Michigan Clean Water Corps

Techniques for Stream Macroinvertebrate Collecting

Team Roles

Every person on the team needs to have a role so they know their responsibilities and how they should be participating. Every river group is welcome to hold training events for all volunteer roles as they see fit, but the Huron River Watershed Council suggests that training should not be required for pickers and collector assistants, in order to boost beginner volunteer participation. Here are several suggested roles:

Picker:

- New volunteers typically start out as Pickers. This job does not require getting into the stream and is a good way to get introduced to monitoring and the interesting creatures that live in the stream.
- No training is required to be a Picker.
- Pickers are responsible for sorting through the samples collected by the Collector, picking out the macroinvertebrates from the rocks and leaves and putting them in a collection jar.

Collector Assistant:

- On a large site it is helpful to have one team member in waders assisting the Collector by carrying the trays to the team and the empties back to the Collector.
- The only training required to be an Assistant is experience wading in moving water on slippery rocks.

Collector:

- Collectors should attend training session in order to learn the techniques for sampling in the river.
- The Collector is the only person that enters the water (unless there is an Assistant).
- They are responsible for sampling all of the habitats, and bring the samples to the rest of the team to sort through.

Streamside Leader:

- The Leader instructs the team, keeps the team together, locates the sampling site, is responsible for filling out the data sheets, labeling the jars, and reminding the Collector which habitats still need to be found.
- Should require a training event.

Equipment Manager:

- The Manager is a person who is willing to take responsibility for the equipment and will check the list to be sure everything leaves each site with the team
- This position should be a secondary job of one of the pickers.

When you get to the site- instructions for the streamside leader

1. Make sure you're at the right site!
2. Scout out a nice place for your team to sit on the bank and sort through samples.
3. Orient your team to what they are looking for. Explain that:
   - We want to collect samples of all the different macroinvertebrates.
   - Be patient when sorting; it may take a little time to see the tiny creatures that are there.
4. Make sure that each habitat gets sampled.
5. Let the team know about what you see in the creek, such as types of habitats that are missing and any evidence that the force of storm flow has affected the stream.

Collecting Hints- instructions for the collector

1. Always start downstream and work upstream to avoid disturbing where you're about to collect.
2. The most important thing is to get some of each type of creature.
3. Please note that some clams are endangered or threatened. Don't collect large clams, just make a note that you observed them.
4. You should spend approximately 45 minutes collecting at a small stream, and up to 1 hour collecting at a large river site (or 2 collectors spend 30 minutes in a river). Please collect as long as you need to thoroughly sample every different kind of habitat. The goal is to find as many types of macroinvertebrates as possible.
5. Sample a number of times in each habitat. Use three samples as a guideline but collect enough that you feel you got all of the different animals living in each habitat.
6. Remember - BE AGGRESIVE- the animals are holding on tight to rocks, branches, and leaves to avoid being carried downstream and you want to shake them loose!

Collecting Techniques

It is very important that you begin at the downstream end of your collecting site and work upstream, to minimize disturbance to the site. Collect from the various habitats in the order they come to you as you work your way upstream (and not necessarily in the order on the data sheet).

Riffle:

Note: When selecting a riffle, keep in mind that flow has a big impact on the types of animals that can live there. Two riffle samples, one in the fastest part (white water present, larger rocks) and one in the slowest part (no white water, smaller gravel sized rocks) will likely yield different animals.

1. Put net on bottom of stream, stand upstream, hold net handle upright.
2. Use kicking/shuffling motion with feet to dislodge rocks. You are trying to shake organisms off rocks as well as kick up organisms that are hiding under the rocks. Dig down with your toes an inch or two. Do a lil' dance. Some people use their hands to rub organisms off rocks, but beware of sharp objects on the stream bottom.

Quiet Place/pool:

1. Scoop some sediment up in your net. Some animals burrow into the muck.

Tip: When your net is full of muck, it is very heavy. To clean the excess muck out of your net: keep the top of the net out of the water to avoid losing animals, then sway the net back and forth, massaging the bottom of the net with your hand. When choosing a soft bottom area try to find one that contains silt since it is a far more productive habitat than just sand.

Undercut Bank/Overhanging Vegetation or Roots:

1. Jab the net into the undercut bank while pulling the net up. Move in a quick bottom to surface motion to scrape the macroinvertebrates from roots. Do this several times.
2. If you notice roots or overhanging vegetation, put the net under the bank at the base of the plants. Shake the vegetation using your net, trying to shake off the animals clinging to these plants. Feel free to use your hands if you are sure the plants are not poisonous.

Submerged or emergent vegetation:

1. Keeping the net opening pointed upstream, move the net through vegetation trying to shake the vegetation and catch any animals.
2. Use your hands to agitate the vegetation and dislodge the animals into the net.

Rocks/Logs:

1. Small logs and rocks can be pulled out of the water and given to the team to search for animals.

Hint for Logs: Be sure to check under bark.

Hint for Rocks: Caddisfly homes often look like small piles of sticks or clumps of small gravel attached to rocks.

Leaf Packs:

1. Look for a decomposing leaf pack. A "good" leaf pack has dark brown-black skeletonized leaves. Slimy leaves are an indication that they are decaying. Scoop a few into your net and let the team pull then apart and look for animals.
2. Tip: Sometimes a little water in the pan with the leaves will help dislodge the animals.

Finishing up

1. Remember to rinse the net and pans before leaving the site to avoid transporting animals or plants between sampling sites.
2. Have the Streamside Leader double check that the data sheet is completely filled out and that all habitats have been sampled.