

Mill Creek at Ivey Road

Adopt-a-Stream Site Report, updated January 2012

Overall Condition: *Fair/Good*

At this site, the water is clean and cool. One of the stream banks lacks vegetation and the stream bed is about half sand. Historically, at this site there are several kinds of bugs and a few of them are sensitive. A sample gathered in October 2010 showed bug diversity cut by about 50% from past levels, and we did not find stoneflies during the 2011 Stonefly Search. We will be watching this creek very closely in 2012 in order to determine if these were bad samples or indicative of a real problem.

Measuring Stream Quality

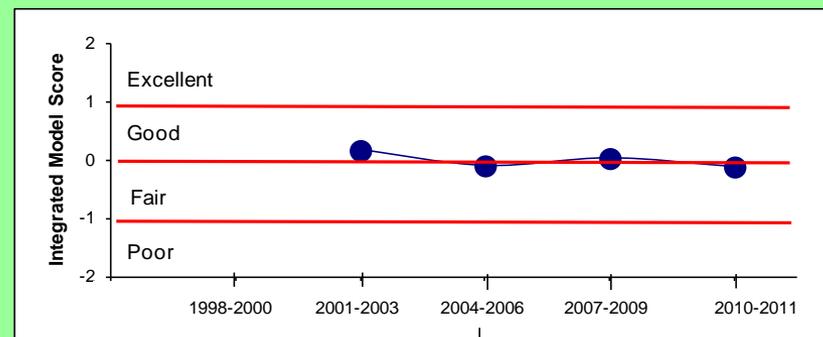
We use the bugs living in the creek to measure stream quality for two reasons. When the stream is rich in habitat variety it will have many diverse kinds of bugs (called families). Also, some bugs (called sensitive) can live only in good quality streams; they die in a poor quality stream. Any stream with sensitive families has the clean water and good habitat required by those bugs to survive.

Monitoring Data

These data come from HRWC volunteers who have monitored this site 37 times, starting in 1994. This includes Stonefly Search, River Roundup, Habitat, and Temperature events.

This site on Mill Creek is 8 feet wide and shallow (less than half a foot). In 2009 we found poor habitat here with unstable banks and the rocks in the swift water (riffles) were somewhat clogged with sand although the streambed was fairly stable. It has clean, cool water (seldom over 73°F) and with urban runoff from only 6% impervious surface, we expect the creek to be in good shape.

Historically, there is good diversity of bugs here for such a small stream. Prior to 2010, in the spring we typically found 10 different families and two are sensitive families that require a good quality stream. In the fall an average of 12 families are typically found, with one or two sensitive ones, and at least 7 from the mayfly-stonefly-caddisfly families. In 2010 we only found 8 families, no sensitive families, and only 1 of the mayfly-stonefly-caddisfly families. Stoneflies are very sensitive insects that are only found in clean water. Every January except in 2011, we always found at least one of the two kinds of "winter stoneflies" that grow only in winter and are dormant the rest of the year.



To determine the overall condition rating, HRWC uses an integrative model that compares this site to all of HRWC's other monitoring sites in the Huron watershed. The model uses insect, habitat, temperature, and stream size data.

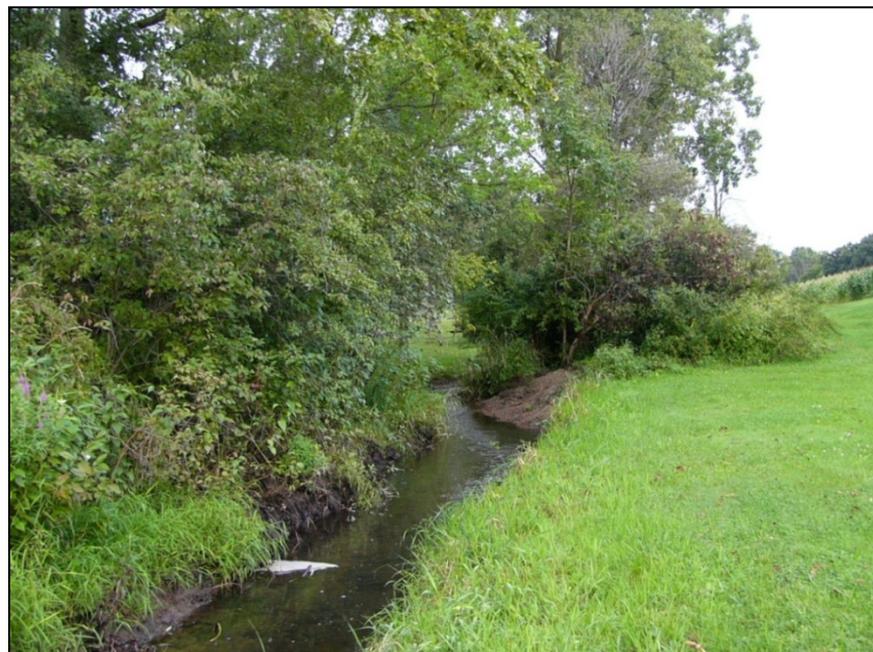


Photo credit: Peggy Liggitt

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Background Information

Site History

This site is upstream of Chelsea on the north branch of Mill Creek. The north branch of Mill Creek flows out of Mill Lake and the Waterloo State Recreation Area about 2 miles upstream from this location.

Waterloo State Recreation Area is the largest park in Michigan's Lower Peninsula at more than 20,000 acres in size. The extensive state recreation areas in various parts of the Huron River's tributaries are one of the main reasons why the river is so clean and healthy throughout its run.

How is the Creek affected by land use here?

This site receives water from 12 square miles of land in northwestern Washtenaw County, mostly wetlands and farms.

This is a rural area in the Huron watershed, according to data from 2000. Only one-seventh of this site's watershed is developed while one-quarter is used for agriculture and one-third is wetland. At that time, 6% of the land was covered by impervious surface.

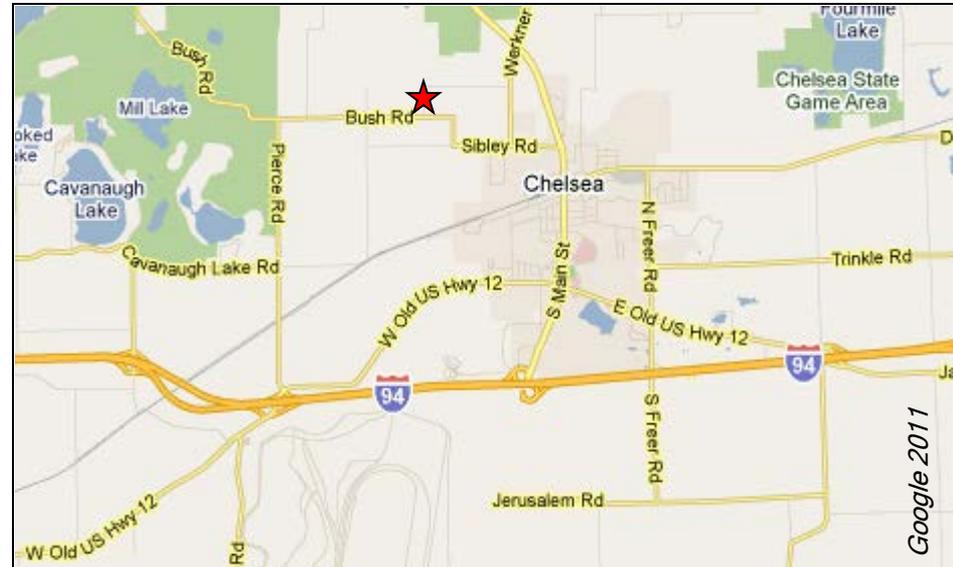
Impervious surface is hard on streams because it prevents rain from being filtered and cleaned through the soil and, instead, delivers it quickly to the stream, carrying pollutants and causing surging flows that damage the stream habitat and biotic community.

Creeks tend to start degrading once the watershed is more than 8% impervious and become badly degraded by 25%. [The most urbanized Huron River watershed that we study (draining into Millers Creek at Baxter Road) is 51% impervious.]

Watershed land use in 2000: 25% Agriculture, 15% Urban, 13% Forest, 15% Open, 32% Wetland.

What You Can Do

Help us improve Mill Creek! Plant trees and deep-rooted plants in low areas on your property to help the rain infiltrate into the earth so it can be cleansed and cooled. Go to www.hrwc.org/take-action for ways to keep the rain at home so that it doesn't wash pollutants into the stream and cause flooding from the sudden increase in flow volume.



Insects found in at least two sampling events from 2001-2011:

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| *Perlodidae — Perlodid stonefly | Limnephilidae — northern caddisfly |
| Aeshnidae — damner dragonfly | Philopotamidae — finger-net caddisfly |
| Baetidae — small minnow mayfly | Phryganeidae — giant case-maker |
| Calopterygidae — broad-winged damselfly | Tipulidae — crane fly |
| Chironomidae — midge | Veliidae — short-legged striders |
| Elmidae — riffle beetle | |
| Heptageniidae — flathead mayfly | *Sensitive Family |
| Hydropsychidae — common net-spinner caddisfly | |