How Watersheds Work

Learn how watersheds affect water quality

It is important to know how your watershed works in order to help protect water quality. You can contribute to the solution, not the pollution!

A ***watershed***, also referred to as a drainage basin, is the land area that delivers rain and snow/ice melt to a stream or lake. Every home, business and farm in Michigan is in a watershed!

Stormwater, or runoff, is when rain and snow/ice melt travel across the land (watershed) picking up trash, animal waste, chemicals, sediments and dissolved substances along the way until it discharges into the nearest waterbody and causes pollution. Even if your house, business or farm is not "next to the river," your actions still have an impact on the watershed.

Impervious surfaces, pavement or other hard surfaces, speed up the flow of runoff from the landscape and prevent water from soaking into the ground where it can be naturally cleaned by microorganisms that live in the soil. Many pollutants also reach our waterways from soil erosion because many chemicals attach themselves to soil particles.

Groundwater is water that is stored underground in the spaces between soil particles and fractured rocks and is a source of drinking water for many suburban and rural households. Groundwater resources can be impacted if pollutants in runoff leach through the soil. Pollutants can impact water quality by harming fish and wildlife, impairing recreation (fishing, boating and swimming) and contaminating drinking water supplies.

The ***Rouge River watershed*** is home to more than one million people and encompasses 466 square miles and runs through the most densely populated and urbanized land area in southeast Michigan. The Rouge River, a tributary to the Detroit River, is approximately 126 miles of waterways and includes over 400 lakes, impoundments and ponds. More than 50 miles of the river flows through public parklands making the Rouge River one of the most publicly accessible rivers in the country.

Understanding the watershed concept allows us to comprehend that we can have an impact on water quality far beyond our own back door. As land becomes altered or developed, the amount of stormwater runoff in the watershed increases, as well as the potential amount of pollutants that are contained in that runoff.

Stormwater pollution plays a large role in water quality. This contaminated runoff comes from many different sources and is difficult to trace back to one source on the landscape. Contaminated runoff flows without treatment into the nearest stormwater drainage system. This may consist of simple drainage ditches or infrastructure such as enclosed pipes, outfalls, catch basins and detention ponds.

Because of this infrastructure, we all have a direct effect on the water quality in the Rouge River watershed. This impacts our quality of life, home values, and the environment.

For more information on your watershed, visit:

www.allianceofrougecommunities.com

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How Water Quality Works

Learn how water quality is affected by watersheds

Water quality plays an important role in a healthy watershed and you can contribute to the solution, not the pollution! Clean water provides communities with drinking water, makes recreation like boating and fishing safe for the residents of Michigan and supports a healthy ecosystem for plants and wildlife.

Knowing how watersheds work is important because it allows us to understand that our actions have an impact on water quality. When rain and snow/ice melt travel across the land (watershed) and into storm drains, it is called stormwater or runoff. As this runoff travels, it picks up trash, animal waste, chemicals, sediments and dissolved substances along the way until it discharges into the nearest waterbody which has a negative affect on water quality.

Common types of pollution in stormwater runoff include sediment, nutrients, chemicals, bacteria and illicit discharges. In addition to stormwater runoff, water velocity can decrease water quality.

Sediment can be eroded soil from unprotected construction sites, eroding streambanks and shorelines and runoff from agricultural lands.

- Adding vegetative buffers along agricultural land or at the water's edge of your waterfront property can help slow runoff.

Nutrients include natural sources (organic debris), fertilizers, animal waste (pets, wildlife, and livestock) and sewage sources coming from failing septic systems or illegal discharges of sewage.

- Don't feed the ducks and geese because the concentration of droppings adds excess nutrients to the river.
- Fertilize your yard with slow-release fertilizer and sweep excess particles off paved surfaces back onto the lawn.

Chemicals can come from pesticides used on residential and agricultural lands, leaking vehicle fluids, road salt and the improper disposal of household chemicals.

- Change to a chemical alternative for cleaning, like peroxide or baking soda and vinegar, and dispose of cleaning supplies, paints, oven cleaners, aerosol cans, etc. at a household hazardous waste collection event in your community.
- Use Michigan native plants in your yard which are naturally resistant to pests and diseases, eliminating the need for harmful pesticides.

Bacteria is another source of pollution in stormwater which comes from animal waste or human sewage sources.

- Always pick up after your pet, even in the winter, to prevent the bacteria from washing into drainage ditches and storm drains which go straight to the river and have a negative impact on water quality.
- If you have a septic tank on your property, have it inspected every 3 years and pumped out every 3-5 years.

Illicit discharges are any discharge to a storm drain or waterbody that contains polluting material, such as sediment, nutrients, oil, and bacteria.

- If you see someone dumping anything in the river or lake, on the side of the road or even down the storm drain on your street, report it to your community's pollution hotline.

Report Illegal Dumping	
Michigan's Pollution Alert System	800-292-4706
Macomb County	877-679-4337 or IDEP@macombcountymi.gov
Oakland County	248-858-0931
St. Clair County	277-504-SWIM
Washtenaw County	734-222-3800 or https://washtenaw.org/196/Report-an-Issue
Wayne County	888-223-2363

Water velocity is too much water, too quickly, which scours the streambed and banks adding to the sediment and recirculating the bacteria and chemicals in the river reducing water quality.

- Plant trees to provide a natural filter to reduce stormwater runoff, flooding and erosion.
- Disconnect downspouts around your home or business to slow runoff and reduce the amount of sediment entering the river.

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