

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, and the IAHS website: www.iahs.info.

The Warsaw symposium on *Sediment Dynamics for a Changing Future* continues the highly successful ongoing series of ICCE symposia and the papers have been prepublished in this IAHS 'red book'. The response to the call for papers for the symposium exceeded the organisers' expectations (more than 100 abstracts), and should be viewed as an indication of the increasing significance of sediment-related issues to both the environmental and scientific communities. The topic is also particularly important for practitioners and policy makers in Poland and other European countries, because of the implementation of the EU Water Framework Directive, which establishes a legal framework to protect and restore river systems across Europe and ensure their long-term, sustainable use. The 48 papers published in this volume, which include three keynote papers, aim to advance our understanding of the processes of erosion and sedimentation in relation to sediment dynamics and water quality. The keynote papers have been placed at the beginning of the volume and the remaining papers have been grouped into three main themes. The group of papers dealing with *Human Impact on Sediment Budgets* are primarily concerned with the influence of land-use change on catchment sediment yields and/or fluxes. A group of papers on *The Structure, Functioning and Management of Fluvial Sediment Systems* provide valuable information on a range of topics, including the dynamics of flood plain sedimentation, temporal variation of sediment parameters and the important influence of sediment on aquatic ecosystems. The third group of papers dealing with *Experiment-based and Modelling Approaches to Sediment Research* highlight the important role of both monitoring and modelling studies in generating an improved understanding of catchment sediment dynamics, sediment fluxes and river water quality. We hope that these papers encourage further research on how sediment dynamics will respond to future changes in climate and land use.

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Previous ICCE events include:

- Symposium on Erosion and Sediment Transport Measurement (Florence, 1981, Publ. 133*)
- Symposium on Recent Developments in the Explanation and Prediction of Erosion and Sediment Yield (Exeter, 1982, Publ. 137)
- Symposium on Dissolved Loads of Rivers and Water Quantity/Quality Relationship (Hamburg, 1983, Publ. 141)
- Symposium on Drainage Basin Sediment Delivery (Albuquerque – New Mexico, 1986, Publ. 159)
- Workshop on Erosion, Transport and Deposition Processes (Jerusalem, 1987, Publ. 189)
- Symposium on Sediment Budgets (Porto Alegre, 1988, Publ. 174)
- Symposium on Sediment and the Environment (Baltimore, 1989, Publ. 184)
- Symposium on Erosion, Debris Flows and Environment in Mountain Regions (Chengdu, 1992, Publ. 209)
- Symposium on Erosion and Sediment Transport Monitoring Programmes in River Basins (Oslo, 1992, Publ. 210)
- Symposium on Sediment Problems: Strategies for Monitoring, Prediction and Control (Yokohama, 1993, Publ. 217)
- Symposium on Variability in Stream Erosion and Sediment Transport (Canberra, 1994, Publ. 224)
- Symposium on the Effect of Scale on the Interpretation and Management of Sediment and Water Quality (Boulder, 1995, Publ. 226)
- Symposium on Erosion and Sediment Yield: Global and Regional Perspectives (Exeter, 1996, Publ. 236)
- Symposium on Human Impact on Erosion and Sedimentation (Rabat, 1997, Publ. 245)
- Symposium on Modelling Soil Erosion, Sediment Transport and Closely Related Processes (Vienna, 1998, Publ. 249)
- Symposium on the Role of Erosion and Sediment Transport in Nutrient and Contaminant Transfer (Waterloo, 2000, Publ. 263)
- Workshop on Erosion and Sediment Transport Measurement in Rivers: Technological and Methodological Advances (Oslo, 2002, Publ. 283)
- Symposium on the Structure, Function and Management Implication of Fluvial Sedimentary Systems (Alice Springs, 2002, Publ. 276)
- Symposium on Erosion Prediction in Ungauged Basins: Integrating Methods and Techniques (Sapporo, 2003, Publ. 279)
- Symposium on Sediment Transport through the Fluvial System (Moscow, 2004, Publ. 288)
- Symposium on Sediment Budgets (Foz do Iguacu, 2005, Pubs 291 and 292)
- Symposium on Sediment Dynamics and the Hydromorphology of Fluvial Systems (Dundee, 2006, Publ. 306)
- Symposium on Water Quality of the Future; Predicting Water Quality in the 21st Century (Perugia, 2007, Publ. 314)
- Workshop on the Impact of Environmental Change on Sediment Sources and Sediment Delivery (Perugia, 2007)
- Symposium on Sediment Dynamics in Changing Environments (Christchurch, 2008, Publ. 325)
- Workshop on Sediment Problems and Sediment Management in Asian River Basins (Hyderabad, 2009)

* Publ. 133 refers to the publication number in the IAHS Publications series (the red books). Details of these publications are available at www.iahs.info/redbooks.htm. Books published before 2002 (Pubs 1 to 269) can be downloaded as pdf files from the website without charge.