

Comparison of sampling methods for benthic macroinvertebrates in forested wetlands

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Abstract

Forest wetlands are biodiversity hotspots that perform functions of vital ecological importance, but they are among the world's most threatened ecosystems. Due to their high diversity of habitats and species, the study of their benthic macroinvertebrate communities is challenging, and there is no consensus on which sampling methods allow a better representation of these communities. Here we compared the performance of 3 sampling methods (hand net, corer and litterbags) in 2 temporary and 3 permanent forested wetlands in southern Chile, which were bimonthly sampled throughout a year, with 108 samples per wetland. Our results indicated that the greatest abundance and diversity were collected with the hand net, followed by the litterbags and the corer. The composition of communities collected by the hand net and litterbags were more similar between them than that of communities collected by the corer (where Chironomidae and Oligochaeta were common). We suggest that the combined use of the hand net and corer could provide a good representation of macroinvertebrate communities in forest wetlands, as they would allow recording most of the diversity, including taxa that are both sensitive and tolerant to stressors.

Author keywords

Corer

Hand net

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Mediterranean zones

Permanent water regime

Temporary water regime