



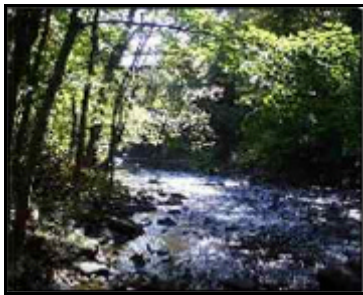
AQUADUCT

Newsletter of the New Jersey Chapter - American Water Resources Association
March 2004

April 29-30, 2004 Join Us for Stormwater Phase II: How is It Working? The Mid-Atlantic AWRA Conference

The 2004 Mid-Atlantic AWRA Conference is scheduled to take place on Thursday, April 29th and Friday, April 30th. This year's Conference is hosted by the New York State Section and co-sponsored by the New Jersey, Pennsylvania and Philadelphia AWRA Sections. The Conference will be held at the Best Western Motel at Hunts Landing in Matamoras, Pennsylvania. Speakers will include John Nolan of Pace University School of Law and many others.

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The South Branch of the Raritan River near Ken Lockwood Gorge is a Category 1 waterbody

President's Message Raymond Zabihach

The New Jersey Section of the AWRA has participated in and hosted some very cutting edge water resources conferences. Last year our Fall Conference presented the latest information on non-regulated contaminants in water. As was presented at the conference, a multi-faceted effort is underway at various levels of government and academia to identify new complex substances in New Jersey's water especially our drinking water supply. Thankfully, there is now an ever growing awareness that more investigation and analysis are necessary to safeguard our water resources. The New Jersey Section AWRA is proud to be helping to elevate public awareness on this issue.

In a similar way, this year's Mid-Atlantic Conference will explore the initial impacts of the new Phase II Stormwater Rules in our tri-state area. The 2004 Mid-Atlantic Conference will be held in Matamoras, PA this year on April 29th and 30th. The conference theme this year is "Stormwater Phase II: How is It Working?" Hopefully you have received a flyer with specifics and registration information. The host for this year's conference is the New York State Section. Our website has the full conference brochure. Hope to see you there.

New Jersey's New Stormwater Rules...Do They Protect all Streams Equally?

Mark Gallagher, Princeton Hydro, LLC.

As of February 2, 2004 the New Jersey Department of Environmental Protection enacted their long awaited revision to the Stormwater Management Act. One of the more controversial components of this legislation was the requirement for a 300-foot Special Waters Resource Protection Area or buffer adjacent to all Category One (C1) streams and their tributaries. Category One streams are special protection waters subject to the state's antidegradation policies. The protection of these waters has been an integral and well-advertised component of the new rules. Over the past few weeks, various newspaper articles made statements such as follows: "In total, the buffers will impact 6,093 stream miles - including the 3,307 miles of currently designated C1 rivers and streams and an additional 2,786 miles of non-C1 tributaries to C1 streams". Although the newspaper reports make this legislation seem comprehensive, there are gaps in the rules.

The revised rule stipulates the need for a buffer or Special Water Resource Protection Area (SWRPA) of as much as 300 feet on either side of C1 streams and mapped tributaries. In accordance with 7:8-5.5(h) *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 HUC 14 drainage.* This regulation

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identifies that SWRPA's are only required on mapped intermittent and perennial streams. The key point of this rule to remember is that it limits the buffer requirement to streams that are mapped. Thus, the protection of C1 watersheds is relying on the accuracy of these maps.

Recent studies by government agencies, academic institutions and private consulting firms indicate that many first and second order headwater streams are not indicated on United States Geologic Survey (USGS) maps; including both intermittent and perennial streams. Most of the missing stream segments are typically headwater streams. A study performed by the Ohio Environmental Protection Agency found that headwater streams, although generally absent from the USGS topographic maps, comprise more than 80% of the total length of the state's stream system. An article by Judy Myer and J. Bruce Wallace of the University of Georgia stated "it is humbling to recognize that the 185 ecological papers about streams that have been published in the past 25 years at Coweeta Hydrologic Laboratory [sponsored by the National Science Foundation] have been done on streams channels that do not exist according to most national accounting of stream networks".



The Spruce Run in Hunterdon County is classified as Category 1

Although the County Soil surveys may illustrate more of these headwater streams, especially intermittent streams, many of the streams indicated are drainage ditches. In accordance with the New Jersey Freshwater Wetlands Protection Act, a man-made ditch is considered a wetland of ordinary resource value that does not require a buffer and can be filled in accordance with the NJDEP's General Permit Program. In contrast to this rule, a ditch shown in the County Soil Survey that is tributary to a C1 stream will be required to have a 300-foot buffer. It should be interesting to see how the state resolves this conflict.

Another important aspect of the new rules also relates to the SWRPA requirement. The 300-foot buffer requirement that is so widely discussed will not always be 300 feet. These areas may be reduced from 300 feet to as little as 150 feet in previously disturbed areas and/or in areas under active cultivation.

This article was designed to comment on specific portions of the new regulations. However, as with all new regulations, there will likely be a variety of other issues that will emerge in the upcoming months and will need to be addressed by the NJDEP. Although there may be some problems with the new rules, they do, however, provide for the possibility that many of the stated concerns can be addressed at the local level as part of a "stream corridor protection plan". For example, the omission of unmapped intermittent or perennial headwater streams, although clearly an oversight, can thus be managed at the local level. In addition, it is important to remember that the antidegradation standards of a C1 stream are still applicable and need to be considered in the management of unmapped elements of a C1 watershed. However, the protection of certain mapped streams such as those indicated on County Soil surveys may be contrary to reducing downstream water quality impacts. For example, an eroding ditch may warrant elimination or modification as part of a proposed development as a means to better manage the water quality of a stream. It is clear that issues such as this need to be evaluated on a case-by-case basis. However, the preparation of a stream corridor management plan may be an important tool to better manage sensitive watersheds.

The protection of any important unmapped headwater streams that warrants additional protective measures would need to be done at the Municipal level. Protective measures such as buffers, re-vegetation programs for the SWRPA, as well as the identification of eroded streams or other channels can also be done as part of a local or regional Stream Riparian Corridor Protection Plan. In accordance with 7:8-5.5 "A Stream Corridor Protection Plan may be developed by a regional stormwater management planning committee, a municipality or the Department". A plan can also be part of an adopted municipal stormwater management plan. The Stream Corridor Protection Plan aspect of the new regulations could serve to provide management for those streams "overlooked" by the new stormwater regulations.

So do the new regulations protect all C1 streams equally? The answer is...no, and unless one looks beyond the headlines, your watershed may not be protected to the level that you have read.

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Mid Atlantic Conference—Stormwater Phase II

This conference focuses on Stormwater Phase II regulations, discussing and comparing how professionals in the four AWRA Sections are implementing the new regulations in a wide variety of geographical settings and for different administrative and management systems.

Keynote Speaker: John Nolan, Professor of Law & Counsel to the Land Use Law Center, Pace University School of Law - "Implementing Stormwater Management Plans Under Existing Land Use Laws"

State Experiences Panel

Ken Eyre, Greeley and Hanson

Elizabeth Semple, New Jersey Department of Environmental Protection

Lauren Miller, New York State Soil & Water Conservation Committee

Local Perspectives Panel

Dereth Glance, Citizens Campaign for the Environment

Steve Souza, Ph.D., Princeton Hydro

Bob Christoff, Dauphin County Conservation District

Technologies and Practices Panel

Chris Pomeroy, Aqualaw, PC

Robert Traver, Ph.D., Villanova University

Joseph Skupien, PE, SWM Consulting

Funding Opportunities

Raymond Zabihach, Morris County Planning Board

Fran Albright, Gannett Fleming

See http://www.awra.org/state/new_jersey for information on hotel and registration.



**October 3, 2003 NJAWRA Conference
"Nonregulated Compounds in Water"**

**Partnering for Protection:
NJWSA Watershed Protection Programs
By Kathy Hale, NJWSA**

(Based on a presentation by Daniel J. Van Abs, Ph.D. PP/AICP, *Manager for Watershed Protection Programs at the February 27, 2004 Past President's Meeting*)

The New Jersey Water Supply Authority (NJWSA, www.njwsa.org and www.raritanbasin.org) operates and maintains public water supply facilities in the Raritan River Basin System, including the Round Valley and Spruce Run Reservoirs in Hunterdon County, the Delaware and Raritan Canal and the Manasquan Reservoir in Monmouth County. The Watershed Protection Programs Unit was formed in 1999 to work with Raritan Basin stakeholders to protect and improve water supplies.

The Raritan River Basin in central New Jersey encompasses approximately 1,100 square miles within parts of seven counties (Hunterdon, Mercer, Middlesex, Monmouth, Morris, Somerset and Union) and 100 municipalities. It is the largest river basin located entirely in New Jersey and is a heavily used landscape – urban, suburban and agricultural. The Basin consists of three watershed management areas (WMAs): the North & South Branch Raritan WMA, the Lower Raritan WMA and the Millstone WMA.

There are approximately 2,000 mapped miles of flowing streams within the Basin, all of which flow to the Raritan Bay located at Perth Amboy and South Amboy in the easternmost portion of Middlesex County. The Raritan Basin provides water to approximately 1.3 million people in central New Jersey, including drinking water, irrigation water for farms, nurseries and golf courses and processing water for industries. In addition, the Basin is used for many recreational activities, including boating, fishing and hiking, and provides habitat for many aquatic and terrestrial organisms.

Two key surface water quality problems in the Basin are high levels of phosphorus (a nutrient that comes from fertilizers, animals and human sewage) and fecal coliform (an indicator of disease-causing bacteria that comes from animals and human sewage). While phosphorus comes from both sewage treatment plants and nonpoint sources, fecal coliform bacteria now come entirely from nonpoint sources such as septic system failure and animals. Other water quality issues in the Basin include hardness and pH, both of which may be natural conditions, and trout water temperature, usually caused by stormwater runoff and the loss of stream vegetation. The Raritan Basin has extensive stream ecosystem impairment, usually moderate but sometimes severe. A few pesticides have been found at levels that can harm human health and aquatic life.

Impervious surfaces range from less than 5 percent to over 40 percent by subwatershed, resulting in many impacts, including excessive stormwater flows. Riparian area historic losses exceed 80 percent in some subwatersheds. Many stream segments and water bodies are listed for total maximum daily load (TMDL) development. In only ten years, the process of suburbanization reduced ground water recharge up to 20% in some subwatersheds.

NJWSA has developed and received funding for several major projects affecting and benefiting the Raritan Basin.

1. **EPA Watershed Protection Initiative Grant, South Branch Raritan and Mainstem Raritan Project Area** – This project is part of a three-year, \$2+ million project. In the mainstem Raritan (Raritan/Somerville/Manville Area), the project will focus on stormwater system improvements to address turbidity at water supply intake in Bridge-water, municipal planning and ordinances, road salting controls, River Friendly programs and intervention at sites identified in NJDEP source water assessment. In the South Branch Raritan Area (upstream of NJWSA's South Branch Pumping Station), the project will focus on stream restoration, municipal planning and ordinances, and riparian area management. *Project Partners:* Stony Brook-Millstone Watershed Association, NJDEP-Division of Watershed Management, South Branch Watershed Association.
2. **D&R Canal Tributary Assessment & NPS Management Plan** - The project will address nonpoint sources of pollution from influent water sources to the Canal in the State Park and the vicinity of drinking water intakes. NJWSA will locate and assess the "infalls." The "infall" assessment will include determination of which ones contribute the most pollutants and suspended sediment to the Canal and development of conceptual approaches for the management of nonpoint source loads. *Partners:* NJWSA, Franklin Township, South Bound Brook Borough.
3. **Cedar Grove Brook (aka Al's Brook) Watershed Stormwater Management Plan** – NJWSA and Franklin Township will partner on the development of a watershed-based stormwater management plan. The project will address stormwater flows, stormwater quality, and stream baseflow. The stream baseflow issue will be addressed by ensuring that the stormwater management measures focus both on surface water flow and ground water infil-

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NJWSA Watershed Protection Programs (Continued from page 4)

tration. *Partners:* NJWSA, Franklin Township.

4. **Raritan Phase 2 Manalapan Lake Restoration Plan** – This project will use some of the remaining Raritan Project funds from Phase 2 (management plan development) to develop a lake restoration plan, focusing on nutrients and sediment.
5. **Raritan Phase 2 Open Space & Redevelopment Plan** – This project will use some of the remaining Raritan Project funds from Phase 2 (management plan development) to create an approach for identifying undeveloped lots near surface waters that are not preserved, determining whether they are more appropriate for development or open space preservation (or a combination), and integrating the two approaches in a manner that both better protects water resources (such as drinking water) while improving local economies. Most of the work is targeted to the greater Somerville area, and will include methods to improve stream quality.
6. **Raritan Phase 2 Fecal Coliform Management** – This project will use some of the remaining Raritan Project funds from Phase 2 to develop an approach, field results and detailed recommendations for implementation of the fecal coliform TMDLs adopted for the Raritan Basin by NJDEP. *Project Partner:* NJDEP.
7. **Raritan Highlands Grant** – this project will help Highlands municipalities better plan for and protect Highlands water resources through their Wastewater Management Plans and other tools. *Partners:* County Planning Departments of Hunterdon, Morris and Somerset Counties, South Branch Watershed Association, Upper Raritan Watershed Association.
8. **Mulhockaway Watershed Stormwater Management Plan** – this project is a three-year effort to develop a watershed-based stormwater management model and plan for the Mulhockaway Creek, a 12 square mile tributary to the Spruce Run Reservoir. *Partners:* Townships of Bethlehem and Union.
9. **Spruce Run Initiative Smart Growth Project** – This project will involve planning for improved management of development, redevelopment and reservoir protection in the commercial highway corridors within the Spruce Run Reservoir watersheds. The two goals are reduced pollutant loads to the reservoir with equal or greater economic benefits.
10. **Open Space Acquisition in the Spruce Run Reservoir Watersheds** – NJWSA is using funds from a \$5 per million gallon rate increase to partner with the State, Hunterdon County and local municipalities in the purchase of open space identified in the Spruce Run Initiative's "Critical Areas Plan for the Spruce Run Reservoir Watersheds." In 2003, parcels acquired through this partnership exceeded one square mile.
10. **Stream Segment Management Plan – NJWSA received funding from NJDEP to perform a stream assessment and water quality monitoring and to develop a targeted subwatershed management plan for Spruce Run and Rocky Run. This project is tied to the TMDL program.**



February 2004 Past President's Meeting



Past Presidents of NJAWRA at the February 2004 Past President's meeting

2004 Peter Homack Award Winner to be Announced at Mid-Atlantic Conference

Announcement of the Peter Homack Award winner will be made at the upcoming Mid-Atlantic Conference on April 29th. The following are to be construed as the minimum criteria for consideration of an individual for the Peter Homack Award:

- The individual shall have performed activities consistent with the general purposes of the award, i.e. "made outstanding contributions toward a multidisciplinary understanding or management of water resources in New Jersey."
- The individual shall have promoted the rational and objective development and utilization of water resources and the maintenance of high quality water resources in New Jersey.
- The individual shall have made a significant contribution to understanding and communication among individuals from diverse disciplines toward the resolution of local or regional water resources problems within New Jersey.
- The individual shall have evidenced a continuing interest and a record of outstanding contributions in the cause of effective water resources management.
- The contributions of the individual should be applicable beyond the scope of the primary emphasis of the individual's activities. For example, for a contribution at a local level, the ideas, activities, or other contributions shall have been recognized or applied beyond the local area or shall be of such a meritorious nature that statewide recognition is appropriate.

Past Homack Awardees:

Name	Affiliation
1987 William Whipple, Jr	NJDEP Division of Water Resources
1988 William Goldfarb, PhD	Cook College, Rutgers University
1989 Rocco D. Ricci	NJ Water Supply Authority
1990 Hermia Lechner	South Branch Raritan Watershed Association
1991 Donald E. Vaupel	U.S. Geological Survey
1992 Peggy Haskin	NJ Water Supply Authority/NJ League of Women Voters
1993 David C. Yaeck	Chester County Water Resources Authority
1994 Peggy D. McNeill	NJ State Association of Conservation Districts, Mercer County Soil Conservation District
1995 Robert Hordon, PhD, PH	Rutgers University
1996 Dean C. Noll, PE	North Jersey District Water Supply Commission
1997 Ellis S. Vieser	NJ Alliance for Action/ NJ Wastewater Treatment Trust
1998 Gerald M. Hansler	Delaware River Basin Commission
1999 Thomas G. Baxter	NJ Water Supply Authority
2000 Haig F. Kasabach, CPG	NJ Geological Survey
2001 John W. Gaston, Jr., PE, PP	Stony Brook Regional Sewerage Authority
2002 Joseph J. Skupien, PE, PP	Storm Water Management Consulting, PA
2003 Shing Fu Hsueh, PhD, PE	Mayor, West Windsor Township

Join us at the 2004 MAC Conference, April 29-30, for the announcement of the 2004 Homack Awardee!

Mission of New Jersey Section of the American Water Resources Association

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.

2004 Section Officers and Employment Affiliation

- Raymond Zabihach, President (Morris County Planning Department)
- Michael Cox, Vice President (URS Corporation)
- John Miller, Secretary (Princeton Hydro, LLC.)
- Paul Scally, Treasurer (Delaware River Basin Commission)
- Robert Uhrik, Immediate Past President (South Brunswick Township)
- James Lynch, North Director (Union County)
- Kathy Hale, Central Director (New Jersey Water Supply Authority)
- Robert Kull, South Director (Burlington County Economic Development and Regional Planning)



Current NJAWRA Board members (from left to right): Bob Uhrik, Michael Cox, Kathy Hale, John Miller, Ray Zabihach, Bob Kull and Paul Scally.

Schedule of Section Meetings

Meetings begin at 12 noon at the Cranbury Inn, Cranbury, NJ unless otherwise announced

January 23
February 27*
March 26
May 21
June 25
July 23
September 24
October 29
November 19
December 17
January 28, 2005

*at DRBC, West Trenton

All members are welcome to attend. Check the NJAWRA website for information regarding speakers at meeting.

Member News

Kathy Hale of the New Jersey Water Supply Authority and currently Central District Director in NJ-AWRA, will present a paper titled "Assessment and Restoration of Streams in the Spruce Run Reservoir Watershed" at the AWRA National Summer Specialty Conference "Riparian Ecosystems and Buffers: Multi-Scale Structure, Function and Management", June 28-30, 2004.

Robert M. Hordon of Rutgers University and a past President of the NJ-AWRA has been elected Treasurer of the American Institute of Hydrology (AIH). The AIH is a national organization that certifies the professional competence and ethical conduct of professionals in all fields of hydrology. Additional information about the AIH is available at www.aihydro.org.

John A. Miller, P.E. of Princeton Hydro, LLC., and currently Secretary of the NJ-AWRA, recently was certified as a Certified Floodplain Manager (C.F.M.) by the Association of State Floodplain Managers (ASFPM). Additional information about the ASFPM is available at www.floods.org.

Proposals Requested for Web Design

Knowledge, Skills and Other Abilities:

Proficiency in developing and designing websites for attracting users as well as making the website easily accessible.

Services Needed:

One time re-design of the New Jersey Section AWRA website according to direction by the Executive Committee to permit ease of access to various facets of the organization. Propose a sample template (s) and key concepts that in your opinion should guide the design of the website. The project will be initiated by June 1, 2004 and completed by August 1, 2004.

Fee for Service:

Not to exceed \$500 or as determined by the Executive Committee.

References:

Provide a list of web sites and written references from others for whom you have provided this service.

Send information on the above by May 14, 2004 to Paul Scally, Treasurer, at: NJAWRA, P.O. Box 7814, West Trenton, NJ 08628 or pscally@drbc.state.nj.us.

Upcoming Events

April 29-30, 2004

Mid-Atlantic Conference -

Stormwater Phase II: How is it working?
Best Western Motel at Hunt's Landing,
Matamoras, PA See the NJAWRA website
for registration information.

May 4, 2004, 9 am - 4 pm

*Stormwater Management Forum
& Award Program*

New Jersey EcoComplex, County Route 543,
1200 Florence-Columbus Road, Columbus,
NJ. Sponsored by Board of Chosen
Freeholders of Burlington County. \$20/
person (includes lunch). Speakers include NJ-
AWRA President Ray Zabihach. For further
information contact Gina Berg, Burlington
County Department of Resource
Conservation, 856-642-3850 or GBerg@co.burlington.nj.us.

May 19th, 2004, 8:30 - 2 pm

*"Using Science to Protect Wetlands: Making
Science Available to All"*

Rider University, Lawrenceville, NJ. Following
the symposium, there will be a field trip to the
Trenton- Hamilton Marsh for the first 60 who
apply. Contact Dr. Mary Leck at leck@rider.edu
for further information.

Have you sent in your membership renewal? The year 2004 membership dues are now being received. Annual dues are \$10. A membership application is available on the Section website and can be returned to the Section mailing address. We hope you will continue to be a part of the Section. Member benefits include the Aquaduct newsletter, reduced registration fees for Section Conferences and other events and the opportunity to network with other water resource professionals.

NJAWRA
P.O. Box 7814
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