

Dragonfly Gazette

GEORGIA PROJECT WET Environmental Protection Division

Volume 1, Number 5 | SPRING 2003

Georgia Students Jump into River of Words

RIVER OF WORDS is an international environmental poetry and art project designed to nurture respect and understanding of the natural world. Students learn their "ecological address" by honing their observation skills and describing through poetry and art their "place in space." The contest is open to youth ages 5-19. Each year eight students are chosen as National Grand Prize Winners and receive a trip to Washington DC. National winners are selected by former U.S. Poet Laureate (1995-1997) and ROW co-founder, Robert Hass and a committee of nationally-recognized poets and artists.

In Georgia, River of Words is coordinated by the Georgia Center for the Book and Georgia Project WET. State winners are selected by a local committee of poets and artists. Power of Literacy prize winners are selected by Starbucks employees from poems created by youth organization students who participate in River of Words field trips at the Dunwoody Nature Center and the Oatland Island Education Center.

This year the Center for the Book and Project WET will recognize twelve national winners, thirty-two state winners, and two winners of the Starbucks Power of Literacy Prize on Sunday, May 18, at an awards ceremony at the Atlanta Botanical Garden. Award winning poetry and art will be also be put on display for one year in the Georgia River of Words Exhibition, which travels to schools, libraries, conferences, festivals, parks and public buildings.

NATIONAL GRAND PRIZE WINNER



Kristen Van Liew, 17 years old, Atlanta

NATIONAL ART FINALISTS

Catherine Bird, 17 years old, Atlanta
Elizabeth Lamb, 18 years old, Atlanta
Jesse Moore, 16 years old, Evans
Laura Myers, 18 years old, Atlanta
Natalie Osten, 17 years old, Marietta
Neema Ebrahim-Zadeh, 10 years old, Marietta
Gil Greenberg, 10 years old, Duluth
Kirsten Warbington, 18 years old, Evans

NATIONAL POETRY FINALISTS

Rachel Blumenthal, 18 years old, Atlanta
Johanna Chotiwat, 17 years old, Chamblee
Scott Laffler, 10 years old, Alpharetta

Thanks to Georgia River of Words sponsors: Starbucks Coffee and the Starbucks Foundation, and partners: the Atlanta Botanical Garden and the Environmental Education Alliance of Georgia



See page 2 for more information on River of Words.

River of Words



WHAT PEOPLE ARE SAYING ABOUT RIVER OF WORDS PROGRAMS AT THE DUNWOODY NATURE CENTER AND THE OATLAND ISLAND EDUCATION CENTER

Thanks to a grant from The Starbucks Foundation, students from the Brookhaven Boys and Girls Club in Atlanta and the Frank Callen Boys and Girls Club in Savannah are learning about their watersheds and expressing themselves through poetry and spoken word performances.

“Three boys sat together for the poetry workshop, after their watershed hike. They were ‘way too cool’ to write poetry, so when the others were writing away, they wrote poems like ‘water is nothing nothing nothing, I see nothing nothing, it smells nothing nothing.’ We brought out the wooden stool to have a reading. As the other students read their poems (some pretty good), these three rebels felt left out – so they asked to read other folks’ poems, from the workbooks I had handed out. I think it’s progress for them to see reading poetry aloud as a privilege they wanted to share. Baby steps...”

Claire Hayes, Dunwoody Nature Center, Atlanta

“None of the children who attended had ever been out in a boat. I find this amazing considering that they all grew up in Savannah.”

“Isn’t it unreal that some things we take almost for granted, like boats, are sometimes so far out of reach to some?”

Frank Callen Boys and Girls Club, Savannah



WHERE CAN I TAKE A GROUP OF STUDENTS FOR A RIVER OF WORDS FIELD TRIP?

Charlie Elliott Wildlife Center, Mansfield
Brooke Ager Discovery Area Watershed Field Trip
For 4th - 6th grade students
Cost: \$3.00/student, Deposit required.
Contact: 770-784-3059

Chattahoochee Nature Center, Roswell
The Creek and the Cherokee
For 3rd - 12th grade students
Cost: \$6.00/student, 25 students/naturalist, 2 adults free/25 students. Reservation and deposit required.
Contact: 770-992-2055, ext. 122 to make reservations. Specify River of Words option for The Creek and the Cherokee program.

Dunwoody Nature Center, Dunwoody
River of Words
For K - 8th grade students
Cost: \$6.00/student—\$60 minimum for poetry, \$7.00/student—\$70 minimum for art.
Contact: 770-394-3322

Elachee Nature Science Center, Gainesville
River of Words
For 5th - 8th grade students
Cost: \$8.00/student.
Contact: 770-535-1976

Newman Wetlands Center, Hampton
River of Words & Nature Journaling
For 6th - 12th grade students
Cost: \$5.00 per student with a minimum of \$50.00.
Maximum number of students per class: 20.
Contact: 770-603-5606

Oatland Island Education Center, Savannah
River of Words
For 1st - 8th grade students
Cost: \$3/student for Chatham County students and \$5/student for Non-Chatham County students with a minimum of 15 students or \$45.
Contact: 912-898-3980

Oxbow Meadows Environmental Learning Center, Columbus
River of Words
For 2nd - 6th grade students
Cost: \$4.50/student, 25 students minimum.
Contact: 706-687-4090

Sandy Creek Nature Center, Athens
River of Words
Cost: \$2.50/Athens-Clarke County students and \$3.50 for non-ACC students.
Adult chaperones welcome and are free.
Minimum \$40 fee.
Contact: 706-613-3615, ext. 231

Dragonfly Gazette

Editors: Deron Davis, Petey Giroux and Monica Kilpatrick

Production artist: Jacob Escobedo

THE DRAGONFLY GAZETTE IS PRINTED ON RECYCLED PAPER. PASS IT ON TO A FRIEND, AND RECYCLE IT WHEN YOU’RE DONE.

The Dragonfly Gazette is published bi-annually. It is distributed to Georgia Project WET Facilitators and Educators in April and October.



RIVER OF WORDS TIMELINE



FEBRUARY 15

Annual deadline for entries

APRIL

National winners announced and State winners selected

MAY

Georgia’s National and State Winners recognized at Awards Ceremony

JUNE - DECEMBER

ROW exhibit travels to libraries across the state

AUGUST

Georgia ROW brochure produced and distributed

SEPTEMBER

Georgia ROW Teacher’s Guide produced and distributed

NOVEMBER - JANUARY

Georgia ROW Poetry and Art Journal produced and distributed

WET WORKSHOPS

VISIT THE www.EEinGEORGIA.org CALENDAR FOR THE LATEST INFORMATION ON AVAILABLE WORKSHOPS

TIP

Facilitator's Try This! – Encourage participants to develop an outline for a unit, explain how the lesson they present supports the unit, and correlate the activity to the Quality Core Curriculum. For a sample agenda and more information, contact Deron Davis at deron_davis@mail.dnr.state.ga.us.

PROFESSIONAL DEVELOPMENT OPPORTUNITIES THIS SUMMER!

June 11-26, Savannah

Using the Marine Environment as a Model for Integrating Science, Math, and Social Issues

The course will be based at the Marine Education Center and Aquarium (MECA) on Skidaway Island. Tuition, room and board, and most course related expenses are covered by grant funds. Housing will be dormitory style, and cafeteria meals will be provided. Enrollment is limited to 20 students. Graduate Credit or 10 SDUs are available.

Visit <http://www.uga.edu/aquarium/ALT%20ASSETS/PDFs/workshops.pdf> for a pre-application form. Questions? - Please email Dr. Maryellen Timmons at mare@uga.edu.

June 9-13, Gainesville

"All WET" Teacher Education Course

A week of aquatic studies will whet your appetite for water education. A pond and stream study, lake and wetland studies, computer modeling and more. Project WET certification included. (K-12) 4 SDUs (40 contact hours) \$225 tuition.

Visit <http://eeingeorgia.org/content/ee/docs/Elachee2003.pdf> for a registration form. Please contact Elachee at 770-535-1976 for more information.

June 28, Coweta County

Georgia Adopt-A-Stream – Getting Started and Chemical Monitoring

Volunteers learn about the process of registering the stream, wetland or lake that they will monitor, and then learn how to use maps to delineate and assess their watershed. The Chemical Monitoring component teaches basic stream water chemistry and how to conduct chemical tests using hand-held field equipment. Educators will receive the Georgia Adopt-A-Stream Educator's Guide for Grades K-12.

Visit www.riversalive.org/aas.htm for more information. Or call 404-675-1636

July 8-22, 2003, Savannah

COASTLINES 2003: No Wetlands / No Seafood

15 days of intensive field and laboratory experiences focusing on land use and water quality issues as they relate to the health and productivity of estuarine and marine ecosystems A residential program based at the Marine Education Center & Aquarium (MECA) on Skidaway Island, near Savannah. Tuition, room and board, and most course related expenses are covered by grant funds. 6 graduate credits or 10 SDUs offered.

Visit <http://www.uga.edu/aquarium/ALT%20ASSETS/PDFs/workshops.pdf> for a pre-application form. For more information e-mail or call bobwms@uga.edu at (912) 598-2338, or lindsaya@uga.edu at (912) 598-2355, or visit our website at <http://www.uga.edu/aquarium> and jump to the Teacher Workshops page.

July 14-18, Alpharetta

Wonders of Water: Currents of Learning, Eddies of Discovery

Our most precious resource, water, will be the fascinating vehicle for our activities, experiments, and investigations. This fun and informative week of interdisciplinary professional development and enrichment will be presented in an extraordinarily beautiful setting...the Chattahoochee River National Park! Participants will receive the 530 page Project WET and 330 page Wonders of Wetlands curriculum guides. Cost: \$125 registration and materials. SDUs available.

Call 770-399-8074 ext 243 for more details and registration form.

July 19, Coweta County

Georgia Adopt-A-Stream – Biological Monitoring

Learn how to sample the biological diversity of a stream! The macroinvertebrates (insects, snails & other critters) found in a stream are excellent indicators of the condition of both water quality and habitat. This workshop will focus on collection techniques for either rocky or muddy bottom streams and macroinvertebrate identification. Educators will receive the Georgia Adopt-A-Stream Educator's Guide for Grades K-12.

Visit www.riversalive.org/aas.htm for more information.

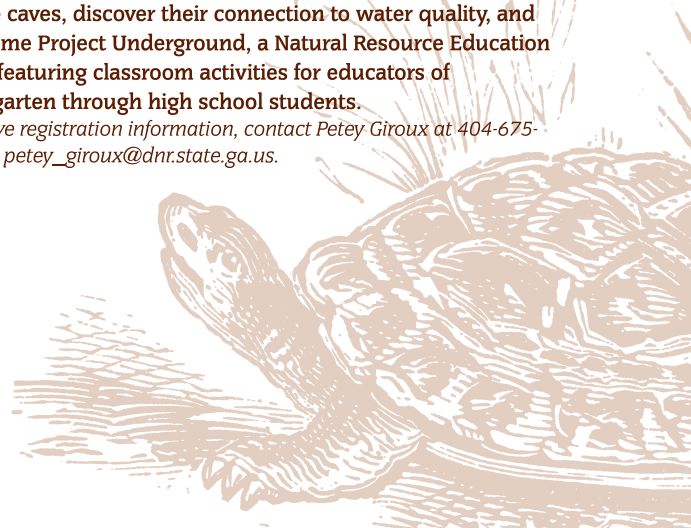
Or call 404-675-1636.

Coming Soon...

Groundwater, Caves, Karst, and Classrooms Project WET presents Project Underground

In this two day workshop currently in development, participants will learn about Georgia's karst systems, landscapes with sinkholes, springs, and streams that sink into subsurface caverns. The hollow nature of karst terrain results in a very high pollution potential. Groundwater can travel quite rapidly through these underground networks transmitting contaminants to wells and springs in the vicinity. Workshop participants will explore caves, discover their connection to water quality, and take home Project Underground, a Natural Resource Education Guide, featuring classroom activities for educators of kindergarten through high school students.

To receive registration information, contact Petey Giroux at 404-675-1638 or petey_giroux@dnr.state.ga.us.



watercourse

What is the Watercourse? Established in 1989, The Watercourse is a not-for-profit water science and education program specializing in the development of educational materials on water and water-related management issues. Publications include curriculum such as Project WET, Wonders of Wetlands, and Conserve Water, as well as materials for students such as the Kids in Discovery series. To order these materials, visit www.projectwet.org.

Kids In Discovery Series (KIDS)

These colorful, 16-page activity booklets are written and illustrated for eight through twelve-year-olds. They feature creative and hands-on investigations, demonstrations, science experiments, educational games and stories to stimulate understanding of each booklet's topic.

These informative, inexpensive booklets will complement Watercourse or other school curricula, or stand alone as a fun introduction to water knowledge. Sets of 30 are \$18.00. Discounts are available for orders of 1000 or more.



KIDS: Big Rivers

Readers explore big rivers and watersheds in North America, meet famous river explorers, calculate a river's rate of flow, discover how the river environment is unique, investigate the many ways that rivers are important, and recognize the role of water managers.

KIDS: Celebrate Wetlands

With everyday tools such as coffee, filters, sponges, celery and food coloring, readers learn about the life of wetlands. An 11 x 16 poster reminds kids of the many spectacular plant and animal species of the wetlands.



KIDS: Conserve Water

Kids test their water IQ by matching familiar plants and animals with their water content, then get outdoors to learn "catchment," and think about their own neighborhoods in the "Water Detective."



KIDS: Discover the Rio Grande/ Rio Bravo English

The explorers' journal entries offer a close-up look at life along the river, detailing everything from muskrats and prickly pear cactus to ancient dwellings.

KIDS: Descubre el Rio Grande/Rio Bravo Spanish

Liga al Cuadernillo de Actividades para niños Río Grande/Río Bravo (KIDS)
(Ediciones en español)

KIDS: Discover Ground Water and Springs

Interactive lessons such as filling glasses with sand, gravel, and clay show readers principles related to water flow. Watershed animals, hot and cold springs, and everyday ground water uses are vividly illustrated and demonstrated.

KIDS: Explore Oceans

Have you been asked why the ocean is blue, or why it is salty? Maybe your students want to know how storms build. Explore Oceans teaches the answers along with navigation concepts and watershed principles.

KIDS: Fish and Fishing

From facts about fins to funny phrases, kids learn about the lives of fish and human-kind's long history of pursuing them. "A Fine Kettle of Fish" increases awareness of water pollution, whirling disease, drought, loss of habitat, and over-fishing.

KIDS: Healthy Water, Healthy People

Facts and fun games teach water quality monitoring, watershed restoration, and pollution prevention. Also learn how the body uses water in sports, digestion, breathing, and even thinking.

KIDS: The Water Story

Games and exercises introduce water artifacts and cultural celebrations, water friendly cleaning alternatives, and the maze from water source through treatment plant to homes and out again.





frog pond lessons

Many teachers across the State are engaging students with water education. Often these classes include studying the pond in the campus' outdoor classroom. This section of the Dragonfly Gazette will focus on stories and lessons for making the most out of trips to the pond.

You can share your pond lessons and receive a \$50 gift certificate for EE teaching materials from the Nature Watch Catalog. Qualify to win a library of over \$500 of environmental education books and curricula! Visit http://www.eeingorgia.org/lesson_plans/ for more information.

The following lesson plan is reprinted with permission from www.EEInGEORGIA.org, Georgia Learning Connections (www.glc.k12.ga.us) and Kim Bailey of the Georgia Environmental Protection Division (kim@eeingorgia.org). Visit <http://eeingorgia.org/> for more information.

P[?]NDERings

The frog pond is an excellent place to inspire students to develop questions, design their own investigations and explore answers using the inquiry process! Even the smallest constructed pond or water garden on the school campus can offer an endless pool of fascinating questions to delve into.

You may want to introduce students to pond inquiry by using a KWHL chart that organizes what students *K*now about the pond, what they *W*onder or want to know, *H*ow they will find out, and finally what they *L*earned (see example on page 4). The chart can be re-created on a portable wipe-off board or large chart paper to be used by the whole a class. Or, groups of students may use copies of the KWHL chart on a clipboard to help organize their thoughts. Before going outdoors, ask students what they already know about the pond. Record responses in the Knowledge section of chart.

Next, review your behavior expectations and safety rules for the outdoor classroom and take students out to observe the frog pond. If possible, provide students with cups, nets, magnifying glasses, bug boxes, etc. to aid their observations. Give students several minutes to make observations and learn new things about the pond. Students may explore individually or in groups. As students share their new pond discoveries with the class, their observations may be added to the "Knowledge" section of the KWHL chart.

Then ask students what they wonder about the pond. What questions do they have about the pond? Let questions build off of one another. Accept all questions and ideas. Encourage every student to participate. Record questions in the "Wonder" section of on the KWHL chart as the question brainstorming continues.

After students have developed questions, decide how to proceed with investigations to help answer some of them. Depending on the age and experience of your students, you may want to help them choose one question to explore together as a class. Or, you may want students-

to work in small groups to choose and explore different questions. Students may need help designing an investigation or may be able to work independently with just limited facilitation from the teacher. Students may be able to work independently with limited facilitation by the teacher. Conducting background research, designing the experiment, forming a hypothesis, etc., can all be part of this process. (Please be mindful of ethics and laws related to animal research.)

Before beginning investigations, if working in groups, you may wish to have students present their question, hypothesis, and investigation design to the rest of the class. During this peer review, other students may raise questions and make suggestions for possible ways to improve the investigation design. Be sure to record the investigation plans in the “How” section of the KWHL chart.

Assist as needed, in helping students set up and carry out their pond investigations. Make sure students are conducting the experiments in a safe manner. Ask questions but try not to tell students how or what they should do – unless it is a matter of safety.

After conducting investigations, you may have students report their findings to rest of the class. Students could share their procedures, results (data/observations), conclusions, possible applications, and what they learned overall. They may also want to share challenges they encountered, any things they would do differently, and new questions they developed as a result of the investigation process. Be sure to record what was learned in the final section of the KWHL chart.

Students may have answered specific questions and learned things that no one else knew about the frog pond before. Chances are, their natural curiosity sparked a new motivation and enthusiasm for learning! In the process they also learned more about how to learn. Making observations, asking questions, making predictions, designing experiments, collecting data, drawing conclusions, and sharing ideas with others, are all part of the science inquiry process as outlined in State and National Science Standards. Inquiry projects also provide easy opportunities to integrate standards from other subject areas such as math, language arts, technology, and often social studies. In addition, student products and presentations provide authentic methods of assessing performance. So, what are you waiting for? Get outside this spring and start taking advantage of all that can be learned by pondering questions at the frog pond!

Materials Needed: 1. KWHL chart (one large chart for the whole class or copies for each student if working in groups). 2. tools to aid pond observations: cups, nets, magnifying glasses, bug boxes, etc. (at least one tool per student). 3. materials to conduct student-designed pond investigations (will be determined by questions and investigation design).

You may wish to have students participate in a guided pond inquiry before they dive into their own investigations. Here are some investigation ideas to consider:

Pond Investigations

1. Floating Plant Reproduction

What do you Know?

There are several kinds of small floating plants that float on the surface of frog ponds. Three of the most common are Duckweed, Azolla, and Salvinia.

Duckweed: Duckweed is the smallest flowering plant in the world. They often cover the surface of still water ponds. They have tiny flat oval leaves and single root.

Azolla: Azolla is a tiny floating aquatic fern. It grows in a symbiotic relationship with *Anabaena*, a microscopic filamentous blue-green alga. Growing in bright sun, Azolla is red, but in shade it is green. Common names include Mosquito Fern and Fairy Moss.

Salvinia: Salvinia, also called Water-spangles, is an aquatic floating fern. It has joined oval leaves covered in hairs that form a water repellent shield.

What do you Wonder?

Which plant reproduces the fastest - Duckweed, Azolla, or Salvinia?

How can you find out?

Ten of each plant may be collected and brought inside to grow in the same conditions. Or, if you can ensure that plants in the pond will not be disturbed, use plastic tubing to form a floating circle enclosing equal samples of each plant. Count the number of individual plants on a regular schedule (ex. every three days) so you can graph their reproduction rate.

What did you Learn?

The data will reveal which plant reproduces fastest.

(Do you wonder will this change if you change the growing conditions - add fertilizer, decrease light, change temperature, etc. Start another investigation!)

Visit www.mobot.org/jwcross/duckweed/ for more information on "The Charms of Duckweed." This web site contains great background information, botanical facts, photos, practical uses, and a collection of inquiry-based Duckweed Laboratory Exercises and projects for teachers and students.

2. Pond Water pH

What do you Know?

Pond water pH measurements can tell you how acidic or basic your pond is. There are several methods for measuring pH - paper strips, chemical tests, and meters.

What do you Wonder?

What can cause changes in pond water pH?

1. Does the pond water pH level change after it rains? If so, how much?
2. Do rotting leaves change the pH of pond water? If so, how much?
3. Does all that pollen floating on the surface of the water change the pH level If so, how much?

How can you find out?

There are many ways to explore these questions. 1. Measure the pond pH daily. Then, determine whether it changes after a rain. You may also want to collect rainwater in a separate bucket and compare pH to that of the pond. 2. Collect buckets of pond water and add varying amounts of leaves to all but one (control). Measure and compare pH over time. 3. Collect buckets of pond water and add varying amounts of pollen to all but one (control). Measure and compare pH over time.

What did you Learn?

The data will reveal whether rain, leaves, or pollen can change pond water pH. What other things might affect pH of pond water?

3. Submerged Oxygenating Pond Plants (SOPs)

What do you Know?

Submerged oxygenating plants (SOPs) are an important part of the frog pond ecosystem. They release oxygen into the water, provide shelter, and compete with algae for nutrients. Several kinds are commonly used. Some of the more common oxygenating plants are Common Waterweed (*Elodea canadensis*), Anacharis (*Elodea densa*) and Water Milfoil (*Myriophyllum spicatum*).

What do you Wonder?

Which submerged oxygenating plants produce the most oxygen?

How can you find out?

Collect an equal amount of each plant you wish to test. Measure the dissolved oxygen in the pond water. Seal each plant inside an equal size jar of the pond water. Do this underwater to ensure no air is in the jar. Be sure to form an airtight seal. Seal one jar of just pond water to use as a control. Place the jars in the same area of the pond. After at least a day, and during the same time of day as before, open, and immediately measure dissolved oxygen. Compare this to the original measurement and the measurement from the control jar. An alternative test could be place sealed jars of plants and control pond water in a bright window. Just be sure not to cook the plants!

What did you Learn?

Dissolved oxygen measurements and comparisons should reveal which plant produced the greatest net amount of oxygen. Try the same experiment over a longer period of time to see if the results are the same. Do you think the sealed plants have enough carbon dioxide to use for photosynthesis? What would happen if you added equal amounts baking soda to the pond water to provide extra carbon dioxide?

P?NDerings



K	W	H	L
What do I know?	What do I wonder?	How will I find out?	What did I learn?



Soaking Wet

THIS SECTION OF THE DRAGONFLY GAZETTE RECOGNIZES PROJECT WET FACILITATORS, TEACHERS AND SCHOOLS AND PROVIDES A PLACE FOR THEM TO SHARE THEIR IDEAS AND ACCOMPLISHMENTS.

STUDENTS FROM STEWART-QUITMAN HIGH SCHOOL IN LUMPKIN REPRESENT GEORGIA AT THE YOUTH WATERSHED SUMMIT

By Beth Cook, Social Studies Teacher

In August 2002, the EIC (Using the Environment as an Integrating Context for Learning - visit www.eeingorgia.org/eic/ for more information) class at Stewart-Quitman High was selected to represent Georgia at the Year of Clean Water Youth Watershed Summit in Edgewater, Maryland. The Summit was held in honor of the 30th anniversary of the Clean Water Act, passed by Congress in 1972.

The EIC class conducted an investigation of the Chattahoochee River entitled "A Watershed, within a Watershed, within a Watershed." The students wrote a research paper on the Chattahoochee River and the issues associated with Atlanta's location at the headwaters instead of at the mouth of the river. They developed a tri-board which showcased the river and the results of their water quality testing on its tributary Hodchodkee Creek. The students also created an I-Movie of their work on the creek.

Four students, Amber Laseter, Rodney Dent, Varshenna Scott, and Tiara Harris, were selected based on merit and initiative to attend the Watershed Summit. Together with their teacher, Mrs. Beth Cook, they flew to Edgewater, Maryland as the guests of the American Clean Water Foundation and the Smithsonian Environmental Research Center.

Students from 46 states presented their watershed projects to other students and a

panel of judges. During the Summit, students and teachers were divided into groups and rotated through four activities.

The first for Georgia's students was a boat ride on the Rhodes River and Chesapeake Bay to discover the difference in the size of the area's Blue Crabs. In the second rotation the students learned about Geographic Information Systems (GIS) using ARC-VIEW software on laptops. The third rotation gave the students the opportunity to explore the Rhodes River in canoes. In the last rotation the students investigated the size and type of trees in the forest at the Smithsonian Environmental Research Center. They explored the tree canopy in baskets and learned about the significance of the canopy to other vegetation in the area. Students also visited the Smithsonian Museum of Natural History in Washington, D.C. to hear short speeches on the importance of clean water from leaders in Washington.



Soaking Wet

2003 GEORGIA PROJECT WET FACILITATOR, TEACHER, AND SCHOOL OF THE YEAR

On Saturday, March 22, at the Environmental Education Alliance of Georgia's annual awards ceremony, Georgia Project WET honored Susan Noakes, Carol Anderson, and Arnold Magnet Academy for their contributions to water education.

FACILITATOR OF THE YEAR

Susan Noakes has worked for the Georgia Environmental Protection Division since the late 80's. In her work with industry, farmers, and citizens on environmental issues, she realized the need for environmental education. She believes that understanding and respect for the environment should be learned at an early age. In 2001 she became certified as a Project WET facilitator, and since that time has trained 61 teachers, led water quality demonstrations and Project WET activities for 300 students, and participated in two Rivers Alive waterway clean-up events in Northeast Georgia.

TEACHER OF THE YEAR

Carol Anderson has been a classroom teacher for 27 years. She uses water almost every day to bring science to life at Elkins Pointe Middle School in Roswell. From coral reefs to local streams, her students study bodies of water and the organisms that live in them. Her commitment to hands-on teaching led her to help establish an outdoor classroom with a retention pond as its primary feature, where students can investigate the natural world. Carol's dedication reaches beyond the school grounds and into the community. In partnership with a local park, her students collect aquatic insects from a stream, test the water's pH level, and gather other water quality data.

SCHOOL OF THE YEAR

Arnold Magnet Academy in Columbus was selected by the Georgia Department of Education and received training in the Environment as an Integrating Context school improvement model last year. From this process, four seventh grade teachers worked with Oxbow Meadows Environmental Learning Center and Columbus Water Works to engage their students in standards-based lessons about the school watershed, the Chattahoochee River, and the water resources of the world. In Math class, students learned the concept of absolute value by measuring the water in the courtyard pond. In Language Arts, they learned to write creatively and persuasively about the river. In Science they researched the plants and animals of the river ecosystem, and created murals from what they learned. In Social Studies, they discovered the reliance of civilizations on the world's major rivers, and shared their knowledge by creating ceiling tiles for the hallways.



WET Winners (pictured left to right: Susan Noakes / Facilitator of the Year, Carol Anderson / Teacher of the Year, Deron Davis / Project WET Coordinator, Terri Massa & Jill Sammons / 7th Grade Teachers - Arnold Magnet Academy, Petey Giroux / Project WET Coordinator, Becky Champion /Oxbow Meadows - Arnold Magnet's EIC Community Partner)

NEWS, NOTES AND UPCOMING EVENTS

PROJECT WET DEVELOPS URBAN WATERSHED CURRICULUM

With funding from the City of Atlanta Department of Watershed Management, Georgia Project WET is developing an Urban Watershed Supplement for the National Project WET guide. Marilyn Johnson, Manager of the Public Information Program with the City of Atlanta, stated that "often people are unaware of the vital need to protect the river and our water resources. This supplement for education will help students make connections with their urban watershed and become better stewards."

The Supplement will be completed by summer with the help of writer Angelle Cooper, environmental education consultant with over 15 years experience in the field. Angelle will be adapting existing lessons with Atlanta specific information. Workshops are planned to introduce Atlanta Public School Teachers to Project WET and the new urban watershed resource that will answer questions about the Chattahoochee River and its journey through Atlanta.

Do You Know:

- The river flows through the city in a maze of pipes and tunnels winding its way to our homes, and back to the river?
- Where your water is taken in from the river and where it is returned?
- A tunnel can be 27 feet in diameter?
- The difference between a sewer and a sanitary sewer?
- Who sets standards for Georgia's drinking water and the water we return to the Chattahoochee?
- Rainwater and runoff are responsible for 80% of the pollutants impacting our rivers?

The Georgia Urban Watershed Supplement will answer these questions and give students information that will help them make wise decisions concerning the protection of their water resources. If you would like more information contact: Pety Giroux 404-675-1638.

WINNING WATER:

ACF CHILDREN'S WATER FESTIVAL

On Tuesday, March 23, 2004, the Georgia Department of Community Affairs, in partnership with other agencies and organizations, will host a daylong water festival on the campus of Columbus State University in Columbus. The event will feature hands-on interdisciplinary water activities/lessons divided into four categories: drinking water, water quality, watersheds, surface water/groundwater. Each class will attend a four-hour block or eight different activities. Fourth grade classrooms from the Apalachicola, Chattahoochee, and Flint River basins will be targeted, and activities will be based on the fourth grade Quality Core Curriculum standards.

For more information contact Suki Janssen at (404) 679-3152 or sjanssen@dca.state.ga.us.

FREE!

Newly Revised AAS Educator's Guide Is Here!

After a year of editing, the Adopt-A-Stream Program happily announces the availability of this new resource for educators to bring stream and water quality issues to your classroom and spark your students' interest in protecting our precious water resources. Designed for K-12 school and youth groups, this 168 page activity guide takes key messages from Adopt-A-Stream program manuals: Getting to Know Your Watershed, Visual Stream Survey, and Biological and Chemical Stream Monitoring and lays them out in a fun and interactive lesson plan format. Each activity has been correlated to the Georgia Quality Core Curriculum standards and includes an objective, background information, location, time needed, subjects covered and additional resources.

To receive a copy of the Educator's Guide please call Georgia Adopt-A-Stream at (404) 675-1636 or email Kim Morri-Zarneke at kimberly_morri-zarneke@mail.dnr.state.ga.us.

FREE FROM PROJECT WET (WHILE SUPPLIES LAST)

Make your selections below and fax to Deron Davis at (404) 675-6245.

- # req. **CHILDREN'S BOOKS**
- Spring Waters: Gathering Places (1 max)
- ACTIVITY BOOKLETS**
- Discover Ground Water and Springs (5 max)
- POSTERS**
- River of Words/Rivers Alive (2 max)



NAME: _____

ORGANIZATION: _____

ADDRESS: _____

PHONE: W _____ H _____

FAX: _____ EMAIL: _____

THE LEGEND OF NEEA

by Sharon Bagatell, Atlanta Bicycle Campaign
for a Georgia Project for Excellence in Environmental Education certification course



Once upon a time in a land of wonders (not too far away), there lived a group of wonderful creatures. They lived their lives doing their creature things for thousands and thousands of years.

One day, not too long ago, some of the creatures began to look around them, and they saw that (some time in the last few hundred years, they guessed) they had made a BIG MESS.

"Let's clean it up," they said.

So they did. Or they thought they did.

But they noticed that as they cleaned, things were still getting messed up. They communicated to the other creatures about this, but the response was often, "What mess??" or "It wasn't me!!" or "Well, what can I do about it??"

So the creatures struggled for a while, trying to do the best they could to clean up the mess. They took comfort in words like "Belgrade Charter," and "Tbilisi Declaration," but still the mess continued. They knew that something different, something BIG, something important needed to happen; the other creatures of their land were not listening.

They began to speak amongst themselves a language - spoken, at first, in whispers - called "ee." If you listened closely and watched carefully, you could see the rise of the eyebrows, the nod of the head, and the "ee" sound passing between them. They knew...

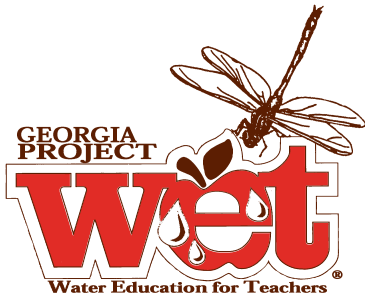
Well, eventually, they got tired of whispering. They went to their Decision-Making gods. "Decision-Making gods," they said, "We need "ee" throughout the land, for every big and little creature among us!" And the boldest among them proclaimed, " We need support, we need training, we need ways to spread "ee" - and to do this, we need lots of that powerful green paper and metal stuff! Only then will we be able to clean up this BIG MESS once and for all."

And the Decision-Making gods listened. And in their infinite wisdom said, "Yes, we need to foster a well-educated and well-trained public who will respond effectively to complex environmental issues by enhancing understanding of the environment and natural processes, increasing awareness of environmental problems and their origins, and improving skills to solve these problems."

And thus the creatures and their Decision-Making gods brought into being the NEEA (National Environmental Education Act of 1990, otherwise known as Public Law 101-619). It was full of good ideas - and lots of that powerful green paper and metal stuff. (Well not LOTS, but SOME...)

And the creatures went WILD - "ee" could be heard everywhere! An Office of EE was established at the EPA. The EE and Training Partnership Program was set up. Grants for EE were provided to states, local agencies, tribal agencies, universities, school districts, and non-profits. They gave out EE awards. They gave out EE fellowships. They established the National EE Advisory Council and Task Force. And they established the National EE and Training Foundation.

FOOTNOTE: At the time of printing, the Office of Management and Budget (OMB) had proposed terminating the Office of Environmental Education at the Environmental Protection Agency (SOURCE: North American Association for Environmental Education).



4220 International Parkway, Suite 101, Atlanta, Georgia 30354

What's Inside this Issue?

- Award-Winning Students
- Take a River of Words Field Trip
- Summer Workshops
- Lesson Plan on Schoolyard Ponds
- KIDS Activity Booklets
- Youth Watershed Summit
- Project WET Facilitator, Teacher, and School of the Year
- MORE FREE STUFF!!