2024 BioMonitoring Report
For Benthic Macroinvertebrates

The Huron River Watershed Council conducts aquatic benthic macroinvertebrate sampling in the winter, spring, and fall every year. **Aquatic Benthic Macroinvertebrates** are particular types of insects, crustaceans, gastropods, 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.

Staff and volunteers visit rivers and creeks across the Huron River Watershed and collect samples of these critters that live in the stream and on the streambed. Benthic macroinvertebrates are good indicators of water and habitat quality because they live in the water year-round and are exposed to all of the stressors and threats that the stream faces, such as chemical pollution, high and low flows, fast and stagnant water, and erosion, to name a few.

Summary of 2024

Of the 61 sites regularly monitored by HRWC, 40 of them are unchanging over time, 8 are getting better, and 8 are getting worse. Five sites are too new to yet judge.

Of these 56 sites with enough data, 7 are "Excellent" and 14 are "Good" with macroinvertebrate populations much higher to slightly higher than average. 20 are "Fair" and 15 are "Poor" with macroinvertebrate populations slightly to much lower than average.

The highlight of 2024 was obtaining a near-record breaking sample at the Huron River: Zeeb Road. With 30 insect families found (12 of which were EPT and 6 were sensitive—see below for details), this is the third best sample collected by HRWC since monitoring began in 1992. The Huron at Zeeb Road is a gorgeous location! There is so much varied habitat here—riffles, pools, vegetation, submerged logs, rocks, sand, cobbles, wetland margins, and more. The locations supports so much life because the habitat is so healthy!

Of the sites getting better, **Mann Creek: Van Amberg Road, Fleming Creek: Warren Road, and Huron Creek in Hudson Mills Metropark** are the most exciting, since they already have excellent macro populations and are becoming real gems of the Watershed. These are creeks that we want to protect. **Mill Creek: Mill Creek Park, Fleming Creek: Parker Mill Park, Boyden**

Creek: Delhi Road, Malletts Creek at Chalmers, and Port Creek at Armstrong Road are also getting better through time.

The improvements in Mill Creek have occurred since the Mill Creek dam was removed in 2008.

Malletts Creek has been improving for about 15 years now, ever since Washtenaw County put serious investment in improving the stream's flashy water flow and eroding banks. In Fall 2012, we found a finger net caddisfly for the first time. **In Fall 2024, we found a flathead mayfly for the first time**. Neither of these macros is an unusual find in a healthy stream, but in Mallett's Creek, these are indicators that conditions continue to improve!

For the first time, we are happy to report improvements in Port Creek's (small creek near Flat Rock) macroinvertebrate population. While normally a poor creek, we have had a couple of years of good samples here, and the population is statistically increasing.

Of the sites declining, the largest concern is **Davis Creek near South Lyon**, as multiple sites in this growing community are getting worse and this is a trend that has continued for several years now. The creek at Silver Lake Road used to be a gem of a location, but consistent declines have pulled this creek down to just slightly above average. Other declining sites include **Chilson , South Ore Creek, and Norton Creek**.

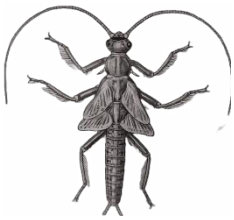
We really struggled to sample stoneflies in January 2024. Due to a very heavy rain one day before the sampling event, most streams were flooded with a combination of rainwater and snowmelt. Most teams could not successfully get in the water. Because the Stonefly Search uses Presence and Absence data, we decided to keep those samples where stoneflies were successfully found, and disregard samples where they were not found as if the team never even went there. In this way, 2024 Stonefly Search was more of a "Presence" study only as we are not recording the absences.

How does HRWC rate its sampling sites?

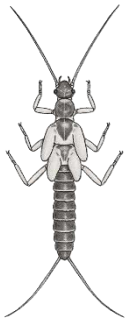
HRWC uses five different metrics of benthic macroinvertebrates to rate the benthic community. The first four of these metrics are calculated by the number of families in a sample. A "family" is a taxonomic term that indicates a type of macroinvertebrate (for example, it is possible to find about 10 different mayfly families in our area of Michigan). In general, the more families found, the healthier the stream.

1. **All insects:** This metric is a count of all insect families in the sample. It serves as a general indicator of stream health and habitat diversity in particular.
2. **EPT:** Standing for Ephemeroptera-Plecoptera-Trichoptera, this metric is a count of all 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.

3. **Sensitive:** There are 21 insect families found in the Huron River watershed that are particularly sensitive to organic pollution (i.e. fertilizers, animal and human waste). This metric is a count of those insect families. Up to six or seven of these families might be found in a single sample from near pristine streams in the Huron, but even highly healthy streams will usually only have three or four. Finding one or two is normal for an average stream, and degraded streams won't have any.
4. **Winter Stoneflies:** There are five different stonefly families in the Huron River watershed, and two of these in particular (Taeniopterygidae and Capniidae) are not found during the spring and fall. To find them, we hold a special monitoring event in January where we only look for stoneflies! The number of stonefly families in January reflects habitat quality and baseflow instream water quality instead of the water quality from landscape runoff. This is because in the frozen winter there is not significant water run-off from land. As climate changes causes more melt water throughout winter, we expect to see winter stoneflies to decline over time.



Winter Stonefly
Family: Taeniopterygidae



Small Winter Stonefly
Family: Capniidae

MiCorps Water Quality Rating (WQR)

The MiCorps WQR is the fifth metric used to determine benthic population quality. This rating is one used by all stream monitoring groups involved in the Michigan Clean Water Corps Program (www.micorps.net), thus it is a statewide measure and used to compare Michigan streams. WQR is an index of biotic integrity (IBI) measure that is essentially a weighted average of insect pollution tolerance values, ranging from 0 to 10. A score of 0 is extremely healthy and a 10 is highly degraded. In the Huron, the best score is normally around a 3.8 and the worst score is normally around a 7.2.

Water Quality Rating		Degree of Organic Pollution
0.0-3.50	excellent	Pollution unlikely
3.51-4.50	very good	Slight pollution possible
4.51-5.50	good	Some pollution possible
5.51-6.50	fair	Fairly substantial pollution likely
6.51-7.50	fairly poor	Substantial pollution likely
7.51-8.50	poor	Very substantial pollution likely
8.51-10.0	very poor	Severe pollution likely

The abundance of macroinvertebrates plays into this score as well. It is expected that any particular sample should have between 100-150 macroinvertebrate specimens to give the most accurate score. However, in highly degraded streams collecting this many is not always possible as populations will be low. Samples with very low abundances will essentially break the math of the MiCorps WQR and usually result in a higher score than the stream should have. Thus, if a collection comes back with less than 30 specimens it is automatically given a 10, and a collection with less than 60 specimens is automatically given a 7.

Typically, streams that are high affected by agriculture in the watershed will have higher (worse) WQR scores.

Trends: Trends are determined by simple linear regressions of the sample year vs. five metrics described above. If at least two of the nine regressions (4 for fall, 4 for spring, and 1 for winter stonefly) are significant at the alpha level of 0.1 and trending the same direction, the trend is noted. Six data points are required before a regression is calculated. It is normal to have fluctuations up and down in populations.

HRWC only gets concerned about downward trends if they are persistent over many years. Thankfully, this is rare in HRWC data, but when it happens then staff consider restoration projects to help the ecosystem recover. For example, both Millers Creek and Norton Creek have had very poor and declining macroinvertebrate populations for many years and HRWC has initiated several projects in the creekshed. Malletts Creek has had very poor macroinvertebrate populations historically but significant investment and restoration was put in place by HRWC, Washtenaw County, and Ann Arbor, and now the creek is showing a positive trend in the macroinvertebrate metrics!

Cruise the InfoStream

The next several pages of this report give the most recent BioMonitoring results, but HRWC also has an online mapping system where you can see the location of each monitoring site as well as graphs over time for each metric.

Benthic Macroinvertebrate map: https://shorturl.at/drzMQ
All HRWC online maps: https://www.hrwc.org/our-watershed/maps/

Site #	Site Location	Overall Site Ranking (1= Best, 56= Worst)	Habitat/ Physical Condition with Measuring and Mapping Program and Conductivity measurements	Biological Condition with Roundup and Stonefly Search	River Roundup Metrics	Insect Family Diversity	EPT Family Diversity	Sensitive Family Diversity	MiCorps WQR	# of Stoneflies Families during Stonefly Search		Comments	Trends
25	Huron River: White Lake Road	1	Good	Excellent	Spring 2024	18	7	3	3.9, Very Good	Winter 2024	Not sampled	Sampled 1994-2024. Despite this being a small little river, the insect diversity is high and we always find many sensitive families. Stoneflies are regularly found. There is a highly sensitive caddisfly here that is very rare in Michigan (Odontoceridae), and this was found most recently in Fall 2024. This Fall's sample was particularly good-- a 3.5 WQR is among the best we have ever had.	–
					Spring Avg. since 2020	20.0	10.0	3.5	4.0, Very Good				
					Fall 2024	18	10	5	3.5, Excellent	Average since 2020	0.7		
					Fall Avg. since 2020	17.5	8.3	3.8	4.0, Very Good				
30	Mann Creek: Van Amberg Road	2	Fair	Excellent	Spring 2024	14	7	5	3.8, V. Good	Winter 2024	4.0	Sampled 1995-2024. 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. The creek is oddly high in conductivity, with possible industrial sources upstream.	↑
					Spring Avg. since 2020	15.0	7.5	5.5	4.0, V. Good				
					Fall 2024	12	7	3	3.8, V. Good	Average since 2020	3.5		
					Fall Avg. since 2020	17.0	8.0	4.5	4.1, V. Good				

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26	Huron River: Zeeb Road	3	Good	Excellent	Spring 2024	Not sampled				Winter 2024	1.0	Sampled 1996-2024. This section of the Huron River is the most diverse in macroinvertebrate life of any that HRWC monitors. (1996-2023) (Its overall rating gets downgraded because the river is so big here, and we would hope to see even higher diversity than we do!) This site is hard to sample as it gets quite deep. In Fall 2024, we collected the third most diverse sample that HRWC has ever collected, in our 32 years of collecting insects!	—
					Spring Avg. since 2020	13.0	7.0	3.0	3.9, V. Good				
					Fall 2024	30	12	6	4.3, V. Good	Average since 2020	2.0		
					Fall Avg. since 2020	20.5	8.8	3.8	4.2, V. Good				
13	Fleming Creek: Warren Road	4	Good	Excellent	Spring 2024	No sample				Winter 2024	1.0	Sampled 1994-2024. Since 1994 this site has improved significantly in fall and spring collections. Winter stoneflies are consistently present.	↑
					Spring Avg. since 2020	15.5	8.5	3.5	4.8, Good				
					Fall 2024	No sample				Average since 2020	1.0		
					Fall Avg. since 2020	12.0	4.0	2.0	4.0, V. Good				
16	Honey Creek (N): Darwin Rd	5	Fair	Excellent	Spring 2024	18	9	3	4.7, Good	Winter 2024	No sample	Sampled 1997-2024. This lovely creek has remained unchanging for the years we have been monitoring here. Winter stoneflies are consistently present.	—
					Spring Avg. since 2020	14.5	8.0	3.0	4.3, Good				
					Fall 2024	14	8	5	4.8, Good	Average since 2020	1.7		
					Fall Avg. since 2020	15.3	7.3	3.3	4.6, Good				

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37	Portage Creek: Dexter Townhall Road	6	Good	Excellent	Spring 2024	No sample				Winter 2024	3.0	Sampled 1996-2023. 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. Winter stoneflies are found abundantly here.	↓
					Spring Avg. since 2020	13.0	9.0	2.0	4.8, Good				
					Fall 2024	No sample				Average since 2020	2.2		
					Fall Avg. since 2020	16	5	5	3.6, V. Good				
22	Huron Creek: Dexter-Pinckney Road	7	Good	Excellent	Spring 2024	18	8	3	4.8, Good	Winter 2024	3.0	Sampled 1996-2024. This site is showing significant long-term increases in fall EPT samples and spring total families and EPT samples. Stoneflies are abundant and consistently found (1996-2022). This is a wonderfully diverse location.	↑
					Spring Avg. since 2020	17.0	8.5	3.5	4.2, V. Good				
					Fall 2024	No sample				Average since 2020	3.0		
					Fall Avg. since 2020	10.0	5.0	3.0	4.0, V. Good				
63	Hummocky Lick: M-36	8	Good	Good	Spring 2024	18	7	2	39, V. Good	Winter 2024	Not sampled	Sampled 2000-2023. 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. However, since 2019, Hummocky Lick has been recovering! Insect family diversity has crept back up to 18 or 19 famlies. Hummocky Lick is becoming (perhaps better stated, returning to) one of the best streams in the watershed. Stoneflies went missing from 2015 through 2020, but now have been found in 2021 and 2023.	–
					Spring Avg. since 2020	18.3	7.3	2.3	4.6, Good				
					Fall 2024	18	7	2	4.8, Good	Average since 2020	1.0		
					Fall Avg. since 2020	15.8	5.0	1.2	4.6, Good				

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40	South Ore Creek: Hamburg Rd	9	Good	Good	Spring 2024	11	5	1	5.1, Good	Winter 2024	2.0	Sampled 1994-2024. This creek is doing very well through this section. Spring insects are increasing, though not significantly. Insects and specifically stonefly abundance is very high.	–
					Spring Avg. since 2020	13.3	7.0	2.0	5.0, Good				
					Fall 2024	15	4	1	5.4, Good	Average since 2020	1.6		
					Fall Avg. since 2020	13.0	3.7	1.0	5.2, Good				
46	Woodruff Creek: Buno Road	10	Fair	Good	Spring 2024	14	8	2	4.7, Good	Winter 2024	1.0	Sampled 1993-2024. No significant changes over time. Winter stoneflies are found less than 50% of the samples here; they were found in 2024. The fall 2024 sample was not valid as only 33 specimens were returned.	–
					Spring Avg. since 2020	14.3	7.3	1.7	5.2, Good				
					Fall 2024	No valid sample				Average since 2020	0.8		
					Fall Avg. since 2020	15.0	5.0	0.5	5.0, Good				
5	Chilson Creek: Chilson Road	11	Good	Good	Spring 2024	11	5	3		Winter 2024	2.0	Sampled 1995-2024. Sensitive families are declining here, in both the spring and the fall. Winter stoneflies are holding steady. Habitat is healthy and diverse.	↓
					Spring Avg. since 2020	11.7	5.0	2.3					
					Fall 2024	13	4	0		Average since 2020	1.3		
					Fall Avg. since 2020	13.3	4.5	1.0					
68	Pettibone Creek: Livingston Rd	12	Fair	Good	Spring 2024	14	4	1	5.1, Good	Winter 2024	Not sampled	Sampled 2000-2024. There have been some population shifts up and down, but overall the site is holding steady. Winter stoneflies are not found here.	–
					Spring Avg. since 2020	13.5	5.0	1.0	5.3, Good				
					Fall 2024	10	4	0	4.8, Good	Average since 2020	0.0		
					Fall Avg. since 2020	11.7	4.3	0.3	4.7, Good				

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62	Huron River: Bell Road	13	Good	Good	Spring 2024	8	4	2	5.4, Good	Winter 2024	Not sampled	Sampled 2000-2024. This site is often difficult to sample because of fast flows, especially in the spring. Stoneflies are found here in about 3/4 of samples. The site has stable macro populations.	–
					Spring Avg. since 2020	10.0	5.0	1.5	5.0, Good				
					Fall 2024	15	5	0	4.9, Good	Average since 2020	1.0		
					Fall Avg. since 2020	15.3	5.0	1.0	4.8, Good				
49	Davis Creek: Silver Lake Rd	14	Fair	Good	Spring 2024	13	5	1	5.9, Fair	Winter 2024	Not sampled	Sampled 1998-2024. All spring metrics are significantly declining, but fall sensitive families are staying about the same statistically. Stoneflies are normally found here-- but weren't in 2023 and the creek was too flooded to check in 2024. This stream is of concern due to the declining populations.	↓
					Spring Avg. since 2020	13.0	6.0	1.0	5.7, Fair				
					Fall 2024	12	6	2	4.2, V. Good	Average since 2020	0.7		
					Fall Avg. since 2020	15.0	7.0	3.5	4.6, Fair				
84	Fleming Creek: Galpin Road	15	Good	Good	Spring 2024	Not sampled				Winter 2024	1.0	Sampled 2004-2024. No significant changes over time, though Fall 2024 had a poorer sample than usual. Winter stoneflies are always found here in high numbers.	–
					Spring Avg. since 2020	13.0	5.0	1.0	5.4, Good				
					Fall 2024	10	4	0	4.7, Good	Average since 2020	1.3		
					Fall Avg. since 2020	15.0	3.7	0.3	4.9, Good				
2	Boyden Creek: Delhi	16	Good	Fair	Spring 2024	17	7	3	4.3, V. Good	Winter 2024	Not sampled	Sampled 1994-2024. The overall trend for most of the parameters is stable. However, fall sensitive famiilies are significantly improving (we regularly find at least 1). Winter stoneflies are found here consistently. The habitat is healthy and diverse.	↑
					Spring Avg. since 2020	13.0	6.5	2.0	4.1, V. Good				
					Fall 2024	Not sampled				Average since 2020	1.3		
					Fall Avg. since 2020	9.0	6.0	1.0	5.1, Good				

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14	Woods Creek: L Huron Metropark	17	Fair	Good	Spring 2024	14	7	2	5.7, Fair	Winter 2024	No sample	Sampled 1997-2024. Woods Creek is unchanging, statistically. Several teams have pulled poor samples from here recently though, so HRWC is watching the site carefully to be sure it isn't declining.	–
					Spring Avg. since 2020	12.0	5.0	1.7	5.5, Fair				
					Fall 2024	12	3	1	4.7, Good	Average since 2020	1.3		
					Fall Avg. since 2020	11.5	3.3	0.5	4.9, Good				
11	Fleming Creek: Parker Mill County Park	18	Good	Fair	Spring 2024	10	6	3	4.9, Good	Winter 2024	2.0	Sampled 1993-2024. 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. Spring sampling has proven to be quite difficult in recent years with flood impeding the collection process. Winter stoneflies are consistently present.	↑
					Spring Avg. since 2020	10.0	6.0	3.0	4.9, Good				
					Fall 2024	No sample				Average since 2020	1.3		
					Fall Avg. since 2020	12.5	5.0	2.0	4.1, V.Good				
79	Mill Creek: Mill Creek Park	19	Fair	Good	Spring 2024	11	6	1		Winter 2024	2.0	Sampled 2003-2024. Samples have been getting better over time-- a slow crawl upwards, though 2024 was a low year for the site. Winter stoneflies are always found here.	↑
					Spring Avg. since 2020	13.0	7.0	2.0					
					Fall 2024	No sample				Average since 2020	2.0		
					Fall Avg. since 2020	14.0	5.0	1.5					
21	Horseshoe Creek: Merril Road	20	Fair	Fair	Spring 2024	No sample				Winter 2024	Not sampled	Sampled 2009- 2023. We have found a lot more total insect families here since 2009, but all of the other metrics are holding steady. Winter stoneflies were not found in 2022, the first time ever, but were found again in 2023.	–
					Spring Avg. since 2020	10.0	2.5	0.0	5.2, Good				
					Fall 2024	17	5	1	4.9, Good	Average since 2020	1.0		
					Fall Avg. since 2020	17.0	4.7	0.3	5.5, Fair				

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94	Portage Creek: Rockwell Rd	21	Fair	Good	Spring 2024	Not sampled				Winter 2024	Not sampled	Sampled 2013-2023. No significant changes over time. Winter stoneflies are never found here.	—
					Spring Avg. since 2020	13.0	4.0	0.0	5.2, Good				
					Fall 2024	Not sampled				Average since 2020	0.0		
					Fall Avg. since 2020	17.5	3.0	0.5	5.6, Fair				
64	Huron River: Proud Lake Rd	22	Fair	Fair	Spring 2024	Not sampled				Winter 2024	Not sampled	Sampled 1999-2024. There have been no significant changes over time. Winter stoneflies are never found here. The samples are dominated by scuds, a pollution tolerant species, and this is one of the lower WQR ratings that HRWC has, and something to follow up on.	—
					Spring Avg. since 2020	15.5	8.0	1.0	6.1, Fair				
					Fall 2024	14	4	0	6.9, Fairly Poor	Average since 2020	0.0		
					Fall Avg. since 2020	12.0	4.0	0.0	6.7, Fairly Poor				
96	Mill Creek: Parker Rd	23	Fair	Good	Spring 2024	Not sampled				Winter 2024	Not sampled	Sampled 2013-2024. No significant changes over time. Winter stoneflies are never found here.	—
					Spring Avg. since 2020	10.5	5.5	1.5	5.6, Fair				
					Fall 2024	13	3	0	4.9, Good	Average since 2020	0.0		
					Fall Avg. since 2020	15.5	3.0	0.0	5.2, Good				
80	Mill Creek: Shield Rd	24	Fair	Fair	Spring 2024	Not sampled				Winter 2024	Not sampled	Sampled 2001-2024. There have been no significant changes over time. Winter stoneflies are nearly always found here.	—
					Spring Avg. since 2020	9.5	5.5	1.0	4.8, Good				
					Fall 2024	14	6	2	4.4, V. Good	Average since 2020	1.5		
					Fall Avg. since 2020	14.7	5.0	1.7	4.2, V. Good				

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67	Pettibone Creek: Commerce Rd	25	Fair	Good	Spring 2024	9	3	0	5.7, Fair	Winter 2024	Not sampled	Sampled 2001-2024. There have been no significant changes over time. Winter stoneflies are not found here- though it hasn't been sampled since 2016, so HRWC should do this again in 2025.	—
					Spring Avg. since 2020	8.3	3.7	0.3	5.8, Fair				
					Fall 2024	12	4	0	4.6, Good	Average since 2020	Not sampled		
					Fall Avg. since 2020	12.5	4.5	0.0	4.6, Good				
47	Huron River: Commerce Road	26	Fair	Good	Spring 2024	8	4	1	5.8, Fair	Winter 2024	No sample	Sampled 1997-2024. This site has struggled with up and down macroinvertebrate populations, but the statistical trend is steady as of now. This fall had one of it's best samples in a long time! However, winter stoneflies, once abundant, have disappeared since 2019. Certainly this site is one to watch going forward.	—
					Spring Avg. since 2020	11.5	6.0	1.0	5.9, Fair				
					Fall 2024	16	6	0	4.4,Very good	Average since 2020	0.0		
					Fall Avg. since 2020	14.0	6.0	0.5	4.5, Good				
82	Walker Creek: 8 Mile Creek	27	Good	Fair	Spring 2024	Not sampled				Winter 2024	Not sampled	Sampled 2003-2023. No significant changes over time. Winter stoneflies have never been found here.	—
					Spring Avg. since 2020	No samples							
					Fall 2024	Not sampled				Average since 2020	0.0		
					Fall Avg. since 2020	12.5	5.5	1.0	4.9, Good				
61	Huron River: Island Park	28	Good	Fair	Spring 2024	Not sampled				Winter 2024	1.0	Sampled 2001-2024. The insect community here is stable. The winter stoneflies here are abundant and consistent.	—
					Spring Avg. since 2020	9.5	6.0	1.0	4.7, Good				
					Fall 2023	15	8	1	4.3, V. Good	Average since 2020	1.8		
					Fall Avg. since 2020	14.3	6.8	1.5	5.0, Good				

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1	Arms Creek: Walsh Road	29	Fair	Fair	Spring 2024	No sample				Winter 2024	Not sampled	Sanpled 1993-2024. Overall, fall sensitive families have increased significantly over time--but barely. Winter stoneflies are holding at strong levels. The stream is quite mucky and difficult to sample.	-
					Spring Avg. since 2020	17.0	6.0	1.0	5.7, Fair				
					Fall 2024	12	5	2	5.6, Fair	Average since 2020	1.5		
					Fall Avg. since 2020	15.0	3.5	2.0	5.6, Fair				
31	Mill Creek: Fletcher Road	30	Fair	Fair	Spring 2024	No sample				Winter 2023	No sample	Fall families have significantly increased over time (10--> approx 15) Winter stoneflies, however, have disappeared from here since 2015. (1993-2023). The "Fair" ranking of the WQR also points to a creek with a higher-than-HRWC-average amount of pollution tolerant species... This is a sign of a creek heavily affected by agriculture.	—
					Spring Avg. since 2020	12.0	6.0	3.0	5.2, Good				
					Fall 2024	No sample				Average since 2020	0.0		
					Fall Avg. since 2020	15.0	3.5	0.0	6.0, Fair				
58	Portage Creek: Unadilla	31	Fair	Fair	Spring 2024	10	5	0	5.4, Good	Winter 2024	Not sampled	Sampled 1999-2024. There have been no significant changes over time. Winter stoneflies are never found here.	—
					Spring Avg. since 2020	10.0	5.0	0.0	5.4, Good				
					Fall 2024	Not sampled				Average since 2020	0.0		
					Fall Avg. since 2020	13.3	5.0	1.3	5.1, Good				
52	South Ore Creek: Bauer Rd	32	Good	Fair	Spring 2024	8	2	0	5.6, Fair	Winter 2024	Not sampled	Sampled 1998-2024. All three spring metrics have significantly decreased over time. Stoneflies haven't been seen since 2012.	↓
					Spring Avg. since 2020	10.5	3.5	0.5	5.7, Fair				
					Fall 2024	13	3	0	5.8, Fair	Average since 2020	0.0		
					Fall Avg. since 2020	13.0	3.5	0.5	5.6, Fair				

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55	Mill Creek: M-52	33	Fair	Fair	Spring 2024	Not sampled				Winter 2024	Not sampled	Sampled 1999-2023. There have been no significant changes over time, though the 2023 spring sample was really down in abundance and diversity. Winter stoneflies are nearly always found here.	—
					Spring Avg. since 2020	8.0	4.0	1.5	4.9, Good				
					Fall 2024	Not sampled				Average since 2020	2.0		
					Fall Avg. since 2020	11.0	2.5	2.0	4.7, Good				
57	Mill Creek: Klinger Road	34	Good	Fair	Spring 2024	Not sampled				Winter 2024	Not sampled	Sampled 1999-2023. Fall EPT families are up, otherwise this site has mostly stayed stable. Winter stoneflies are regularly found	—
					Spring Avg. since 2020	7.0	3.0	1.0	5.6, Fair				
					Fall 2024	Not sampled				Average since 2020	2.0		
					Fall Avg. since 2020	12.5	3.5	0.5	5.5, Good				
33	Mill Creek: Jackson Road	35	Fair	Fair	Spring 2024	10	4	1	5.3, Good	Winter 2024		Sampled 1996-2024. Spring total families are significantly increasing; all of the other metrics are stable. The winter stoneflies here are abundant and consistent; however, this site can get very deep with rainy conditions and winter and spring sampling is often canceled.	—
					Spring Avg. since 2020	13.0	5.0	1.5	5.0, Good				
					Fall 2024	Not sampled				Average since 2020			
					Fall Avg. since 2020	12.0	3.5	0.5	5.3, Good				
32	Mill Creek: Ivey Rd	36	Fair	Fair	Spring 2024	Sampled rejected for				Winter 2024	1.0	Sampled 1993-2024.There have been no significant changes over time, although spring and fall samples are trending downwards, a result that is not yet significant. Stonefly populations are usually found here, however.	—
					Spring Avg. since 2020	15.0	7.0	2.0	4.4, V. Good				
					Fall 2024	Not sampled				Average since 2020	0.8		
					Fall Avg. since 2020	13.0	5.0	2.0	5.3, Good				

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20	Honey Creek (S): Wagner Road	37	Fair	Fair	Spring 2024	8	3	1	5.7, Poor	Winter 2024	No sample	Sampled 1993-2024. The fall sensitive families are significantly declining over time. Most of the other metrics are slightly and non-significantly declining. Stoneflies disappeared from 2015 to 2019, came back 2020-2022, and went missing again in 2023. Overall, this site does not seem to be in active decline like it was five years ago but remains one to watch.	–
					Spring Avg. since 2020	9.4	4.0	2.5	5.3, Good				
					Fall 2024	No sample				Average since 2020	1.0		
					Fall Avg. since 2020	10.0	4.0	1.0	4.3, V. Good				
6	Davis Creek: Doane Road	38	Fair	Fair	Spring 2024	Not sampled				Winter 2024	2.0	Sampled 1994-2024. Samplings here are showing slow declines through time, with spring sensitive insects and fall total insects declining significantly. The site is difficult to sample, especially during spring high flows, and it can be challenging to get good spring samples. Winter stoneflies are very abundant here. This site has been one to keep an eye on for years, but it does not seem to be changing too rapidly.	↓
					Spring Avg. since 2020	No valid samples							
					Fall 2024	Not sampled				Average since 2020	2.3		
					Fall Avg. since 2020	9.7	4.3	1.0	4.5, V. Good				
91	Portage Creek: Stockbridge	39	Fair	Poor	Spring 2024	11	4	0	6.2, Fair	Winter 2024	Not sampled	Sampled 2013-2024. No significant changes over time. Winter stoneflies are never found here.	–
					Spring Avg. since 2020	9.7	4.0	0.0	5.6, Fair				
					Fall 2024	Not sampled				Average since 2020	0.0		
					Fall Avg. since 2020	8.0	2.0	0.0	5.5, Good				
42	Traver Creek: Broadway Ave	40	Poor	Fair	Spring 2024	9	2	1	5.0, Good	Winter 2024	No sample	Sampled 1993- 2024. No significant changes over time. While degraded, this is one of the healthier urban stream we monitor. Stoneflies can be found here regularly.	–
					Spring Avg. since 2020	9.0	2.0	1.0	5.0, Good				
					Fall 2024	No sample				Average since 2020	1.0		
					Fall Avg. since 2020	13.0	4.0	0.0	4.9, Good				

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7	Davis Creek: Pontiac Road	41	Fair	Fair	Spring 2024	Not sampled				Winter 2024	Not sampled	Sampled 1994-2023. Samples have been declining over many years, and have been poor in fall in particular. Winter stoneflies haven't been here since 2020.	↓
					Spring Avg. since 2020	14.0	6.0	1.0	5.7, Fair				
					Fall 2024	Not sampled				Average since 2020	0.3		
					Fall Avg. since 2020	9.5	3.0	0.0	4.8, Good				
8	Greenock Creek: Rushton Rd	42	Fair	Poor	Spring 2024	Not sampled				Winter 2024	Not sampled	Sampled 1996-2024. This site has gotten worse over time. All of the spring insect diversity metrics have significantly decreased; fall metrics are falling but not significant. Stoneflies are never found here as well. However, even in 1996 when monitoring began, the creek was not a healthy one. The declines we see are from an already low starting point.	↓
					Spring Avg. since 2020	5.0	2.0	0.0	6.3,Fairly Poor				
					Fall 2024	Not sampled				Average since 2020	0.0		
					Fall Avg. since 2020	10.0	2.5	0.5	5.5, Good				
34	Letts Creek: M-52	43	Poor	Fair	Spring 2024	Not Sampled				Winter 2023	0.0	Sampled 1993-2023. This site is declining significantly in fall EPT familes. All other metrics are holding steady. Stoneflies are found consistently normally, but were absent in 2023. (1993-2023)	–
					Spring Avg. since 2020	11.0	3.0	0.0	5.8, Fair				
					Fall 2024	Not Sampled				Average since 2020	1.0		
					Fall Avg. since 2020	12.0	2.5	0.0	6.7,Fairly Poor				
18	Honey Creek (S): Jackson Road	44	Poor	Poor	Spring 2024	12	4	0	4.9	Winter 2024	No Sample	Sampled 1993-2024. Sensitive families have declined in spring samples, from approximately 2 in the early 2000s to 0 since 2009. However, winter stoneflies, which disappeared in 2009, made a comeback and have been seen since 2017. This site has seen a lot of changes over time; through crashes and recoveries. Overall, it isn't too much different now than it was in 1993.	–
					Spring Avg. since 2020	12.0	4.0	0.0	4.9, Good				
					Fall 2024	No sample				Average since 2020	1.0		
					Fall Avg. since 2020	8.5	2.0	0.0	4.9, Good				

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60	Port Creek: Armstrong Rd	45	Poor	Poor	Spring 2024	No sample				Winter 2024	Not sampled	Sampled 1994-2024. This site is consistently poor, but has improved in just the last couple of years! This fall sample was the best seen since 2001. Winter stoneflies are not found here.	↑
					Spring Avg. since 2020	10.5	3.0	2.5	6.5, Fair				
					Fall 2024	6	0	0	6.1, Fair	Average since 2020	0.0		
					Fall Avg. since 2020	12.0	1.0	0.0	6.3, Fair				
92	Portage Creek: Williamsville Rd	46	Fair	Poor	Spring 2024	9	3	1	5.8, Fair	Winter 2024	Not sampled	Sampled 2013-2024. No significant changes over time. Winter stoneflies are never found here.	–
					Spring Avg. since 2020	8.5	3.0	1.0	5.6, Fair				
					Fall 2024	Not sampled				Average since 2020	0.0		
					Fall Avg. since 2020	12.5	4.5	0.5	6.3, Fair				
24	Huron River: Cross Street	47	Fair	Poor	Spring 2024	No sample				Winter 2024	0.0	Sampled 1997-2024. No significant changes over time. Winter stoneflies are found here in approximately 50% of samples.	–
					Spring Avg. since 2020	6.7	2.7	0.3	6.0, Fair				
					Fall 2024	12	5	0	4.8, Good	Average since 2020	1.0		
					Fall Avg. since 2020	11.0	5.5	1.5	4.8, Good				
23	Huron River: Flat Rock	48	Poor	Poor	Spring 2023	No sample				Winter 2024	No sample	Sampled 1996-2024. We switched sites in 2022 at Flat Rock to get a location that had safer access. This is a site to watch as we try to confirm if they switch in site makes a difference in the sampling success and amounts we find. (first site: 1996-2021; second site: 2022-2024).	–
					Spring Avg. since 2020	8.0	4.0	0.0	5.9, Fair				
					Fall 2023	10	4	0	5.7, Fair	Average since 2020	2.0		
					Fall Avg. since 2020	9.5	4.5	0.8	5.5, Fair				

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50	South Ore Creek: Lake Ridge	49	Fair	Poor	Spring 2024	6	2	0	4.8, Good	Winter 2024	Not sampled	Sampled 1998-2024. This site has declined over time, but these changes are not yet significant, and regardless, the site has never had a good insect population. This site has nice habitat, but there is a dam immediately upstream and the water quality is very poor. Stoneflies are never found here.	–
					Spring Avg. since 2020	5.5	2.0	0.0	5.0, Good				
					Fall 2024	5	1	0	5.4, Good	Average since 2020	0.0		
					Fall Avg. since 2020	6.0	1.5	0.0	5.2, Good				
98	Horseshoe Creek: Barker Road	50	Poor	Poor	Spring 2024	7	1	0	5.6, Fair	Winter 2024	Not sampled	Sampled 2012-2024. No significant changes over time. Winter stoneflies are never found here.	–
					Spring Avg. since 2020	7.5	1.0	0.0	5.7, Fair				
					Fall 2024	11	2	0	5.9, Fair	Average since 2020	Not sampled (but No Stoneflies from 2012-2019)		
					Fall Avg. since 2020	11.0	1.7	0.0	5.9, Fair				
27	Malletts Creek: Chalmers Road	51	Poor	Poor	Spring 2024	7	1	0	5.1, Good	Winter 2024	No sample	Long term, spring and fall samples have shown improvement over time (1994-2023). Malletts Creek has had a very slow yet continual improvement thanks to the efforts of many partners. This fall, for the first time ever we found a flat-head mayfly-- this family, common in higher quality streams, is another sign of Mallett's improvement.	↑
					Spring Avg. since 2020	7.7	1.7	0.0	5.6, Fair				
					Fall 2024	11	4	0	5.1, Good	Average since 2020	0.0		
					Fall Avg. since 2020	9.3	3.3	0.0	4.9, Good				
99	Horseshoe Creek: Brookside Rd	52	Fair	Poor	Spring 2024	Not sampled				Winter 2024	Not sampled	Sampled 2012-2023. No significant changes over time. Winter stoneflies are never found here.	–
					Spring Avg. since 2020	4.0	0.0	0.0	6.1, Fair				
					Fall 2024	Not sampled				Average since 2020	0.0		
					Fall Avg. since 2020	13.0	1.0	1.0	5.7, Good				

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41	Swift Run: Shetland Drive	53	Poor	Poor	Spring 2024	7	1	1	5.5, Fair	Winter 2024	No sample	Sampled 1992- 2024. No significant changes over time. Winter stoneflies are never found here.	—
					Spring Avg. since 2020	5.0	1.0	0.3					
					Fall 2024	No sample				Average since 2020	0.0		
					Fall Avg. since 2020	6.5	1.5	0.0	5.5, Fair				
97	Norton Creek: Gibson Park	54	Poor	Poor	Spring 2024	Not sampled				Winter 2024	Not sampled	Sampled 2013-2024. No significant changes over time. Winter stoneflies are never found here.	—
					Spring Avg. since 2020	5.0	0.0	0.0	5.9, Fair				
					Fall 2024	5	0	0	6.6, Fairly Poor	Average since 2020	0.0		
					Fall Avg. since 2020	6.0	0.3	0.0	6.6, Fairly Poor				
35	Millers Creek: Glazier Way	55	Poor	Poor	Spring 2024	No sample				Winter 2024	No sample	Sampled 1993-2024. No significant changes over time. This site is highly degraded. Stoneflies have never been found here.	—
					Spring Avg. since 2020	10	1	0	5.9, Fair				
					Fall 2024	No sample				Average since 2020			
					Fall Avg. since 2020	8.5	1.0	0.0	5.4, Good				
65	Norton Creek: Maple Road	56	Poor	Poor	Spring 2024	Not sampled				Winter 2024	0.0	Sampled 2001-2023. This site shows significant decline in fall EPT metrics and total insects families. The last several years have had particularly poor counts. There are a mess of scuds here and barely anything else. Winter stoneflies are never found here.	↓
					Spring Avg. since 2020	4.0	0.0	0.0	6.3, Fair				
					Fall 2024	Not sampled				Average since 2020	0.0		
					Fall Avg. since 2020	1.0	0.0	0.0	7.5, Poor				

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104	Silver Creek: Flat Rock Community Park		Unranked (not enough data)	Unranked (not enough data)	Spring 2023					Winter 2024	Not sampled	This is a brand new site!	
					Spring Avg. since 2020	4	0	0	6.2				
					Fall 2024	11	7	0	7, Fairly Poor	Average since 2020	Not sampled (highly unlikely that stoneflies are here)		
					Fall Avg. since 2020	8.5	5	0.5	5.7, Fair				
105	Regan Drain: Willows Metropark Interloop Road		Unranked (not enough data)	Unranked (not enough data)	Spring 2024	7	1	0	5.7, Fair	Winter 2024	Not sampled	This is a brand new site!	
					Spring Avg. since 2020	6	1.5	0	6.2, Fair				
					Fall 2024	7	2	0	4.9, Good	Average since 2020	Not sampled (highly unlikely that stoneflies are here)		
					Fall Avg. since 2020	8	1.5	0	6.1, Fair				
106	Smith Creek: Flat Rock Community Center		Unranked (not enough data)	Unranked (not enough data)	Spring 2023	5	0	0	5.8, Fair	Winter 2024	Not sampled	This is a brand new site!	
					Spring Avg. since 2020	5	0	0	5.8, Fair				
					Fall 2024	Not sampled--wedding in the park				Average since 2020	Not sampled (highly unlikely that stoneflies are here)		
					Fall Avg. since 2020	No samples							
107	Hay Creek: Swarthout Rd		Unranked (not enough data)	Unranked (not enough data)	Spring 2024	17	7	2	5.2, Good	Winter 2024	Not sampled (flooded)	This is a brand new site! The fall sample was much worse than the spring sample. We don't have enough knowledge of the site yet to determine if this is real or a sampling artifact-- we may end up removing Fall 2024 from the record in the future if we determine it was improperly collected.	
					Spring Avg. since 2020	17	7	2	5.2, Good				
					Fall 2024	6	1	0	5.7, Fair	Average since 2020	Not sampled (flooded)		
					Fall Avg. since 2020	6	1	0	6.1, Fair				

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108	Portage Creek: Heart of Hell		Unranked (not enough data)	Unranked (not enough data)	Spring 2024					Winter 2024	Not sampled	This is a brand new site! It is located next to the tavern in Hell.	
					Spring Avg. since 2020								
					Fall 2024	14	5	2	4.7, Good	Average since 2020	Not sampled		
					Fall Avg. since 2020	14	5	2	4.7, Good				