

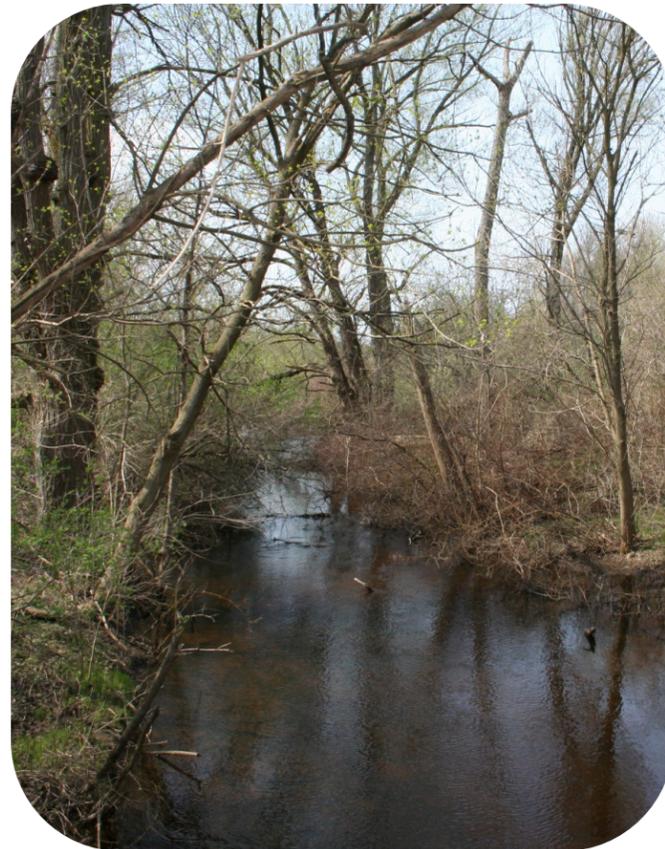
## Successes and Challenges

### Successes

- The Scio Township Land Preservation Commission works to preserve the most important natural areas and farmland using a township-wide millage. So far, the commission has protected 569 acres in the township.
- Scio Township has enacted a number of measures, including wetlands and riparian buffer ordinances that provide a variety of protections to natural features including development setbacks.
- Washtenaw County Natural Areas Preservation Program and Scio Township have preserved numerous properties in the creekshed. DeVine Preserve; Botsford, Green and Hathaway easements have frontage on branches of the creek. Scio Woods Preserve and Scherdt easement have headwater wetlands and vernal streams. (Note: Scio Woods, Botsford, Green, and DeVine are open to the public.)

### Challenges

- Honey Creek is contaminated with high levels of bacteria. HRWC is working with local partners to determine the extent of the problem and confirm and remedy sources. This will likely require education and efforts to prevent waste from entering the creek.
- Honey creekshed's communities and residents must promote compact development and preserve natural areas. It is extremely important to limit increases of impervious surfaces in order to maintain the creek's integrity.
- In the mid-1980's, the carcinogen dioxane was found in lakes and wells in and around the Honey creekshed. Gelman Sciences had been discharging their chemical wastewater into lagoons and spraying it on the property around the plant. Pall Life Sciences, which bought Gelman Sciences in 1997, has since been cleaning the dioxane from the groundwater. Monitoring has shown that there is still a lot of dioxane left and we don't know how much nor where its spread will extend.
- Honey Creek has been significantly impacted by the effects from channel straightening and deepening. These practices promote rapid velocities of flow during rain, cause erosion, and can exacerbate localized flooding. Natural flows need to be restored.



Honey Creek as it flows past Pratt Road. Credit: Chris Benedict

## What you can do!

### At home

- If you live near a creek or intermittent stream leave a vegetated buffer strip adjacent to the waterway—ideally a suite of native plants, 50 feet wide.
- 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 manage horses or livestock, install fencing or other exclusions to keep them out of the streams. A vegetated buffer will also reduce erosion and keep animal waste from washing into streams.
- If you own property with a natural area, work with Scio Township or a land conservancy to establish an easement to protect it from future development.
- Install a raingarden, rainbarrels, and other methods which reduce runoff from your property.



Protecting the river since 1965

# Honey Creekshed Report

## Washtenaw County

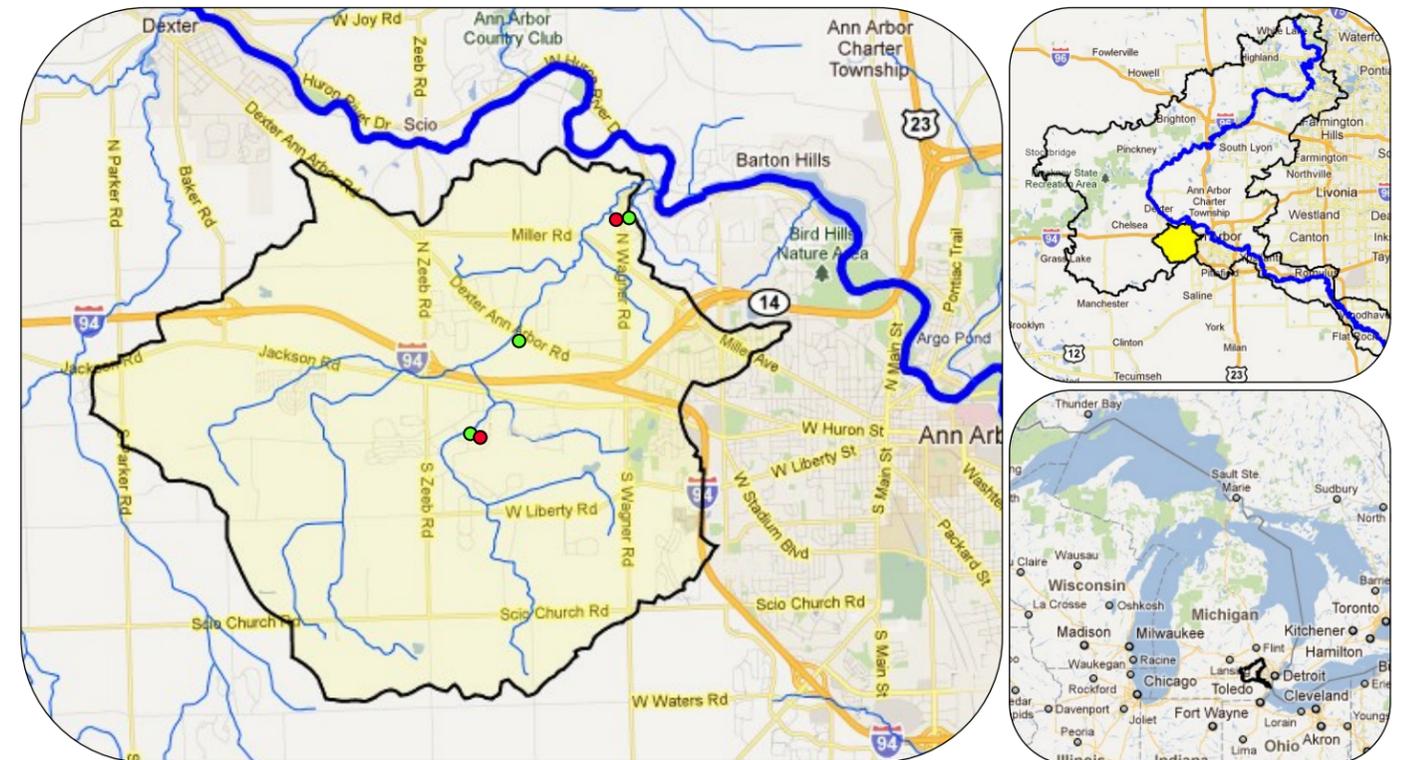
[www.hrwc.org/honey-washtenaw](http://www.hrwc.org/honey-washtenaw)

## Creekshed Profile

Flowing through what is now Scio and Lodi Townships as well as the western edge of the City of Ann Arbor, Honey Creek was home to numerous beehives in trees along the creek. Historically, Honey creekshed was an area of agriculture and gravel pit mining. Over time, areas of residential and commercial centers have developed along major road arteries. However, agriculture (including many horse pastures) is still a prominent feature in the creekshed.

There are 4 lakes (open water > 5 acres) in the Honey creekshed. There are 3 ponds (open water < 5 acres). Honey Creek is composed of 26 miles of branching stream channels, and it drains 23 square miles of land. The creek's average slope is 30 feet per mile, which is steep for the Huron River watershed as a whole. There is a rapid drop in elevation from Miller Road to the Huron River, resulting in a series of mini-rapids in this section of the creek. An undisturbed stream with this high slope will typically have well established riffle-pool sequences and excellent diversity in fish habitat and water flow. However, channelization and urbanization have reduced this habitat diversity.

There are two Honey Creeks in the Huron River watershed. The Honey creekshed in Washtenaw County is highlighted in this report (the other is in Livingston County).



- 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*

# Creekshed Status and Trends



Honey Creek flows swiftly down a rocky path as it nears the Huron River. Credit: Dick Chase

## Creekshed Land Use

*Honey is a suburban and agricultural creek*

Total creekshed size: 23 square miles  
 Year 2000 land use:  
 Agriculture: 32%, 7 square miles  
 Residential & urban: 38%, 9 square miles  
 Forest: 9%, 2 square miles  
 Open: 13%, 3 square mile  
 Wetland: 8%, 2 square miles

Total impervious surface: 14%, 3 square miles

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 Honey creekshed is currently impervious, this means that the biological and hydrological systems in the creek are negatively impacted.

## 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. Only 17% of the creekshed has intact natural areas; only a small fraction of these areas are protected from development (about 2% of the watershed, notably Saginaw Forest and Dolph Park). Without its intact natural areas, the creekshed faces an uncertain future. It will be important to keep these lands natural, so they can keep the creekshed as healthy as possible.

## Stream Habitat

*Excellent near the mouth; otherwise poor*

At the mouth of Honey Creek, the stream habitat is of good quality; large rocks, riffles, and pools are plentiful as it nears the Huron River. However, the middle to upper parts of the creek have unstable and eroding stream banks and the stream bed is full of sand and muck. The study site on Pratt Road (see map on cover, near Dexter Rd) has the worst substrate of all sites we monitor—100% of the streambed is covered by fine sediment.

## Dams and Impoundments

*Free flowing*

While dams can provide recreational benefits, they greatly alter a stream's hydrology and degrade fish and insect habitat. There are no known dams on Honey Creek. The water flows freely from the upper tributaries down to the mouth of the river.

## Fish Community

*Small bodied cool-water fish community*

Honey Creek is home to a variety of small fish typically found in small cool creeks. Bluntnose minnows, johnny darters, central stonerollers, blacknose dace, and green sunfish have all been found in Honey Creek. None of these fish are particularly sensitive to pollution or altered hydrology.

## Aquatic Insect Community

*Below average*

Honey Creek has a lower insect diversity than many other creeks located within the Huron River watershed, but is better than most of the urban creeks (like Malletts or Millers). Sensitive insects including winter stoneflies are present, but never abundant. At the mouth of Honey Creek, the insect community is slightly below average, and further upstream the population is far below average, but not yet poor. The insect population is restricted by the high amount of fine sediment in the creek.

## Stream Water Temperature

*Cool water*

Honey Creek receives a mix of cold groundwater and warmer surface runoff. Temperature measurements show that the water temperature of Honey Creek rarely gets above 70 °F and rarely drops below 60 °F during July and August. This is a normal water temperature for a creek with these properties and in this area of Michigan.

## E. coli

*Consistently high*

*E. coli* bacteria is a useful water quality indicator for the presence of fecal contamination. In Honey Creek, *E. coli* is present in high concentrations, which makes partial body contact unsafe (no drinking, or recreational activities). After heavy rain events, *E. coli* can reach levels that are well above state standards. HRWC is investigating potential sources.

## 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 < 50 µg/l. Honey Creek's mean total phosphorus (TP) is 69 µg/l, which is elevated, particularly after heavy storms (see below). This is likely due to residential and agricultural runoff.

## Color Coded Ranking

Excellent

Fair

Poor

## Total Suspended Solids

*Low*

Total suspended solids (TSS) is a measurement of the amount of sediment and organic held by the stream. A high TSS indicates high turbidity and erosion problems. Good TSS values during rain storms are below 80 mg/l. Honey Creek's mean TSS is 24 mg/l.

## Conductivity

*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 Honey Creek are well above natural background levels, indicating the presence of some amount of unknown pollutants.

## Stream Flow

*Natural flow dynamics*

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). Honey Creek has a flashiness rating that is average for comparable Michigan streams, and more natural than most in the Midwest.

## 2009 Storm Event Graph 1.5 inches of rain fell on June 11.

