

## Accepted Manuscript

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PII: S0034-6667(16)30265-2  
DOI: doi:[10.1016/j.revpalbo.2017.05.013](https://doi.org/10.1016/j.revpalbo.2017.05.013)  
Reference: PALBO 3873

To appear in: *Review of Palaeobotany and Palynology*

Received date: 21 December 2016  
Revised date: 13 March 2017  
Accepted date: 30 May 2017

Please cite this article as: Steiner, Bigna L., Antolín, Ferran, Vach, Werner, Jacomet, Stefanie, Subsampling of large-volume samples in waterlogged sediments. A time-saving strategy or a source of error?, *Review of Palaeobotany and Palynology* (2017), doi:[10.1016/j.revpalbo.2017.05.013](https://doi.org/10.1016/j.revpalbo.2017.05.013)

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## Subsampling of large-volume samples in waterlogged sediments. A time-saving strategy or a source of error?

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### Abstract

For the archaeobotanical analysis of waterlogged sediments, which are usually very rich in organic remains, subsampling is often necessary. Subsampling strategies for this kind of material are mostly based on non-empirical experience and have rarely been tested. In this paper, we compare results from small-volume subsamples with those from the large-volume residue of the master sample subsamples were drawn from. The extra-variability caused by lumpiness of the unprocessed waterlogged sediment was quantified in order to find out how much the necessary sample sizes need to increase for this type of sediment.

We found that subsampling of unprocessed waterlogged material in general should only be done if it is indispensable, as it can introduce a bias. We propose methods to adapt sample sizes based on random sampling for unprocessed waterlogged sediment (where random sampling is impossible) so that the proportions or also the diversity of plant species can be estimated with sufficient precision in these sediments. However, it would be best to use an

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