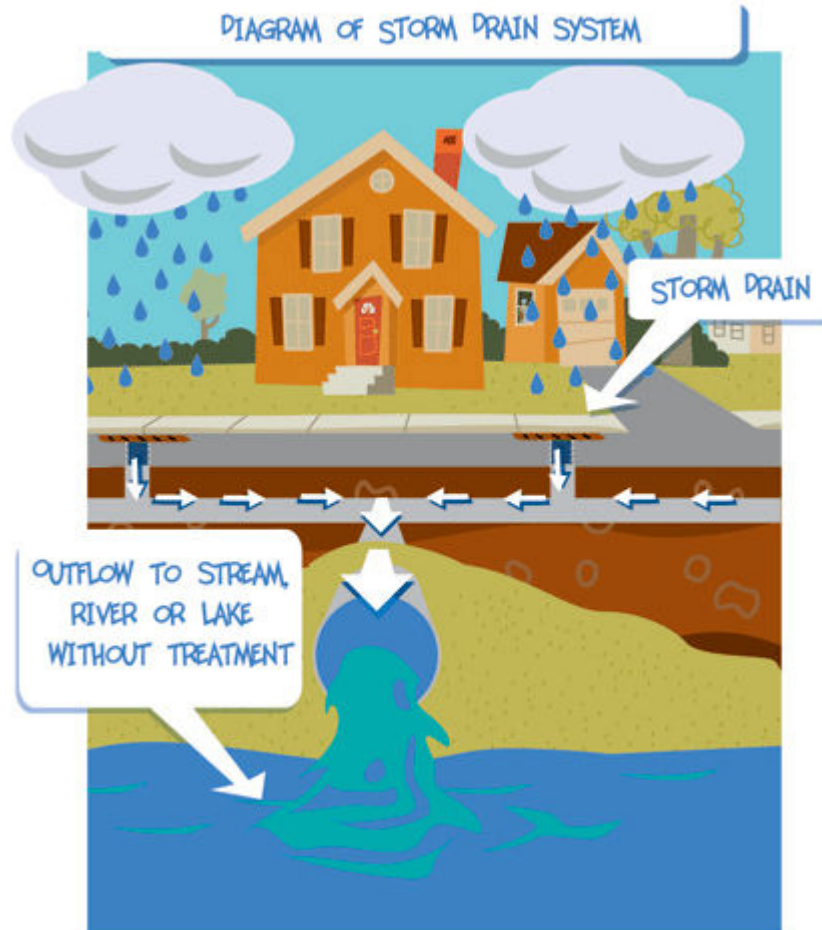


Water Quality: Why You Should Care!

Adapted from h2Ohero.org



- **You really do make a difference:** 80 percent of the pollution problems in Lake Ontario are caused by all the "stuff" that goes into neighborhood storm drains. Since none of what enters a storm drain gets treated, it goes right from your neighborhood into the lake. The beaches were closed one-third of the time last year due to excessive bacteria levels that likely comes from runoff from our neighborhood areas after heavy rains.
- **You are impacting Lake Ontario which is one of the Great Lakes which is the largest source of fresh water on the planet.** The Great Lakes have a total shoreline near 10,000 miles, over 350 species of fish, and provide drinking water for over 40 million people.
- **Your can be why Ontario Beach is (Charlotte) closed some days in the summer:** When bacteria levels are high enough to cause a health risk, Ontario Beach is closed. Excessive bacteria in the lake can cause swimmers to have negative health effects. When we have heavy rains near the beach, or in areas that drain to the Genesee River, the stormwater that drains into the lake can contain lots of bacteria that washed off of pavements and rooftops. When there are large waves that stir up the water, sunlight

cannot penetrate the water to kill the bacteria that may be there. If large amounts of algae collect along the beach, this is another place where bacteria grow.

Water Quality Background

How does water get polluted?

Most of the pollution in Lake Ontario, the Genesee River and streams comes from polluted runoff or nonpoint sources, such as your yard!

- pet waste
- improper disposal of chemicals, spas/pools, septic tanks, motor oil
- detergents
- lawn fertilizer

These are sources that come from many widespread areas and are often things we can do something about. Many people think most of our pollution comes from industry. While it's true industry and businesses contribute to water pollution, it's really the things we do every day that add up to water quality problems. Luckily, just as we're all part of the problem, we are all part of the solution too!

Why is the Genesee River brown so often?

The brown color of the Genesee River is caused by small particles of soil, called sediment, that are suspended in water. Much of this soil originates from erosion of the banks of the river or its tributaries during rainstorm events or during the spring snowmelt period.

The Genesee River drains an area that starts in Pennsylvania and extends to Lake Ontario. Along the way, it gathers water from many other streams, including Canasaraga Creek, Honeoye Creek, Oatka Creek, and Black Creek. So, by the time the river reaches Rochester, it has had a chance to pick up a great deal of sediment.

Why do algae blooms form?

Algae are small, mainly aquatic, plants. Like all plants, algae require nutrients and sunlight for growth and photosynthesis. The main nutrients supporting algae growth are phosphorus and nitrogen. These two nutrients come from a variety of sources including lawn and agricultural fertilizers, air pollution, pet waste, leaky septic tanks and others. When an excess of these nutrients are dissolved in the water, algae grow and reproduce rapidly. This is called an algae bloom. Algae blooms can cause the lake to look green or very dark. Some algae grow attached to the bottom of the lake or stream, and when they break away, may end up on shore.

To help prevent algae blooms, you can help keep phosphorus and nitrogen out of the

water, by being an H₂O Hero.

Are the fish from Lake Ontario safe to eat?

Some fish from Lake Ontario and its connecting streams, rivers, ponds, and bays contain dangerous chemicals in amounts considered too high by the New York State Department of Health (NYSDOH). People can take in these chemicals from eating the fish. The chemicals of concern in the Genesee River/Lake Ontario watershed are PCB's, Mirex (a pesticide), and dioxin. The NYSDOH recommends that women of childbearing age and children under the age of 15 should not eat any fish from Lake Ontario and the waters that contain contaminated fish. Others should limit their fish consumption according to the specific advisory for that body of water. Local waters listed in the advisory include Lake Ontario, Irondequoit Bay, Canadice Lake, Canandaigua Lake, and Keuka Lake.

How do wetlands affect water quality in streams and lakes?

Wetlands are those areas that support specialized plants adapted to prolonged flooding or wet soils. There are many different types of wetlands including marshes, swamps, bogs, and fens. Wetlands are transitional areas where land and water meet. Because of their location, wetlands play a critical role in protecting water quality.

Did you know that:

- every ounce of pet waste contains over 650 *million* fecal coliform bacteria?
- the average dog excretes over 4.5 *billion* fecal coliform bacteria *every day*?
- At that rate, it would only take one year for 50 dogs to contaminate all the water in Irondequoit Bay?

That can't be true, right? If you have a difficult time believing that leaving pet waste on the ground actually causes water quality problems in our creeks, streams, rivers, bays, and Lake Ontario, then you're not alone. But, you're sadly mistaken. There are scientific studies in which numerous water samples were collected and analyzed using sophisticated DNA techniques to determine the actual source of bacteria (human vs. livestock, vs. pets, vs. native wildlife). In these studies, it was found that:

- pet waste is the source of 15-20% of the bacteria in our natural waterways.

What You Can Do to Improve Water Quality

RESOURCES

Cornell Cooperative Extension, 461-1000

Our Mission is to provide research-based information and education programs to address local priority needs in the areas of 4-H Youth Development, Agriculture, Horticulture, and Nutrition, Food Safety & Health.

Monroe County Department of Public Health, 753-5564

The Environmental Health Division's mission is to provide public health services and leadership to assure the improved health status of individuals, families, the environment and the community.

Monroe County Department of Environmental Services, 753-7600

The mission is protecting the county's land and water from pollution represents the most basic aspect of environmental protection. To control the sheer magnitude of industrial and residential solid waste and wastewater generated by our society demands a coordinated, comprehensive and forward-looking approach.

Monroe County Soil and Water Conservation District, 473-2120 x3

We are a municipal subdivision that partners with other agencies and organizations to educate and assist land stewards in planning and implementing comprehensive management practices that stabilize soil, improve water quality, manage stormwater, preserve open space and/or manage fish and wildlife habitat.

DON'T LET YOUR PET WASTE GO DOWN THE DRAIN

○ _____

DO NOT WASH YOUR CAR IN YOUR DRIVEWAY

○ _____

USE ALTERNATIVES TO PESTICIDES AND FERTILIZERS

○ _____

MAKE SURE THAT YOU SAFELY DRAIN YOUR POOLS AND SPAS.

○ _____

MAKE SURE THAT YOUR SEPTIC TANK IS REGULARLY CLEANED AND MAINTAINED.

FOLLOW SAFER DISPOSAL/USE OF HAZARDOUS HOUSEHOLD CHEMICALS:

Follow the label instruction.

Some labels give disposal recommendations. Read the label carefully and follow the manufacturer's recommendations.

Use it up.

When products are fully used up as intended there is no hazardous waste. Buy only as much as you need. Do not buy a gallon of paint, pesticide, or specialty cleaner when a quart will do. The large container may cost less per ounce, but leftovers must be stored or disposed of so as not to harm people or the environment.

Recycle.

Recycling means reclaiming the potential waste so that the product is usable again. Recycling helps reduce the overall demand for hazardous household products and the amount of waste produced. You can recycle paint thinner at home. Pour paint thinner or cleaner into a jar. Let it sit for several days. The solids settle to the bottom. When the liquid at the top of the jar is clean, pour it into a container that can be sealed for future use. If pouring stirs up the solid, pour the liquid through a funnel lined with an old sheet. Dispose of the dried solids in the trash.

Oil and transmission fluids from your car and lawn mower can be recycled. Find out if a collection program is available in your area. Many gas stations are now accepting used oil for recycling. Gas stations and stores that sell auto batteries must recycle them.

Donate.

Donate paint, household cleaners, or other products to a local charity, church, or service organization. Theater groups, the local housing authority, or a neighbor may be happy to accept small quantities of usable paint or cleaning products. Such items need to be in original containers with labels.

Throw it in the trash with special treatment.

Some hazardous household wastes are acceptable at landfills if special treatment is followed. Empty hazardous product containers should be rinsed several times before discarding in the trash. Use the rinse solution in the same manner you were using the chemical solution. Call the local landfill or solid waste management contractor

for special information on disposing of hazardous household waste. They can advise you if they will even accept the waste.

Save for a collection day.

A community waste collection day is one way to manage hazardous household waste and keep it out of the landfill. The collection days are usually sponsored by a local government agency or a private organization. Residents are notified of the date, the dropoff location, and the types of materials the program will accept. The collected wastes are recycled, treated, or disposed of by a professional handler.

ALTERNATIVES TO PESTICIDES AND FERTILIZERS

- MIX your own effective pesticides and deterrents. Make a powder, grinding a combination of bay leaf, mint, pepper, citrus peel, garlic powder, cayenne, pyrethrum, and salt; then sprinkle it along baseboards where infestation has been seen.
- USE organic fertilizer, especially compost. Compost, a living system of microbes and decaying organic matter, is Mother Nature's primary fertilizer choice. If you have a yard or garden, you have room for composting.
- USE plants suitable to your specific region. Buy seed from a company that harvests seed locally, if possible. These seeds have been selected for their performance within the specific requirements of your local environment, climate, and soil conditions.
- REEXAMINE the concept of an expansive lawn in the first place. Certainly a patch of green is a respite to the mind and body, and children and pets need space to romp and frolic as well. But your better interests may not be served by converting your entire property to turf grass; rather you might combine your creativity with that of the natural world. Plan instead for a hardy ground cover, for shrubbery and hedgerows to host wild songbirds, and wildflowers for butterflies.
- PLANT a variety of grasses suited to your local area. Call your county extension service to find out which varieties would be most appropriate. Mixtures will respond differently to changing growing conditions and more likely ensure that you have something growing throughout the season.
- WATER deeply but less often. Grass does better when watered to the root zone and then allowed to dry out.
- REDUCE soil compaction. To aerate your soil, use earthworms and a garden fork. Get the kids to don their cleats and play follow the leader up and down the lawn. Put on your golf shoes and join them. For bigger jobs, rent an aerating machine.
- REMOVE thatch buildup. Thatch is the layer of decomposing roots, leaves, and stems at the surface of the soil. The once popular idea that this debris was 'composting' was incorrect, as there isn't enough of it to maintain the moisture or generate the heat necessary for biological decay. Instead, removing this layer allows water and nutrients to penetrate down to the roots where they are most needed. Use a thatching rake or, for big jobs, rent a thatching machine. It is most strategic to do this in the spring or fall when the grass grows back quickly.
- MOW frequently, lightly, and high. Mowing too close to the ground significantly limits the grass blade's ability to produce its own food; it also causes lawns to dry out as it is the remaining living grass that concentrates the moisture.

- USE a sharp blade to reduce the stress on the grass. You want to cut the stems neatly, not macerate the tissue, rendering it more vulnerable to disease and pests.
- POST a pesticide-free lawn sign.

C=cup T=tablespoon t=teaspoon

aerating lawn *cleats*

Wear your golf cleats while tending to lawn chores such as weeding, watering, saving you an extra chore. With the time saved, you can take in a round of golf; you're already wearing the right shoes!

all-purpose pesticide powder *bay leaves, pepper, mint leaves, citrus peels, garlic powder, cayenne pepper, pyrethrum, salt*

Grind ingredients (1/2 C each bay and mint, 1 1/2 t each of the rest) into a powder in blender or mortar and pestle. Dust along baseboards and areas of infestation. Do not rinse.

all-purpose pesticide spray *essential oils of eucalyptus and pennyroyal*

Combine 1 tsp each essential oils of eucalyptus and pennyroyal with 2 C water in a spray bottle. Shake to blend. Spray along baseboards, backs of counters, inside cupboards. Do not rinse.

ants *borax and sugar*

Mix borax and sugar in a 50/50 ratio, and sprinkle where ants have been seen.

ants *chalk*

Ants are repelled by chalk; put pieces, or chalk dust, in or near places of entry and infestation.

ants *cloves, ground*

Make a trail of the powder where there are ants.

ants *coffee grounds*

Ants are repelled by coffee grounds. Sprinkle grounds in outdoor areas where ants have been sighted.

ants *scalding water*

Pour water into outdoor nests.

ants *soapy water*

Make a moat of soapy water around pet food bowls and around the legs of picnic tables.

Hang flypaper that comes in small canister rolls found at many hardware stores. Feed and supply stores will have them as well.

flies *orange peel*

Rub oil of orange peel on skin to repel most bothersome insects. Add dry citrus peel or essential oils to potpourri.

garden insects *aluminum foil*

Strips of aluminum foil around corn, cucumbers, and squash reflect light, repelling many insects.

garden pests *stinging nettles*

Plant stinging nettles out of the way. They will attract butterflies to lay their eggs and repel garden pests.

insect repellent *essential oils, witch hazel extract*

Blend 10-25 drops essential oil with 2 T witch hazel extract in small jar. Dab a few drops on skin and clothing. This will soothe bites you already have, too!

insect repellent oils *essential oils (rose geranium, palmerosa, bay, eucalyptus, aloe vera gel, pennyroyal) vegetable oil*

Mix 10-25 drops of selected oil, 2 T vegetable oil, 1 T aloe vera gel in small glass jar. Dab onto skin. Other oils to try: lavender, myrrh, rosemary, lemon balm.

insect repellent soaps *essential oils (lemon balm, pennyroyal, lavender, or rose geranium) castile soap (liquid)*

Add 10-15 drops of oil per ounce of liquid soap. Wash before and after spending time outdoors.

mosquito repellent *pennyroyal with or without eucalyptus*

Combine 2 oz vegetable or olive oil, 1/4 tsp citronella and eucalyptus, 1/8 tsp each pennyroyal, cedar, and rose geranium oils.

mosquitos *vanilla extract*

Dilute 1 T vanilla extract in 1 C of water. Apply to skin. Safe for around the eyes and for babies.

mosquitos *dishwashing liquid*

If you can't get rid of puddles of standing water, pour dish detergent into them. This will kill eggs and larvae before they develop into adults.

personal insect repellent *oil of spearmint, peppermint, citronella, or pennyroyal; baby oil or petroleum jelly*

Mix 1 ounce of herb oil with a few drops of baby oil, vegetable oil or petroleum jelly (don't use herbal oils undiluted). Rub this ointment on your skin before exposure to insects.

rabbits *talcum powder*

Sprinkle scented talc on your plants and rabbits will steer clear. Be sure to reapply after rain.

raccoons *squash and corn*

Plant squash around your patch corn to foil nocturnal raccoon raids.

red spider mites *coffee grounds*

Sprinkle coffee grounds around places infested with red spider mites.