



AQUA-DUCT

Newsletter of the New Jersey Section - American Water Resources Association
Fall 2005

Happy New Year (Water Year, that is!) Eve Gathering—September 30th

Join the NJ Section at its first annual New Year's Eve (Water Year, that is!) Gathering on **Friday, September 30, 2005** at the Lambertville Station, Lambertville. Come celebrate the new water year* and 35 years of NJ-AWRA. The event will include dinner, a presentation from NJDEP Commissioner Bradley Campbell about the Governor's Flood Mitigation Task Force, 35th anniversary memorabilia and a silent auction. Available space is limited with registration deadline set for September 22nd. The registration form is on the Section website at: www.njawra.org and on [Page 10](#) of the Aqua-duct.

* The water year, as set by the hydrology profession, begins on October 1st.

NJ CAT EcoComplex Tour—September 27th

On September 27, 2005 at 10:00 a.m. staff of the Rutgers University's Environmental Research and Extension Center will be providing a tour of their new "EcoComplex" in Burlington County. Call NJ AWRA Vice President, Paul J. Scally, P.E., at 609-883-9500, ext. 251 for details. Directions: www.ecocomplex.rutgers.edu/

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Flood Plain Management Conference November 2nd

The NJ-AWRA Flood Plain Management Committee has planned a conference titled "New Jersey Flood Plain Management – Past, Present and Future". Topics will include the history of flood plain management in NJ, mitigation programs and a municipal survey. The keynote speaker is Wayne Sallade, who will discuss the Charlotte, FL experience with hurricanes in 2004. See [Pages 2 and 13](#) for more details and registration information.

Announcing the NEW NJ-AWRA website: www.njawra.org!

President's Message, Ray Zabihach

Over the last two weeks it has been heartbreaking to both view and read about the impacts resulting from Hurricane Katrina. The destruction unleashed by hurricane forces on Florida and the Gulf Coast are hard for us to truly understand and appreciate. The scale is so overwhelming compared to what we normally experience from storms in New Jersey. The flooding which occurred in New Orleans as a result of the levee breaks, though truly horrendous and monumentally catastrophic, is a phenomenon we have unfortunately experienced on a smaller scale through events such as dam failures.

The storm events in New Jersey over the last two years which have caused flooding in Burlington, Camden and Middlesex Counties as well as along the Delaware River may not compare in scale, suffering and destruction to Gulf Coast but were overwhelming for us nonetheless. Flood control and preparedness are very important to those areas that flood chronically or are continually threatened. Much is being made today in the media and by politicians about the breakdown of the disaster response. There will be investigations as to where and why communications failed, why where plans

(Continued on page 4)

NJ-AWRA Committee Reports

Stream Restoration Committee

The Stream Restoration Committee has been busy planning the 2006 MAC Conference "Stream Protection & Restoration in the Mid-Atlantic" to be held next June. There have been several planning meetings in the last few months to discuss the logistics of the conference. See page 9 for more information on the conference and planning activities. Our July 11th field trip to the Neshanic River restoration site and Somerset County wetland mitigation bank attracted nearly 30 interested professionals. More details about the field trip are included in this issue of the Aqua-duct.

The committee's next meeting is scheduled for September 19th at 3:30 pm at the Somerset County Administration Building in Somerville. Christine Hall from North Jersey RC&D will discuss the Walnut Brook project in Raritan Township. We'll also be planning future meetings and field trips.

Groundwater Committee

In New Jersey ground-water issues arise in water supply, pollution, soil science, and stormwater contexts, among others. The groundwater committee intends to provide a forum where ground-water professionals can meet to exchange experiences and information. The goals of this committee include meeting every other month, have a short technical presentation at each meeting, sponsor occasional field trips, perhaps have an annual conference or seminar, and sponsor professional development, training and outreach activities.

The committee has met twice so far and selected as officers Jeff Hoffman (chair), Keithe Merl (vice chair) and Gina Berg (secretary). The next meeting will be on Thursday, October 6 at 1:00 in the DRBC conference room in West Trenton NJ. (directions at <http://www.state.nj.us/drbc/>). This meeting will start off with a 20-minute presentation on the NJ Geological Survey's approach to estimating ground-water recharge. After the presentation we will continue with organizational issues. For example - what is the next field trip? We also want to discuss what we mean by professional development, training and outreach as well as who is going to volunteer to do them.

Please send any questions or comments to Jeff Hoffman (jeffrey.l.hoffman@dep.state.nj.us).

Floodplain Management Committee

The Flood Plain Management Committee of NJ-AWRA is taking the lead on planning the annual fall conference. This year's conference entitled "New Jersey Flood Plain Management – Past, Present and Future" is to be held on Wednesday, November 2, 2005 at the Double Tree Hotel in Franklin Township, Somerset County. Conference Chairperson Mariana Mossler noted that there will be a number of speakers present including welcoming remarks by the Mayor of Franklin Township; Dirk Hoffman discussing the history of flood plain management in New Jersey; Mark Mauriello reviewing the Association of State Flood Plain Managers mission; representatives of FEMA and New Jersey Office of Emergency Management discussing mitigation programs; John Miller, Secretary of NJ-AWRA, discussing the results of a New Jersey Flood Plain Management survey of the 566 municipalities; and a representative discussing the National Flood Insurance Program and Community Rating System. The keynote speaker will be Wayne Sallade discussing the Charlotte, Florida experience with last year's hurricane disasters. For further information or to register contact Cleighton Smith, Secretary of the Flood Plain Management Committee at cleighton.smith@dewberry.com.

July 11th Stream Restoration Field Trip: A day in the field

On July 11th the Stream Restoration Committee of the NJ-AWRA converged on the Natural Resources Conservation Service (NRCS) Clinton office to visit the Somerset County Wetlands mitigation bank and Stahl Restoration project. Our objective was to bring committee members together for a look at an implemented and functioning wetlands creation and stream stabilization project. The project is located in Neshanic Station at the confluence of the South Branch of the Raritan River and the Third Neshanic River, just below the Black Point Road Bridge.



We were very fortunate to have the designers and coordinators of the projects on hand to give the committee members some insight on the project's purpose and goals, the design, and how the design was implemented. Mark Gallagher, of Princeton Hydro, LLC was one of the designers of the wetlands mitigation bank and Linda Peterson, P.E. of NRCS was the designer of the stream stabilization project. Also on hand was Rick Axt of Trout Unlimited. Rick was instrumental in the funding of the stabilization project and provided the coordination of volunteers (my wife and I being two of the volunteers) from Trout Unlimited to help with the plantings and installation of the stabilization devices.

Linda Peterson began the tour by discussing the project's background, why the project was initiated, and what the site looked like prior to stabilizing the northern bank of the South Branch below the bridge. As the group stood on the bank of the North Branch, Linda identified the spur dikes, rock vanes, and hard points that help stabilize the banks. Linda fielded the



group's many questions about the design of the structures, such as the length and depth of the vanes and how they were sized. To get a peak at the restoration project, you may find it through the use of Google Earth, which shows the project just after its completion. The rock vanes are clearly defined as is the bridge, South Branch, and the Third Neshanic River. Just go to <http://earth.google.com/> and type in "Neshanic Station" and enter the following coordinates: 40° 30'07.82"N - 74° 44'28.56".

Rick Axt spoke about how the tree revetments were constructed, placed, and anchored by the volunteers of Trout Unlimited. Most of the devices are still intact and are working as designed. Rick discussed the grading of the site and how the bank was stabilized with plantings. It was very interesting for me to come back to the site after so many years and see how it was functioning.

Mark Gallagher led the group over to the wetlands his firm designed and discussed the project goals and design. He spoke about the topography and soils in the area, planting types, and their survival. We discussed elevations of the wetlands with regards to its close proximity to the South Branch. Questions were brought up about the flooding of the South Branch and how it would impact the wetlands. Mark assured the group that influence of the river was accounted for in the design and has held up after several large storm events. Though most of us are Stream Restoration types, we were all very impressed with the wetlands and how it is functioning.

At the end of this hot and humid July day our group sought refuge at Finagle's Pub in Clinton to discuss our day in the field and just cool off. We had a great time and many thanks go out to all participants for attending. If you missed this one, be sure to mark your calendars for our next meeting on September 19th and our future field trips.

Submitted by: John H. Finkeldie, The Louis Berger Group, Inc., 973-765-1850, jfinkeldie@louisberger.com



President's Message *(Continued from page 1)*



that were written many years ago warning of danger ignored, why commitments for relief were not immediately met and general logistical incompetence. I have full faith that these issues and questions will be fully explored and corrections implemented.

Nonetheless, there are lessons to be learned even now from what has transpired. Without specifically pointing fingers at any individual, it seems obvious that since New Orleans is below sea level and has not had a direct hit by a hurricane for many decades, the need to be afraid and better prepared for such an eventuality was generally not appreciated. Flooding is a chronic nuisance in many communities in New Jersey.

Are we any better prepared? New Jersey is in a continuous cycle of drought and flooding. So much so, that we seem to only recognize the problem or respond after the fact. We may not have to face several hurricanes each season but even an isolated thunderstorm can wreak havoc like the storm event several years ago in Sussex and Morris Counties. I strongly urge you to consider attending and participating in the NJ-AWRA Flood Management Conference on November 2, 2005. As we are now experiencing a small drought and the memory of Katrina fades let us not lose the momentum we seem to have generated in New Jersey concerning flooding.

Section Bylaws Under Revision

Section President Ray Zabihach has appointed a Bylaws Committee to review the current bylaws (see the Section website at www.njawra.org). The Committee held its first meeting on Friday, August 26th. Committee Chairman Robert Uhrlik is requesting that all NJ-AWRA members provide him with any comments they have on the current bylaws by September 23rd at ruhrik@sbtjn.net.

Governor's Flood Mitigation Task Force

The Governor's Flood Mitigation Task Force, formed as a result of the devastating September 2004 and April 2005 floods in the Delaware River valley, has met on two occasions on May 26th and July 7th. Three committees, namely, the Technical, Funding and Outreach Committees have been formed and met on several occasions. Four public meetings to receive public input have been held in Trenton, Phillipsburg and Lambertville. The Task Force will again meet on September 14th and October 20th to begin review of the Task Force Draft Report and to finalize the Draft Report, respectively. There will be a final public meeting for comments on the draft report. NJ-AWRA members John Miller, Ken Mitchell, Cleighton Smith and Greg Westfall are members of the Task

Delaware Forms New AWRA Section

In December 2004 water resources students and professionals from many disciplinary fields throughout Delaware formed the DE Section of the AWRA (DE AWRA). DE AWRA provides a common forum in which professionals in water resources and related areas can meet, discuss, and exchange ideas pertaining to all aspects of water resources research and management. Activities include lectures from water resource professionals throughout DE and the surrounding region, field activities, social gatherings, and an annual meeting.

The DE AWRA meetings are held the 2nd Tuesday of every other month from 3:00 – 4:30 p.m. The meeting locations vary throughout the state in order to encourage participation from all three counties in DE. Our next meeting will be our 1st Annual Meeting on Friday, October 7, 2005 in Sussex County, DE. The meeting will include a boat tour of the Inland Bays area and dinner at a local restaurant, which will include networking opportunities, a review of our first year, and our future direction. Our next regularly scheduled meeting will be held on Tuesday, December 13, 2005 from 3:00 p.m. – 4:30 p.m., location TBA. DE AWRA will host a panel of private water utility representatives throughout the state who will discuss security issues in the water industry.

The DE section elected officers in February and the Board includes water resources students and professionals from a variety of disciplinary fields and organizations:

- *President:* Martha Corrozi, Water Resources Agency, Institute for Public Administration, University of Delaware
- *Vice President:* Laura Boyer, Graduate Student, College of Agriculture and Natural Resources, University of Delaware
- *Secretary:* Molly Hesson, Graduate Student, Center for Environmental Energy and Policy (CEEP), University of Delaware
- *Treasurer:* Bryan Pariseault, URS Corporation
- *Board of Directors:*
 - Holly Conte – Graduate Student, CEEP, University of Delaware
 - Dr. Katherine Bunting-Howarth – DE Department of Natural Resources and Environmental Control (DNREC)
 - Mr. Robert Ambrose – Delaware Public Service Commission (PSC)
 - Mr. William Schaffer – Delaware PSC

We are aware that there are AWRA sections in Pennsylvania, New Jersey, and Philadelphia and we look forward to working together and learning from the sections' experiences. We welcome anyone living, working, studying, or interested in the water resources discipline in DE to join DE AWRA. If you are interested in joining the section or would like more information please contact DE AWRA President, Martha Corrozi at mcorrozi@udel.edu or 302-831-4931.

**Restore watersheds, but do so with care:
Researchers are still learning which projects work best.**

By David D. Hart

Gov. Rendell's \$625 million Growing Greener II program, recently passed by the state legislature, includes money to protect open space, preserve farmland, and restore the health of our watersheds, the land areas drained by specific streams and rivers.

There is a rich menu of restoration projects designed to improve watershed health. They include planting trees to cut stream-bank erosion, removing obsolete dams that block fish migrations, and instituting better farming practices to decrease fertilizer runoff. By curtailing pollution, reducing flooding, and enhancing sport fishing, Growing Greener has the potential to greatly improve our economy and quality of life.

But the \$625 million question is: How can we maximize the environmental benefits of this taxpayer investment? Current efforts to restore watershed health involve nearly as much art as science. In particular, we're still learning which restoration practices work best. Sometimes these efforts seem to resemble early attempts to improve human health - it's often difficult to diagnose the problem, and even when we can, we don't necessarily know the best remedy. We shouldn't be surprised, however. Watersheds have many more "working parts" than people, and we know much less about them.

Although we don't yet know enough to treat all watershed ailments with surgical precision, we must make sure to find out as much as possible about what works best, and why. For instance, trees often are planted along stream banks to reduce sediment erosion that harms fish and other wildlife. But how much erosion is actually reduced, and do some types of trees work better than others? There are countless other questions whose answers would enable us to get a better return on our investment.

The first, critical step toward wiser watershed investments is to monitor how well current and future restoration projects are working. We need to measure a watershed's "vital signs" - the amount of sediment in a stream or the number of trout, for instance - before and after a restoration project. Such monitoring could be done by government agencies, environmental groups or local citizens. Unfortunately, our track record for monitoring restoration outcomes isn't too great. For example, my colleagues and I just completed a comprehensive national assessment of more than 37,000 stream- and river-restoration projects. We learned that only 10 percent of the projects involved any monitoring to find out how well they worked.

We focused on restoration efforts in the Chesapeake Bay Watershed, including large portions of Pennsylvania, Maryland and Virginia. The health of the bay - the nation's largest estuary, which provides more than half a billion pounds of seafood each year - is threatened by sediment and fertilizer carried by the Susquehanna River and other tributaries. Although thousands of stream-bank restoration projects have been implemented throughout the watershed to reduce polluted runoff, less than 1 percent have been monitored.

Without more monitoring, we're losing valuable learning opportunities that can improve watershed restoration. We risk doing it backward, and saying: "Ready, Fire, Aim!"

In addition to greater monitoring to understand how well projects are working, we need tools that can help identify which types of restoration projects will work best in different locations. Watersheds are as individual as people, so the benefits of a particular restoration project - say, stream-bank plantings - could differ with such watershed conditions as the level of urbanization.

Fortunately, new computer-based tools that link stream health to land use are being developed to predict how a project's benefits will vary in different watersheds. Soon, these planning tools can be used by watershed managers and local environmental groups to evaluate the pros and cons of different restoration practices, and to pick those that yield the greatest benefits.

Now that we're committed to improving the health of Pennsylvania's watersheds, let's increase the environmental benefits of Growing Greener II by targeting our restoration efforts, monitoring restoration outcomes, and then spending wisely.

David D. Hart (hart@acnatsci.org) is director of the Patrick Center for Environmental Research at the Academy of Natural Sciences in Philadelphia. He also is a fellow in the Aldo Leopold Leadership Program for academic environmental scientists.

Mapping Category One Streams or "So which streams get a buffer?" Delaware Township, Hunterdon County Project

By: J.P. Bell, John Miller, P.E., CFM and Mark Gallagher, Princeton Hydro, LLC

Since the update of the New Jersey Department of Environmental Protection's Stormwater Management Act in early February of 2004, the issue of protecting Category One (C1) streams has been an important and often debated issue for environmental organizations, municipal officials and developers. A stream designated C1 (New Jersey Administrative Code 7:9B-1.15(c) through (h)), and the anti-degradation polices governing C1 streams (N.J.A.C 7:9B-1.5(d)) can affect future development of the lands directly adjacent to C1 streams. While these rules are designed to protect our higher quality waterways, the regulations do not provide comprehensive protection. In fact, in the March, 2004 *Aqueduct*, an article entitled "New Jersey's New Stormwater Rules...Do they protect all streams equally?" outlined these issues, such as the fact that only mapped streams receive protection measures. This article intends to expand on this issue, by discussing methods used by municipalities to identify their mapped streams and possible methods to afford protection to unmapped stream segments.

According to N.J.A.C. 7:8, a buffer zone, or Special Water Resource Protection Area (SWRPA), up to 300-feet is to be placed on either side of mapped segments of a designated C1 stream. *A Special water resource protection areas shall be established along all perennial or intermittent streams designated Category One at N.J.A.C 7:9B and perennial or intermittent streams that drain into or upstream of the Category One waters as shown on the USGS Quadrangle Maps or in the County Soil Survey Reports, within the associated HUC14 drainage.* This rule indicates that two sources of mapped streams are to be utilized in identifying C1 waterways: streams found on the USGS 7.5 Minute Quadrangle Maps (typically known as "Blue Line Streams") and streams found on Soil Conservation Service County Soil Survey maps. One might think that between these two resources most stream segments would be identified. However, many streams, especially in headwater areas are not mapped. The omission of these streams has to do with a variety of issues, but the underlying problem is that these maps were not developed for the purpose that they are currently being used. In addition, most USGS maps were originally produced in the 1950's/60's and photo-revised in the late 1970's and early 1980's. Many of the County Soil Surveys were also prepared and published sometime in the 1960's and 1970's. Due to the age of these resources, some segments of streams may no longer exist. The absence of an easy to use, one reference tool to identify where SWRPAs may be required, has frequently led to uncertainty.

In general, the anti-degradation policies protecting C1 streams state that they shall be *protected from any measurable changes (including calculable or predicted changes)*, along with the establishment of the

How the maps were created

Most geographic data today is in some digital format. The USGS Blue Line streams have already been created in a digital GIS format by the NJDEP's GIS division. Yet the hardcopy, paper maps of the Soil Survey Book are not digital. These maps are scanned, creating a digital image (jpg or tiff format). Most GIS programs read these images, and offer tools to *register and rectify* (fit) these images to real-world coordinates, such as Latitude/Longitude or Stateplane. Registering and rectifying the soil book images can be done using the tic marks and their associated coordinates located on along the border of the map. Once fit properly, the streams identified on the maps can be "heads-up digitized", or traced on the computer screen. Once all soil book streams are digitized, GIS will combine the Soil Survey stream data and the USGS data files into one. But there will be some overlap between the two data sources, especially along the 3rd and 4th order streams. To create a final C1 waters data layer, a choice must be made of one of the two data sources. To do this accurately, the combined data sources are viewed on top of the 2002 aerial photographs provided by the New Jersey Image Warehouse; the more accurate streams are chosen, when and where the two data sources overlap, for the final product.

Once a final C1 stream data layer is created, GIS can intersect these streams with any other digital data, such as tax parcels for example. This will provide a database of Lot and Block numbers that contain officially mapped C1 streams, and the length of the stream segment on that particular property.

Performing QA/QC procedures on the final data, errors are obvious when the data is viewed with the aerial photographs. Since the regulations stipulate that C1 streams are those mapped with the Quadrangles and Soil Survey books, no changes are made to the original data. Human error is also introduced when registering and rectifying the images and digitizing the streams. It is these errors, along with the outdated data, that limit the SWRPA Stream Map a planning tool. The exact location of stream needs to be based on site specific survey at the time of an application to a land use board.

(Continued from page 6)

SWRPA buffer zone. This requirement will affect future development and land use on all lands adjacent to C1 streams. As such, municipalities have a powerful tool to protect sensitive surface water resources. The re-occurring problem relates to which streams require a SWRPA.

To clarify these issues, several townships including Delaware Township, Hunterdon County and Mount Olive Township, Morris County have developed maps and databases that illustrate both of these input layers on one resource. A creation of a comprehensive SWRPA Stream map will not only serve to identify which stream segments are considered C1, but can also indicate the location of the extent of the required buffer.

Once the value of a SWRPA Stream map became apparent, Delaware Township officials asked for additional components to accompany the maps. This additional information included adding stream buffers and integrating Township tax parcel information. The Township's suggestion spawned a database containing the Lot and Block numbers of parcels that contained **mapped** C1 streams and the amount (in square feet and acres) of 150' and 300' buffer zones associated with each property (**with the surprising conclusion that 8.9% of Delaware Township is in the 150' buffer, and 17.2% is in the 300' buffer**). To increase the value of the maps as a planning tool, the SWRPA Stream Maps were printed on large sheets of clear transparency at the same scale as the hardcopy tax maps. This allows the environmental council members to overlay the transparency on the existing tax maps as another way to reference where the SWRPA would be required. Finally, all GIS maps and data were exported using ESRI's ArcMap (GIS) Publisher extension, allowing EC members to view and query the data utilized to create the C1 Stream maps with ArcReader (free program from ESRI – similar to an Adobe Reader for GIS). ArcReader also allows the EC members to reproduce maps at will.

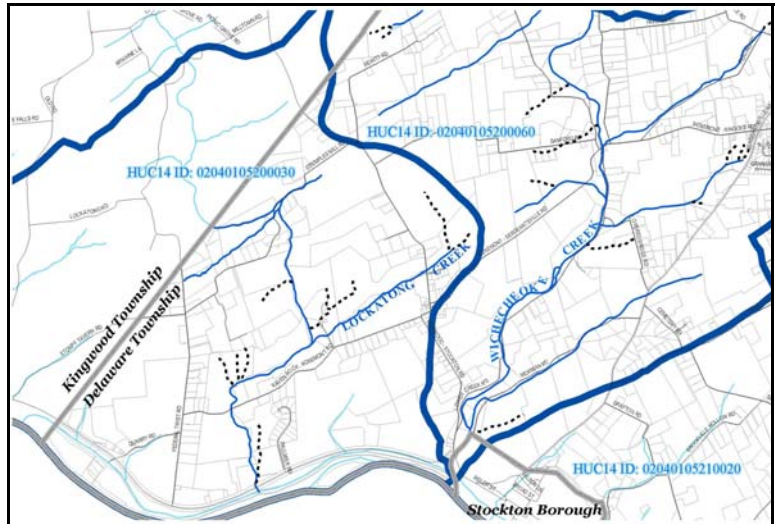


Figure 1. Delaware Township SWRPA Stream map, showing two sources of input data. Blue streams indicate the USGS blue line streams and the dotted lines indicate the soil survey streams.

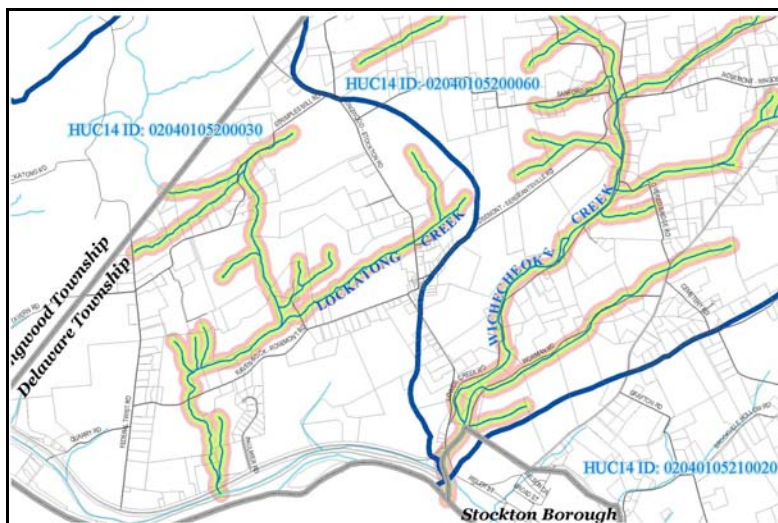


Figure 2. Final C1 streams layer with buffer zones prepared for Delaware Township. Map shows 150' and 300' buffers.

With the SWRPA Stream maps in hand, it is up to local officials to enforce the anti-degradation polices correctly. Because it is not accurately mapped on the Plan does not signify that it does not qualify for C1 protection, only that it doesn't require a SWRPA. If a municipality desires the protection of unmapped stream segments it can be achieved as part of the continuing development of a Stormwater Management Plan or discrete stream protection ordinance. While the NJDEP has taken steps to protect our surface water resources, these rules do not necessarily provide comprehensive protection. It is up to the local officials to enforce these stormwater rules and develop the tools to make the most out of the opportunities that they have been provided.

Upcoming Events



September 19, 2005: NJ-AWRA Stream Restoration Committee— Meeting & Presentation on New Jersey Wetland Mitigation Council, Somerset County Administration Building, 20 Grove Street, Somerville, NJ, 3:30 p.m.

September 20, 2005: NJ-AWRA New Jersey Committee for Advanced Technology (NJCAT) Tour
Sponsored by NJ – AWRA and its Groundwater Committee Rutgers EcoComplex, Bordentown, NJ
Contact: Paul Scally at 609-883-9500

September 21, 2005: NJDEP Stormwater & Groundwater Permits. More information: www.cookce.rutgers.edu

September 21-22, 2005: "Policy to Protection: Go with the Flow", New Jersey Water Association Technical and Managerial Conference
Caesars Atlantic City Hotel/Casino, Atlantic City, NJ
Contact: N.J. Water Association, Phone: 609-242-7111, E-mail: info@njwater.org

September 28-30, 2005: Stormwater Management for Engineers. More information: www.cookce.rutgers.edu

September 30, 2005: NJ-AWRA Water's Eve Social. See page 1 for more info, page 12 for registration form.

October 6, 2005: NJ-AWRA Groundwater Committee meeting, DRBC, West Trenton.

October 7-8, 2005: Geological Association of New Jersey 2005 Annual Meeting: Geology of the Central Newark Basin - The View from the 21st Century
College of New Jersey, Mercer County, Trenton, NJ
<http://www.ganj.org/>

October 15, 2005: Protect Our Streams
Learn the importance of stream side buffers and about ways to protect stream corridors in your town. Workshop includes an afternoon bus trip showcasing four completed buffer planting sites. Merrill Creek Reservoir, Warren County
More info: gmessinger@northjerseyrcd.org

October 21, 2005: 32nd Annual Environmental Congress—Habitat Strategies for NJ: the Path to Sustainability
The Conference Center at Mercer County College, West Windsor, NJ
Contact: info@anjec.org, or www.anjec.org

October 21, 2005: PA Section- AWRA Annual Fall Conference—Water Resources Planning and Management in

Pennsylvania, Lehigh University, Bethlehem, Pennsylvania
More information: Hernan Quinodoz at 609-883-9500 X225

October 25-28, 2005: 8th Annual Wetlands & Watersheds Workshop—Aquatic Systems and Water Quality. Holiday Inn on the Boardwalk Atlantic City, NJ
More info: (540) 286-6072; frank@wetlandsworkgroup.org.

October 31, 2005: Clean Water Council and Water Supply Council, 9 a.m. – 1 p.m.
DEP Hearing Room, 401 East State Street, Trenton, NJ

November 2, 2005: NJ-AWRA Fall Conference—New Jersey Floodplain Management: Past, Present and Future.
DoubleTree Hotel, Atrium Drive, Somerset, NJ
Contact: Marianna Mossler at LPPMOSSM@gw.njsp.org. See registration flyer on page 13.

November 4 and 5, 2005: 3rd Annual Volunteer Monitoring Summit Sponsored by NJDEP and the Watershed Watch Network Advisory Council,
Clarion Hotel and Towers, Edison, New Jersey
More information: <http://www.state.nj.us/dep/wmm/CallforPresenters.pdf>

November 5, 2005: Restore Our Streams Classroom and hands-on field experience about the fundamentals of restoring and enhancing streams.
Raritan Township, Hunterdon County
More info: gmessinger@northjerseyrcd.org

November 15-16, 2005: New Jersey Environmental Authorities Annual Meeting, Trump Taj Mahal, Atlantic City
More information: <http://www.aeanj.org/>

November 15-18, 2005: NJ League of Municipalities 90th Annual Conference, Atlantic City Convention Center
More information: http://www.njslom.org/90annual_conference_main.html

December 5-9, 2005: Hydrology, Ecology and Biogeochemistry of Suburbia, American Geophysical Union San Francisco, CA. More info: <http://www.agu.org/meetings/fm05/>

March 20-24, 2006: NJ Section American Water Works Association Conference, Atlantic City, NJ
Contact: Mona Cavalcoli at 1-866-436-1120

May 1-5, 2006: New Jersey Water Environment Association 91st Annual Conference, Tropicana Hotel & Resort, Atlantic City
More information: <http://www.njwea.org/>

May 21-24, 2006: Challenges in Coastal Hydrology and Water Quality
American Institute of Hydrology, 25th Anniversary Meeting
Baton Rouge, Louisiana
Contact: aihydro@aol.com or 770-384-1634

June 2006: Mid-Atlantic AWRA Conference
Topic: Stream Restoration & Protection
School of Conservation, Branchville, NJ
Watch the NJ-AWRA website and Aqua-duct for more details!

2006 Mid-Atlantic Conference "Stream Restoration & Protection in the Mid-Atlantic"

Planning for the 2006 conference of the AWRA Mid-Atlantic Sections (New Jersey, New York, Pennsylvania, Philadelphia, and Delaware) is well underway, with NJ section taking the lead this year. The conference will be held June 14-16, 2006 with the theme "Stream Restoration and Protection in the Mid-Atlantic Region".

We'll be visiting a new venue for the 2006 conference: Montclair State University's New Jersey School of Conservation (www.csam.montclair.edu/njsoc), a residential environment education camp in near pristine Stokes State Forest in far Northwest Jersey. Much different from the typical hotel, the location promises a unique conference experience, with great natural beauty and rustic, lodge-style buildings and lodging (although more elegant accommodations are available only a few miles away).

The program has been expanded from year's past to take advantage of the venue's outstanding opportunities for outdoor recreation and field-based workshops and tours. We will begin on a Wednesday afternoon with workshops/tours, followed by an outdoor barbeque and a speaker. Thursday will feature a full day of presentations, keynote speaker, poster session and the traditional dinner banquet. Friday morning will feature a panel discussion with state regulators and a keynote speaker, followed by workshops/tours after lunch.

Dr. Kirk Barrett of Montclair State's Passaic River Institute is serving as conference chair, with Kathy Hale of the NJ Water Supply Authority and Tali Engoltz of NJDEP's Coastal Management Program (both members of the NJ AWRA's stream restoration committee) as vice-chairs.

Watch for a preliminary announcement and call for abstracts soon!

Submitted by Kirk R. Barrett, PhD, PE, PWS, Director, Passaic River Institute
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Useful Web Links

- ✓ NJ-AWRA http://www.awra.org/state/new_jersey/index.html
- Thanks to Dr. Kirk Barrett, the NJ-AWRA Webmaster!
- ✓ Association of New Jersey Environmental Commissions <http://www.anjec.org/>
- ✓ Delaware River Basin Commission <http://www.state.nj.us/drbc/>
- ✓ Natural Resources Conservation Service—NJ <http://www.nj.nrcs.usda.gov/>
- ✓ New Jersey Clean Water Council
<http://www.state.nj.us/dep/watershedmgt/CWC%20website/cwc%20website.htm>
- ✓ NJDEP, Division of Watershed Management <http://www.nj.gov/dep/watershedmgt/index.htm>
- ✓ New Jersey Geological Survey <http://www.state.nj.us/dep/njgs/>
- ✓ New Jersey Water Association <http://www.njwater.org/>
- ✓ New Jersey Water Environment Association <http://www.njwea.org/>
- ✓ New Jersey Water Monitoring Coordinating Council
<http://www.state.nj.us/dep/wmm/wmcccharter.html>
- ✓ New Jersey Water Resources Research Institute <http://njwrri.rutgers.edu/>
- ✓ New Jersey Water Supply Authority <http://www.njwsa.org/>
<http://www.raritanbasin.org>
- ✓ Passaic River Institute <http://www.csam.montclair.edu/PRI/>
- ✓ U.S. Geological Survey <http://www.usgs.gov/>



The NJ Section of the American Water Resources Association invites you to:



The 1st Annual New Year's (Water Year*) Eve Gathering

September 30, 2005

6:00 pm to 9:00 pm

Reception at 6:00; dinner at 7:00

The Lambertville Station

Lambertville, NJ

<http://www.lambertvillestation.com>

**Speaker: Bradley M. Campbell, Commissioner of the New Jersey Department of Environmental Protection
The Governor's Flood Mitigation Task Force—
Recommendations and Next Steps**

Menu:

Soup, Tropical
Salad
Entrée (choice of NY Strip Steak, Stuffed Chicken Breast, Roasted Salmon)
Ice Cream Truffle
Glass of Wine
Cash Bar

Name(s) of Attendees:

Check here for Vegetarian meal

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Contact Phone #: _____

Registration Cost Per Person:

\$35—NJ-AWRA Members

\$70—Per couple (NJ-AWRA Member and Guest)

\$45—New NJ-AWRA Member (Includes 2005-2006 membership)

Payment should be made to NJ-AWRA and mailed to:

New Jersey Section AWRA, PO Box 7814, West Trenton, NJ 08628

**Deadline for registration is
September 22nd!**

**NJ-AWRA:
Celebrating
35 Years!**

Space is limited—please register promptly! Khale@raritanbasin.org for info.

*The Water Year is used by hydrologists to show the monthly patterns of precipitation (both rain and snow), evaporation/evapotranspiration from vegetation, runoff, and groundwater recharge, the primary components of the hydrologic cycle. Hydrologists use a year that begins on October 1st when soil moisture begins to be recharged following the summer months of high evaporation and transpiration that exceed the precipitation.

Stormwater Utilities in NJ—New Report Released

Morris County Planning Board released in late June a major new report that proposed legislative changes that would authorize stormwater utilities and utility authorities in New Jersey. The report, prepared by consultant CDM under federal funding through the NJDEP, notes that more than thirty states have already passed similar legislation. Under such laws, municipalities and counties, independently or in cooperation, are allowed to establish a fee-based system for stormwater management, and to manage stormwater either through local utility districts (as part of municipal or county general government) or a separate stormwater utility authority. Both the funding mechanism and the institutional arrangement are similar to those used for public wastewater and water supply utility functions. The decision to use stormwater fees (which are primarily based on impervious cover existing on each lot) and the choice of stormwater management institution would be voluntary. New Jersey law would need to change for this purpose because the Constitution allows municipalities and counties to implement only those powers granted by the State, and current laws do not authorize stormwater utilities.

The report has been submitted to NJDEP's Division of Watershed Management in its final form. It will be available soon in electronic form from the County.

Submitted by: Ray Zabihach, Morris County Planning Board
Phone: 973-829-8120, rzabihach@co.morris.nj.us

About Your Agency

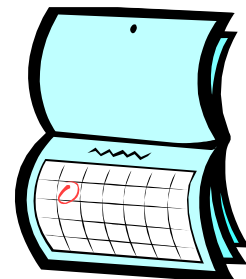
The New Jersey Meadowlands Commission is the zoning authority for the 32 square-mile Meadowlands District including portions of 14 municipalities in Bergen and Hudson Counties. The agency, created in 1969 by an act of the New Jersey Legislature, is charged with protecting the delicate balance of nature, providing for orderly development, and managing the disposal of waste within the region.

Toward that end, the NJMC's new Master Plan preserves 8,400 acres of wetlands, open space and waterways and targets them for intensive restoration. It also slates 3,078 acres of brownfields and blighted areas for redevelopment. In addition, the NJMC carries out extensive environmental education programs through its Meadowlands Environment Center, supports municipal services through a grant program and digital mapping network, and fosters important economic initiatives through a new employment center and eco-tourism initiative.

Submitted by: Christine Hobble, Senior Environmental Scientist, New Jersey Meadowlands Commission/ Meadowlands Environmental Research Institute, christine.hobble@njmeadowlands.gov, 1 DeKorte Park Plaza, Lyndhurst, NJ 07071, (O) 201-460-4660, (F) 201-460-2804

Mark Your Calendar for these Upcoming NJ-AWRA Events:

- + September 19th, MAC 2006 Planning Meeting, 1:00 pm
- + September 19th—Stream Restoration Committee Meeting, 3:30 pm
- + September 20th—NJCAT Tour
- + September 23rd—Executive Board Meeting
- + September 30th—Water New Year's Eve Celebration
- + October 6th—Groundwater Committee Meeting
- + October 28th—Executive Board Meeting
- + November 2—Flood Plain Management Committee Conference
- + November 18th—Executive Board Meeting





**New Jersey Section
American Water Resources Association
2005 Members in Good Standing
Early September 2005**

Executive Committee:

Ray Zabihach, President *
Paul Scally, Vice President
John Miller, Secretary *

Kathy Hale, Treasurer , SRC Chair, Vice Chair MAC 2006 (Aqua-duct NJ-AWRA newsletter publisher),

Bob Uhrik, Immediate Past President
Jimmy Lynch, Northern Director
Jeffrey Hoffman, Central Director, Chair GC *
Robert Kull, South Director +

**Floodplain Management
Committee (FMC) Leaders:**

Mike Graham, Vice Chair
Mark Mauriello, Chair
John Scordato, Treasurer
Cleighton Smith, Secretary
Greg Westfall +, Outreach Chair (Aqua-duct NJ-AWRA newsletter editor)

Committee (SRC) Leaders:

Jennifer Brunton, Vice Chair
Robin Dingle, Secretary
John Finkeldie, Northwestern Regional Director
Michele Bakacs, Northeastern Regional Director
Rick Axt, Central Regional Director
Tim Donnellon, Southern Regional Director

Groundwater Committee (GC) Leaders:

Keith Merl, Vice Chair
Gina Berg*, Secretary
Stream Restoration

MAC 2006 Committee Leaders:

Kirk Barrett, Chair (webmaster) *
Tali Engoltz, Vice Chair

General Membership:

Nicholas Agnoli	Geoff Goll
Richard Albert +*	Megan Grubb
Robert Anastasia	Derek Haas
Scott Anderson	Christine Hall
Steve Ardito	Paul Hartelius
Josephine Axt	Jake Helminiak
Bill Bauersfeld +	Suzy Hess
Ken Bogen	Christine Hobbie *
Gerald Bracht	Dirk Hofman #
Anthony Castillo	Bob Hordon +#
James Cosgrove *	K. Thomas Kellers *
Ellen Cronan	Don Knezick
Kelley Curran	Bryan Kohart
Daniel Dattilio	Richard Kropp
Jim Dugan	William Kruse +*
Carl Dupoldt	Marit Larson
Don Einhorn	Thomas Little
Raymond Ferrara *	Bob Limbeck
Mark Gallagher	Philip Ludeke
Frank Getchell	Anthony McCracken +
Laurie Gneiding	James Mitchell
	Debbie Newcomb

Peder Nesse
Joe Orlins *
Mary Paist (Membership Sec.)
Bill Pearce *
Linda Peterson
John Ragan
Pat Rector
Michael Rehman
Mark Renna
Anna Ruepp
Michelle Segal *
Erik Silldorff
Adam Slutsky
David Sonner
Christian Soucier
Tom Stanuikynas
Christopher Testa
Vince Uhl
Daniel Van Abs *
Eric Vowinkel +
Sarah Watts

Rich Westergaard
Benjamin Witherell
Walter Wysowaty
Roberta Zwier

* National AWRA member as per AWRA website (18)
+Past President, NJ-AWRA (10)
Peter Homack Award Recipient (2)
total of 93 members

**Floodplain Management Association of
New Jersey**

2005 Conference Agenda

*DoubleTree Hotel and Executive Meeting Center
200 Atrium Drive
Somerset, NJ*

November 2, 2005

- 9:00 – 9:30: Kenneth Daly, Township Manager, Franklin Twp., Welcome
Col. Joseph R. Fuentes, NJSP: Welcome
Mark Mauriello, NJDEP: Introduction
- 9:30 – 9:50: Dirk Hofman: Floodplain Management in New Jersey
- 10:00 – 10:30: Mark Mauriello: ASFPM PowerPoint
- BREAK*** 10:30 – 10:45
- 10:45 – 11:15: Joseph Picciano, FEMA Region II: FEMA and New Jersey
- 11:30 – 12:00: John Miller: New Jersey Floodplain Management Surveys
and Greg Westfall
- LUNCH*** 12:00 – 1:30: Wayne Sallade (Charlotte County, FL OEM)
- 1:30 – 1:50: Sgt. Paul Miller, NJ State Hazard Mitigation Officer
- 1:50 – 2:10: Director William Connolly, NJDCA: Building Codes
- 2:10 – 2:40: Vince Mazzei, NJDEP: NJDEP Regulatory Overview
- BREAK*** 2:40 – 3:00
- 3:00 – 3:20: David Van Troost: NFIP/CRS
- 3:20 – 3:40: Harry deButts: Avalon, NJ
- 3:40 – 4:00: Zachary Usher, FEMA Region II: Map Modernization

***** **Registration Deadline: October 14th** *****

For further information: http://www.awra.org/state/new_jersey/floodplain.html

**The Floodplain Management Association of New Jersey
First Annual Conference
Wednesday, November 2, 2005**

**DoubleTree Hotel and Executive Meeting Center
200 Atrium Drive
Somerset, NJ**

This one-day conference will cover information important for floodplain managers, emergency managers, building code officials and other professionals involved in floodplain work. Speakers from FEMA, NJ State agencies and the private sector will cover topics of floodplain management in New Jersey, FEMA activity in our state, hazard mitigation, building codes, NJDEP regulatory issues, NFIP/CRS, local case studies, NFIP map modernization, and the development of this New Jersey chapter of the Association of State Floodplain Managers.

A full agenda can be found at http://www.awra.org/state/new_jersey/floodplain.html

This conference is sponsored through a grant from the New Jersey Office of Emergency Management

Registration Form

**The Floodplain Management Association of New Jersey
First Annual Conference, November 2nd, 2005
Doubletree Hotel and Conference Center
Somerset, New Jersey**

Name _____

Title _____ Organization _____

Address _____

E-mail _____

Phone (____) _____ Fax (____) _____

Registration: \$30 (includes continental breakfast, breaks and lunch)

Check enclosed: Please make checks payable to "New Jersey Section AWRA".

Mail form by October 14th and send payment to:

New Jersey Section AWRA
P.O. Box 7814
West Trenton, NJ 08628

For additional information:

Mariana Mossler
(609) 538-6006
Lppmossm@gw.njsp.org

For overnight accommodations, please contact the Doubletree at (732) 469-2600 or online at
<http://www.doubletreesomerset.com/>



**NEW JERSEY SECTION
AMERICAN WATER RESOURCES ASSOCIATION**
PO BOX 7814 • WEST TRENTON • NJ • 08628
http://awra.org/state/new_jersey/index.html

Dear Water Resource Professional,

The New Jersey Section A.W.R.A. invites you to become a new member or renew your membership. The N.J. Section goal is to provide members with the latest updates on water resource issues and research in New Jersey. Your membership helps support our informative conferences, forums, and field trips at which water resource professionals have the opportunity to meet, discuss, exchange ideas, and network with one another. Also, the Peter Homack award is presented annually to an individual who has made outstanding contributions to the understanding and or management of New Jersey's water resources. Members are entitled to receive discount registration fees at all events and *instant event updates if you provide an email address on the dues form.* This year you are invited to make an additional tax-deductible contribution to our scholarship fund (a receipt will be returned to you for your tax records). The Section scholarships are given to worthy college seniors who have shown interest in pursuing a career in a water resources related field. To join New Jersey Section A.W.R.A., complete the member application and return it with your check or voucher made payable to **NJ Section AWRA** and mail to: P.O. Box 7814, West Trenton, NJ 08628.

Thank you,
Raymond Zabihach, President
New Jersey Section AWRA, Inc.
(Federally Tax Exempt Non-Profit # 22-2992686)

New Jersey Section American Water Resources Association, Inc. - Membership Application

First name _____ Last name _____
 Title _____ Affiliation _____
 Address _____
 City _____, State _____ Zip code _____
 Telephone _____ Fax _____
 Email _____
 Date: _____ New member Renewal Membership year _____ (calendar year)

<u>AFFILIATION:</u>	<u>MEMBERSHIP CLASS:</u>
<input type="checkbox"/> CONCERNED CITIZEN	<input type="checkbox"/> REGULAR FULL MEMBERSHIP \$10/yr.
<input type="checkbox"/> NON-PROFIT GROUP OR ASSOCIATION	<input type="checkbox"/> STUDENT
<input type="checkbox"/> AUTHORITIES, COMMISSIONS	
<input type="checkbox"/> ACADEMIA, EDUCATIONAL INSTITUTIONS	
<input type="checkbox"/> BUSINESS, CORPORATE	
<input type="checkbox"/> GOVERNMENT	

Describe your area of interest, expertise, or professional endeavor: _____
 May we send you announcements by email? YES NO
 May we include your name and affiliation in our membership directory? YES NO
 Would you like to be contacted to discuss how you can assist the Section Executive Board? YES NO

Comments / suggestions: _____
 *Please indicate here any additional tax-deductible contribution you wish to make to the **Scholarship Fund**: \$ _____
 Make check payable to **NJ Section AWRA** and mail to: P.O. Box 7814, West Trenton, NJ 08628

NJ-AWRA SECTION INFORMATION

2005 Schedule of Section Meetings

Meeting Locations are normally at the Cranbury Inn which is currently under renovation. Please contact the Secretary for the current month's meeting location. All members are welcome to attend.

September 23, 2005
 October 28, 2005
 November 18, 2005

December 16, 2005
 January 27, 2006

2005 Section Officers and Affiliation

Name	Title	Employment Affiliation	Phone E-mail Address
Raymond Zabihach	President	Morris County Planning Board	973-829-8120 rzabihach@co.morris.nj.us
Paul Scally	Vice President	Delaware River Basin Commission	609-883-9500 X251 psally@drbc.state.nj.us
John Miller	Secretary	Princeton Hydro, LLC	908-237-5660 x 116 jmiller@princetonhydro.com
Kathy Hale	Treasurer	New Jersey Water Supply Authority	908-685-0315 X28 khale@rارانbasin.org
Robert Uhrik	Immediate Past President	South Brunswick Township	732-329-4000 X233 ruhrik@sbtj.net
James Lynch	North Director	Union County	908-789-3673 jlynch@ucnj.org
Jeffrey Hoffman	Central Director	New Jersey Geological Survey	(609) 984-6587 Jeffrey.L.Hoffman@dep.state.nj.us
Robert Kull	South Director	Burlington County Economic Development and Planning	609-265-5055 RKull@co.burlington.nj.us

Newsletter Submissions

Did you attend an interesting water resources event? Do you know of an upcoming event? Did you see an interesting article you'd like to discuss? Did you work on an innovative project? Then we want to hear about it! ALL members of the NJ-AWRA are encouraged to submit articles and news for future issues of The Aqua-duct. The deadline for submission of information/articles to the editor for the Winter 2005 edition of The Aqua-duct is January 10th. Please send articles to gregory.westfall@nj.usda.gov.

Membership Renewals

Membership dues for 2006 are now being received. Please designate that your dues are for 2006. Annual dues are \$10. A membership application is available on the Section website. We hope you will continue to be a part of the Section. Member benefits include the Aqua-duct newsletter, reduced registration fees for Section Conferences and other events and the opportunity to network with other water resource professionals.

New Jersey Section of the American Water Resources Association Mission Statement

The Section has a mission to provide a common forum in which to meet, discuss, exchange ideas, and assist all persons concerned with the conservation, development, management, and utilization of fresh and marine waters and related resources together with their environmental aspects. Its mission is also to cooperate with Federal, State and local agencies, educational institutions, foundations, private companies, and with other local sections and chapters of the national organizations concerned with water resources.

NJ Section - American Water Resources Association
<http://www.njawra.org>
P.O. Box 7814, West Trenton, NJ 08628