

Preface

Since the early 1980s, the International Commission on Continental Erosion (ICCE) of the International Association of Hydrological Sciences (IAHS) has organized a large number of highly successful symposia and workshops dealing with various aspects of erosion and sedimentation. The proceedings of most of these symposia and workshops have been published as IAHS “Red Books” (see over for details, or go to <http://www.iahsmembers.info/shop.php>).

The Chengdu symposium on *Erosion and Sediment Yields in the Changing Environment* represents a continuation of this highly successful, ongoing series of ICCE symposia, and the papers have been pre-published in this IAHS Red Book. The response to the “call for papers” for this symposium generated 90 abstracts, which may well provide an indication of the increasing significance of soil erosion and sediment yield issues to both the environmental as well as the scientific communities. The 54 papers published in this volume, including four keynote papers, aim to advance our understanding of the processes of erosion and sediment production in a world that is increasingly affected by anthropogenic activities, and to encourage further work.

The keynote papers have been placed at the beginning of the volume and the remaining papers have been grouped under five main themes. The group of papers on *Dynamic processes of erosion and sediment transport in fluvial systems* provides information on the pathways and patterns of erosion and sediment transport in fluvial systems. Another group of papers dealing with *Impacts of climate change and human activities on erosion and sediment yield* is primarily concerned with the influence of land-use change on catchment soil erosion and sediment yields and fluxes. The group dealing with *Modelling erosion and sediment yields* covers a wide variety of approaches for estimating sediment concentrations/fluxes in the absence of actual sample data. The papers grouped under the theme of *Mountain hazards and debris flows* provide information on quantifying and modelling landslides and debris flows in different countries/environments. The fifth group of papers dealing with *Monitoring and tracing methodology* highlights the important role of both monitoring and tracing approaches for improving our understanding of soil erosion and sedimentation. We hope that these contributions will encourage further research on how erosion and sediment yields respond to changing environments and climatic conditions in what is becoming known as the Anthropocene.

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IAHS publications resulting from ICCE symposia and workshops

- Erosion and Sediment Transport Measurement*, Florence, Italy, 1981 (IAHS Publ. 133)
- Recent Developments in the Explanation and Prediction of Erosion and Sediment Yield*, Exeter, UK, 1982 (IAHS Publ. 137)
- Dissolved Loads of Rivers and Water Quantity/Quality Relationships*, Hamburg, Germany, 1983 (IAHS Publ. 141)
- Drainage Basin Sediment Delivery*, Albuquerque, New Mexico, USA, 1986 (IAHS Publ. 159)
- Erosion, Transport and Deposition Processes*, Jerusalem, Israel, 1987 (IAHS Publ. 189)
- Sediment Budgets*, Porto Alegre, Brazil, 1988 (IAHS Publ. 174)
- Sediment and the Environment*, Baltimore, USA, 1989 (IAHS Publ. 184)
- Erosion, Debris Flows and Environment in Mountain Regions*, Chengdu, China, 1992 (IAHS Publ. 209)
- Erosion and Sediment Transport Monitoring Programmes in River Basins*, Oslo, Norway, 1992 (IAHS Publ. 210)
- Sediment Problems: Strategies for Monitoring Prediction and Control*, Yokohama, Japan, 1993 (IAHS Publ. 217)
- Variability in Stream Erosion and Sediment Transport*, Canberra, Australia, 1994 (IAHS Publ. 224)
- Effects of Scale on the Interpretation and Management of Sediment and Water Quality*, Boulder, USA, 1995 (IAHS Publ. 226)
- Erosion and Sediment Yield: Global and Regional Perspectives*, Exeter, UK, 1996 (IAHS Publ. 236)
- Human Impact on Erosion and Sedimentation*, Rabat, Morocco, 1997 (IAHS Publ. 245)
- Modelling Soil Erosion, Sediment Transport and Closely Related Hydrological Processes*, Vienna, Austria, 1998 (IAHS Publ. 249)
- Role of Erosion and Sediment Transfer in Nutrient and Contaminant Transfer*, Waterloo, Canada, 2000 (IAHS Publ. 263)
- Erosion and Sediment Transport Measurement in Rivers: Technological and Methodological Advances*, Oslo, Norway, 2002 (IAHS Publ. 263)
- The Structure, Function and Management Implications of Fluvial Sedimentary Systems*, Alice Springs, Australia, 2002 (IAHS Publ. 276)
- Erosion Prediction in Ungauged Basins: Integrating Methods and Techniques*, Sapporo, Japan, 2003 (IAHS Publ. 279)
- Sediment Transport through the Fluvial System*, Moscow, Russia, 2004 (IAHS Publ. 288)
- Sediment Budgets, vols 1 and 2*, Foz do Iguaçu, Brazil, 2005 (IAHS Pubs 291 and 292)
- Geomorphological Processes and Human Impacts in River Basins*, Solsona, Spain, 2004 (IAHS Publ. 299)
- Sediment Dynamics and the Hydromorphology of Fluvial Systems*, Dundee, UK, 2006 (IAHS Publ. 306)
- Water Quality and Sediment Behaviour of the Future: Predictions for the 21st Century*, Perugia, Italy, 2007 (IAHS Publ. 314)
- Sediment Dynamics in Changing Environments*, Christchurch, New Zealand, 2008 (IAHS Publ. 325)
- Sediment Dynamics for a Changing Future*, Warsaw, Poland, 2010 (IAHS Publ. 337)
- Sediment Problems and Sediment Management in Asian River Basins*, Hyderabad, India, 2009 (IAHS Publ. 349)
- Wildfire and Water Quality: Processes, Impacts and Challenges*, Banff, Canada, 2012 (IAHS Publ. 354)

* IAHS Publ. 133 refers to the publication number in the IAHS Proceedings and Reports series (the Red Books). Details of these publications are available at <http://www.iahs.info/redbooks.htm>. Volumes published before 2005 (Pubs 1 to 290) can be downloaded as pdf files from the website without charge. More recent ones can be purchased from the IAHS Bookshop at www.iahs.info.