Using Watershed Education to promote hands-on Science Education

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By Dr. Jack Turner
Director of the Watershed Ecology Center
Outline

• Short description of my migration to South Carolina
• 40 years of teaching and research
• Development of the Watershed Ecology Center
• The mission of the Center
• The evolution of the Center
• The Center’s programs
From Farm to Grad School

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• Move my wife and 2 girls to SC
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8. In our peak year we contacted 22,000 kids in Spartanburg, Union and parts of Greenville county.
Mission Statement

Encouraging watershed awareness through education and community outreach.
Where in the world is the WEC?

The Watershed Ecology Center is housed on the USC Upstate campus in the Horace C. Smith Science Building. The Center itself houses supplies for all programs, artifacts and live animals to make programs come alive as well as office space for staff and a water testing lab. While visitors are welcome, most of our programs are designed to be presented off-campus.
What do we do?

Educate!
School Programs
Highlights!

- 5 part time educators
- 8 school districts serviced
- 58 programs for grades K-8 in general science, chemistry and math
- 877 classrooms visited
- All programs correlate to SC Science and Mathematics Standards
- 20,000+ students reached last school year!
School Programs

https://www.youtube.com/watch?v=vQ3EtVUjiZ4
Mission: Disseminate

Educate
Tools of our programs!

- Artifacts and or Critters with every program

- Many on loan from U.S. Department of the Interior.
Artifacts, WEC
Milkeyway and Friend

Critters
Reptiles!
Amphibians!
Other Guys!

Millie & Pete, Twix & Mikeyway, Hermie & Crabby and “the Roach Family”. 
Highlights!

• 2 Discovery Camps
  • 1 great week
• Campers going into grades 1-3 and Campers going into grades 4-6.
• Daily experiments, crafts, games, discoveries and FUN!
• Limited enrollment for more involvement.
Community Outreach Program

Watershed Ecology Center
COMMUNITY OUTREACH PROGRAM
Protecting Upstate watersheds through community education and involvement.

www.uscupstate.edu/wec

UPSTATE
University of South Carolina Upstate
Highlights!

• 12 FREE programs available for community groups
  • Discover Your Watershed
    • Earth Day
    • Storm Drain Marking
  • Adopt-A-Stream Training
  • FREE Rain Barrel Workshops
Adopt-A-Stream
Mission: Collect

Community Volunteers
Highlights!

• Collect data on stream that mean the most to YOU!
• FREE certification, volunteer based
• Collect data to create a baseline for your stream
• Monthly chemical tests and bacteria monitoring
• Quarterly macro invertebrate sampling
• Join several teams already sampling!
Pearson's Falls, Pacolet River

Highlights!

- Monitor Water quality in local streams
  - Determine Baseline data on streams
  - Data collected from Adopt-A-Stream become part of South Carolina Adopt-A-Stream
  - Collaborated for Spartanburg Indicators Project
Become a Part of WEC
THANK YOU!
Anonymous Donors
Our Latest Program…
Adopt-A-Stream!

• The adopt-A-stream program is suggested by the EPA, the national organization is headquartered in New York.
• It is available in our neighboring states of North Carolina, Georgia, Florida (based on the Georgia program), Kentucky, Tennessee and Virginia as well as many others.
• Trained groups of concerned citizens monitor the water quality in streams near their homes.
Why did WEC become involved?

• SCDHEC is assigned the task of monitoring source water quality.

• However, with over 100 named streams and many un-named waterways in Spartanburg County, there are not enough water monitors to do an adequate job.

• With data lacking, how is a citizen to know the water quality in their county?
South Carolina Adopt-A-Stream

This program is dedicated to increasing public awareness of the State's nonpoint source pollution and water quality issues.

A - awareness
D - data collection
O - observations
P - partnerships
T - tools & training
What is it all about?

• Volunteers monitor the quality of the water in their “adopted” stream

• Check water parameters through chemical tests once a month

• Monitor bacteria levels with test films once a month

• Check biological water parameters through macro invertebrate sampling

• Report all data through the website

• All data from your site and that of all others is available on the website
Why Should I Adopt A Stream?
Not in MY backyard...

- We worry about landfills, power plants, new development, noisy dogs, lousy neighbors....

- ... but how about Water Quality?
Our “backyard”...
Better Water Quality

...better life!
Better Water Quality...  
...better habitat.
Better Water Quality…

• ...makes “cents”!
Our Adopted Streams
Chinquapin Creek
Coming soon…

• ...the newly named “Butterfly Creek”.
What we do.

Once certified,
Once each month,

- Air and Water temperature
- Conductivity
  - pH
- Dissolved Oxygen
- Bacteria
Once each quarter,

- Macroinvertebrate Sampling
Record Data

- www.GeorgiaAdoptAStream.com
Who Are the Stream Teams?
Become Certified!

- Take a FREE certification course offered through South Carolina Adopt A Stream.
- Find a stream near you, make sure there is a safe way to access your stream.
- Acquire a Stream Testing Kit.
- Get started, add your data to the website!
Can’t Monitor?

• Sponsor a STREAM
  • Outfit a team with a monitoring kit.
  • Provide for annual kit upkeep and re-supply.

• Sponsor a TEAM
  • Get a team started with all the supplies needed to monitor a stream.

• Sponsor a KIT
  • Provide for the yearly chemical replacements and equipment up-grades.
For More Information,

- Email the Watershed Ecology Center, aas_wec@USCupstate.edu
- Call the Watershed Ecology Center, (864)503-5728
- Check out the South Carolina Adopt-A-Stream website at www.scadoptastream.org
- We look forward to hearing from you!
Thank you!

Our Sponsors…

Anonymous Donors