

# Fleming Creek at Warren Road

*Adopt-a-Stream Site Report, updated January 2012*

## Overall Condition: **Excellent**

This site is the second best that HRWC monitors in the Huron River system, ranking slightly below the best site at White Lake Road, near the River's origin. There are many kinds of bugs here and several of them are sensitive. The water is clean, although it does get warm in the summer. The stream banks, streambed, and streamside vegetation are healthy. Overall, the Fleming Creek at this location is in excellent shape.

### 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.

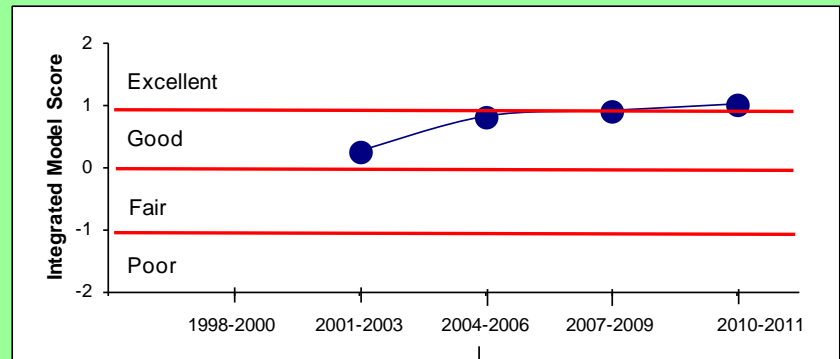
### Monitoring Data

These data come from HRWC volunteers who have monitored this site 36 times, starting in 1993. This includes Stonefly Search, River Roundup, Habitat, and Temperature events.

This site on the western branch of Fleming Creek is 17 feet wide and shallow (less than a foot), with at least one pool nearly 3 feet deep. In 2008 we found good habitat with sturdy substrate on the bottom, stable banks, and rocks in the riffles free of silt. It has clean water that can warm to 84°F in summer. There is very little urban runoff here, as the land has only 4% impervious surface.

Despite the small size of this stream, in the spring we typically find an average of 18 different families with three sensitive families. In the fall an average of 15 families are typically found, again with three that are sensitive. This is extremely high for any creek in the Huron River Watershed.

In the winter we find the smaller of the two kinds of "winter stoneflies" that grow only in winter and are dormant the rest of the year. Winter stoneflies are also indicative of clean water.



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: HRWC

# Fleming Creek at Warren 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. It was located on Fleming Creek very close to the current Botanical Gardens, which are about 2.5 miles downstream from this location.

This western branch flows in Salem and Superior townships, and also through Ann Arbor Township, which has been actively protecting the creeks in that Township since 1998.

### How is the Creek affected by land use here?

This site on the small western branch of Fleming Creek receives water from only seven square miles of land. The few remaining wetlands here are protected by local ordinances. According to data from 2000, less than one-tenth of this creekshed is developed while nearly half of the land is used for agriculture. Only 4% of the land is covered by impervious surface.

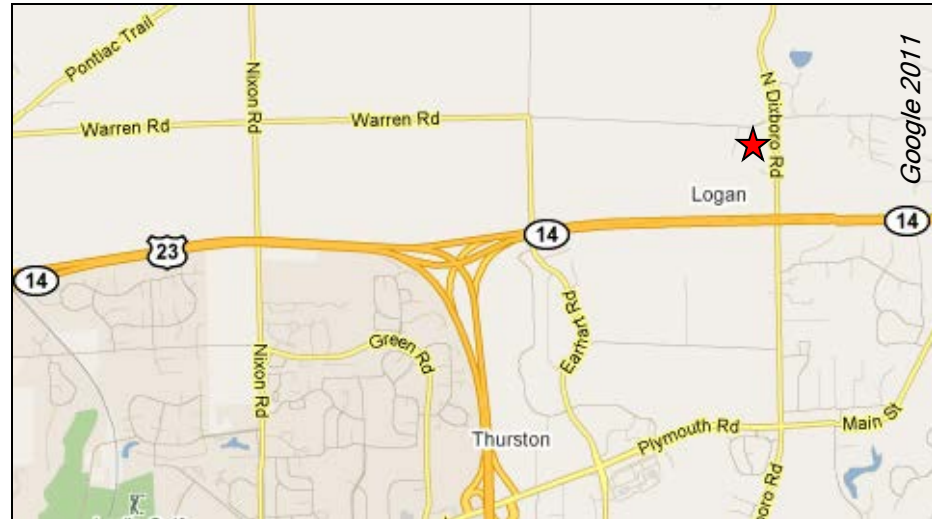
Impervious surface is hard on streams because it prevents rain from being filtered and cleaned through the soil and, instead, delivers it quickly to the stream, carrying pollutants and causing surging flows that damage the stream habitat and biotic community.

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: 41% Agriculture, 9% Urban, 8% Forest, 33% Open, 9% 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](http://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    | Heptageniidae — flathead mayfly               |
| *Corydalidae — dobson fly               | Hydropsychidae — common net-spinner caddisfly |
| *Leptophlebiidae — pronggill mayfly     | Limnephilidae — northern caddisfly            |
| Aeshnidae — damer dragonfly             | Philopotamidae — finger-net caddisfly         |
| Baetidae — small minnow mayfly          | Simuliidae — black fly                        |
| Calopterygidae — broad-winged damselfly | Tabanidae — deer fly, horse fly               |
| Chironomidae — midge                    | Tipulidae — crane fly                         |
| Elmidae — riffle beetle                 | Veliidae — short-legged striders              |
| Heptageniidae — flathead mayfly         |   |
- \*Sensitive Family