

Bear Creek

Together, we can protect it.

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- Effective lawn care and landscaping practices
- Urban redevelopment, parking lot and drain improvements
- Sewer investigations and improvements
- Increased public awareness and community-based action
- Pilot projects for water pollutant removal

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To see how you can make a difference at home and in your community, call 248-853-4580 and ask for the Bear Creek tip card series.



What is stormwater pollution and where does it come from?

Actually, it comes from all of us. Even if we don't mean to, many of our everyday actions add to stormwater pollution. Stormwater picks up litter, car oil, pet waste, fertilizer, grass clippings and other materials left on the sidewalks and streets before it enters a catch basin. This polluted runoff washes from the catch basins straight into Bear Creek without being treated.

Stormwater is different than wastewater from toilets and sinks, which goes to the treatment plant in Warren or Detroit before being discharged into the river.



What else is polluting Bear Creek?

While metals and salts from road runoff continue to threaten Bear Creek, bacteria is also a huge pollutant. *E. coli* is the one people hear about most, even though most strains aren't dangerous. That's because *E. coli* indicates the presence of other disease-causing bacteria. *E. coli* lives in the digestive systems of humans and animals, and can be found in sewage and wastewater. In some places, sanitary sewers have been incorrectly connected to storm drains, causing sewage to enter Bear Creek. Right now, communities and county agencies are working together to identify and fix these "illicit connections."



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Bear Creek, the stretch of the Clinton River connecting Center Line, Hazel Park, Madison Heights and Warren, has become one of the most polluted streams in Michigan. It carries rain and snowmelt runoff, or stormwater, into the Red Run Drain, the Clinton River and Lake St. Clair. Except for two open sections in Warren, much of Bear Creek is buried in underground pipes.

Cities and county agencies are working to find long-term solutions for sewage problems in Bear Creek, but a significant amount of pollution is coming from stormwater. Each person's actions are important because the cheapest way to stop stormwater pollution is to prevent it at the source.

5 SIMPLE WAYS YOU CAN HELP BEAR CREEK

1 Use a pooper scooper! Bacteria, parasites and viruses from pet waste can easily wash into storm drains and end up in the river without being treated.

2 Sweep grass clippings and fertilizer back onto the lawn. Pesticides are one of the biggest pollutants of all. Limit fertilizer use, and make it a habit to sweep onto the lawn rather than into a catch basin.

3 Check your vehicles for fuel and oil leaks. When it rains, grease and oil drippings wash into storm drains, and go straight into Bear Creek.

4 Wash your car on the lawn or go to a car wash (where the water goes to a wastewater treatment plant). Dirt and oils you wash off can harm fish and animals if it goes straight in the storm drain. Grass filters pollutants — and waters your lawn at the same time!

5 Remember, only rain in the drain! In other words, use trash cans! Even if it means a slight inconvenience for you, it's better off for everyone who shares Bear Creek.

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Guide to Household Hazardous Waste

leaning products like aerosols, bathroom cleaners and drain cleaners, and car supplies like waxes, starting fluids and repair products are all considered household hazardous wastes. Many ingredients in these products are corrosive or reactive, and if they aren't disposed of properly, they can harm people and the environment. Chemicals in them can actually contaminate our rivers, lakes and drinking water.

Simple alternatives can replace many hazardous substances. If you choose to use commercial products, however, make sure to dispose of them properly! *See the chart inside for details.*



Proper disposal of household hazardous wastes is easy — the trick is just knowing how!

- Ok to throw away
- Take to hazardous waste drop-off site
- Recycle
- Pour small amounts down the drain with lots of water

Kitchen	Aerosol cans (empty) Floor care products Household batteries	
Bathroom	Disinfectants Medicine (expired) Nail polish/remover (dried up) Toilet, tub and tile cleaner	
Garage	Antifreeze Battery (lead acid) Garden fertilizer Gasoline and kerosene Motor oil Insecticides and weed killers	
Workshop	Paint (latex — dried) Paint (oil-based, auto, model) Paint thinner, stripper or primer Wood preservative	

Tips for handling toxics

- Store household hazardous wastes in their original containers, and make sure the labels are readable.
- Save money and reduce waste by purchasing only what you need and use.
- Let solvents and paint thinners set in a closed jar to let dirt and paint settle to the bottom. You can reuse the top portion, and dispose of less waste!
- Never pour motor oil, paints or chemicals directly down the sink or into a catch basin in the street. Recycle or dispose of them properly. For disposal locations and drop-off dates, call the Southeast Oakland County Resource Recovery Authority (SOCRRA) 248-288-5150 or the Macomb County Environmental Health Department at 810-469-5236.



Non-toxic alternatives

Homemade solutions to prevent pollution

- To disinfect, use one-half cup borax or washing soda* dissolved in one gallon hot water.
- To clean floors, use 1/4 cup white vinegar, 1/4 cup washing soda* in one gallon warm water.
- For glass cleaner, mix one part vinegar to four parts water. Dry windows with newspapers.
- To unclog drains, use a plumber snake instead of drain cleaners.
- Instead of toilet cleaner, scrub with a toilet brush and baking soda.
- To deodorize carpets, sprinkle with baking soda, and vacuum after 30 minutes.

* Be sure to use washing soda (sodium carbonate) in these recipes, and not baking soda (sodium bicarbonate).

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Landscaping Guide

With so many types of trees, shrubs and grasses available at nurseries, it's difficult to know which ones are best for planting in your yard. Surprisingly, many of the grasses planted most often for lawns aren't best for the landscape as a whole.

Native plants — those naturally found in southeast Michigan — actually help improve water quality, and they're an attractive alternative to turfgrass. Natives generally have deeper roots, which absorb runoff and break down pollutants that would otherwise go straight into storm drains and rivers. Native trees, shrubs and grasses encourage a healthy yard, and require less maintenance than non-natives!

Why is it important to plant native shrubs and wildflowers?



While many non-native plants, such as purple loosestrife, are colorful and attractive, they are considered "invasive" because they out-compete native species and disrupt wildlife habitat. Native plants, on the other hand, offer nesting sites and food for wildlife. A garden of prairie wildflowers, for instance, will attract butterflies and hummingbirds to your backyard. Best of all, natives are adapted to our local soils and climate, so they do not need watering and require very little fertilizer or pesticides, which can pollute our waterways.



Find out more about native plants by calling the MSU Extension Master Gardener Hotline. In Oakland County, call 248-858-0887, and in Macomb County, call 810-469-5063. Or go online at www.epa.gov/greenacres to learn more.

Many nurseries specialize in native plants, and local conservation districts offer free site assessments to determine what plants will work best in your yard!



Call 248-673-4496 in Oakland County or 810-727-2666 in Macomb County for more information about native nurseries and free site assessments.

What plants are native to southeast Michigan?

These plants are native to our area, and are easy to find in most nurseries!

• Ferns •

Christmas
Cinnamon
Lady

Maidenhair
Ostrich
Royal

• Grasses •

Big bluestem grass
Cordgrass
Indian grass

Junegrass
Purple lovegrass
Wool-grass

• Shrubs •

Blueberry
Buttonbush
Dogwood
Fragrant sumac
Elderberry

Michigan holly
(Winterberry)
Serviceberry
Spicebush
Raspberry

• Trees •

American beech
Ash (Red, Green)
Blackgum
Black walnut
Canada hemlock
Douglas fir
Flowering dogwood
Hawthorn

Hickory
Maple (Red, Sugar)
Oak (Red, White)
Ohio buckeye
Paw paw
Sycamore
Tuliptree
White pine

• Wildflowers •

Anemone
Black-eyed Susan
Blazing star
Butterfly weed

Columbine
Coral bells
Purple coneflower
Woodland poppy

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Boat & Auto Guide

This guide is for anyone who maintains anything with an engine. What we do with our boats, personal watercrafts, mobile homes, cars and other vehicles on land greatly influences the health of the streams and lakes around us. By adopting environmentally-friendly cleaning and fueling habits, we're one step closer to restoring Bear Creek and protecting Lake St. Clair.

Several area marinas are doing their part to keep the water clean by participating in the Macomb County Health Department's Marina Pollution Prevention Program. (Is yours?) You can do your part to prevent pollution at the source by checking up on your marina and following a few simple tips at home.

Car washing & boat cleaning

- Look for non-toxic and phosphate-free cleansers.
- Use alternative cleaners, such as baking soda and lemon juice. Avoid those with bleach, ammonia, lye or petroleum distillates (see chart).

Product	Better Alternative
Bleach	Borax or hydrogen peroxide
Chrome cleaner	Apple cider vinegar to clean, baby oil to polish
Drain cleaner	Boiling water and plunger or plumber's snake
Engine cleaner	Steam clean the engine in a dedicated service area.
Fiberglass stain remover	Baking soda paste, scrub pad "elbow grease"
Paint stripper	Physically remove old paint without chemical use. Avoid products containing methylene chloride, trichloroethylene, benzene, trichloroethane, xylene or toluene.
Scouring powders	Baking soda and "elbow grease"
Window cleaner	Vinegar and lemon juice mixed in lukewarm water
Wood polish	Olive oil or almond oil for interior wood; use water or borax-based products



References: Marine Environmental Education Foundation's
National Clean Boating Campaign 2000 Action Kit
Michigan Department of Environmental Quality's "Tips to Protect the Environment"

Fuel and oil

- When fueling, avoid topping off! Remember that fuel expands as it warms up in your tank.
- Store fuel only in approved containers.
- Routinely check for and fix oil and fuel leaks.
- Avoid pumping any bilge water that is oily or has a sheen.

Engine care

- Keep boat and car engines properly tuned for efficient fuel consumption and clean exhaust.
- Use a drip pan when doing engine maintenance. Drippings left on the cement get washed into nearby drains and end up in our streams.



Sewage control

- Use onshore restrooms when docked, and encourage everyone to use the facilities before casting off.
- Empty portable toilets *only* at pumpout stations or at home.
- Clean up after your pet to prevent pet waste from washing into storm drains.

Most Lake St. Clair marinas have pumpouts and allow non-members to use them. Keep sewage out of storm drains and the lake!

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Don't guess... soil test!

Don't assume your plants need fertilizer. Perform a soil test. You'll save money and reduce the chance of over-applying by only replacing the nutrients your soil is actually missing. Michigan State University Extension offers easy-to-use soil nutrient testing boxes, and recommends a soil test every two or three years. To find out more, call 248-858-0902 in Oakland County or 810-469-5180 in Macomb County.

Choose the correct fertilizer

Use slow-release fertilizers that provide a slow, steady source of nutrients for plants. This also prevents the big spurt of growth common with synthetic fertilizers. Slow-release fertilizers come in a variety of types: organic, timed-release and coated. You may want to talk to a lawn care professional to find out what's best for your yard.

Avoid "weed-and-feed" mixtures. These contain herbicides to control weed growth and are often applied where they aren't needed. If healthy lawn care practices (correct mowing height and watering) are followed, weed control shouldn't be necessary. Be sure your mower is set to three inches to help shade out unwanted weeds.

How often, how much?

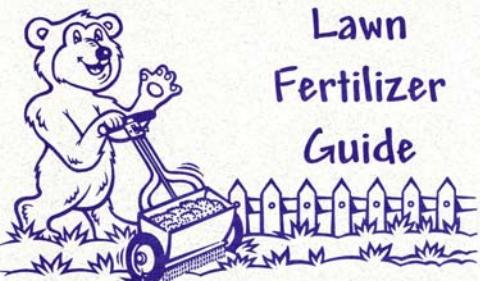


Unless you're maintaining a golf course, you can have a beautiful lawn by fertilizing only two or three times a year:

- Either apply twice a year, in late spring (late April or early May) and fall (September or October)
- Or apply three times a year, in late spring (Memorial Day), early fall (Labor Day) and late fall (Thanksgiving)

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True or False:

"More is better" when applying lawn fertilizer.

False! Over-fertilizing is a problem contributing to stormwater pollution in Oakland and Macomb counties. Without realizing it, many landowners are applying herbicides and pesticides when their lawns don't even need them!

While applying an appropriate amount of fertilizer is usually okay, it's important to take care when adding chemicals to your lawn so that we can keep our rivers, lakes and wildlife healthy.

Pointers for pesticide use



Correct watering, mowing and fertilizing habits can reduce many pest problems. But if you do choose to treat for insects, it is essential that you know your enemy before you apply pesticides! If possible, hand pick the little buggers off the plants and identify the pest. The important part is to identify and treat only for the pests you have, at their most vulnerable stage.

For help identifying the bug that's been bugging you, call the Michigan State University Master Gardener Hotline. In Macomb, call 810-469-5063. In Oakland, call 248-858-0887.

A general spraying of insecticide is ineffective, costly and may do more harm than good.

