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by Robert Goo

The importance of education in bringing nonpoint-source pollution under control is a recurring theme in this issue of EPA Journal. The reason for this is pragmatic: What you don't know can hurt the environment. When rain falls or snow melts, the seeming negligible amounts of chemicals and other pollutants around your home and premises get picked up and carried via storm drains to surface waters. The ramifications include polluted drinking water, beach closings, and endangered wildlife.

So what can you do to help protect surface and ground waters from so-called nonpoint source pollution? You can start at home. Begin by taking a close look at practices around your house that might be contributing to polluted runoff: You may need to make some changes. The following are some specific tips to act on--dos and don'ts, organized by categories, to help you become part of the solution rather than part of the problem nonpoint-source pollution.

Household Chemicals

- Be aware that many chemicals commonly used around the home are toxic. Select less toxic alternatives. Use non-toxic substitutes wherever possible.
- Buy chemicals only in the amount you expect to use, and apply them only as directed. More is not better.
- Take unwanted household chemicals to hazardous waste collection centers; do not pour them down the drain. Pouring chemicals down the drain may disrupt your septic system or else contaminate treatment plant sludge.
- Never pour unwanted chemicals on the ground. Soil cannot purify most chemicals, and they may eventually contaminate runoff.
- Use low-phosphate or phosphate-free detergents.
- Use water-based products whenever possible.

- Leftover household pesticide? Do not indiscriminately spray pesticides, either indoors or outdoors, where a pest problem has not been identified. Dispose of excess pesticides at hazardous waste collection centers.

Landscaping and gardening

- When landscaping your yard, select plants that have low requirements for water, fertilizers, and pesticides.
- Cultivate plants that discourage pests. Minimize grassed areas which require high maintenance.
- Preserve existing trees, and plant trees and shrubs to help prevent erosion and promote infiltration of water into the soil.
- Use landscaping techniques such as grass swales (low areas in the lawn) or porous walkways to increase infiltration and decrease runoff.
- Other landscaping tips:
 - Install wood decking or bricks or interlocking stones instead of impervious cement walkways.
 - Install gravel trenches along driveways or patios to collect water and allow it to filter into the ground.
 - Restore bare patches in your lawn as soon as possible to avoid erosion.
 - Grade all areas away from your house at a slope of one percent or more.
- Leave lawn clippings on your lawn so that nutrients in the clippings are recycled and less yard waste goes to landfills.
- If you elect to use a professional lawn care service, select a company that employs trained technicians and follows practices designed to minimize the use of fertilizers and pesticides.
- Compost your yard trimmings. Compost is a valuable soil conditioner which gradually releases nutrients to your lawn and garden. (Using compost will also decrease the amount of fertilizer you need to apply.) In addition, compost retains moisture in the soil and thus helps you conserve water.
- Spread mulch on bare ground to help prevent erosion and runoff.
- Test your soil before applying fertilizers. Over-fertilization is a common problem, and the excess can leach into ground water or contaminate rivers or lakes. Also, avoid using fertilizers near surface waters. Use slow-release fertilizers on areas where the potential for water contamination is high, such as sandy soils, steep slopes, compacted soils, and verges of water bodies. Select the proper season to apply fertilizers: Incorrect timing may encourage weeds or straggles. Do not apply pesticides or fertilizers before or during rain due to the strong likelihood of runoff.
- Calibrate your applicator before applying pesticides or fertilizers. As equipment ages, annual adjustments may be needed.
- Keep storm gutters and drains clean of leaves and yard trimmings. (Decomposing vegetative matter leaches nutrients and can clog storm systems and result in flooding.)

Septic Systems

Improperly maintained septic systems can contaminate ground water and surface water.

with nutrients and pathogens. By following the recommendations below, you can help ensure that your system continues to function properly.

- Inspect your septic system annually.
- Pump out your septic system regularly. (Pumping out every three to five years is recommended for a three-bedroom house with a 1,000-gallon tank; smaller tank should be pumped more often.)
- Do not use septic system additives. There is no scientific evidence that biologic and chemical additives aid or accelerate decomposition in septic tanks; some additives may in fact be detrimental to the septic system or contaminate ground water.
- Do not divert stormdrains or basement pumps into septic systems.
- Avoid or reduce the use of your garbage disposal. (Garbage disposals contribute unnecessary solids to your septic system and can also increase the frequency your tank needs to be pumped.)
- Don't use toilets as trash cans! Excess solids may clog your drainfield and necessitate more frequent pumping.

Water Conservation

Homeowners can significantly reduce the volume of wastewater discharged to home septic systems and sewage treatment plants by conserving water. If you have a septic system, by decreasing your water usage, you can help prevent your system from overloading and contaminating ground water and surface water. (Seventy-five percent of drainfield failures are due to hydraulic overloading.)

- Use low-flow faucets, shower heads, reduced-flow toilet flushing equipment, and water saving appliances such as dish and clothes washers. (See table on water savings possible with conservation devices.)
- Repair leaking faucets, toilets, and pumps.
- Use dishwashers and clothes washers only when fully loaded.
- Take short showers instead of baths and avoid letting faucets run unnecessarily.
- Wash your car only when necessary; use a bucket to save water. Alternatively, go to a commercial carwash that uses water efficiently and disposes of runoff properly.
- Do not over-water your lawn or garden. Over-watering may increase leaching of fertilizers to ground water.
- When your lawn or garden needs watering, use slow-watering techniques such as trickle irrigation or soaker hoses. (Such devices reduce runoff and are 20-percent more effective than sprinklers.)

Other Areas Where You Can Make a Difference

- Clean up after your pets. Pet waste contains nutrients and pathogens that can contaminate surface water.
- Drive only when necessary. Driving less reduces the amount of pollution your automobile generates. Automobiles emit tremendous amounts of airborne pollutants, which increase acid rain; they also deposit toxic metals and petroleum byproducts into the environment. Regular tuneups and inspections can help keep automotive waste and byproducts

from contaminating runoff. Clean up any spilled automobile fluids.

- Recycle used oil and antifreeze by taking them to service stations and other recycling centers. Never put used oil or other chemicals down stormdrains or in drainage ditches. (One quart of oil can contaminate up to two million gallons of drinking water!)

Community Action

- Participate in clean-up activities in your neighborhood.
- Write or call your elected representatives to inform them about your concerns and encourage legislation to protect water resources.
- Get involved in local planning and zoning decisions and encourage your local officials to develop erosion and sediment control ordinances.
- Promote environmental education. Help educate people in your community about ways in which they can help protect water quality. Get your community groups involved.

For more information on how you can help, contact your

State Water Quality Coordinator

or

Local Cooperative Extension Officer.#

(Goo is an Environmental Protection Specialist in EPA's Nonpoint-Source Control Branch.)

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