



River Roundup

October 2016 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 are ranked as excellent, good, fair, and poor and ordered best to worst. This is done on 61 sites, picked to be representative of all parts of the watershed.

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?

All inquiries, email Paul at psteen@hrwc.org



Site #	Site Location	Current Site Condition (excellent, good, fair, poor)	Site ranking (1= Best, 61= Worst)	October 2016 Samples			October averages since 2012			Comments	Trend
				All Insects	EPT	Sensitive	All Insects	EPT	Sensitive		
25	Huron River: White Lake Road	Excellent	1	18	10	4	16.3	8.7	3.7	Despite this being a small little river, the insect diversity is high and we always find many sensitive families. This fall we once again found the rare Odontoceridae here (strong case-maker caddisfly). There has still been no significant changes over time (1998-2016).	-
30	Mann Creek: VanAmberg Road	Excellent	2				14.3	5.0	3.0	Mann Creek continues to impress. Fall samples have increased significantly over time 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. (1995-2015)	↑
16	Honey Creek (N): Darwin Road	Excellent	3	21	8	4	18.5	7.8	3.5	No significant changes over time (1997-2016). This is one of the healthiest places that we monitor.	-
49	Davis Creek: Silver Lake	Excellent	4	23	9	5	16.8	7.6	2.8	This was the best fall sample taken at this location in about 8 years. There has been no significant changes over time in the samples (1998-2016)	-
22	Huron Creek: Dexter-Pinckney Road	Excellent	5	11	5	2	17.0	6.0	3.0	The site is showing significant long-term increases in sensitive families for fall samples, and non-significant increases in total family and EPT for fall samples. (1996-2016). Spring samples are holding steady.	↑
37	Portage Creek: Dexter-Townhall Road	Good	6	17	6	3	18.8	8.6	4.8	While fall samples are holding steady and are very diverse, there have been significant declines in the spring total families, EPT families, and sensitive families since 1996 (sensitive families 5-->1 or 2, normally). It is possible that high flows in the spring heavily affect the insect population.	↓

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26	Huron River: Zeeb Road	Good	7	15	3	0	15.8	5.3	2.3	No significant changes over time (1996-2016). The Huron River at this location has a high diversity of insect life. This fall sample had a lower EPT family count than normal and no sensitive families, which is very unusual for this site. Reports from the field were that this site was running fast and deep and difficult to sample. That information in combination with the results being 40% outside of the median means that this point will be counted as an outlier and not be counted toward calculations of long-term trends.	-
13	Fleming Creek: Warren Road	Good	8				11.0	5.0	2.5	Since 1994 this site has improved significantly in fall and spring collections. (1994-2015)	↑
55	Mill Creek: Manchester Road	Good	9				14.0	4.0	1.0	Total insect diversity in spring and fall samples has increased significantly over time (1999-2015).	↑
58	Portage Creek: Unadilla	Good	10				14.5	5.0	1.0	Fall 2015 was one of the best samples ever taken here. However, there have been no significant changes over time (1999-2015)	-
94	Portage Creek: Rockwell Road	Good	11				18.0	4.5	0.5	This site has been sampled twice in the fall, once in the spring.	?
80	Mill Creek: Shield Road	Good	12	10	6	2	14.3	6.7	2.0	While this sample was a less diverse than recent samples, total insect diversity (spring only) and EPT diversity (both spring and fall) are statistically increasing over time (2002-2016). This site has made these improvements since the dam downstream came out in 2008.	↑

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63	Hummocky Lick: M-36	Good	13	11	3	1	11.0	3.0	1.0	From 2000-2004, about 18 insect families were found in fall samples. Since 2007, it is more usual to find between 11-13. This is a statistically significant decrease. Spring samples have not changed over time.	↓
84	Fleming Creek: Galpin Road	Good	14				15.5	4.5	1.5	No significant changes over time (2004-2015)	-
68	Pettibone Creek: Livingston Road	Good	15	11	3	0	12.0	4.4	0.4	In fall samples there has been a significant decline in total insect families. (2000-2015).	↓
67	Pettibone Creek: Commerce Road	Good	16	14	6	0	12.7	4.7	0.0	This was the best sample ever taken at this site. However, there have been no significant changes over time. (2001-2015)	-
14	Woods Creek: L Huron Metropark	Good	17				12.5	4.3	0.8	Long term trends show statistically significant increases in all three metrics for fall samples. Spring samples have remained steady (1997-2016).	↑
82	Walker Creek: 8 Mile Road	Good	18				19.0	7.0	1.0	No significant changes over time (2003-2015).	-
62	Huron River: Bell Road	Good	19	10	3	0	14.0	5.0	0.3	No significant changes over time (2000-2016). This was a poor sample; collected in high water, but not outside the realm of normal variation.	-

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9	Fleming Creek: Botanical Gardens	Good	20				12.0	5.0	0.5	No significant changes over time (1993-2016)	—
40	South Ore Creek: Hamburg Road	Good	21	14	5	2	11.3	3.5	1.0	This site is non-significantly declining in all of the spring and fall metrics (1994-2016). The changes are slight but steady and do indicate that it is a site to watch carefully in the future.	—
79	Mill Creek: Mill Creek Park	Good	22	12	6	1	13.4	6.4	1.4	No significant changes over time (2003-2016)	—
46	Woodruff Creek: Buno Road	Fair	23				10.7	3.0	0.0	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).	↓
2	Boyden Creek: Delhi	Fair	24	13	4	1	10.3	3.3	0.7	Fall populations have remained unchanged, but spring EPT families have significantly increased over time (1994-2016). This location is one of the best in the watershed for spring caddisflies.	↑
11	Fleming Creek: Geddes Road	Fair	25				11.3	4.3	1.0	2016 was the best spring sample collected in many years. There is a slight, but significant, increase in sensitive species over time in both fall and spring samples. (1992-2016)	↑
15	Hay Creek: M-36	Fair	26				14.3	4.7	1.7	EPT and sensitive families have decreased over time in fall samples. Spring samples are declining but the changes are not significant. (1996-2015)	↓

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5	Chilson Creek: Chilson Road	Fair	27	9	2	1	8.8	3.0	1.3	There have been declines in spring and fall counts over time (1997-2016), but the change is not significant.	-
31	Mill Creek: Fletcher Road	Fair	28				12.5	3.5	1.0	There have been no significant changes over time (1993-2015).	-
51	Huron River: US-23 (Liv. Co)	Fair	29	14	3	1	14.0	4.3	1.3	Sensitive families have declined in the spring samples over time (1998-2016). All of the other parameters, fall and spring, are declining but not yet statistically significant.	↓
34	Mill Creek: Letts Cr at M-52	Fair	30	12	3	0	11.7	2.7	0.3	This site is declining significantly in fall EPT families (1993-2016). Spring samples are holding steady.	↓
52	South Ore Creek: Bauer Road	Fair	31	15	5	0	13.7	3.7	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).	↓
61	Huron River: Island Park	Fair	32	12	5	2	13.4	6.2	2.0	One metric is significantly increasing- fall sensitive families. (2000-2016) The other metrics are holding steady.	↑
1	Arms Creek: Walsh Road	Fair	33	12	6	0	12.7	5.0	1.3	No significant changes over time (1993-2016).	-
64	Huron River: Proud Lake Rec Area	Fair	34	13	4	1	12.8	3.8	1.0	No significant changes over time (2001-2016).	-

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33	Mill Creek: Jackson Road	Fair	35				13.0	4.5	2.5	This was the first time 3 sensitive families were found here in the fall! However, there have been no significant changes over time (1996-2015)	-
7	Davis Creek: Pontiac Trail	Fair	36	10	4	2	8.5	3.5	1.5	Samples in the fall have been declining over many years, but these changes are not yet significant. Spring samples are holding steady. (1994-2016)	-
96	Mill Creek: Parker Road	Fair	37	11	2	0	12.7	2.3	0.0	This site has only been sampled six times (three fall, three spring). Initial samples indicate a decent insect population with mucky habitat. The population does not appear to be changing. (2012-2016)	-
6	Davis Creek: Doane Road	Fair	38	10	4	1	9.3	4.3	0.7	Spring samples show that 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 spring total insect diversity and EPT diversity has also declined significantly. Fall diversity is declining but is not significant.	↓
47	Huron River: Commerce Road	Fair	39				10.5	4.5	0.0	Fall samples have significantly declined over time (1997-2015), with as many as 18 insect families found in the early years of sampling and only about 10 insect families found in recent years. Interestingly, spring EPT has statistically improved! The conflict results in the trend being marked as steady.	-
91	Portage Creek: Stockbridge	Fair	40				8.5	3.0	0.5	This site has been sampled four times. The creek was dredged here over the summer and insect counts are down, but we can't accurately say how much because this is such a new site.	?

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32	Mill Creek: Ivey Road	Fair	41	17	7	1	13.3	5.7	1.0	There is a significant decline detected for both spring insect and sensitive diversity. (1993-2016). Fall samples remain steady. This particular fall sample was the best taken in several years.	↓
21	Horseshoe Creek: Merrill Road	Fair	42	9	4	1	10.0	3.3	0.5	Most of the metrics are declining over time (1996-2016). Spring EPT families are the only metric significantly declining however.	↓
20	Honey Creek: Wagner Road	Fair	42	9	2	1	10.6	3.4	1.0	While many of the metrics are slightly declining, there have been no significant changes over time (1993-2016). This is a site to watch in the future especially considering the upstream site at Jackson Road is doing poorly.	-
24	Huron River: Cross Street	Fair	44	11	6	1	11.5	5.3	0.5	Spring samples have significantly improved at this site since 1997 for total insect diversity. Fall samples have remained steady.	↑
18	Honey Creek: Jackson Road	Poor	45	8	3	0	10.7	3.0	0.0	Sensitive families have declined in spring samples, from approximately 2 in the early 2000s to 0 in recent years. (1993-2016) No sensitive families have been found in fall or spring since 2009.	↓
57	Mill Creek: Klinger Road	Poor	46				14.0	4.0	1.0	Significantly more EPT families have been found in fall samples here over time. (1999-2015).	↑
23	Huron River: Flat Rock	Poor	47				8.3	6.3	1.0	Three metrics are declining significantly; the fall insect diversity and the spring insect diversity and EPT diversity. (1996-2016).	↓
92	Portage Creek: Williamsville	Poor	48	15	4	0	14.3	3.0	0.3	No significant changes over time (2010-2016)	-

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50	South Ore Creek: Lake Ridge	Poor	49	7	3	0	5.5	2.5	0.0	This site has declined over time (1998-2016), but these changes are not yet significant. This year's sample was slightly above average, which was good to see.	-
98	Horseshoe Creek: Barker Road	Poor	50				12	1	0	This site is still quite new (6 samples, 2012-2016). As a preliminary analysis, the data appear to be steady with just a slight amount of variation over time.	-
89	Bancroft-Noles Drain: Lebo Park	Poor	51				4.5	0.5	0.0	This sample was exceptionally bad for this location. High water from the Huron River downstream was backing up the creek and this alteration to normal conditions justify classifying this observation as an outlier. No significant changes over time (2008-2014)	-
45	Chilson Creek: Brighton Road	Poor	52				9.5	3.0	0.0	There have been declines in all spring counts over time (1997-2015), but the change is not significant. Fall samples are holding steady.	-
8	Greenock Creek: Rushton Road	Poor	53	6	1	0	5.7	1.0	0.0	This site has gotten worse over time (1996-2016). Fall insect diversity and spring EPT diversity has significantly decreased.	↓
42	Traver Creek: Broadway Avenue	Poor	54				4.7	1.0	0.0	No significant changes over time (1992-2015)	-
97	Norton Creek: Gibson Park	Poor	55	14	1	0	10.3	1.3	0.0	This site has been sampled three times (2 fall, 1 spring). It appears to be a better location for sampling macros than the other Norton site (#65). 14 insect families is pretty good for any creek, although the EPT and sensitive families are low and do indicate disturbed habitat or water pollution.	?

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27	Malletts Creek: Chalmers Drive	Poor	56				8.0	2.8	0.0	Spring samples have shown improvement over time (1994-2015). There have been no significant changes in fall samples.	↑
60	Port Creek: Armstrong Road	Poor	57				5.0	0.0	0.0	There have been no significant changes over time (2000-2015)	-
99	Horseshoe Creek: Brookside Drive	Poor	58				8.0	1.0	0.0	This has been sampled three times (2013-2015)	?
41	Swift Run: Shetland Drive	Poor	59				6.3	2.0	0.0	From fall 2015: Volunteers reported that the flow of the creek was extremely low. Only three creatures were even found, all of the same family. This is very unusual, even for the worst streams HRWC samples. In fact, this is the worst sample ever collected, anywhere, by HRWC. This sample is getting marked as a outlier because of the lack of water and will not be analyzed in the long-term trends. No significant changes over time (1992-2015)	-
65	Norton Creek: West Maple Road	Poor	60				3.5	0.5	0.0	This site shows significant decline in EPT metrics and total insects families (2000-2015). The last several years have had particularly poor counts.	↓
35	Millers Creek: Glazier Way	Poor	61				9.0	0.5	0.0	No significant changes over time (1993-2016).	-