



# River Roundup

October 2019 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](mailto:psteen@hrwc.org)

Site #	Site Location	Current Site Condition (excellent, good, fair, poor)	Site ranking (1= Best, 61= Worst)	Oct 2019 Samples			Sept/Oct April averages since 2014 (not counting 2019)			Comments	Trend
				All Insects	EPT	Sensitive	All Insects	EPT	Sensitive		
25	Huron River: White Lake Road	Excellent	1							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). This site hasn't had an official sample for a couple of years due to flooding and access issues.	-
22	Huron Creek: Dexter-Pinckney Road	Excellent	2	16	8	2	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. (1996-2019)	↑
30	Mann Creek: VanAmberg Road	Excellent	3	19	7	5	14.0	6.3	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 three or four families of stoneflies are regularly found (1995-2018).	↑
26	Huron River: Zeeb Road	Excellent	4	17	7	2	18.7	8.7	4.0	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!)	↑
16	Honey Creek (N): Darwin Road	Excellent	5	22	7	4	17.3	6.3	2.7	No significant changes over time (1997-2019). This is one of the healthiest places that we monitor.	-
37	Portage Creek: Dexter-Townhall Road	Excellent	6	19	9	3	18.0	8.0	4.0	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.	↓
40	South Ore Creek: Hamburg Road	Good	7	20	6	2	13.3	5.0	1.0	No significantly changes over time (1994-2019). This was a great sample	-

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13	Fleming Creek: Warren Road	Good	8	10	4	3	11.0	4.5	2.5	Since 1994 this site has improved significantly in fall and spring collections. (1994-2019)	↑
49	Davis Creek: Silver Lake	Good	9	11	5	1	18.2	8.3	3.5	All spring metrics are significantly declining, but fall sensitive families are staying about the same statistically. However, this particular fall sample was one of the worst at this location. (1998-2019).	↓
79	Mill Creek: Mill Creek Park	Good	10	18	11	4	15.4	7.4	1.6	Samples have been getting better over time, but it is not enough to be significant at this point (2003-2019).	-
84	Fleming Creek: Galpin Road	Good	11	14	6	0	12.0	4.5	1.0	No significant changes over time (2004-2019)	-
9	Fleming Creek: Botanical Gardens	Good	12	13	5	1	13.3	5.0	1.3	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. (1993-2019).	↑
5	Chilson Creek: Chilson Road	Good	13	8	3	1	12.0	4.0	2.0	There have been declines in spring and fall counts over time, but this sample was particular poor, and is the first time one of those changes was big enough to be statistically significant. (fall sensitives) (1995-2019).	↓
46	Woodruff Creek: Buno Road	Good	14	15	5	0	12.0	4.0	1.0	Recent samples have been quite poor here compared to five-ten years ago, though this one was better than recent averages. There has been a significant decline in fall EPT over time (6-->3 or 4) (2002-2018).	↓
62	Huron River: Bell Road	Good	15							No significant changes over time (2000-2018).	-
14	Woods Creek: L Huron Metropark	Good	16	7	3	0	14.0	5.0	1.0	Long term trends are heading slightly up, though are not statistically significant. This sample was particularly poor; one of the worst here in several years (1997-2019).	-

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67	Pettibone Creek: Commerce Road	Good	17	11	4	0	13.3	5.0	0.0	There have been no significant changes over time. (2001-2019)	-
68	Pettibone Creek: Livingston Road	Good	18	8	2	0	12.0	4.0	0.0	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. (2000-2019).	-
33	Mill Creek: Jackson Road	Good	19	16	5	1	13.0	5.0	2.0	There have been no significant changes over time (1996-2017)	-
21	Horseshoe Creek: Merrill Road	Fair	20	17	4	2	12.5	4.3	0.8	There is a lot of variation in samples here. Long term, both spring total and EPT families are significantly declining, while fall sensitive families are increasing. Marked as not changing (1996-2019).	-
2	Boyden Creek: Delhi	Fair	21							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)	↑
1	Arms Creek: Walsh Road	Fair	22	14	5	2	13.5	5.8	1.3	Overall, fall EPT and sensitive families have increased significantly over time; spring samples have remained steady. (1993-2019)	↑
15	Hay Creek: M-36	Fair	23							All metrics have decreased over time in fall samples. Spring samples are declining but the changes are not significant. (1996-2018)	↓
63	Hummocky Lick: M-36	Fair	24	15	4	1	9.7	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. The 2019 sample was great by comparison; a terrific sample this time. However, there is still a statistically significant decrease. Spring samples have not	↓

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52	South Ore Creek: Bauer Road	Fair	25							Total diversity and EPT taxa has significantly decreased over time (1998-2018).	↓
11	Fleming Creek: Geddes Road	Fair	26	14	5	0	12.3	4.0	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. (1993-2019).	↑
31	Mill Creek: Fletcher Road	Fair	27	13	4	0	15.0	3.0	1.5	Fall families have significantly increased over time (10->15) (1993-2017).	↑
94	Portage Creek: Rockwell Road	Fair	28	14	4	1	16.0	4.7	0.7	No significant changes over time (2013-2019)	-
61	Huron River: Island Park	Fair	29	14	6	3	13.3	5.6	1.5	There have been no significant changes over time (1996-2019)	-
55	Mill Creek: Manchester Road	Fair	30							There have been no significant changes over time (1999-2017).	-
58	Portage Creek: Unadilla	Fair	31	11	5	0	14.0	4.7	1.0	There have been no significant changes over time (1999-2018).	-
96	Mill Creek: Parker Road	Fair	32							No significant changes over time (2012-2018)	-

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6	Davis Creek: Doane Road	Fair	33							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.	↓
80	Mill Creek: Shield Road	Fair	34							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.	↑
7	Davis Creek: Pontiac Trail	Fair	35							Samples have been slightly declining over many years, but these changes are not yet significant. (1994-2018)	-
51	Huron River: US-23 (Liv. Co)	Fair	36	10	5	1	13.0	4.3	1.0	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.	↓
57	Mill Creek: Klinger Road	Fair	37							EPT families and total insect families have significantly increased over time (1999-2017).	↑
89	Bancroft-Noles Drain: Lebo Park	Fair	38							No significant changes over time (2008-2018)	-
82	Walker Creek: 8 Mile Road	Fair	39	14	5	1	19.0	7.0	1.0	No significant changes over time (2003-2019).	-

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64	Huron River: Proud Lake Rec Area	Fair	40	7	4	0	11.8	4.0	0.8	No significant changes over time (2001-2019).	-
91	Portage Creek: Stockbridge	Fair	41	9	3	0	9.0	2.7	0.3	No significant changes over time (2013-2019)	-
45	Chilson Creek: Brighton Road	Fair	42	9	3	0	10.0	2.0	0.0	There have been declines in all spring and fall counts over time (1997-2019).	↓
20	Honey Creek: Wagner Road	Fair	43	9	3	0	10.0	3.0	1.0	The fall sensitive families are significantly declining over time. Most of the other metrics are slightly and non-significantly declining (1993-2019).	↓
24	Huron River: Cross Street	Fair	44	12	6	1	11.7	5.0	0.7	Spring samples have significantly improved at this site since 1997 for total insect diversity. Fall samples have remained steady. (1997-2019)	↑
47	Huron River: Commerce Road	Fair	45	8	4	0	8.0	4.5	0.0	Fall samples have significantly declined over time (1997-2019), 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.	-
34	Mill Creek: Letts Cr at M-52	Poor	46							This site is declining significantly in fall insect and EPT families. Spring samples are holding steady. (1993-2018)	↓
92	Portage Creek: Williamsville	Poor	47							Site seems to be getting worse; no significant changes over time (2010-2018)	-

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32	Mill Creek: Ivey Road	Poor	48							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							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.	↓
27	Malletts Creek: Chalmers Drive	Poor	50	5	2	0	10.3	3.0	0.0	This was a poor sample, but long term, spring and fall samples have shown improvement over time (1994-2019).	↑
50	South Ore Creek: Lake Ridge	Poor	51							This site has declined over time, but these changes are not yet significant. (1998-2018)	-
8	Greenock Creek: Rushton Road	Poor	52							This site has gotten worse over time. Spring insect diversity has significantly decreased. (1996-2018)	↓
97	Norton Creek: Gibson Park	Poor	53	6	1	0	10.0	1.7	0.0	This site has been sampled five times (4 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.	-
42	Traver Creek: Broadway Avenue	Poor	54							No significant changes over time (1992-2018)	-
23	Huron River: Flat Rock	Poor	55							Three metrics are declining significantly; the fall insect diversity and the spring insect diversity and EPT diversity. (1996-2018).	↓
99	Horseshoe Creek: Brookside Drive	Poor	56							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.	-



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98	Horseshoe Creek: Barker Road	Poor	57							No significant changes over time (2012-2018)	-
60	Port Creek: Armstrong Road	Poor	58	3	1	0	5.5	0.0	0.0	Insect diversity and EPT diversity are declining here (2000-2019).	↓
41	Swift Run: Shetland Drive	Poor	59							No significant changes over time (1992-2018)	-
65	Norton Creek: West Maple Road	Poor	60							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	7	1	0	9.0	0.5	0.0	No significant changes over time (1993-2019).	-