

Fleming Creek at Galpin Road

Adopt-a-Stream Site Report, updated January 2012

Overall Condition: **Fair/Good**

At this site there are several kinds of bugs but few of them are sensitive. The water is clean and cool. The stream banks, streambed, and streamside vegetation are healthy. This site is rated on the border between "fair" and "good"; this is the average condition rating across the whole Huron River Watershed for streams of this size.

Measuring Stream Quality

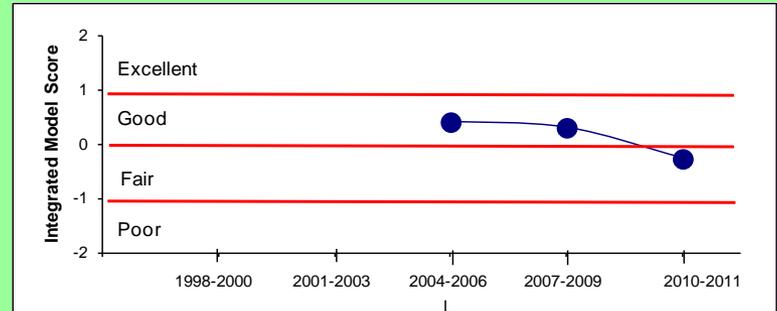
We use the bugs living in the creek to measure stream quality for two reasons. When the stream is rich in habitat variety it will have many diverse kinds of bugs (called families). Also, some bugs (called sensitive) can live only in good quality streams; they die in a poor quality stream. Any stream 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 18 times, starting in 2004. This includes Stonefly Search, River Roundup, Habitat, and Temperature events.

This site on Fleming Creek is 15 feet wide and shallow (less than half a foot). In 2009 we found good habitat here with a stable bottom and clean rocks in the swift water (riffles). It has clean, cool water (seldom over 67°F) but we expect the creek to be affected by urban run-off from the 17% impervious surface in this sub-watershed.

There is good diversity of bugs here but few of the families are sensitive. In the spring we typically find 14 different families and one is a sensitive family that requires a good quality stream. In the fall an average of 16 families are typically found, with no sensitive ones. Stoneflies are very sensitive insects that are only found in clean water. We find the smaller 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: Max Bromley

Fleming Creek at Galpin Road

Background Information

Site History

Fleming Creek is a clear, cool, and powerful stream. It was important source of power for the first European settlement in this area. In 1824, Mr. Fleming built one of the first mills on the Huron River system, very close to the current Botanical Gardens, a few miles downstream from this site.

The land draining to this site lies in Superior Township but mostly in Salem Township. There is very little dense or urban development in this area. This site replaced a site one-quarter mile downstream that was monitored for many years. The landowner denied HRWC access.

How is the Creek affected by land use here?

The area of land draining to this site receives water from 23 square miles of land, mostly residential.

According to data from 2000, two-fifths of this Fleming Creek sub-watershed is developed while one-quarter is used for agriculture. At that time, 17% 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, 38% Urban, 9% Forest, 24% Open, 0% Wetland.

What You Can Do

Help us improve Fleming 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:

- | | |
|---|---|
| *Capniidae — slender winter stonefly | Helicopsychidae — snail-case caddisfly |
| *Perlodidae — Perlodid stonefly | Heptageniidae — flathead mayfly |
| Aeshnidae — damner dragonfly | Hydropsychidae — common net-spinner caddisfly |
| Baetidae — small minnow mayfly | Limnephilidae — northern caddisfly |
| Calopterygidae — broad-winged damselfly | Notonectidae — back-swimmers |
| Chironomidae — midge | Simuliidae — black fly |
| Corixidae — water boatman | Tipulidae — crane fly |
| Elmidae — riffle beetle | Uenoidae — Uenoid caddisfly |
| Gerridae — water strider | Veliidae — short-legged striders |
| Gyrinidae — whirligig beetle | |

**Sensitive Family*