



River Roundup

September 2018 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)	Sept 2018 Samples			Sept/Oct April averages since 2013 (not counting 2018)			Comments	Trend
				All Insects	EPT	Sensitive	All Insects	EPT	Sensitive		
25	Huron River: White Lake Road	Excellent	1				17.0	9.7	3.7	Despite this being a small little river, the insect diversity is high and we always find many sensitive families. There has still been no significant changes over time (1998-2017).	-
30	Mann Creek: VanAmberg Road	Excellent	2	14	6	4	14.3	5.7	4.0	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 (1995-2018).	↑
37	Portage Creek: Dexter-Townhall Road	Excellent	3	14	7	3	18.6	8.6	4.6	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.	↓
22	Huron Creek: Dexter-Pinckney Road	Excellent	4				15.0	6.5	2.5	The site is showing significant long-term increases in EPT and sensitive families for fall samples. Spring samples are holding steady. (1996-2018)	↑
16	Honey Creek (N): Darwin Road	Excellent	5	17	6	2	18.0	7.3	3.0	No significant changes over time (1997-2018). This is one of the healthiest places that we monitor.	-
26	Huron River: Zeeb Road	Good	6	19	9	4	16.5	6.3	2.8	Fall sensitive families are significantly increasing. This section of the Huron River is the most diverse in macroinvertebrate life of any that HRWC monitors. (1996-2018) (It's rating gets downgraded because the river is so big here, and we would hope to see even higher diversity than we do!)	↑

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13	Fleming Creek: Warren Road	Good	7				11.3	5.0	2.7	Since 1994 this site has improved significantly in fall and spring collections. (1994-2017)	↑
49	Davis Creek: Silver Lake	Good	8	17	8	4	18.5	8.3	3.0	All spring metrics are significantly declining, but fall sensitive families are significantly increasing--- marking this site as unchanged, but still one to keep an eye on. (1998-2018).	-
5	Chilson Creek: Chilson Road	Good	9	14	4	1	11.0	4.0	2.0	There have been declines in spring and fall counts over time (1997-2018), but the change is not significant.	-
40	South Ore Creek: Hamburg Road	Good	10	14	7	1	11.3	3.5	1.0	No significantly changes over time (1994-2018).	-
9	Fleming Creek: Botanical Gardens	Good	11	14	6	1	13.0	4.5	1.5	Since 2010, we have been finding 1-2 sensitive families here in the fall where there was once none. Starting in 2018, there was enough data to confirm this as statistically significant. (1993-2018).	↑
67	Pettibone Creek: Commerce Road	Good	12	13	4	0	13.5	5.5	0.0	There have been no significant changes over time. (2001-2018)	-
14	Woods Creek: L Huron Metropark	Good	13	12	4	0	13.3	4.7	0.7	Long term trends show statistically significant increases in insect and EPT metrics for fall samples and the sensitive family metric for spring samples (1997-2018).	↑
94	Portage Creek: Rockwell Road	Good	14				16.0	4.7	0.7	This site has been sampled thrice in the fall, twice in the spring.	?

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84	Fleming Creek: Galpin Road	Good	15				14.0	4.7	1.3	No significant changes over time (2004-2017)	-
68	Pettibone Creek: Livingston Road	Good	16	10	4	0	12.2	4.4	0.6	Strange results here. There still has been a significant decline in fall total insect families over time but a significant increase in spring total families over time. (2000-2018).	-
2	Boyden Creek: Delhi	Good	17	13	4	1	14.0	4.7	1.0	Fall populations have remained unchanged, but spring Total and EPT families have significantly increased over time. This location is one of the best in the watershed for spring caddisflies. (1994-2018)	↑
31	Mill Creek: Fletcher Road	Good	18				15.0	3.0	1.5	Fall families have significantly increased over time (10->15) (1993-2017).	↑
63	Hummocky Lick: M-36	Good	19	10	3	1	9.5	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, and then more recently, 8-10. This is a statistically significant decrease. Spring samples have not changed over time. (2000-2018)	↓
80	Mill Creek: Shield Road	Good	20	10	5	2	14.0	6.5	2.0	Total insect diversity (spring only) and EPT diversity (both spring and fall) are statistically increasing over time (2002-2018). This site has made these improvements since the dam downstream came out in 2008.	↑
62	Huron River: Bell Road	Good	21	15	6	1	13.0	4.5	0.0	No significant changes over time (2000-2018).	-
58	Portage Creek: Unadilla	Good	22	10	3	0	14.3	5.0	1.3	There have been no significant changes over time (1999-2018).	-

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1	Arms Creek: Walsh Road	Good	23	11	5	1	14.3	6.0	1.3	Lower slightly lower than average this sample, overall fall EPT and sensitive families have increased significantly over time; spring samples have remained steady. (1993-2018)	↑
79	Mill Creek: Mill Creek Park	Good	24	18	8	3	14.0	6.8	1.2	No significant changes over time (2003-2018)	-
46	Woodruff Creek: Buno Road	Fair	25	8	3	0	11.0	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 or 4) (2002-2018).	↓
15	Hay Creek: M-36	Fair	26	9	3	2	13.3	5.0	1.7	All metrics have decreased over time in fall samples. Spring samples are declining but the changes are not significant. (1996-2018)	↓
51	Huron River: US-23 (Liv. Co)	Fair	27				13.5	4.5	1.3	Sensitive families have declined in the spring and fall samples over time (1998-2017). All of the other parameters, fall and spring, are declining but not yet statistically significant.	↓
55	Mill Creek: Manchester Road	Fair	28				12.0	4.0	1.0	There have been no significant changes over time (1999-2017).	-
52	South Ore Creek: Bauer Road	Fair	29	12	4	0	13.5	4.0	1.0	Total diversity and EPT taxa has significantly decreased over time (1998-2018).	↓
11	Fleming Creek: Geddes Road	Fair	30	13	3	1	12.0	4.3	1.0	Since 2009, we have been finding 1-2 sensitive families here in the fall where there was once none. Starting in 2018, there was enough data to confirm this as statistically significant. (1993-2018).	↑

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33	Mill Creek: Jackson Road	Fair	31				14.0	4.7	2.0	There have been no significant changes over time (1996-2017)	-
64	Huron River: Proud Lake Rec Area	Fair	32				12.4	3.8	0.8	No significant changes over time (2001-2016).	-
82	Walker Creek: 8 Mile Road	Fair	33				15.5	6.0	1.0	No significant changes over time (2003-2017).	-
61	Huron River: Island Park	Fair	34				13.6	5.8	1.8	There have been no significant changes over time (1996-2017)	-
21	Horseshoe Creek: Merrill Road	Fair	35	12	5	1	11.3	3.8	0.5	There is a lot of variation in samples here. Long term, however, both spring total and EPT families are significantly declining. (1996-2018).	↓
96	Mill Creek: Parker Road	Fair	36	17	3	0	11.5	2.5	0.0	No significant changes over time (2012-2018)	-
57	Mill Creek: Klinger Road	Fair	37				15.3	5.0	1.0	EPT families and total insect families have significantly increased over time (1999-2017).	↑
7	Davis Creek: Pontiac Trail	Fair	38	11	3	2	10.0	4.0	2.0	Samples have been slightly declining over many years, but these changes are not yet significant. (1994-2018)	-

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6	Davis Creek: Doane Road	Fair	39	11	5	1	11.0	5.7	1.0	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 from 1994-2000, from 2003-2014 we were finding 0-1 families. The last couple of samples have been better at 2 families. Fall diversity is declining slightly but it is not a significant change. (1994-2018)	↓
91	Portage Creek: Stockbridge	Fair	40				9.0	2.7	0.3	This site has been sampled six times. The creek was dredged here over the summer of 2016 and insect counts are down, but we can't accurately say how much because this is such a new site.	?
45	Chilson Creek: Brighton Road	Fair	41				9.5	3.0	0.0	There have been declines in all spring counts over time (1997-2017). Fall samples are holding steady.	↓
89	Bancroft-Noles Drain: Lebo Park	Fair	42	3	0	0	6.0	1.0	0.0	No significant changes over time (2008-2018)	-
34	Mill Creek: Letts Cr at M-52	Fair	43	12	5	0	11.7	2.7	0.3	This site is declining significantly in fall insect and EPT families. Spring samples are holding steady. (1993-2018)	↓
20	Honey Creek: Wagner Road	Fair	44	10	3	1	10.6	3.0	0.8	The fall sensitive families are significantly declining over time. Most of the other metrics are slightly and non-significantly declining (1993-2018).	↓

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47	Huron River: Commerce Road	Fair	45				8.7	4.0	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 5-10 insect families found in recent years. Interestingly, spring EPT has statistically improved! The conflict results in the trend being marked as steady.	-
92	Portage Creek: Williamsville	Fair	46	8	3	0	15.0	3.5	0.5	Site seems to be getting worse; no significant changes over time (2010-2018)	-
24	Huron River: Cross Street	Poor	47				11.5	5.0	0.5	Spring samples have significantly improved at this site since 1997 for total insect diversity. Fall samples have remained steady.	↑
32	Mill Creek: Ivey Road	Poor	48	9	3	0	13.3	5.7	1.0	There have been no significant changes over time (1993-2018), although spring samples are trending downwards, a result that is not yet significant.	-
18	Honey Creek: Jackson Road	Poor	49	10	2	0	8.0	3.0	0.0	Sensitive families have declined in spring samples, from approximately 2 in the early 2000s to 0 in recent years. (1993-2018) No sensitive families have been found in fall or spring since 2009.	↓
50	South Ore Creek: Lake Ridge	Poor	50	7	2	0	5.5	2.5	0.0	This site has declined over time, but these changes are not yet significant. (1998-2018)	-
27	Malletts Creek: Chalmers Drive	Poor	51	14	3	0	8.3	3.0	0.0	This was the best sample ever taken here! Spring samples have shown improvement over time (1994-2018).	↑
8	Greenock Creek: Rushton Road	Poor	52	6	2	0	5.0	1.0	0.0	This site has gotten worse over time. Spring insect diversity has significantly decreased. (1996-2018)	↓

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42	Traver Creek: Broadway Avenue	Poor	53	7	3	0	4.5	0.8	0.0	No significant changes over time (1992-2018)	-
23	Huron River: Flat Rock	Poor	54	7	3	1	8.0	5.8	0.5	Three metrics are declining significantly; the fall insect diversity and the spring insect diversity and EPT diversity. (1996-2018).	↓
97	Norton Creek: Gibson Park	Poor	55				9.3	1.5	0.0	This site has been sampled five times (3 fall, 2 spring). It appears to be a better location for sampling macros than the other Norton site (#65). The EPT and sensitive families are low and do indicate disturbed habitat or water pollution.	?
99	Horseshoe Creek: Brookside Drive	Poor	56	9	0	0	8.0	1.0	0.0	This site is still quite new (6 samples, 2013-2018). As a preliminary analysis, the data appear to be steady with just a slight amount of variation over time.	-
60	Port Creek: Armstrong Road	Poor	57				5.3	0.3	0.0	Insect diversity and EPT diversity are declining here (2000-2015).	↓
41	Swift Run: Shetland Drive	Poor	58	7	0	0	6.0	1.3	0.0	No significant changes over time (1992-2018)	-
98	Horseshoe Creek: Barker Road	Poor	59				9.5	1.0	0.0	No significant changes over time (2012-2018)	-
65	Norton Creek: West Maple Road	Poor	60				1.5	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.	↓

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35	Millers Creek: Glazier Way	Poor	61	11	1	0	9.3	0.5	0.0	No significant changes over time (1993-2018).	-