



Delaware Section of the American Water Resources Association DOWN STREAM DISPATCH

Volume 3

2009

DE AWRA's 1st Annual Water Quest

By Pete Mandeville

One of the primary missions of the Delaware chapter of the American Water Resources Association (DE AWRA) is to raise public awareness about the countless water related issues and resources within the communities of The First State. This past fall DE AWRA sought to educate the citizens of Delaware on a few of these resources surrounding them. Thus the 1st Annual Water Quest Scavenger Hunt was born.

The scavenger hunt attracted nine teams with participants ranging from professionals in water related industries to a kayaking group of citizens that regularly enjoys the water resources of the state. It even attracted two groups of college students who may have been initially drawn to the \$300 grand prize.



Before starting their quest, teams were required to submit both a team name and mascot who would appear in pictures to authenticate some of their visits to various locations along the quest. The participants proved to be quite creative coming up with names like Pirates of the Christina Basin and Kermit's Carroñeros (Spanish for Scavengers). With mascots and clues in hand, the groups set off on their quest.

The scavenger hunt was designed to expose participants to several different water resources in each of the three Delaware counties. Hunters visited the Woodlawn Library in New Castle County where they were to locate and photograph stormwater Best Management Practices (BMPs) to include rain gardens, porous pavement and water collection cisterns. In Kent County, the teams walked along the boardwalk of the St Jones Reserve and photographed informative signs within the salt marsh.



Sussex County lured the scavengers to DNREC's newest nature preserve, The DuPont Nature Center, to learn about the spawning grounds of the prehistoric horseshoe crab.

In organizing this event DE AWRA did have a hidden agenda masked in all this fun: increased membership. One of the keys to DE AWRA's mission is having ambassadors throughout the state to raise that aforementioned public awareness. The more voices available to spread the word means more attention being brought to the water related issues within the state.

With the success of this inaugural event which drew attention from the National AWRA Headquarters, DE AWRA is already planning the 2nd Annual Water Quest Scavenger Hunt. For more details please contact John Harrod at john@delawarenaturesociety.org.

Photos: Members of "Kermit's Carroñeros" pose with their mascot on a rock vane in restoration of Pike Creek along 3 Little Bakers' Golf Course (Left). Team "River Ducks" with mascot Ducky in hand, all geared up and ready to set off on their Water Quest. (Right).

Special points of interest:

- THE NEXT DE AWRA MEETING WILL BE HELD ON **APRIL 2, 2009, 2:30-4:30**. SHOWCASING THE CLEAN MARINA PROGRAM IN SUSSEX COUNTY, DELAWARE.
- THE DELAWARE AND NEW JERSEY STATE SECTIONS OF AWRA ARE CO-HOSTING THE **2010 AWRA ANNUAL CONFERENCE**. STAY-TUNED FOR THE LOCATION, DETAILS, AND WAYS TO GET INVOLVED.
- FUTURE DE AWRA MEETINGS:
 - ⇒ **JUNE 4, 2009**
WASTE MANAGEMENT IN FEEDING OPERATIONS
WE WILL VISIT A LARGE ANIMAL FEEDING OPERATION TO SEE HOW THEY HANDLE WASTE MANAGEMENT AND WATER QUALITY ISSUES.
 - ⇒ **AUGUST 6, 2009**
WILMINGTON PROGRAM
SEE THE WEBSITE FOR DETAILS.
 - ⇒ **OCTOBER 1, 2009**
WILL BE HELD IN SUSSEX COUNTY. DETAILS WILL BE PROVIDED AT A LATER DATE.
- **SAVE THE DATE: DECEMBER 3, 2009, DE AWRA ANNUAL DINNER AND MEETING.**

Meet Our Members!

The newsletter subcommittee will be showcasing DE AWRA members in each edition of the DE AWRA newsletter. It is our hope that by showcasing our members the entire group will learn more about our membership and the diversity of skills and benefits that we can offer each other. If you are interested in being showcased or know someone who is a member and should be showcased in the next newsletter please contact Martha Corrozi Narvaez at mcorrozi@udel.edu or 302-831-4931.

John Harrod, DE AWRA President

**Education:**

BS Horticulture Texas A & M

MS Public Horticulture University of Delaware

Current Position:

DuPont Environmental Education Center manager, Delaware Nature Society

Experience:

I began my career in horticulture and gradually shifted to the environmental field. I am lucky to be able to still use my background to influence land use and water quality at the individual level.

Personal Interests:

I enjoy hiking and sight-seeing with my family wherever we happen to be.

Andrew Read Homsey, DE AWRA Secretary



Photo: Andrew (right) and a friend exploring the great outdoors and looking for birds.

Current Position:

GIS Services Coordinator, Institute for Public Administration, Water Resources Agency, University of Delaware

Experience:

Andrew has a background in urban geography, human geography, and landscape aesthetics. For nearly the last 20 years he has been in the field of Remote Sensing and Geographic Information Sciences (GIS), where he has focused on image processing and image classification, photogrammetry, computer programming, development of web-based applications in the spatial realm, and water/wetlands research.

Personal Interests:

In his spare time he can be found outside, biking on- or off-road, exploring local wildlife areas looking for birds, sailing on the Chesapeake, or having adventures with his son Nate and daughter Anna.

Bryan Pariseault, DE AWRA Treasurer

**Photo:**

Bryan is working hard on the Kalmar Nyckel with the Christina Basin Tributary Action Team.

Education:

BS Civil Engineering, Villanova University, 1994

MS Management, Rensselaer Polytechnic Institute, 2001

MS Civil Engineering, Villanova University, 2004

Current Position:

URS Corporation, Project Manager

Experience:

After seven years as a submarine officer in the Navy, I returned to my roots as a civil engineer working in stormwater management. Most recently I have been worked on watershed studies, storm water basin retrofits and rain garden design for schools and parks.

Personal Interests:

When I am not chasing after three very active kids, I try to find time to get out and play ice hockey.

Kelly Wolfe, DE AWRA Student Member

Education:

MA Urban Affairs and Public Policy with a concentration in Water Resources Policy, University of Delaware (expected May 2009)

BA International Relations, University of Delaware,

Current Position:

Graduate Research Assistant, Water Resources Agency, Institute for Public Administration, University of Delaware

Experience:

Over the past summer, I worked as a research intern at both the Mid-Atlantic Fishery Management Council and the Brandywine Conservancy. The previous spring, I was a legislative fellow for the Delaware General Assembly's House Majority Caucus. Before returning to the University of Delaware for my Master's Degree, I served as the Legislative Correspondent for Representative Michael Castle's Washington, D.C. office, and prior to that, I completed a year-long internship at the National Wildlife Federation's D.C. office as a legislative intern.

Personal Interests:

In my spare time I like to relax at home or be out with my friends. When the weather's warm, I also enjoy spending time at the beaches in Delaware and North Carolina.

Giving Back: Engineers Without Borders

“Building a better world one community at a time.”

By Laura Whalen

Engineers Without Borders – USA (EWB-USA) is a non-profit humanitarian organization established to partner with developing communities worldwide in order to improve their quality of life. This partnership involves the implementation of sustainable engineering projects, while involving and training internationally responsible engineers and engineering students. Both professional and student chapters take on projects. EWB also includes specialists from many fields in addition to engineers: geologists, health professionals, teachers, journalists, and others interested in being involved in the projects.

Generally, professionals and other mentors support student chapters for assessment of implementation of projects in developing communities worldwide, and focus on implementing necessary engineering projects that the community can maintain on their own. Currently EWB-USA has project presence in over 40 countries. EWB-USA’s activities range from the construction of sustainable systems that developing communities can own and operate without external assistance, to empowering such communities by enhancing local, technical, managerial, and entrepreneurial skills. These

projects are initiated by, and completed with, contributions from the host community working with project teams. Projects include water supply systems, sanitation systems, housing, bridges, roadways and schools in remote areas lacking modern infrastructure.

EWB-USA began in 2001 with the design and construction of a water system in San Pablo, Belize, a Mayan village of about 250 people, by University of Colorado engineering students. Based on this successful experience, a network of engineering students, faculty, practicing professional engineers, and industry has been developed. Now, just about eight years later, over 200 student chapters exist at university and college engineering schools across the US. Students working with EWB-USA are getting real-life, hands-on engineering experience, instead of only theory.

Student chapters are assisted by more than 60 professional chapters throughout the US. Professionals work on student projects as mentors, conduct project design reviews, train students or other professional partners, or work on their own projects.

EWB chapters are active around Delaware including a professional EWB group in Philadelphia called the Mid-Atlantic EWB and a student EWB at the University of Delaware. The Mid-Atlantic chapter also has a goal of mentoring students and they invite student chapters to present at the meetings. Two current projects with the Mid-Atlantic chapter are water supply projects in the Philippines and Rwanda. This group meets monthly at Drexel University in Philadelphia, PA.

So what’s the point of this article? Recruiting! EWB needs professional members from any and all disciplines; you don’t even have to be a PE! The time commitments are manageable. This is a unique opportunity to give something back to your profession, and to meet 100 some extraordinary students and fellow professionals. Check out EWB’s website at www.ewb-usa.org. Contact Walt Walker with the Mid-Atlantic chapter at president@ewb-map.org for information on how you can become involved in EWB.

The Year in Review

“and the stops along the way.”

By Maureen Nelson

DE AWRA endeavors to hold its meetings throughout the state at a variety of locations. This past year took members to several interesting locations, including tours of the United Water Drinking Facility and Stone Creek Water and Wastewater Treatment Plant, and a canoe trip down the St. Jones River. In addition, DE AWRA held its first Silent Auction at the annual dinner in December. The auction was held in an effort to help the Student Chapter raise money for future events. With the students following the State Section’s lead, they have successfully launched their own independent organization. Some of their meetings involved touring Wilmington’s Porter Filter Plant, kayaking, and in the future, a brewery tour. While the two sections are unique entities, they value the opportunities they have in participating in one another’s events and activities throughout the year.

Check out what other local AWRA sections are doing:

<http://www.awra.org/state/philadelphia/>

http://awra.org/state/new_jersey/



Photo (left): The Student Chapter’s drinking water tour of Wilmington’s Porter Filter Plant

Photo (right): A demonstration on DE AWRA’s tour of the Stone Creek Water and Wastewater Treatment Plant.



Sheer Mussel: Can Shellfish be Saviors of Watersheds?

By Danielle Kreeger, Ph.D., Science Director, and Angela Padeletti, Science Specialist, Partnership for the Delaware Estuary

In 2007, the Partnership for the Delaware Estuary (PDE) launched the Freshwater Mussel Recovery Program. The purpose of this new initiative is to demonstrate how freshwater mussels can be restored, and how the resulting benefits can promote the recovery of an entire watershed. Many species of freshwater mussels once thrived throughout the Delaware River Basin.

The goal of the Freshwater Mussel Recovery Program is to restore the population, diversity, and resilience of mussels through a mix of conservation, habitat expansion, and reintroduction. To this end, the PDE is testing methods for the reintroduction of relatively common species into streams where they have disappeared. Reintroduction will be achieved by seeding streams with juvenile mussels from a hatchery, as well as transplanting adults that are reproductively active.

In some cases, conditions may not support the reintroduction of mussels. That is why a key first step in the Freshwater Mussel Recovery Program is to select which streams should be targeted. The PDE team is doing this by monitoring the health of mussels held in underwater cages at prospective restoration sites. Streams will be targeted for reintroduction if these “caged sentinels” show good health after one year. However, if mussels die or lose fitness, that waterway will not be targeted. The first

screening study is nearing completion in areas of southeastern Pennsylvania.

It is our hope that the Freshwater Mussel Recovery Program will prove worthy throughout the region and include all native species. By reintroducing native mussel species and, at the same time, boosting current populations, the PDE will improve the ecosystem in the following ways:

- refilling open niches in the food web
- providing ecosystem services, or tangible benefits like improved water quality and habitat complexity
- intercepting and filtering out pollutants before they reach the tidal estuary
- reassuring the public that ecosystems are indeed being improved

Similar to other regions of the United States, freshwater mussels are the most imperiled of all plants and animals in the Delaware Estuary's watershed. All but a few of our 12 native species are in danger of being wiped out. In fact, even the most common species are disappearing in many streams. This could be the result of a failure to reproduce, an inability to exchange genes among neighbors, or the deterioration of habitat. Whatever the reason for their decline, this spells trouble.

One of the reasons freshwater mussels have declined is their link to fish. They have a complex life cycle during which females nurture their larvae before releasing them onto fish hosts, usually a specific species. If these fish become impaired or restricted in some way (say, by dams for example), so too are mussels affected.

Mussels filter water, enrich the food supply, stabilize riverbeds, and enhance habitat. They also serve as important tools for resource managers who are working to assess environmental conditions.

As filter-feeders, freshwater mussels are very sensitive to water quality and habitat degradation. Even if these conditions improve, along with the availability of fish hosts, freshwater mussels cannot rebound quickly. This is due to the fact that they live 50 to 100 years and do not reproduce until at least the age of eight. This, however, does not mean the species is unworthy of attention. On the contrary, this tells us that if we can rebuild mussel beds throughout their natural range, they in turn will help restore the ecology for us, and we will be assured that the system is once again healthy.

The Freshwater Mussel Recovery Program has been made possible thanks to cooperation with the Academy of Natural Sciences of Philadelphia, Cheyney University, Drexel University, and the U.S. Fish and Wildlife Service. Financial support has been provided by ConocoPhillips and the National Fish and Wildlife Foundation. Additional in-kind support has been furnished by the Brandywine Conservancy and U.S. Geological Survey.

If you are interested in learning more about this innovative project, please contact Angela Padeletti at (800) 445-4935, extension 103, or APadeletti@DelawareEstuary.org.



Photo: Examples of Mussels found in the Brandywine River



Photo: Brandywine River Mussel Project

Spring 2009 Events: No one left inside

Delaware Great Green Expo

March 21, 2009, from 9 a.m. to 5 p.m.
<http://www.ecodelaware.com/events.php>

Tree Planting at Middle Run

March 21, 2009, from 9 a.m. to 12 p.m.
<http://www.delawarenaturesociety.org/events.html>

21st Annual Red Clay Valley Cleanup

March 28, 2009, from 8am-12pm
<http://delawarenaturesociety.org/events.html>

**Copeland Native Plant Seminar
Ashland Nature Center
Hockessin, DE**

April 4, 2009
<http://delawarenaturesociety.org/events.html>

Great Delaware Kite Festival

April 10, 2009, from 10 a.m. to 3 p.m.
<http://www.ecodelaware.com/events.php>

Ocean to Bay Bike Tour

April 18, 2009
<http://www.ecodelaware.com/events.php>

Christina River Cleanup

April 18, 2009
www.delawareestuary.org

DSWA Earth Day Festival

April 18, 2009, from 10 a.m. to 3 p.m.
<http://www.ecodelaware.com/events.php>

Wilmington Earth Day Celebration

April 22, 2009, from 11 a.m. to 2 p.m.
<http://www.ecodelaware.com/events.php>

Delmarva Birding Weekend

April 23-27, 2009
<http://www.ecodelaware.com/events.php>

May Day Nature Walk

May 1, 2009, from 9:30 to 11:30 a.m.
<http://www.ecodelaware.com/events.php>

**Coverdale Farm Native Plant Sale
Greenville, DE**

May 2-3, 2009
<http://delawarenaturesociety.org/events.html>

**Horseshoe Crab and Shorebird
Festival**

May 23-24, 2009
<http://www.ecodelaware.com/events.php>

Dogfish Dash

September 27, 2009, Time TBD
<http://www.ecodelaware.com/events.php>

Bike to the Bay

October 3-4, 2009
<http://www.ecodelaware.com/events.php>

Quiet Resorts Birding Weekend

October 16-18, 2009
<http://www.ecodelaware.com/events.php>

Delaware River Sojourn

June 21-27, 2009
<http://www.state.nj.us/drbc/sojourn.htm>

If you have information on water related meetings, events, or conferences in Delaware or the surrounding region that you would like posted on our website or in our next newsletter (scheduled for this fall), please contact John Harrod at john@delawarenaturesociety.org.



Photo: DE AWRA members at the 2008 Christina River Clean-up.