

Millers Creek at Huron River Drive

Adopt-a-Stream Site Report, 2011

Overall Condition: **Poor**

At this site there are very few kinds of bugs and none of them are sensitive. The water has a high concentration of unknown pollutants. The stream banks, streambed, and streamside vegetation are also very poor. This site is heavily affected by water runoff from storms.

Measuring Stream Quality

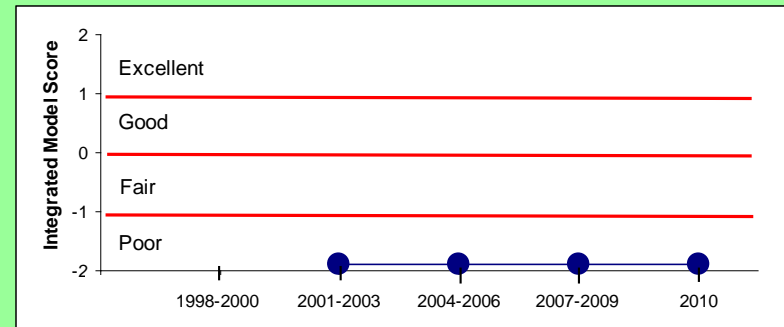
We use the bugs living in the creek to measure stream quality for two reasons. When the stream is rich in habitat variety it will have many diverse kinds of bugs (called families). Also, some bugs (called sensitive) can live only in good quality streams; they die in a poor quality stream. Any stream 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 19 times, starting in 2002. This includes Stonefly Search, River Roundup, Habitat, and Temperature events.

This site on Millers Creek is seven feet wide and shallow (less than half a foot). In 2008 we found poor habitat here with a mucky bottom and the rocks in the swift water (riffles) were somewhat clogged with silt although there was much natural vegetation on the banks. It has cool water (seldom over 67°F) containing unknown pollutants. The extent of development (44% impervious surface) creates urban runoff that has already degraded the stream.

There is very poor diversity of bugs here, even for such a small stream. We typically find only three different families and none of them are sensitive families that require a good quality stream. Stoneflies are very sensitive insects that are only found in clean water. In the winter we have never found the two kinds of "winter stoneflies" that grow only in winter and are dormant the rest of the year. This suggests a pollution problem here since streams that are not polluted should have sensitive families in the winter.



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

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Background Information

Site History

Whenever a substantial amount of rain falls or snow melts, this small stream rapidly becomes a torrent. The potential of Millers Creek to cut its banks and move the channel results from three features. First, the creek's path was shortened when the City constructed Huron Parkway. Second, it has a very steep gradient. Third, the watershed is covered by extensive impervious surface, which results in excess runoff during rain events. The rapid change in water levels damages the channel and makes Millers Creek inhospitable to macroinvertebrates which are indicators of stream health. This site, located across Huron Parkway from Huron High School, is well known to HRWC volunteers as difficult to sample and measure. The velocity of the water slows in this flat region and the stream deposits sediment and other debris that was carved from the banks further upstream. This delta area is full of braided channels which can shift dramatically after a storm since there is so much loose sand throughout the area.

This site is no longer monitored consistently (HRWC more closely monitors other sites on Millers Creek).

How is the Creek affected by land use here?

The area of land draining to this site is very small, receiving water from only 1.9 square miles of land.

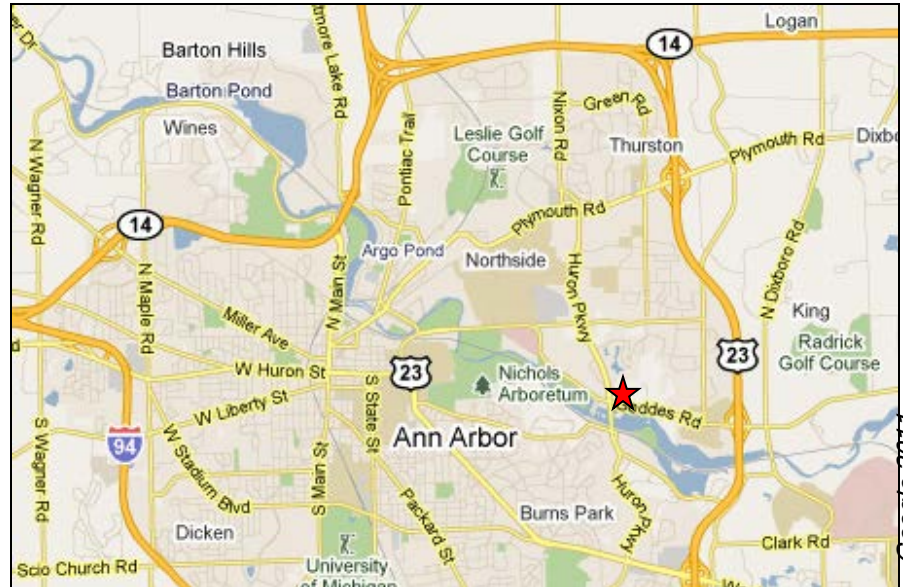
This is one of the most developed areas in the Huron watershed, according to data from 2000. Nine-tenths of the this site's watershed is developed while none is used for agriculture. At that time, 44% of the land was covered by impervious surface.

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: 0% Agriculture, 92% Urban, 4% Forest, 4% Open, 0% Wetland.

What You Can Do

Help us improve Millers 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 2008-2010:

- Aeshnidae — damner dragonfly
- Baetidae — small minnow mayfly
- Belostomatidae — giant water bug
- Calopterygidae — broad-winged damselfly
- Chironomidae — midge
- Elmidae — riffle beetle
- Hydropsychidae — common net-spinner caddisfly
- Notonectidae — back-swimmers
- Tipulidae — crane fly
- Veliidae — short-legged striders