



# Monitoring Report

The results of the

## Adopt-A-Stream's River RoundUp

PROTECTING OUR WATER TOGETHER SINCE 1965



photo: Al Wooll

Carri Gittleson and Jesse Gordon pick small creatures from a creek sample at the River RoundUp.

Congratulations to the many, many people who made this spring monitoring a success! About 150 people sampled aquatic insect populations at 64 sites in the watershed!

In total, we collected 4,000 creatures, which we identified at Bug ID Day.

Following are the results of your efforts both recently and throughout the years.



photo: Al Wooll

Team 8 prepares for their adventure into the streams at the River RoundUp.

## Aquatic Population Changes

We identify a change (e.g. decline) only when there is a statistically significant trend over the entire time of monitoring. See page 9 for a table of the results and population changes.

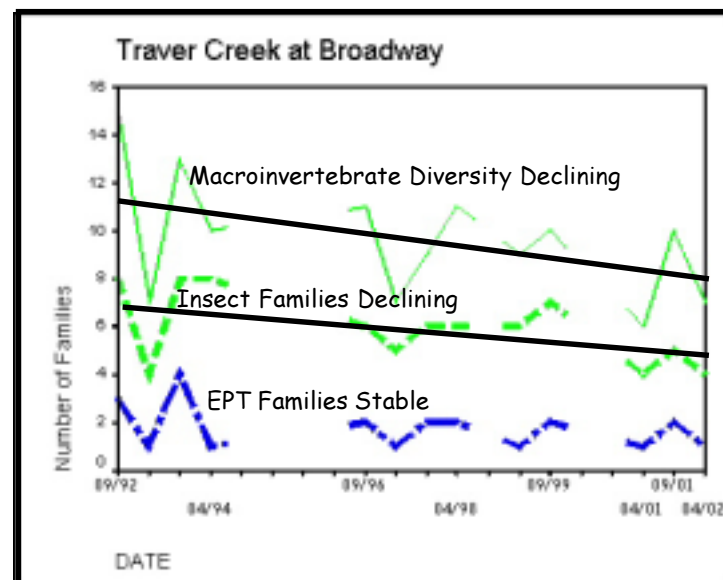
### Traver Creek at Broadway Continues to Decline in Quality

This urban area of the creek continues to lose groups of aquatic insects. We measured a decline in macroinvertebrate diversity in the spring of 2001, then a decline in the number of insect families in the fall of 2001 (although the graph shows the populations rising

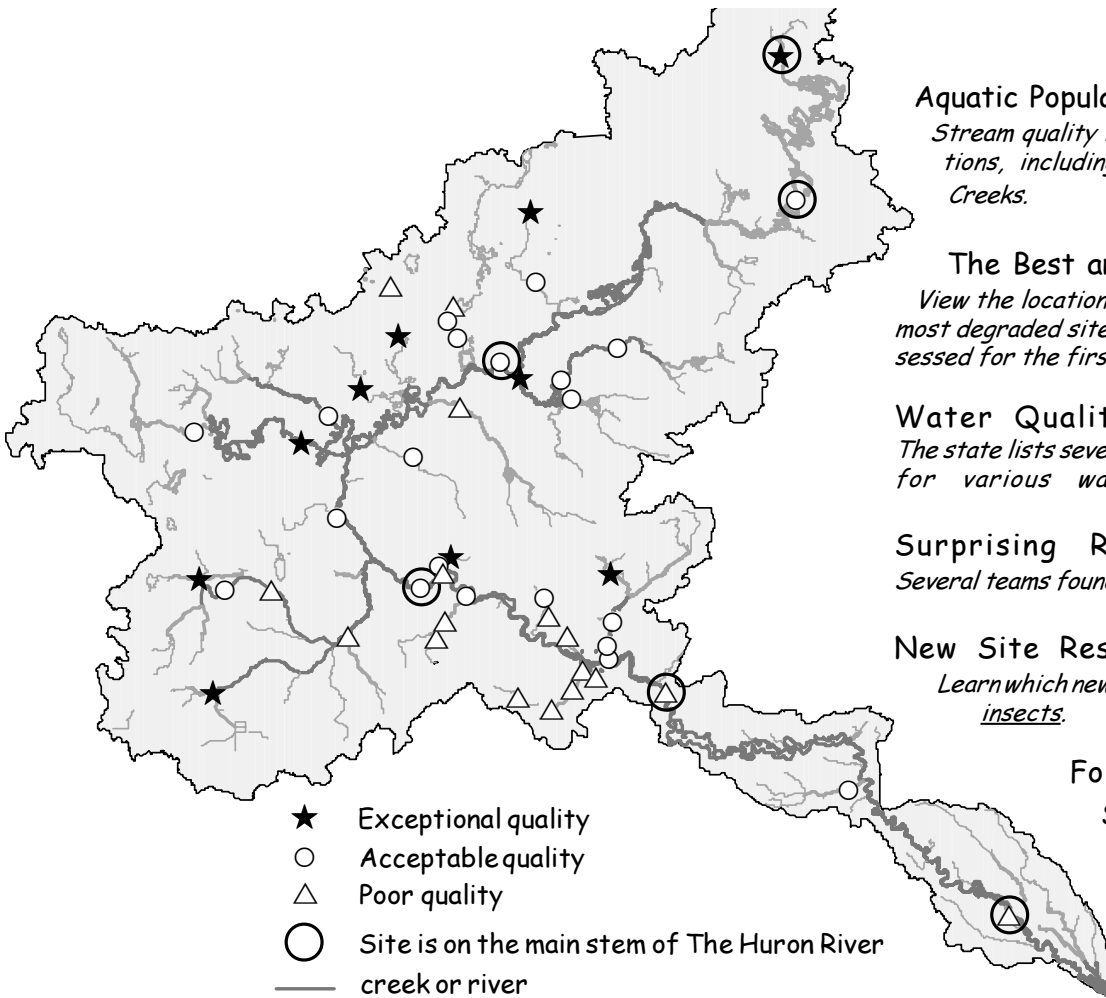
slightly during the fall of 2001, the trend line over the entire monitoring time was

declining. This spring, both the macroinvertebrate diversity and the number of insect

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(Sites studied less than 3 years are not shown.)

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## The Best and Worst Sites

This map shows the location of the highest quality and the most degraded sites monitored in the watershed. In general, the headwaters of the Huron River and some of the creeks are in exceptional health, while downstream locations are in worse condition.

This spring collection completed the three years of data necessary to assess the ecological quality of

three sites: the Huron River at Flat Rock, Malletts Creek at Main Street, and Portage Creek at Unadilla.

The Huron River at Flat Rock and Malletts at Main Street both have poor ecological quality. At Flat Rock, the number of insect families is only about half of what we would expect it to be at a big river site. In Malletts Creek, we have been unable to find any sensitive families and we

only find on average between 1 and 2 EPT families, fewer than half of what we expect to find.

Portage Creek at Unadilla has acceptable ecological quality. While the numbers of insect families and the EPT families are more than we expected, the diversity of sensitive families is a little less than our expectations.

# Aquatic Population Changes

*continued from cover*

families are declining. Fortunately, upstream at Traver at Dhu Varren Road, the populations remain in a stable and acceptable ecological quality.

## South Ore Creek at Bauer Declines

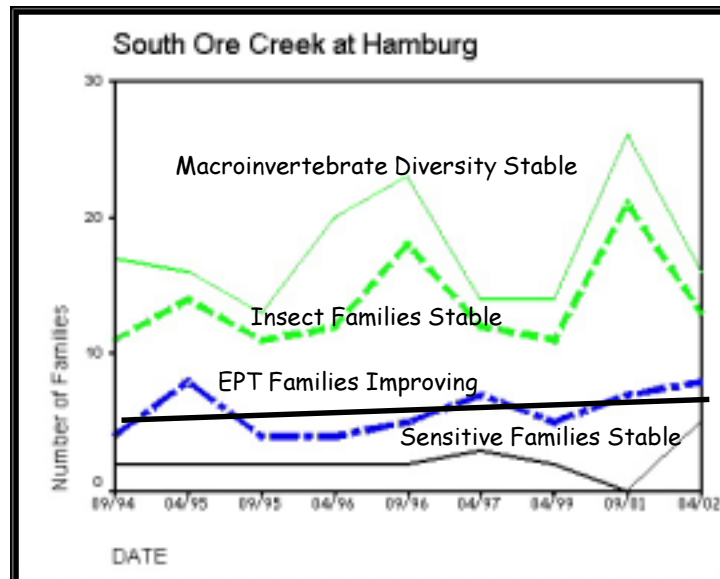
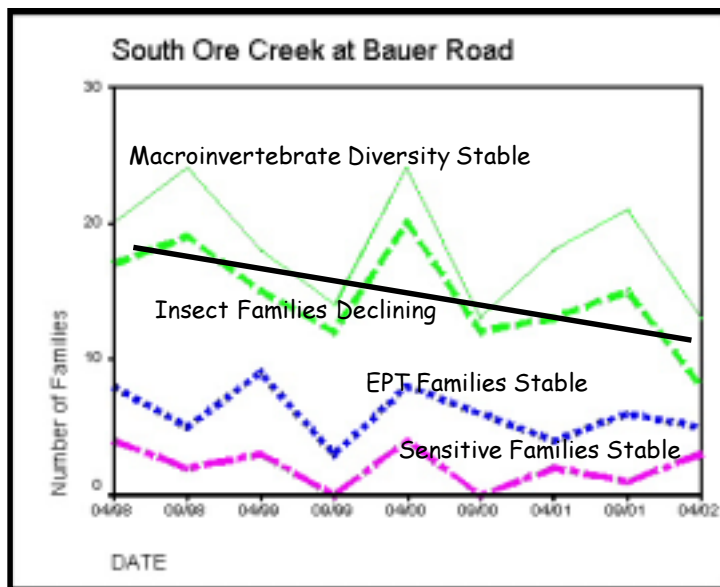
This spring we found only 8 insect families (compared to an average of 14 families) in South Ore Creek at Bauer Road. Fortunately, we are not losing EPT or sensitive insect families. This spring we found three sensitive insect families there: the Perlodid stonefly (Family Perlodidae), the log-cabin building caddisfly (Family Brachycentridae), and the club-tailed dragonfly (Family Gomphidae).

## South Ore Creek at Hamburg Road Improves

Good news. South Ore Creek at Hamburg Road is improving in spite of the drop in sensitive families and unusually high conductivity levels that we measured last September. A special watershed action team (SWAT) of volunteers re-sampled one month later and found two kinds of young sensitive insect families and that the conductivity level had dropped to normal. An area resident pointed out that the paving of Maltby Road, which connects with Hamburg Road immediately upstream of the site, occurred just before our September collection.

## Millers at Glazier Improves

There has been a significant increase in the number of EPT



families in Millers Creek at Glazier Way. Since monitoring

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*We are hopeful about the future of Millers Creek. . .*

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began in 1993, we have usually found either 0 or 1 EPT family but for the past

three collections we've found 2 and 3 families. Although this increase is a welcome sign, the biology of this creek is still below what we expect for a creek of its characteristics.

We are hopeful about the future of Millers Creek, thanks to a major study that will be used to create a restoration plan to improve the creek. The study resulted from concerns of the "Millers Creek Action Team", which includes Pfizer

*(continued on page 4)*

# Aquatic Population Changes

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Inc., HRWC, Altarum, Pollack Design, Ann Arbor City, local residents, the Washtenaw County Drain Commissioner, the University of Michigan, and the Michigan Department of Environmental Quality. Pfizer has hired Ayres, Lewis,

Norris and May, Tilton and Associates and the Huron River Watershed Council to conduct the study. For more information about this exciting new study, or to learn how you can get involved, call (734) 769-5971.

Other sites that have shown increases in population diversity are:

- ◆ Boyden Creek at Huron River Drive
- ◆ Honey Creek (in Livingston County)
- ◆ Huron Creek
- ◆ Huron River at Zeeb Road
- ◆ Mill Creek at Jackson Road

(visit our website at [www.hrwc.org](http://www.hrwc.org) to view the trend graphs or call (734) 769-5971 to request that one be mailed to you):

## Water Quality Concerns

*MDEQ recently released a list of Huron River sites with various water quality problems.*

The Michigan Department of Environmental Quality (MDEQ) recently released water quality information (the "nonattainment list"), which lists sites in Michigan that do not meet designated uses, such as swimming and fishing.

To view the entire report visit [www.michigan.gov/deq](http://www.michigan.gov/deq), then select "information and news" from a column on the left of the screen. Then scroll down to Michigan's Environment and select "Michigan Water Quality Report" and "Attainment list".

Table 1. Several sites are listed on the Huron River for various water quality problems.

Site	Water Quality Problems
Barton Pond	PCB's, Fish Consumption Advisory
Bishop Lake	Mercury
Four Mile Lake	Mercury
Honey Creek (Livingston Co.)	Poor Macroinvert. Community
Honey Creek (Washtenaw Co.)	Pathogens
Horseshoe Creek	Poor Macroinvert. Community
Ford and Belleville Lakes	PCB's, Fish Consumption Advisory
Kent Lake	PCB's, Fish Consumption Advisory
Letts Creek	Poor Fish & Macroinvert. Community
Limekiln Lake	Nutrients
Malletts Creek	Poor Fish & Macroinvert. Community
Norton Creek	Poor Fish & Macroinvert. Community
Pontiac Lake	PCB's, Fish Consumption Advisory
Portage Creek	Poor Fish & Macroinvert. Community
Second Sister Lake	Mercury
South Lake	Mercury
Swift Run	Poor Macroinvert. Community
Unnamed Lake S. of Ford Lake, at Textile and Burton Rd	Mercury & PCB's, Fish Consumption Adv.
Whitmore Lake	PCB's, Fish Consumption Advisory
Willow Run	PCB's



*Skunk cabbage*

*If we can identify and correct what impairs our creeks, nature has an ability to restore itself.*

### Letts Creek Recovers

Since 1997, we've measured an increase in the population diversity in Letts Creek at M-52 following the oil spill that caused the aquatic population to crash. This spring, it appears that the improvement at this site may be leveling off at a quality that is similar to its pre-spill conditions. The improvement at this site is considerable; the average number of EPT families we've found between 2000-2002 is more than double the average number that we found between 1997-1999. This story of recovery is encouraging. If we can identify and correct what impairs our creeks, nature has an ability to restore itself.



# Surprising Results

Tom Jameson's team found the log-cabin building caddisfly (Family Brachycentridae) for the first time in Boyden Creek at Huron River Drive. His team also found prong-gilled mayflies (Family Leptophlebiidae), which we haven't found at this site since 1996! These families are



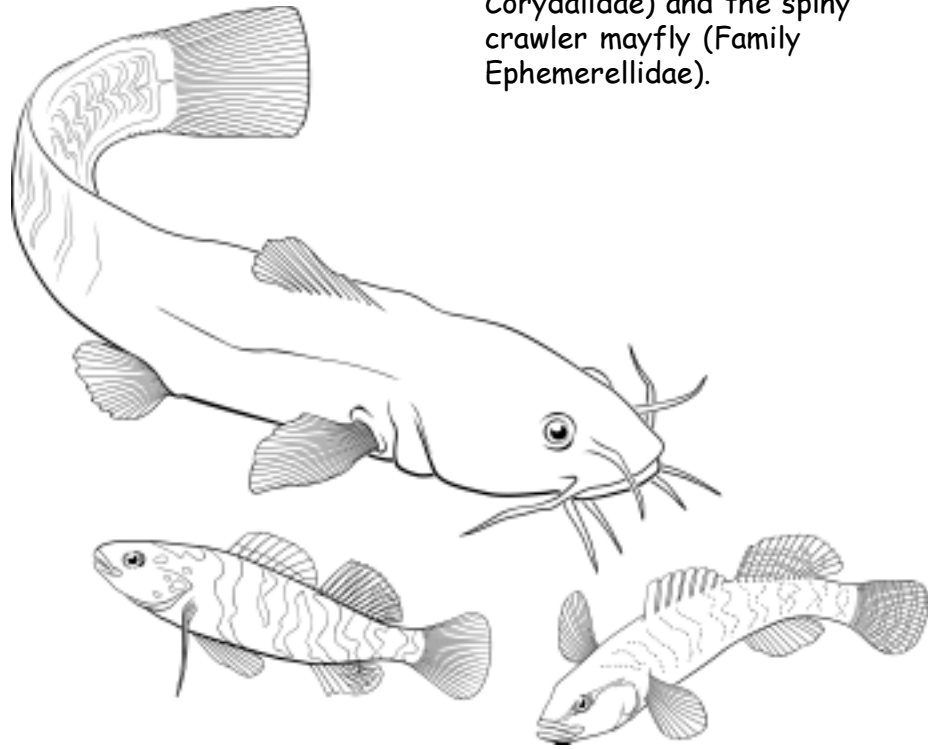
*Prong-gilled mayfly (Family Leptophlebiidae).*

both sensitive, which sets a new record of two sensitive families found at this site! Since 1993, we have sometimes found one sensitive family, and often we didn't find any.

The team led by Meroe Kaericher and Thad McCollum found three different kinds of stoneflies, the Perlid stonefly (Family Perlidae), Perlodid stonefly (Family

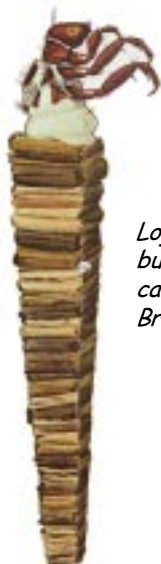
Perlodidae), and the Nemourid broadback stonefly (Family Nemouridae) in Fleming Creek at the Botanical Gardens! All stoneflies are sensitive. The team also found a sensitive watersnipe fly (Family

found almost double the number of insect families we've found in the last two April collections at the Huron River at Bell Road! Two of these insect families were sensitive, the dobson fly or hellgrammite (Family Corydalidae) and the spiny crawler mayfly (Family Ephemerellidae).



*Illustration by Matt Wimsatt*

*Gary Crawford's team identified a stonecat, fantail darter, and rainbow darter in Honey Creek (in Livingston County).*



*Log-cabin building caddisfly (Family Brachycentridae)*

Athericidae), for a total of four sensitive families, two more than we've found at this site before!

Gary Crawford's team found six sensitive families in Honey Creek (Livingston County) at Darwin Road, compared to only two last spring! This team found the saddle-case maker caddisfly (Family Glossosomatidae) for the first time at this site.

The team led by Chris Wood

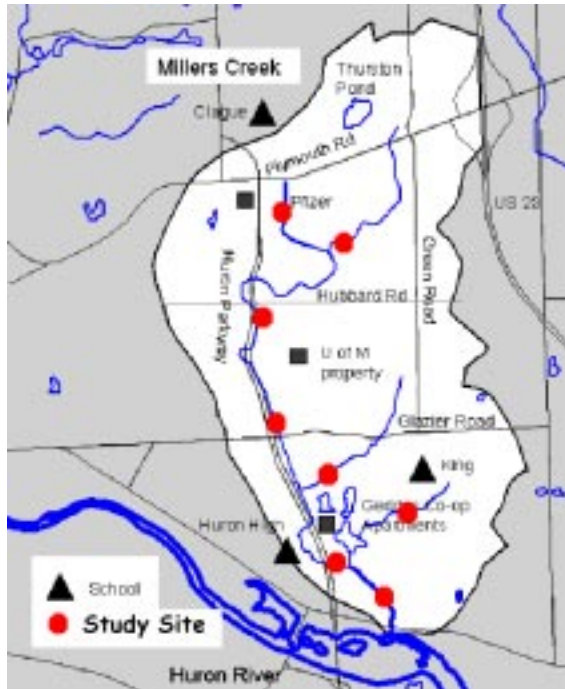
Don Rottier's team found 5 sensitive families in South Ore Creek at Hamburg Road, compared to an average of fewer than 2 families since 1994! Although none of these families were new finds for this site, we had not found the spiny crawler mayfly (Family Ephemerellidae) or the log-cabin building caddisfly (Family Brachycentridae) since 1995.

# New Site Results

Sites are considered "new" when we have collected fewer than three years of data, or six collections.

## Sites monitored for the first time this spring:

Seven sites were added on Millers Creek as part of an in-depth study that will be used to create a restoration plan for this creek. We were unable to find sensitive families at any of these sites and four sites were even lacking any EPT families. We will be collecting detailed information about the flow and channel shape of this creek this summer and will return to monitor the populations in the fall.



Seven new study sites have been added on Millers Creek which is located in northeast Ann Arbor. The site at Glazier Road was first monitored in 1993.

## Spring Diversity looks low at Hummocky Lick:

This spring at Hummocky Lick (a tributary to Honey Creek in Livingston County), we found about 10 fewer insect families than we have found in the previous four collections. We also found the lowest number of EPT families that we have ever found at this site. Fortunately, we still found three sensitive families. In the fall, we will complete our 6<sup>th</sup> collection at Hummocky Lick, making it possible to assess the ecological quality of this site. Preliminary results indicate the biological quality in Hummocky Lick is acceptable.

## New sites that have sensitive insects:

- ◆ Norton Creek at Loon Lake Outlet
- ◆ Chilson Creek at the Golf Course
- ◆ Huron River at Island Park, Proud Lake State Rec. Area and Bell Road
- ◆ Pettibone Creek at Livingston Road
- ◆ Woodruff Creek at Buno Road
- ◆ Hummocky Lick

## New sites lacking sensitive insects

- ◆ Davis Creek, upstream of Limekiln Lake
- ◆ Mill Creek at Klinger Road
- ◆ Millers Creek (all 7 sites)
- ◆ Norton Creek at West Maple Road
- ◆ Pettibone Creek at Commerce



photo: Marc Akemann



photo: Marc Akemann

Gary Crawford collects macroinvertebrates at the base of an eroding bank in Millers Creek. Left, he holds up a crayfish that was found.

# Follow-up at Troubled Sites

*An update on our investigation into the poor diversity in Chilson and Davis Creeks.*

After the January winter stonefly search, we revisited Chilson and Davis Creeks, where winter stoneflies have been routinely absent, although these are high quality streams. We were hoping to find the sensitive Perlodid stoneflies, which emerge from the stream slightly later than the winter stoneflies we look for in January. None were found in Davis Creek or at our Brighton Road site on Chilson Creek. However we found an individual broad-back stonefly (Family Taeniopterygidae) in Chilson at the Golf Course, just upstream of our Brighton Road site. While it seems peculiar to find only one

stonefly rather than a population, at least we know stoneflies can get to this portion of the creek.

This spring we monitored two additional sites to compare to the poor areas of Chilson and Davis Creeks. The new sites

Rushton Road site. These investigations have only begun. Hopefully by continuing to monitor in and around these sites, we'll identify what impairs the population there.

To continue the investigation, this summer, we will measure



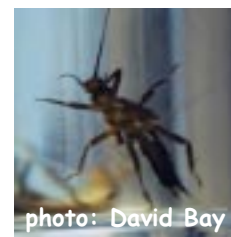
*The population at the new site looked even worse than the results from Rushton Road.*



*In February we found one broad-back stonefly (right) at the Golf Course and none at Brighton Road. Populations monitored at these sites this spring were equally poor.*

are: Chilson Creek at the Golf Course (to compare to our site at Brighton Road) and Davis Creek upstream of Limekiln Lake (to compare to our Rushton Road site). The macroinvertebrate population in the site on Chilson Creek looked very similar to the Brighton Road site, suggesting there are not major influences to the stream health between these sites. On Davis Creek, since dams usually have a negative effect on the biology of sites just downstream, we thought that a sight farther downstream from the dam might look better than our site just below the Nichwagh Lake Dam. Unfortunately, the population at this new site looked even worse than the

the dissolved oxygen in a few of our small wetland creeks including Chilson Creek, Woodruff Creek, and Hummocky Lick. We are interested to learn how much oxygen is available in the creek and how it fluctuates during the day. This may help us to understand why we don't find much diversity in part of Chilson Creek and why winter stoneflies are often lacking from these small wetland creeks.



*photo: David Bay*

*A single broad-back stonefly (Family Taeniopterygidae) was found in February at the Golf Course.*



# G l o s s a r y   o f   T e r m s

**Acceptable Ecological Quality** indicates that the quality of the site is about what we expect for a healthy site of its characteristics (drainage area, slope). The range included in this "acceptable" designation includes sites that are only minimally acceptable as well as good quality sites.

**Ecological Quality** is determined by the biological and physical quality of the site. The biological quality includes the diversity of insect families, EPT families and Sensitive families. The physical quality is determined by "measuring and mapping" assessments of habitat quality. These assessments involve examining characteristics of the stream such as the stream banks, measuring the stream widths and depths, and assessing what type of material (such as sand and gravel) is on the stream bottom. When interpreting the biological and physical quality, we expect more diversity at a site with a larger drainage area and a steeper slope.

**Conductivity** is an indication of the amount of dissolved ions (for example salt, metals) present in the water. It is determined using a meter that measures how easily electricity can flow through the water sample. If the average conductivity measured at a site is 800 microSiemens ( $\mu S$ ) or less, it is considered natural for stream water. Conductivity over 800  $\mu S$  is considered excessive and may indicate the presence of toxic substances. (Realize that many toxins, although harmful, are not measured by conductivity.) One source of elevated conductivity is development. At some of our sites with high levels of development and impervious surfaces (roads, driveways, roofs), rainwater washes chemicals, such as fertilizers and pet wastes, from the developed landscape into the creek.

**EPT Families:** Insects in the orders Ephemeroptera (the mayflies), Plecoptera (the stoneflies), and Trichoptera (the caddisflies) generally evolved in streams with high levels of oxygen and/or faster flowing waters. As a result, these insects are particularly sensitive to factors that reduce oxygen, reduce flow, increase temperature or otherwise raise metabolic rates.

**Families** - Families are a taxonomic grouping of similar insects (families are groups of similar genera which are groups of species).

**Insect Families:** This indicator gives us our best overall picture of the insect community's health. Because there are about 77 insect families in the Huron, this indicator can provide a good measure of ecological condition.

**Macroinvertebrate Diversity** - the number of macroinvertebrate groups (including insects, clams, leeches, etc.).

**Sensitive Insect Families:** This indicator counts the number of families that have been identified in scientific studies as particularly vulnerable to organic pollution (such as fertilizers, human or animal waste). In selecting these families we follow the published protocol of William Hilsenhoff from the University of Wisconsin.

**A Watershed** is the area of land that drains into the same waterway. Parts of seven counties in southeast Michigan drain into the Huron River and make up its watershed. The Huron, in turn, drains into Lake Erie and is part of the Great Lakes Watershed.

Please let us know how we can best work with you to protect the Huron River. We certainly want to hear about your interests and efforts. What would you like to do to help the river? What are you already doing?

Also, tell us what you think of this monitoring report: (734) 769-5971

Sincerely,  
Theresa Dakin  
tdakin@hrwc.org

&

Joan Martin  
jmartin@hrwc.org





## Spring 2002 Results and Population Changes

LOCATION	Insect Families	EPT Families	Sensitive Families	Population Diversity	Ecological Quality*
Arms Creek: Walsh Road	13	6	1	stable	2
Boyden Creek: Delhi	13	8	3	stable	1
Boyden Creek: Golf Course	10	4	1	stable	2
Boyden Creek: Huron R Dr	7	5	<b>2</b>	<b>INC</b>	3
Chilson Creek: Brighton Road	10	5	1	stable	3
Chilson Creek at Golf Course	14	5	1	NEW	NA
Chilson Creek: Chilson Road	14	6	2	stable	1
Davis Creek: Doane Road	8	4	1	stable	2
Davis Creek: Upstream of Limekiln Lake	3	1	0	NEW	NA
Davis Creek: Pontiac Trail	11	7	1	stable	2
Davis Creek: Rushton Road	9	3	0	stable	2
Davis Creek: Silver Lake	16	7	3	stable	1
Fleming Creek: Bot Gardens	14	7	4	stable	2
Fleming Creek: Geddes Rd.	10	5	1	stable	2
Fleming Creek: Radrick Farms	10	5	1	stable	2
Fleming Creek: Warren	9	4	2	stable	1
Griggs Drain	11	5	1	stable	2
Hay Creek	12	5	1	stable	1
Honey Creek (Livingston County): Darwin Rd.	<b>18</b>	<b>11</b>	6	<b>INC</b>	2
Honey Creek: Pratt	14	5	1	stable	3
Honey Creek: Wagner	9	3	2	stable	2
Horseshoe Creek:	9	4	0	stable	3
Hummocky Lick at M-36	12	4	3	NEW	NA
Huron Creek: near the mouth	11	<b>7</b>	3	<b>INC</b>	2
Huron River at Bell Road	21	7	2	NEW	NA
Huron River at Island Park	9	4	1	NEW	NA
Huron River at Proud Lake Rec. Area	17	9	2	NEW	NA
Huron River: US-23 (Liv. Co.)	14	7	2	stable	2
Huron River: Commerce Rd	11	4	1	stable	2
Huron River: Cross Street	5	3	1	stable	3
Huron River: Flat Rock	11	7	2	stable	3
Huron River: Zeeb Road	<b>21</b>	<b>9</b>	5	<b>INC</b>	2

\*Ecological Quality: 1 = Exceptional, 2 = Acceptable, 3 = Poor, NA = not enough data to assess conditions

**Bold** numbers indicate a population change (**INC**=increasing, **DEC**=declining) that is statistically significant at the 10% level or less.

## Spring 2002 Results and Population Changes

LOCATION	Insect Families	EPT Families	Sensitive Families	Population Diversity	Ecological Quality*
Huron River: White Lake Rd	18	10	4	stable	1
Malletts Creek: Chalmers	2	1	0	stable	3
Malletts Creek: I-94	5	1	0	stable	3
Malletts Creek: Main St.	5	1	0	stable	3
Malletts Creek: Scheffler	2	1	0	stable	3
Mann: VanAmburg Road	17	8	3	stable	2
Mill Creek: Jackson Road	9	<b>5</b>	2	<b>INC</b>	3
Mill Creek: Manchester Rd	11	6	3	stable	1
Mill Creek: Fletcher Road	8	4	1	stable	3
Mill Creek: Klinger Road	9	1	0	NEW	NA
Mill Creek: Letts at M-52	10	6	2	stable	2
Millers at Hubbard	7	1	0	NEW	NA
Millers at Huron Parkway	8	2	0	NEW	NA
Millers at Meadows	10	1	0	NEW	NA
Miller's Creek: Glazier	5	<b>2</b>	0	<b>INC</b>	3
Millers E. Branch at Baxter Road	5	0	0	NEW	NA
Millers trib. at Green Road	4	0	0	NEW	NA
Millers trib. at Lakehaven Drive	4	0	0	NEW	NA
Millers W. Branch at Plymouth Road	3	0	0	NEW	NA
Norton Creek: Loon Lake Outlet	8	4	1	NEW	NA
Norton Creek: West Maple Road	5	2	0	NEW	NA
Pettibone Creek at Commerce Road	14	4	0	NEW	NA
Pettibone Creek at Livingston Road	9	4	1	NEW	NA
Portage Creek: Unadilla	9	5	1	stable	2
South Ore Creek: Bauer Rd	<b>8</b>	5	3	<b>DEC</b>	2
South Ore Creek: Hamburg R	13	<b>8</b>	5	<b>INC</b>	2
South Ore Creek: Lake Ridge	6	2	0	stable	3
Swift Run	3	1	0	stable	3
Traver Creek: Broadway	<b>4</b>	1	0	<b>DEC</b>	3
Traver Creek: Dhu Varren	10	5	1	stable	2
Woodruff Creek: Buno Rd.	10	5	2	NEW	NA
Woodruff: Maxfield Rd.	11	4	1	stable	1

\*Ecological Quality: 1 = Exceptional, 2 = Acceptable, 3 = Poor, NA = not enough data to assess conditions

**Bold** numbers indicate a population change (**INC**=increasing, **DEC**=declining) that is statistically significant at the 10% level or less.