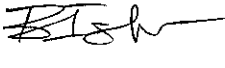



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1.0 SCOPE

Freshwater benthic invertebrates are sorted into designated taxonomic categories, including Ephemeroptera, Plecoptera, Trichoptera, Diptera, Other Insects, Mollusca, Crustacea, and Other Phyla.

2.0 HEALTH AND SAFETY CONSIDERATIONS


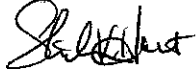

The laboratory technician works under a hood to rinse and then transfer the sample to water. The sample is sorted in water. The technician will utilize ergonomically sound seating with proper posture when sorting for long periods, resting and stretching frequently. Armrests are available if requested.

3.0 EQUIPMENT

- Dissecting microscope
- Standard size No. 35 sieve (0.5 mm)
- Baking pan marked with 2" grids
- Sorting tray
- Forceps
- Squeeze bottles for tap water and ethanol
- Glass vials
- Vial Labels
- Stream Bioassessment Sorting Sheet
- 70% ethanol

4.0 PROCEDURE

- 1➤ A sample is logged out of the sample storage location on the infaunal sample tracking sheet (Figure 1).
- 2➤ The sample is poured over a 0.5-mm sieve. Proper preservation is assessed by the presence of rotting odors. The sample manager, laboratory manager, or project manager is notified if the sample appears improperly preserved.
- 3➤ The sample is gently rinsed with tap water using a spray nozzle. Debris larger than ½ inch is removed. Green leaves, twigs and rocks are removed, but filamentous algae or skeletonized leaves are not removed. The material to be discarded is inspected carefully so that animals are not discarded.

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- 4> The rinsed material is placed into a gridded tray. Excess water is not allowed into the tray. The material is spread in an approximately 1/2-inch-thick layer in the tray.
- 5> One grid is randomly selected and removed from the tray using a spoon (for sandy material) or a razor blade (for filamentous organic material). The material is transferred to a suitable container for sorting of the animals into taxonomic groups. The sample material is kept moist, and, if left overnight or longer, ethanol is added to maintain sample preservation.
- 6> Up to 300 animals are removed from the sample, using as many grids as necessary. After each grid is complete, the number of animals removed from the grid is recorded on the Stream Bioassessment Sorting Sheet (Figure 2). Once 300 animals are tallied, the remaining animals in the grid are removed and counted, but all phyla are placed into one separate vial.
- 7> The Stream Bioassessment Sorting Sheet is filled out.

5.0 PERSONNEL

Initial sorting is performed by a laboratory technician; QA/QC is performed by a senior technician. Determinations of corrective actions to be taken are made by the laboratory manager.

6.0 QUALITY ASSURANCE

Quality assurance of the sorting process begins with the personnel assigned to perform the sorting. Weston assigns only trained sorters to programs with high quality assurance requirements. In addition, all sorters are trained at Weston, and all sorting is done at our corporate headquarters benthic laboratory.

Sorters provide a count of animals during initial sorting (i.e., approximately 300 animal, plus the remainder of the last grid sorted). This number shall become the basis for evaluating sorting efficiency. The sorted portion of at least 10% of the sample lot will be examined by senior laboratory staff members that have been trained in the QA/QC procedure. Each sorting technician will have at least one sample per sample lot (of a survey) evaluated for sorting efficiency. Less experienced sorters will have more than one sample evaluated. Samples must have a 90% removal rate of organisms to pass the QA/QC, i.e., for a 300 organism sample, no more than 30 organisms may be left in the sample.

- 1> A sample is signed out on the Lab Sample Tracking Sheet (Figure 1).
- 2> The sample is poured over a 0.5 mm sieve and the ethanol retained for re-use.

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Approved by: _____
Date: _____

Stream Bioassessment Sorting Sheet

I. Sample Identification

Project Title _____ Survey _____
 Station _____ Replicate _____
 Date Collect _____
 Sample Sed. Vol. (mL) _____ No./Type Contr. 1 Qt Sampler Kick Net

II. Sorting

Sort Fraction _____ Sorted By _____ Date(s) Sorted _____
 Total Sort Time _____ # Animals Sorted _____ Animals Remaining _____
 # Animals/Grid _____
 Comments _____

Distribution of Sorted Material	Est. total abundance _____		
	# of Vials	# of Jars	Contents of Jars
Ephemeroptera	_____	_____	_____
Trichoptera	_____	_____	_____
Diptera	_____	_____	_____
Other Insects	_____	_____	_____
Mollusca	_____	_____	_____
Crustacea	_____	_____	_____
Other phyla	_____	_____	_____
Extra Animals	_____	_____	_____

III. Sorting QA/QC

Sort Criteria _____ %
 QA/QC By _____ Pass/Re-Sort _____ Date _____
 QA/QC Time _____ Re-Sort Time _____ Re-Sort Date _____
 No. of Animals QA/QC _____ Removal rate _____
 No. of Animals Re-Sort _____

IV. Sample Qualification Comments (Circle One)

1. Preservation: GOOD FAIR POOR

2. Single Major Component:

Shellhash	Tubes	Wood	Algae	Seeds	Animals
Fibers	Coarse Sand		Fine Sand	Pea Gravel	Organic Material
Sewage Debris	Macrodetritus		Other: _____		

Figure 2: Stream Bioassessment Sorting Sheet

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- 3> The sample is examined by the QA technician until it either passes QA/QC or a number of organisms greater than 10% of the total number has been removed from the sample. Samples that pass QA/QC will have been completely processed by the QA technician.
 - 4> Samples that fail QA/QC may be returned to the sorting technician for completion, and the QA technician will discuss overlooked organisms with the sorting technician.
 - 5> The QA/QC section of the Stream Bioassessment Sorting Sheet (Figure 2) is filled out. The sample is logged back in on the Lab Sample Tracking Sheet and replaced back in the sample storage location.

If a technician fails to remove at least 90% of the organisms in a sample, at least 2 more samples sorted by that technician will be evaluated by the QA technician. If one or both of these samples fails QA/QC evaluation, 2 more samples will be evaluated. If the technician repeatedly fails the QA/QC evaluation, all the samples sorted by that technician will be resorted and the sorting technique of the technician will be evaluated.