

Braided Rivers

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Braided rivers are of considerable importance to the geologist, geomorphologist and engineer and an understanding of their dynamics and deposits holds many key economic applications. This book presents the first interdisciplinary approach to the study of braided rivers, with comprehensive views on their dynamics, sedimentation and economic applications with examples drawn from modern and ancient braided rivers.

Braided rivers form some of the world's largest lowland rivers and are common in upland and proglacial settings. They are the agents of substantial erosion, deposition and landscape evolution. For the geomorphologist and engineer, braided rivers often pose considerable problems through their high rates of sediment transport, rapid bank erosion, substantial bed scour and frequent channel shifting. Braidplain behaviour may therefore dictate the design of within-channel structures, such as bridges, as well as those on the floodplain such as roads and flood embankments. Braidplain management becomes especially important in parts of the world where these rivers dominate regions of high population density.

Geologically, braided river deposits form some of the largest and most valuable aquifers, hydrocarbon reservoirs, placers and aggregate deposits. An understanding of their facies architecture, heterogeneity and the controls upon deposition is essential for the effective exploitation of resources as well as in the interpretation and reconstruction of ancient sedimentary environments.

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Cover illustration: Ragitata River, South Island, New Zealand.
Photo courtesy of Dale Leckie (Geological Survey of Canada).
Photographer: Lloyd Homer (Institute of Geological and Nuclear Sciences, NZ)

ISBN 0-903317-93-1



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