

Student studies show Norwalk River suffers from pollution

by Christie Greeley, Wilton Bulletin Intern



Editors:
Pete Fraboni
&
Dick Harris

What is water pollution in the Norwalk River compared to famous environmental disasters like Chernobyl, Love Canal, Three Mile Island, or the nuclear crisis in Japan? It is something that directly affects Connecticut and is the product of local waste production and pollution.

Earthplace in Westport has been working in conjunction with local schools “since the early 1990s” to conduct flounder studies and water quality testing in the Norwalk River, said Dick Harris, the man who runs the Harbor Watch and River Watch programs. Such studies have revealed extremely high levels of coliform bacteria and *E. coli* ratings in the river and shrinking populations of flounder since the studies began. High school students have played a major role in accumulating this data.

“We try to take (students) on a full project from beginning to end, from the research to the analysis, to making a PowerPoint and writing a paper,” Mr. Harris said, mentioning that such students are doing work that goes beyond the classroom and beyond a grade. “Everything they do is turned in to the DEEP (Department of Energy and Environmental Protection) and we also send things to the EPA (Environmental Protection Agency).”

The Harbor Watch water quality monitoring program has a voluntary section available to high school students who are either just interested in science or are looking for a hands-on way to fulfill their AP Biology research requirements.

Wilton High School science teacher Sue Steadham has worked closely with Earthplace for about 15 years and is intimately familiar with both of the programs. “I’ve been involved a long time,” she said. “I actually got kids involved when I was at Darien. When



Photo by Matt Luciani

Above: Julia Lipner acquires GPS data while team member Ali Luciani records the trawling position on the fisheries data sheet.

I came here I got kids involved in the flounder study.”

The flounder study is another term for the Harbor Watch program, which eight Wilton High School students participated in this year, Amelia Fleitz, Ali Luciani, Ian Kieffer, Gabe Rosen, Elizabeth Villareal, Matthew Luciani, Julia Lipner, and Alex Sullivan. These seven accompanied Ms. Steadham to Norwalk Harbor for an hour and a half on Tuesdays after school to conduct their studies. “We look specifically at the numbers of juvenile winter flounder,” Ms. Steadham said.

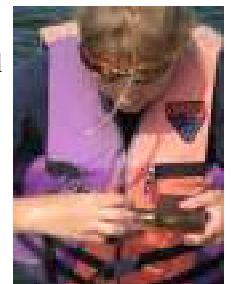
The studies are conducted methodically, based on a grid system. The harbor is divided into 20 different boxes labeled A-T. Each time the students return to conduct more research, they move to a new box on the grid so they will be less likely to catch the same flounder.

Students use a trawl net to catch such flounder, which lie on the bottom of the harbor, then empty their net into a sorting tray so they can go through what they caught and record their findings. This process continues throughout September

and October, at which point students start analyzing the data.

Since 1994, student-run studies have shown that flounder populations in the harbor are rapidly decreasing and this year was no exception. For the 2010 season (May-October), only 27 flounder were caught, an extremely low number in comparison to the 1994 season catch of 445 flounder.

Ms. Steadham attributed this decrease to a number of factors, “The testing area is becoming muddier, there is more pollution, and there is more runoff from roads.”



This pollution has mainly stayed in the northern part of the harbor, which was previously prime flounder habitat. Earthplace studies have shown that no fish were found in large sections of the upper harbor since 2008. It is thought that flounder have begun to move away from sources of pollution towards the middle and lower harbor.

This trend is becoming a big issue because flounder are not well adapted to live in the lower parts of the harbor.

“We have also seen more blue crab, which eat baby flounder. We had 90 blue crabs last summer (2010) and we usually have 10,” Ms. Steadham said.

Blue crabs are usually found as far south as Maryland but migrated north last summer because of climbing water temperatures.

River Watch

Student participants working in the aquatic section conduct monitoring activities at certain points along the Norwalk River rather than at the harbor. These students test the water for dissolved oxygen and coliform bacteria levels rather than flounder populations.

Two participating Wilton High School students were Christopher Cavalea and Leila Mgaloblishvili, who conducted River Watch studies at Cooper Brook and the Norwalk River at Branchville. They tested the site from September 2010 to April 2011, during which time the local sewage treatment plant is not obligated by the Environmental Protection Agency to disinfect discharges of treated effluent into the river.

According to Ms. Steadham, testing has been occurring in the same 10 designated sites along the river for years. This helps to reduce variables and allows Earthplace to monitor the “change from week to week, year to year,” she said.

Chris and Leila went out to Cooper every other week on Wednesdays for about two hours to collect data. They used dissolved oxygen probes on site to check



oxygen levels in the river and were able to use Earthplace’s Water Quality Research Lab to check levels of coliform-bacteria and run *E. coli* tests.

When asked what their findings were, Chris said, “We found high *E. coli* ratings, semi-low dissolved oxygen readings, and polarized conductivity readings. Basically what this means is that some of these rivers are in really bad shape. Parts of the Norwalk River are possibly even detrimental to human health, for they failed state standards. Fish cannot live as comfortably in these rivers anymore, and the stability of said rivers is all over the place, as we see with our conductivity readings.”

Chris and Leila suggested stricter state regulations be put in place to reduce pollution, better waste water management plans be enforced, and the river be better protected from runoff and erosion, in their culminating presentation at Wilton High School on May 26.

They also noted the importance of increasing awareness about the pollution levels in the Norwalk River. “Ask most people about the rivers in Wilton, and they’ll probably have no clue that there are several issues taking place. We need to spread awareness not only on a local, but legislative level, encouraging the state to take charge and reverse some of

Above: Members of the Wilton High School juvenile benthic fisheries research group with their teacher, Sue Steadham (front row left), and HW Program Director, Dick Harris (back row, center) presented their fish survey research at the Twelfth Biennial Flatfish Conference, sponsored by the National Marine Fisheries

the damage that has been done,” Chris said.

These studies help students to connect with their environment and spread awareness about local pollution issues rather than just those that are nationally recognized. “Hands-on is the best way to learn. (Students) start to generate the questions and then it snowballs. The lab isn’t over,” said Ms. Steadham, talking enthusiastically about the opportunities that Harbor Watch River Watch has created for her students.

The findings of high school students such as Chris and Leila have contributed to ongoing efforts to preserve and monitor the Norwalk River and its tributaries and are not just part of a controlled experiment with a predetermined outcome that students find in a classroom.

As Mr. Harris said, “This is real science.”

Harbor Watch duo receive EPA awards

By Steve Kobak- Norwalk Hour Staff Writer



(Left to Right):

Dick Harris, Earthplace Staff Scientist, Curt Spaulding, EPA Region 1 Administrator, and Peter Fraboni, Earthplace Associate Director at the awards ceremony in Faneuil Hall

The U.S. Environmental Protection Agency New England Region has given lifetime achievement awards to two area environmentalists who have dedicated a significant amount of time to monitoring the health of the Norwalk River and other local rivers, streams and estuaries.

Harbor Watch Program Director Dick Harris, a Westport native and Earthplace Associate Director Peter Fraboni received EPA Lifetime Achievement Environmental Merit Awards at a ceremony in historic Faneuil Hall in Boston on May 11, 2011.

"We were very, very blown away by it," Fraboni said. Fraboni and Harris have monitored the quality of the water in the Norwalk River since 1986, and their Harbor Watch water quality monitoring program became part of Earthplace in 1991.

The pair have also organized clean-ups of local waterways. Harris calls Fraboni "the nuts and bolts of the operation," as he mans a lot of the lab work and data computation. Fraboni describes Harris as the "brainchild of the program," as Harris noticed the low oxygen levels in the Norwalk Harbor estuary and reacted by forming the Harbor Watch Monitoring Program.

Aside from measuring the oxygen levels on the river, Harris and Fraboni have studied the factors that lead to fish kills in Norwalk River and they monitor the number of fish species found in the river.

Harris and Fraboni have used the Westport-based conservationist hub Earthplace and Harbor Watch water quality monitoring program to teach the value of environmental stewardship to area high school students. Harris said teaching teens is the most rewarding part of his job, because he and Pete get to see their "influence radiating out."

"Many of them stay with us through the years," he said. "We see them head off in environmental careers, whether it be environmental law or science or biology."

The environmentalist partners have also developed a repertoire with officials in Norwalk, Westport and Wilton, all of whom have come to value the data collected by Fraboni and Harris. "When we find something in the field, they get on it," Harris said.

On a yearly basis, Harris and Fraboni also team up with the Norwalk-based U.S. Coast Guard Auxiliary Flotilla 72 to monitor of the water on Five Mile River harbor and a portion of Norwalk Harbor. Volunteers from this local Coast Guard collect data on routine patrols.

Friends of Harbor Watch

We would like to invite you to join us as a member of [Friends of Harbor Watch](#), a grassroots campaign designed to raise awareness and support for our water quality monitoring program. Membership will be both fun and fulfilling, connecting you to a wider network of water-loving enthusiasts who want to protect the water quality of Long Island Sound and its watershed.

Whether you are a swimmer, boater, kayaker, fisherman, or a lover of clean water, your contribution will help us keep our waters clean. As we've all seen, water quality is not something to be taken for granted. The health of our valuable aquatic and marine resources can be lost if we are not wise on how we manage these resources. It's not a matter of protecting your neighborhood beach or your local harbor, but rather the safeguarding of our entire watershed.

Our watersheds are made up of vast interdependent networks of rivers, springs, creeks, swamps, estuaries, wetlands and harbors. We work to protect and sustain your watershed today and in the years to come. The Harbor Watch Program works on water quality issues to ensure a legacy of clean water for our children and grandchildren.



Yes, I want to join Friends of Harbor Watch as a:

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Under what name would you like your gift publically acknowledged?

Please mail this form to: Earthplace 10 Woodside Lane, Westport, CT 06880

Gift Levels:

Friend \$100 - Friends receive a Harbor Watch sticker, quarterly e-newsletter, two tickets to annual Cocktails and Clams Event.

Patron \$250 - Patrons receive benefits of Friend Level plus an Earthplace/Harbor Watch cap.

Supporter \$500 - Supporters receive benefits of Patron Level plus a free invitation to the Harbor Watch water quality monitoring course (held in the fall and spring).

Benefactor \$750 - Benefactors receive benefits of Supporter Level plus a free invitation to our Sunset Paddle Event with DownUnder Kayaking.

Protector \$1,000 - Protectors receive benefits of Benefactor Level plus four tickets to the Cocktails and Clams Event.

Sustainer \$2,500 - Sustainers receive benefits of Protector Level, eight tickets to the Cocktails and Clams Event, plus a tour upon a Norm Bloom and Son Oyster boat to experience, first-hand the oyster industry.

Earthplace is a 501(c)(3) non-profit organization and your donation is tax-deductible.

Thank you for your support and help in protecting our waterways

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Thank you for all your time effort and commitment.

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THE HARBOR WATCH PROGRAM
depends on staff and volunteers to maintain regular water quality sampling of the Sasco Brook, Aspetuck, Silvermine, Saugatuck, Norwalk, and Five Mile Rivers, as well as, the Norwalk and Saugatuck Harbors. The Earthplace laboratory is certified by the state Department of Public Health and its program is recognized as a leader in water quality testing for waterways throughout Fairfield County. To date, HW is the only qualified volunteer/citizens group water monitoring program in southwestern Fairfield County.

Cocktails & Clams 2011 – An Evening Dedicated to Clean Water



Nikki Cantatore, HW Coastal Ecology Technician, stands next to an abundant supply of clams and oysters for our Cocktails & Clams Event.

Mr. Tripp Killian, Executive Director of the Jeniam Foundation, acted as Master of Ceremonies and spoke about his foundation's association with the HW Program and why it deserved philanthropic support to fulfill its dual mission of environmental research and education.

Along with the festivities the HW Program also paid tribute to Susan Malloy, Honorary Earthplace Trustee, and Timon Malloy of the Sun Hill Foundation, who have been longstanding supporters of HW with the 2011 Earthplace HW Protector of Clean Water Award.

Also honored at the event with HW Lifetime Achievement Awards were Gerry and Karen

On September 17, the "Friends of Harbor Watch", a newly formed Earthplace committee that focuses on helping to fund the work of the Harbor Watch Water Quality Monitoring Program at Earthplace, staged their first "Cocktails and Clams" fundraiser hosted by Norm Bloom & Son Oysters and Clams on the Norwalk Harbor. The event highlighted the grassroots effort to raise awareness and funding for the Harbor Watch (HW) water quality monitoring program, and at the same time, honor several remarkable HW supporters and dedicated HW volunteers.



Dick Harris, HW Director speaks to attendees of the Cocktails and Clams gathered in the Norm Bloom oyster and clam processing facility.

LaRocque, a husband and wife volunteer team who have volunteered by monitoring DO levels in Norwalk Harbor since the late 1988's, and Matt Silver, a senior at Staples High School, who was awarded a HW Outstanding Student-Volunteer Award for his stream monitoring work during his tenure with the program.

ENOUGH IS ENOUGH

Under natural conditions, leaves that enter into the aquatic systems are utilized and processed by certain aquatic insects, such as stoneflies that live there. The practice of dumping yard waste and leaves into the waterways will overwhelm the natural disposal system and result of these bad management practices will cause the excessive accumulation of organic matter on the bottom of rivers and streams. This matter detracts from the natural beauty, of our waterways and degrades the habitat and contributes to a condition called hypoxia, where dissolved oxygen concentration levels fall below 3 milligrams per liter (or 3 parts per million). Landowners should consider composting their leaves and yard wastes into valuable compost for their gardens and lawns and refrain from using our waterways as disposal sites for that organic waste. To learn more about how home owners can protect aquatic and marine resources get the facts and information about "Sound Gardening" at http://longislandsoundstudy.net/wp-content/uploads/2010/03/sound_gardening.pdf.





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