



Protecting the river since 1965

Adopt-a-Stream

River Round Oct 2014 Data and Trends



The Huron River Watershed Council holds two full benthic macroinvertebrate collections per year, during which volunteers visit rivers and creeks across the watershed and collect a sample of the critters that live in the stream and on the streambed.

“Benthic macroinvertebrates” are another word for stream insects, crustaceans, worms, and mollusks. The word “benthic” refers to the bottom of a lake or stream, the word “macro” means they are large enough to see with the naked eye, and “invertebrates” are creatures without backbones.

There are three categories of benthic macroinvertebrates that are particularly interesting. These categories, or “metrics”, are calculated by the number of families in a sample. A “family” is a taxonomic term that indicates a type of macroinvertebrate (for example, it is possible to find about 10 different mayfly families or 5 different stonefly families in our area of Michigan). In general, the more families found, the healthier the stream.

All insects: This metric includes all of the insect families in the sample, and serves as a general indicator of the stream health.

EPT: Standing for Ephemeroptera-Plecoptera-Trichoptera, this metric includes all of the mayfly, stonefly, and caddisfly families in the sample. These insects are sensitive to water temperature and oxygen availability. Stagnant or warm streams will not have many of these families.

Sensitive: There are a small handful of insect families in the Huron River watershed that are particularly sensitive to organic pollution. In other words, this metric is calculated from insects that are not likely to be found in streams polluted with fertilizers or animal and human waste.

Current Site condition: To determine the overall condition rating, HRWC uses an integrative model that compares a monitoring site to all of HRWC’s other monitoring sites in the Huron watershed. This involves insect data, habitat data, water temperature, land cover, and stream size. Streams can be ranked (from best to worst) as excellent, good, fair, and poor.

Trend: Trends are determined by simple linear regressions of the sample year vs. the three above metrics. If any of the six regressions (3 for fall, 3 for spring) are significant at the alpha level of 0.1, the trend is noted by an up or down arrow. Six data points are required before a trend is calculated.

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WANT MORE DETAIL?

To learn of any particular site in more detail (i.e. more data, graphs), go to: <http://www.hrwc.org/publications/river-study-reports-plans/>

To see a map of all of the monitoring sites, go to: <http://www.hrwc.org/the-watershed/maps/>

All other inquiries, email psteen@hrwc.org

Site Location	Site #	Current Site Condition	Oct 2014 Samples			Oct. averages since 2010 (not including 2014 sample)			Comments	Trend
			All Insects	EPT	Sensitive	All Insects	EPT	Sensitive		
Arms Creek: Walsh Road	1	Fair	16	5	3	12.5	6.0	1.5	This is the best sample ever taken at this location. This is the first time 3 sensitive families have been found (previously only 1 maximum had been found). Sensitive families are statistically increasing (1993-2014).	↑
Bancroft-Noles Drain: Lebo Park	89	Poor	6	1	0	3.0	0.0	0.0	No significant changes over time (2008-2014)	-
Boyden Creek: Delhi	2	Fair	6	2	0	15.5	5.0	1.5	This sample was particularly bad for this location (but these changes are not statistically significant). However, spring EPT families have significantly increased over time (1994-2014). This location is one of the best in the watershed for spring caddisflies.	↑
Chilson Creek: Brighton Road	45	Poor	No sample			9.0	4.0	0.0	Fall samples have remained steady. There have been declines in all spring counts over time (1997-2012). The decline in EPT families is statistically significant.	↓

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			All Insects	EPT	Sensitive	All Insects	EPT	Sensitive		
Chilson Creek: Chilson Road	5	Fair	No sample			7.5	3.0	1.0	There have been slight declines in most insect categories over time (1995-2014), but none of these changes are statistically significant. This is a site to keep an eye on as further declines will certainly cause this change to be a statistically significant result.	-
Davis Creek: Doane Road	6	Fair	5	2	0	13.0	6.0	1.5	This is clearly the worst sample ever taken in the fall at this site, but beyond that there are clear significant declines here over time (1994-2014) in the fall samples. In the spring, families have been slowly disappearing from this site since monitoring began in 1994. This is a statistically significant change. We used to find 3-4 sensitive families, now it is normal to find 0-1 families. The total insect diversity and EPT diversity has also declined significantly.	↓
Davis Creek: Pontiac Trail	7	Fair	7	3	1	9.0	3.0	2.0	This site is similar to the one above, Davis Creek at Doane Road. Insect families have been slowly disappearing since monitoring began in 1994. This is the worst fall sample ever taken here.	↓
Davis Creek: Silver Lake	49	Good	18	9	3	15.7	7.0	3.0	There has been no significant changes over time in the samples (1998-2014)	-

Site Location	Site #	Current Site Condition	Oct 2014 Samples			Oct. averages since 2010 (not including 2014 sample)			Comments	Trend
			All Insects	EPT	Sensitive	All Insects	EPT	Sensitive		
Fleming Creek: Botanical Gardens	9	Fair	12	6	1	14.7	4.3	1.0	No significant changes over time (1993-2014)	-
Fleming Creek: Galpin Road	84	Fair	No sample			14.5	4.0	1.0	We have detected a significant decrease of spring sensitive families here since 2004, but fall families have remained steady.	↓
Fleming Creek: Geddes Road	11	Fair	13	5	1	12.0	4.0	1.0	Slight, but significant increase in sensitive species over time in fall samples (1992-2014) Spring samples are constant.	↑
Fleming Creek: Warren Road	13	Good	No sample			11.5	5.0	3.0	This site remains one of the best that we visit, and since 1994 has improved significantly in fall collections. Spring collections show improvement as well, though not quite statistically significant.	↑
Greenock Creek: Rushton Road	8	Poor	4	1	0	5.5	1.0	0.0	This is a poor site that has only gotten worse over time (1996-2014). Fall insect diversity and spring EPT diversity has significantly decreased.	↓
Hay Creek: M-36	15	Fair	No sample			13.0	4.3	1.5	No significant changes over time (1996-2014)	-
Honey Creek (N): Darwin Road	16	Good	14	5	2	19.3	9.0	4.0	No significant changes over time (1997-2014)	-

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Honey Creek: Jackson Road	18	Fair	7	1	0	13.3	3.3		No significant changes over time (1993-2014)	-
Honey Creek: Wagner Road	20	Fair	11	5	1	11.5	3.5	1.5	No significant changes over time (1993-2014).	-
Horseshoe Creek: Barker Road	98	Unranked (new site)	5	1	0				This site is too new to observe trends. This is the second time it has been sampled in the fall.	?
Horseshoe Creek: Brookside Drive	99	Unranked (new site)	No sample						This site has been sampled once.	?
Horseshoe Creek: Merrill Road	21	Fair	9	4	0	10.3	4.0	0.8	Metrics have remained steady in fall samples. In the spring samples, both total insect diversity and EPT diversity have significantly declined. (1996-2014). We have had two poor spring samples in a row, now.	↓
Hummocky Lick: M-36	63	Good	No sample			14.5	5.0	1.0	From 2000-2004, about 18 insect families were found in fall samples. Since 2005, it is more usual to find about 13. This is a statistically significant decrease. Last fall, the collection fared better with 16 families. The last spring sample was also quite good, with 4 sensitive families found.	↓

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Huron Creek: Dexter-Pinckney Road	22	Good	No sample	7	2	18.0	5.5	3.0	Spring samples have been consistent here including the 2014 sample. Of special note: The fall 2012 sample here was not only a record for Dexter-Pinkey Rd, but had the highest insect diversity, at 23 families, found at any sample site since 2006! Overall, the site is doing quite well, earning a 'good' rating and showing significant long-term increases in insect and sensitive metrics for fall samples (1996-2014).	↑
Huron River: Bell Road	62	Good	16	6	0	16.0	6.0	1.0	No significant changes over time (2000-2014).	-
Huron River: Commerce Road	47	Fair	No sample			8.5	3.5	0.0	Fall samples have significantly declined over time (1997-2013), with as many as 18 insect families found in the early years of sampling and only about 11 insect families found in recent years. Interestingly, spring samples have statistically improved! The conflict results in the trend being marked as steady.	-
Huron River: Cross Street	24	Fair	No sample			11.8	5.8	1.0	Spring samples have significantly improved at this site since 1997 for both total insect diversity and EPT diversity, although fall samples have remained steady.	↑

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			All Insects	EPT	Sensitive	All Insects	EPT	Sensitive		
Huron River: Flat Rock	23	Fair	8	6	1	8.8	5.8	1.5	Two metrics are declining significantly; the fall insect diversity and the spring EPT diversity. (1996-2014).	↓
Huron River: Island Park	61	Fair	15	8	2	13.7	6.7	2.7	Fall samples have improved; trends show statistically increasing number of sensitive families over time. Previously it was common to find 1-2 sensitives, now it is more normal to find 2-3. Spring samples have been getting better here also though this is a non-significant change (2000-2014).	↑
Huron River: Proud Lake Rec Area	64	Fair	10	4	0	14.5	3.5	0.5	This sample was worse than usual, but there have been no significant changes over time (2001-2014).	-
Huron River: US-23 (Liv. Co)	51	Fair	13	5	1	15.0	5.5	2.5	No significant changes over time (1998-2014).	-
Huron River: White Lake Road	25	Excellent	No sample			17.5	8.5	4.0	This site has the highest average diversity in the watershed despite it being such a small little river. No significant changes over time (1998-2014).	-
Huron River: Zeeb Road	26	Good	16	6	3	15.8	6.3	3.3	No significant changes over time (1996-2014)	-

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			All Insects	EPT	Sensitive	All Insects	EPT	Sensitive		
Livermore Creek: Doyle Road	93	Unranked (new site)	12	3	1				This site has been sampled three time in the spring. By our initial results, it seems to be a very healthy location, although sampling it is quite difficult because of plentiful muck.	?
Malletts Creek: Chalmers Drive	27	Poor	7	3	0	8.3	2.7	0.0	While this fall sample maintains status quo, changes in spring samples in Malletts Creek have become statistically significant.	↑
Mann Creek: VanAmberg Road	30	Good	13	6	3	15.7	5.7	4.0	Mann Creek continues to impress. Fall samples have increased significantly over time (1995-2014) and spring samples have remained steady and high. This site is also the best site to go to during the Stonefly Search as four families of stoneflies are regularly found.	↑
Mill Creek: Fletcher Road	31	Fair	No sample			15.3	3.0	0.7	There have been no significant changes over time (1993-2013)	-
Mill Creek: Ivey Road	32	Fair	13	7	2	18.0	6.0	3.0	No significant changes over time (1994-2014).	-
Mill Creek: Jackson Road	33	Fair	No sample			14.7	4.0	1.3	No significant changes over time (1997-2013)	-

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Mill Creek: Klinger Road	57	Fair	No sample			14.0	5.0	1.0	Significantly more sensitive families and EPT families have been found here over time (1999-2013).	↑
Mill Creek: Letts Cr at M-52	34	Fair	11	1	0	9.0	2.0	0.0	The EPT metric has declined here over time; yet the spring samples have slightly yet significantly increased here over time (1993-2014). This conflict means that we will record the site as generally unchanged.	-
Mill Creek: Manchester Road	55	Fair	No sample			12.5	3.5	1.5	Fall samples have increased significantly over time (1999-2013). Spring samples have increased though not significantly over the same time period.	↑
Mill Creek: Parker Road	96	Unranked (new site)	12	3	0				This site has only been sampled four times (twice fall, twice spring). Initial samples indicate a rather poor insect community, and it is likely that this site will eventually be ranked poor after more data is collected.	?
Mill Creek: Shield Road	80	Good	18	7	2	13.0	6.0	2.0	This is the second best fall sample ever taken at this site. EPT is statistically increasing both in spring and fall samples over time (2002-2014).	↑
Mill Creek: Warrior Park	79	Fair	17	9	2	11.8	6.0	1.5	This was the best sample we have had at this location in years. There are still no significant changes over time (2003-2014)	-

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			All Insects	EPT	Sensitive	All Insects	EPT	Sensitive		
Millers Creek: Glazier Way	35	Poor	8	1	0	9.3	0.8	0.0	We have been seeing better samples for this creek since work was done in the headwaters in spring 2009. The increase in total insect families is not statistically significant over the long term (1993-2014), but over the short term (2004-2013) there have been increase (5 in 2006-->12 in 2013).	-
Norton Creek: West Maple Road	65	Poor	No sample			3.7	0.7	0.0	This site shows significant decline in EPT metrics and total families (2000-2014). This creek is probably the worst one that we monitor. The last several years have had particularly poor counts.	↓
Pettibone Creek: Commerce Road	67	Fair	13	5	0	11.0	3.0	0.0	This was one of the best samples taken at this site, but there have been no significant changes over time (2001-2014)	-
Pettibone Creek: Livingston Road	68	Good	11	6	0	11.3	4.0	0.3	The creek's total insect diversity has significantly declined since sampling began (2001-2013).	↓
Port Creek: Armstrong Road	60	Poor	No sample			5.0	1.0	0.0	No significant changes over time (2000-2011)	-

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			All Insects	EPT	Sensitive	All Insects	EPT	Sensitive		
Portage Creek: Dexter-Townhall Road	37	Good	22	10	5	16.7	8.3	4.7	While fall samples are holding steady, there have been significant declines in the spring sensitive families since 1996 (5 -> 1 or 2). The site is still quite healthy although it should be watched carefully.	↓
Portage Creek: Unadilla	58	Fair	No sample			12.5	5.0	0.5	No significant changes over time (1999-2013)	-
Portage Creek: Rockwell Road	94	Unranked (new site)	No sample						This site has been sampled once.	?
Portage Creek: Stockbridge	91	Unranked (new site)	No sample						This site has been sampled once.	?
Portage Creek: Williamsville	92	Fair	15	3	1	13.3	2.7	0.3	This site has been sampled for 3 years. Judging from this small amount of data, fall samples are holding steady, but spring samples do seem to be getting worse. This is tentative pending more data.	↓
South Ore Creek: Bauer Road	52	Fair	8	5	1	11.7	2.7	1.0	This site is significantly declining for the EPT metric in fall samples (1998-2013) and in spring sensitive families (4 in 1998 -> 1 in 2014).	↓

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			All Insects	EPT	Sensitive	All Insects	EPT	Sensitive		
South Ore Creek: Hamburg Road	40	Good	13	4	1	10.5	1.5	1.5	This site is significantly declining in fall EPT families (1995-2013), and declining slightly (and non-significantly) in all of the other spring and fall parameters. However, the past year has had slightly better samples, so maybe things are turning around.	↓
South Ore Creek: Lake Ridge	50	Fair	4	2	0	6.0	2.0	0.0	This site has definitely declined over time (1998-2014), but these changes are not yet significant.	-
Swift Run: Shetland Drive	41	Poor	8	2	0	7.3	2.3	0.0	No significant changes over time (1992-2014)	-
Traver Creek: Broadway Avenue	42	Poor	4	1	0	5.5	1.5	0.0	No significant changes over time (1992-2014)	-
Walker Creek: 8 Mile Road	82	Fair	No sample			12.0	5.0	1.0	Total insect families have been steadily and significantly declining since 2003 in fall samples. (22-->12). Spring samples are steady.	↓
Woodruff Creek: Buno Road	46	Fair	8	3	0	13.0	3.3	0.3	Recent samples have been quite poor here compared to five-ten years ago. There has been a significant decline in fall EPT over time (6-->3) and spring sensitives (2-->1) (2002-2014).	↓
Woodruff Creek: Maxfield Road	44	Fair	No sample			13.0	4.0	1.0	No significant changes over time (1996-2012).	-

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			All Insects	EPT	Sensitive	All Insects	EPT	Sensitive		
Woods Creek: L Huron Metropark	14	Good	16	6	2	12.5	4.8	1.5	Long term trends show statistically significant increases in all three metrics for fall samples. Spring samples have remained steady (1997-2014).	↑

These sites are sampled on occasion, sometimes for a specific project, but are not used to determine overall watershed health. The long-term average is a longer window because these sites are visited infrequently.

Site Location	Site #	Current Site Condition	Oct 2014 Samples			Oct. averages since 2010 (not including 2014 sample)			Comments	Trend
			All Insects	EPT	Sensitive	All Insects	EPT	Sensitive		
Boyden Creek: Golf Course	3	Fair	10	4	1	11.0	4.0	1.0	No significant changes over time (1994-2014)	▬
Boyden Creek: Huron River Drive	4	Fair	9	3	0	20.0	6.0	2.0	No significant changes over time (1993-2014)	▬
Fleming Creek: Radrick Farms	12	Fair	No sample			10.0	6.0	1.0	No significant changes over time (1994-2013)	▬
Davis Creek: 11 Mile Road	81	Poor	No sample			8.5	0.5	0.0	No significant changes over time (1993-2010).	▬
Honey Creek: Pratt Road	19	Poor	No sample			13.0	3.0	0.0	No significant changes over time (1994-2013)	▬
Malletts Creek: Main Street	56	Poor	No sample			6.0	2.0	0.0	Significant decreases in insect families (12-->6) since 2000.	↓
Malletts Creek: Near I-94	28	Poor	No sample			9.0	2.0	0.0	Spring insect family metrics have statistically improved over time. (1992-2011)	↑

Malletts Creek: Scheffler Road	29	Poor	No sample			7.0	2.0	0.0	No significant changes over time (1992-2011).	-
Narrow Gauge Creek: Green Road	75	Unique	No sample			4.0	2.0	2.0	No significant changes over time (2002-2013). This site has much different characteristics than the other streams and so is not rated in the same manner.	-
Millers Creek (W Branch): Plymouth Rd	72	Poor	No sample			8.0	0.5	0.0	We have been seeing better samples (for this creek) since work was done in the headwaters in spring 2009. The change is not yet significant (2002-2011).	-
Traver Creek: Traver Road	101	Unranked (new site)	No sample			8.0	3.0	0.0	This was the second time this site has been sampled in the spring.	?
Traver Creek: Dhu Varren Road	43	Good	No sample			12.0	4.0	0.0	No significant changes over time (1992-2013)	-
Willow Run: VanBuren Park	90	Unranked (new site)	No sample			6.5	2.5	0.0	This site is too new to recognize a trend.	?
Woods Creek: Martinsville Road	87	Fair	No sample			10.7	1.7	1.0	No significant changes over time (2008-2013)	-
Woods Creek: Renton Road	88	Fair	17	7	2	12.0	4.0	1.5	This was by far the best sample ever taken here. All three metrics are significantly increasing over time (2008-2014)	-