



"In this new book, Philip Allen has distilled a lifetime of insightful study of the Earth's surface into a wide ranging and rigorous synthesis of planetary sediment processes. *Sediment Routing Systems* is the first to use the idea of global sediment routing – 'following the sediment' – to provide a framework for synthesis across environments and scales, to integrate the source and sink sides of the routing system, and to link geochemical and particulate fluxes. It manages to do this in a quantitative framework that is carefully formulated, accessible, and perfectly pitched in clarity and detail. *Sediment Routing Systems* is a landmark and masterpiece; for many Earth scientists, it will be all they need in terms of global sediment dynamics."

**Chris Paola**, *University of Minnesota*

This cutting-edge summary combines ideas from several sub-disciplines, including geology, geomorphology, oceanography and geochemistry, to provide an integrated view of Earth surface dynamics in terms of sediment generation, transport and deposition. Introducing a global view of fundamental concepts underpinning source-to-sink studies, it provides an analysis of the component segments which make up sediment routing systems. The functioning of sediment routing systems is illustrated through calculations of denudation and sedimentation as well as the response to external drivers; with the final sections focusing on the stratigraphic record of sediment routing systems. Containing quantitative solutions to a wide range of problems in Earth surface dynamics, this book is suitable for graduate students as well as academic and professional researchers.

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**Part I A Global View of Sediment Routing Systems**

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