

Letts Creek at M-52

Adopt-a-Stream Site Report, updated January 2012

Overall Condition: *Fair*

At this site there are many kinds of bugs including some that are considered sensitive. The stream banks and streambed are in average condition. With a high "fair" ranking, this stream is very typical for a stream of its size in the Huron River Watershed. However, its presence in a park probably causes some degradation as the grass is mowed to the very edge of the creek.

Measuring Stream Quality

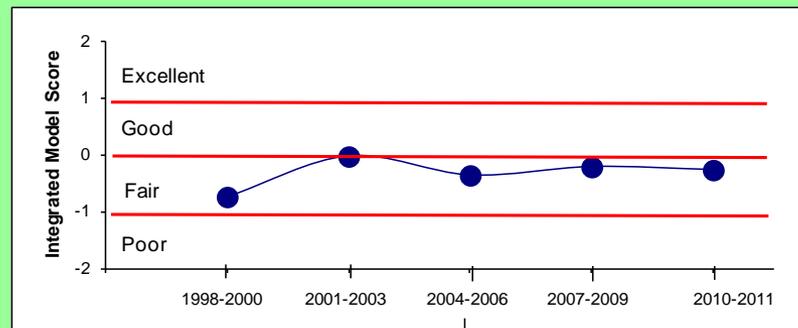
We use the bugs living in the creek to measure stream quality for two reasons. When the stream is rich in habitat variety it will have many diverse kinds of bugs (called families). Also, some bugs (called sensitive) can live only in good quality streams; they die in a poor quality stream. Any stream 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 42 times, starting in 1993. This includes Stonefly Search, River Roundup, Habitat, and Temperature events.

This site on Letts Creek is 17 feet wide and shallow (about half a foot). In 2008 we found good habitat here with a stable bottom, stable banks and the rocks in the swift water (riffles) were clean of silt. It has cold water (seldom over 70°F) and with only 5% of the watershed covered by impervious surface, we expect the creek to be in very good shape.

This site has a good diversity of bugs except in the fall. In the spring we typically find 14 different families and 1 to 2 are sensitive families that require a good quality stream. In the fall an average of 10 families are typically found, but with no sensitive ones. Stoneflies are very sensitive insects that are only found in clean water. Two kinds of "winter stoneflies" grow only in winter and are dormant the rest of the year. Since two families of stoneflies are found here in the winter, this site seems to have good water quality except in the fall, when no sensitive families are found. Heavy park use and poor mowing techniques may degrade this creek during the summer.



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: Lydia Austin

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Background Information

Site History

This site in northwestern Chelsea (Vet's Park) receives water flowing from most of the Chrysler Proving Grounds and the rural land in Sylvan Township, all the way from Goose Lake.

In 1997, an HRWC monitoring team discovered an oil leak that had long been undetected. It was accidental and quickly corrected. This incident shows the power of volunteer monitoring for finding problems that would go unnoticed otherwise!

The pedestrian bridge you see crossing Letts Creek was constructed in the summer of 2008. To do this, a temporary dam was placed in the stream and constricted all the water to flow through a culvert. Such construction practices are damaging to the stream habitat, but streams are resilient and can usually recover quickly.

How is the Creek affected by land use here?

The area of land draining to this site is small, receiving water from only 19 square miles of land, equally used for farming and for residential development.

This is a fairly urban area in the Huron watershed, according to data from 2000. One-third of the Letts Creek watershed is developed while one-third is used for agriculture. At that time, only 5% of the land was covered in impervious surface.

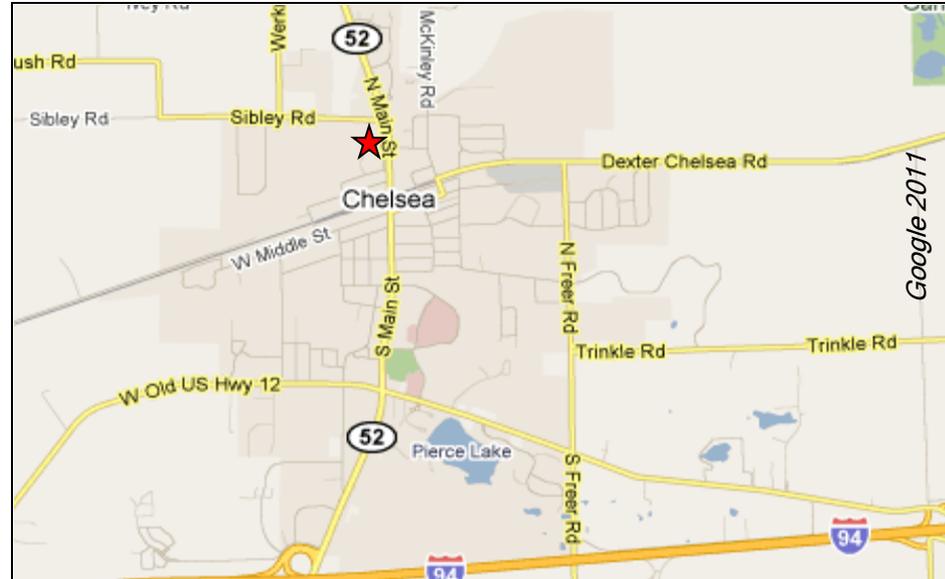
Impervious surface is hard on streams because it prevents rain from being filtered and cleaned through the soil and, instead, delivers it quickly to the stream, carrying pollutants and causing surging flows that damage the stream habitat and biotic community.

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: 33% Agriculture, 32% Urban, 8% Forest, 9% Open, 18% Wetland.

What You Can Do

Help us improve Letts 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 2009-2011:

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| *Capniidae — slender winter stonefly | Haliplidae — crawling beetle |
| *Perlodidae — Perlodid stonefly | Heptageniidae — flathead mayfly |
| *Taeniopterygidae — broad-back winter stonefly | Hydropsychidae — common net-spinner caddisfly |
| Aeshnidae — damer dragonfly | Limnephilidae — northern caddisfly |
| Baetidae — small minnow mayfly | Nepidae — water scorpions |
| Calopterygidae — broad-winged damselfly | Simuliidae — black fly |
| Chironomidae — midge | Tipulidae — crane fly |
| Elmidae — riffle beetle | Veliidae — short-legged striders |
| Gerridae — water strider | |

**Sensitive Family*