

9.2 PROTOCOL FOR SAMPLING INVERTEBRATES IN STREAMS

Overview

The invertebrate collecting and processing protocols outlined in this document are designed primarily for the intention of collecting specimens for identification purposes. The various collection techniques are partially selective in terms of the species and size classes that each captures. Therefore, the particular method to be used will depend on the purpose of the study and will be outlined in the project design.

The mesh size used to collect/process the invertebrate sample determines the composition of the benthic invertebrate sample collected. In streams and rivers, benthic invertebrates are collected from either erosional or depositional substrates and a variety of samplers are used. Open water benthic invertebrate sampling programs are usually conducted in early spring or fall when benthic communities tend to be the most stable and relatively low flows facilitate sampling. It is also important to maintain consistency of time of sample collection within and between years. There are a number of qualitative and quantitative sampling techniques each with advantages and disadvantages.

The Drift net sampler can also be used to collect the emerging or drifting invertebrate stages while a Surber sampler can be used for depths less than 30 cm. The Neill or Hess cylinder sampler is one of the most commonly used benthic invertebrate samplers to sample erosional substrates in streams and rivers. This sampler is suited to a range of erosional substrate types such as gravel, cobble, small boulders, and sand. Although, it is limited to a relatively shallow sampling depth in flowing water, a modified version of the Neill cylinder (mesh: 210 µm; substrate contact area: 0.1 m²) has been used to sample benthic invertebrates in major rivers.

Sources

Environment Canada (2007), Alberta Environment (2006a), Ontario Ministry of the Environment (2005)

Special safety concerns

Formalin is used as a preservative and is a suspected carcinogen. It should be used with extreme care and the MSDS should be read.

Other sources

B. C. WLAP (2003), Environment Canada (1999), EMAN (Undated c)

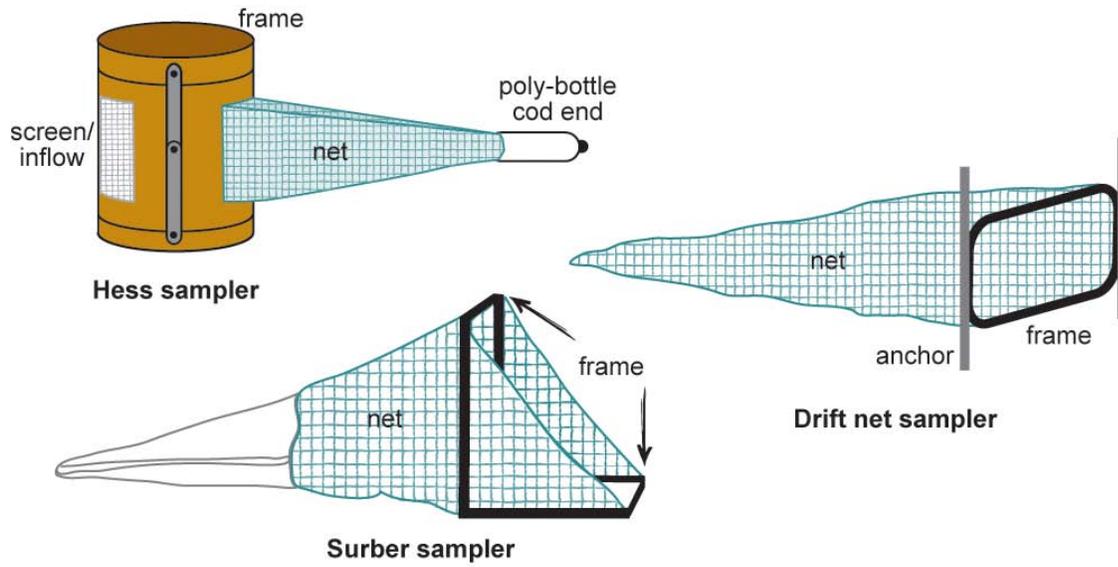


Figure 13. Common types of invertebrate samplers (Alberta Environment (2006) and British Columbia MWLAP (2003))