

# NIE Connect with your environment

Learn about environmental issues in your community and how you can get involved.



CONTRIBUTED PHOTO

The Great Lakes Beach Glass Festival will be held Saturday and Sunday.

## Find art, information at Beach Glass Festival

Jennifer and Terri Reed, owners of Relish Studio & Gallery in Erie, Pa., care about the local community and about the environmental and economic health of the Erie region.

Their concern led them to organize the Great Lakes Beach Glass Festival in 2013 to celebrate the much sought after beach glass found along the shores of Lake Erie and all that the Lake Erie region has to offer. The sisters will host their third festival on Saturday and Sunday at the Bayfront Convention Center. In addition to treasured beach glass jewelry, the juried show incorporates all forms of other high quality coastal art, including paintings, ceramics, blown glass, mosaics, clothing, candles, stained glass products and more. Other attractions include wine tasting, live music, a best beach find

contest, antique bottle collections and bottle identification. There will also be a book signing by Richard LaMotte, known as the 'godfather of sea glass'. His books include Pure Sea Glass and his newest release, The Lure of Sea Glass.

Because educating attendees about the lake is important to the Reeds, the event will also offer opportunities to learn about Lake Erie and will premier 14 dive videos that highlight the work of the Pennsylvania Archaeology Shipwreck and Survey Team (PASST). In addition there will be lectures including: Old Bottle Baggage, Finding Beach Gems, The Evolution of the Port of Erie, and Schooner Porcupine. For more information, visit [www.relishinc.com](http://www.relishinc.com).

— Anna McCartney



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Students at School 7 in Dunkirk N.Y. learn about the Great Lakes.

## School 7 fifth-graders explore Great Lakes

Guided by their teacher Marcella Dolce and Julie Sek, a parent/teacher volunteer, students at School 7 in Dunkirk, N.Y. are learning about the Great Lakes.

Using models of each lake and their research, students were able to guide the water as it flows from Lake Superior through the other Great Lakes and out to the Atlantic Ocean via the St. Lawrence Seaway. They also explored population data and compared it to the contours of the lakes. This information was then used to compare concentrations of pollutants and fish ratios.

Students also explored concepts related to Boyle's Law by using Styrofoam cups to demonstrate how the pressure and the depth of water in the Great Lakes can modify the cups. They made measurements, calculations and predictions on what will happen to

their cups under the pressure of lake water. Their experiment will continue when the cups are deployed from the US EPA's Lake Guardian, at the deepest point of Lake Superior (~1332 ft) in April. When the cups return, students will see if their predictions were true and actually see specific observations like: "Did the mass, volume, or density change?"

Both teachers and students are participating in the PA Sea Grant Center for Great Lakes Literacy (CGLL) program that builds Great Lakes knowledge by forming ongoing relationships with researchers and environmental partners and involving students in stewardship activities. For more information about CGLL contact Marti Martz at 217-9011 or [mam60@psu.edu](mailto:mam60@psu.edu).

— Anna McCartney



FILE PHOTO CHRISTOPHER MILLETTE/Erie Times-News

The intersection of Route 97 and Interstate 90 in Summit Township was closed due to flooding on June 6, 2013. Studies have shown for each 10 to 20 percent increase in impervious surface, the amount of runoff can double, contributing to an increase in frequency and severity of floods. This leads to problems for residents and also the local government, which has to deal with the flooding.

# Runoff selection

## Poor planning causes more frequent floods, pollution

By ANNA McCARTNEY  
Contributing writer

When roads, parking lots and buildings replace open fields, forests and wetlands, water that can no longer soak into the ground has to go somewhere.

Traditionally, local governments have used "hard" infrastructure such as gutters, storm drains, tunnels, culverts and related systems to quickly move the resulting runoff directly into local water bodies with no treatment. This increase in the speed and volume of dirty water entering streams results in an increased frequency of flash floods and pollution.

With heavier and more frequent rain and snow events and unnecessary ever-growing paved areas, it's clear the "hard" approach isn't working. Every time green space is developed this way, the water cycle's

natural system of storing and slowly releasing water back into the environment is diminished.

Before our watersheds were developed 50 percent of the rainfall seeped into the ground and replenished the groundwater, 40 percent went back to the atmosphere through evaporation, and transpiration through vegetation and 10 percent was stormwater runoff.

Replacing trees, bushes and plants with asphalt, cement and other impervious surfaces upsets this balance of the continuous exchange of water between land, bodies of water and the atmosphere. In a highly developed watershed, about 55 percent of the rain becomes stormwater runoff. Studies have shown for each 10 to 20 percent increase in impervious surface, the amount of runoff can dou-

ble. This contributes to an increase in frequency and severity of floods.

As this stormwater flows downhill, it can carry everything in its path including litter, sediment, pesticides, and wastewater. In general, after 10 to 15 percent of an area is covered by impervious surfaces, increased sediments and chemical pollutants in runoff have a measurable effect on water quality. When 15 to 25 percent of a watershed is impervious, increased runoff leads to reduced oxygen levels and impaired stream life. If impervious surfaces are more than 25 percent, many types of stream life die from the concentrated runoff and sediments. This pollution has harmful effects on drinking water supplies, recreation, fisheries, and wildlife.

Smart growth can control this increase in floods

and pollution and the growing costs caused by poor development. But it will require better planning and cooperation from multiple levels of government and communities, from the individual homeowner to the local neighborhood and beyond. Contact your local planning board and encourage them to change your zoning laws to stop gobbling up precious land and to replace impervious space with green infrastructure. Ask them to channel investment into walkable mixed-use business districts that benefit people and the environment.

**Next week:** Green infrastructure

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ANNA McCARTNEY/Contributed photo

Current infrastructure is ill-suited to effectively manage the quantity of stormwater from a growing urban landscape during stronger, more frequent storms.



FILE PHOTO JARID A. BARRINGER/Erie Times-News

The Mill Creek Tube is one example of hard infrastructure that was built to carry stormwater runoff away from city streets into Lake Erie.



ANNA McCARTNEY/Contributed photo

As the rain washes into storm drains, it picks up litter, chemicals, oils, sediment and other pollutants and deposits them into local waterways.



ANNA McCARTNEY/Contributed photo

The sheer volume and velocity of stormwater runoff often scours away riverbanks and has harmful effects on drinking water supplies, recreation, fisheries and wildlife.

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Check out these websites to learn more:

- [www.education.noaa.gov/Freshwater/Watersheds\\_Flooding\\_and\\_Pollution.html](http://www.education.noaa.gov/Freshwater/Watersheds_Flooding_and_Pollution.html)
- <http://water.usgs.gov/edu/impervious.html>
- [www.seagrant.psu.edu](http://www.seagrant.psu.edu)

### Newspaper Environmental Scavenger Hunt

- Locate the following items. Make a note and record the page number. **1.** A story about land development/new construction. **2.** An example of pollution. **3.** Something that burns fossil fuels. **4.** The names of three political candidates and how they will protect the environment. **5.** An opinion about the environment. **6.** A product with chemicals that could pollute the water. **7.** A photo or news story about someone helping the environment. **8.** Stores you can walk to shop. **9.** A global water issue. **10.** Rainfall or snow amount predictions.

