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## UNCERTAINTIES IN HISTORICAL POLLUTION DATA FROM SEDIMENTARY RECORDS FROM AN AUSTRALIAN URBAN FLOODPLAIN LAKE

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### ABSTRACT

Sediment cores from aquatic environments can provide valuable information about historical pollution levels and sources. However, there is little understanding of the uncertainties associated with these findings. The aim of this study is to fill this knowledge gap by proposing a framework for quantifying the uncertainties in historical heavy metal pollution records reconstructed from sediment cores. This uncertainty framework consists of six sources of uncertainty: uncertainties in (1) metals analysis methods, (2) spatial variability of sediment core heavy metal profiles, (3) sub-sampling intervals, (4) the sediment chronology, (5) the assumption that metal levels in bed sediments reflect the magnitude of metal inputs into the aquatic system, and (6) post-depositional transformation of metals. We apply this uncertainty framework to an urban floodplain lake in South-

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