

# TOOLS IN FLUVIAL GEOMORPHOLOGY

SECOND EDITION

Fluvial Geomorphology studies the biophysical processes acting in rivers and the sediment patterns and landforms resulting from them. It is a discipline of synthesis, with roots in geology, geography and river engineering, and with strong interactions with allied fields such as ecology and landscape architecture. This book comprehensively reviews tools used in fluvial geomorphology at a level suitable to guide the selection of research methods for a given question. Presenting an integrated approach to the interdisciplinary nature of the subject, it provides guidance for researchers and professionals on the tools available to answer questions on river restoration and management.

Thoroughly updated since the first edition in 2003 by experts in their respective fields, the book presents state-of-the-art tools that have revolutionized fluvial geomorphology in recent decades, such as physical and numerical modelling, remote sensing and GIS, new field techniques and advances in dating, tracking and sourcing, statistical approaches, as well as more traditional methods such as system concept, stratigraphic analysis, form and flow characterization and historical analysis.

This book:

- Covers five main types of geomorphological questions and their associated tools: historical framework; spatial framework; chemical, physical and biological methods; analysis of processes and forms; and future understanding framework.
- Provides guidance on advantages and limitations of different tools for different applications, data sources, equipment and supplies needed, and case studies illustrating their application in an integrated perspective.
- Is an essential resource for researchers and professional geomorphologists, hydrologists, geologists, engineers, planners and ecologists concerned with river management, conservation and restoration. It is a useful supplementary textbook for upper-level undergraduate and graduate courses in Geography, Geology, Environmental Science and Civil and Environmental Engineering and interdisciplinary courses in river management and restoration.

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