



www.therouge.org

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Rouge River Benthic Monitoring Program Fall 2003 Results

Sampling

Twenty-five sites were sampled this fall as part of Friends of the Rouge's (FOTR) benthic monitoring program. Twenty sites were sampled on Oct. 11, 2003 by 105 volunteers during the Fall Bug Hunt. This

included Brownies from Canton who split up into four groups and helped out at eight sites. On Oct. 15, students from 2 Rouge Education Project schools sampled the Ingersoll Creek and Tarabusi Creek. FOTR staff sampled 2 additional sites and re-sampled 5 sites as part of our Quality Assurance Plan and were able to include a group of home-schooled students from Southfield at one site. An additional site on the Bell Branch was adopted by Schoolcraft College and was sampled on October 21, 2003.

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 are used to assess water quality over time. 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 a grant from the Rouge River National Wet Weather Demonstration Project.

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 higher number of different organisms also results in a high score. The quality score is then given a rating from *Poor* to *Excellent* (<19=*Poor*, 19-33=*Fair*, 34-48=*Good*, >48=*Excellent*). In addition to the quality and rating, the number of taxa is calculated. Taxa represents the number of different families of organisms. Like quality, a higher number of taxa indicates a healthier site.

What Did We Find?

Quality scores for sites ranged from *Poor-Excellent* (17.6-53.1) and taxa from 6-20 (see Table 1 p. 4). Tonquish Creek had the distinction of having both the site with the record highest score for the Rouge and the lowest score. Two sites rated *Excellent*, 11 sites rated *Good*, 11 sites rated *Fair* and 1 sites rated *Poor*. This is our third year of fall sampling and we now have a baseline for 10 sites.

Many team leaders reported finding small fish at their sites including darters, fathead minnows, mottled sculpins, blacknose and blackside dace. While we are not sampling for vertebrates, a good variety of fish in the stream is a good sign.



WINTER STONEFLY SEARCH

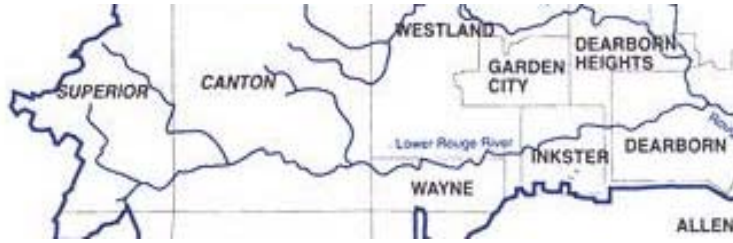
Sat. January 10, 2004

9 a.m. - noon

Register before Jan. 7: (313) 792-9621 picoordinator@therouge.org



Lower Branch



Five sites were sampled on the Lower Branch of the Rouge: Fellows Creek (Plymouth Township), South Fellows Creek (Canton), Fowler Creek (Superior Township), Willow Creek, and the main branch of the Lower (Canton). Two sites had *Good* ratings, and 3 ranked *Fair* (see Table 1, Pg. 4). Low water levels due to the drought precluded

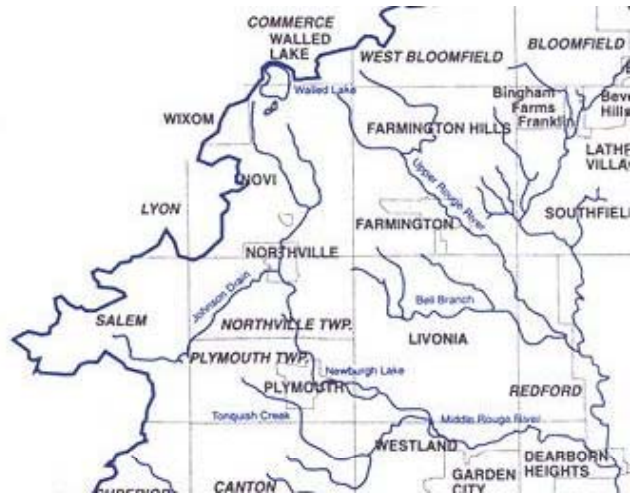
volunteers from sampling the Lower branch at Cherry Hill and Ridge but volunteers were relieved to find the riverbank covered with vegetation. Last spring, soil that had been left bare during construction of a detention basin was washing into the river. Sediment in the river clogs the gills of sensitive macroinvertebrates and fish, making them unable to survive. FOTR worked with Canton Township officials to ensure that the revegetation of the area be completed quickly. This spring, we hope to find stoneflies there once again.

Middle Branch

Nine sites were sampled on the Middle branch, including 4 Johnson Creek sites, 3 Walled Lake Drainage sites, and 2 Tonquish Creek sites. Two sites rated *Excellent*, one sites rated *Good*, 5 rated *Fair*, and one site rated *Poor* (see Table 1, p. 4).

Johnson Creek

Fall scores for the 4 Johnson Creek sites continue to vary far more than sites in the rest of the watershed. The site on 5 Mile near Ridge had an *Excellent* rating despite rating *Fair* in 2002, and *Poor* in 2001. The other 3 sites rated *Fair*, contrasting with *Good* ratings in 2002. Sampling results for the Johnson Creek are far more consistent from spring to spring. We are unsure why our scores for the Johnson Creek vary so much more in the fall than at other sites. We were also alarmed to find a large population of zebra mussels at the Fish Hatchery Park site.



Tonquish Creek

The Tonquish Creek sites had both the highest score and the lowest score for the watershed this fall. The Plymouth Township Park site that we added last spring had the highest quality score we have had in the history of our program, at 53.1 (*Excellent*). Downstream, our site at Ann Arbor Road near Lilley Road scored *Poor* (17.6) for the third consecutive fall. Tonquish Creek clearly declines between Beck Rd and Lilley Rd but we do not know why.

Walled Lake Drainage

Three sites in the Walled Lake Drainage were sampled this fall. In addition to Bishop Creek and the Walled Lake Branch, Ingersoll Creek was sampled by Guest Elementary School. The Walled Lake Drainage site continued to rank *Fair* for the third consecutive fall while the Bishop Creek site rated *Fair* after ranking *Good* the previous 2 falls. We hope this decline at Bishop Creek is temporary and that the disturbance of the site has no long-lasting effect on the macroinvertebrate community there. The new site, Ingersoll Creek, had a *Good* rating and the teacher and students were happy to find a good variety of macroinvertebrates including mayflies and caddisflies.

Main Branch



Four sites were sampled on the Main Branch and all but the Franklin site rated *Good*. The sensitive dobsonfly was found for the first time at the Valley Woods Nature Preserve site in Southfield as well as at Pebble Creek again but was absent from Franklin where it was found last fall. A shell from the huge white heelsplitter clam was found for the first time at Pebble Creek, indicating the species lived there at one time. The Birmingham site had a high number of taxa this fall at 17, compared to 12 and 9 in past years.

Upper Branch

The 7 Upper branch sites had surprisingly similar scores, ranging between 32.8 and 35.1. Because the cutoff point between *Good* and *Fair* falls between 33 and 34, the scores (numbers) mean more than the ratings (designation). We do not have as much data for the Upper branch since we did not begin sampling there until 2002. Comparisons to last fall show higher scores for the Tarabusi and Seeley Creek sites and similar scores for Shiawassee Park. The sensitive fly family *Athericidae* (water snipe fly) was found at Shiawassee Park and the Seeley Creek site at Sleepy Hollow. Zebra mussels were found for the first time in the Upper branch at the Seeley Creek site at 13 Mile near Haggerty.



Due to a lack of team leaders, FOTR staff sampled 2 sites volunteers were unable to sample during the Fall Bug Hunt. A group of homeschooled students from Southfield joined the staff at one site (see photo on left).

Summary

After three years of sampling for benthic macroinvertebrates in the headwater streams of the Rouge River, we now have baseline data for 10 sites and have identified areas in the watershed where healthy macroinvertebrate communities reside and areas where the communities could improve or are even severely impaired. We continue to share our findings with the Michigan Department of Environmental Quality, the 48 Rouge communities, and all of our volunteers. As we expand the program and recruit more team leaders, we will be able to add more sites and spend more time investigating impaired sites.

The benthic monitoring program would not be possible without the support from the Rouge River National Wet Weather Demonstration Project, the Michigan Department of Environmental Quality, and all the time contributed by our volunteers. Volunteer team leaders contribute their time not only on sampling days but in additional training sessions as they hone their skills in sampling and identification. Volunteer bug hunters are also invaluable to the program as we could never pick and sort all those bugs on our own! Thank you!

Table 1: Fall 2001-2003 Benthic Macroinvertebrate Sampling Results

Site	FALL 03 RATE	FALL 03 QUAL	FALL 03 TAXA	FALL 02 RATE	FALL 02 QUAL	FALL 02 TAXA	FALL 01 RATE	FALL 01 QUAL	FALL 01 TAXA	AVE RATE- QUAL
Lower Branch										
Fellows Creek (Napier/Powell)	FAIR	26.2	12	FAIR	25.9	10	FAIR	20.1	12	FAIR-24.1
South Fellows Creek (Ford/Ridge)	GOOD	37.0	15	FAIR	19.7	8				
Fowler Creek (Prospect/Cherry Hill)	GOOD	39.1	16	GOOD	35.1	9	FAIR	32.3	13	GOOD-35.5
Lower (Cherry Hill/Napier)	FAIR	23.3	10	FAIR	25.8	12				
Willow Creek, Barchester Park (Ford/Lilley)	FAIR	27.0	12							
Middle Branch										
Bishop Creek (11 Mile/Meadowbrook)	FAIR	25.2	9	GOOD	41.6	16	GOOD	34.1	15	GOOD-33.6
Ingersoll Creek (10 Mile /Haggerty)	GOOD	44.4	16							
Johnson Creek (5 Mile/Salem)	FAIR	19.3	6	GOOD	38.3	17	FAIR	28.9	13	FAIR-28.8
Johnson Creek (5 Mile/Ridge)	EXC	48.6	15	FAIR	25.3	15	POOR	11.4	8	FAIR-28.4
Johnson Creek (6 Mile/Beck)	FAIR	28.5	13	GOOD	47.7	14	POOR	9.2	4	FAIR-28.5
Johnson Creek, Fish Hatchery Park	FAIR	33.7	13	GOOD	44.5	12				
Tonquish, Plymouth Twp Park (Ann Arbor Tr/Beck)	EXC	53.1	20							
Tonquish (Ann Arbor Rd/Lilley)	POOR	17.6	8	POOR	15.2	6	POOR	15.6	5	POOR-16.1
Walled Lake Drainage (10 Mile/Novi Rd)	FAIR	30.9	11	FAIR	20.2	8	FAIR	26.6	11	FAIR-25.9
Main Branch										
Franklin Creek, Franklin Cider Mill (14 Mile/Franklin)	FAIR	24.3	10	FAIR	22.2	8				
15 Mile/Sfld, Birmingham	GOOD	45.2	17	GOOD	44.8	12	FAIR	23.9	9	GOOD-38
Telegraph/Civic Center, Southfield	GOOD	41.2	17	GOOD	42.6	14				
Pebble Creek (12 Mile/Middlebelt)	GOOD	41.5	14	EXC	50.9	15	FAIR	30.9	9	GOOD-41.1
Upper Branch										
Bell Branch (Schoolcraft College)	GOOD	34.3	14							
Minnow Pond Creek (13 Mile/Farmington)	FAIR	32.8	8							
Seeley Creek (13 Mile/Haggerty)	GOOD	35.1	11	FAIR	29.8	10				
Seeley Creek, Sleepy Hollow (Drake/11 Mile)	GOOD	34.8	13							
Tarabusi Creek (Gill/Colfax)	FAIR	33.4	11	FAIR	32	12				
Tarabusi Creek (8 Mile/Gill)	GOOD	34.0	13	FAIR	21.5	12				
Shiawassee Park (Shiawassee/Power)	GOOD	34.8	13	GOOD	35.8	14				

ROUGE RIVER WATERSHED AQUATIC INSECT FAMILIES

to date October 2003

*Indicates sensitive family

EPHEMEROPTERA (Mayflies)

Heptageniidae (flathead mayfly)
Siphoneuridae (primitive minnow mayfly)
*Leptophlebiidae (pronggill)
Baetidae (small minnow mayfly)

***PLECOPTERA (Stoneflies)**

*Perlodidae (perlodid stonefly)
*Capniidae (slender winter stonefly)

TRICHOPTERA (Caddisflies)

Hydropsychidae (common net-spinner)
Limnephilidae (northern caddisfly - stick cases)
*Brachycentridae (humpless case makers - stone cases)
Leptoceridae (long-horned case makers)
*Glossosomatidae (saddle-case makers)
Philopotamidae (finger-net)
Phryganeidae (giant case-maker)
Psychomyiidae (net-tube)

MEGALOPTERA (Dobsonflies)

Sialidae (alderfly)
*Corydalidae (dobsonfly)

ANISOPTERA (Dragonflies)

Aeshnidae (darner)
Libellidae (common skimmer)

ZYGOPTERA (Damselflies)

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

COLEOPTERA (Beetles)

Dytiscidae (predaceous diving beetle)
Elmidae (riffle beetle)
Halipidae (crawling beetle)
Staphylinidae (rove beetle)
Hydrophilidae (water scavenger)

DIPTERA (True Flies)

Chironomidae (midge)
Culicidae (mosquito)
Simuliidae (black fly)
Tipulidae (crane fly)
Empididae (aquatic dance fly)
Stratiomyidae (soldier fly)
Tabanidae (horse fly)
*Athericidae (watersnipe)
Ceratopogonidae (no-see-um)
Ptychopteridae (phantom crane fly)
Sciomyzidae (marsh fly)

HEMIPTERA (True Bugs)

Corixidae (water boatman)
Gerridae (water strider)
Notonectidae (back-swimmer)
Veliidae (short-legged strider)
Belostomidae (giant water bug)
Nepidae (water scorpion)

