Lake County Soil & Water Conservation District

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CROSSECTION

Spring

NONPOINT SOURCE POLLUTION -
the nation's largest water quality problem

Nonpoint Source Pollution is Ohio's largest pollution problem and we all contribute to it. However, NPS pollution can be controlled and we can all help solve this problem. The first step is to understand the issue. In this edition of CrosSection we will discuss what NPS pollution is, the major types of NPS pollution, NPS around the home and yards, and impacts humans have on watersheds. In the next issue we will discuss what we can do to prevent NPS and create cleaner water.

INSIDE THIS ISSUE:

- **Special points of interest:**
- Learn why Nonpoint Source Pollution has become the leading cause of water pollution.
- Sign up now to help out with the Grand River Cleanup!
- Become a Stream Quality Monitor Volunteer!
- Surf the internet to learn more about NPS Pollution!

FORESTRY CAMP SCHOLARSHIPS!

Lake SWCD is offering 2 scholarships to attend Ohio Forestry Camp this summer at Camp Muskingham. Students must be ages 15-18, and have completed 8th grade. Deadline is April 26th! Call Lake SWCD for more information, or log onto our web site at www.lakecountyohio.org/soil.

DEFINING THE PROBLEM

Why is it that approximately 40% of our surveyed lakes, rivers, and estuaries are not clean enough for such basic uses as fishing and swimming? The problem is water pollution – any human-caused contamination of water that reduces its usefulness to humans and other organisms in nature. In the past 25 years the United States has cleaned up our nation's water by controlling pollution from industries and sewage treatment plants. A good start – but these are only a few pieces of the pollution puzzle.

When we think of pollution, we often think of *point source* pollution, which enters water resources at an easily identifiable, distinct location through a direct route. Point source pollution is easier to identify and measure compared to *nonpoint source* pollution (NPS). Think of a pipe coming from a factory. We know exactly where the pollution is coming from. This is point source pollution.

What is Nonpoint Source Pollution?

NPS pollution also contributes many pieces to the pollution puzzle. NPS pollution is water pollution where you cannot pinpoint where the pollution is coming from. NPS comes from many different sources over a large area. It is difficult to trace and hard to control. NPS pollution is created when rainwater, melted snow, or irrigation water moves over land and through the ground, collecting impurities as it travels. This water, called runoff, deposits both natural and human-made pollutants into streams, rivers, lakes, wetlands and some underground sources of drinking water. Imagine the path a raindrop takes from the time it hits the ground until it ends up in Lake Erie. Any pollutant it picks up on its journey becomes part of the NPS problem.

There are many types of pollutants that fall under the category of NPS pollution. Sediment, nutrients, toxins, and bacteria are among the most common. The types of NPS pollution you'll find will depend on how the land is used in your community. Examples include excess fertilizers, herbicides, and insecticides from agricultural lands and residential areas; oil, grease, and toxic chemicals from urban runoff and energy production; sediment from improperly managed construction sites, crop and forest lands, and eroding streambanks; bacteria and nutrients from livestock, pet wastes, and faulty septic systems. See page 2 for more information about these pollutants. We all play a part. NPS pollution results from a wide variety of human activities on the land. Each of us can contribute to the problem without even realizing it.

(Continued on page 2)

...DEFINING THE PROBLEM

(Continued from page 1)

NPS Pollution, why should I care about it?

The effects of polluted runoff are not limited to large lakes or coastal bays. In fact, chance are that you don't have to look any farther than your neighborhood stream or duck pond. Water pollution in your town, and perhaps in your own backyard, can result in anything from weed-choked ponds to fish kills to contaminated drinking water. NPS pollution affects humans, as well as the organisms that live in the polluted waterways.

There's not much chance that you can ignore this problem, even if you want to. Concern over polluted runoff has resulted in an ever-increasing number of state and federal laws enacted over the last five years. At the federal level, a permit program for stormwater discharges from certain municipalities and businesses is now underway, and coastal zone management authorities are in the process of adding nonpoint source control to their existing programs. In addition to implementing these federal programs, many states have passed laws altering local land use (planning and zoning) processes and building codes to address the problem of polluted runoff. The bottom line is that both polluted runoff and its management are likely to affect you and your town in the near future. ♦

Information taken from *On the Trail of Nonpoint Source Pollution by* Two Herons Environmental Consulting, and *NEMO Project Fact Sheet #2*

THE BIG 4—COMMON TYPES OF NPS POLLUTION

There are four major types of nonpoint source pollutants. They are detrimental to the environment and are a growing concern. The four types are sediment, nutrients, bacteria, and toxins.

Sediment Pollution

Over one billion tons of sediment pollutes the nation's waters every year. Sediment is defined as minerals or organic solid matter that is either blown or washed into bodies of water. Once the sediment is eroded, it is transported easily by runoff. Sources include construction sites, agricultural practices, logging, flooding, and runoff from urban areas. Contaminants such as pesticides, heavy metals and toxins can be transported by sediment. Sediment pollution is very detrimental. It can clog municipal water systems, and will cause lakes to fill in over times, smothering the aquatic life that resides on the bottom. The sediment that is suspended in water can cause cloudiness, or high turbidity, making the water aesthetically displeasing. It also clogs fish gills and fills in streambeds, thus destroying important habitat. As the water becomes more turbid, more solar radiation is absorbed, raising the temperature to a point that cannot sustain some aquatic life.

Bacterial Pollution

Bacteria are responsible for decomposing the organic material in water. Oxygen is required for this process to occur. Bacteria compete for the limited dissolved oxygen with the other aquatic life. Along with the depletion of dissolved oxygen comes the problem of bacterial water pollution.

Primary sources of bacterial nonpoint source pollution are animal feed lots, runoff from livestock waste, slaughter houses, improperly installed sewage disposal systems, and mismanaged landfills. Bacterial water pollution can contaminate both groundwater and surface water supplies.

Nutrient Pollution

Nutrients are a necessity in order to sustain life. However, too much of a good thing can be quite harmful. Nutrients such as phosphorus and nitrates stimulate plant growth, and are the main components of fertilizer. A large amount of these nutrients enter lakes and streams through sewage and septic runoff, fertilizer runoff, detergent, livestock waste, and industrial waste. When nitrogen and phosphorus reach a certain level, the algae reproduce rapidly. This is known as an algae bloom, and can cause the entire lake to change. Algae become entangled in boat propellers, affecting the recreational uses of the water. Water quality will also plummet due to toxins within the algae that can cause digestive problems to both humans and animals.

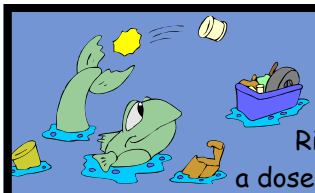
Toxin Pollution

Toxic water pollution is a major health concern. Chemicals are used constantly in industry, agriculture, and in the home. Safe chemicals can become toxic if disposed of improperly. This can have far-reaching effects, such as allergic reactions or even death. Nonpoint source toxic pollution can occur in runoff from both rural and urban areas. Road and parking lots collect lead, oil and other pollutants that are washed either directly into streams or through storm drains. These toxins accumulate in sediment or in the tissue of living organisms, causing long-term damage.

In rural areas, pesticides are applied to crops to rid of insects. This increases both crop yield and quality; however, improper pesticide application can create serious water pollution problems, contaminating both surface and groundwater.

Household chemicals such as cleaners, dyes, and paints are a large source of toxic pollution in urban areas. Many times these chemicals are poured down drains and toilets. This can be especially harmful in areas where there are septic systems. Many people believe that their individual actions do not affect the environment; however one quart of motor oil can pollute 250,000 gallons of water!♦

Answers: 1)A, 2)B, 3)C, 4)B, 5)D, 6)D, 7)B, 8) D, 9) C, 10) B



Grand River Cleanup!

Mark your calendars! As part of the American Rivers Cleanup Week, the Grand River will receive a dose of litter control on **Saturday, May 18th, 2002, from 8:00 am - 1:00 pm**. Canoe floats are scheduled for the morning and will be in two groups. One set of canoes will start at Harpersfield Dam in Ashtabula County and end at Hidden Valley Lake Metropark. A second group of canoes will start at Hidden Valley and end at Mason's Landing Lake Metropark. The cleanup will encompass over 16 river miles!

River bank cleanups will be scheduled for Hidden Valley and Riverview Lake Metroparks along the Grand River. Private canoes are welcome, but at your own risk. All canoes must be 18 years of age or older. Persons under 18 will conduct river bank cleanups.

All volunteers are welcome! Lunch, prizes, safety equipment and cleanup equipment will be provided! Please make reservations with Chad Knisely, Grand River Partners, Inc. @ 440-639-4773.♦

Conservation Easement News…

Madison Twp. Residents Preserve Land

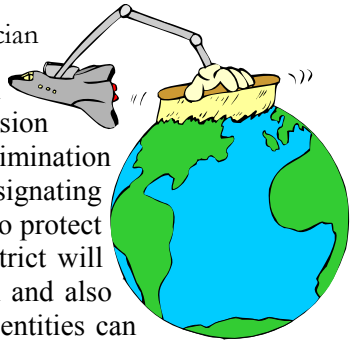
A conservation easement totaling 27.5 acres has been recorded along the Grand River near Ford Rd. in Madison Township. Jeff and Daniel Homans have enrolled their property into the Wetland Reserve Program (WRP) administered by the Natural Resources Conservation Service. The agreement permanently protects land along 500 feet of the mainstem Grand River and 1,500 feet of tributary. Two acres of land were also enrolled in a conservation easement with Lake Metroparks.

The conservation easement allows the Homans family to continue to use their property for recreational uses but prohibits any development in the easement area. The riparian habitat will remain protected for future generations.

Landowners have enrolled over 1,000 acres of land in the WRP easement program with support from Lake SWCD, Western Reserve RC&D, Lake Metroparks, Holden Arboretum and Grand River Partners, Inc. Contact the District to learn about easement opportunities and their potential tax benefits.♦

Cleaning Up Our Act!

by Matthew Scharver, Resource Protection Technician



On January 9, 1998, USEPA (extending from the 1972 Clean Water Act) proposed the expansion of the existing National Pollutant Discharge Elimination System (NPDES) Storm Water Program by designating additional sources of storm water for regulation to protect water quality. In upcoming newsletters, the District will provide updates to the progress of this program and also explain ways that residents, local officials, and entities can make this transition flow smoothly.

The issue at hand is non-point source pollution. Past regulations have dealt with point discharges of pollution, such as pollution that comes from a direct source (i.e. end of a pipe!). However, now the battle shifts toward pollution that is diffused through our homes, yards, streets, workplaces and our environment. Many of us already voluntarily participate in minimizing pollution, however, we are being asked to take our pollution control to a new level. This may require some changes in our everyday behavior and attitudes towards pollution, but if our goal is cleaner streams, safer drinking water, swimmable and fishable rivers and lakes, and higher quality of life for all of us, the battle should be easily won with some hard work and dedication.♦

Who Wants to be a Conservationist?

Test your own knowledge of environmental issues by playing "Who Wants to be a Conservationist?" Quiz classmates, colleagues, fellow employees, and your family! Look for the correct answers inside this newsletter!

1. Kellogg Creek directly empties into what body of water?
   A. Big Creek C. Arcola Creek
   B. Chagrin River D. Lake Erie
2. In order to be considered a wetland, an area of land must have standing water year-round.
   A. True B. False
3. Steelhead trout are the migratory form of what fish?
   A. Brook trout C. Rainbow trout
   B. Brown trout D. King salmon
4. This type of water pollution comes from many different sources over a large area.
   A. Point source pollution C. Discharge
   B. Nonpoint source pollution D. Direct
5. Which of the following would increase shore erosion?
   A. Less ice in water
   B. Less shoreline construction
   C. More pollution
   D. More waves
6. Sea lampreys have been a problem in the Great Lakes because they
   A. Eat yellow perch
   B. Destroy water plants near shore
   C. Use up food needed by other fish
   D. Are parasites on lake trout
7. What year was the first Earth Day celebrated?
   A. 1965 C. 1975
   B. 1970 D. 1980
8. This plant/these plants are commonly used to stabilize eroding streambanks.
   A. Purple Osier Dogwood
   B. Bankers Dwarf Willow
   C. Streamco Willow
   D. All of the Above
9. How long is the larval period of a two-lined salamander?
   A. 1 year C. 2 years
   B. 6 months D. 1 month
10. How many eggs are in the falcon nest on the Terminal Tower in Cleveland (hint: check out the website: www.falconcam.apk.net)?
   A. Two C. Three
   B. Four D. Five

Stream Monitoring Workshops

Are you interested in an excellent outdoor, hands-on experience to learn about the natural values and environmental benefits of our rivers and streams? Then join the Stream Quality Monitoring Project of the Ohio Division of Natural Areas and Preserves' Scenic Rivers Program. Attend one of the following workshops in order to learn more about this volunteer monitoring program.

- **Chagrin Scenic River - Old River Farm Picnic Shelter, *Thurs., May 16th, 5-7 pm***
- **Grand Wild and Scenic River - Hidden Valley Picnic Shelter, *Thurs., May 23rd, 5-7 pm***

For more information or to reserve a spot, contact: Billie Jagers (330) 527-2961 - Stream Quality Monitoring Coordinator.♦

Surfing the Web for NPS Sites!

* **U.S. EPA Nonpoint Source Pollution Homepage:** http://www.epa.gov/owow/nps/index.html
* **OSU Extension Fact Sheet series on NPS Pollution:** http://ohioline.osu.edu/aex-fact/0465.html; http://ohioline.osu.edu/aex-fact/0441.html
* **Nonpoint Education for Municipal Officials:** http://nemo.uconn.edu/
* **U.S. EPA - NPDES Phase II information:** http://www.epa.gov/npdes/stormwater/measurablegoals/index.htm

Grant Announcement!

Lake SWCD received a 2002 NPS Personnel Grant through the Ohio Department of Natural Resources, Division of Soil and Water, in order to expand our NPS Pollution education programs.♦

LAKE COUNTY SOIL & WATER CONSERVATION DISTRICT

125 E. Erie St., Painesville, OH 44077

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Office Hours: Mon.-Fri. 7:30 am-4:00 pm
•E-mail: soil@lakecountyohio.org
•Web site: www.lakecountyohio.org/soil

AL BONNIS, District Conservationist, NRCS	350-2730
PAM BROWN, District Secretary/Treasurer	350-2730
DAN DONALDSON, District Administrator	350-2030
CHAD EDGAR, Urban Stream Specialist	350-2032
AMY KNISELY, Education/Information Coordinator	350-2033
JOHN NIEDZIALEK, Western Reserve RC&D Coordinator	350-2034
BRETT RODSTROM, Urban Resource Technician	350-2092
MATTHEW SCHARVER, Resource Protection Tech.	350-2031

The public is invited to attend Lake SWCD's monthly Board meetings, held the fourth Wednesday of each month at 7:00 pm at 125 East Erie St., Painesville. Meeting announcements appear under the public agenda in the Plain Dealer and News-Herald. Please call in advance to let us know you will be attending.

Lake County Soil & Water
Conservation District
125 East Erie St., Painesville, OH 44077

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