Macroinvertebrate Sampling

Time – 40 minutes
Persons – 2
Materials -
- 1 kick net
- plastic pan
- transfer pipettes
- plastic petri dishes
- magnifying glasses
- macroinvertebrate key
- ruler

OPTIONAL
- 5 gal plastic bucket (for decanting)
- waders

Step 1 - Choose your sample site

Select sampling reaches that are safe and easily accessed by everyone in your group. A riffle will offer the best variety of organisms.

Step 2 – Collect your sample

If you are sampling in flowing water:
1. Wade into the stream and place your net so the mouth of the net is perpendicular to and facing the flow of water.
2. Stand upstream of the net and disturb the stream bottom with your feet and hands.
3. Carefully pick up and rub stones directly in front of the net to remove attached animals. The stream bottom material and organisms will be carried by the current into the net. If the rocks are lodged in the stream bottom, rub them vigorously, concentrating your effort on any cracks or indentations.
4. After removing all large stones, disturb the sand and gravel to a depth of about 3 inches by raking and stirring with your hands.
5. Continue this process until you can see no additional animals or organic matter being washed into the net.

If you are sampling in pools or highly-vegetated areas:
1. Scoop material from the stream bottom with the net. Try not to scoop up too much sediment as it will make it difficult to sort the macroinvertebrates.
2. Push and pull the net through aquatic vegetation.
3. Hand pick organisms from sticks and other structures.

Step 3 – Empty your sample

1. Hold your sampling net over a plastic pan and use a bucket of stream water to wash the material into the pan.
2. If your sample contains a lot of rocks or debris, stir the sample in the pan to suspend the animals, then pour the suspended material back into your net. Rinse the debris from the pan, then wash the animals in the net back into the pan.

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Step 4 – Sort out 100 macroinvertebrates

1. Pour most of the water from the pan, so that the materials and animals are no longer floating. Distribute the material evenly in the bottom of the pan.
2. Take a ruler and divide the material in half. Remove one half of the material from the pan.
3. Redistribute the material again over the bottom of the pan and divide this material again with a ruler.
4. Continue this process until you have a sample with about 100 organisms total.
5. Add some stream water back into the pan for easier sorting.
6. Sort and identify the macroinvertebrates using the petri dishes and pipettes.
7. Keep track of the number of types of organisms on the macroinvertebrate sorting worksheet. For example, if you have two macroinvertebrates that you identify as mayflies, but they have distinct differences, record that you have two types of mayflies.