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The "Managing Municipal Stormwater Workshop" on April 17 and 18 will share information about new stormwater regulations and best management practices to reduce flooding and protect water quality.

Workshop looks at ways to manage stormwater

By ANNA MCCARTNEY
Contributing writer

Multiple studies confirm that land development and inadequate techniques of moving stormwater negatively impact streams and watersheds. Excess runoff is responsible for impaired water quality and aquatic habitat degradation, flash floods and streambank erosion and reduced groundwater recharge.

In order to deal with these mounting problems, stormwater management is evolving and it is critical to keep up-to-date on new regulations, timelines and all the best management tools for implementation.

Municipal officials, engineers, the development community and other stakeholders involved in managing stormwater can meet the stormwater challenge by attending the "Managing Municipal Stormwater" workshop from 8:30 a.m. to 4 p.m. April 17-18 at the Tom Ridge Environmental Center.

This two-day workshop, sponsored by Penn State Cooperative

Extension, Pennsylvania Sea Grant and Environment Erie, will review the Pennsylvania Stormwater Program and sustainable design and low-impact development best management practices with site visits to help attendees achieve compliance.

The cost is \$35 per person before March 2 and \$40 after. Certificates of attendance and continuing education credits will be provided through Penn State (CEUs will require an additional payment of \$35 on April 17).

Register online at: <http://environmenterieworkshops.ticketleap.com/stormwater-erie/>.

The deadline to RSVP is April 2. For more information contact: Matt Pluta at 835-8069 or Scott Sjolander at (814) 333-7440.

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NOAA, USGS

Runoff carries pollutants from yards, parking lots, streets, golf courses and farms into Lake Erie. During storms, this runoff can cause flooding and overwhelm sewer systems, sending untreated sewage into nearby waters. Runoff poses a significant public health threat, and an economic one as well when flooding destroys structures, or when beaches are closed and fisheries shut down due to harmful algal blooms and other toxic chemicals.

Danger zone

Why Lake Erie faces threats to water quality

By ANNA MCCARTNEY
Contributing writer

It should not be a surprise that Lake Erie's health is in constant danger.

With millions of people living near its shores, there are plenty of residential, agricultural, industrial, power generation and transportation activities that substantially alter the natural landscape and add untold numbers of pollutants to the ecosystem.

When it rains or when snow melts or when the wind blows, these pollutants are carried into streams, rivers, lakes, aquifers and the ocean. Sediment, fertilizers, pesticides, toxic chemicals, microorganisms, untreated sewage, salt, plastics, metals and heat create the perfect conditions for harmful algal blooms,

dead zones, acid rain and other problems. Erosion, beach closures, fishing and swimming advisories, millions of dollars in flooding and infrastructure damage and thousands of acres of lifeless streams, rivers and lakes are the result.

Yet these disasters are avoidable since they are caused by human activities. And studies show that when stormwater is considered valuable and the natural water cycle is protected, a healthy watershed can be maintained.

Therefore new regulations embrace more natural methods of stormwater management. Instead of sending precipitation directly into storm sewers or receiving waters, new approaches aim to:

■Mimic natural hydrologic

processes, like percolation through soil and plant uptake and transpiration, by making use of soil and vegetation-constructed techniques, such as rain gardens or green roofs.

■Store stormwater runoff by preserving natural features, such as floodplains and natural vegetation buffers along streams that can slow, filter, and store water.

■Protect water quality and quantity by effectively minimizing impervious surfaces using low-impact development, rain barrels, narrower streets, permeable pavement and other sustainable methods.

Ultimately the choices people make every day play a vital role in protecting water resources. Business as usual threatens the drinking water for millions of people and the health of the en-

tire ecosystem that supports the Great Lakes multibillion-dollar fishing industry and other water recreation that is so important for jobs and the economy. For those who think the new methods are too expensive, consider the costs of restoring these precious resources.

Learn more about new stormwater regulations and how to implement them at the upcoming stormwater management workshop on April 17 and 18. See side article for details.

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ANNA MCCARTNEY/Contributed photo

Register for the TU Water Quality Monitoring Workshop on March 23 to become a local stream steward by learning how to monitor your local stream.

Learn how to monitor water in local streams

By ANNA MCCARTNEY
Contributing writer

Are you concerned about water quality in local streams? Do you worry about the potential effects of shale gas extraction?

Become a local stream steward by learning how to monitor your local stream at the Trout Unlimited "Water Quality Monitoring Workshop" on March 23, from 9 a.m. to 3 p.m. at the Tom Ridge Environmental Center.

The Pennsylvania TU Coldwater Conservation Corps training is an opportunity for Erie area residents to test and monitor the water quality of their streams to assess any impacts of shale gas extraction.

The workshop, hosted by the PA Council of TU and Pennsylvania Sea Grant, will cover topics from basic environmental concerns of gas extraction to hands-on water quality sampling. You will learn how to use the monitoring equipment, how to select locations, who to call if an incident is observed and how to use TU's online data portal and mapping application.

Joining TU in this important work is easy. Because all participants are required to be TU members to ensure each volunteer is covered under the TU liability policy, the cost for the training, \$17.50, includes a special half-price membership. There is no cost for first-time women anglers who register; they get a free membership. The training for current TU members is also free. Registration begins at 8:30 a.m. and breakfast and lunch will be provided.

To register, e-mail Mitchell Blake at mblake@tu.org or call (814) 977-0007, and provide your name, phone number and chapter name. Directions to the training session and an agenda will be provided via e-mail the week of the training. Registration deadline is Wednesday, March 20.

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ANNA MCCARTNEY/Contributed photo

Problem: Increased runoff from roads and parking lots contaminates water, closes beaches, increases flooding and reduces groundwater recharge, which in turn reduces stream flow during dry periods.



ANNA MCCARTNEY/Contributed photo

Problem: Soil in runoff carries contaminants that smother and kill aquatic life. Fertilizers, car exhaust and detergents cause explosive plant and algae growth, which depletes water of oxygen.



ANNA MCCARTNEY/Contributed photo

Solution: Low impact development that makes use of more natural methods of retaining stormwater allows precipitation to soak into the ground as it creates wildlife habitat and beautifies an area.



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Solution: Eliminating lawns and impervious surfaces around your home and replacing them with native plants and pervious areas will reduce runoff and erosion and the need for fertilizers and pesticides.

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Check out these websites to learn more:

www.glerl.noaa.gov/res/Centers/HumanHealth/ceglh.html
http://oceanservice.noaa.gov/education/tutorial_pollution/
www.paseagrant.org



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 two elected officials 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

