Traver Creekshed Report

Huron River Watershed Council

Protecting the river since 1965

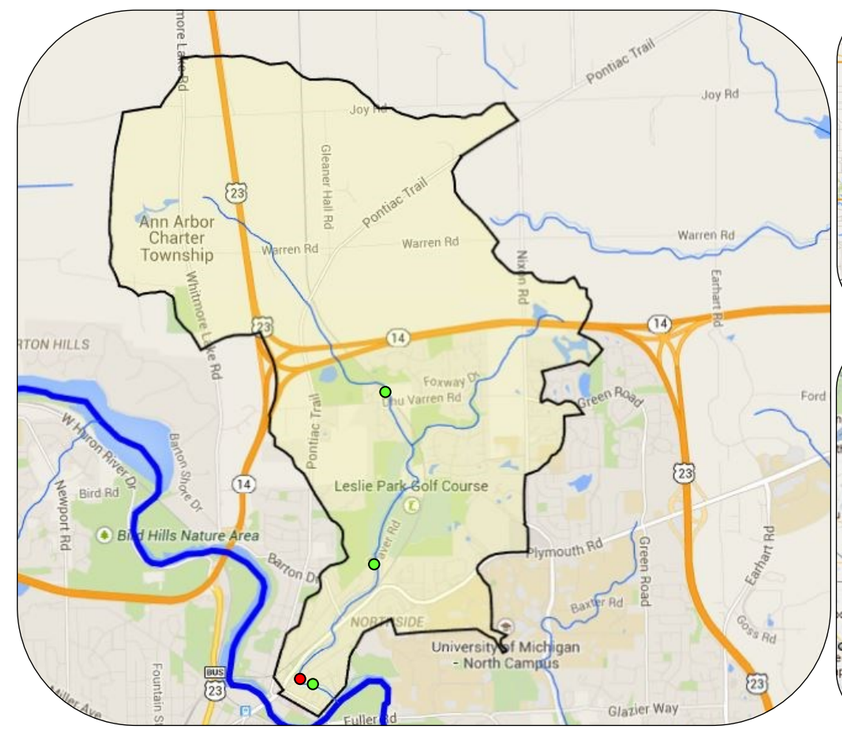
www.hrwc.org/traver

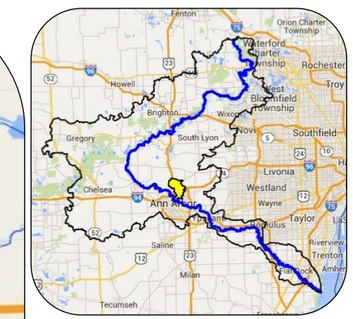
Creekshed Profile

Traver Creek flows off the western ridge of the Fort Wayne Moraine and down into Northeast Ann Arbor before emptying into the Huron River in the Lowertown neighborhood. Before European settlement, the creekshed was covered with oak-hickory forest. Today, the creekshed has two distinct areas, with its northern headwaters being predominantly farms and rural homes, and its southern region part of the urban area of Ann Arbor. The water quality of the river is clearly affected by the type of land through which it flows.

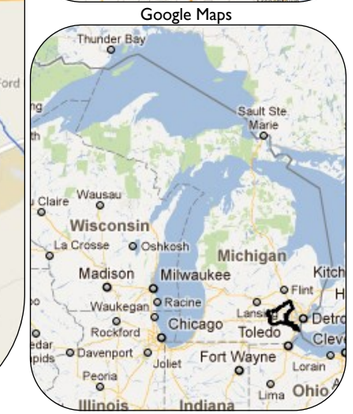
Traver creekshed is small, covering only 7 square miles, and the creek is also quite short, made of a main branch that runs 4.5 miles, and one tributary that runs 1.8 miles. The creek has a steep slope for the Huron River Watershed, dropping 163 feet over the 4.5 mile run of the main branch (36 feet per mile). There are 12 ponds (open water <5 acres) scattered through the creekshed; most of them are used for irrigation and part of the course in the Leslie Park Golf Course or as stormwater detention ponds near residential housing.

Traver creekshed falls primarily in the City of Ann Arbor (south of M-14) and Ann Arbor Township (north of M-14), and a small section in Northfield Township. The creek is a county drain and under purview of the Washtenaw County Water Resources Commissioner.





Google Maps



- 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*

Successes & Challenges

Successes

• Ann Arbor City's Greenbelt program and Ann Arbor Township's Farmland Preservation Program have protected 541 acres of farmland in the northern part of the creekshed, while the City holds 207 acres of parks, including gems such as Black Pond Woods and Dhu Varren Woods.

•Ann Arbor Township and City have numerous policies that protect the creek, including restrictions on building within 100 feet of waterways, strong wetland and stormwater ordinances, and the land preservation policies mentioned above.

•The City is encouraging compact, walkable communities with good stormwater design in the urban areas (south of M-14), and Ann Arbor Township is guiding higher intensity development to its southeast side and preserving rural landscapes in its northern area (located in the creekshed north of M-14).

•The Washtenaw County Water Resources Commission restored a section of Traver Creek running through the Leslie Park Golf Course. Funded by the City of Ann Arbor, the project improved flow controls in two small impoundments, added acres of wetland, and used natural materials and techniques to restore the creek bed and banks to a more sustainable state.

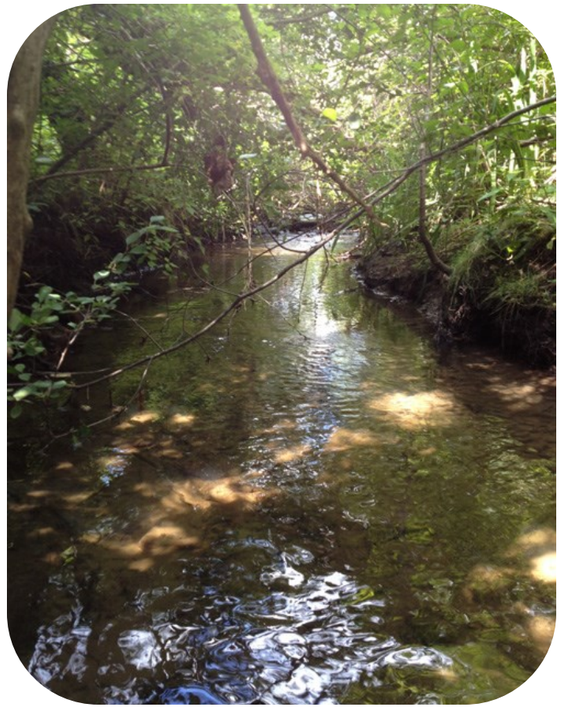
Challenges

• In urban areas of the creekshed, the City of Ann Arbor will need to encourage green infrastructure designs, enact stream restoration to stabilize banks, and promote storage and infiltration projects to improve flow and reduce erosion.

•Ann Arbor Township will need to encourage stream buffers and other erosion and nutrient management techniques in upstream agricultural areas.

•Ann Arbor city and township need to look for opportunities for stream restoration to address the affects of previous channelization and flow restriction.

•The two dams on the main branch of Traver only serve an aesthetic purpose. Removing these dams would allow fish from the Huron River to enter Traver Creek and would result in lower stream temperatures. Traver Creek could be a refuge area for smaller fish when the Huron is flowing high.



The upstream portion of Traver Creek runs through a shady riparian zone.
Credit: HRWC

What you can do!

At home

• Minimize your turf lawn. Instead, install a raingarden, use a rain barrel, and plant deep rooted native plants, in order to reduce runoff from your property.

• If you have pets, clean up after them and dispose of their waste properly. Pet waste left on the ground can contribute bacteria to the stream.

• If you own a septic system, have it checked regularly. Leaking septic systems can be a large source of phosphorus and *E. coli.*

• Don't use phosphorus fertilizer. The City of Ann Arbor law and Michigan State law prohibit application of phosphorus fertilizer without a soil test to prove that the phosphorus is needed.

•On agricultural lands, maintain at least a 25-foot vegetated buffer, ideally made of native plants, from all ditches, creeks, and water bodies. Also, contact the County Conservation District and ask about conservation programs.

Huron River Watershed Council, 1100 North Main Street, Ann Arbor, MI 48104, (734) 769-5123, **Updated 2015**

Creekshed Status and Trends

Many sections of Traver Creek have no vegetative buffers and are experiencing bank erosion. Credit: HRWC

Creekshed Land Use

Encroaching impervious surface

Total creekshed size: 7 square miles
Land use based on the year 2000:
Agriculture: 38%, *2.5 square miles*
Residential & urban: 40%, *3 square miles*
Forest: 8%, 0.*6 square miles*
Open: 7%, 0.5 *square mile*
Wetland: 5%, 0.*4 square miles*

Total impervious surface: 14%, *1 square mile*

Numerous studies have shown that fish and insect communities are less diverse when the amount of impervious surface exceeds 10-12% of the total watershed area. Since 14% of the Traver creekshed is currently impervious, this means that the system is at the tipping point of losing much of its biological diversity.

Creekshed Natural Areas

Many natural lands yet unprotected

The creekshed'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 15% of the creekshed remains as intact natural areas. However, only about a third of these areas are protected from development. (including Black Pond and Dhu Varren Woods). Without designated protection, the natural areas of the creekshed face an uncertain future. It will be important to keep these lands natural, so they can continue to help keep the creek healthy.

Stream Habitat

Poor at the mouth; fair upstream.

Traver Creek has the substrate favorable for aquatic life throughout the creek; boulders, rocks, sand, and very little little muck or clay. However, eroding banks throughout the lower section of the creek indicate that flashy flow conditions are a serious issue. There is also little instream woody debris or depth variation to provide cover and flow refuges. The upper portions of the creek are better, although this habitat could not be considered healthy or diverse compared to other Huron River tributaries more removed from urban centers.

Dams and Impoundments

Throughout the system

There are two dams on the main branch, one dam on the tributary, and 5 dams on residential detention ponds. All of the dams are small (<5 feet tall). However, the main branch dams are big enough to stop all fish movement from the Huron River to the upper half of the creek. As a result, the fish population in the creek suffers.

Mussel and Fish Community

Not known; likely poor to non-existent

There are no known fish surveys on Traver Creek. However, given the dams blocking the upper portion of the creek from the Huron River, the elevated temperatures, and the flashiness of the creek, it is probable that any fish community in Traver Creek is small and contains only the most tolerant species.

Aquatic Insect Community

Poor at the mouth; fair upstream.

From the golf course through where Traver Creek meets the Huron River, the aquatic insect population is very poor with a very low family diversity. The sample point on the upper portion of Traver (and upstream from most urban impacts), has an average diversity and HRWC finds sensitive insect families here on occasion.

Stream Water Temperature

Cool to warm-water

Traver Creek receives a mix of cold groundwater and warmer surface runoff. Except through the golf course, much of the stream is shaded by riparian areas. Downstream of the golf course, temperatures range between 70°F and 85°F during July and August. The rest of the creek is on average 5° cooler, ranging between 65°F and 80°F. The hottest parts of the summer cause oxygen-stressed situations for both macroinvertebrates and fish.

E. coli

Consistently high

E. coli bacteria is a useful water quality indicator for the presence of fecal contamination. In the Traver creekshed, E. coli is present in high concentrations that make drinking or recreational activities unsafe. After heavy rain events, E. coli can reaches levels that are well above State standards. Predominant sources are pets and wildlife. It can take 48 hours for the E. coli to return to safe levels.

Phosphorus

Elevated

Phosphorus is the limiting nutrient in most freshwater systems, and too much phosphorus can cause algal blooms and water quality problems. The target for area streams is < 30 µg/l. Traver Creek's mean total phosphorus (TP) near its outlet is 87 µg/l, which is elevated. Sites upstream are similar. Storm event runoff significantly increases phosphorus concentrations in Traver Creek.

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; Traver Creek's mean TSS is 13.1 mg/l.

Conductivity

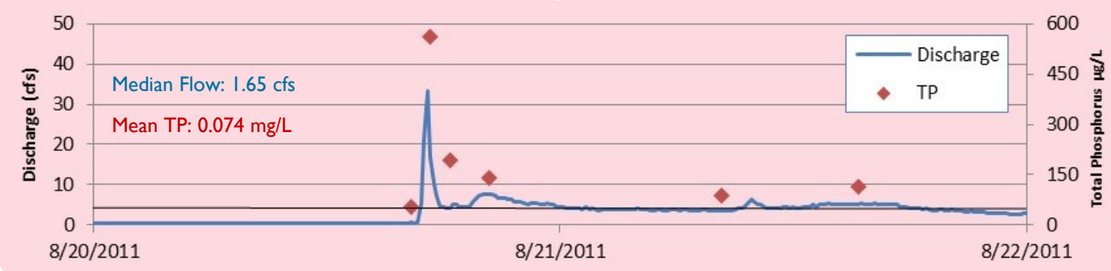
Normal to highly elevated

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 in Traver Creek are at natural background levels in the upper portions of the creek. Levels in the lower portion of the creek range from slightly to highly elevated, indicating the presence of some amount of unknown pollutants.

Stream Flow

Highly variable and flashy

Stream flow is an important underlying factor for determining likely erosion rates, stream habitat quality, and aquatic community diversity. An important measure is "flashiness" or the rate a stream rises and falls through a storm event (see below). Traver Creek has a flashiness rating that is high or less natural than comparable Michigan and Midwestern streams.

2011 Storm Event Graph

0.50 inch of rain fell on August 20.