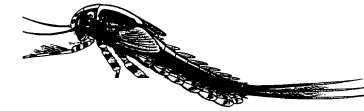




Adopt-a-Stream

River Round October 2013 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.

Trends: 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.imrivers.org/hrwc/>

All other inquiries, email psteen@hrwc.org

Site Location	Site #	Current Site Condition	October 2013 Samples			Averages since 2010			Comments	Trend
			All Insects	EPT	Sensitive	All Insects	EPT	Sensitive		
Arms Creek: Walsh Road	1	Fair	8	4	2	10.0	5.0	1.5	Spring samples have been declining recently (not statistically significantly), while fall samples have remained steady. A few sensitive families have appeared recently - a good sign.	-
Bancroft-Noles Drain: Lebo Park	89	Poor	No sample this season			3.7	0.7	0.0	This site has only been sampled for 3 years. Judging from this small amount of data, it has remained steady.	-
Boyden Creek: Delhi	2	Fair	12	4	1	14.0	6.4	1.8	Sensitive families have significantly increased in the fall samples since sampling began in 1993, and spring EPT families have significantly increased as well.	↑
Chilson Creek: Brighton Road	45	Poor	9	4	0	10.0	4.3	0.3	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.	↓
Chilson Creek: Chilson Road	5	Good	3	2	0	12.0	5.3	2.0	There have been slight declines in most insect categories over time (1995-2013), but none of these changes are statistically significant. However, the diversity in the sample collected this fall was terrible compared to past samples. The team reported that the creek was flooded and sampling as normal was impossible. This sample will not be included in the long term record.	-
Davis Creek: 11 Mile Road	81	Poor	9	1	0	8.5	0.5	0.0	No significant changes over time (1993-2010).	-

Site Location	Site #	Current Site Condition	October 2013 Samples			Averages since 2010			Comments	Trend
			All Insects	EPT	Sensitive	All Insects	EPT	Sensitive		
Davis Creek: Doane Road	6	Fair	13	7	1	10.2	4.8	0.8	No significant changes over time (1995-2011) in the fall samples. In the spring, sensitive 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 families, now it is normal to find 0-1 families.	↓
Davis Creek: Pontiac Trail	7	Fair	No sample this season			8.0	4.0	1.5	This site is similar to the one above, Davis Creek at Doane Road. Sensitive families have been slowly disappearing since monitoring began in 1994.	↓
Davis Creek: Silver Lake	49	Good	18	8	2	15.6	7.2	2.6	Last fall the sample taken here was rather poor, so it is good to see this creek rebound this fall with a diverse sample that is higher than the 3 year average. There has been no significant changes over time in the samples (1998-2013)	-
Fleming Creek: Botanical Gardens	9	Fair	No sample this season			13.5	4.8	1.0	No significant changes over time (1993-2013)	-
Fleming Creek: Galpin Road	84	Fair	18	5	2	13.3	4.7	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	6	2	0	10.3	3.5	0.6	Slight, but significant increase in sensitive species over time in fall samples (although no sensitive species were found in this fall's sample). This was shown by establishment of a sensitive species (Athericidae, a watersnipe fly), in 2009. (1992-2013)	↑

Site Location	Site #	Current Site Condition	October 2013 Samples			Averages since 2010			Comments	Trend
			All Insects	EPT	Sensitive	All Insects	EPT	Sensitive		
Fleming Creek: Warren Road	13	Good	12	6	3	14.3	7.0	3.5	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	No sample this season			6.0	1.8	0.3	This site has been poor since 1989. Unfortunately, this fall's sample confirmed that the EPT metric has gradually, but statistically, declined since 2006 with the disappearance of Batidae, the small minnow mayfly (1996-2013).	↓
Hay Creek: M-36	15	Fair	16	7	3	12.4	4.9	1.9	Fall and Spring samples here have remained steady since 1996. This fall's sample was the best seen in several years.	—
Honey Creek (N): Darwin Road	16	Good	19	9	3	16.6	8.0	2.6	This site has consistently been good since 1997. Fall samples have been slowly getting better, but these changes are not yet significant.	—
Honey Creek: Jackson Road	18	Fair	9	4	0	12.0	3.7	0.0	No significant changes over time (1993-2013)	—
Honey Creek: Wagner Road	20	Fair	12	2	1	11.1	4.3	1.9	No significant changes over time (1993-2013).	—
Horseshoe Creek: Barker Road	98	Unranked (new site)	No sample this season			8.5	2.0	0.5	This site is too new to observe trends.	?
Horseshoe Creek: Brookside Drive	99	Unranked (new site)	8.0	1.0	0.0	6.0	0.5	0.0	This was the first time this site has been sampled in the fall.	?

Site Location	Site #	Current Site Condition	October 2013 Samples			Averages since 2010			Comments	Trend
			All Insects	EPT	Sensitive	All Insects	EPT	Sensitive		
Horseshoe Creek: Merrill Road	21	Fair	7	3	0	10.3	3.7	0.6	Sensitive families have significantly increased from 0 to 1. The sensitive family Brachycentridae (the humpleless case maker caddisfly), has been found consistently since 2009, although it was not found in this fall sample. Other metrics have remained steady in fall and spring samples. (1996-2013). The fall 2013 sample was a little low, but not outside the range of normal.	↑
Hummocky Lick: M-36	63	Good	No sample this season			14.7	6.2	1.8	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. Spring samples have remained steady.	↓
Huron Creek: Dexter-Pinckney Road	22	Good	No sample this season			15.2	6.2	2.8	The fall 2012 sample 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! This is a remarkable jump compared to the site's three-year-average of 15.2. 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. The EPT families increase was nearly significant as well. (1996-2013) Spring samples have been consistent.	↑
Huron River: Bell Road	62	Good	No sample this season			16.0	6.0	1.3	No significant changes over time (2000-2013)	-

Site Location	Site #	Current Site Condition	October 2013 Samples			Averages since 2010			Comments	Trend
			All Insects	EPT	Sensitive	All Insects	EPT	Sensitive		
Huron River: Commerce Road	47	Fair	10	3	0	11.7	5.0	0.3	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!	↑↓
Huron River: Cross Street	24	Fair	11	5	0	11.6	5.8	1.0	Spring samples have significantly improved at this site since 1997, although fall samples have remained steady.	↑
Huron River: Flat Rock	23	Fair	11	8	1	9	5	1	This site has remained steady over time (1996-2013), with the exception of the spring EPT metric which has significantly declined. However, the fall 2013 sample was one of the most diverse ever taken during the fall season. The conflict results in the trend being marked as steady.	-
Huron River: Island Park	61	Fair	15	7	3	14.0	7.4	2.6	Spring samples have been significantly improving at this site over time. Now, fall samples are improving too! 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. (2000-2013)	↑
Huron River: Proud Lake Rec Area	64	Fair	15	3	1	13.3	5.0	0.8	No significant changes over time (2001-2013).	-
Huron River: US-23 (Liv. Co)	51	Fair	15	5	2	12.3	4.8	1.5	No significant changes over time (1998-2013).	-

Site Location	Site #	Current Site Condition	October 2013 Samples			Averages since 2010			Comments	Trend
			All Insects	EPT	Sensitive	All Insects	EPT	Sensitive		
Huron River: White Lake Road	25	Excellent	14	7	3	18.5	9.0	4.4	While this fall sample was lower than normal, this incredible site remains incredible; it has the highest average diversity in the watershed despite it being such a small little river.	-
Huron River: Zeeb Road	26	Good	14	5	3	16.2	7.5	3.5	No significant changes over time (1996-2011)	-
Livermore Creek: Doyle Road	93	Unranked (new site)	No sample this season			13.5	5.0	1.0	This site has been sampled only twice so far.	?
Malletts Creek: Chalmers Drive	27	Poor	8	3	0	7.8	2.3	0.0	While this site has been doing a little bit better every year, there are no statistically significant changes yet. (1993-2013)	-
Mann Creek: VanAmberg Road	30	Good	15	4	4	13.9	6.4	3.4	Mann Creek continues to impress. Fall and spring samples have increased significantly over time (1995-2013). 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	15	4	2	14.3	3.5	1.0	With two sensitive families found, this was the best fall sample since monitoring began. However, there have been no significant changes over time (1993-2013)	-
Mill Creek: Ivey Road	32	Good	No sample this season			12.2	4.6	1.8	No significant changes over time (1994-2013).	-
Mill Creek: Jackson Road	33	Fair	16	4	2	13.3	4.0	1.5	No significant changes over time (1997-2013)	-
Mill Creek: Klinger Road	57	Fair	14	5	1	12.0	5.0	2.0	Significantly more sensitive families and EPT families have been found here over time (1999-2013).	↑

Site Location	Site #	Current Site Condition	October 2013 Samples			Averages since 2010			Comments	Trend
			All Insects	EPT	Sensitive	All Insects	EPT	Sensitive		
Mill Creek: Letts Cr at M-52	34	Fair	No sample this season			12.7	4.7	1.3	Spring samples have slightly yet significantly increased here over time (1993-2012).	↑
Mill Creek: Manchester Road	55	Fair	10	3	1	14.0	5.0	2.7	While this fall sample was worst than others in the recent past, overall 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)	No sample this season			12.5	3.5	0.5	This site has only been sampled twice.	?
Mill Creek: Shield Road	80	Fair	No sample this season			12.8	6.8	2.0	Spring samples have increased here over time (2002-2013). Fall samples have remained steady.	↑
Mill Creek: Warrior Park	79	Fair	11	5	1	11.8	6.5	1.8	No significant changes over time (2003-2013)	-
Millers Creek: Glazier Way	35	Poor	12	1	0	7.8	0.8	0.0	We have been seeing better samples for this creek since work was done in the headwaters in spring 2009. This fall sample was the best ever seen. The increase in total insect families is not statistically significant over the long term (1993-2013), but over the short term (2004-2013) there is a significant increase (5-->12).	↑
Norton Creek: West Maple Road	65	Poor	3	1	0	6.2	0.8	0.0	This site shows significant decline in EPT metrics and total families (2000-2013). This creek is probably the worst one that we monitor. The last several years have had particularly poor counts.	↓

Site Location	Site #	Current Site Condition	October 2013 Samples			Averages since 2010			Comments	Trend
			All Insects	EPT	Sensitive	All Insects	EPT	Sensitive		
Pettibone Creek: Commerce Road	67	Fair	No sample this season			11.2	4.2	0.0	No significant changes over time (2001-2013)	-
Pettibone Creek: Livingston Road	68	Fair	13	4	1	11.0	4.0	0.3	The creek's total insect diversity has significantly declined since sampling began (2001-2013). However, this fall's sample was better than average, and a sensitive insect was found here for the first autumn since 2003.	↓
Port Creek: Armstrong Road	60	Poor	2	0	0	4.3	0.7	0.3	No significant changes over time (2000-2011)	-
Portage Creek: Dexter-Townhall Road	37	Good	19	11	6	15.6	8.2	3.4	There have been significant declines in the spring sensitive families since 1996 (5->1); however, fall samples have remained steady. The site is still quite healthy although should be watched carefully.	↓
Portage Creek: Unadilla	58	Fair	11	4	1	12.5	5.0	0.5	No significant changes over time (1999-2013)	-
Portage Creek: Rockwell Road	94	Unranked (new site)	20	6	1				This was the first time this site has been sampled in the fall. However, this is a very impressive insect diversity that compares to the best sites that we monitor.	?
Portage Creek: Stockbridge	91	Unranked (new site)	10	4	1				This was the first time this site has been sampled in the fall.	?
Portage Creek: Williamsville	92	Fair	No sample this season			12.4	3.4	0.6	This site has only been sampled for 3 years. Judging from this small amount of data, it has remained steady.	-
South Ore Creek: Bauer Road	52	Fair	12	3	2	11.3	4.0	1.3	This site is significantly declining for the EPT metric in fall samples (1998-2013), but spring samples are steady.	↓

Site Location	Site #	Current Site Condition	October 2013 Samples			Averages since 2010			Comments	Trend
			All Insects	EPT	Sensitive	All Insects	EPT	Sensitive		
South Ore Creek: Hamburg Road	40	Fair	6	1	1	12.6	4.2	1.8	This site is significantly declining in fall EPT families (1995-2011), and declining slightly (and non-significantly) in all of the other spring and fall parameters. This fall's sample was particularly bad and this site needs to be watched carefully.	↓
South Ore Creek: Lake Ridge	50	Poor	No sample this season			6.0	1.7	0.0	No significant changes over time (1998-2013)	-
Swift Run: Shetland Drive	41	Poor	5	1	0	6.3	1.6	0.0	No significant changes over time (1992-2013)	-
Traver Creek: Broadway Avenue	42	Poor	7	2	0	5.6	1.8	0.0	No significant changes over time (1992-2013)	-
Woodruff Creek: Buno Road	46	Fair	10	3	0	13.7	5.0	0.8	The past two fall samples were quite poor here compared to past years. There has been a significant decline in EPT over time (6-->3) (2002-2012).	↓
Woodruff Creek: Maxfield Road	44	Poor	13	4	1	10.0	3.5	1.0	No significant changes over time (1996-2012).	-
Woods Creek: L Huron Metropark	14	Good	11	4	0	12.4	5.3	1.7	Long term trends show statistically significant increases in EPT despite this year's sample being lower than average (1997-2013).	↑

Site Location	Site #	Current Site Condition	October 2013 Samples			Averages since 2010			Comments	Trend
			All Insects	EPT	Sensitive	All Insects	EPT	Sensitive		

These sites are sampled on occasion, sometimes for a specific project, but are not used to determine overall watershed health:

Boyden Creek: Golf Course	3	Fair	No sample this season			12.6	6.2	1.8	Most of the parameters have not changed over time (1995-2013), however, there are significantly more sensitive families in fall samples over the past couple of years as compared to samples taken in the mid to late 1990s.	↑
Boyden Creek: Huron River Drive	4	Good	No sample this season			12.5	4.5	1.3	Fall samples have significantly increased in time (1992-2013), though spring samples have remained fairly steady.	↑
Fleming Creek: Radrick Farms	12	Fair	No sample this season			10.7	5.0	1.0	No significant changes over time (1994-2013)	-
Honey Creek: Pratt Road	19	Poor	No sample this season			10.3	2.8	0.3	No significant changes over time (1994-2013)	-
Malletts Creek: Main Street	56	Poor	No sample this season			6.0	1.5	0.0	Significant decreases in insect families (12-->6) since 2000.	↓
Malletts Creek: Near I-94	28	Poor	No sample this season			9.0	1.5	0.0	Spring insect family metrics have statistically improved over time. (1992-2011)	↑
Malletts Creek: Scheffler Road	29	Poor	No sample this season			6.0	1.7	0.0	No significant changes over time (1992-2011). Spring 2013 data were excluded from the database due to exceptionally high water and unrepresentative sampling.	-
Narrow Gauge Creek: Green Road	75	Unique	No sample this season			4.5	1.3	0.8	No significant changes over time (2002-2013). This site has much different characteristics that the other streams and so is not rated in the same manner	-

Site Location	Site #	Current Site Condition	October 2013 Samples			Averages since 2010			Comments	Trend
			All Insects	EPT	Sensitive	All Insects	EPT	Sensitive		
Millers Creek (W Branch): Plymouth Rd	72	Poor	No sample this season			5.4	0.8	0.2	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). The 2013 sample is quite low, although not outside the range of normal.	-
Traver Creek: Traver Road	101	Unranked (new site)	No sample this season			7.7	3.0	0.3	This was the second time this site has been sampled in the spring.	?
Traver Creek: Dhu Varren Road	43	Good	No sample this season			12.0	5.0	0.8	No significant changes over time (1992-2013)	-
Walker Creek: 8 Mile Road	82	Fair	No sample this season			11.7	5.7	1.0	Total insect families have been steadily and significantly declining since 2003 in fall samples. (22-->12). Spring samples are steady.	↓
Willow Run: VanBuren Park	90	Unranked (new site)	No sample this season			6.3	2.0	0.0	This site is too new to recognize a trend.	?
Woods Creek: Martinsville Road	87	Fair	14	2	1	11.0	2.6	1.2	No significant changes over time (2008-2013)	-
Woods Creek: Renton Road	88	Fair	No sample this season			14.3	5.0	2.0	No significant changes over time (2008-2013)	-