

Multi-habitat Freshwater Macroinvertebrate Protocol

Field Guide

Task

Collect macroinvertebrate samples from one or more of following habitat types: vegetated banks, submersed vegetation, snags, logs, roots, mud, sand, and gravel. The number of samples for each habitat type is proportional to the area that habitat type covers at your hydrosphere study site. Collect a total of 20 samples.

What You Need

- [Freshwater Macroinvertebrate Identification Data Sheet](#)
- Sieve (0.5 mm or smaller)
- Hydrosphere Investigation Site Map
- Latex gloves
- Equipment and [Hydrosphere Data Sheets](#) for collection of water chemistry measurements (optional)
- Trowel or shovel
- D-net
- Calculator (optional)
- One to four spray bottles (1 to 2-L)
- Two to six 5-L white buckets
- 1 x 1 meter quadrat (for mud, sand and gravel habitats)

In the Field

1. Locate the areas where you will collect your samples on your map and in the water.
2. Estimate the proportion of each accessible habitat type within your hydrosphere study site.
3. Use the *Freshwater Macroinvertebrate Identification Data Sheet* to calculate the number of samples collected within each habitat type for a total of 20 samples.
4. If collecting water chemistry measurements, do before collecting macroinvertebrates. Be careful not to disturb the areas where you will be collecting macroinvertebrates.
5. Fill a bucket with water from the site.
6. While holding the sieve over a second bucket, pour water through the sieve. Use the sieved water to fill (and refill as needed) the spray bottles. Keep sieved water in the shade.
7. Rinse sieve downstream of the sampling sites (or away from sites if water is not flowing).
8. Start macroinvertebrate sampling downstream and move upstream as you collect samples from different habitat types. If the water is not visibly moving, collect samples in the order that will minimize the impact of taking one sample on taking the others.

9. Use the *Field Guides* to collect samples in

- submersed vegetation,
- vegetated banks or around snags, logs, and roots,
- muddy bottom, and
- gravel and sand.

10. Record the number of samples taken in each habitat on the *Freshwater Macroinvertebrate Identification Data Sheet*. The total should be 20 samples. If the number of samples per habitat is different than what was planned, explain why in the comment section.