

Preface

The Developments in Paleoenvironmental Research book series has thus far covered a wide spectrum of paleoenvironmental subjects, some of which have included examples of studies using natural archives of contaminants. However, given the growing interest and development of approaches used in this area, we believed it was an opportune time to collate summaries of some of these sub-disciplines into a single volume.

This book aims to provide a review of recent developments in the study of natural archives to resolve the timing and magnitude of environmental contaminants. Natural archives have tremendous potential to resolve the human footprint on the environment, but experience has shown that these archives must be examined with an understanding of the processes that may shape and modify the historical record. We have asked all contributing authors to bring these issues to bear, and we devote several chapters to discuss how external and internal processes may modify the historical record in sediments, specifically focusing on hydrology, geochemistry, and physical turbulence.

Our intent with this book was to provide a review of sufficient breadth and depth to serve both seasoned practitioners of the field, as well as newcomers. We strived to make the writing accessible to a general audience that could serve as a text for graduate courses as well as a reference for those actively participating in the field. The vast literature that utilizes natural archives to determine the timing and magnitude of pollutants spans a broad spectrum, including cores collected from ice, peat, lake and marine sediments, to sclerontological archives and museum specimens spanning centuries. This book spans this full range of natural archives, and will hopefully be useful to those who are curious about recent developments in these related fields. Ultimately, a strong proof of concept for the use of natural archives is to determine the concordance of separate lines of evidence as recorded in different kinds of archives, and this book aims to provide a platform to facilitate those kinds of comparisons.

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Environmental Contaminants

Using natural archives to track sources and long-term trends of pollution

Blais, J.M.; Rosen, M.; Smol, J.P. (Eds.)

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