Huron River Watershed Council

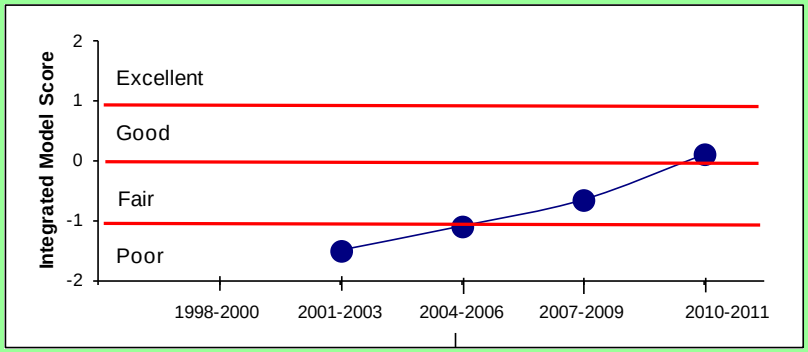
Protecting the river since 1965

Boyden Creek at Huron River Drive

Adopt-a-Stream Site Report, updated January 2012

Overall Condition: Good

The quality at this site has improved steadily from poor in 2001 to good in 2011. In 2003, an upstream dam failure and fine sediment release destroyed the aquatic life here, but the stream is certainly recovering. We found two sensitive families in both spring and fall of 2010, which drove the rating up. The water is quite warm, being downstream of dams and lakes. The stream bed and the banks are healthy. This site does not support winter stoneflies, and we remain curious as to why that is.



To determine this 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.

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 38 times, starting in 1993. This includes Stonefly Search, River Roundup, Habitat, and Temperature events.

This site on Boyden Creek is 21 feet wide and shallow (less than a foot), with an occasional shallow pool (1 ½ feet deep). In 2011 we found healthy habitat here with a sturdy bed, stable banks and the rocks in the riffles were nice and clean. It has clean water that gets quite very warm in the summer (averaging 86°F), which would limit dissolved oxygen levels.

There is an average variety of bugs here, despite the destabilizing effect of water pouring out of the dam at the beginning of the site. In the spring we have been finding an average of 11 different families here but only one is a sensitive family that requires a good quality stream. In the fall an average of 14 families are typically found, again with only an occasional sensitive one.

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. They are special indicators of the potential of a stream that may be too degraded to sustain sensitive bugs during warmer times of the year. Winter stoneflies are never found at this site.

Photo credit: Mike Standing

Huron River Watershed Council, 1100 N. Main Street, Ann Arbor, MI, 48104, (734) 769-5123 x 601.

Please contact psteen@hrwc.org or go to www.hrwc.org for more information.

Boyden Creek at Huron River Drive

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.

Boyden Creek flows through three townships, but mostly Webster. This downstream Creek site is disconnected from most of Boyden Creek by a dam and, above that, the two impounded lakes that are the central focus of a subdivision, Loch Alpine, that has nearly 500 homes on 600 acres. This portion of the creek flows over Huron River Drive to empty directly into the Huron River. The lakes were recently dredged in 2002; this site was cleaned up following a spill of deep sediment in 2003. We have seen continuous improvements since this clean up.

How is the Creek affected by land use here?

This site on Boyden Creek is small, receiving water from only 8 square miles of land, mostly farms.

This is a developed portion of an otherwise rural area in the Huron watershed, according to data from 2000. Only 17% of the Boyden Creek watershed is developed while more than half of the land is used for agriculture. At that time, only 5% of the land was covered by impervious surface.

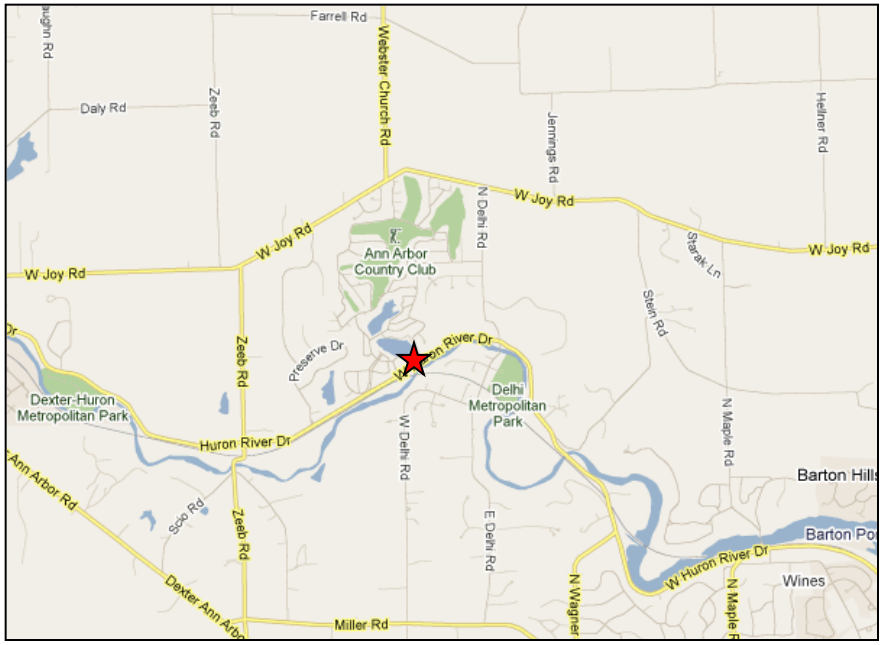
Impervious surface is hard on streams because it prevents rain from being filtered and cleaned through the soil and, instead, delivers it quickly to the stream, carrying pollutants and causing surging flows that damage the stream habitat and biotic community.

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: 61% Agriculture, 17% Urban, 7% Forest, 5% Open, 10% 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 to 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:

Baetidae — small minnow mayfly
Belostomatidae — giant water bug
Caenidae — square gilled mayfly
Chironomidae — midge
Coenagrionidae — narrow-winged damselfly
Corixidae — water boatman
Elmidae — riffle beetle
Heptageniidae — flathead mayfly
Hydrophilidae — water scavenger beetle

*Sensitive Family

Hydropsychidae — common net-spinner caddisfly
Libellulidae — common skimmer dragonfly
Philopotamidae — finger-net caddisfly
Polycentropodidae — spotted head caddisfly
Scirtidae — marsh beetle
Simuliidae — black fly
Tipulidae — crane fly
Veliidae — short-legged striders