

Honey Creekshed Report

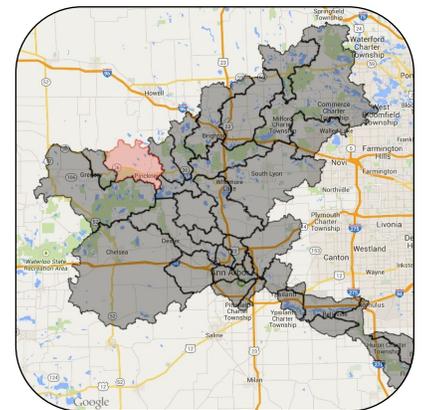
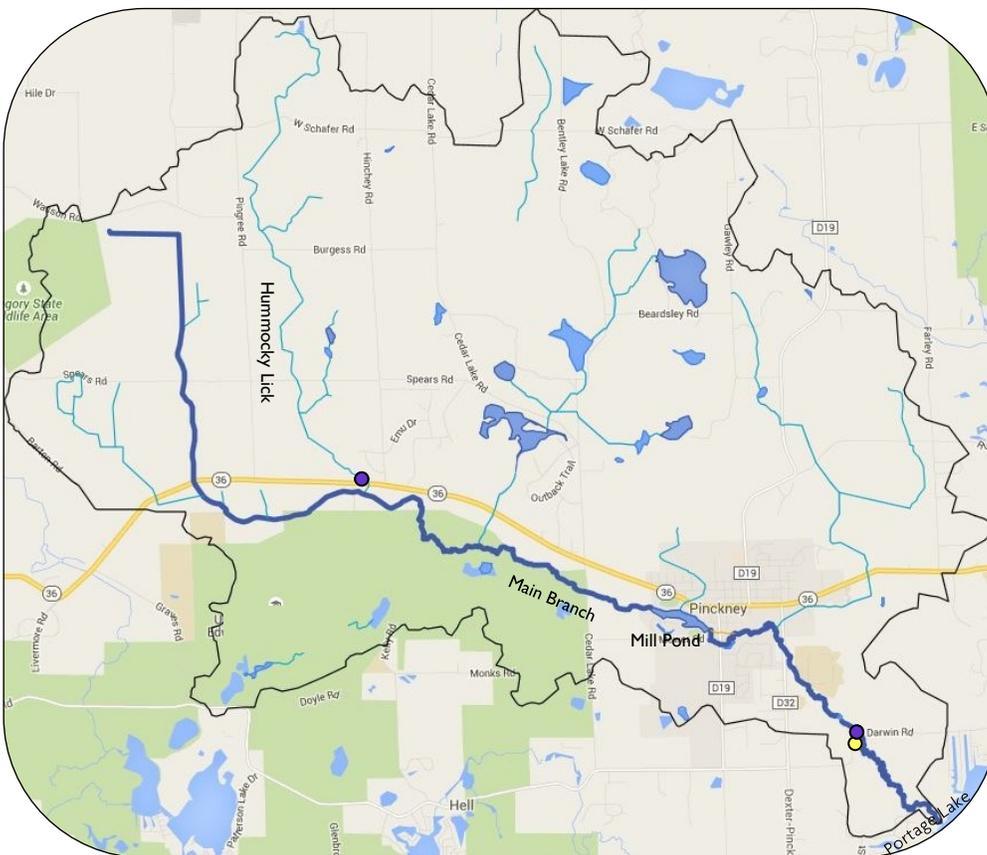
Livingston County

www.hrwc.org/honey-livingston

Creekshed Profile

Honey Creek cuts its way through a glacial moraine and a valley of gravel and sandy soils. This geological setting resulted in a creekshed covered by a mosaic of white and black oak forests and grassy oak barren ecosystems on the uplands, with large tamarack swamps and wet prairies growing in low areas. The creekshed was an agricultural region in the 1800's, centered around the Village of Pinckney. An earthen dam in Pinckney created a mill pond and a millrace. By the mid-20th century, Pinckney had become a bedroom community for the larger urban areas of Ann Arbor, Lansing, and Detroit.

Honey Creek is a branching stream with numerous tributaries and lakes. The main branch of Honey Creek flows for 11 miles, starting in agricultural fields of Unadilla Township, eventually entering Putnam Township, the Pinckney Recreation Area, the Village of Pinckney, and finally ending at Portage Lake and the Huron River. The main branch's average slope is 6 feet per mile, which is quite flat compared to the other tributaries to the Huron River, but there are particular areas of higher slopes. There are three main tributaries to Honey Creek. Hummocky Lick is a small creek that flows through a high quality fen system. HRWC volunteers informally renamed this stream "Hummocky Lick" (reminiscent of streams in Kentucky named "Licks") to replace the official name, "County Drain #7." The word Hummocky comes from the fen vegetation, which is composed of grass and sedge bumps on the ground called hummocks. The other two major tributaries are unnamed. The center tributary seen in the map below flows through multiple lakes and wetlands. There are 13 lakes in the Honey creekshed (open water > 5 acres), and 12 ponds (open water < 5 acres). Most of the lakes and ponds have very natural lakeshores, with few houses built along the edges.



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

Creekshed Status and Trends



Honey Creek flows through a near even mix of forest, wetland, agriculture, and suburban neighborhoods. Credit: Graham Battersby

Creekshed Land Use

Habitat for a healthy ecosystem

Total creekshed Size: 27 square miles

Land use based on the year 2000:

Agriculture: 22%, 6 square miles

Residential & urban: 19%, 5 square miles

Forest: 16%, 4 square miles

Open: 22%, 6 square mile

Wetland: 21%, 6 square miles

Total impervious surface: 4% , 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. Only 4% of the Honey creekshed is currently impervious, and so the creek enjoys the benefits of the natural water cycle.

Creekshed Natural Areas

Intact natural lands

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 40% of the creekshed remains as intact natural areas, with about half of those areas enjoying a measure of protection as state land and private preserves. The other half of those natural areas are not protected and face an uncertain future. It will be important to keep these lands natural, so they can continue to help keep the creek healthy.

Dams and Impoundments

Mill Pond in Pinckney

While dams provide recreational benefits, they greatly alter a stream's hydrology, and degrade fish and insect habitat. There are 2 dams on Honey Creek, one of which creates a large Mill Pond in the Village of Pinckney. This dam was once used to power a mill but its only function now is to maintain the lake level for aesthetic purposes. The other dam also is used for aesthetic purposes only and is also in the Village of Pinckney. Both dams are located about 2.5 miles from the creek mouth, preventing fish passage from the Huron River into the creek's headwaters.

Stream Habitat

Diverse

Honey Creek has the riffles, pools, bends, and runs that are characteristic of low human impact. The stream bed is made of an even mix of sand, gravel, cobble, and muck. Plentiful woody debris provides cover and shade for the biological community. There are some areas, particularly upstream, that have been channelized to provide quick agricultural drainage, but most of the creek has been allowed to meander within wide riparian floodplains.

Fish Community

Cool-water fishery community

A fish survey on Honey Creek found the game species of northern pike, smallmouth bass, rockbass, walleye, and yellow perch, which would be expected in a cool water Michigan stream like Honey. Smaller fish were not recorded.

Aquatic Insect Community

Excellent on the main branch and on tributaries.

Honey Creek at Darwin Road, near the mouth of the creek, has one of the most diverse aquatic insect communities in the entire Huron River watershed, and several insect families that are intolerant to pollution can be found here. Hummock Lick, a tributary to Honey Creek, also has a high insect diversity.

Stream Water Temperature

Cool to warm water

Honey Creek receives a mix of cold groundwater and warmer surface runoff. Much of the stream is shaded by natural riparian areas. Temperature measurements show that the water temperature of Honey Creek occasionally gets above 80 °F and rarely drops below 60 °F during July and August. This is a slightly elevated water temperature for a creek of this size and in this area of Michigan. These temperature measurements were taken about 1 mile downstream of Mill Pond and it is probable that this impoundment warms the creek's temperature several degrees during the summer.

E. coli

Unknown

E. coli bacteria is a useful water quality indicator for the presence of fecal contamination. HRWC does not have sufficient data to evaluate Honey Creek for bacteria. State monitoring has not detected a bacteria impairment.

Phosphorus

Low

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. Honey Creek's mean total phosphorus (TP) is 17 µg/l.

Stream Flow

Unknown

Stream flow is an important underlying factor for determining likely erosion rates, stream habitat quality, and aquatic community diversity. There has been no data collected on stream flow in Honey 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 are below 80 mg/l; Honey

Conductivity

Normal

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 Honey Creek are normal and have been normal since monitoring began in 1996.



HRWC volunteers explore Honey Creek at Darwin Road. This picture was taken several days after a large storm and the water is about 6 inches higher than normal baseline conditions. Credit: Alison Battersby

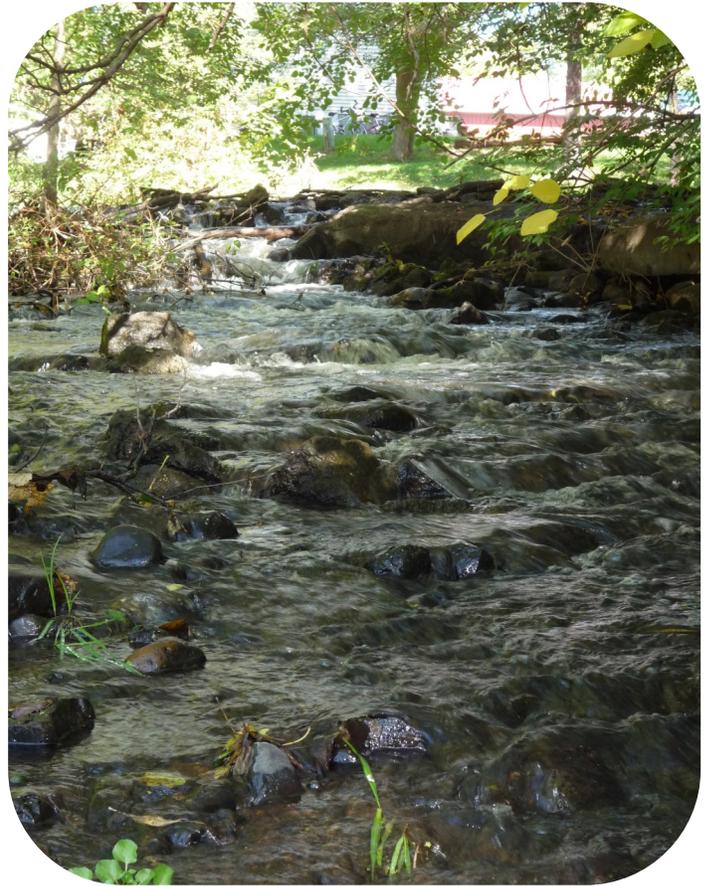
Successes & Challenges

Successes

- The water quality of Honey Creek is very good, and the aquatic life and in-stream habitat are highly diverse. Large areas of wetlands and forest and natural lake shorelines have helped make the creekshed one of the healthiest in the Huron watershed.
- In 2009, the Village of Pinckney reconstructed several streets and incorporated “green infrastructure” techniques like bioinfiltration and porous pavement to infiltrate more runoff into the groundwater.

Challenges

- Mill Pond Dam should be removed and Honey Creek should be allowed to return to a free flowing stream. The dam has been falling apart for years and there is a chance that it could wash away and cause a flood for homes, roads, and aquatic life downstream.
- Honey Creekshed contains many unprotected natural lands that could fall victim to development. Local government and property owners alike should explore options to protect this natural land. It is these areas that protect the high water quality of Honey Creek.



The “dam” at Mill Pond in Pinckney is now a steep slope made of concrete, logs, and rocks. It drops about 3 vertical feet over 45 horizontal feet.



Like many small creeks, the amount of woody debris in Honey Creek is great for aquatic life but makes paddling the creek virtually impossible. Credit: Graham Battersby

What you can do!

At home

- Have your septic system checked regularly. Leaking septic systems can be a large source of phosphorus and *E. coli*.
- On residential and agricultural lands, maintain a 25 foot buffer of native plants between your yard and the creek, ditches, and all water bodies.
- If you own property with a natural area, work with a land conservancy to establish an easement to protect it from future development.

In your community

- Learn to identify environmental impairments like algal growth in waterways and erosion on land—and follow up with HRWC when you see something wrong.
- Urge local community leaders to pass riparian buffer and other water quality and natural area protection ordinances and policies to protect the watershed.