

## Preface

In recent years the International Commission on Continental Erosion (ICCE) has organized several symposia on many aspects of erosion and sediment yield. One of the most perplexing problems of erosion and sedimentation investigations is the satisfactory linkage of on-site rates of erosion on upland areas and sediment yields as measured at the drainage basin outlet. This relationship between erosion and sediment yield, referred to as sediment delivery, has received attention from hydrologists and geomorphologists for many years yet still remains as a major research need. This symposium was organized to review some of the recent research work designed to produce quantitative solutions to the sediment delivery problem. The objectives of the symposium are: (a) to examine the processes and mechanisms in the conveyance and storage of eroded material in drainage networks from upland slopes to stream channels, and (b) to discuss the relationship between erosion and sediment delivery as it affects estimates of basin sediment yield, and problems of scale in drainage basin studies. With these objectives in mind the papers in this volume have been divided into five categories: (1) sediment sources, (2) processes and sediment delivery, (3) storage and mobilization of sediment, (4) modelling of sediment yield and delivery, and (5) data acquisition and analyses.

The group of papers on sediment sources provides discussion of methods for identifying and mapping sediment sources based primarily on land use and sediment properties. Sediment budgets are also developed for areas subject to afforestation by measuring erosion, sediment storage, and sediment yields. The economic consequences of erosion on agricultural lands and subsequent aggradation of river channels and floodplains is investigated by modelling of changes in river behavior.

Papers concerned with processes and sediment delivery cover a wide range of topics. Fluctuations of sediment yield, both temporally and spatially, are attributed to the availability and size of sediment, channel slope, and intensity of storms. The transport of pollutants from nonpoint sources are shown to be associated primarily with fine mineral and organic fractions of the sediment load during the runoff process. Among the results in this group of papers, it was found that a distinct seasonal trend may exist in sediment storage and remobilization.

The storage of sediment, both in upland areas and in channels, plays an important part in the determination of sediment delivery. The group of papers in this section deals with examples of contemporary processes of storage and remobilization of sediment, and the historical record of these processes preserved in valley floor and channel deposits.

The papers on modelling of sediment yield and sediment delivery range from empirical models such as the Universal Soil Loss Equation (USLE) to mathematical simulation models and Caesium-137 budgets used to determine sediment delivery ratios. We are hopeful that the

presentation of the research findings of all the authors will stimulate discussion of all aspects of the sediment delivery problem.

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