



The StreamWatcher

Summer - July 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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Cleaning up, One Stream at a Time

3rd Annual
Watershed-wide Stream Clean-ups
2009



Clean water.
It's in your hands.

A safe containing poker chips. Shopping carts. A toilet and vacuum cleaner. Laptop computers. Coconuts. What do these items have in common? They were all removed from our streams during the 3rd Annual Stony Brook-Millstone Watershed-wide Stream Clean-ups, along with 425 bags of trash and recyclables amounting to over 7,000 pounds of trash.

This feat was made possible by 244 volunteers in 11 communities throughout our watershed. We were especially happy to welcome volunteers from Plainsboro and Hopewell as they participated in the clean-ups for the first time this year.

While we are thrilled with the participation and amount of trash removed, it is our hope that this number will become smaller, not through lack of participation, but because there is less trash ending up in our streams and lakes to begin with.

The clean-ups garnered community support through several sponsors, including the NYMEX Charitable Foundation, Aztec Graphics, Saul Ewing, LLP, Wegmans, and Whole Foods. American Rivers, the national organization behind National River Clean-up Week, serves as an inspiration for the local clean-ups and provides trash bags. The clean-ups also would not be possible without the dedication of environmental commission members from the municipalities hosting clean-up events.

Thank you to the volunteers and environmental commission members from Cranbury, East Windsor, Franklin, Hightstown, Hopewell, Lawrence, Millstone, Monroe, Plainsboro, Princeton, and West Windsor for making this year's clean-ups a huge success!

UPDATES AND HAPPENINGS



This summer, the Watershed Association is piloting a program to test for bacteria in our waterways. We will launch the program slowly, sampling at 12 sites with the help of our summer interns, Alisa Tao and Mary Hillas. All samples will be analyzed in-house using the Coliscan Easygel method 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. High *E. coli* levels can result from leaking septic or sewer systems, polluted runoff that has picked up animal (dog, goose, cow, etc) waste en route to the stream, waterfowl in the stream, or wading cows. Monitoring will be used to keep an eye on several hot spots and to identify other bacteria problems quickly. We will also send data from Peddie Lake to the Hightstown Borough Parks and Recreation Committee to help identify if the lake is safe for swimming. 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.



an *E. coli* bacteria

How Healthy is Your Stream?

The 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.

March Biological Sampling Results

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

Goodbye Dams, Hello Shad?

by Peggy Savage, Science Director

Imagine that you are a fish migrating upstream to spawn. But you keep bumping into a wall and can't get to your preferred destination. This has been the fate of American shad and other migratory fish in the Millstone River since the early 18th century when dams were constructed on the river to power mills.

In the last issue, we reported our goal of restoring the Millstone River as prime shad habitat, opening up passage through the river. Now, with a recent grant from American Rivers and the National Oceanic and Atmospheric Administration (NOAA) Restoration Center, the Watershed Association is happy to report the launching of a feasibility study to determine whether it is possible to make this dream come true.

Our study will look into whether it is possible to remove two dams on the Millstone River, thereby opening up 14 river miles to migrating fish and recreational users between Carnegie Lake and Manville, at the confluence of the Millstone and Raritan Rivers.

Through this incredibly exciting project we aim to restore the ecological integrity of the Millstone River, reestablishing the equilibrium between river flow and sediment flow while allowing the river to meander as needed and naturally create habitat for fish and other aquatic species. In addition, recreational users like kayakers and canoers would enjoy improved safety with the elimination of the two dams, which today pose a severe impediment for river travelers – both human and aquatic.

The Weston Causeway Dam (also known as the Weston Mills Dam) is the first impediment to fish making their way upstream. Thought to have been built around 1700, it is located 1.5 miles from the Millstone River's confluence with the Raritan River, and is a run-of-the-river dam – meaning it spans across the entire river and water constantly flows over it. Originally built to service a mill that no longer exists, it spans the river between Franklin Township and Manville Borough.

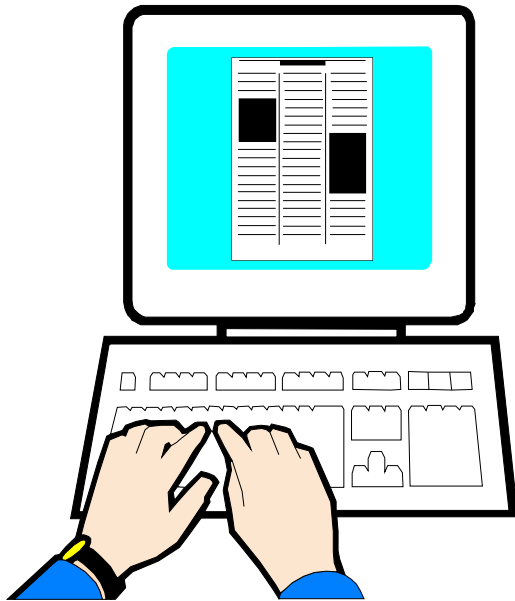
The Blackwell Mills Dam, located 4.7 miles upstream from the Weston Causeway Dam, is another run-of-the-river dam originally built in the 18th century to service a mill that no longer exists and spans Franklin and Hillsborough Townships.

American shad are migratory fish that live in the oceans but migrate up freshwater streams to spawn before returning to their home habitat. Historically, there were massive shad migrations up the Delaware River, but these fish also swam up the Raritan River and into the Millstone.

As recently as 2005, research shows that American shad, river herring and American eel made their way close to, if not into, the Millstone River. About 160 feet



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StreamWatch data updated through 2008 is available online at

<http://www.thewatershed.org/>

Click on StreamWatch Water Monitoring to view a map of the chemical sites throughout the watershed. Click on a balloon to see the site name, and then Annuals to view data for the site.

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downstream of the confluence of the Millstone and Raritan Rivers is the Island Farm Weir, which has an extensive fish ladder – a structure alongside the dam that facilitates fish migration – with a record of successful fish passage through 2005, the last year fish data was recorded. American Shad, river herring, and American eel were all moving through the fish ladder during that time.

River herring move from the ocean to freshwater like the shad, while American eels are catadromous fish, meaning they live in freshwater streams or lakes and migrate to the ocean to spawn. Each of these species currently has free access to the Millstone River up to the Weston Causeway Dam.

Our feasibility study will determine the safety of dam removal or breaching by studying the sediments upstream of the dams, looking for potential contamination that might need to be dealt with prior to dam removal, as well as studying the likely effects on water levels post dam removal. Future storm water levels will be predicted to determine if flooding would be more or less likely after dam removal. We will hold public meetings to discuss potential scenarios for fish passage at the dams and to listen and respond to local concerns about each scenario. It is our hope that by the end of the study, we can say, “goodbye dams, hello shad!”



Save the Date for the 9th Annual Watershed Butterfly Festival!

Join the Stony Brook-Millstone Watershed Association, central New Jersey's first environmental group, at its **9th Annual Butterfly Festival** on **Saturday August 15**, 10 a.m. to 4 p.m., at the amazing 860-acre Watershed Reserve (31 Titus Mill Road, Pennington NJ 08534). This community festival offers fun for the entire family! Enjoy naturalist-guided tours of the Kate Gorrie Memorial Butterfly House, live entertainment, local food, children's activities, a waterslide, and an array of demonstrations and exhibits about the environment and conservation. We are also offering the opportunity for children and adults to show off their creative skills in our Butterfly Costume and Hat Parade. Contact us at (609) 737-3735 x.10 for details on how to participate.

Now celebrating its 60th Anniversary, don't miss the Watershed Association's two new additions to the festival – a Butterfly Festival Passport, and special pre-event panel (see box). Fill out your **"Butterfly Festival Passport"** by visiting the festival's Conservation, Advocacy, Science and Education Zones to learn how you can protect clean water and the environment, and receive a special prize!

Parking for the Watershed Association Butterfly Festival is generously provided by Bristol-Myers Squibb. No pets allowed. Fee: \$5 per person; \$15 per carload. All proceeds benefit the Stony Brook-Millstone Watershed Association.

To learn more, visit <http://www.thewatershed.org/events/butterfly2009.html>.



"Bees to Butterflies: Native Pollinators of NJ"

Join us at the Watershed Reserve on **Thursday August 13** at 7 p.m. to hear from an expert panel of science and conservation leaders as they explore who our native pollinators are and what issues they face for survival in New Jersey. Panelists include nationally recognized bee researcher Dr. Rachel Winfree from Rutgers University and Tim Dunne of the U.S. Department of Agriculture Natural Resource Conservation Service. Space for the panel discussion is limited and **registration is required**. Call (609) 737-3735 x10 to register.

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DATES TO REMEMBER

July

RATs Month. Time to walk your stream beats!

July 11th

CATs testing weekend.

July 18th

BATs Identification Day from 9:30 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.

July 25th

CATs testing weekend.

August 8th

CATs testing weekend.

August 13th

"Bees to Butterflies: Native Pollinators of NJ", 7:00 pm at the Watershed Reserve. Call (609) 737-3735 x.10 to register.

August 15th

Butterfly Festival at the Watershed Reserve, 10:00 am to 4:00 pm.

August 22nd

CATs testing weekend.

September 5th

CATs testing weekend.

September 8th

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 12th

CATs Fall QA/QC session, 9:30 am to 12 noon. Contact Beth April for more information and to RSVP.

September 19th

CATs testing weekend.

Funding for the StreamWatch program is generously provided by Janssen Pharmaceutica, NYMEX Charitable Foundation, Dodge Foundation, Rita Allen Foundation, and NJ Water Supply Authority.