

Rouge River Benthic Macroinvertebrates

School/Organization _____

Sampling Site Location (include cross streets) _____ City/Township _____

Date ___ / ___ / ___ Start Time _____ End Time _____ Air Temp. _____ Water Temp. _____ Weather _____

Main Branch Upper Branch Middle Branch Lower Branch Main Stem

1. Spend approximately 30 minutes collecting invertebrates, or sample until you're no longer finding different types of organisms.
2. Sample all types of habitats and substrates that are available at your site.
3. Identify the invertebrates you collect, and fill out the sheet below.

Check the types of habitats and substrates from which invertebrates are collected. Put a 0 for habitats that are not present at your site.

<input type="checkbox"/> Riffles	<input type="checkbox"/> Runs	<input type="checkbox"/> Pools
<input type="checkbox"/> Cobbles	<input type="checkbox"/> Margins	<input type="checkbox"/> Undercut Banks/Over-Hanging Vegetation
<input type="checkbox"/> Aquatic Plants	<input type="checkbox"/> Leaf Packs	<input type="checkbox"/> Submerged Wood
<input type="checkbox"/> Other (Please Describe) _____		

Use letter codes R and C (Rare = 1-10, & Common = 11 or more) to record the approximate number of organisms found in each taxa.

<u>Group 1</u> Sensitive	<u>Group 2</u> Somewhat - Sensitive	<u>Group 3</u> Tolerant
<input type="checkbox"/> Beetle adults (Coleoptera)	<input type="checkbox"/> Beetle larvae (Coleoptera)	<input type="checkbox"/> Aquatic worms (Oligochaeta)
<input type="checkbox"/> Caddisfly larvae (Trichoptera)	<input type="checkbox"/> Clams (Pelecypoda)	<input type="checkbox"/> Leeches (Hirudinea)
<input type="checkbox"/> Hellgrammites (Megaloptera)	<input type="checkbox"/> Crane fly larvae (Diptera)	<input type="checkbox"/> Midge larvae (Diptera)
<input type="checkbox"/> Mayfly nymphs (Ephemeroptera)	<input type="checkbox"/> Crayfish (Decapoda)	<input type="checkbox"/> Pouch snails (Gastropoda)
<input type="checkbox"/> Gilled snails (Gastropoda)	<input type="checkbox"/> Damselfly nymphs (Odonata)	<input type="checkbox"/> Sowbugs (Isopoda)
<input type="checkbox"/> Stonefly nymphs (Plecoptera)	<input type="checkbox"/> Dragonfly nymphs (Odonata)	<input type="checkbox"/> True bugs (Hemiptera)
<input type="checkbox"/> Water penny (Coleoptera)	<input type="checkbox"/> Scuds (Amphipoda)	<input type="checkbox"/> Other Diptera
<input type="checkbox"/> Blackfly larvae (Diptera)	<input type="checkbox"/> Alderfly larvae (Megaloptera)	

<u>Group 1</u>	<u>Group 2</u>	<u>Group 3</u>
<input type="checkbox"/> # of R's x 5.0 = _____	<input type="checkbox"/> # of R's x 3.0 = _____	<input type="checkbox"/> # of R's x 1.1 = _____
<input type="checkbox"/> # of C's x 5.3 = _____	<input type="checkbox"/> # of C's x 3.2 = _____	<input type="checkbox"/> # of C's x 1.0 = _____
<input type="checkbox"/> Group 1 Total = _____	<input type="checkbox"/> Group 2 Total = _____	<input type="checkbox"/> Group 3 Total = _____

Total Stream Quality Score (sum of totals for Groups 1-3) = _____

Excellent (> 48)
 Good (34-48)
 Fair (19 - 33)
 Poor (< 19)

During the sampling and evaluation, did you observe any fish or wildlife? () Yes () No

If yes, please describe (if possible):

Benthic Sampling Techniques and Habitat Definitions

Always begin sampling downstream and work upstream, sampling a number of times in each of the habitats below (if available). Point your net upstream and lift up carefully in a sweeping motion. You may want to give your students who will be sorting the organisms a few rocks and pieces of submerged wood to get them started right away. **Be sure to dump each sample into a tub or tray with water for students to look through carefully.** It's surprising how many organisms you'll find after looking in the tray for a few minutes when there didn't appear to be any organisms in the net.

Riffles

Definition: Shallow, fast-moving turbulent water running over rocks

Sampling technique: Place the net on the river bottom downstream from you. Dig down with your feet and try to dislodge organisms by shuffling your feet. Make sure to sample the upstream, middle and downstream ends of the riffle.

Cobbles

Definition: Rocks with a larger diameter than pebbles; 2-10 inches in diameter

Sampling technique: Same as for riffles. For larger rocks, use hands to rub off organisms or pick up rocks and take to student sorters.

Aquatic Plants

Definition: Vegetation growing in the water

Sampling technique: Run net over vegetation, scraping gently as you go. Use hands to loosen organisms. Vegetation that comes loose can be given to student sorters.

Runs

Definition: Deep, fast-moving water with little or no turbulence

Sampling technique: Scoop up material from river bottom with net.

Margins

Definition: Stream edges

Sampling technique: Scoop up material from stream edges.

Leaf Packs

Definition: Clumps of decomposing leaves

Sampling technique: Scoop into net.

Pools

Definition: Deep, quiet water

Sampling technique: Scoop up material from bottom. For very mucky samples, lift net up so top ring is just above the water level of the river and swish sample around.

Undercut Banks/Overhanging Vegetation

Definition: Stream or riverbanks that have been cut into by erosion so that water actually flows under the edge of the bank/Plants growing on the riverbanks that hang over the water, such as grasses

Sampling technique: Lift net up and under bank and vegetation. Use hands to knock organisms off vegetation.

Submerged Wood

Definition: Wood under water

Sampling technique: Dislodge organism with hands or give smaller pieces of wood to student sorters to examine.