
**Review of *Rivers and Floodplains*,
by M. John S. Bridge**

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The author states that this book is concerned with the origin, geometry, water flow, sediment transport, erosion, and deposition associated with modern alluvial rivers and floodplains, how they vary in time and space, and how this information is used to interpret deposits of ancient rivers and floodplains. There is specific reference to the types and lifestyles of organisms associated with fluvial environments, human interaction with rivers and floodplains, associated environmental and engineering concerns, as well as the economic aspects of fluvial deposits, particularly the modeling of fluvial hydrocarbon reservoirs and aquifers. Methods of studying rivers and floodplains and their deposits are also discussed. Although basic principles are emphasized, many examples are detailed.

Rivers and Floodplains is designed as a core text for senior undergraduate and graduate students studying modern or ancient fluvial environments, particularly in earth sciences, environmental sciences, and physical geography, but also in civil and agricultural engineering; college professors, researchers, and practicing professionals will also find the book an invaluable reference. John Bridge is a professor of Geological Sciences at the State University of New York at Binghamton, where he teaches and undertakes research in earth surface processes and sedimentology.

This substantial monograph has been subdivided into ten chapters. The first chapter presents an overview of fluvial systems; the second and third chapters are on fundamentals of water flow and sediment transport respectively; Chapter 4 deals with bed forms and sedimentary structures; Chapter 5 focuses on alluvial channels and bars; Chapter 6 focuses on floodplains; Chapter 7 details along-valley variations in channels and floodplains; Chapter 8 is on channel-belt movements across floodplains; Chapter 9 is on long-term large-scale evolution of fluvial systems; and chapter 10 deals with fossils in fluvial deposits.

In general, the material is very well presented, extremely well illustrated and very well suited to the intended audience. What this text does so well is a comprehensive integration of geomor-

phologic and engineering approaches. The author elaborates on the stratigraphic details of fluvial deposits, yet explains some complex fluid mechanics concepts like the burst and sweep cycles in unequivocal terms. It is perhaps the most remarkable effort to bring fluvial geomorphologists and hydraulic engineers on the same page. This text should be a must for all interested in multidisciplinary analyses of rivers, and fluvial deposits. The topics range from fluid mechanics to paleontology, but most of the effort is in the area of river hydraulics and fluvial morphology. Another unique and extremely valuable aspect of this book is the frequent reference to laboratory experiments and field observations to complement the engineering analyses based on river hydraulics and sediment transport. This text is highly descriptive of fluvial processes and presents both a simplified version of river mechanics with a wealth of field observations on the plan form geometry of rivers as well as the stratigraphy of the fluvial deposits. The explanations are usually quite clear though the text may get a little wordy in the last couple chapters dealing with stratigraphic details, long-term evolution of rivers, and fossils. The illustrations remain extremely useful throughout the text. There are 70 pages of references, which may interest researchers a lot more than undergraduates. Needless to say, the literature review is comprehensive and contains ample evidence of the refereed papers published during the past decade. The index is also good though not comprehensive and could be improved for undergraduate use. For instance, I could not find "meandering" or "braiding" in the index.

The publisher provides a very good quality manuscript with high quality/heavy paper and a simple paperback binding. The quality of the numerous photos and illustrations (particularly the few color photos) is truly remarkable. The font size and type, and overall typesetting are also very appropriate. The manual may be a little heavy for everyday use in the classroom and the price perhaps a little deep for undergraduates.

In summary, this monograph is filling a gap in the current textbook literature in fluvial geomorphology. It will primarily suit the needs of geology and civil engineering seniors interested in fluvial sedimentology. The strengths of the book include a unique integration of concepts in fluvial geology and river engineering. The weaknesses of this book are difficult to find, but the volume may be a little long, heavy, and expensive. Overall, all fluvial geomorphologists and river engineers will find this book worth buying.