

Creekshed Profile

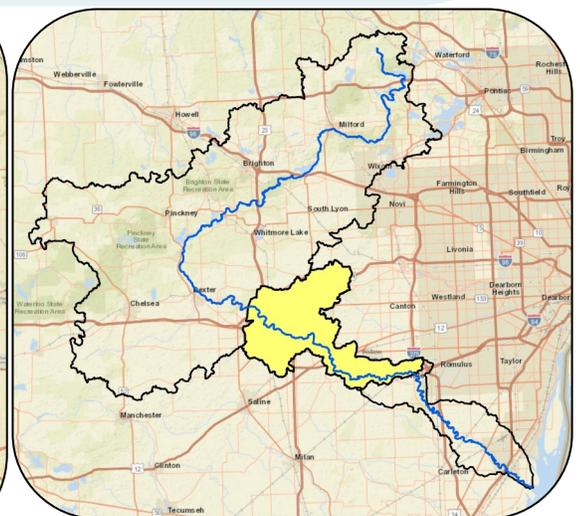
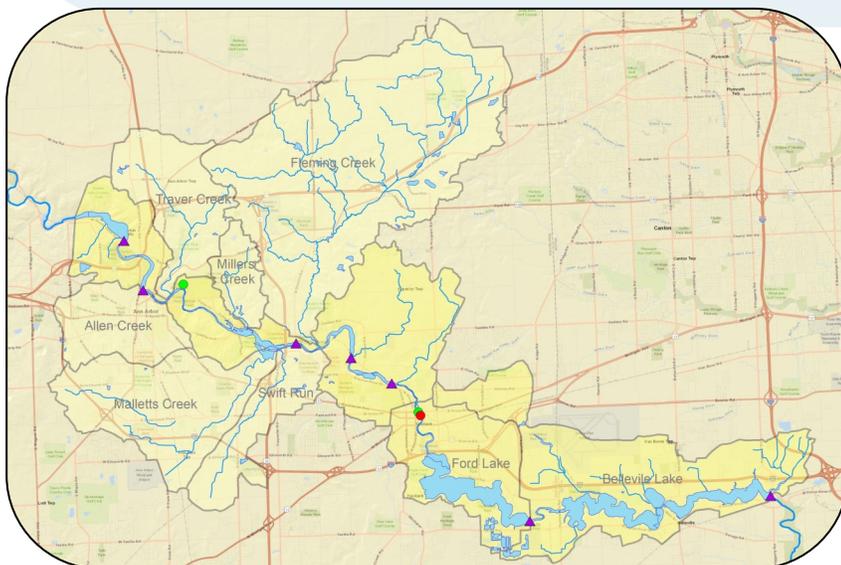
The Huron River flows 125 miles from its headwaters at Big Lake, near Pontiac in Oakland County, to its mouth at Lake Erie in Monroe County. HRWC divides the river into five sections based on its geology, ecology, and hydrology. This report is based on the 4th section from the headwaters, which runs 27.7 miles from North Maple Road, where Barton Pond begins to backup from Barton Dam, downstream to French Landing Dam, on the downstream end of Belleville Lake.

The land immediately around the Huron River in this section (brighter yellow, below) is the focus of this report. It is governed primarily by Washtenaw County, the City of Ann Arbor, the City of Ypsilanti, and five townships: Ann Arbor, Ypsilanti, Superior, and Van Buren. The river serves the main source of drinking water for the Ann Arbor area and the discharge point for wastewater

Historically, the Huron River through Ann Arbor and Ypsilanti was a working river. Seven large dams were built to power mills and create impoundments. Industry grew in this urban area using the river for water and waste removal. And the rail service is situated in the river valley with historic stock yards and industrial storage. While scarred by historical pollution, water quality in the river has improved in the last 25 years and there has been a resurgence in reconnecting to the river. Communities are embracing the riverfront through redevelopment of industrial and commercial properties, an active Huron River Water Trail for recreational users, and a robust park system for cultural and historical events.

Seventy-seven percent of the River in this section is impounded, which means it is slowed by one of the 7 dams here, and thus is more similar to a lake than a river ecosystem. This section has an average gradient of 5.9 feet per mile (twice the gradient of the adjacent upstream Huron River section), though most of the elevation change occurs at the dam structures themselves.

A river ecosystem is only as healthy as the quality of the water flowing into it. This section of the Huron is heavily impacted by ninety-six miles of creeks, including Allen, Traver, Miller, Fleming, Malletts, and Swift Run Creeks, and of course is influenced by the upstream Huron River. Reports exist for all of these sections (<https://www.hrwc.org/our-watershed/features/huron-river-creeks-streams/>)



- Monitoring sites for Aquatic Insects, Stream Habitat, and Stream Temperature For more details on these parameters, please see inside.
- Monitoring site for Stream Flow, Phosphorus, Total Suspended Solids, and *E. coli*
- ▲ Dams

Watershed Status and Trends



The new dock at the portage take out near Peninsular Dam. Credit: Kris Olsson

Watershed Land Use

Most urban area in the watershed

Total watershed size: 46 square miles (not including Fleming, Traver, Millers, Allen, Mallets, and Swift Run creeksheds)

Land use based on the year 2000:

Agriculture: 11%, 5 square miles

Residential & urban: 57%, 25.5 square miles

Forest: 8%, 3.5 square miles

Open: 11%, 5 square mile

Wetland: 5%, 2 square miles

Total impervious surface: 21%, 10 square miles

Fish and insect communities are less diverse when impervious surface exceeds 10-12% of the total watershed area. 21% of this area is impervious; also, the tributaries that flow into this stretch are also some of the most impervious in the watershed. Therefore we would expect instream habitat and therefore fish and insect pop-

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. Only 12% of this stretch remains as intact natural areas. About a third of these areas are protected from development (in places like Birds Hills and Barton Nature areas, and Nichols Arboretum,). In this urban stretch, it will be important to maintain natural features like trees, pocket parks, plantings, and riparian buffers, as well as employ Stormwater Green Infrastructure (rain gardens,

Stream Habitat

Moderately healthy habitat throughout

In the undammed stretches, the Huron River has substrate favorable for river life throughout this section; boulders, rocks, and gravel, with a small amount of sand. Plenty of fallen trees line the banks and provide habitat for fish, turtles, and birds. In the impounded areas, the substrate is silty and habitat is more similar to a lake than a river, which pro-

Dams and Impoundments

A dammed river

This section of the river is most easily characterized by the presence of big dams and impounded water. Nutrients settle in these quiet waters, and the impoundments are regularly overrun 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. Of particular concern is the poor dam controls at Argo Dam, which causes widely fluctuating river flows in the free flowing section near Island Park and the U-M Arboretum.

Fish Community

Warm water lake communities

The impounded water in this section supports fish communities more typically seen in warm lakes rather than cool-water rivers. Sunfish and bass are common, as are suckers, carp, and catfish. Walleye and yellow perch are more rare. In the free-flowing areas, anglers do enjoy fly fishing a surprisingly good smallmouth bass community.

Aquatic Insect Community

Below average

The large substrate in the free flowing areas of the river provides good habitat for many types of aquatic insects, but the high fluctuations in water flows due to poor dam management and poor water quality coming from the tributaries do limit overall aquatic insect diversity.

Stream Water Temperature

High maximum summer temperatures

The Huron River receives a mix of cold groundwater and warmer surface runoff and is an average of about 72-75°F during July and August in most upstream sections. In this section of the river, the overall average is a few degrees warmer, and it is not unusual to see summer afternoon water temperatures that exceed 80°F (Ann Arbor) and 85°F (Ypsilanti). This is likely due to the unshaded impoundments being highly exposed to the sun.

E. coli

High, but declining

E. coli bacteria is a useful water quality indicator for the presence of fecal contamination. In the area near E. Cross Street, *E. coli* is normally present in low concentrations. After heavy rain events, *E. coli* levels may rise above State standards. It can take 48 hours for the *E. coli* to return to safe levels. The river is listed by the state as impaired in this section, however, recent monitoring data show a strongly declining trend.

Phosphorus

Elevated

Phosphorus is the limiting nutrient in most freshwater systems, and too much phosphorus can cause algal blooms and water quality problems. The river is impaired for high phosphorus here. While the target concentration is < 50 µg/l for this section of the river, the mean total phosphorus (TP) near E. Cross Street is 70 µg/l. The trend is declining, however, and overall loading is close to

Color Coded Ranking

Excellent

Fair

Poor

Total Suspended Solids

Low

Total suspended solids (TSS) is a measurement of the amount of sediment and organic material held by the stream. A high TSS indicates high turbidity and erosion problems. Good TSS values during rain storms are below 80 mg/l; this section of the river at E. Cross Street has a mean TSS of 17 mg/l.

Conductivity

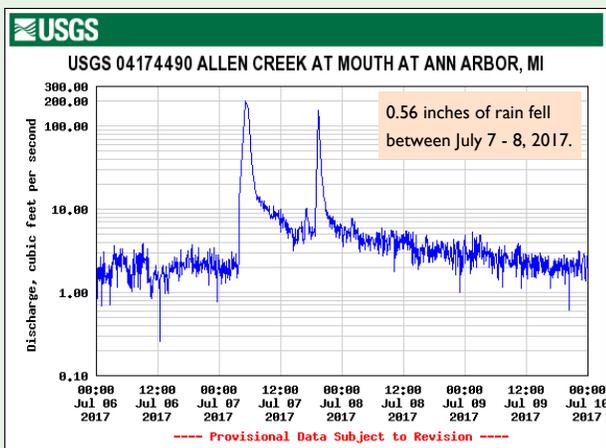
Slightly elevated

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 Island Park in Ann Arbor are normal. Conductivity in Riverside Park in Ypsilanti 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 dam operations

River discharge (flow) below Argo Dam can be quite flashy following storms. This is driven in large part by runoff coming out of Allens Creek storm drains (see charts). In between storms, river flow is periodically erratic due to imprecise dam gate controls. At the gage, the flashiness measures among the highest in the state.



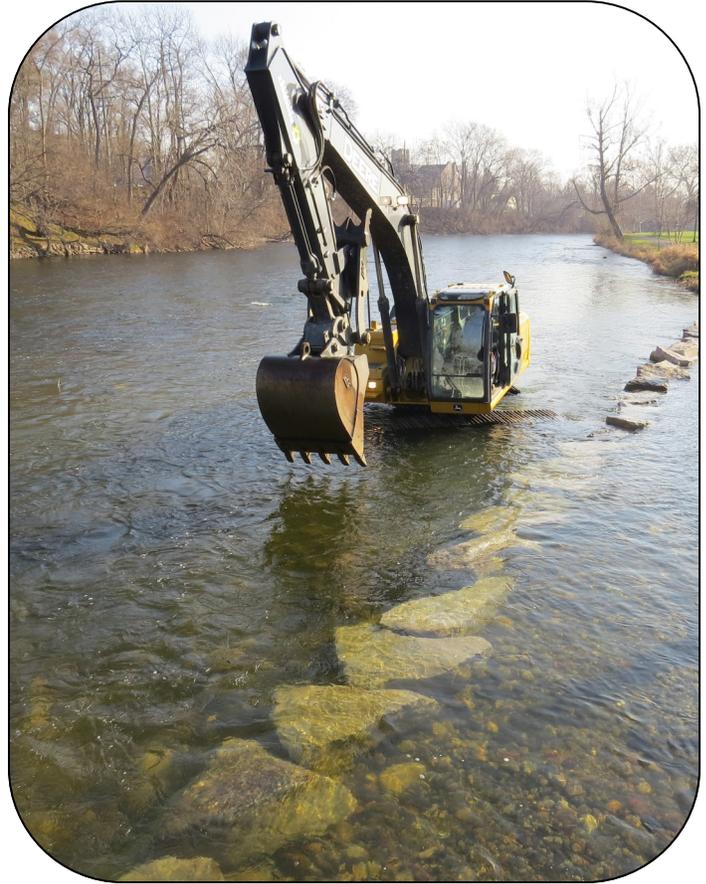
Successes & Challenges

Successes

- In 2016, HRWC secured felled trees to the banks of the Huron River at Riverside Park in Ypsilanti to create fish habitat as well as flow and depth variation. In addition, HRWC installed a rock vane near the gazebo in Riverside Park to increase water depth and fishing access.
- HRWC's RiverUp program has improved paddling access sites across this section of the Huron River (including but not limited to Barton Dam, Frog Island Park, Island Park, and Superior Dam).
- The Middle Huron Partners have invested well over \$10M on projects to reduce stormwater and runoff pollution and capture and infiltrate stormwater. The City of Ann Arbor established a stormwater utility to fund continuing work. Washtenaw County significantly revised their stormwater standards in 2014 to require greater infiltration and promote Green Infrastructure.
- Well over a dozen parks run alongside the waterfront along this stretch, owned by the City of Ann Arbor, Washtenaw County and Van Buren and Ypsilanti Townships. These parks keep the river safe from development and give much of the river a riparian buffer.
- The Washtenaw County Border-to-Border Trail runs alongside the river, allowing biking, hiking, birding, and other activities.
- 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.

Challenges

- Runoff from impervious surfaces is a continuous challenge in urban areas. Communities along this stretch will need to keep designing development and redevelopment creatively with Green Stormwater Infrastructure like rain gardens, porous pavement, green roofs, and native landscaping to slow down and soak up runoff.
- New development continues to appear along the river's banks, clearing the riparian trees, shrubs, and other native vegetation so vital to its health. Communities need to ensure new development is designed to minimize vegetation clearing and impervious surfaces, especially near the river.



This rock vane deepens the water in this section by about a foot and allows larger fish to hide there when summer water level get low. Credit: HRWC

- While this section of the Huron River is very popular with recreational users, such as anglers, paddlers, and tubers, it creates user conflicts. HRWC is working to promote shared uses and respect for the river.
- Phosphorus and *E.coli* are known problems in Mill, Honey, and Boyden creeks. These three creeks enter the Huron River in this section, lowering the river's water quality. Learn more about these three tributaries from their reports. (<https://www.hrwc.org/our-watershed/features/huron-river-creeks-streams/>)

What you can do!

At home

- The best way to maintain watershed health overall is through compact development in urban areas and preservation of natural areas in rural areas. Let your local government know that they should promote compact development that reduces loss of vegetation and impervious surfaces. Development in urban areas must use Green Stormwater Infrastructure to perform functions lost as natural landscapes are converted to buildings and pavement.