

Posidonia oceanica: A tracer of past mercury contamination

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Posidonia oceanica sheaths allow to reconstruct the evolution of the past mercury contamination.

Abstract

The aim of this study is to assess the relevance and the potential of *Posidonia oceanica* as a tracer of past mercury contamination. Shoots were collected on two sites, an impacted site, Rosignano (Tuscany, Italy), and a pristine site, Tonnara (Corsica, France). Lepidochronology was used to measure mercury concentrations in living sheaths and in the corresponding dead sheaths. The results show that there is an overestimation of mercury concentrations in dead sheaths (because of the degradation of this tissue due to its ageing), overestimation which stabilizes itself from the third lepidochronological year onwards (trend significant only for Rosignano). Thus, it is possible to estimate previous mercury concentrations and to date a contamination, by measuring mercury concentration in the dead sheaths of a given lepidochronological year and by taking into account the degradation of the sheaths. Therefore, *Posidonia oceanica* can be used to reconstruct the evolution of the past mercury contamination.

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