

Adopt-a-Stream

River Round April 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 60 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.

WANT MORE DETAIL?

All inquiries, email Paul at psteen@hrwc.org

| Site # | Site Location | Current Site Condition | Site ranking (1= Best, 60= Worst) | April 2016 Samples | | | April averages since 2012 | | | Comments |
|--------|-------------------------------------|------------------------|-----------------------------------|--------------------|-----|-----------|---------------------------|-----|-----------|--|
| | | | | All Insects | EPT | Sensitive | All Insects | EPT | Sensitive | |
| 25 | Huron River: White Lake Road | Excellent | 1 | 18 | 9 | 6 | 18.2 | 9.4 | 4.4 | Despite this being a small little river, the insect diversity is high and we always find many sensitive families. Finding 6 sensitive families in one sample is superb and this has only been done a few times in HRWC's history of sampling. There has still been no significant changes over time (1998-2016). |
| 30 | Mann Creek: VanAmberg Road | Excellent | 2 | | | | 13.3 | 6.5 | 3.3 | 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) |
| 22 | Huron Creek: Dexter-Pinckney Road | Excellent | 3 | 17 | 8 | 4 | 14.0 | 7.0 | 2.7 | The site is showing significant long-term increases in insect and sensitive metrics for fall samples (1996-2016). Spring samples are holding steady. This spring's sample was the best since 2003. |
| 26 | Huron River: Zeeb Road | Excellent | 4 | 19 | 10 | 2 | 18.7 | 9.3 | 2.3 | No significant changes over time (1996-2016). The Huron River at this location has a high diversity of insect life. However, sensitive families seem to be declining in recent samples (not yet significant but worth keeping an eye on). |
| 37 | Portage Creek: Dexter-Townhall Road | Excellent | 5 | 11 | 6 | 2 | 12.0 | 6.5 | 1.3 | 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-->0). It is possible that high flows in the spring heavily affect the insect population. |
| 16 | Honey Creek (N): Darwin Road | Good | 6 | 14 | 6 | 1 | 14.6 | 7.8 | 2.0 | No significant changes over time (1997-2016). |

| Site # | Site Location | Current Site Condition | Site ranking (1= Best, 60= Worst) | April 2016 Samples | | | April averages since 2012 | | | Comments |
|--------|-----------------------------|------------------------|-----------------------------------|--------------------|-----|-----------|---------------------------|-----|-----------|--|
| | | | | All Insects | EPT | Sensitive | All Insects | EPT | Sensitive | |
| 13 | Fleming Creek: Warren Road | Good | 7 | | | | 17.0 | 9.0 | 3.0 | Since 1994 this site has improved significantly in fall and spring collections. (1994-2015) |
| 49 | Davis Creek: Silver Lake | Good | 8 | 13 | 6 | 2 | 14.3 | 6.8 | 2.0 | There has been no significant changes over time in the samples (1998-2015) |
| 63 | Hummocky Lick: M-36 | Good | 9 | 15 | 8 | 3 | 14.5 | 7.8 | 2.8 | 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. Spring samples have not changed over time. |
| 55 | Mill Creek: Manchester Road | Good | 10 | | | | 19.0 | 9.0 | 3.0 | Total insect diversity in spring and fall samples has increased significantly over time (1999-2015). |
| 80 | Mill Creek: Shield Road | Good | 11 | 13 | 4 | 1 | 13.3 | 5.7 | 2.0 | While this sample was a little less diverse than recent samples, total insect diversity and EPT diversity are statistically increasing both in spring and fall samples over time (2002-2016). This site has made these improvements since the dam downstream came out in 2008. |
| 62 | Huron River: Bell Road | Good | 12 | 16 | 7 | 2 | 14.3 | 5.7 | 1.3 | No significant changes over time (2000-2016). |

| Site # | Site Location | Current Site Condition | Site ranking (1= Best, 60= Worst) | April 2016 Samples | | | April averages since 2012 | | | Comments |
|--------|----------------------------------|------------------------|-----------------------------------|--------------------|-----|-----------|---------------------------|-----|-----------|---|
| | | | | All Insects | EPT | Sensitive | All Insects | EPT | Sensitive | |
| 58 | Portage Creek: Unadilla | Good | 13 | | | | 16.0 | 6.0 | 2.0 | 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 | 14 | | | | 15.0 | 4.0 | 0.0 | This site has been sampled twice in the fall, once in the spring. |
| 82 | Walker Creek: 8 Mile Road | Good | 15 | | | | 12.0 | 6.0 | 0.0 | No significant changes over time (2003-2015). |
| 68 | Pettibone Creek: Livingston Road | Good | 16 | 13 | 5 | 1 | 11.5 | 5.0 | 1.3 | In fall samples there has been a significant decline in total insect families. (2000-2015). |
| 84 | Fleming Creek: Galpin Road | Good | 17 | | | | 11.0 | 6.0 | 1.0 | No significant changes over time (2004-2015) |
| 14 | Woods Creek: L Huron Metropark | Good | 18 | 12 | 7 | 3 | 11.6 | 6.2 | 2.2 | Long term trends show statistically significant increases in all three metrics for fall samples. Spring samples have remained steady (1997-2016). |
| 67 | Pettibone Creek: Commerce Road | Good | 19 | 9 | 3 | 0 | 12.0 | 5.3 | 0.7 | There have been no significant changes over time. (2001-2015) |

| Site # | Site Location | Current Site Condition | Site ranking (1= Best, 60= Worst) | April 2016 Samples | | | April averages since 2012 | | | Comments |
|--------|----------------------------------|------------------------|-----------------------------------|--------------------|-----|-----------|---------------------------|-----|-----------|--|
| | | | | All Insects | EPT | Sensitive | All Insects | EPT | Sensitive | |
| 9 | Fleming Creek: Botanical Gardens | Good | 20 | 11 | 6 | 0 | 12.7 | 6.7 | 0.3 | No significant changes over time (1993-2016) |
| 5 | Chilson Creek: Chilson Road | Good | 21 | 14 | 7 | 3 | 13.4 | 6.2 | 2.2 | There have been declines in all spring counts over time (1997-2016), but the change is not significant. |
| 2 | Boyden Creek: Delhi | Good | 22 | | | | 15.3 | 8.0 | 2.5 | Spring EPT families have significantly increased over time (1994-2015). This location is one of the best in the watershed for spring caddisflies. |
| 40 | South Ore Creek: Hamburg Road | Good | 23 | 9 | 4 | 1 | 13.5 | 6.3 | 1.5 | This site is significantly declining in fall EPT families (1995-2015), and declining slightly (but non-significantly) in all of the other spring and fall parameters. |
| 79 | Mill Creek: Warrior Park | Good | 24 | 12 | 7 | 3 | 11.0 | 6.5 | 1.8 | No significant changes over time (2003-2016) |
| 46 | Woodruff Creek: Buno Road | Fair | 25 | | | | 12.0 | 5.7 | 1.7 | 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). |
| 11 | Fleming Creek: Geddes Road | Fair | 26 | 13 | 8 | 3 | 11.8 | 5.2 | 1.4 | This 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 | 27 | | | | 10.3 | 5.5 | 1.8 | EPT and sensitive families have decreased over time in fall samples. Spring samples are declining but the changes are not significant. (1996-2015) |

| Site # | Site Location | Current Site Condition | Site ranking (1= Best, 60= Worst) | April 2016 Samples | | | April averages since 2012 | | | Comments |
|--------|------------------------------|------------------------|-----------------------------------|--------------------|-----|-----------|---------------------------|-----|-----------|--|
| | | | | All Insects | EPT | Sensitive | All Insects | EPT | Sensitive | |
| 31 | Mill Creek: Fletcher Road | Fair | 28 | | | | 14.0 | 4.0 | 2.0 | While this fall sample was the worst collected in several years, there have been no significant changes over time (1993-2015). |
| 34 | Mill Creek: Letts Cr at M-52 | Fair | 29 | 7 | 3 | 0 | 11.5 | 4.5 | 1.0 | No significant changes over time (1993-2016). |
| 61 | Huron River: Island Park | Fair | 30 | 13 | 6 | 2 | 11.5 | 5.8 | 1.0 | It was great to find sensitive families here in the spring-- they had been missing the last two years. Overall, metrics are holding steady. One metric is significantly increasing- fall sensitive families. (2000-2016) |
| 52 | South Ore Creek: Bauer Road | Fair | 31 | 12 | 6 | 3 | 10.5 | 5.5 | 2.0 | 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). |
| 51 | Huron River: US-23 (Liv. Co) | Fair | 32 | 10 | 5 | 0 | 10.7 | 4.7 | 1.0 | Sensitive families have declined in the spring samples over time (1998-2016). |
| 7 | Davis Creek: Pontiac Trail | Fair | 33 | 16 | 7 | 4 | 11.0 | 5.7 | 2.0 | Just like Doane Road, this was the best sample seen in many years. Samples in the fall have been declining over many years, but these changes are not yet significant. |
| 33 | Mill Creek: Jackson Road | Fair | 34 | | | | 12.0 | 6.0 | 0.0 | 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) |

| Site # | Site Location | Current Site Condition | Site ranking (1= Best, 60= Worst) | April 2016 Samples | | | April averages since 2012 | | | Comments |
|--------|----------------------------------|------------------------|-----------------------------------|--------------------|-----|-----------|---|-----|-----------|---|
| | | | | All Insects | EPT | Sensitive | All Insects | EPT | Sensitive | |
| 1 | Arms Creek: Walsh Road | Fair | 35 | 9 | 5 | 1 | 11.4 | 6.0 | 1.6 | April 2015 was the best sample taken at this location since 1995. April 2016 sample is back down to more normal levels. Fall sensitive families are statistically increasing (1993-2015). |
| 64 | Huron River: Proud Lake Rec Area | Fair | 36 | 11 | 7 | 0 | 11.3 | 6.7 | 0.3 | No significant changes over time (2001-2016). |
| 96 | Mill Creek: Parker Road | Fair | 37 | 10 | 4 | 0 | 9.0 | 4.0 | 0.7 | This site has only been sampled five times (twice fall, three spring). Initial samples indicate a decent insect population with mucky habitat. The population does not appear to be changing. |
| 6 | Davis Creek: Doane Road | Fair | 38 | 18 | 8 | 2 | 11.3 | 5.0 | 1.3 | This was the best spring sample taken since 2000. However, despite this, the overall trend is negative. 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. |
| 47 | Huron River: Commerce Road | Fair | 39 | | | | No April samples in this time period (high water) | | | 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 | | | | 12.0 | 7.0 | 2.0 | 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. |

| Site # | Site Location | Current Site Condition | Site ranking (1= Best, 60= Worst) | April 2016 Samples | | | April averages since 2012 | | | Comments |
|--------|-------------------------------|------------------------|-----------------------------------|--------------------|-----|-----------|---------------------------|-----|-----------|---|
| | | | | All Insects | EPT | Sensitive | All Insects | EPT | Sensitive | |
| 21 | Horseshoe Creek: Merrill Road | Fair | 41 | 8 | 3 | 1 | 10.0 | 3.8 | 0.4 | 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 | 8 | 4 | 1 | 8.0 | 3.8 | 1.3 | 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. |
| 32 | Mill Creek: Ivey Road | Fair | 43 | 7 | 4 | 1 | 11.5 | 6.0 | 2.0 | This was a poor spring sample, and it followed a poor fall sample. There is now a significant decline detected for both spring insect and sensitive diversity. (1993-2016). |
| 24 | Huron River: Cross Street | Fair | 44 | 8 | 3 | 0 | 9.5 | 4.5 | 0.5 | Spring samples have significantly improved at this site since 1997 for total insect diversity. Fall samples have remained steady. |
| 57 | Mill Creek: Klinger Road | Fair | 45 | | | | 8.0 | 3.0 | 0.0 | Significantly more EPT families have been found in fall samples here over time. (1999-2015). |
| 18 | Honey Creek: Jackson Road | Fair | 46 | 6 | 1 | 0 | 8.8 | 2.8 | 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. |
| 23 | Huron River: Flat Rock | Poor | 47 | 5 | 0 | 0 | 6.8 | 2.5 | 0.3 | Three metrics are declining significantly; the fall insect diversity and the spring insect diversity and EPT diversity. (1996-2016). |
| 50 | South Ore Creek: Lake Ridge | Poor | 48 | 5 | 2 | 0 | 5.3 | 1.7 | 0.0 | This site has declined over time (1998-2016), but these changes are not yet significant. |

| Site # | Site Location | Current Site Condition | Site ranking (1= Best, 60= Worst) | April 2016 Samples | | | April averages since 2012 | | | Comments |
|--------|----------------------------------|------------------------|-----------------------------------|--------------------|-----|-----------|---------------------------|-----|-----------|--|
| | | | | All Insects | EPT | Sensitive | All Insects | EPT | Sensitive | |
| 92 | Portage Creek: Williamsville | Poor | 49 | 10 | 1 | 0 | 7.7 | 1.7 | 0.0 | This site has been sampled for 4 years. Judging from this small amount of data, samples are holding steady, with the exception of one spring sample that was quite a bit more diverse than the other spring samples. This is tentative pending more data. |
| 89 | Bancroft-Noles Drain: Lebo Park | Poor | 50 | 1 | 0 | 0 | 4.0 | 1.0 | 0.3 | 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) |
| 98 | Horseshoe Creek: Barker Road | Poor | 51 | 5 | 1 | 0 | 5.0 | 1.3 | 0.3 | This site is still quite new (5 samples, 2012-2016). As a preliminary analysis, the data appear to be steady with just a slight amount of variation over time. |
| 45 | Chilson Creek: Brighton Road | Poor | 52 | | | | 11.0 | 5.0 | 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 | 5 | 1 | 0 | 5.7 | 2.0 | 0.3 | 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 | | | | 5.8 | 1.8 | 0.0 | No significant changes over time (1992-2015) |
| 99 | Horseshoe Creek: Brookside Drive | Poor | 55 | | | | 4.5 | 1.0 | 0.0 | This has been sampled three times (2013-2015) |

| Site # | Site Location | Current Site Condition | Site ranking (1= Best, 60= Worst) | April 2016 Samples | | | April averages since 2012 | | | Comments |
|--------|--------------------------------|------------------------|-----------------------------------|--------------------|-----|-----------|---------------------------|-----|-----------|--|
| | | | | All Insects | EPT | Sensitive | All Insects | EPT | Sensitive | |
| 27 | Malletts Creek: Chalmers Drive | Poor | 56 | | | | 7.3 | 1.7 | 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 | | | | 3.0 | 0.0 | 0.0 | There have been no significant changes over time (2000-2015) |
| 65 | Norton Creek: West Maple Road | Poor | 58 | | | | 4.7 | 0.3 | 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. |
| 41 | Swift Run: Shetland Drive | Poor | 59 | | | | 5.5 | 0.8 | 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) |
| 35 | Millers Creek: Glazier Way | Poor | 60 | 6 | 0 | 0 | 6.3 | 0.3 | 0.0 | No significant changes over time (1993-2016). |
| 97 | Norton Creek: Gibson Park | Unranked | Unranked | 7 | 1 | 0 | 7.0 | 1.0 | 0.0 | This is the first time this location has been sampled in the spring. |