



# River Roundup

April 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?**

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| Site # | Site Location                     | Current Site Condition (excellent, good, fair, poor) | Site ranking (1= Best, 61= Worst) | April 2018 Samples |     |           | 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                                 |                    |     |           | 17.8  | 9.3 | 4.3       | 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 (1998-2017). | -     |
| 16     | Honey Creek (N): Darwin Road      | Excellent  | 2                                 | 16                 | 9   | 2         | 15.0  | 8.0 | 2.0       | No significant changes over time (1997-2017). This is one of the healthiest places that we monitor.   | -     |
| 30     | Mann Creek: VanAmberg Road        | Excellent  | 3                                 | 17                 | 8   | 6         | 12.7  | 5.3 | 3.3       | 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).                                     | ↑     |
| 22     | Huron Creek: Dexter-Pinckney Road | Excellent  | 4                                 | 14                 | 8   | 4         | 14.0  | 7.5 | 3.0       | The site is showing significant long-term increases in EPT and sensitive families for fall samples. Spring samples are holding steady. (1996-2018)  | ↑     |
| 26     | Huron River: Zeeb Road            | Excellent  | 5                                 |                    |     |           | 18.0  | 8.5 | 2.0       | Fall sensitive families are significantly increasing. This section of the Huron River is the most diverse in macroinvertebrate life of any that HRWC monitors. (1996-2017)  | ↑     |
| 13     | Fleming Creek: Warren Road        | Good   | 6                                 |                    |     |           | 17.0  | 9.0 | 3.0       | Since 1994 this site has improved significantly in fall and spring collections. (1994-2017)   | ↑     |
| 49     | Davis Creek: Silver Lake          | Good   | 7                                 | 13                 | 6   | 1         | 12.7  | 5.7 | 1.7       | Total, EPT, and sensitive families are significantly declining in the spring samples (1998-2018).   | ↓     |

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|--------|-------------------------------------|--|-----------------------------------|--------------------|-----|-----------|---|-----|-----------|--|-------|
|        |                                     |  |                                   | All Insects        | EPT | Sensitive | All Insects                                   | EPT | Sensitive |  |       |
| 67     | Pettibone Creek: Commerce Road      | Good   | 8                                 | 13                 | 6   | 0         | 11.5  | 5.5 | 1.0       | There have been no significant changes over time. (2001-2018)  | -     |
| 5      | Chilson Creek: Chilson Road         | Good   | 9                                 | 16                 | 8   | 3         | 13.5  | 6.0 | 2.0       | There have been declines in spring and fall counts over time (1997-2018), but the change is not significant.   | -     |
| 37     | Portage Creek: Dexter-Townhall Road | Good   | 10                                |                    |     |           | 11.7  | 5.7 | 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-->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   | 11                                | 16                 | 7   | 2         | 13.7  | 6.3 | 1.7       | While this sample was quite good, this site is non-significantly declining in all of the spring and fall metrics (1994-2017). The changes are slight but steady and do indicate that it is a site to watch carefully in the future.  | -     |
| 46     | Woodruff Creek: Buno Road           | Good   | 12                                | 13                 | 5   | 3         | 12.0  | 5.5 | 2.0       | 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 or 4) (2002-2018).  | ↓     |
| 9      | Fleming Creek: Botanical Gardens    | Good   | 13                                | 14                 | 8   | 4         | 12.0  | 6.5 | 0.0       | No significant changes over time (1993-2018). With four sensitive families found, this was the best sample ever taken here.  | -     |
| 2      | Boyden Creek: Delhi                 | Good   | 14                                | 15                 | 6   | 2         | 16.0  | 8.0 | 2.7       | 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)  | ↑     |

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|--------|----------------------------------|--|-----------------------------------|--------------------|-----|-----------|---|-----|-----------|--|-------|
|        |                                  |  |                                   | All Insects        | EPT | Sensitive | All Insects                                   | EPT | Sensitive |  |       |
| 68     | Pettibone Creek: Livingston Road | Good   | 15                                | 12                 | 5   | 1         | 12.3  | 5.7 | 1.3       | 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).                               | -     |
| 58     | Portage Creek: Unadilla          | Good   | 16                                | 9                  | 6   | 1         | 16.0  | 6.0 | 2.0       | Fall sensitive families have increased significantly over time (0->2). (1999-2018)   | ↑     |
| 55     | Mill Creek: Manchester Road      | Good   | 17                                |                    |     |           | 19.0  | 9.0 | 3.0       | There have been no significant changes over time (1999-2017).  | -     |
| 14     | Woods Creek: L Huron Metropark   | Good   | 18                                |                    |     |           | 10.8  | 6.0 | 2.3       | Long term trends show statistically significant increases in all three metrics for fall samples and the sensitive family metric for spring samples (1997-2017).  | ↑     |
| 79     | Mill Creek: Mill Creek Park      | Good   | 19                                |                    |     |           | 10.0  | 6.0 | 1.3       | No significant changes over time (2003-2017)   | -     |
| 80     | Mill Creek: Shield Road          | Good   | 20                                |                    |     |           | 13.5  | 5.0 | 1.5       | 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. | ↑     |
| 62     | Huron River: Bell Road           | Fair   | 21                                |                    |     |           | 13.5  | 5.5 | 1.0       | No significant changes over time (2000-2016).  | -     |

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|--------|----------------------------|--|-----------------------------------|--------------------|-----|-----------|---|-----|-----------|--|-------|
|        |                            |  |                                   | All Insects        | EPT | Sensitive | All Insects                                   | EPT | Sensitive |  |       |
| 1      | Arms Creek: Walsh Road     | Fair   | 22                                | 14                 | 7   | 2         | 11.8  | 6.3 | 1.5       | Fall EPT families have increased significantly over time; spring samples have remained steady. (1993-2018)   | ↑     |
| 6      | Davis Creek: Doane Road    | Fair   | 23                                | 12                 | 7   | 2         | 13.5  | 5.5 | 1.5       | 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) | ↓     |
| 11     | Fleming Creek: Geddes Road | Fair   | 24                                | 7                  | 4   | 1         | 12.0  | 5.3 | 1.5       | No significant changes over time (1992-2018). This sample was particularly poor, but does not change the overall trend line.   | -     |
| 82     | Walker Creek: 8 Mile Road  | Fair   | 25                                |                    |     |           | 12.0  | 6.0 | 0.0       | No significant changes over time (2003-2017).  | -     |
| 84     | Fleming Creek: Galpin Road | Fair   | 26                                |                    |     |           | 11.0  | 6.0 | 1.0       | No significant changes over time (2004-2017)   | -     |
| 31     | Mill Creek: Fletcher Road  | Fair   | 27                                |                    |     |           | 14.0  | 4.0 | 2.0       | Fall families have significantly increased over time (10->15) (1993-2017).   | ↑     |

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|--------|----------------------------------|--|-----------------------------------|--------------------|-----|-----------|---|-----|-----------|---|-------|
|        |                                  |  |                                   | All Insects        | EPT | Sensitive | All Insects                                   | EPT | Sensitive |   |       |
| 94     | Portage Creek: Rockwell Road     | Fair   | 28                                |                    |     |           | 15.0  | 4.0 | 0.0       | This site has been sampled thrice in the fall, twice in the spring.   | ?     |
| 15     | Hay Creek: M-36                  | Fair   | 29                                | 12                 | 8   | 2         | 9.7   | 5.3 | 1.3       | EPT and sensitive families have decreased over time in fall samples. Spring samples are declining but the changes are not significant. (1996-2018)  | ↓     |
| 7      | Davis Creek: Pontiac Trail       | Fair   | 30                                | 10                 | 3   | 1         | 13.0  | 6.0 | 2.5       | Samples have been slightly declining over many years, but these changes are not yet significant. (1994-2018)  | -     |
| 52     | South Ore Creek: Bauer Road      | Fair   | 31                                | 8                  | 3   | 2         | 10.7  | 5.7 | 1.7       | Total diversity and EPT taxa has significantly decreased over time (1998-2018).   | ↓     |
| 51     | Huron River: US-23 (Liv. Co)     | Fair   | 32                                |                    |     |           | 11.5  | 5.0 | 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.                         | ↓     |
| 63     | Hummocky Lick: M-36              | Fair   | 33                                | 13                 | 6   | 2         | 14.0  | 8.0 | 3.0       | 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. | ↓     |
| 64     | Huron River: Proud Lake Rec Area | Fair   | 34                                |                    |     |           | 12.5  | 7.5 | 0.5       | No significant changes over time (2001-2016).   | -     |

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|--------|-------------------------------|--|-----------------------------------|--------------------|-----|-----------|---|-----|-----------|--|-------|
|        |                               |  |                                   | All Insects        | EPT | Sensitive | All Insects                                   | EPT | Sensitive |  |       |
| 33     | Mill Creek: Jackson Road      | Fair   | 35                                |                    |     |           | 12.0  | 6.0 | 0.0       | There have been no significant changes over time (1996-2017)   | -     |
| 21     | Horseshoe Creek: Merrill Road | Fair   | 36                                | 9                  | 3   | 0         | 9.5   | 3.8 | 0.3       | There is a lot of variation in samples here. Long term, however, both spring total and EPT families are significantly declining. (1996-2018).  | ↓     |
| 61     | Huron River: Island Park      | Fair   | 37                                |                    |     |           | 10.3  | 5.0 | 0.7       | There have been no significant changes over time (1996-2017)   | -     |
| 57     | Mill Creek: Klinger Road      | Fair   | 38                                |                    |     |           | 8.0   | 3.0 | 0.0       | EPT families and total insect families have significantly increased over time (1999-2017).   | ↑     |
| 34     | Mill Creek: Letts Cr at M-52  | Fair   | 39                                | 7                  | 3   | 2         | 7.0   | 3.0 | 0.0       | This site is declining significantly in fall EPT families. Spring samples are holding steady. (1993-2018)  | ↓     |
| 96     | Mill Creek: Parker Road       | Fair   | 40                                |                    |     |           | 8.5   | 3.5 | 0.5       | 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) | -     |
| 91     | Portage Creek: Stockbridge    | Fair   | 41                                |                    |     |           | 12.0  | 7.0 | 2.0       | 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.               | ?     |
| 20     | Honey Creek: Wagner Road      | Fair   | 42                                |                    |     |           | 8.0   | 3.5 | 0.5       | The fall sensitive families are significantly declining over time. Most of the other metrics are slightly and non-significantly declining (1993-2017).   | ↓     |

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|--------|---------------------------------|--|-----------------------------------|--------------------|-----|-----------|---|-----|-----------|--|-------|
|        |                                 |  |                                   | All Insects        | EPT | Sensitive | All Insects                                   | EPT | Sensitive |  |       |
| 32     | Mill Creek: Ivey Road           | Fair   | 43                                | 14                 | 6   | 2         | 7.0   | 4.0 | 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.  | -     |
| 89     | Bancroft-Noles Drain: Lebo Park | Poor   | 44                                |                    |     |           | 6.0   | 2.0 | 1.0       | No significant changes over time (2008-2017)   | -     |
| 47     | Huron River: Commerce Road      | Poor   | 45                                |                    |     |           |   |     |           | 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. | -     |
| 24     | Huron River: Cross Street       | Poor   | 46                                |                    |     |           | 9.0   | 4.0 | 0.3       | Spring samples have significantly improved at this site since 1997 for total insect diversity. Fall samples have remained steady.  | ↑     |
| 92     | Portage Creek: Williamsville    | Poor   | 47                                |                    |     |           | 7.5   | 1.5 | 0.0       | No significant changes over time (2010-2016)   | -     |
| 18     | Honey Creek: Jackson Road       | Poor   | 48                                |                    |     |           | 7.5   | 2.5 | 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.  | ↓     |
| 50     | South Ore Creek: Lake Ridge     | Poor   | 49                                | 4                  | 1   | 0         | 5.5   | 2.0 | 0.0       | This site has declined over time, but these changes are not yet significant. (1998-2018)   | -     |
| 45     | Chilson Creek: Brighton Road    | Poor   | 50                                |                    |     |           | 11.0  | 5.0 | 0.0       | There have been declines in all spring counts over time (1997-2017). Fall samples are holding steady.  | ↓     |



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|--------|----------------------------------|---|--------------------------------------|--------------------|-----|-----------|---|-----|-----------|---|-------|
|        |                                  |   |                                      | All Insects        | EPT | Sensitive | All Insects                                   | EPT | Sensitive |   |       |
| 97     | Norton Creek: Gibson Park        | Poor  | 51                                   |                    |     |           | 7.0   | 1.0 | 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. | ?     |
| 27     | Malletts Creek: Chalmers Drive   | Poor  | 52                                   | 8                  | 2   | 0         | 8.0   | 2.0 | 0.0       | Spring samples have shown improvement over time (1994-2018), and this sample continues the upward trend. There have been no significant changes in fall samples.  | ↑     |
| 42     | Traver Creek: Broadway Avenue    | Poor  | 53                                   | 4                  | 1   | 0         | 6.0   | 1.7 | 0.0       | Fall EPT families have significantly declined. (1992-2018)  | ↓     |
| 8      | Greenock Creek: Rushton Road     | Poor  | 54                                   | 5                  | 2   | 0         | 5.0   | 1.5 | 0.0       | This site has gotten worse over time. Fall insect diversity and spring EPT diversity has significantly decreased. (1996-2018)   | ↓     |
| 23     | Huron River: Flat Rock           | Poor  | 55                                   |                    |     |           | 6.0   | 1.7 | 0.0       | Three metrics are declining significantly; the fall insect diversity and the spring insect diversity and EPT diversity. (1996-2017).  | ↓     |
| 99     | Horseshoe Creek: Brookside Drive | Poor  | 56                                   |                    |     |           | 4.5   | 1.0 | 0.0       | This site is still quite new (6 samples, 2013-2017). As a preliminary analysis, the data appear to be steady with just a slight amount of variation over time.  | -     |
| 98     | Horseshoe Creek: Barker Road     | Poor  | 57                                   | 4                  | 1   | 0         | 5.0   | 1.0 | 0.0       | No significant changes over time (2012-2018)  | -     |
| 60     | Port Creek: Armstrong Road       | Poor  | 58                                   |                    |     |           | 3.0   | 0.0 | 0.0       | Insect diversity and EPT diversity are declining here (2000-2015).  | ↓     |

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|--------|-------------------------------|---|--------------------------------------|--------------------|-----|-----------|---|-----|-----------|---|-------|
|        |                               |   |                                      | All Insects        | EPT | Sensitive | All Insects                                   | EPT | Sensitive |   |       |
| 41     | Swift Run: Shetland Drive     | Poor  | 60                                   | 2                  | 2   | 0         | 5.0   | 0.7 | 0.0       | No significant changes over time (1992-2018)  | -     |
| 65     | Norton Creek: West Maple Road | Poor  | 61                                   |                    |     |           | 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. For this sample, not a single insect was found-- only the extremely common suds and sowbugs. | ↓     |
| 35     | Millers Creek: Glazier Way    | Poor  | 62                                   | 5                  | 0   | 0         | 5.3   | 0.0 | 0.0       | No significant changes over time (1993-2018).   | -     |