

Today and Tomorrow

Challenges, Opportunities, and Actions to Enhance the Rouge Green Corridor as a Community Asset

Current Challenges and Opportunities



What is a "Native" plant?

"Native" plants are plants that grew in the Rouge Green Corridor before European settlement. They have survived here for thousands of years and are uniquely adapted to the climate, soil, and water conditions of this area. Wildlife indigenous to this area has co-evolved with native plants, depending on these specific plant species for their survival. A "non-native" plant is one that was brought to this area by European settlers, and later by plant and garden enthusiasts. Many of these species don't cause any problems. But some, called "exotic invasive plants," escape into the wild, taking over natural areas and out-competing the native plants. The most common invasive plants in the Rouge Green Corridor are common buckthorn (*Rhamnus cathartica*) and garlic mustard (*Alliaria petiolata*). These invasive plants rob wildlife of the food and habitat benefits of the native plants they depend on.



What is Non-Point Source Water Pollution?

In general, water pollution is considered to come from two sources: "point sources" are readily-identifiable sources, such as an industry discharge pipe. "Non-point sources" are sources of pollutants that are not easily identifiable, such as those carried by stormwater runoff. Non-point source water pollution is created when rain falls to the ground on an impervious surface (roof or parking lot), and picks up pollutants (sediment, oil, motor fluids, fertilizers, etc.) as it travels along the surface on its way to a lake or river. The biggest source of water pollution today is stormwater runoff.



What is a CSO?

A CSO (Combined Sewer Overflows) occurs during large rain events when the capacity of the combined storm and sewer system is exceeded. The CSO retention treatment captures excess flow and stores it until it can be conveyed to the Detroit Waste Water Treatment plant. During a very large rain event when there is a discharge into the river from the CSO basin, the effluent is screened, settled and disinfected.

The Plant-River Partnership

Areas where land and water meet are often rich in plant and wildlife diversity. The woodlands that grow next to the Rouge play a significant role in protecting the river. Plant roots hold the stream bank in place and help limit soil erosion. Leaves that fall into the water provide food and shelter for aquatic organisms. Branches and trunks that fall across the water provide loafing logs for ducks and turtles. Finally, large trees and shrubs growing near the water's edge shade the water, keeping it cool and hospitable for all the aquatic creatures. Plants along the river act as a riparian buffer. The wider this buffer is, the more it can do to protect the river from problems associated with stormwater runoff from parking lots, rooftops, and lawns.

Riparian buffers that contain native plants have added ecological value because they are critical sources of food, shelter, and nesting material for wildlife. Native plants still have a strong presence in the Rouge Green Corridor as was documented during a plant inventory by botanists in 2004. The natural areas inventoried along the corridor vary widely in size and condition. Larger, undisturbed sites have high-quality native plant communities, including species such as American beech, sugar maple, bitternut hickory, red oak, ironwood, trillium, and jack-in-the-pulpit.

An Ark of Biodiversity

Many terrestrial (lives on land) and aquatic (lives in water) wildlife call the Rouge Green Corridor home. In fact, the Rouge Green Corridor is considered a refuge or ark for future re-colonization of the rest of the Main Branch of the Rouge River. There are two reasons for this: 1) There is a fairly intact vegetated riparian buffer that provides important protection for the aquatic community; and 2) The water is of fairly high quality, with high dissolved oxygen concentrations and low to moderate nutrient concentrations (which is also due to the riparian buffer). Continued improvements in water quality, and the restoration of riparian buffers will help enable the diverse array of plant and animal species found within the Rouge Green Corridor to re-colonize other areas along the Rouge River.

Recent inventories of the Corridor by biologists show that the river and its adjacent wooded uplands support five kinds of turtles, two kinds of non-poisonous snakes, eight species of frogs, and seventeen species of mammals. Aquatic invertebrates or macroinvertebrates found within the Rouge Green Corridor include flathead and small minnow mayflies, net spinner caddisflies, and several types of beetles. Another exciting find is that the Corridor has the largest and most diverse population of freshwater mussels within the entire Rouge River watershed.

Urbanization and Water Quality

Over the years, the Rouge Green Corridor has been impacted by the stresses of urbanization. As land use shifted from agriculture to suburban and urban development, the Corridor was used for combined and sanitary sewer overflows, limited industrial discharges, and stormwater discharge. These uses caused problems, such as odors, non-point source water pollution and high flow variability. In 1992, the Rouge River National Wet Weather Demonstration Project ("Rouge Project"), funded by the U.S. Environmental Protection Agency, began to address the causes of these issues, and implement solutions. As part of this project, a monitoring program was begun to assess current conditions, identify primary pollutant sources, and track long-term trends.

The Rouge Project regularly monitor's bacterial levels. Rouge communities have completed several tasks to reduce bacteria levels in the Rouge Green Corridor, including the construction of retention treatment basins to control Combined Sewer Overflows (CSOs). After installation of the basins in the Rouge Green Corridor, the *E. coli* readings were cut by approximately 50%.

Like us, fish and aquatic animals need oxygen to breathe, but underwater! Dissolved oxygen can be reduced in water bodies when aquatic plants grow out of control because too many nutrients (such as phosphorus from lawn fertilizers or nutrients from human waste) have been added to the water. As the plants die, their decomposition ties up the dissolved oxygen, making it unavailable to fish. Dissolved oxygen monitoring has shown significant improvement since 1994, meeting State water quality standards more than 80% of the time.

What is Nature Telling Us?

Another way to monitor water quality is to look at the species of fish, macroinvertebrates, and frogs and toads that live in and near a watercourse. Fish were sampled in the Rouge Green Corridor by Michigan Department of Natural Resources (MDNR) in 1995. They found a higher diversity of fish in the Rouge Green Corridor than in other sampling locations within the Rouge. Survey results also show some environmentally sensitive species, indicating good water quality and habitat conditions.

Rights and Responsibilities of Riverfront Property Owners

The rights of riparian land owners and the waters of Michigan are protected and regulated by a number of laws. However, land owner responsibilities are generally less well defined. Be sure to read through the "River Stewardship 101" section to be well-versed on how you can be a responsible river front property owner.

General Guide to Waterfront Laws*

Much of the general concepts for Michigan's water use laws developed through court cases and rulings given over the past 200 years. The State Legislature also has passed comprehensive laws, such as the Natural Resources and Environmental Protection Act, 1994, PA 451 which includes Part 301, Inland Lakes and Streams, and Part 303, Wetlands Protection. Both regulate certain uses of riparian areas. The Oakland County Drain Commissioner also has jurisdiction over certain drainage ways within Oakland County to minimize flooding and ensure conveyance of stormwater.

Jurisdictional Boundaries

There are several general concepts that form the basis for Michigan's riparian laws. Several are explained here:

- A riparian land owner (or Riparian) is one who owns land or property abutting water. The Riparian also owns the submerged lands adjacent to his or her property to the center of the lake or stream. However, a Riparian does not own the water, or in most cases, the fish. These are held in public trust for the benefit of all the people. The surface of a lake, whether open or frozen, is shared equally by all riparian property owners that abut the lake. They may fish or boat on any part of it.
- The Oakland County Drain Commissioner is given jurisdiction by municipalities to establish drainage districts and implement drain projects. Application is made by a community for both tasks. Once an application is made, it is evaluated by the Drain Commissioner's office and either accepted or denied. Natural drainage ways may be designated as a County Drain, and this designation may only cover portions of a natural stream, as opposed to the entire length of the stream. A drain also can be an underground pipe, retention pond, ditch or swale that conveys stormwater.
- In general, the State of Michigan has jurisdiction over "navigable" waters, fish, and water-oriented construction operations, such as marinas, docks, canals, bridges, dredging, filling, and impoundments. The State uses the definition of navigable waters to determine if a lake or stream is public (navigable) or private (non-navigable). The definition of navigable has been developed through a series of judicial decisions, but there is significant uncertainty regarding the public or private character of most of the State's streams. Many streams are designated public or private after some type of litigation has been settled over the use of the stream by someone other than the riparian land owner.



Rights of Passage Within a Watercourse

If a stream is navigable, the public has the right to wade up a stream and fish, but cannot trespass on the uplands. However, if the stream is obstructed or in case of an emergency, the fisherman can make reasonable use of the upland to go around the obstruction or get help. An abutting property owner may not create obstructions to keep the public from wading, swimming or fishing a navigable stream. If the stream is not navigable, the public cannot wade up the stream, or access the stream by boat. Hunting, on the other hand, is a right that goes with land ownership and permission from the landowner is required.

Drawing Water for Irrigation

As indicated earlier, riparian land owners do not own waters adjacent to their lands, but do have the right to reasonable use of the water for their own purposes, including irrigation. However, the landowner cannot impair the water as it passes along or decrease the benefits of the water for other riparian landowners. Non-riparian owners are not entitled to similar water use rights, and extraction of water for their own purposes is considered trespassing against the rights of the riparian owner. Further, a riparian landowner cannot permit a non-riparian landowner to withdraw water.

Footbridges

The Inland Lakes and Streams laws do not allow property owners to structurally interfere with the natural flow of a stream, nor construct anything within the bottomland of a stream without a permit from the MDEQ. In addition, the Oakland County Drain Commissioner, who is charged with ensuring drainage of stormwater throughout Oakland County, prefers that homeowners refrain from constructing footbridges because of the possibility of debris collecting under these small bridges and obstructing the flow of the stream.

So, have your travels through the Rouge Green Corridor gotten you excited about the river in your community? If so, there are many things you can do that will help the Rouge Green Corridor continue to improve. Since stormwater—regardless of where it falls in the watershed—could end up in the river, we all have riverfront property, and our activities in the watershed impact the river. The chart below explains how residents and businesses can help the Rouge.

Help Keep Pollution Out Of Storm Drains	Follow Healthy Lawn Care Practices	Carefully Store And Dispose Of Cleaners, Chemicals, And Oils	Clean Up After Your Pet & Don't Feed Waterfowl	Practice Good Car/Mechanical Equipment Care	Choose Earth-Friendly Landscaping	Manage Woody Debris	Establish and Maintain Riparian Buffer Zones	Stabilize Stream Banks	Support and Participate in Local Environmental Groups
<p>Storm drains and roadside ditches empty into our lakes and streams without treatment. Follow these tips to keep pollutants out of storm drains:</p> <ol style="list-style-type: none"> Sweep extra fertilizer, grass clippings or dirt back onto your lawn. Don't hose down hard surfaces. Keep grass clippings, leaves, trash, and fertilizers away from storm drains. Never dump ANYTHING down a storm drain, such as motor oil, pet waste, or dirty or soapy water. Remember: Only Rain in the Drain! Label storm drains in your neighborhood. That lets residents know they flow directly to our lakes and streams. Build a rain garden to reduce the amount of stormwater. Call 248-288-5150 for a rain garden information packet. <p><i>In addition to the tips above, businesses should be sure that all floor drains discharge to the sanitary system.</i></p>	<p>Chemicals washed off of lawn enter our lakes and streams through storm drains and roadside ditches. Fertilizers cause algae blooms, which kill fish. What can you do? Follow these tips to maintain a green, river-friendly lawn:</p> <ol style="list-style-type: none"> Maintain lawns at 3" or taller. Taller grass promotes root growth and shades out weeds. Recycle clippings into the lawn, reducing your need to fertilize. Test your soil to determine what type of fertilizer you need, if any. Use slow-release fertilizers following package directions. Water your lawn lightly and frequently. Avoid "weed & feed" products. This spreads pesticides where they are not needed. Keep chemical applications at least 25 feet away from the edge of a lake, stream, storm drain, or roadside ditch. <p><i>Maintaining an attractive lawn also makes businesses look good. Instruct your lawn maintenance company of the tips above. Less mowing, fertilizers and pesticides save you money.</i></p>	<p>Cleaners, chemicals and oils pollute our waterways if washed or dumped into storm drains or roadside ditches. Be sure you:</p> <ol style="list-style-type: none"> Only purchase the amount you need. Try using less toxic alternatives like vinegar for washing windows. Keep unused products in their original containers with label intact. Store in a cool, dry place away from kids, pets, and wildlife. NEVER dump motor oil or other toxic materials down a storm drain, in a sink, or on the ground. Contact your community for local disposal sites. <p><i>The State of Michigan has specific laws regulating use and storage of toxic chemicals for many business applications. Often, double containment, and a spill response plan are required to obtain the necessary permits. However, businesses also use many unregulated products that, if washed into a storm drain, road ditch, or floor drain could be harmful to the environment. Follow the tips above to ensure that all materials are used, stored, and disposed of properly.</i></p>	<p>Animal waste washed into a storm drain or road side ditch has harmful bacteria that can make our lakes unsafe for swimming. Whether on your lawn or on a walk, pick up after your pet promptly, and dispose of it in the trash or toilet where it can be treated.</p> <p>Lake or stream side pet owners should follow these tips to dispose of it: Who wants to swim in your pet's poop? Also refrain from feeding ducks and geese. This causes the birds to become dependent on humans, creating unnaturally high populations and more waste. Bacteria in the waste pollute our parks, lakes, and your yard!</p> <p><i>Businesses that have lake or riverfront property may provide space for employees to enjoy the view. Encourage your employees to refrain from feeding ducks and geese. This practice increases their populations, and in turn, the wastes that are left on your lawn and in the water. See the column titled Establish and Maintain Riparian Buffer Zones.</i></p>	<p>There are over four million vehicles in Southeast Michigan alone! Taking good care of your car or vehicle fleet keeps dirty wash water and fluids out of our storm drains and road side ditches. Follow these simple steps:</p> <ol style="list-style-type: none"> Take the car to the car wash. They treat their dirty wash water. If you wash your own or company's car, do it on the grass so the soapy water doesn't drain into the storm drain, floor drain or roadside ditch. Also use less soap, or just plain water. Keep the car properly tuned. If possible, take it to a shop where they can clean up fluids and oil and recycle used accidental spills. If you change the fluids or oil, label the waste container and take it to a business that accepts used vehicle fluids. Residents can take it to their community's household hazardous waste collection day. Use kitty litter to soak up any spills, and throw it in the trash. <p><i>For businesses, hire a lawn care service that is aware of its impact on the river. Instruct them to follow the practices outlined above. This will save them time and your business money!</i></p>	<p>How we plant and care for our yards can help water quality. Consider the following:</p> <ol style="list-style-type: none"> Use a wide variety of plants to control pests and minimize the need for pesticides. Select plants that are suitable for the soils and site conditions. Select plants native to Michigan. Once established, native species need less water, and are more disease resistant. Keep leaves, grass clippings and other yard debris away from storm drains, roadside ditches, streams or lakes. Compost or set out for collection. Keep low areas free of yard debris to allow standing water to soak into the ground. Better yet, plant a rain garden! Shred leaves and use as mulch. <p><i>Even though you may not live right on the river, you could assist a local community group in managing woody debris (logs) on public property. Contact your community offices for more information.</i></p>	<p>Logjams used to be considered a problem. Now, common thought is that properly managed logjams are an important part of a river system's natural processes. The Drain Commissioner only manages logjams in legally defined County Drains. Before taking action on a logjam, call the Friends of the Rouge (313-792-9900) or the Wayne County Department of Environment (888-223-2363). They can assist you in assessing the situation and the best course of action to take. They can also tell you if a permit from the MDEQ is required. Here are tips about logjams:</p> <ol style="list-style-type: none"> Leave most logjams in place to slow river flow, reduce erosion and preserve and maintain existing habitat. Use logjams as a natural screen for collecting urban litter, which can be removed on a regular basis. Use woody material from logjams for stream bank protection and habitat creation. <p><i>Your gardening expertise (or interest!) could be used to assist your community in planning and installing a riparian buffer on public property. Contact your community offices for more information. In any event, be sure to practice earth-friendly landscaping in your yard.</i></p>	<p>Riparian buffers are areas next to a stream or lake planted in trees, shrubs and flowers. The plants' deep root systems hold the stream bank in place, protecting it from erosion. The buffer also helps to slow surface runoff. This allows the buffer plants to take up fertilizers or other pollutants, keeping them out of the stream or lake. When planting buffers, make it as wide as possible (ideally 25-30 feet wide, but as little as 5 feet wide can be beneficial). Select a variety of species well suited for the conditions. Also maximize the use of native plants, and use earth-friendly landscaping practices. A narrow path through the buffer to the water's edge allows access and encourages your neighbors or employees to visit your beautiful waterside garden.</p> <p>Your gardening expertise (or interest!) could be used to assist your community in planning and installing a riparian buffer on public property. Contact your community offices for more information. In any event, be sure to practice earth-friendly landscaping in your yard.</p>	<p>Stream bank erosion happens when storm-water flows scour the sides of the stream, dislodging vegetation and removing the stream bank. This degrades in-stream habitat and eats away at upland property. Stabilizing stream banks can be done with many engineered techniques. However, bio-engineered methods (methods that include vegetation) not only stabilize the stream bank, but provide habitat and aesthetic benefits as well. Designs should be based on the volume and speed of flow at the sites, and the slope and stability of stream banks. Note that a permit from the MDEQ is required for any stream bank stabilization work.</p> <p>Your community may have a volunteer opportunity available for you if you're interested in getting dirty! To be involved in a stream bank stabilization project, call your community offices or the Friends of the Rouge (313-792-9900).</p>	<p>There are many local groups that work to protect the Rouge Green Corridor. These groups are non-profit and depend on volunteers and donations to continue their efforts. Consider calling one of the groups listed below and getting involved to improve the Rouge Green Corridor!</p> <p>Friends of the Rouge (313-792-9900) Oakland Land Conservancy (248-601-2816) Oakland Audubon Society (248-647-2473) East Michigan Environmental Action Council (248-258-5188)</p> <p><i>Business or corporate memberships in many non-profit groups provide critical funding and opportunities for employees to give back to their communities. Supporting a local non-profit also gives the business a positive public image, and other non-tangible benefits to the business as an organization. The groups listed above work in your company's back yard and would benefit from any financial and volunteer contributions a Rouge Green Corridor business could make!</i></p>

Riparian Activities that Require a Permit

The Inland Lakes and Streams legislation describes activities where a riparian land owner must obtain a permit from the Michigan Department of Environmental Quality (MDEQ). These include the following:

- Dredge or fill bottomland (Bottomland is the area that lies below the ordinary high-water mark and may or may not be covered by water)
- Construct, enlarge, extend, remove, or place a structure on bottomland, such as a permanent dock. Seasonal structures for noncommercial recreational use do not require a permit as long as they don't interfere with the use of the water by others entitled to use the water or interfere with water flow.
- Erect, maintain, or operate a marina
- Create, enlarge, or diminish an inland lake or stream
- Structurally interfere with the natural flow of an inland lake or stream
- Construct, dredge, commence, extend, or enlarge an artificial canal, channel, ditch, lagoon, pond, lake, or similar waterway where the purpose is ultimate connection with an existing inland lake or stream, or where any part of the artificial waterway is located within 500 feet of the ordinary high-water mark of an existing inland lake or stream.
- Connect any natural or artificially constructed waterway, canal, channel, ditch, lagoon, pond, lake, or similar water with an existing inland lake or stream for navigation or any other purpose. Wetlands and floodplains are regulated in a similar way through Part 303, Wetlands Protection, of the Natural Resources Environmental Protection Act, 1994 PA 451. This law specifically applies to wetlands connected to an inland lake, pond, river or stream, or a wetland located within 500 feet of an inland lake, pond, river, or stream. Wetlands that are not connected and are greater than five acres in size are also protected, as are non-connected wetlands of any size that the MDEQ determines are essential for protection of the State's natural resources. The property owner must obtain a permit from the MDEQ for any of the following activities:

- Deposit or permit the placing of fill material in a wetland
- Dredge, remove, or permit the removal of soil or minerals from a wetland
- Construct, operate, or maintain any use or development in a wetland
- Draw surface water from a wetland

A guidebook, called the *Permit and Licensing Guidebook*, has been developed by MDEQ to explain the permit requirements for these activities. Refer to the MDEQ website or contact the Land and Water Management Division for more information.

*Regulations about the use of water in the State are complex and continue to evolve. The information included here was gathered from a number of sources: Public Rights of Michigan Waters, published by the Law Enforcement Division of the State of Michigan, 1997; the Michigan Waterfront Alliance website; and the Michigan Lakes, Streams and Waterbodies Association website. It should not be construed as legal advice, nor a comprehensive evaluation of the topics discussed. It is only meant to give general information on common questions regarding the use of riparian lands.



What Waters Are Considered Navigable (or Public)?

A navigable inland stream is (1) any stream declared navigable by the Michigan Supreme Courts; (2) any stream included within the navigable waters of the United States by the U.S. Army Corps of Engineers; (3) any stream which floated logs during the lumbering days, or a stream of sufficient capacity for the floating of logs in the condition which it generally appears by nature, notwithstanding there may be times when it becomes too dry or shallow for that purpose; (4) any stream having an average flow of approximately 41 cubic feet per second, an average width of some 30 feet, an average depth of about one foot, capacity of flote during spring seasonal periods of high water limited to loose logs, ties and similar products, used for fishing by the public for an extended period of time, and stocked with fish by the State; (5) any stream which has been or is susceptible to navigation by boats for the purposes of commerce or travel; (6) all streams meandered by the General Land Office Survey in the mid 1800's. Note that the Michigan Supreme Court designated the Rouge River navigable from its mouth to 15 miles upstream from the mouth.

Navigable is not whether a boat can be used in a lake or stream, but is based on the "floating log" test, which was a very useful tool during logging days in Michigan. If a log can float down a waterway, then it is considered navigable, and useable for commerce, travel, and trade. Navigable waters are considered public, which brings with it rights for public use. Even though we don't use rivers to float logs to market any more, this standard is still used as the legal test to define public waters.



Resources

Environmental Stewardship in Oakland County
Contact: Oakland County Planning
248-858-0720

www.oakgov.com/community/community-development/environmental-stewardship

24-Hour Environmental Hotline for surface water pollution
Contact: Oakland County Drain Commissioner
248-858-0931 www.oakgov.com/drain

Rouge Rescue/River Day, Annual Frog & Toad Survey, Annual Bug Hunt – Benthic Macroinvertebrate Sampling
Contact: Friends of the Rouge
313-792-9900 www.therouge.org

Healthy Lawn Care, Composting & Soil Health, Rain Gardens, Naturscaping & Native Plants:
Contact: Southeastern Oakland County Water Authority (SOCWA) 248-288-5150 www.socwa.org

Invasive Plant Removal & Stewardship Workshops
Contact: Your Municipal Offices
For more information about how you can protect water quality see: www.sencog.org/OursToProtect/OursToProtect

Web links for more information on water resource preservation and natural area stewardship:
Rouge River National Wet Weather Demonstration Project www.rougeviewer.org
Center for Watershed Protection www.cwp.org
The Stewardship Network www.stewardshippnetwork.org
Wild Ones Native Plants, Natural Landscapes www.for-wild.org

PROJECT PARTNERS
City of Birmingham www.bhamgov.org/
City of Southfield www.cityofsouthfield.com
Village of Beverly Hills www.villagebeverlyhills.com
Friends of the Rouge www.therouge.org
Southeastern Oakland County Water Authority www.socwa.org
Oakland County Drain Commissioner's Office www.oakgov.com/drain
Oakland County Planning & Economic Development Services www.oakgov.com/community/community-development

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Rouge Green Corridor

Keep an eye out for this new Rouge Green Corridor logo in your area and help get the word out about this community asset.