

Friends of the Rouge  
Benthic Macroinvertebrate Monitoring Program  
2010 Annual Report  
for the Alliance of Rouge Communities

## Summary

Friends of the Rouge held three sampling events in 2010: a Winter Stonefly Search on January 23, a Spring Bug Hunt on April 24 and a Fall Bug Hunt on October 16. A record attendance level occurred at the Spring Bug Hunt with 110 participants. Seventeen new team leaders were trained during the spring and fall trainings.

The spring sampling covered 48 sites, the fall covered 47 sites, and 29 sites were sampled for the Stonefly Search in January for a total of 73 sites that were visited during the 2010 calendar year. Team Leader Training was held prior to both the Spring and Fall Bug Hunts and Identification Nights were held following each.

Several new sites were added to the sampling this year. In the spring, two new sites were added on a tributary to the Johnson Creek near Maybury State Park (John8 & MR-22). In the fall, an additional Maybury site was added (MR-23), two new Lower branch sites - John Daly (LR-10) and Ford Field (LR-11) and three Main Branch sites – 10 Mile (Main7), Parkland Park (MN-4), and Fordson Island (Main8). The Fordson Island site was done as part of pre-monitoring for a GLRI-NOAA funded project to remove marine debris.

### 2010 Sampling Participation and Sites

Event	Winter Stonefly Search	Spring Team Leader Training	Spring Bug Hunt	Spring Identification Night	Mussel Survey	Fall Team Leader Training	Fall Bug Hunt	Fall Identification Night
Date	1/23/2010	4/21/2010	4/24/2010	5/10/2010	7/16/2010	10/3/2010	10/16/2010	10/28/2010
Meeting Location	UM-D, Dearborn	Stage Nature Center, Troy	UM-D, Dearborn	UM-D, Dearborn	Troy, B'ham & Bev. Hills	Stage Nature Center, Troy	Schoolcraft College, Livonia	UM-D, Dearborn
# volunteers	94	14	110	11	5	3	65	7
total sites sampled	29		48				47	
Sampled by Wayne County	2		21				21	

### 2010 Sites Sampled

BRANCH	FIELDID	Location/Site Description	Sampling Location	County	city township	ORG	ST10	SP10	F10
L	Fel1	Fellows Plymouth	Napier/Powell	Wayne	Plymouth Twp	FOTR	Y		Y
L	Fel2	South Fellows	Ford/Ridge	Wayne	Canton Twp	FOTR	Y	Y	Y
L	Fel4	Flodin Park	Saltz Rd, Morton Taylor/ Sheldon	Wayne	Canton Twp	FOTR	Y	Y	
L	Fowl1	Fowler Prospect	Prospect/Cherry Hill	Wayne	Superior Twp	FOTR	Y	Y	Y
L	Fowl2	Fowler Beck	Beck, N of Geddes, E side of Rd	Wayne	Canton Twp	FOTR	Y	Y	Y
L	Low2	Lower Ridge	Cherry Hill/Ridge	Wayne	Canton Twp	FOTR	Y		
L	LR-10	John Daly	Warren & Beck	Wayne	Inkster	WC			Y
L	LR-11	Ford Field	Brady & Cherry Hill	Wayne	Dearborn	WC			Y
L	LR-3	Goudy Park	Wayne & Michigan Ave	Wayne	Wayne	WC			Y
L	LR-5	Meadows of Canton	Lotz & Palmer	Wayne	Canton Twp	WC		Y	
L	LR-7	Ecorse & Hannan	Ecorse & Hannan	Wayne	Romulus	WC		Y	
L	LR-8	Lower Proctor	Ridge & Proctor	Wayne	Canton Twp	WC	Y	Y	Y
L	LR-9	Beck Warren/Tonda Elem	Warren & Beck	Wayne	Canton Twp	WC	Y	Y	Y
M	Bish2	Bishop Cr Scarborough	10 Mile/Meadowbrook	Oakland	Novi	FOTR		Y	
M	Ing1	Brookfarm Park	Willowbrook/10 Mile	Oakland	Novi	FOTR			Y

### 2010 Sites Sampled

BRANCH	FIELDID	Location/Site Description	Sampling Location	County	city township	ORG	ST10	SP10	F10
M	John1	JC 5M Salem	5 Mile/Salem Rd	Washtenaw	Salem Twp	FOTR	Y	Y	
M	John2	JC 5M NV	5 Mile/Ridge	Wayne	Northville Twp	FOTR	Y		
M	John3	JC 6M NV	6 Mile/Beck	Wayne	Northville Twp	FOTR	Y		
M	John5	JC FH	7 Mile/Sheldon	Wayne	Northville Twp	FOTR	Y		
M	John6	JC Hines	Hines/Sheldon	Wayne	Northville Twp	FOTR	Y	Y	
M	John7	JC Arcadia	S of 6 Mile, W of Beck	Wayne	Northville Twp	FOTR	Y		
M	John8	Maybury north	7 Mile & Napier	Wayne	Northville Twp	FOTR		Y	Y
M	Mid1	Northville Rec Area	Northville Rd/7 Mile	Oakland	Northville Twp	FOTR	Y		
M	MR-1	Northville Rec Area	Hines/7 Mile	Wayne	Northville Twp	WC	Y		
M	MR-13	Warrendale	Hines/Warren	Oakland	Dearborn Heights	WC			Y
M	MR-14	Smith Elementary	Byron/McKinley	Wayne	Plymouth	WC	Y	Y	
M	MR-15	Outer Drive	Ford Road/Outer Drive	Wayne	Dearborn	WC		Y	
M	MR-16	Tonquish - Canoe Park	W of Ann Arbor Trail/Hines	Wayne	Westland	WC		Y	
M	MR-17	I-275 clam bar	West of I-275	Wayne	Plymouth Twp	WC	Y	Y	Y
M	MR-18	Springbrook Rec Area	E of M-14 on Hines	Wayne	Plymouth Twp	WC	Y	Y	Y
M	MR-19	Tonquish - Joy Rd	Joy/Lilley	Wayne	Plymouth Twp	WC		Y	Y
M	MR-2	Reservoir Road	S of 6 Mile, E of Hines	Wayne	Northville Twp	WC	Y		
M	MR-20	Waterford Bend	Waterford Bend	Wayne	Northville Twp	WC	Y	Y	Y
M	MR-22	Maybury south	7 Mile N & Napier	Wayne	Northville Twp	WC		Y	Y
M	MR-23	Maybury north	8 Mile	Oakland	Northville Twp	WC			Y
M	MR-2a	Reservoir Road W	S of 6 Mile, E of Hines	Wayne	Northville Twp	WC	Y	Y	
M	MR-4	Levan Knoll	W of Levan Knoll, S of Hines	Wayne	Livonia	WC		Y	
M	MR-8	Inkster Road	W of Inkster, S of Hines	Wayne	Westland	WC		Y	Y
M	Ton1	Plymouth Twp Pk	Beck/Ann Arbor Tr	Wayne	Plymouth Twp	FOTR	Y		Y
M	Ton1/2	Canton Ctr	Canton Ctr Rd, N of Ann Arbor Rd	Wayne	Plymouth Twp	FOTR	Y	Y	Y
M	Ton2	Tonquish-Ann Arbor Rd	Ann Arbor Rd/Lilley	Wayne	Plymouth	FOTR	Y	Y	
M	Wall1	Rotary Park	9 Mile/Meadowbrook	Oakland	Novi	FOTR			Y
M	Wall3	WL 12 M	12 Mile/Taft	Oakland	Novi	FOTR		Y	
M	Wall4	Ford Field	Northville/Main Street	Wayne	Northville	FOTR		Y	
MN	Frank1	Franklin Cider Mill	14 Mile/Franklin Rd	Oakland	Franklin	FOTR		Y	
MN	Frank2	Inkster pumping station	Inkster & Farmington	Oakland	Farmington Hills	FOTR		Y	Y
MN	Main3	Booth Park	Old Woodward/Euclid	Oakland	Birmingham	FOTR		Y	
MN	Main4	B'ham	15 Mile/Southfield	Oakland	Birmingham	FOTR		Y	Y
MN	Main4.5	Fairway Park	Lincoln/Southfield	Oakland	Birmingham	FOTR		Y	
MN	Main5	Douglas Evans	Evergreen/13 Mile	Oakland	Beverly Hills	FOTR			Y
MN	Main6	Sfld	Civic Center Dr/Telegraph	Oakland	Southfield	FOTR			Y
MN	Main7	Sfld 10 Mile	10 Mile	Oakland	Southfield	FOTR			Y
MN	Main8	Fordson Island	Fort Street	Wayne	Detroit Dearborn	FOTR			Y
MN	MN-1	Eight Mile	Eight Mile East of Telegraph	Wayne	Detroit	WC	Y	Y	Y
MN	MN-2	Eliza Howell	5 Mile/Telegraph	Wayne	Detroit	WC		Y	Y
MN	MN-4	Parkland Park	Ann Arbor Trail	Wayne	Dearborn Heights	WC			Y
MN	Mur2	Roeper School	41190 Woodward	Oakland	Bloomfield Hills	FOTR		Y	Y
MN	Nott	Country Day MS	Lahser/13 Mile	Oakland	Beverly Hills	FOTR			Y
MN	Peb1	Pebble Creek-Danvers	28314 Danvers Ct	Oakland	Farmington Hills	FOTR			Y
MN	Sprag	Lloyd Stage	6685 Coolidge	Oakland	Troy	FOTR		Y	Y

2010 Sites Sampled									
BRANCH	FIELDID	Location/Site Description	Sampling Location	County	city township	ORG	ST10	SP10	F10
U	Bell1	Bicentennial Park	7 Mile/Newburgh Rd	Wayne	Livonia	FOTR		Y	Y
U	Bell2	Schoolcraft College	6 Mile/Haggerty	Wayne	Livonia	FOTR	Y	Y	Y
U	Bell3	Livonia 6 Mile	6 Mile/Farmington	Wayne	Livonia	FOTR		Y	Y
U	Min2	OCC	Farmington Rd	Oakland	Farmington Hills	FOTR		Y	Y
U	Min3	Dunkel MS	12 Mile/OL	Oakland	Farmington Hills	FOTR		Y	Y
U	See2	Sleepy Hollow	Drake/11 Mile	Oakland	Farmington Hills	FOTR		Y	Y
U	See3	Seeley Creek Trail	Kennedy Court	Oakland	Farmington Hills	FOTR		Y	Y
U	Up1	Heritage Pk	Farmington/10 Mile	Oakland	Farmington Hills	FOTR	Y		Y
U	Up2	Shiawassee Pk	Shiawassee/Power	Oakland	Farmington	FOTR	Y		Y
U	UR-1	Lola Valley	Kinloch	Wayne	Redford Twp	WC		Y	
U	UR-2	Bell Creek Park	5 Mile/Inkster	Wayne	Redford Twp	WC		Y	Y
U	UR-3	Tara 7 Mile	7 Mile/Merriman	Wayne	Livonia	WC		Y	Y
U	UR-4	Five Mile Beech Daly	east of Inkster	Wayne	Redford Twp	WC			Y

There were two significant findings that received some very positive news coverage this year. One was the finding of a stonefly for the first time on the Main Branch. Stoneflies had not been found before in any tributaries or main sections of the Main Branch despite many years of searching. Found by Wayne County at an unlikely site in Detroit just south of Eight Mile, this was also a new type of stonefly not seen before in the Rouge – Taeniopterygidae or broad-backed stonefly. A press release was sent out and the new stonefly finding was covered by many newspapers and featured on National Public Radio's Craig Fahle show.

In addition to the new type of stonefly, a new type of caddisfly was identified from the Spring Bug Hunt. The free living caddisfly (*Rhyacophila lobifera*) had no records previously for the state of Michigan and UM biologist Michael Wiley confirmed the identification. This finding also received good news coverage.

In the spring, 37 sites had three or more years of past data. Of these 37 sites, six improved and none declined. In the fall, 31 sites had past data and most showed no change. One fall site improved and three declined. In addition to site-by-site comparisons, we compared a rolling three year average for sites by branch. This showed a possible upward trend in scores for the Middle Branch and possible downward trend for scores in the Main Branch. As of fall 2010, 68 families of aquatic insects have been confirmed in the Rouge River. Detailed results from each sampling event are attached.

#### Mussel Surveys

In addition to the regular sampling events, FOTR worked with MDEQ biologist Joe Rathbun to survey for Unionidae mussels. Joe conducted surveys for these very sensitive macroinvertebrates in 1998-2003. In July, FOTR and volunteers searched for mussels with Joe to determine what changes had happened to these populations since 2003. Surveys were done on the Main Branch of the Rouge River and one site on Bell Creek in Livonia. A new species was identified at Firefighters Park in Troy (paper pondshell) but sites downstream all had fewer live mussels than in the past. Additional mussel surveys are planned for the Middle Branch in spring 2011.

## **Reports**

*2010 Winter Stonefly Search*

*2010 Spring Bug Hunt*

*2010 Fall Bug Hunt*

*2010 Mussel Surveys*

# Rouge River Watershed 2010 Winter Stonefly Search



Ninety-four volunteers attended Friends of the Rouge's 2010 Winter Stonefly Search on January 23 hosted at the University of Michigan-Dearborn's Environmental Interpretive Center. A group of students from Eastern Michigan University participated for the second year in a row. Wayne County Department of Public Services Water Quality Management Division (WC) sampled an additional two sites and Schoolcraft College students sampled one site on their campus.

*Stoneflies are sensitive indicators of healthy streams. Unlike other insects, winter stoneflies develop into adult flies in the winter. The Winter Stonefly Search is part of Friends of the Rouge's volunteer benthic monitoring program.*

Stoneflies were found for the first time in the Main Branch and the type found is a new species for this program. After eight years of sampling tributaries and major branches of the Main Rouge and coming up short, a broad-backed stonefly (Taeniopterygidae) was found on February 9 at Eight Mile and Telegraph by WC.

Twenty-nine sites were sampled and twenty of these had stoneflies. Most of the stoneflies found were slender winter stoneflies (Capniidae), genus *Allocapnia*. The exceptions were the Main branch site with the broad-back stonefly, Fellows Creek at Warren & Beck with Perlodid stoneflies in addition to slender winter stoneflies, and the Johnson Creek site at 5 Mile and Salem Road with three families: Capnids (*Allocapnia*), Perlodids and a Nemouridae.

## Lower Rouge

Fellows Creek and the Lower Rouge had stoneflies at seven of the eight sites sampled. One Fellows Creek site even had two families (Capniidae and Perlodidae) and stoneflies were found as far downstream as Flodin Park. This surprised FOTR staff to find stoneflies so far downstream and since the team lost their specimen, the site was re-sampled to confirm the results.

## Main Rouge

Wayne County employees sampling the Main Rouge at Eight Mile Road and Telegraph found Taeniopterygidae, the broad-back stonefly. The genus found (*Taeniopteryx*) is relatively tolerant, but this is still very significant to have stoneflies at all in the Main Rouge and so far downstream as Eight Mile Road.

## Middle Rouge

Eleven of the 17 sites sampled on the Middle Rouge had stoneflies. All six Johnson Creek sites had them and they were found on the Middle branch as far downstream as Springbrook Recreation Area, just south of M-14. Tonquish Creek did not have any stoneflies at any of the four sites sampled. This is troubling in that three Tonquish Creek sites have had stoneflies in the past.

## Upper Rouge

Capnid (*Allocapnia*) stoneflies were found once again in the Upper Branch - in Heritage Park. This is only the third time stoneflies have been found in the Upper Rouge and the first time since 2005. They were not found downstream in Shiawassee Park or in the Bell Branch at Schoolcraft College.

Thank you to all the volunteers! The Winter Stonefly Search is part of Friends of the Rouge's long term volunteer monitoring program and is supported by the Alliance of Rouge Communities. Please join us for the Spring Bug Hunt on Saturday April 24, 2010.

**See the results on a Google map at [www.therouge.org](http://www.therouge.org)**

**Spring Bug Hunt - Sat. April 24 9am-4 pm UM-D EIC \*Register by 4/9\***

Team Leader Training March 21 (must have previously attended an event)

**[www.therouge.org](http://www.therouge.org)** (register online)

**(313) 792-9621**



**[monitoring@therouge.org](mailto:monitoring@therouge.org)**

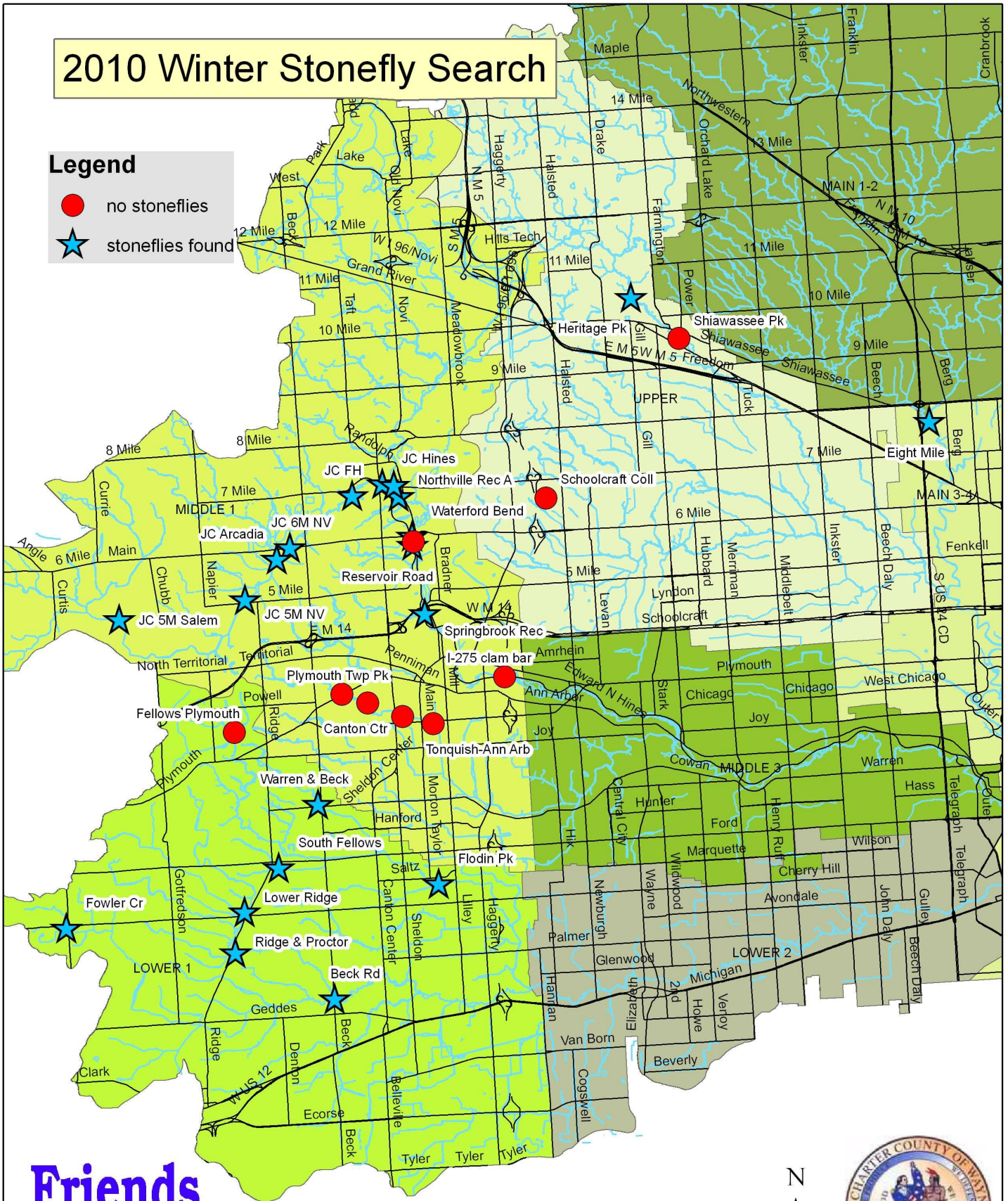
Coordinated by Friends of the Rouge and supported by the Alliance of Rouge Communities.



# 2010 Winter Stonefly Search

## Legend

-  no stoneflies  
 stoneflies found



# Friends of the ROUGE

A horizontal scale bar with markings at 0, 0.5, 1, 2, 3, 4, and 5 miles. The bar is divided into segments of varying lengths and colors (black and white).



## 2010 Winter Stonefly Search Results

Branch	Fieldid	Site Name	Location	Waterbody	Longitude	Latitude	Stoneflies Found?	Type of Stonefly Found
Lower	Fel1	Fellows Plymouth	Napier/Powell	Fellows Creek	-83.53988	42.35729	N	
Lower	Fel2	South Fellows	Ford/Ridge	Fellows Creek	-83.52460	42.31932	Y	Capniidae
Lower	Fel4	Flodin Pk	Saltz Rd, Morton T. & Sheldon	Fellows Creek	-83.46471	42.31346	Y	Capniidae
Lower	Fowl1	Fowler Cr	Prospect/Cherry Hill	Fowler Creek	-83.60516	42.30423	Y	Capniidae
Lower	Fowl2	Beck Rd	Beck Road, N of Geddes	Fowler Creek	-83.50515	42.28226	Y	Capniidae
Lower	Low2	Lower Ridge	Cherry Hill/Ridge	Lower Rouge	-83.53793	42.30724	Y	Capniidae
Lower	LR-8	Ridge & Proctor		Lower Rouge	-83.54185	42.29598	Y	Capniidae
Lower	LR-9	Warren & Beck		Fellows Creek	-83.50924	42.33667	Y	Capniidae, Perlodidae
Main	MN-1	Eight Mile	8 Mile/Telegraph	Main Rouge	-83.27139	42.39972	Y	Taeniopteryx
Middle	John1	JC 5M Salem	5 Mile/Salem	Johnson Creek	-83.58194	42.38970	Y	Capniidae, Perlodidae, Nemouridae
Middle	John2	JC 5M NV	5 Mile/Ridge	Johnson Creek	-83.53440	42.39424	Y	Capniidae
Middle	John3	JC 6M NV	6 Mile/Beck	Johnson Creek	-83.51693	42.40844	Y	Capniidae
Middle	John5	JC FH	Fish Hatchery Park	Johnson Creek	-83.49289	42.42240	Y	Capniidae
Middle	John6	JC Hines	Hines/Sheldon	Johnson Creek	-83.48138	42.42546	Y	Capniidae
Middle	John7	JC Arcadia	Arcadia, 6 Mile & Beck	Johnson Creek	-83.52199	42.40528	Y	Capniidae
Middle	Mid1	Northville Rec Area	Northville Rd/7 Mile	Middle Rouge	-83.47546	42.42177	Y	Capniidae
Middle	MR-1	Northville Rec Area	Hines/7 Mile	Middle Rouge	-83.47712	42.42487	Y	Capniidae
Middle	MR-17	I-275 clam bar	West of I-275	Middle Rouge	-83.43757	42.37047	N	
Middle	MR-18	Springbrook Rec Area	East of M-14 on Hines	Middle Rouge	-83.46693	42.38892	Y	Capniidae
Middle	MR-2	Reservoir Road	S of 6 Mile, E of Hines	Middle Rouge	-83.47076	42.40800	Y	Capniidae
Middle	MR-20	Waterford Bend	Waterford Bend	Middle Rouge	-83.47079	42.41054	Y	Capniidae
Middle	MR-2a	Reservoir Road West	S of 6 Mile, E of Hines	Middle Rouge	-83.47040	42.40890	N	
Middle	Ton1	Plymouth Twp Pk	Beck/Ann Arbor Tr	Tonquish Creek	-83.49895	42.36701	N	
Middle	Ton1/2	Canton Ctr	Canton Ctr Rd	Tonquish Creek	-83.48939	42.36437	N	
Middle	MR-14	Smith Elementary	Byron/McKinley	Tonquish Creek	-83.47638	42.36027	N	
Middle	Ton2	Tonquish-Ann Arbor Rd	Ann Arbor Rd/Lilley	Tonquish Creek	-83.46507	42.35809	N	
Upper	Bell2	Schoolcraft College	6 Mile/Haggerty	Bell Branch	-83.42000	42.42000	N	
Upper	Up1	Heritage Pk	Farmington/10 Mile	Upper Rouge	-83.38567	42.47526	Y	Capniidae
Upper	Up2	Shiawassee Pk	Shiawassee/Power	Upper Rouge	-83.36811	42.46323	N	





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## Rouge River Benthic Monitoring Program Spring 2010 Report

This report covers benthic macroinvertebrate sampling at 48 sites on Rouge River tributaries and branches in the spring of 2010. Twenty-six sites were sampled by Friends of the Rouge (FOTR) volunteers and staff, 21 sites were sampled by Wayne County

Department of Public Service Water Quality Management Division, and one site was sampled by Schoolcraft College students. Most of Friends of the Rouge's sites were sampled on April 24 & 25 during the Spring Bug Hunt in which 110 volunteers participated.

### Benthic Scores

Each site is given a quality score which is determined by weighting each type and number of organisms found by their sensitivity ratings. A higher proportion of sensitive organisms such as mayflies and caddisflies results in a higher score. A number of different organisms also results in a high score. The quality score is then given a rating:

>48 = EXCELLENT  
34-48 = GOOD  
19-33 = FAIR  
<19 = POOR

Number of taxa represents the number of different families of organisms. A higher number of taxa indicate a healthier site.

EPT refers to the number of mayfly, caddisfly and stonefly families found; these three orders contain some of the most sensitive organisms.

Sensitive Families refers to insects that are rated 1 on the Hilsenhoff Sensitivity Index.

### Overall Scores

The highest score for any site in the watershed in all ten years of Friends of the

Rouge's sampling on the Rouge River was 62 (excellent) at Sump Drain (John8), a tributary to the Johnson Creek that runs through Maybury State Park (see Table 1). An additional site on Fellows Creek at Warren and Beck (LR-9) also rated excellent with a score of 53. The average score for all sites was 32 or fair and most sites scored fair. Only one site had a poor score – Tarabusi Creek at 7 Mile Rd (UR-3), a tributary to the Upper Rouge.

Thirty seven sites had three or more years of data so the means could be compared. Of these, 6 were above one standard deviation of the mean for the site. No sites were below a standard deviation.

Sensitive Families were found at eleven sites (see Table 2). Nemourid broadback stoneflies which previously had only been

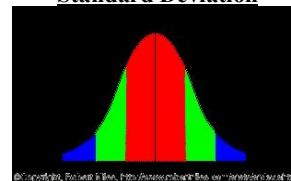
found at one site in the Johnson Creek (John1) were also found in Sump Drain (John8) as well as in Fellows Creek (LR-9). Rhyacophilid (free-living) caddisflies were found for the first time in the Johnson Creek (John1). Biologist Bruce McCulloch identified the Rhyacophilids to species - *Rhyacophila lobifera* – and also found that we may be the first to find and identify this species in Michigan! (see below article by Bruce McCulloch)

Pronggill mayflies (Leptophlebiidae) were found for the first time at Fel2 as well as at John8, raising the number of known sites with this family from 5 to 7. Clubtail dragonflies (Gomphidae) continue to thrive at only one site in Troy (Sprag). Dobsonflies (Corydalidae) were also found there, making Sprague Creek one of only seven known sites with dobsonflies in the Rouge River watershed.

### FRIENDS OF THE ROUGE BENTHIC MONITORING PROGRAM

FOTR's benthic monitoring program was started in 2001 to involve a large number of volunteers in monitoring the health of the watershed by sampling the creeks of the Rouge River. The types and number of benthic macroinvertebrates found can be used to assess water quality. Each team of volunteers samples two sites under the direction of a trained team leader. Samples of each organism are collected and field identifications are verified in the lab. The program is supported, in part, by the Alliance of Rouge Communities and in cooperation with Wayne County Department of Public Services Water Quality Management Division.

### Standard Deviation



Some sites have consistent scores where others vary greatly year to year. Standard deviation is a measure of how spread out your data is. 68% of your data will fall within one standard deviation of the mean (red areas shown above). On Charts 1-5, one standard deviation is represented by the vertical lines for each site. Standard deviation helps us to determine whether the current score is within normal for the site.

### Free-living Caddisfly (*Rhyacophila lobifera*) Likely a New Record for the State by Bruce McCulloch

In the Spring 2008 Report, I wrote an article describing the first recorded specimen of a predacious caddisfly (*Rhyacophila lobifera*; Family Rhyacophilidae) in the Rouge River watershed. It was collected in the Lower Rouge at Cherry Hill and Ridge roads (Low2). The individual was large, likely in its last instar stage. At the time of that article, I did not realize that not only was it a new species for the Rouge, but also likely a new species for Michigan. According to the Aquatic Insects of Michigan website (maintained until recently by Ethan Bright), *Rhyacophila lobifera* has been found in Ohio, Indiana, Illinois

and the province of Ontario, but is not listed as occurring in Michigan. Given its occurrence in these adjacent or nearby states/province, its occurrence in Michigan is not surprising. The story doesn't quite end there. Re-examination of a collection made at the same Lower Rouge site in spring 2003 revealed another specimen, which was smaller than the one collected in 2008. Then on March 3, 2010, FOTR staff Cyndi Ross, Emily Hughes, Wayne Roper and Randi Fires collected a third specimen at a different site and branch of the watershed (Johnson Creek at 5 Mile and Salem roads/Middle Branch-John1). This specimen was intermediate in length to the aforementioned two individuals.

Rhyacophilid caddisflies are free-ranging and lack cases until the fifth (and final) instar, when a crude dome-like case is built for pupation (Waters 2000). Most Rhyacophilids occupy cool running waters, where they forage under rocks for prey such as other caddisflies, black fly larvae (Wiggins 2004) and fish eggs (Voshell 2002). Other members of this family, however, feed on algae and vascular plants (Wiggins 2004). Characteristics of this family include: abdominal segments separated by prominent constrictions; presence of a dorsal sclerite (plate) on the last abdominal segment; and prominent anal prolegs each with a large claw (Wiggins 2004). Most Rhyacophilid caddisflies are bright green when alive but take on a purple hue when placed in alcohol (Voshell 2002). Fly fishers refer to members of this family as green sedges (Troutnut website). While the family as a whole is classified as "sensitive", some members such as *Rhyacophila lobifera* can inhabit intermittent streams (CTAP website), where diapausing eggs bridge the dry phase and allow the life cycle to continue (Wiggins 2004). When the site on the Lower Rouge was sampled in the fall of 2008, the section of streambed where sampling usually occurs was in fact dry, so sampling was conducted downstream where water was present.

### Literature Cited

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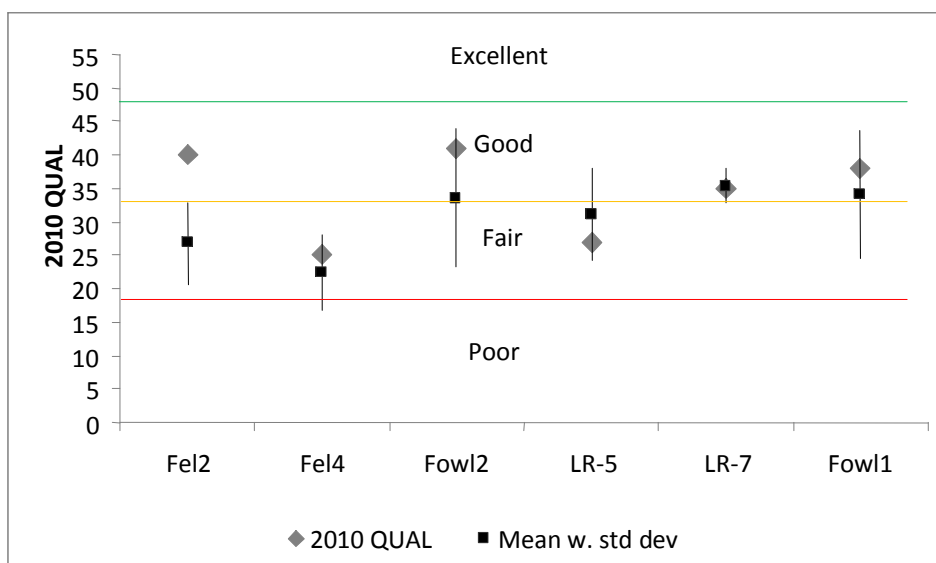
### **Lower Branch**

Eight sites were sampled on the Lower Branch of the Rouge (see Table 1). Three tributaries were sampled: Delaney Creek (LR-7), Fellows Creek (Fel2, Fel4, LR-5 & LR-9), Fowler Creek (Fowl1 & Fowl2) and one site on the main branch of the Lower (LR-8). One site scored EXCELLENT (LR-9), five of the sites scored GOOD and two scored FAIR. There were no POOR scores on the Lower branch. Six of the sites had enough past data to compare scores (see Chart 1). All were within one standard deviation of the mean with the exception of Fel2 which scored above a standard deviation of the mean.



Creek Chub found at Flodin Park (Fel4)  
photo credit: M. Gruelle

**Chart 1: 2009 Lower Branch Scores with Standard Deviation**



### Delaney Creek

Delaney Creek (LR-7) near Hannan and Ecorse Roads in Romulus had an average score and number of taxa (17) for the site. This site varies little over time.

### Fellows Creek

Four sites on the Fellows Creek tributaries were sampled. The upstream sites rated EXCELLENT (LR-9) and GOOD (Fel2). Sensitive families were found at both LR-9 and Fel2 (see Table 2) with Perlodid stoneflies at both sites. At Fel2, the team led by Martha Gruelle and Al Sadler also found prongill mayflies (Leptophlebiidae). The downstream sites (Fel4 & LR-5) both scored FAIR. LR-5 was sampled during Rouge Rescue on June 5 so that cleanup volunteers could see the life in the stream.

### Fowler Creek

Fowler Creek was sampled at two locations (Fowl1 & Fowl2) and both had GOOD scores. The team that sampled both sites, led by biologists Bruce McCulloch and Andrew Tluczek, found a very high number of EPT (mayflies, stoneflies & caddisflies) including a seldom seen type of stonefly at Fowl2 – Nemourid broad-backed stoneflies.

### Lower

Only one main Lower branch site was sampled – an upstream site at Ridge & Proctor (LR-8). The site, sampled by Wayne County staff, rated GOOD with 18 taxa, 4 EPT and the sensitive Perlodid stoneflies.

## Main Branch

Nine sites on the Main Branch were sampled. Three were on tributaries: Franklin, Murphy, and Sprague Creeks. Scores ranged from FAIR to GOOD. Eight sites had three years of data and of these, Main3 and Main4 were above one standard deviation of the mean.

### Franklin Creek

Two Franklin Creek sites (Frank1 & Frank2) were sampled by a team led by Laura Steiner and Miles Robinson. Both scored FAIR and showed no change from past sampling.



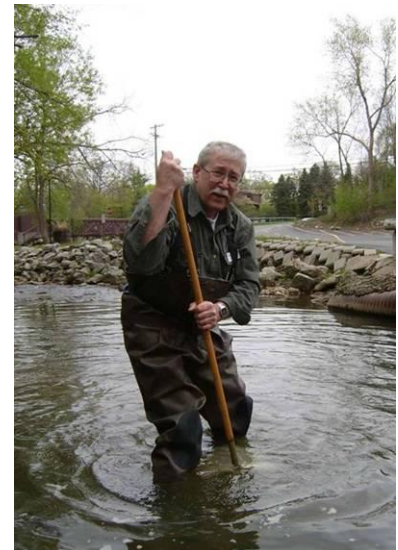
Josh Eisenman at Mur2  
photo credit: Susan Guenther

### Murphy Creek

Murphy Creek (Mur2) was sampled the day after the Bug Hunt by a group from Roeper School led by team leaders Bill Eisenman, Miles Robinson and Tom Steiner. Despite the rain overnight, the site had a FAIR score, showing no change.

### Sprague Creek

Sprague Creek (Sprag) in Troy was sampled near the Lloyd Stage Nature Center during the Team Leader training and it had a GOOD score. Sensitive clubtail dragonfly larvae and dobsonfly larvae were found there again.



Chester Marvin demonstrates the riffle dance at Frank1  
photo credit: C. Marvin?



**Chart 2: Franklin, Murphy, and Sprague Creeks and the Main Rouge Scores and Standard Deviation**



Main 4 & Main4.5 Team self-portrait  
photo credit: Josh Springer

### Main

Five sites were sampled on the Main Branch. The upstream sites (Main3 & Main4) both had GOOD scores and were above a standard deviation of the mean for the sites. Further downstream at Fairway Park (Main4.5), team leaders Michael Mogill, Sherrie & Josh Springer still found 3 EPT and the site had a high FAIR score (33).

Wayne County sampled two bigger river sites at Eliza Howell Park near Fenkell (MN-2) and at Eight Mile (MN-1). Both sites scored FAIR but MN-1 had more taxa than the upstream MN-2. MN-1 is the site where a *Taeniopteryx* (broad-backed) stonefly was found during the Winter Stonefly Search. This was the first stonefly ever found in the Main Rouge or any of its tributaries AND the first time we had ever found *Taeniopteryx* stoneflies.

### Middle Branch

Twenty-one sites were sampled on the Middle branch including four tributaries: Bishop, Johnson, Tonquish, and Walled Lake Creeks. Sites ranged from FAIR to GOOD with one EXCELLENT score. Eighteen sites had enough past data to do comparisons. Of these, two were above a standard deviation of the mean (John6 & Wall2)

#### Bishop Creek

Bishop Creek (Bish2), sampled by Cyndi Ross and Jon Phipps, had a FAIR score and showed little change.

#### Johnson Creek

Four Johnson Creek sites were sampled this spring and two were new sites on a tributary to the Johnson Creek called Sump Drain (John8 & MR-22). Team leader and Wayne County employee Sue Thompson discovered this creek that flows through Maybury State Park through her frog & toad survey work in the park. John8 had the highest score ever since FOTR started sampling! There were two types of stoneflies (Perlodid and Nemourid) as well as pronggill mayflies.



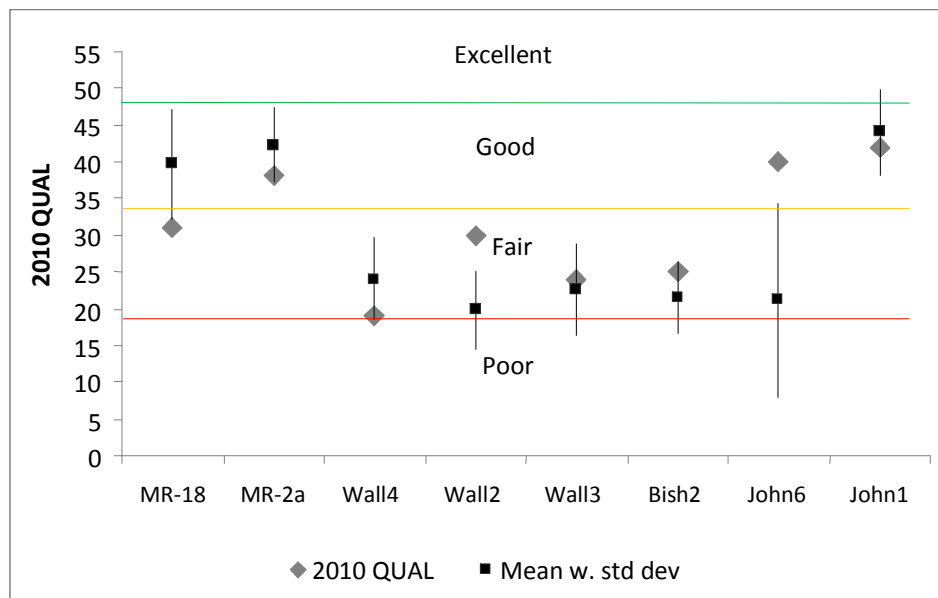
Wall2 Team  
photo credit: Cyndi Ross

John1 was sampled earlier in March by FOTR staff during a training session. The site also had three sensitive species including the possibly new species for the state – *Rhyacophilid* caddisflies. John6, just before the confluence with the Middle Rouge, did not have any of these sensitive species but did score well above a standard deviation of the mean for the site.

### Walled Lake Drainage

In the Walled Lake Drainage system, three sites were sampled. All three (Wall2, Wall3, Wall4) were in the FAIR range. The Wall2 site was above a standard deviation for the mean. At Wall4, JoAnne Dudek and Melissa Erickson's team was surprised to find only 7 taxa despite large boulders and fast moving water.

**Chart 3: 2009 Bishop & Johnson Creek, Walled Lake Drainage & Middle Scores with Standard Deviation**



### Tonquish Creek

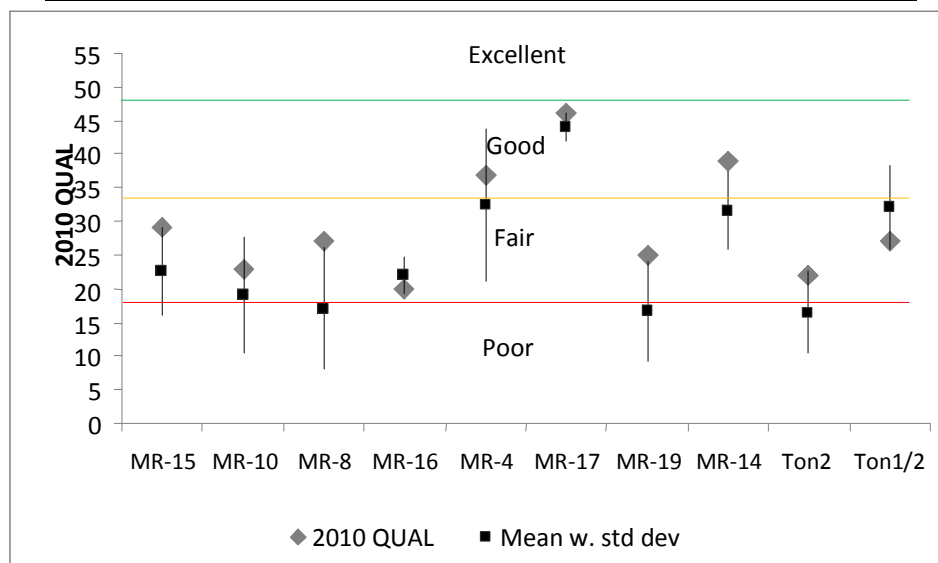
The Tonquish Creek was sampled at five sites. MR-14 (Smith Elementary) scored GOOD while the other four were FAIR Steve Weis and Laura Corsun found little change at Ton1/2 and Ton2 with FAIR scores. Further downstream, MR-19 and MR-16 showed no change. This Creek has had some POOR scores in the past so it is hopeful not to see a decline.



### Middle Branch

There were eight sites on the Middle Branch. Scores were all within a standard deviation of the mean though the upstream sites trended lower than average (MR-2a & MR-18) and the downstream sites trended higher (MR-17, MR-4, MR-8, MR-10, MR-15).

**Chart 4: Tonquish Creek and Middle Rouge Scores and Standard Deviation**

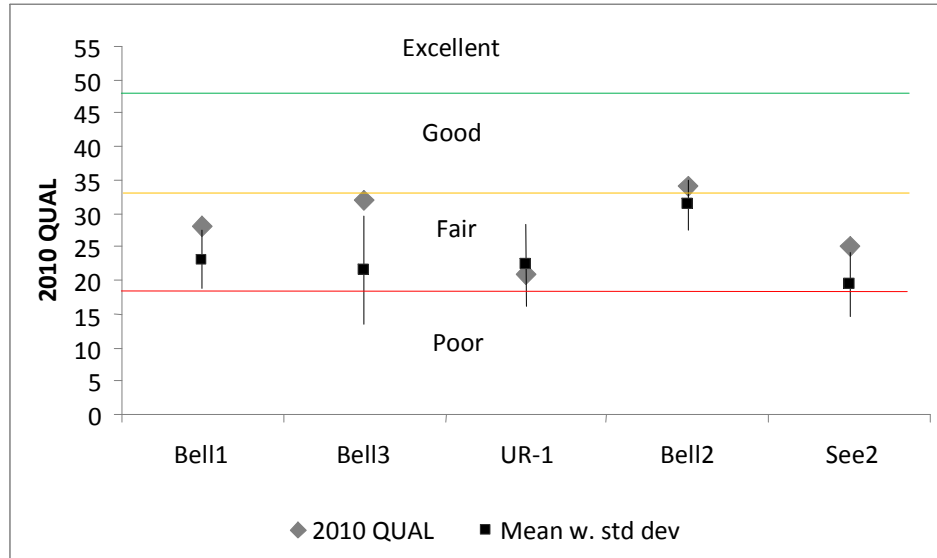




## Upper Branch

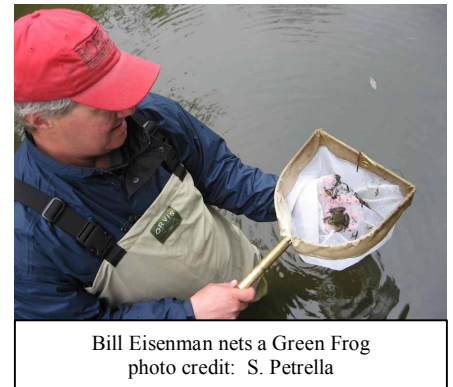
Ten Upper branch sites were sampled this spring, including four tributaries: Bell, Minnow Pond, Seeley & Tarabusi Creeks. Most sites scored FAIR (8) and one sites scored GOOD (Bell2). The only POOR score in the watershed was at UR-3 (Tarabusi Creek). There were no sensitive families found in the Upper branch or its tributaries. Of the five sites with past data, one scored above a standard deviation of the mean (Bell3).

**Chart 5: Bell, Minnow Pond, Seeley and Tarabusi Creeks and the Upper Rouge Scores and Standard Deviation**



### Bell Branch

Bell Creek showed some improvement this spring. Bell2 at Schoolcraft College sampled by students was GOOD rather than FAIR for the second spring in a row. Bell1 and Bell3 were resampled by team leaders due to the loss of some specimens. Bell3 was above a standard deviation of the mean. A large mussel was found at Bell1 and team leader Bill Eisenman was surprised to net a green frog (see photo at left)! This site is getting a buffer zone planted so should show even more improvement over time.



Bill Eisenman nets a Green Frog  
photo credit: S. Petrella

### Minnow Pond Creek

Doug & Sandy Wallace led a team that sampled Minnow Pond both at Dunckel Middle School (Min3) and Oakland Community College. Both sites rated FAIR.



Seeley Creek Sleepy Hollow site (See2)  
Photo credit: Dan Beckett  
[www.dbeckett.com/photos](http://www.dbeckett.com/photos)

### Seeley Creek

Both Seeley Creek sites scored FAIR and had 2 EPT. Team leaders Lisa Austin and Jeff Vallender were surprised to find mayflies and caddisflies at See3 and two types of caddisflies at See2 (Sleepy Hollow). See2 has had a POOR score in the past so a this was a good sign. The See3 site was resampled due to concerns over slumping banks at the site.

**Tarabusi Creek**

Tarabusi Creek (UR-3) had the only POOR score in the watershed. Only six taxa were found.

**Upper Rouge**

Lola Valley Park (UR-1) showed no change from the average with a FAIR score, 8 taxa and 2 EPT.



damselfly larvae

**THANK YOU!!!!**

Thank you to all the **volunteers** and **Team Leaders**, **Schoolcraft College**, **Wayne County**, especially **Sue Thompson** for sampling and providing data for 21 sites, **Krispy Kreme** for giving us half price donuts, **Bruce McCulloch** for identifying our bugs, graphing data and advising us, **Andrew Tluczek** for identifying bugs, **University of Michigan-Dearborn** for providing the meeting place for the Spring Bug Hunt and a lab for identification night, and the **Alliance of Rouge Communities** for funding the program.

Join us for the  
**Fall Bug Hunt**  
**Oct. 16, 2010**

**Schoolcraft College VisTaTech Center**  
**9am-4pm**

**Sign up online today**

**[www.therouge.org](http://www.therouge.org)**

Friends of the Rouge's Benthic Macroinvertebrate Monitoring Program is supported, in part, by the Alliance of Rouge Communities and conducted in partnership with Wayne County.

Table 1: Spring 2010 Rouge Benthic Macroinvertebrate Monitoring Results										
Branch	Creek	FIELDID	Site Location	Sampling Date	Agency	Rate	Score	Total # Taxa	EPT	# Sens Fam
Lower	Delaney	LR-7	Ecorse & Hannan	17-May	WC	35	good	17	1	0
Lower	Fellows	Fel2	Ford/Ridge	24-Apr	FOTR	40	good	14	3	2
Lower	Fellows	Fel4	Flodin Pk	24-Apr	FOTR	25	fair	11	0	0
Lower	Fellows	LR-5	Lotz & Palmer	5-Jun	WC	27	fair	15	1	0
Lower	Fellows	LR-9	Warren & Beck	17-May	WC	53	exc	21	3	1
Lower	Fowler	Fowl1	Prospect/Cherry Hill	24-Apr	FOTR	38	good	17	6	1
Lower	Fowler	Fowl2	Beck Road, N of Geddes	24-Apr	FOTR	41	good	16	5	1
Lower	Lower	LR-8	Ridge & Proctor	17-May	WC	40	good	18	4	1
Main	Franklin	Frank1	Franklin Cider Mill	24-Apr	FOTR	23	fair	9	1	0
Main	Franklin	Frank2	Inkster & Farmington	24-Apr	FOTR	25	fair	9	2	0
Main	Main	Main3	Booth Park	25-Apr	FOTR	37	good	12	2	0
Main	Main	Main4	B'ham-15 Mile	24-Apr	FOTR	34	good	16	2	0
Main	Main	Main4.5	Fairway Park	24-Apr	FOTR	33	fair	14	3	0
Main	Main	MN-1	Eight Mile	28-May	WC	29	fair	11	2	0
Main	Main	MN-2	Eliza Howell	28-May	WC	19	fair	7	1	0
Main	Murphy	Mur2	Roeper School	25-Apr	FOTR	33	fair	13	1	0
Main	Sprague	Sprag	Lloyd Stage	21-Mar	FOTR	42	good	17	3	2
Middle	Bishop	Bish2	10 Mile/Meadowbrook	24-Apr	FOTR	25	fair	10	1	0
Middle	Johnson	John1	5 Mile/ Salem	3-Mar	FOTR	42	good	13	6	3
Middle	Johnson	John6	Hines/Sheldon	24-Apr	FOTR	40	good	16	4	0
Middle	Johnson	John8	7 Mile & Napier S	24-Apr	FOTR	62	exc	26	7	3
Middle	Johnson	MR-22	7 Mile & Beck	24-Apr	WC	40	good	17	3	1
Middle	Middle	MR-10	Parr Rec Area	28-Apr	WC	23	fair	9	2	0
Middle	Middle	MR-15	Ford Road/Outer Drive	28-Apr	WC	29	fair	14	2	0
Middle	Middle	MR-17	I-275 clam bar	28-Apr	WC	46	good	17	4	0
Middle	Middle	MR-18	Springbrook Rec Area	28-Apr	WC	31	fair	14	5	0
Middle	Middle	MR-20	Waterford Bend	28-Apr	WC	48	good	18	4	0
Middle	Middle	MR-2a	Reservoir Road West	28-Apr	WC	38	good	15	4	0
Middle	Middle	MR-4	Levan Knoll	28-Apr	WC	37	good	15	2	0
Middle	Middle	MR-8	Inkster Road	28-Apr	WC	27	fair	11	2	0
Middle	Tonquish	MR-14	Smith Elementary	5-May	WC	39	good	20	1	0
Middle	Tonquish	MR-16	W of Ann Arbor Trail/Hines	28-Apr	WC	20	fair	8	1	0
Middle	Tonquish	MR-19	Joy Rd	5-May	WC	25	fair	10	1	0
Middle	Tonquish	Ton1/2	Canton Ctr	24-Apr	FOTR	27	fair	10	2	0
Middle	Tonquish	Ton2	Ann Arbor Rd/Lilley	24-Apr	FOTR	22	fair	11	1	0
Middle	Walled Lk	Wall2	10 Mile/Novi	24-Apr	FOTR	30	fair	11	1	0
Middle	Walled Lk	Wall3	12 Mile/Taft	24-Apr	FOTR	24	fair	10	1	0
Middle	Walled Lk	Wall4	Northville/Main Street	24-Apr	FOTR	19	fair	7	1	0
Upper	Bell	Bell1	Bicentennial Park	18-May	FOTR	28	fair	13	2	0
Upper	Bell	Bell2	Schoolcraft College	22-Apr	Sch	34	good	14	1	0
Upper	Bell	Bell3	6 Mile/Farmington	18-May	FOTR	32	fair	10	2	0
Upper	Bell	UR-2	Bell Creek Park	20-May	WC	21	fair	7	0	0
Upper	Minnow Pond	Min2	Oakland Community College	24-Apr	FOTR	23	fair	11	1	0
Upper	Minnow Pond	Min3	Dunckel Middle School	24-Apr	FOTR	25	fair	9	2	0
Upper	Seeley	See2	Sleepy Hollow	24-Apr	FOTR	25	fair	9	2	0
Upper	Seeley	See3	Kennedy Court	18-May	FOTR	33	fair	13	2	0
Upper	Tarabusi	UR-3	Tarabusi at 7 Mile	20-May	WC	17	poor	6	0	0
Upper	Upper	UR-1	Lola Valley - Kinloch	20-May	WC	21	fair	8	2	0

<b>Notes</b>	
Agency: FOTR=Friends of the Rouge, Sch=Schoolcraft College, WC=Wayne County DPS-WQMD	
EPT: # families of mayflies (Ephemeroptera), stoneflies (Plecoptera), caddisflies (Trichoptera)	
# Sens families: # families that score 1 on Hilsenhoff Sensitivity Index	

<b>Table 2: Sensitive Families Found</b>					
<b>Branch</b>	<b>Creek</b>	<b>FIELDID</b>	<b>Fam 1</b>	<b>Fam 2</b>	<b>Fam 3</b>
L	Fellows	Fel2	Perlodidae (Perlodid stonefly)	Leptophlebiidae (pronggill mayfly)	
L	Fellows	LR-9	Perlodidae (Perlodid stonefly)		
L	Fowler	Fow1	Perlodidae (Perlodid stonefly)		
L	Fowler	Fow2	Nemouridae (broad-backed stonefly)		
L	Lower	LR-8	Perlodidae (Perlodid stonefly)		
M	Johnson	John1	Capniidae (slender winter stonefly)	Rhyacophilidae (free-living caddisfly)	Leptophlebiidae (pronggill mayfly)
M	Johnson	John8	Perlodidae (Perlodid stonefly)	Nemouridae (broad-backed stonefly)	Leptophlebiidae (pronggill mayfly)
M	Johnson	MR-22	Perlodidae (Perlodid stonefly)		
MN	Sprague	Sprag	Corydalidae (Dobsonfly)	Gomphidae (club-tailed dragonfly)	



## Rouge River Benthic Macroinvertebrate Monitoring Program Fall 2010 Results

This report contains benthic macroinvertebrate sampling results from 47 Rouge tributary and river sites. Twenty-two sites were sampled by 69 volunteers during Friends of the Rouge's (FOTR's) ninth Annual Fall Bug Hunt. Additionally, this report includes data from an on-campus site sampled by Schoolcraft students, additional FOTR sampling, and 21 sites sampled by Wayne County Department of Public Services.

### Overall Scores

Of the 47 sites sampled this fall, the majority were in the FAIR range for the Stream Quality Index (SQI). One site had an EXCELLENT SQI (John8-Johnson Creek); 11 sites were GOOD; 29 sites were FAIR and six sites were POOR. Thirty-one sites have three years or more of past data (p. 3). Of these, one site was above a standard deviation of the mean (Fowl1) and three were below a standard deviation (LR-3, Nott, Bell1); the remaining 27 were close to the average, meaning they did not decline or improve.

Mayflies, stoneflies and caddisflies were found at all but six sites. The Johnson Creek (John8) and the Middle Branch at I-275 (MR-17) had the highest number of these families (5), followed by two sites on the Main Rouge – Sprague Creek (Sprag) and Douglas Evans Nature Preserve (Main5). Douglas Evans had two types of mayflies and two types of caddisflies despite being fairly far downstream.

#### Benthic Scores

Each site is given a **Stream Quality Index (SQI)** which is determined by weighting each type and number of organisms found by their sensitivity ratings. A higher proportion of sensitive organisms such as mayflies and caddisflies results in a higher SQI. A greater number of different organisms also results in a high SQI. The SQI has four different levels: >48=EXCELLENT, 34-48=GOOD, 19-33=FAIR, <19=POOR.

**Number of taxa** represents the number of different families of organisms. Like SQI, a higher number of taxa indicate a healthier site.

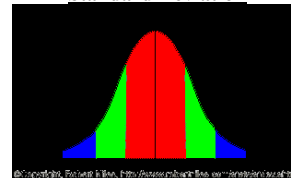
**EPT** refers to the number of mayfly, caddisfly and stonefly families found; these three orders contain some of the most sensitive organisms.

**Number of sensitive families** refers to the number of families of insects that rate very sensitive on the Hilsenhoff Biotic Index.

Seven sites had sensitive families. Clubtail dragonflies (Gomphidae) were found for the first time at Heritage Park in Farmington Hills (Up1), raising the number of sites in the watershed with this family to three (Shiawassee Park-Up2 and Sprague Creek-Sprag in Troy). Dobsonflies (Corydalidae) were found at two sites where they have only been found once before – Fellows Creek (Fel1) and the Main Rouge at Telegraph and Civic Center (Main6). Stoneflies (Perlodidae)

were found at one tributary to the Johnson Creek (John8) and prongbill mayflies (Leptophlebiidae) were found at two sites on a tributary to the Johnson Creek (John8 & MR-22).

#### Standard Deviation



Some sites have consistent scores where others vary greatly year to year. Standard deviation is a measure of how spread out your data is. 68% of your data will fall within one standard deviation of the mean (red areas shown above). On Charts 1-4 (p. 3), one standard deviation is represented by the vertical lines for each site. Standard deviation helps us to determine whether the current score is within normal for the site.

### Long Term Trends

We have finally collected enough benthic data for the Rouge to be able to begin to look at long term trends. To do this, we did some comparisons using a rolling three year average. This involves averaging the scores for all of the sites for a three year period, then moving ahead to the next three year period and so on. This method helps take some of the variation out of the data (due to weather, precipitation, etc.) and make the comparisons more robust. The figures 5-8 are on p. 4. The most robust correlation is an upward trend in scores for the Middle Branch ( $R^2 = 0.8758$ , the closer this value is to 1, the stronger the correlation), followed by a downward trend for the Main Branch sites ( $R^2 = 0.7442$ ). Trend lines for the Upper and Lower Branches were flat (showing neither improving nor declining scores) and  $R^2$  values low (0.4455; 0.3593).

### Lower Branch

Nine sites were sampled on the Lower Branch of the Rouge (see Table 1). Three tributaries were sampled: three on Fellows Creek, two on Fowler Creek and an additional four sites on the main branch of the Lower. SQIs were: one GOOD, seven FAIR and one POOR. The site with the POOR SQI was a new site at Ford Field in Dearborn (LR-11) and this far downstream it would be expected to be lower than upstream.

Five of the sites had enough past data to compare scores (Figure 1). Three of them showed no change, one above a standard deviation of the mean (Fowl1) and one below a standard deviation (LR-3). Last fall, Fowl1 (Cherry Hill & Prospect) was below a standard deviation so this is good news that the site has improved. LR-3 at Goudy Park in Wayne usually scores in the Good range so the SQI of 22 is below average.

#### **Main Branch**

Thirteen sites on the Main Branch were sampled. Five were on tributaries: Franklin, Pebble, Murphy, Nottingham and Sprague Creek. SQIs were four GOOD, eight FAIR, and one POOR. Three new sites were added downstream: one in Southfield (Main7), one in Parkland Park in Dearborn Heights and one on Fordson Island in Dearborn near Fort Street. Despite the downstream locations, all had FAIR SQI.

Ten main branch sites had enough data to make comparisons and nine were within a standard deviation of average for the site. Nott (Nottingham Creek at Detroit Country Day Middle School) was below a standard deviation of average (Figure 2). This branch shows a slight downward trend in scores since 2001 (Figure 7).

#### **Middle Branch**

Thirteen sites were sampled on the Middle branch including Ingersoll, Johnson, Tonquish, and Walled Lake Creeks. SQI scores were: one EXCELLENT, five GOOD, and seven FAIR. No sites scored POOR. The Middle Branch had the only EXCELLENT score in the watershed - on a tributary to the Johnson Creek near Maybury State Park.

Ten sites had past data and all were within a standard deviation of the average (Figure 3). This branch also is also exhibiting an upward trend in scores since 2001 (Figure 6).

#### **Upper Branch**

Twelve Upper branch sites were sampled this fall, including the Bell Branch, Minnow Pond, Seeley Creek and Tarabusi Creek. SQIs were: one GOOD, seven FAIR, and four POOR. Three of the Bell Creek sites were POOR but the site at Schoolcraft College (Bell2) had the only GOOD score. The other POOR score was on Minnow Pond Creek at Dunckel Middle School. Six sites had past data and five were within a standard deviation of average. Bell1 at Bicentennial Park in Livonia was below a standard deviation of the mean (Figure 4).

#### **THANK YOU!!!!**

Thank you to all the **volunteers** and **Team Leaders**, **Schoolcraft College**, the **Schoolcraft Ambassadors** and professor **Diane O'Connell** for hosting the event and sampling one site with her class, **Wayne County**, especially **Sue Thompson** for sampling and providing data for 21 sites, **Krispy Kreme** for giving us half price donuts, biologist **Bruce McCulloch** for identifying our bugs to family and creating all of the graphs, **University of Michigan-Dearborn** for providing a lab for identification night and the **Alliance of Rouge Communities** for funding the program.

**Join us for the  
Winter Stonefly Search  
Saturday January 22, 2011  
9 am – 3 pm at UM-D  
Register today at [www.therouge.org](http://www.therouge.org)**

Figure 1-Lower Branch Mean SQIs



Figure 2-Middle Branch Mean SQIs

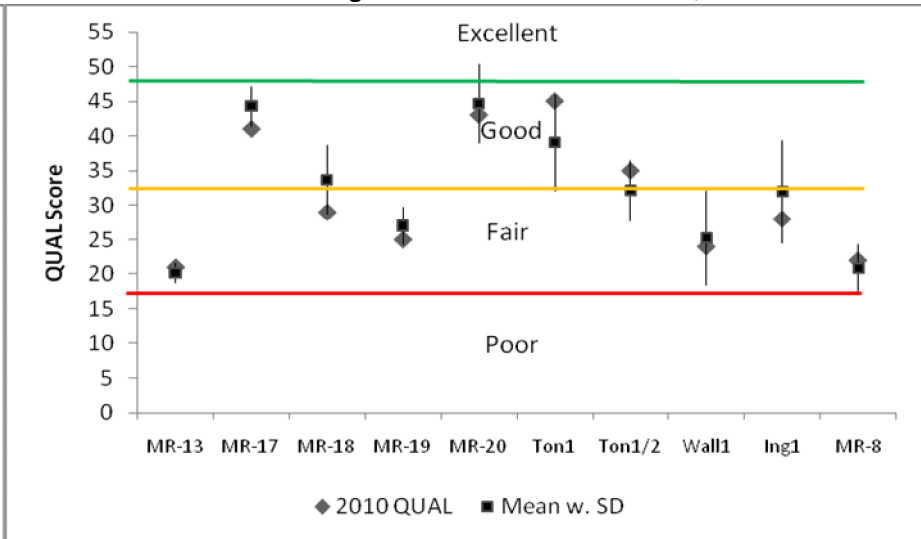


Figure 3-Main Branch Mean SQIs

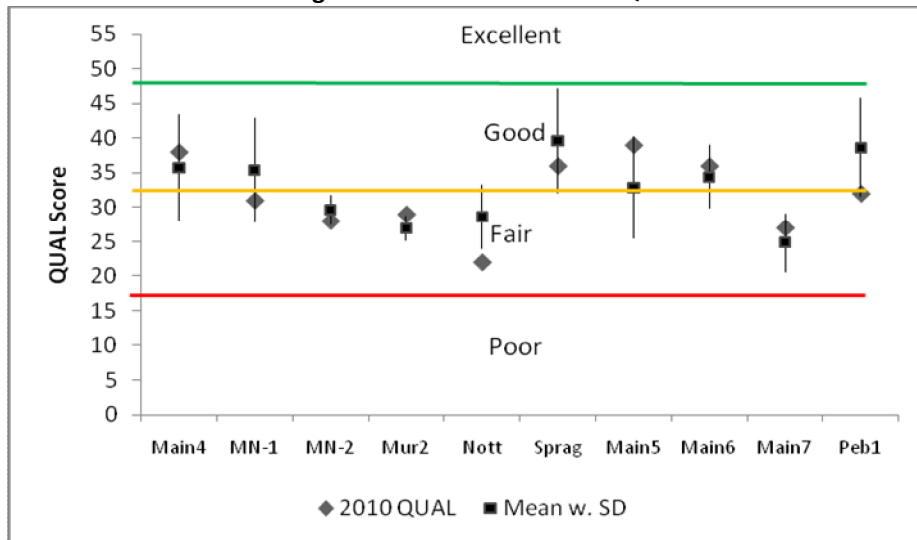


Figure 4-Upper Branch Mean SQIs

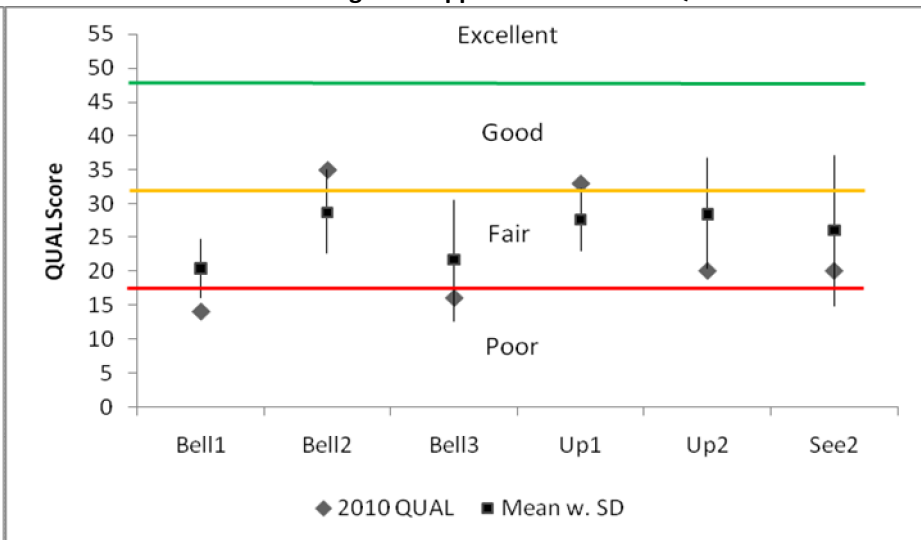


Figure 5 – Lower Branch Means 2001-2010

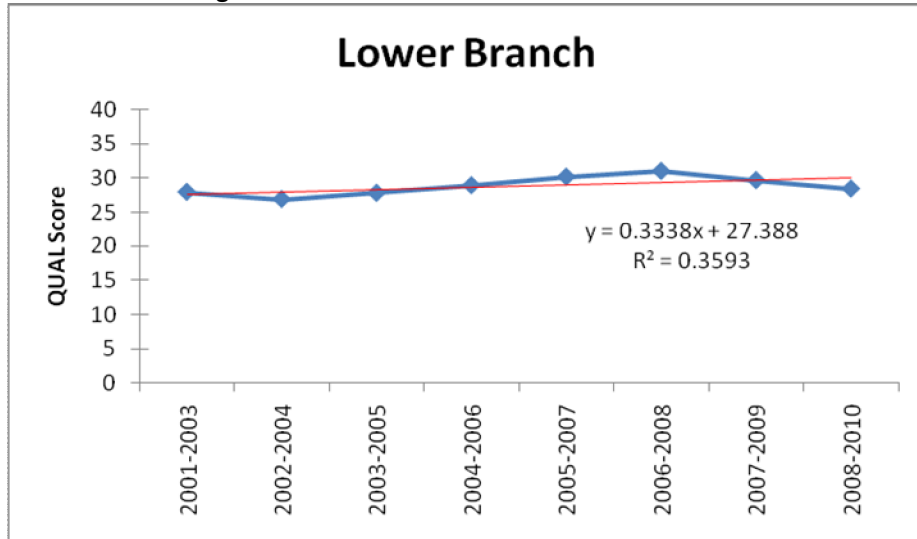


Figure 6 – Middle Branch Means 2001-2010

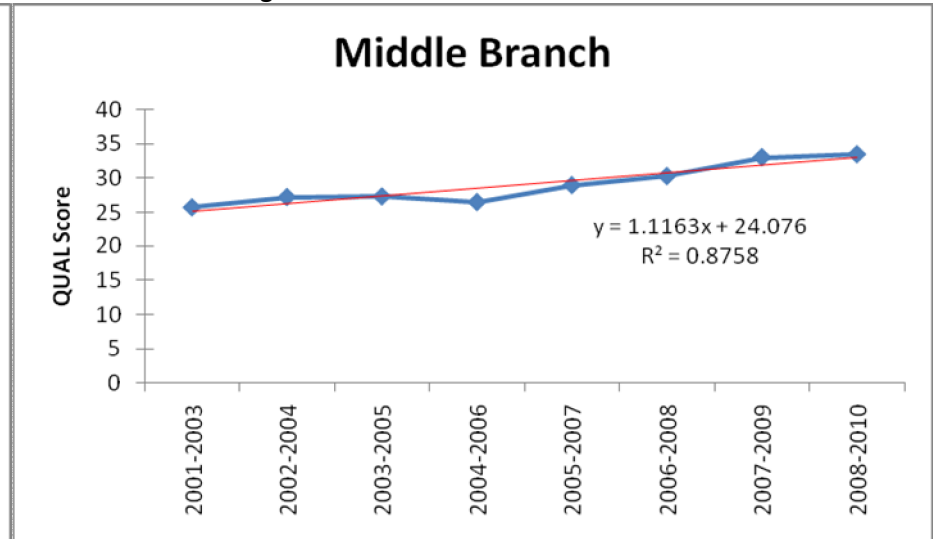


Figure 7 – Main Branch Means 2001-2010

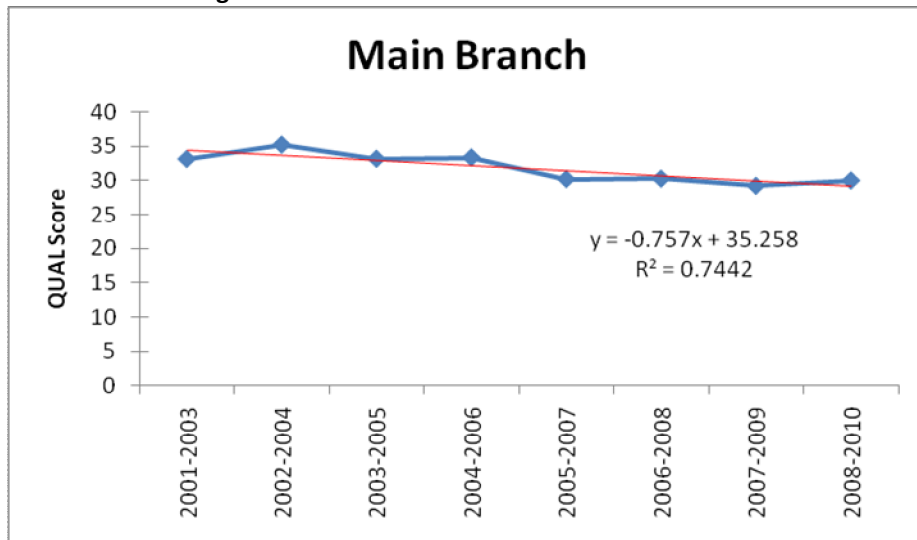
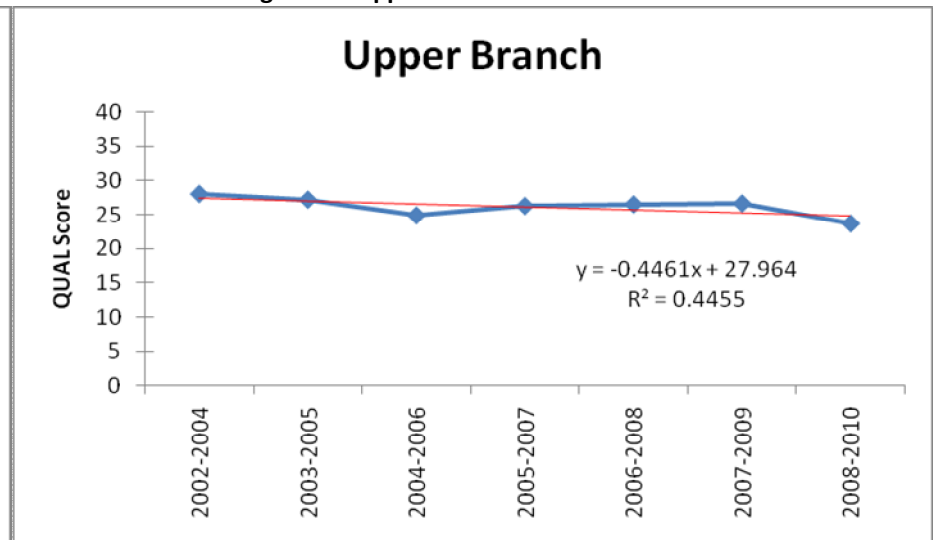


Figure 8 – Upper Branch Means 2002-2010

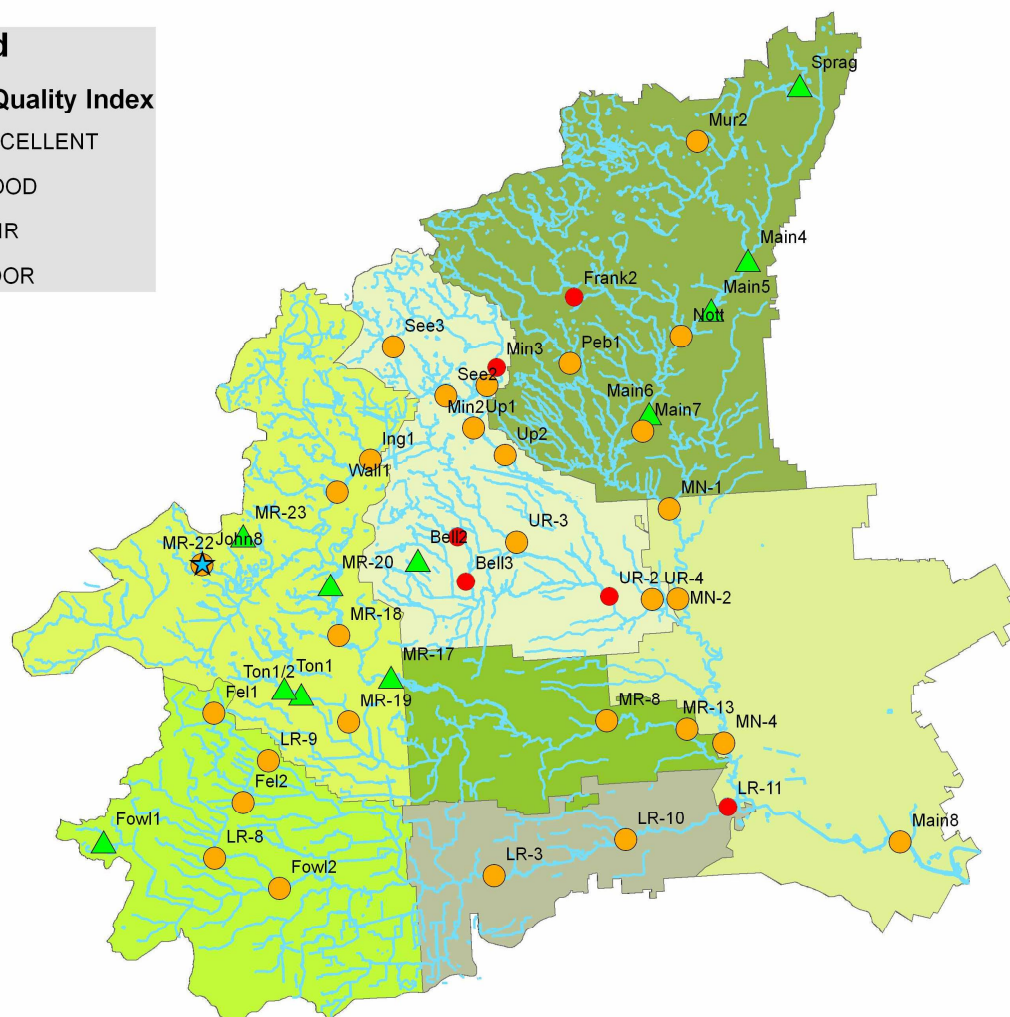


# 2010 Fall Bug Hunt

## Legend

### Stream Quality Index

- ★ EXCELLENT
- ▲ GOOD
- FAIR
- POOR



**Friends  
of the ROUGE**

0 0.5 1 2 3 4 5 Miles





**Table 1: Sampling Sites and Scores**

Branch	FIELDID	Stream Name	Site Location	SQI	SQI rating	F10 TAXA	F10 EPT	F10 SENS	F10 SENS Family
Lower	Fel1	Fellows Creek	Fellows Plymouth	31	FAIR	12	2	1	Corydalidae
Lower	Fel2	Fellows Creek	South Fellows	25	FAIR	11	0	0	
Lower	LR-9	Fellows Creek	Beck Warren/Tonda Elementary	31	FAIR	13	0	0	
Lower	Fowl1	Fowler Creek	Fowler Prospect	39	GOOD	14	2	0	
Lower	Fowl2	Fowler Creek	Fowler Beck	26	FAIR	12	3	0	
Lower	LR-10	Lower Rouge	John Daly	31	FAIR	13	2	0	
Lower	LR-11	Lower Rouge	Ford Field	18	POOR	7	2	0	
Lower	LR-3	Lower Rouge	Goudy Park	22	FAIR	8	3	0	
Lower	LR-8	Lower Rouge	Lower Proctor	23	FAIR	15	1	0	
Main	Frank2	Franklin Creek	Inkster pumping station	15	POOR	7	0	0	
Main	Main4	Main Rouge	B'ham	38	GOOD	13	3	0	
Main	Main5	Main Rouge	Douglas Evans	39	GOOD	19	4	0	
Main	Main6	Main Rouge	Sfld	36	GOOD	13	2	1	Corydalidae
Main	Main7	Main Rouge	Sfld 10 Mile	27	FAIR	11	2	0	
Main	Main8	Main Rouge	Fordson Island	26	FAIR	14	0	0	
Main	MN-1	Main Rouge	Eight Mile	31	FAIR	13	2	0	
Main	MN-2	Main Rouge	Eliza Howell	28	FAIR	11	2	0	
Main	MN-4	Main Rouge	Parkland Park	28	FAIR	12	2	0	
Main	Mur2	Murphy Creek	Roeper School	29	FAIR	9	1	0	
Main	Nott	Nottingham Creek	Country Day MS	22	FAIR	10	1	0	
Main	Peb1	Pebble Creek	Pebble Creek-Danvers	32	FAIR	14	1	0	
Main	Sprag	Sprague Creek	Lloyd Stage	36	GOOD	12	4	2	Corydalidae, Gomphidae
Middle	Ing1	Ingersoll Creek	Brookfarm Park	28	FAIR	11	2	0	
Middle	John8	Johnson Creek	Maybury north	53	EXC	22	5	2	Leptophlebiidae, Perlodidae
Middle	MR-22	Johnson Creek	Maybury south	21	FAIR	10	1	1	Leptophlebiidae
Middle	MR-23	Johnson Creek	Maybury north	34	GOOD	15	3	0	
Middle	MR-13	Middle Rouge	Warrendale	21	FAIR	9	3	0	
Middle	MR-17	Middle Rouge	I-275 clam bar	41	GOOD	16	5	0	
Middle	MR-18	Middle Rouge	Springbrook Rec Area	29	FAIR	14	3	0	
Middle	MR-20	Middle Rouge	Waterford Bend	43	GOOD	21	3	0	
Middle	MR-8	Middle Rouge	Inkster Road	22	FAIR	12	3	0	
Middle	MR-19	Tonquish Creek	Tonquish - Joy Rd	25	FAIR	11	1	0	
Middle	Ton1	Tonquish Creek	Plymouth Twp Pk	45	GOOD	17	2	0	
Middle	Ton1/2	Tonquish Creek	Canton Ctr	35	GOOD	13	2	0	
Middle	Wall1	Walled Lk Drainage	Rotary Park	24	FAIR	10	2	0	
Upper	Bell1	Bell Branch	Bicentennial Park	14	POOR	7	0	0	
Upper	Bell2	Bell Branch	Schoolcraft College	35	GOOD	16	1	0	
Upper	Bell3	Bell Branch	Livonia 6 Mile	16	POOR	6	1	0	
Upper	UR-2	Bell Branch	Bell Creek Park	9	POOR	5	0	0	
Upper	Min2	Minnow Pond	OCC	20	FAIR	10	1	0	
Upper	Min3	Minnow Pond	Dunckel MS	15	POOR	7	1	0	
Upper	See2	Seeley Creek	Sleepy Hollow	20	FAIR	8	1	0	
Upper	See3	Seeley Creek	Seeley Creek Trail	23	FAIR	7	1	0	
Upper	UR-3	Tarabusi Creek	Tara 7 Mile	24	FAIR	9	2	0	
Upper	Up1	Upper Rouge	Heritage Pk	33	FAIR	13	1	1	Gomphidae
Upper	Up2	Upper Rouge	Shiawassee Pk	20	FAIR	8	1	1	Gomphidae
Upper	UR-4	Upper Rouge	Five Mile Rd	31	FAIR	16	2	0	

## 68 AQUATIC INSECT FAMILIES FOUND IN ROUGE RIVER WATERSHED

Updated Dec 2010

\*Indicates sensitive family

### **EPHEMEROPTERA (Mayflies)-5**

Baetidae (small minnow)  
Caenidae (square gill)  
Heptageniidae (flathead)  
\*Leptophlebiidae (prong gill)  
Siphonuridae (primitive minnow)

### **\*PLECOPTERA (Stoneflies)-4**

\*Perlodidae (perlodid)  
\*Capniidae (slender winter)  
\*Nemouridae (broadback) (Spr 06)  
\*Taeniopterygidae (broadback) (Winter 10)

### **TRICHOPTERA (Caddisflies)-15**

\*Brachycentridae (humpless - stone cases) (Spr 02)  
\*Glossosomatidae (saddle-case) (Spr 06)  
Hydropsychidae (common net-spinner) (Spr 01)  
Hydroptilidae (micor or purse) (Fall 02)  
Lepidostomatidae (Spr 04)  
Leptoceridae (long-horned ) (Spr 04)  
Limnephilidae (northern - stick cases) (Spr 01)  
Molannidae (hoodcase maker) (Spr 07)  
\*Odontoceridae (strong casemakers) (Spr 04)  
Philopotamidae (finger-net) (Spr 02)  
Phryganeidae (giant) (Spr 03)  
Polycentropodidae (spotted head) (Spr 07)  
\*Psychomyiidae (net-tube) (Spr 03)  
Rhyacophilidae (free-living) (Spr 08)  
Uenoidae (Fall 04)

### **MEGALOPTERA (Dobsonflies)-2**

Sialidae (alderfly)  
\*Corydalidae (dobsonfly)

### **ANISOPTERA (Dragonflies)-4**

Aeshnidae (darner)  
Corduliidae (Spr 03)  
Gomphidae (clubtail) (Oct 07)  
Libellulidae (common skimmer)

### **ZYGOPTERA (Damselflies)-2**

Calopterygidae (broad-winged)  
Coenagrionidae (narrow-winged)

### **COLEOPTERA (Beetles)-11**

Chrysomelidae (aquatic leaf) (Spr 06)  
Dryopidae (long-toed) (Fall 01)  
Dytiscidae (predaceous diving)  
Elmidae (riffle)  
Gyrinidae (whirligig) (Fall 06)  
Halplidae (crawling)  
Hydrophilidae (water scavenger)  
Noteridae (burrowing) (Fall 02)  
Psephenidae (waterpenny) (Fall 04)  
Scirtidae (marsh) (Spr 06)  
Staphylinidae (rove)

### **DIPTERA (True Flies)-15**

\*Athericidae (watersnipe)  
Ceratopogonidae (no-see-um)  
Chironomidae (midge)  
Culicidae (mosquito)  
Ceratopogonidae (no-see-um)  
Dixidae (Spr 06)  
Dolichopodidae (aquatic long-legged) (Fall 02)  
Empididae (aquatic dance)  
Ephydriidae (shore) (Fall 03)  
Ptychopteridae (phantom crane) (Fall 03)  
Sciomyzidae (marsh) (Fall 03)  
Simuliidae (black)  
Stratiomyidae (soldier)  
Tabanidae (horse)  
Tipulidae (crane)

### **HEMIPTERA (True Bugs)-9**

Belostomidae (giant water bug)  
Corixidae (water boatman)  
Gerridae (water strider)  
Mesoveliidae (water treader) (Fall 01)  
Naucoridae (creeping) (Spr 07)  
Nepidae (water scorpion) (Fall 01)  
Notonectidae (back-swimmer)  
Pleidae (pigmy back-swimmer) (Spr 01)  
Veliidae (short-legged strider)

### **LEPIDOPTERA (Aquatic moths & butterflies)-1**

Pylalidae (aquatic moth)

## Rouge Unionidae Mussel Surveys 1998-2010

Location (u/s → d/s)	Date	Scientific Name*	Common Name*	Site Description, Etc.
Troy; N of Square Lake Rd. & E of Coolidge Rd., within Firefighters Park	7/8/2001	<i>Lasmigona complanata</i>	White heelsplitter	Width = 8'; depth = 1'-2'
		<i>Pyganodon grandis</i>	Common floater	Sand & gravel bottom
				Fish seen
				Dozens of mussels including small ones
				Stream bed apparently channelized several decades ago
				Note: moved 10 <i>P. grandis</i> from E-W running channel, prior to stream bank restoration work
	7/16/2010	<i>Lasmigona complanata</i>	White heelsplitter	NS branch -11 ind and EW branch - 1
		<i>Pyganodon grandis</i>	Common floater	NS branch -9 ind and EW branch - 1
		<i>Lasmigona compressa</i>	Creek heelsplitter	NS branch only - 4
		<i>Utterbackia imbecilis</i>	Paper pondshell	NS branch only - 3
Troy; u/s & d/s of Long Lake Rd., just W of Coolidge	7/8/2001	<i>Lasmigona complanata</i>	White heelsplitter	Width = 10'; depth = 0.5-3'
		( <i>Pyganodon grandis</i> )	(Common floater)	Cobble & sand bottom
		( <i>Elliptio dilatata</i> )	(Spike)	Fish seen
		( <i>L. compress</i> )	(Brook heelsplitter)	Only 2 live mussels
Troy; Beech Rd.	8/9/2002	<i>Lasmigona complanata</i>	White heelsplitter	Many large mussels
		( <i>Pyganodon grandis</i> )	(Common floater)	12' W, 2'-3' D, sand/gravel
		( <i>L. compress</i> )	(Brook heelsplitter)	
Birmingham; W Branch, at Quarton Road	7/6/2002	<i>Lasmigona complanata</i>	White heelsplitter	
		( <i>Elliptio dilatata</i> )	(Spike)	
Birmingham; just d/s of 15 Mile Rd.	9/2/1999	<i>Lasmigona complanata</i>	White heelsplitter	Width = 20'; depth = 2'-3'; also saw sponges & bryozoans; GLEAS macroinvertebrate score = 4; habitat = 93
		<i>Strophitus undulatus</i>	Squawfoot	
		<i>Pyganodon grandis</i>	Common floater	Dozens of mussels
	7/16/2010	<i>Lasmigona complanata</i>	White heelsplitter	
Beverly Hills, Cranbrook Road, entrance to Douglas Evans	7/16/2010	( <i>Lasmigona complanata</i> )	(White heelsplitter)	no live mussels
		( <i>Pyganodon grandis</i> )	(Common floater)	
		( <i>Lasmigona compressa</i> )	(Creek heelsplitter)	
		( <i>Fusconaia flava</i> )	(Pig toe)	
Beverly Hills; 13 Mile Road	7/4/2002	( <i>Elliptio dilatata</i> )	(Spike)	
		( <i>Fusconaia flava</i> )	Pig-toe	15'-20' W; 0.5'-2.5' D; sand to cobble
		( <i>Pyganodon grandis</i> )	(Common floater)	
		( <i>Strophitus undulatus</i> )??	(Squawfoot)	
Beverly Hills; ~ 50' d/s of Acacia Park CSO retention basin; west side of Douglas Evans Nature Reserve	9/2/1999	<i>Lasmigona complanata</i>	White heelsplitter	Width = 30'; depth = 2'-3' also saw sponges & bryozoans; GLEAS macroinvertebrate score = 4; habitat = 75
Beverly Hills; ~ 250' d/s of Acacia Park CSO retention basin & Douglas Evans Nature Reserve	9/2/1999	<i>Lasmigona complanata</i>	White heelsplitter	Width = 30'; depth = 2'-3'; also saw sponges; GLEAS macroinvertebrate score = 4; habitat = 84
		( <i>Lampsilis siliquoidea</i> )	Fat mucket	
		( <i>Elliptio dilatata</i> )	Spike	
		( <i>Strophitus undulatus</i> )	Squawfoot	
		( <i>Pleurobema coccineum</i> )	False pig-toe	
		( <i>Fusconaia flava</i> )	Pig-toe	
Beverly Hills; Lahser Rd.	6/16/2003	<i>Lasmigona complanata</i>	White heelsplitter	Width = 30'; depth = 1-3'
		<i>Lasmigona compressa</i>	Creek heelsplitter	
Southfield; Upstream of Telegraph Road and Civic Center Drive	Summer 1998	<i>Lasmigona complanata</i>	White heelsplitter	Dozens of mussels
		<i>Pyganodon grandis</i>	Common floater	
	10/9/2002			
		<i>Lasmigona costata</i>	Creek heelsplitter	
Farmington Hills; Minnow Pond Drain, 13 Mile Road	4/12/2003	<i>Pyganodon grandis</i>	Common floater	10' W, < 1' D; sand, gravel, cobble
				Stranded near waterline, after rain storm
	7/6/2003	None		

Farmington Hills; Farmington Rd., S of 12 Mile	7/6/2003	<i>Pyganodon grandis</i>	Common floater	12' W, 1' D; silt, gravel, cobble
		<i>Lasmigona compressa</i>	Creek heelsplitter	8 floaters + 3 heelsplitters
		<i>(Lampsilis siliquoidea)</i>	(Fat mucket)	
Novi; 9 Mile Rd.	8/12/2001	<i>Pyganodon grandis</i>	Common floater	15' wide, 1' deep
		<i>(Lampsilis siliquoidea)</i>	(Fat mucket)	sand, gravel, cobble
				1 live mussel, both u/s & d/s of bridge
Novi; Ingersoll Creek at Meadowbrook Rd.	8/9/2001	<i>Pyganodon grandis</i>	Common floater	6'-10' wide, 1'-2' deep
				sand & cobble bottom
				1 live ~3 year old mussel, + a few shells
Plymouth; along Hines Drive near I-275 crossing, u/s of Newburgh Lake	Summer 1998	<i>(Pyganodon grandis)</i>	(Common floater)	Site of 2 chemical fish kills, in 6/97 and 8/98.
		<i>(Lasmigona complanata)</i>	(White heelsplitter)	
	8/13/2001			1 small of each sp., + 2 fresh dead; younger than fish kill, or survived it?
		<i>Pyganodon grandis</i>	Common floater	
		<i>Strophitus undulatus</i>	Squawfoot	
		<i>(Lasmigona complanata)</i>	(White heelsplitter)	
	7/8/2002			
Between Newburgh L. dam and Ann Arbor Rd. bridge crossing		<i>Lasmigona compressa</i>	Brook heelsplitter	
	1/22/2002	<i>Fusconaia flava</i>	Pig toe	Width = 40'; depth = 2'-4'
		ZMs	Zebra mussel	
		<i>(Lasmigona complanata)</i>	(White heelsplitter)	Within fish kill area; dead shells appear fresh
		<i>(Lampsilis cardium)</i>	(Pocketbook)	
		<i>(Strophitus undulatus)</i>	(Squawfoot)	Visit again
		<i>(Toxolasma parvus)</i>	(Lilliput)	
		( )	(Wavy-rayed lamp mussel)????	
				sand
	6/24/2002	<i>Pyganodon grandis</i>		
		<i>Fusconaia flava</i>		
		<i>Lampsilis cardium</i>		
		<i>Strophitus undulatus</i>		
		ZMs		
Livonia; Hines Drive & Wayne Rd.	8/27/1999	<i>Pyganodon grandis</i>	Common floater	Width = 25'; depth = 2'-3'; mostly run; also saw sponges & limpets; GLEAS macroinvertebrate score = -1; habitat = 51
		<i>Lampsilis cardium</i>	Pocketbook	
		<i>Strophitus undulatus</i>	Squawfoot	
		<i>(Lasmigona complanata)</i>	(White heelsplitter)	
Bell Creek, Bicentennial Park, Livonia	7/16/2010	<i>Pyganodon grandis</i>	Common floater	
Northville Township; 6 Mile, W of Beck	6/24/2002	<i>Elliptio dilatata</i>	Spike?? See notes	15' W; 2'-3' D; silt to boulders, mostly silt/sand
	6/10/2002	<i>(SF Pyganodon grandis)</i>	(Common floater)	
Salem Twp., Janet B.'s property	9/13/2002	<i>Lampsilis siliquoidea</i>	Mucket	5'-10' W, 1' D, silt/sand (mostly dried up)
		<i>Alasmodonta viridis</i>	Slippershell	
		<i>(FD A. viridis)</i>		
	7/13/2003	<i>Pyganodon grandis</i>		
		<i>(SF A. viridis)</i>		
		<i>(L. siliquoidea)</i>		
____; Western Wayne County Conservation Association property	7/13/2003	<i>(P. grandis)</i>		
		<i>Pyganodon grandis</i>	Floater	One each
		<i>Lampsilis siliquoidea</i>	Mucket	15' W, 1' D; sand, gravel, silt