



The StreamWatcher

Fall - September 2009

StreamWatch Mission

Protecting and enhancing our watershed through chemical, physical, and biological monitoring, restoration, appropriate action, and education. Volunteers are the key!

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Take a Dip



If you've been wondering this summer where to go swimming, the Watershed Association has been working to answer that question. This summer, the Watershed Association piloted a program to test for bacteria in our waterways. We sampled at eight locations to determine *Escherichia coli* (abbreviated as *E. coli*) levels in the water. *E. coli* are types of bacteria that live in the intestinal tracts of animals and humans. In most instances, these bacteria are not harmful, but their presence indicates that other pathogens of fecal origin – disease causing bacteria, viruses, and parasites – may be present. Therefore, swimming or wading in streams with high *E. coli* levels is considered to be a human health risk.

According to the New Jersey Department of Environmental Protection, waterways are safe for primary recreational contact (e.g. swimming) when there are less than 235 colonies of *E. coli* per 100 milliliters of water. Initial test results from our bacteria sampling show that stream levels of *E. coli* bacteria are less than 235 colonies per 100 mL of water and therefore healthy. Only one sample on the Stony Brook has come up high so far, following a rain event (see data on page three). Rain events help to wash bacteria into streams coming from leaking septic or sewer systems, waterfowl in the stream, wading cows, or polluted runoff that has picked up animal (dog, goose, cow, etc.) waste en route to the stream.

For swimmers in Hightstown, the low bacteria levels were welcome news. We sampled at Peddie Lake in Hightstown and sent the data to the Hightstown Borough Parks and Recreation Committee. The data was used to determine the lake's safety for Friday night summer swims. Reports from Hightstown indicate that the swims were successful and popular with local residents.

Other sites monitored were on the Stony Brook, Honey Lake,

(continued on page 3)

UPDATES AND HAPPENINGS

Delaware and Raritan Canal Gains New Protections



The Delaware and Raritan Canal Commission and the New Jersey Department of Environmental Protection adopted rules this past spring revising the regulations used to review development projects that may impact the Delaware and Raritan Canal State Park. One of the changes gives a boost to water quality protection in and near the park. Streams that flow into the Delaware and Raritan Canal will either receive a 100-foot buffer from the top of its floodplain, or a 300-foot buffer from the top of its banks, whichever is greater. This means that development cannot occur

within this buffer area. Buffer areas of native vegetation provide wildlife habitat, create streamside shade, filter pollutants, and anchor soil, thus reducing erosion. Four streams are listed as directly entering the Canal, including Duck Pond Run in West Windsor, the only one in the Millstone Watershed. This provides greater protection for Duck Pond Run and its tributaries in the event that developments are proposed adjacent to the stream.

2009 Watershed Butterfly Festival



The 9th Annual Watershed Butterfly Festival was a huge success! Nearly 2,500 people visited the Watershed Association Reserve to learn about native butterflies and the Association's work in conservation, advocacy, science, and education. Thank you to all the volunteers that worked to make the day fun and informative for all!

How Healthy is Your Stream?

The biological water quality rating is based on a combination of the organisms' tolerance to pollution; the number of different families in the sample; the number of families and individual organisms belonging to the Orders *Ephemeroptera* (mayflies), *Plecoptera* (stoneflies), and *Trichoptera* (caddisflies); and the percent dominance of one family. In general, a non-impaired stream has a diversity of different families, organisms with low tolerances to pollution (those generally belonging to *Ephemeroptera*, *Plecoptera*, and *Trichoptera*), and a low percent dominance, which is an indicator of diversity. A moderately impaired stream may be experiencing low species diversity due to a lack of diverse habitat and/or a majority of organisms with high tolerances to pollution. A sample must contain at least 100 organisms to be analyzed for statistical purposes. Causes of pollution in our streams include runoff containing high amounts of fertilizers, pesticides, oil, sediment, and/or pet waste.

July Biological Sampling Results

Big Bear Brook (BB1)	Moderately Impaired
Beden Brook (BD1)	Moderately Impaired
Beden Brook (BD3)	Too few to analyze
Beden Brook (BD4)	Non-Impaired
Back Brook (BK1)	Non-Impaired
Cranbury Brook (CB2)	Non-Impaired
Millstone River (MRB)	Too few to analyze
Stony Brook (SB1)	Moderately Impaired
Stony Brook (SB2)	Moderately Impaired
Stony Brook (SB3)	Non-Impaired
Stony Brook (SB4)	Moderately Impaired
Stony Brook (SB5)	Non-Impaired
Six Mile Run (SM1)	Moderately Impaired
Ten Mile Run (TM1)	Moderately Impaired

(continued from page 1)

Beden Brook, Millstone River, and Pike Run. Several of these sites, including those on the Stony Brook, Beden Brook, and Pike Run, are downstream from wastewater treatment plants and other discharge pipes. Therefore, these sites were chosen to monitor bacteria levels coming from these point sources. In addition, biological data for one site on the Stony Brook often indicates moderate to severe impairment. Bacteria monitoring offers another level of information to determine the possible cause for this impairment. Sites on the Beden Brook and Honey Lake were also chosen in response to inquiries from residents regarding bacteria levels and safety for swimming in these areas.

SBMWA staff also hope to add monitoring sites on Heathcote Brook and Carter's Brook. In 2005 and 2006, we monitored Heathcote Brook and Carter's Brook for bacteria levels under a grant from the New Jersey Department of Environmental Protection. Results from this monitoring showed high levels of bacteria at two locations. Additional monitoring would allow us to follow up on these high levels to see if bacteria are still posing a threat to water quality.

If you are interested in helping monitor for bacteria, attend our training on September 12th. See page five for more details.

Summer 2009 Bacteria Monitoring Results

Site	Date	Colonies per 100 mL of Water
Millstone River (MR2)	6/29/09	80
Peddie Lake (PL1a)	6/29/09	60
Peddie Lake (PL1b)	6/29/09	80
Beden Brook (BD3)	7/10/09	140
Honey Lake (HL1)	7/10/09	0
Millstone River (MR2)	7/10/09	90
Peddie Lake (PL1a)	7/10/09	60
Peddie Lake (PL1b)	7/10/09	20
Pike Run (PR1)	7/10/09	223
Stony Brook (CL3)	7/10/09	90
Stony Brook (SB4)	7/10/09	70
Beden Brook (BD3)	7/17/09	190
Honey Lake (HL1)	7/17/09	30
Millstone River (MR2)	7/17/09	40
Peddie Lake (PL1a)	7/17/09	80
Peddie Lake (PL1b)	7/17/09	40
Pike Run (PR1)	7/17/09	190
Stony Brook (CL3)	7/17/09	50
Stony Brook (SB4)	7/17/09	240
Water Quality Standard		235

Note: Results from July 10 and July 17 are averaged from two samples per site.

Calling all Creative Minds: Help Name our New Bacteria Monitoring Program!

CATs, BATs, and RATs. To some, these are merely animal names. But to the volunteers of the StreamWatch Water Quality Monitoring Program, these names identify if they participate in our Chemical Action Teams, Biological Action Teams, or River Action Teams monitoring programs.

Now, with the addition of our Bacteria Monitoring program, we are looking for a new, catchy acronym to distinguish this program from the rest, and we need your help! Perhaps MATs (Microbial Action Teams) are in order? Or GNATs? We haven't been able to come up with a description that pertains to bacteria for that one. If you have suggestions, please let us know. All are welcome, animal related or otherwise. Send your suggestions to Beth April at (609) 737-3735 ext. 17 or bapril@thewatershed.org. Your idea could be the name for our monitoring program!



3D Image of a cluster of *E. coli* bacteria.
Individual bacteria are oblong.

World Water Monitoring Day: Coming to a Stream Near You!

For the second year in a row, the Watershed Association is partnering with the Water Environment Federation (WEF) and the International Water Association (IWA) to participate in World Water Monitoring Day. World Water Monitoring Day is an international education and outreach effort that builds public awareness and involvement in protecting water resources around the world. It engages citizens by encouraging them to monitor their local streams and lakes using basic monitoring techniques. World Water Monitoring Day is officially celebrated on September 18th, but data is accepted for the online database from monitoring between March 22nd and December 31st. In 2008, 73,000 people from 70 countries collected chemical and biological data. WEF and IWA hope to increase this participation to one million people in 100 countries by 2012.



As a partner, the Watershed Association helps to raise awareness about the event. Staff also enter data collected by StreamWatch volunteers on a select group of sites on the Beden Brook, Stony Brook and Millstone River. If you are interested in entering data from your stream, contact Beth April at (609) 737-3735 ext. 17. Together, we can raise awareness about the importance of monitoring and watershed health. Learn more at www.wvmd.org.



Save the Date!

Bacteria Monitoring Training

Who: Stony Brook-Millstone Watershed Association
What: StreamWatch Training
When: Saturday, September 12, 2009
1:00 pm to 3:00 pm
Where: Stony Brook-Millstone Watershed Association Reserve
31 Titus Mill Road; Pennington, NJ 08534

The Stony Brook-Millstone Watershed Association is looking for volunteers to become part of its StreamWatch Bacteria Monitoring program. Bacteria monitors collect samples on a quarterly basis to determine levels of E. coli bacteria in our streams. Volunteers must be available during the week (one day Monday through Thursday) and willing to deliver the sample to our office in Hopewell. No previous experience is required and all materials will be provided. You must be at least 14 years old to participate. Come learn how to monitor the health of your local waterways and improve water quality in your town!

Sampling sites are available at the following locations:

- Carnegie Lake in Plainsboro Township
- Heathcote Brook in South Brunswick Township
- Millstone River in Princeton Township
- Millstone River in West Windsor Township
- Peddie Lake in Hightstown Borough
- Pike Run in Montgomery Township
- Stony Brook in Lawrence Township
- Stony Brook in Princeton Township

Directions to the Stony Brook-Millstone Watershed Reserve are available on our website, www.thewatershed.org/directions.php. **Pre-registration is required. For more information and/or to register for the training, please contact Beth April at (609) 737-3735 ext. 17 or bapril@thewatershed.org**

In This Issue. . .

TAKE A DIP	...page 1
UPDATES AND HAPPENINGS	...page 2
JULY BIOLOGICAL DATA	...page 2
THE NAME GAME	...page 4
WORLD WATER MONITORING DAY	...page 4
NEW VOLUNTEER OPPORTUNITY!	...page 5
DATES TO REMEMBER	...page 6



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DATES TO REMEMBER

September 5 th	CATs testing weekend.
September 8 th	CATs Fall QA/QC session, 6:00 pm to 8:30 pm. Contact Beth April for more information and to RSVP at (609) 737-3735 x.17 or bapril@thewatershed.org
September 12 th	CATs Fall QA/QC session, 9:30 am to 12 noon. Contact Beth April for more information and to RSVP.
September 19 th	CATs testing weekend.
October	RATs Month. Time to walk your stream beats!
October 3 rd	CATs testing weekend.
October 17 th	BATs Identification Day from 9:00 am - 4:00 pm at the Kingsford Community Room. Remember that your macroinvertebrate sample can be collected up to two weeks before the identification day! Contact Beth April at (609) 737-3735 x. 17 or bapril@thewatershed.org for more information or to pick up your sampling equipment.
October 17 th	CATs testing weekend.
October 31 st	CATs testing weekend.
November 14 th	CATs testing weekend.
November 28 th	CATs testing weekend.
December 5 th	Holiday Open House at the Buttinger Nature Center, 12:30 - 3:00 pm. Enjoy food and music and browse our shop for a wonderful selection of holiday gifts!

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