

Floodplains: Interdisciplinary Approaches

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Floodplains: Interdisciplinary Approaches

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Preface

Floodplains are major components of fluvial systems wherein physical, chemical and biological processes combine over a range of temporal and spatial scales varying with, and contributing to, environmental change. Floods have a major (defining) impact on floodplains and have significant socio-economic importance. The relatively flat, generally fertile, land with an adjacent water supply has attracted a large proportion of the world's human population to dwell on floodplains at the mercy of the hazards of major flooding, landslides and mudflows.

Floodplains are areas of natural sediment storage and sites for contaminant capture and remobilization. Sediment accumulation over relatively recent geological time has formed substantial natural resources (loose aggregates, peat, gold and diamond placer deposits, shallow groundwater aquifers), that are of major socio-economic importance in many areas of the world. Floodplain accumulation over longer geological time periods has formed much of the world's coal reserves and ancient deposits include many aquifers and hydrocarbon reservoirs. Despite the resulting economic importance of floodplain deposits, their architecture and processes of formation are only more recently becoming better understood, since previously most research concentrated on channel processes.

Over at least the past 3000 years human activity has altered the state of floodplains so that very few, if any, are still in an anthropogenic unimpacted state. With increasing population pressures, floodplains are continuing to change, and the character and implications of these changes are poorly known and often ignored. Much of the development on floodplains and their 'management' has been piecemeal, often without regard for natural processes in the catchment as a whole and in general ignorance of, or disinterest in, the long term effects of planned activity on the system. This situation has arisen partly as a result of differing interests of residents, land owners and local, regional and national administrative bodies. But in addition to this there is a common lack of communication between practitioners in the fields of planning, civil engineering, geomorphology, ecology and sedimentology, and likewise between any of these 'experts' and local population.

The Floodplains '98 meeting held at the University of East Anglia, which led to this book, was convened with the intention of bringing together those at the forefront of research into many aspects of floodplains. Hydrologists, ecologists, environmentalists, geomorphologists, sedimentologists and geologists presented and discussed research addressing problems relating to floodplain processes, ecology and morphology, deposit character and architecture and environmental management. This book includes papers on many of the projects presented at the meeting and additional noted contributions, in an attempt to represent the complex and very broad subject of floodplains in a truly interdisciplinary way.

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