



**First Regional Wild & Scenic  
White Clay Creek Conference:  
Something for Everyone!**

*For presentation notes  
and photos, visit the  
White Clay Creek Wild & Scenic  
Management Committee site:*

[www.WhiteClay.org](http://www.WhiteClay.org)

*Scroll / click "Clayton Hall  
Conference – April 14, 2005"*

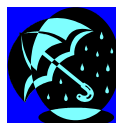
*Contributor: Linda Stapleford,  
River Administrator, White Clay Wild and Scenic Program  
[lstaplef@msn.com](mailto:lstaplef@msn.com) 302-731-1756  
Photos by Amy Boyd, DWRC*

*"Water and Our Changing Landscape: Perspectives from the Wild & Scenic White Clay Creek Watershed", a new Delaware Water Resources Center (DWRC) co-sponsored conference, was held at the University of Delaware (UD), Newark, Delaware Thursday April 14, 2005 for nearly 200 participants. Other event sponsors included the White Clay Watershed Association, Chester County (PA) Conservation District, the Delaware Department of Natural Resources and Environmental Control (DNREC), the Delaware Department of Transportation (DeIDOT), Partnership for the Delaware Estuary, Inc., United Water Delaware and Water Bethel, and the UD Institute of Public Administration Water Resources Agency (WRA), with contributions by Artesian Water Company, Chester Water Authority, the City of Newark, Delaware Nature Society, Kennett, London Grove and Penn Townships, New Castle County Conservation District, and the Stroud Water Research Center.*

The White Clay Creek and its tributaries drain a 69,000-acre watershed in southwestern Chester County, PA and northwestern New Castle County, DE that is home to nearly 100,000 people. Its designation in October 2000 as part of the National Wild and Scenic Rivers System was the first in which an entire watershed, not just a section of river, received federal protection due to the variety of influences outside its river corridor affecting habitat and water quality. Renowned for its scenery and its biologic, geologic, and historic resources, the White Clay Creek is Delaware's premier trout stream, stocked annually by both states. Underlying Cockeysville marble formations create an exceptional aquifer which, with the creek, provides important ground and surface water sources for drinking water. Overall, the White Clay Creek watershed is one of only a few relatively intact, unspoiled and ecologically functioning river systems remaining in the highly congested and developed corridor between Philadelphia, Pennsylvania and Newark, Delaware.

*(continued next page)*

**5<sup>th</sup> Annual Delaware Water Forum**



*"Water Friendly  
Landscape Design: Prescription  
for a Healthy Watershed"*

**Fri. Oct. 21, 2005 (Tentative)**

*UD Clayton Hall Details TBA*

<http://ag.udel.edu/dwrc/>

**In this Issue, on the web at: <http://ag.udel.edu/dwrc/news.html>**

Highlights from Apr. 14 White Clay Creek Conference	1-3	Ten new <b>DWRC</b> 2005-2006 Interns Selected	4-5
Save the Date: Oct. 21, 2005 State Water Forum	1	<b>DWRC</b> Annual Meeting and Poster Session	5
Welcome Martha Corrozi to <b>DWRC</b> Advisory Panel	3	Water News You Can Use	6-7
<b>DWRC</b> Trains Girl and Boy Scouts at Ag Day 2005	3	<b>DWRC</b> History, Goals, Advisory Panel, Contacts	8

***(White Clay Conference, continued from p. 1)***

The new White Clay Creek Conference was made especially appealing to the general public by the stunning visual aesthetic and perceptive commentary by featured keynote speaker Rick Darke, landscape designer, author, and photographer. The registration fee also included a luncheon with participatory roundtables with local watershed experts. Access to lobby displays and opportunities to win door prize gift certificates for landscaping plants provided by the Ashland Nature Center or a book by Rick Darke were bonus attractions.

Agenda topics included historical, scientific, and governance perspectives presented by representatives from the National Park Service, White Clay Creek Watershed Management Committee, watershed water purveyors, and consultants from nonprofits, private engineering firms, and government. Pete Saenger, a Newark riparian landowner attending a water conference for the first time, found the conference "very beneficial. I especially appreciated the many opportunities throughout the day to meet one-on-one with water field experts to communicate my concerns."

**Conference Highlights**

**Edward O'Donnell** of the White Clay Creek Watershed Management Committee filled in for **Chuck Barscz** of the National Park Service. He invited conference participants to build on the unique synergy of local, state, regional, and national entities committing resources to protect and restore this watershed, and encouraged support for the *White Clay Creek and Its Tributaries Watershed Management Plan*.



**Linda Stapleford**, conference coordinator and River Administrator for the White Clay Wild and Scenic Program, described watershed flora and fauna and historic resources. She reported on the White Clay Creek Management Association's efforts in open space preservation, school outreach, trails improvements, and recreation programs. **Judy Schuler** of the White Clay Watershed Association recognized state officials and local environmental activists for their support of the White Clay Creek.



*Cindy Greene seeks a solution to establish youth farm and nature programs for the Kranz Farm in the watershed*

Stapleford introduced **Cynthia Kranz Greene**, who is seeking a viable solution that will allow her Kranz family farm to protect the watershed's resources through preservation for youth programs. Greene described the impact of farming in shaping her life and fostering a respect for the land. She emphasized the need for urban / suburban children to experience a connection to the land that instills values valuable to our society. The farm's outstanding native plant species also need continued protection. To express support or ideas to preserve the Kranz farm, contact: Greene at 302-737-0314 ([cgreene@udel.edu](mailto:cgreene@udel.edu)); Cindy Todd 302-739-3423 (mention the Master Facilities Plan for the White Clay Creek State Park); Senator Liane Sorenson 302-234-3303 or 302-744-4136; or Representative Terry Schooley 302-454-1176.



*White Clay Conference attendees*



**Bernard Sweeney**, director of the **Stroud Water Research Center**, Avondale, PA, described the enduring effects of human activity in the watershed. Sweeney believes persistent encouragement of individuals to make more watershed-friendly choices will help restore stream health and habitats for once abundant species such as brook trout and freshwater mussels along the White Clay Creek.

**Lunch roundtable discussion topics included:** agricultural issues, education, flooding, watershed-healthy gardening, the London Tract Historic District, municipal ordinances, recreation, stream and riparian restoration, water quality, water supply and aquifer capacity, and watershed land preservation.



Jack Stefferud facilitating the Land Preservation roundtable

**Rick Darke's** well received keynote presentation "**The Livable Landscape**" defies description in a print publication. Images in his beautiful photographic montage evoked the grandeur and detail, the spirit and art that is the deciduous forest of the White Clay watershed. Visitors to his web site [www.rickdarke.com](http://www.rickdarke.com) may hear a recent NPR interview or view his upcoming lecture schedule for more background on his landscape perspective. Another source is his book, The American Woodland Garden.

The afternoon **Stormwater Management Panel** moderated by **Andy Urquhart**, co-chair of the White Clay Creek Watershed Management Committee, featured six speakers. **Frank Piorko** of **DNREC's** Division of Soil and Water Conservation, "**Stormwater Utilities**" described the stormwater utility approach recommended by a statewide task force to address stormwater drainage and management issues. "**Recharge and Facility Design**" was discussed by **Jeffrey Bross** of Duffield Associates. Bross told of the progress made by county governments toward regulating stormwater and encouraging the use of recharge best management practices. **Wesley Horner**, Principal Planner of Cahill Associates Pennsylvania, discussed "**Pennsylvania's Initiative: New Stormwater Manual**". This book, available on the Pennsylvania Department of the Environment's site at <http://www.dep.state.pa.us/>, contains ten chapters on stormwater technical best management practices. **Daniel J. Greig** of the Chester County Conservation District (**CCCD**) talked about **Chester County Initiatives** in nutrient management, erosion control, education and certification for watershed-friendly agriculture, liaison between municipalities and agriculture, and programs assisting mushroom farms in developing management plans to implement best management practices (BMPs). Greig also noted that the P.L. 83-566 Watershed Protection and Flood Prevention Act to fund flood control and water quality improvement projects throughout the nation may lose its place in the federal budget; participants were encouraged to ask their Congressmen and Senators to support this bill. **Charlotte Sprengle** of **CCCD**

reported BMP projects undertaken by eight mushroom farmers in the Trout Run Watershed, a subwatershed of the White Clay Creek. CCCD and the city of Avondale cooperated to construct a unique mushroom-shaped wetland for watershed restoration.

Before the closing Q & A session, Delaware Nature Society's **John Harrod** announced that Backyard Habitats or "**SMARTyards**" are now being piloted in the Appoquinimink watershed and Pike Creek area, inspired by the successful initial launch in the Christina and White Clay watersheds.



Visit [www.WhiteClay.org](http://www.WhiteClay.org) for:

- Complete April 14 Conference Notes
- White Clay Creek Watershed Management Committee's first ever biennial report 2002-2004
- Details TBA: 5-Year Celebration of White Clay Creek's "National Wild and Scenic River" designation  
**Sat. Oct. 22, 2005**  
White Clay Creek State Park pavilion, Newark.

**We Welcome Martha Corrozi, Ed Lewandowski**

**Martha Corrozi**, Watershed Analyst for the **UD** Institute for Public Administration Water Resources Agency, and **Ed Lewandowski**, Executive Director of the Center for the Inland Bays, will now represent these organizations on the **DWRC** Advisory Panel. Contacts: [mcorrozi@udel.edu](mailto:mcorrozi@udel.edu) (302) 831-4931 and [director@inlandbays.org](mailto:director@inlandbays.org) (302) 645-7325.

**New Girl Scout "Eco-Action" Interest Project Training** was provided April 30th to 18 girls grades 6-12 by **DWRC** and **UD** Institute of Soil and Environmental Quality (**ISEQ**) staff for the first time at **UD** Ag Day.



Girl Scout team tests nitrogen levels in stream water

Photo: Bill Boyd



**DWRC/ISEQ's Boy Scout "Soil and Water Conservation" Merit Badge**

**Training program**, in its second year at Ag Day, hosted 25 boys also from grades 6-12, bringing the total scouts trained to date to 75. Visit [ag.udel.edu/dwrc/publications.html](http://ag.udel.edu/dwrc/publications.html), click the "Public Programs" link.





## DWRC Announces New Undergraduate Interns for 2005 – 2006

Ten undergraduate students were selected in April by the *Delaware Water Resources Center (DWRC)* Advisory Panel to participate in the 2005 - 2006 *DWRC* undergraduate internship program. Now in its fifth year, the *DWRC's* unique program permits students, faculty, and other water resources professionals from a variety of disciplines to work together in research and education programs addressing water resource related issues of critical importance to Delaware and the Mid-Atlantic region. Students at all Delaware institutions of higher learning are eligible to apply for these internships.

The new interns bring to 51 the number of undergraduate projects funded by the *DWRC* to date in collaboration with nine co-sponsors: the *University of Delaware's (UD's)* College of Arts and Sciences (*CA&S*), College of Agriculture and Natural Resources (*CANR*), College of Engineering (*CENG*), College of Marine Studies (*CMS*), Institute of Soil and Environmental Quality (*ISEQ*), Department of Plant and Soil Sciences (*PLSC*), and Water Resources Agency (*WRA*), and also the Delaware Geological Survey (*DGS*) and the Delaware Division of Natural Resources and Environmental Control (*DNREC*).



*DWRC Intern Carolyn Schnek (Photo: Danielle Quigley)*

UD third-year Civil Engineering major *Christi DeSisto* will create a "*Delaware River Basin State of the Basin Report Card*" under the advisement of Gerald Kauffman of the UD Institute for Public Administration Water Resources Agency. Christi's *DWRC/WRA* sponsored internship project will establish a team to develop a report card methodology reflecting baseline conditions and progress toward objectives for watersheds in the Delaware River Basin, which spans Delaware, New Jersey, Pennsylvania, and New York.

*Bailey Dugan*, a UD fourth-year Geology and Environmental Science double major, will be researching aspects of "*Hydrogeology of the Unconfined Aquifer in Sussex County*" for her *DWRC/DGS* co-sponsored project. Her internship advisors are A. Scott Andres and Andrew Klingbeil of the Delaware Geological Survey. Bailey has worked for DGS since January analyzing stormwater and base flows in Delaware's Inland Bays, and will now extend her skills to acquire and report on water data for Sussex County's most important water resource in geographic information system (*GIS*) and database formats.

Dr. Judith Hough-Goldstein of the UD Department of Entomology & Wildlife Conservation will again serve as advisor for two *DWRC/UD CANR* co-sponsored internship research projects begun in 2004-2005. "*The Purple Loosetrife Project*" is the title of *Jason Graham's* project. A UD third-year Entomology and Wildlife Conservation major, Jason will compare the biodiversity of Flat Pond near Delaware's C&D Canal, where he helped successfully establish a colony of loosetrife-targeting beetles last summer, to that of an Ashland Nature Center site evaluated by *Jamie Pool* last year where the beetles did not thrive. Jamie, a Wildlife Conservation major also in his third year at UD, hopes to determine in his collaboration with Jason whether greater biodiversity subjects beetle populations to higher predator risks. Jamie's project is titled "*Biological Control of Purple Loosetrife: Preventing Wetlands Degradation By An Invasive Plant*". Both projects are also funded by the National Fish and Wildlife Foundation and Chesapeake Bay Small Watershed Grants Program, through a grant to the Del Bay Retriever Club

*Matthew Lee*, a third-year UD Agriculture and Natural Resource major with minors in Wildlife Conservation and Spanish, will be working with advisors Dr. Joshua Duke and Dr. Rhonda Aull Hyde of the UD Dept. of Food and Resource Economics on his *DWRC/ISEQ* co-sponsored internship project, "*Landowner Perceptions of the Stringency of Water Quality Regulations in Delaware*". Matthew will attempt to measure perceptions of policies such as those found in the Clean Water Act, state Nutrient Management Act, and other legislative initiatives designed to improve Delaware's water quality. A quantitative analysis of survey results will reveal compliance costs experienced by landowners and may point to the advisability of either new policies or new concepts, goals, or enforcement for existing laws.

Duke will also serve as advisor with Dr. Steven Hastings, also of the UD Dept. of Food and Resource Economics, for another *DWRC/CANR* co-sponsored project titled "*The Impact of the Solid Waste Decision on Isolated Wetlands In Delaware*". Third-year UD Natural Resource Management major *Matthew Loiacono* will build on work by 2002-2003 *DWRC* intern Kristen Sentoff investigating the effect of a 2002 decision invalidating federal regulation of private behavior on isolated wetlands. Matthew will compare wetlands areas that have or have not experienced previously prohibited land-use activities during the past three years in order to predict future impacts. (*cont. p. 5*)

Exploring the characteristics of an acid commonly assumed valuable in soil and water pollution testing is the goal of **Brian Rosen's DWRC/PLSC** sponsored internship project "The Surface Reactivity of Inert Organic Buffers". He will investigate what effect, if any, the use of 2-[N-Morpholino] ethane-sulfonic acid (M.E.S) may have on the accuracy of experiments assessing environmental contamination. Brian also worked with water pollution testing methods as a Howard Hughes Medical Institute Analytical Chemistry Scholar in the summer of 2003 exploring the ability of resins to remove metallic ions from water. Now a first-year UD chemical engineering major minoring in biochemical engineering, he will be advised by Dr. Donald Sparks of the UD Department of Plant and Soil Sciences.

UD third-year Animal Science major **Carolyn Schnek** will study the fate and water quality impact of metal (copper) nutritional amendments in poultry feed in her **DWRC/CANR** co-sponsored internship "The Effect of Dietary Level and Source of Cu on Broiler Cu Excretion and Movement of Cu Through Broiler Excreta Amended Soils". The project advisor is Dr. William W. Saylor, joined by additional project investigators Michael Persia and James Skaggs, all of UD's Department of Animal and Food Science.

**Nancy Scott**, a UD third-year Environmental Science major, will study "Self-Sustaining, Least-toxic Methods for Managing Mosquito Populations in Stormwater Ponds" advised by Dr. Jack B. Gingrich of UD's Department of Entomology and Wildlife Conservation in her **DWRC/CANR** co-sponsored internship. Gingrich advised 2002-2003 **DWRC** intern Meghan Bielawa in a related public health project studying West Nile virus-carrying mosquito populations. Nancy will seek mosquito management methods that are environmentally safe and also cost-effective, requiring minimal human resource inputs to implement.

"Restoring Coastal Bay Water Quality via Native Eelgrass Micropropagation" is the title of **Katherine Tigani's** internship, co-sponsored by **DWRC/CMS** under the advisement of Dr. John L. Gallagher of the UD College of Marine Studies, Lewes. A fourth-year UD plant science and landscape horticulture major with a plant biology minor, Katherine worked last summer in the UD Halophyte Biotechnology Laboratory, Lewes, with plant tissue cultures, and now will use that experience to attempt to devise a methodology that can regenerate eelgrass in volume.

#### 2004-2005 DWRC Intern Takes the Stage

**Alicia Revis**, 2004-2005 **DWRC** intern and senior Environmental Science major at Delaware State University, presented her internship research under the supervision of Dr. Dennis McIntosh at the National Integrated Water Quality Program (**NIWQP**) Conference, San Diego, CA in February.

*DWRC Advisors / Advisory Panel members Wollaston, Johnson, Labreuveux and Lomax*



#### 2005 DWRC Annual Meeting and Undergraduate Interns Poster Session

*Photos by Amy Boyd, DWRC*

The **DWRC** Advisory Panel convened for lunch and their annual meeting on April 22 on the UD campus. **DWRC** Director Tom Sims described the Center's plans for 2005-2006 with regard to research funding and broader public education outreach efforts, such as the new White Clay Conference and new water conservation training for Girl Scouts as well as Boy Scouts offered at UD Ag Day. Also discussed were promoting the internship program, with the possibility of offering short-term projects in the fall semester; finding new sponsors for graduate fellowships; revising research priorities; and promoting the National Competitive Grants program.

*Intern Steve Ernst with Advisor Jerry Kauffman*



The **DWRC's** 2004 undergraduate interns presented posters of their project findings with their advisors at an informal session sponsored by the University of Delaware's Undergraduate Research Program (URP) following the Advisory Panel lunch.

*Interns Carol Carlson and Jamie Pool*

The interns joined URP's Science and Engineering Scholars to present to over 500 visitors.



## Water News You Can Use

### Upcoming water resources events:

**Aug. 9, 2005: Delaware AWRA meeting** at Sambo's, 282 Front Street, Leipsic, Delaware, 4: 30 p.m. Agenda: AWRA news, informal discussion / presentation by a representative of the Center for Inland Bays, crab feast. Come join us! Kindly RSVP Martha Corrozi [mcorrozi@udel.edu](mailto:mcorrozi@udel.edu), (302) 831-4931 so that she can make reservations. Carpool leaves the WRA in Newark no later than 3:30 pm.

**Stream Evenings "The Science of Stroud".** Stroud Water Research Center, 970 Spencer Road, Avondale, PA. Free. Refreshments 6-7 pm, lecture 7-8 pm. For ages 12 and above. RSVP Kay Dixon at [kdixon@stroudcenter.org](mailto:kdixon@stroudcenter.org), (610) 268-2153 x247. For more information, visit [www.stroudcenter.org](http://www.stroudcenter.org).

**Aug. 11, 2005: Science of Stroud #4 with Dr. Lou Kaplan.** "Watershed Tea: Why watersheds are the first stage of drinking water treatment."

**Sep. 8, 2005: Science of Stroud #5 with Dr. Tom Bott.** "Algae in Ponds, Reservoirs and Rivers: Too much of a good thing."

**Sep. 18-22, 2005: 13<sup>th</sup> National Nonpoint Source Monitoring Workshop.** Raleigh, NC Sheraton Capital Center Hotel. For land managers and water quality specialists. Effectiveness of best management practices improving water quality, effective monitoring techniques, statistical analysis of watershed data. For information: (919) 515-3723, email [waterquality@ncsu.edu](mailto:waterquality@ncsu.edu), or visit [http://www.ncsu.edu/waterquality/nmp\\_conf/](http://www.ncsu.edu/waterquality/nmp_conf/).

**Sep. 25, 2005: Stroud 5K Walk/Run for Fresh Water.** 1 pm. start. All ages welcome. Register online, [www.stroudcenter.org](http://www.stroudcenter.org). Ph: (610) 268-2153.

**Sep. 27, 2005:** Partnership for the Delaware Estuary's free **Nonpoint Source Water Pollution Workshop** for residents of the City of Newark, 6-8 pm, Newark City Council Chambers, 220 Elkton Road. **Register by Sep. 20** by contacting Kelley Dinsmore, (302) 366-7040 [kdinsmore@newark.de.us](mailto:kdinsmore@newark.de.us).

**Oct. 2, 2005: Coast Day 2005.** University of Delaware Hugh R. Sharp Campus, 700 Pilottown Road, Lewes, Delaware. 11 a.m. to 5 p.m. Free admission, parking \$2. Info: [MarineCom@udel.edu](mailto:MarineCom@udel.edu), (302) 831-8083, <http://www.ocean.udel.edu/coastday/>.

**Oct. 21, 2005 (tentative): 5<sup>th</sup> annual State Water Forum, UD Clayton Hall.** Watershed-friendly landscape design. Details TBA <http://ag.udel.edu/dwrc/>.

**Oct. 22, 2005: Wild and Scenic White Clay Creek 5-Year Celebration.** White Clay Creek State Park pavilion, Newark. Details TBA [www.whiteclay.org](http://www.whiteclay.org).

**Oct. 25-28, 2005: 8<sup>th</sup> Annual Wetlands and Watersheds Workshop** "Aquatic Systems and Water Quality", Holiday Inn on the Boardwalk, Atlantic City, NJ. <http://www.thewatershedinstitute.org/wsmworkshops.html>

**Delaware State University water news:** Visit <http://cars.desu.edu/faculty/mreiter/aquanews.pdf> for DSU's Aquatic Sciences June 2004 newsletter. Read about: **DWRC** 2004-2005 faculty advisors Dennis McIntosh, collaborating with several universities in a project to assist underserved farmers in meeting water quality objectives, and Dewayne Fox, working in sand shark research; DSU's remote sensing flyover study of the St. Jones River watershed. **DWRC** Advisory Panel member Maria Labreuveux was instrumental in bringing DSU \$1.5 million in EPSCoR RII grant funds for the next three years to establish a Center for Integrated Ecosystem Studies. For articles and photos: <http://cars.desu.edu/faculty/mreiter/natnews.htm>

**New USGS Online Report:** "Hydrologic and Geochemical Controls on Pesticide and Nutrient Transport to Two Streams on the Delmarva Peninsula", Publication - SIR 2004-5051, by Scott W. Ator, Judith M. Denver, and Michael J. Brayton, 34 p. <http://md.water.usgs.gov/publications/sir-2004-5051>.

*The DWRC thanks the following as they step down from our state Advisory Panel:*

**Bernard Dworsky,  
Mark Isaacs,  
Carl Solberg, and  
William Vanderwende!**

**Bernard Dworsky**, past project director of the Water Resources Agency and DWRC Advisory Panel member since 1980, continues as a senior advisor for the WRA.

**Mark Isaacs** continues in his post as director of the UD Research and Education Center, Georgetown. **Carl Solberg** has championed wetlands protection in his role with Sierra Club and continues in his role as Litigation Chair, Delaware Chapter.

**William Vanderwende**, a Sussex County dairy producer, continues his role as Chair of the Delaware Nutrient Management Commission.

*Thank you all for your many years of energy and service forwarding the DWRC's water resources research mission in Delaware.*





**Delaware State Chapter of the American Water Resources Association News:** The Delaware Section of the American Water Resources Association (*DE AWRA*) has met every other month since the chapter's Dec. 2004

inception, providing a common forum for water resources professionals statewide to discuss all aspects of water resources research and management. In June, about 20 members visited the City of Newark's 317 million gallon reservoir site, hosted by Bill Zimmerman, city Water Quality Engineer. Construction, which resumed in March by new contractor George and Lynch, currently involves regrading the bottom and side slopes of the reservoir and installing a geomembrane and concrete liner. Constructed wetlands will surround the reservoir forming a 10 foot bench adjacent to the water line in order to filter water from the reservoir depths for purification and to deter pedestrians and geese from entering the water supply. Now 75% finished, with the raceway renovated, intake pipeline in place, almost one million cubic yards of soil excavated, and 30 percent of the liner in place, the project is estimated to complete in September 2005. At that time the Curtis Mill Water Treatment Plant will pump approximately 10 million gallons of water per day from the White Clay Creek up to the Reservoir, filling it by December and making the City nearly self-sufficient in water supply. *Contributor: Martha Corrozi, Watershed Analyst, UD Water Resources Agency (WRA). [mcorrozi@udel.edu](mailto:mcorrozi@udel.edu), 302-831-4931 <http://www.wr.udel.edu/> Photo: Andrew Homsey. DE-AWRA at Newark's Reservoir*



**The Delaware Environmental Observing System (DEOS):** UD's Center for Climatic Research (CCR) and the Office of the Delaware State Climatologist, with funding from the Delaware Emergency Management Agency and support from the Delaware Geological Survey, have developed the new *Delaware Environmental Observing System* (DEOS) – a real-time system dedicated to monitoring environmental conditions in and around the State for decision makers involved with emergency management, natural resource monitoring, transportation, and other activities. It consists of (1) a network of approximately thirty new meteorological observation sites coupled with existing weather and other environmental observation sites in and around Delaware – (2) the DEOS Integrated Visualization and Analysis System – an integration

of surface weather observations with National Weather Service WSR-88D radar precipitation estimates to provide estimates of meteorological and environmental variables over a high spatial resolution grid – and (3) a number of DEOS Analysis Systems, designed to provide decision support in a variety of environmentally-sensitive areas. The system also features event-driven triggers that can notify pagers and cell-phones of extreme weather or hydrologic events (*e.g.*, heavy rainfall, high streamflow levels, or excessive heat). We also have partnered with the News-Journal Papers to enlist nearly a hundred volunteer weather-watchers around the State who will take precipitation measurements and act as spotters during severe weather events. At present, we are just getting started, but we are growing quickly! For more information, see our website at <http://www.deos.udel.edu>. *Contributor: David R. Legates, Director, CCR, [legates@udel.edu](mailto:legates@udel.edu), (302) 831-4920.*

**Free Water Pollution Workshop:** The Partnership for the Delaware Estuary will present a Nonpoint Source Water Pollution Workshop **for residents of the City of Newark on September 27<sup>th</sup>, 2005**, 6-8 pm in Newark City Council Chambers. The workshop will start with background information on watersheds, the Delaware Estuary, and the current status of the health of the waterways in the region. An enviroscape model will illustrate nonpoint source pollution and how actions on the land affect the water. Following a video about the Delaware Estuary, its headwaters in the Christina River, White Clay Creek, and its tributaries will be discussed. The final activity, *Dragon Fly Pond*, teaches how human activities and land management affect communities downstream. *Contributor: Kelley Dinsmore, Stormwater Program Coordinator, City of Newark. Contact Kelley at (302) 366-7040 or [kdinsmore@newark.de.us](mailto:kdinsmore@newark.de.us) to register by September 20<sup>th</sup>. Native plants will be given away to the first 30 attendees.*



*Kelley Dinsmore at the White Clay Conference. Only rain in stormdrains! Photo: Amy Boyd*

***The Delaware Water  
Resources Center***

The Delaware Water Resources Center (DWRC), established in 1965, is part of a network of 54 Water Resources Research institutes throughout the nation. The DWRC receives funding through Section 104 of the Water Resources Research Act of 1984. The U.S. Geological Survey administers the provisions of the Act and provides oversight of the nation's Water Resources Centers. The primary goals of the DWRC are: to support research that will provide solutions to Delaware's priority water problems, to promote the training and education of future water scientists, engineers, and policymakers, and to disseminate research results to water managers and the public. For further information, visit our website:

**<http://ag.udel.edu/dwrc/>**

***Delaware Water  
Resources Center  
Advisory Panel***

**Scott Andres**  
*Delaware Geological  
Survey*

**Martha Corrozi**  
*UD Institute for  
Public Administration  
Water Resources Agency*

**Steven K. Dentel**  
*UD Dept. of Civil &  
Environmental Engineering*

**Judith Denver**  
*U.S. Geological Survey*

**Kevin Donnelly**  
*DNREC  
Division of Water  
Resources*

***Delaware Water  
Resources Center  
Advisory Panel***

**Jen Gochenaur**  
*Delaware Nature Society*

**Maria Labreveux**  
*Delaware State University*

**Ed Lewandowski**  
*Center for the Inland Bays*

**Ken Lomax**  
*UD Dept. of  
Bioresources Engineering*

**Paul Petrichenko**  
*USDA Natural Resources &  
Conservation Service*

**Bill Saylor**  
*UD Dept. Animal & Food  
Sciences*

***WATER NEWS*** is published biannually by the University of Delaware Water Resources Center, **Dr. J. Thomas Sims**, Director. **Amy Boyd**, Editor, welcomes materials for publication, including news articles and letters to the editor. To submit material or request future issues, please address your correspondence to the address below or contact the editor by email at [aboyd@udel.edu](mailto:aboyd@udel.edu) or phone (302) 831-6757.

***WATER NEWS – SUMMER 2005***

Delaware Water Resources Center  
College of Agriculture and Natural Resources  
University of Delaware  
113 Townsend Hall  
Newark, DE 19716-2103

**<http://ag.udel.edu/dwrc/>**

**Address Service Requested**