

The Huron River Data Report

The Lower Huron River

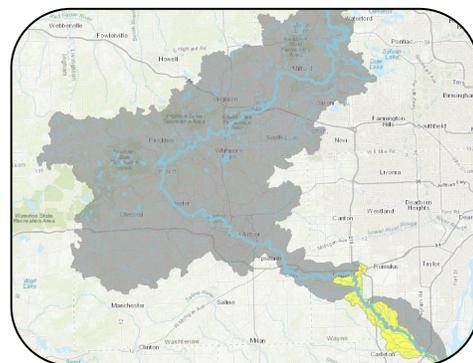
Creekshed Profile

The Huron River flows 125 miles from its headwaters at Big Lake, near Pontiac in Oakland County, to its mouth at Lake Erie in Monroe County. HRWC divides the river into five sections based on its geology, ecology, and hydrology. This report is based on the section that runs from French Landing Dam, on the downstream end of Belleville Lake, to the mouth of the Huron River at Lake Erie. The land immediately around the Huron River in this section (yellow area in map below) is the focus of this report.

In this section, the Huron River achieves a mature river form; it is very wide and slow-moving. There is an abundance of wetlands along its banks and the entire drainage area is flat. The river's final large dam (originally created to produce hydroelectric power) is found at Flat Rock. Below this point, the drainage area narrows rapidly, with land and water merging into marshlands that nurture a rich variety of fish and fowl. Two international migratory flyways intersect over Pointe Mouillee. At the mouth of the Huron, diked and drained land supports productive traditional agriculture. Throughout this section, one can sense the presence of a larger body of water (Lake Erie), a longer history of human habitation, and the influence of the river on the lives of the people who live here.

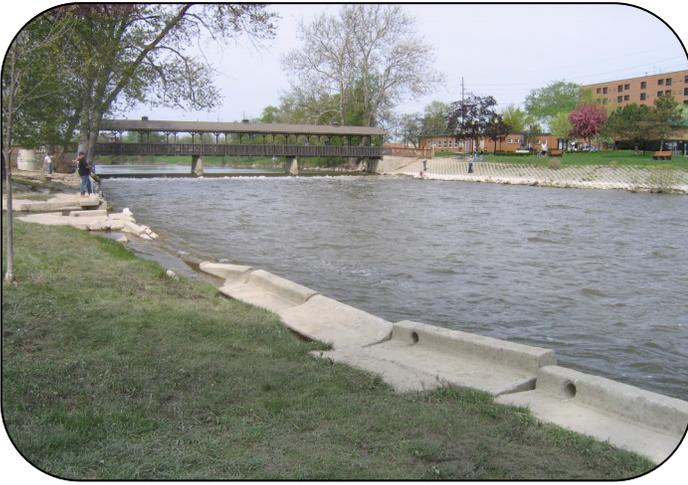
The main branch in this section is 46 miles. It has a gradient of 1.2 feet per mile, which is very flat. There are small tributaries that are also in this area, totaling another 54 miles in length. There are 19 ponds (<5 acres of open water), but 6 lakes (>5 acres of open water). The two most prominent "lakes" are actually the Huron River above Flat Rock Dam (335 acres), and the mouth of Huron River (354 acres) where it connects to Lake Erie.

A river ecosystem is only as healthy as the quality of the water flowing into it. Woods Creek, Smith Creek, and Silver Creek are the primary tributaries that flow into the Huron River in this area (gray on the bigger map). Reports exist for both of these sections (<https://www.hrwc.org/our-watershed/features/>).



- Monitoring sites for Aquatic Insects, Stream Habitat, and Stream Temperature
- Monitoring site for Phosphorus, Total Suspended Solids, and *E. coli*
- ▲ Dams

Watershed Status and Trends



The Huron River flowing through Flat Rock. Credit: Max Bromley

Watershed Land Use

Impacted by polluted runoff

Total watershed size: 38 square miles

Land use based on the year 2000:

Agriculture: 22%, 8 square miles

Residential & urban: 37%, 14 square miles

Forest: 3%, 2 square miles

Open: 11%, 4 square miles

Wetland: 26%, 10 square miles

Total impervious surface: 12%, 5 square miles

Fish and insect communities are less diverse when impervious surface exceeds 10-12% of the total watershed area. 12% of this area is impervious; therefore much of the system is at the tipping point of losing much of its biological diversity.

Watershed Natural Areas

Many natural lands yet unprotected

The watershed's forests, wetlands, and grasslands soak up rainwater and runoff, filter pollutants from runoff, and provide wildlife habitat and beautiful places for us all to enjoy. About 25% of this stretch remains as intact natural areas. 45% of these areas are protected from development (in Lower Huron, Oakwoods, and Willow metroparks). Without designated protection, the rest of these natural areas face an uncertain future. It will be important to keep these lands natural, so they can continue to help keep the upper watershed healthy.

River Habitat

A mix of habitat quality

This section of the Huron River has substrate favorable for river life; a mix of boulders, rocks, sand, and gravel in fast flowing areas and sand and muck in slow-water areas. As the river moves downstream, it slows down and gets wider and fine sediments become dominated in the substrate. Most of the riparian areas are full of large trees, which provide shade for the river and stability for the streambanks. Plenty of fallen trees line the banks and provide habitat for fish, turtles, and birds.

The small tributaries in this section are typically channelized, and straight waterways do not have the normal diversity of habitat types that we look for in creeks. Also, the substrate is quite mucky, and fine sediment is a problem as it fills in living spaces for insects and fish. The muck is natural for the Lower Huron, but is exacerbated by agricultural practices and erosion.

Fish Community

Warm-water lake communities

The Huron River supports warm-water fish communities. Sunfish and bass are common, as are suckers, carp, and catfish. Northern pike are known to get quite large in the vegetated margins of the lakes. In the spring, steelhead, walleye, chinook salmon, and white bass run up the river from Lake Erie until they get to Flat Rock dam.

Aquatic Insect Community

Poor in the tributaries; fair in Huron.

The channelized tributaries of the Lower Huron have mucky substrates and poor insect communities. The Huron River proper is very difficult to sample in this section; only one location is studied (in Flat Rock) and the water is often too deep to get in. When we do get samples here, they usually contain a variety of mayflies and caddisflies which indicate healthy waters, but we don't find the most pollution intolerant (aka sensitive) families. Stoneflies are regularly found in the winter and in high numbers.

Stream Water Temperature

Slightly elevated temperatures

The Huron River receives a mix of cold groundwater and warmer surface runoff. Our temperature logger at the Lower Huron Metropark, which is in the shade, shows a daily July-August range between 73 and 80°F. Downstream of Flat Rock Dam, water temperatures range from about 70 to 85 in July and August. Eighty-five is an elevated temperature and likely the result of unshaded impounded water.

Phosphorus

Elevated

Phosphorus is the limiting nutrient in most freshwater systems, and too much phosphorus can cause algal blooms and water quality problems. Total phosphorus in the Lower Huron is monitored in collaboration with the Alliance of Downriver Watersheds at the point where the Huron River crosses Fort Road in Rockwood. The target for this section is < 30 ug/l. This section of the river's mean total phosphorus concentration near Fort Road is 53 ug/l with a median total phosphorus concentration of 40 ug/l.

E. Coli

Low

E. coli bacteria is a useful water quality indicator for the presence of fecal contamination. In the area near Ford Road in the Lower Huron, average *E. coli* counts are low at 75 *E. coli* per 100 ml with a median of 68 *E. coli* per 100 ml. Both the median and mean are below the state full and partial body contact standards of 300 *E. coli* per 100 ml and 1,000 *E. coli* per 100 ml respectively, indicating no *E. coli* impairments in this area of the river.

Total Suspended Solids

Low

Total suspended solids (TSS) is a measure of the amount of sediment and organic material in a stream. High TSS indicates turbidity and erosion problems. Good TSS values during rain storms are below 80 mg/l. The Lower Huron at Fort Road in Rockwood has a mean TSS of 12 mg/l and a median TSS of 11, indicating low TSS levels.

Color Coded Ranking

Excellent

Fair

Poor

Conductivity

Slightly elevated

Conductivity is a measurement of the amount of ions (also known as salts) dissolved in water. Conductivity is a quick and easy measurement to make and is useful as an indicator of potential problems. Conductivity levels at Flat Rock are just slightly higher than natural background levels, indicating the presence of a slight amount of unknown dissolved pollutants.

Stream Flow

Flashy due to runoff and dams

Stream flow is an important underlying factor for determining likely erosion rates, stream habitat quality, and aquatic community diversity. In the Lower Huron, river discharge, measured by flow, can be quite flashy following storms. Flashiness in the Lower Huron is largely due to stormwater runoff from the surrounding urbanized area as well as dam management.

Dams

Dominate the system

The dam at Flat Rock is large, and impounds a very large lake. Nutrients settle in these quiet waters, and the impoundment is regularly filled with aquatic plants and algae. The impounded water is exposed to the sun away from the river banks, which increases water temperature and lowers dissolved oxygen levels.

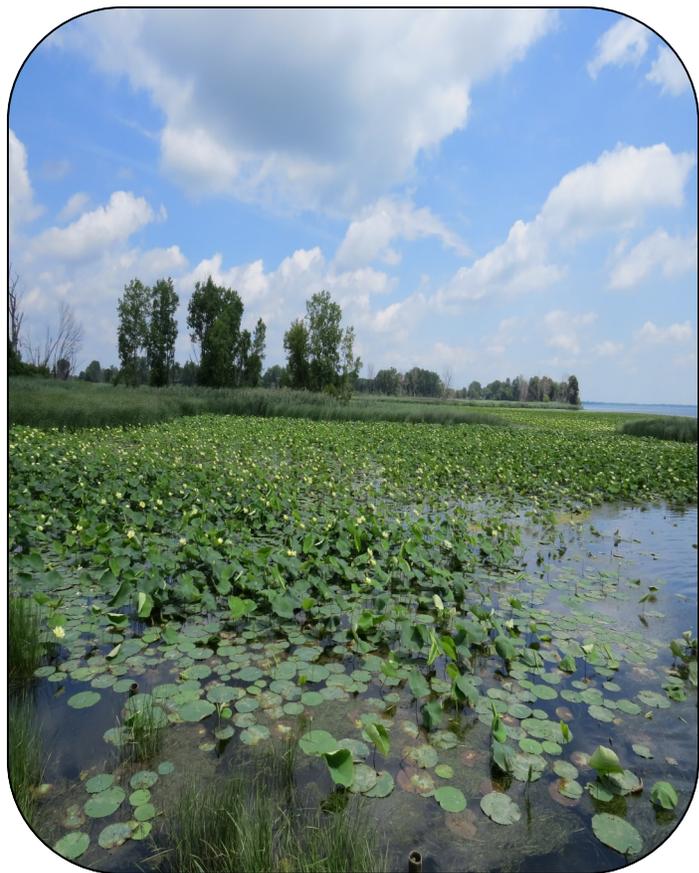
Successes & Challenges

Successes

- The nationally-designated Huron River Water Trail creates linkages from city to village; improves recreational access; adds interpretive, way-finding, and historical signage; and creates economic development opportunities along the entire stretch of the Huron.
- HRWC's RiverUp program has installed water trail signage throughout the Huron River, and improved access and safety at Huroc Park, the DNR boat launch near Flat Rock, and Labo Park.
- From Belleville Lake through Flat Rock, most of the land on the edge of the Huron River is in the Huron Clinton Metroparks, which protects the riparian land from being developed. From upstream to downstream, these parks are the Lower Huron Metropark, Willow Metropark, and Oakwoods Metropark,
- "Located near the towns of Rockwood and Gibraltar, the Point Mouillee State Game Area is 4,000 acres of marshes, pools and diked ponds surrounding the mouth of the Huron River and the shoreline of Lake Erie. Historically it was much larger, so large that its abundance of wildlife and waterfowl induced Late Woodland Indians to settle the area and then attracted French fur traders in the 1700s who gave the marsh its name of Pointe Mouillee (pronounced "Point Moo-yay") or "wet point." —excerpt from michigantrailmaps.com

Challenges

- The Huron River (from North Wixom Road at Milford and downstream) is under a "Do Not Eat Fish" advisory due to elevated levels of PFAS, a carcinogenic set of chemicals. Learn more at the HRWC website: <https://www.hrwc.org/our-watershed/threats/pfas-and-the-huron-river/>
- Flat Rock Dam creates a large lake and is a major piece of infrastructure in the city of Flat Rock, but the bridge over the dam is in a very poor state of repair, and the dam itself is a liability to public safety. Conversations on its possible removal are just starting to occur between the City, HRWC, and the Huron Clinton Metroparks, which own a large amount of the upstream waterfront.
- The smaller tributaries entering the Huron River in this section are dominated by fine soils, thanks to the underlying old lake plain geology. Therefore the natural conditions are not ideal for stream habitat, but the heavily channelization for agricultural land and urban sprawl combine into that to create creeks that are more akin to drains than vibrant natural ecosystems.



Point Mouillee Marsh, where the Huron River meets Lake Erie. Credit: HRWC

What you can do!

- Become a Change Maker! Change Makers learn about the Huron River and its watershed, the impacts of development on clean water, and how to navigate local governments' decision-making processes to encourage local river-friendly policies that protect clean water. hrwc.org/changemakers.
- Volunteer with HRWC! It is very important that HRWC have volunteers from the Lower Huron area who want to test flow, phosphorus, and insect communities, as this area is generally undersampled compared to regions further upstream. HRWC needs you!