

Boyden Creek at Delhi Road

Adopt-a-Stream Site Report, updated January 2012

Overall Condition: **Good**

There are many kinds of bugs at this site, especially for such a small watershed, and several of them are sensitive. The water is clean and cool and the stream banks are healthy. Although the habitat is limited by some sand in the swift flowing areas (riffles), the stream clearly has good quality since it supports a rich variety of aquatic life.

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.

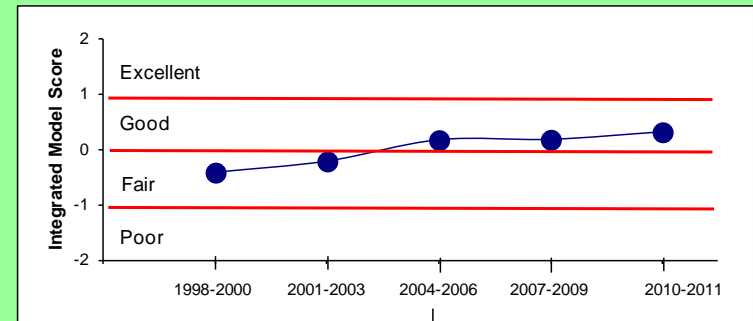
Monitoring Data

These data come from HRWC volunteers who have monitored this site 39 times, starting in 1993. This includes Stonefly Search, River Roundup, Habitat, and Temperature events.

This site on Boyden Creek is only 13 feet wide and a few inches deep, with an occasional one-foot deep "pool". In 2011 we found healthy habitat here; including stable substrate on the bottom and fully vegetated banks. However, more than half of the rocks in the riffles were clogged with sand, limiting the living spaces for bugs and other creatures. It has clean and very cold water (seldom over 68°F) and very little urban runoff.

There is good variety of bugs here for a site with such a small watershed, including several that are sensitive. In the spring we typically find an average of 12 different families and usually two or three are sensitive families that require a good quality stream. In the fall an average of 16 families are typically found, with one or two sensitives each time. That is quite good for such a small stream in the Huron River system!

In the winter we find the smaller of two stonefly families that only grow during the cold, winter months. They 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: Dick Chase

Boyden Creek at Delhi Road

Background Information

Site History

Boyden Creek was named after Luther Boyden who came to Michigan from Massachusetts in 1826. He and Thomas Alexander drew straws to determine the location of their property in what is now Webster Township, just north of Joy Road. Boyden won, and he chose the level, burr oak area, which became known as Boyden's Plains and the source of Boyden Creek. He became locally famous as the first man in Webster to persuade his neighbors to help raise a barn without offering them whiskey.

A part of this creek was straightened by dredging several years ago to follow the property line. However, when the water level is high enough it returns to follow the original, meandering course.

How is the Creek affected by land use here?

This site on Boyden Creek is small, receiving water from only 6 square miles of land, mostly farms.

This is one of the most rural areas in the Huron watershed, according to data from 2000. Only 7% of the Boyden Creek watershed is developed while more than half of the land is used for agriculture. At that time, only 4% of the land was covered by impervious surface.

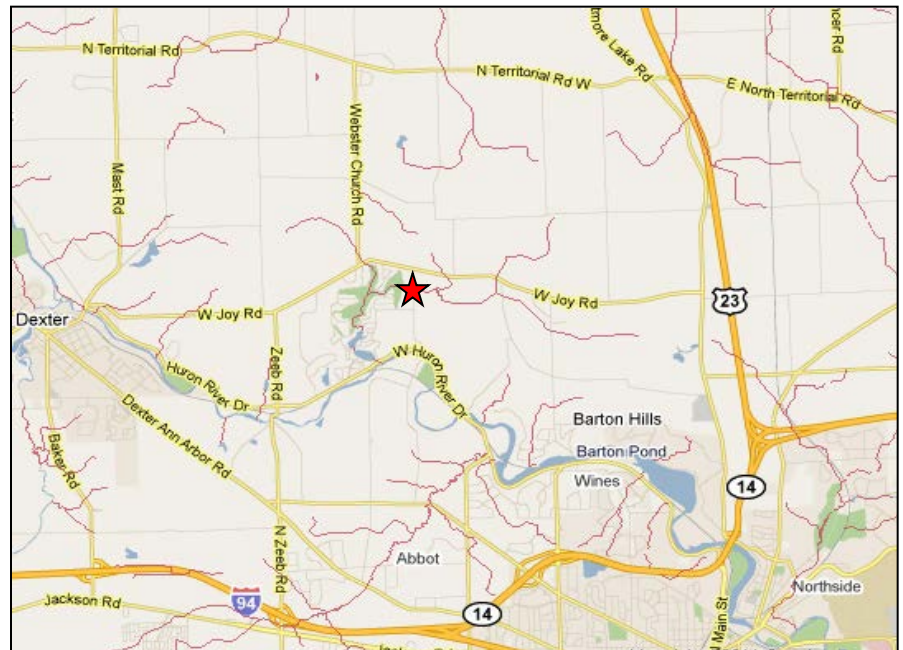
Impervious surface is hard on streams because it prevents rain from being filtered and cleaned through the soil and, instead, delivers it quickly to the stream, carrying pollutants and causing surging flows that damage the stream habitat and biotic community.

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: 68% Agriculture, 7% Urban, 5% Forest, 7% Open, 13% Wetland.

What You Can Do

Help us improve Boyden 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.



Google 2011

Insects found in at least two sampling events from 2009-2011:

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|--------------------------------------|---|
| *Capniidae — slender winter stonefly | Philopotamidae — finger-net caddisfly |
| *Nemouridae — broadback | Uenoidae — rock case-maker |
| *Perlodidae — stripetail | Calopterygidae — broad-winged damselfly |
| Baetidae — small minnow mayfly | Dytiscidae — predacious diving beetle |
| Heptageniidae — flathead mayfly | Elmidae — riffle beetle (larvae + adults) |
| Belostomatidae — giant water bug | Hydrophilidae — water scavenger beetle |
| Hydropsychidae — common net-spinner | Simuliidae — black fly |
| Limnephilidae — northern caddisfly | Tipulidae — crane fly |

**Sensitive Family*