

NIE Connect with your environment

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Stop bagging grass clippings and leaves. Working them into your lawn or garden will promote healthy plants naturally while having significant benefits for your local lake or stream.

Videos show you how to use clippings, leaves

The three most important nutrients needed by lawns are nitrogen (N), phosphorus (P) and potassium (K). But did you know you could fertilize your lawn, improve soil health and fight diseases and weeds naturally without synthetic chemicals that impair water quality?

Mother Nature never intended for us to bag leaves, lawn clippings or other yard wastes. Yet this valuable natural resource that provides these nutrients is put in the garbage or goes up in smoke. We pay to take it away, use valuable landfill space and put a strain on pollution-control systems.

Grass clippings are 20-30 percent protein, and con-

tain N, K and P as well as all the necessary trace elements plants need. Leaves contain P, K and carbon — all essential nutrients needed by plants and turf grasses.

Grasscycling and leafcycling help promote healthy plants naturally, and unlike chemical fertilizers and peat moss, grass clippings and leaves are renewable. They also support earthworms and microorganisms that increase soil fertility and fight lawn diseases, and they help reduce weeds.

Watch a leafcycle video at <https://youtu.be/os-EFAPLcP0>. Watch a grass cycle video at <https://youtu.be/WvkaWsEI65g>.

— Anna McCartney



CONTRIBUTED PHOTO/Anna McCartney



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Are your lawn and garden practices making Lake Erie green? Fertilizers and grass clippings contain phosphorus and nitrogen, nutrients that cause algal blooms like the one above at Shades Beach. Weed killers and pesticides kill beneficial insects and affect birds, animals and people living nearby. When these materials enter the water, they put all life at risk.

Toxin caution

How your lawn, garden might poison our waters

By ANNA McCARTNEY
Contributing writer

Is your lawn or garden poisoning Lake Erie?

It's no longer up for debate: It's an established fact that landscaping and gardening practices are also main culprits in surface and groundwater contamination.

According to the U.S. Fish and Wildlife Service, homeowners use up to 10 times more chemicals per acre than farmers do. The U.S. Environmental Protection Agency estimates that every year, about 80 million pounds of pesticides are applied to some 30 million acres of lawns in this country.

One reason for this pervasive use is once these hazardous chemicals are applied, they are essentially invisible, so "out of sight, out of mind." But these chemicals don't disappear or get filtered by water treatment plants. Along with grass clippings, the chemical fertilizers, pesticides and herbicides (weed killers) are carried by stormwater runoff into our streams, lakes and rivers or are absorbed into our groundwater.

In 2013, the U.S. Geological Survey found that at least one pesticide (and in most samples two or more pesticides) could be found in nearly every stream, river and lake in the country, and almost half of the wells. In addition, the fertilizers and grass clippings contribute nutrients (phosphorous and nitrogen), which can cause algal blooms that rob waterways of the oxygen fish need to survive. Some of these are harm-



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Stormwater carries fertilizers and chemicals used on farms, lawns and gardens into local streams and into Lake Erie, causing serious pollution problems.



TOM ARCHER, MICHIGAN SEA GRANT

Dead fish and impaired drinking water result when excess nutrients cause harmful algal blooms, which produce toxins and reduce the level of dissolved oxygen.

ful algal blooms (HABs) that produce toxins.

Pesticides, herbicides and HABs cause environmental and economic harm by killing aquatic life, endangering human health and polluting our water resources and drinking water. It's not the occasional localized use for uncontainable infestations of pests or invasive plants that's the problem. It's the consistent, repeated and widespread use.

Preventing runoff and pollution is far less costly than dealing with the con-

sequences. And it's not too early to start planning for next year. Make a significant improvement in water quality by making changes.

Pesticides and herbicides:

- Plant pest-resistant, native species.
- Rotate garden crops to reduce infestation.
- Use mulch, then time plantings to avoid peak infestation periods.
- Pull weeds by hand.
- Use biological, me-

chanical or botanical controls.

Fertilizers:

- Test soils before applying and only use if necessary.
- Use compost (grass-cycle or leafcycle) to reduce garden waste and reuse available nutrients.
- Limit application where the potential for water contamination is high (e.g. sandy soils, steep slopes, compacted soils).
- Never apply when the ground is frozen or rain is forecast.
- Don't overwater lawns (nutrients wash out of soils).

Control and treat stormwater pollution:

- Establish "no mow" buffer zones around wetlands and waterbodies.
- Minimize lawn/turf areas and use native, low-maintenance plantings.
- Cut lawns no shorter than 3 inches to establish deep roots.
- Use rain barrels to capture water from roofs and irrigate gardens.
- Use mulch instead of impervious plastic to increase absorption in bare areas.
- Plant terraced or sloped rain gardens to directly capture roof runoff.
- Plant vegetated swales to capture and treat stormwater along curbs and roads.
- Install a green roof.

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Fort LeBoeuf students collect and document trash on school grounds.

Fort LeBoeuf students find more trash than expected

Fort LeBoeuf High School teacher Hannah Evans and her students are participating in Pennsylvania Sea Grant's Center for Great Lakes Literacy project that involves students in service learning. Each group is required to conduct a cleanup and data collection around their school and neighborhood.

According to Evans, her students were real troupers on the day of their cleanup since it was raining. Regardless of the weather, they had a great day and collected much more trash than they thought they would find. Food wrappers and cigarette butts topped their list. Their results have been added to the PA Lake Erie International Coastal Cleanup results, which will be added to worldwide totals by the Ocean Conser-

vancy.

Below are some of their comments:

"Preserving the Earth is important to the well-being of the community."
— Eric Sanfilippo

"We need to clean up a lot more. It really has opened my eyes to how we treat the planet."
— Alexis Post

"If everyone pulls together we can clean up our community with ease."
— Wes Chapman

"It was a great way to raise awareness and help begin to solve a worldwide problem."
— Lindsey Rater

"Erie smokers are very careless with their cigarette butts. And now, instead of just hurting themselves, they are also hurting the environment."
— Sammy Ericson

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Check out these websites to learn more:

- <http://tghyp.com/>
- www.sourcewaterpa.org
- <http://coast.noaa.gov/digitalcoast/tools/rain-garden>
- <http://seagrant.psu.edu/>

Collect newspaper articles about pollution to show why water needs protection. Use the information with what you learned today to convince people that water protection is necessary no matter whether it is a small stream, large river or lake or groundwater. Share your reasons by sending them to axm40@psu.edu for possible publication in the weekly "your space" feature.

