



IAHS Publications

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Considering Hydrological Change in Reservoir Planning and Management

Editor: Andreas Schumann

Co-editors: Vladimir Belyaev, Emna Gargouri, George Kuczera, Gil Mahé & Stephen Mallory

IAHS Publ. 362 (July 2013)
ISBN 978-1-907161-40-7, 214 + x pp. Price £61.00

An excellent overview of contemporary problems in reservoir management, from planning aspects of large multi-objective reservoirs and of small farm dams in Africa, to governmental matters, to sedimentation issues, to climate change impacts. Given the stochastic nature of hydrological conditions, the limited information available to characterize it and the multi-faceted targets of reservoir

management, reservoir planning and operation are ambitious challenges for hydrologists and water managers.

Understanding Freshwater Quality Problems in a Changing World

Edited by Berit Arheimer

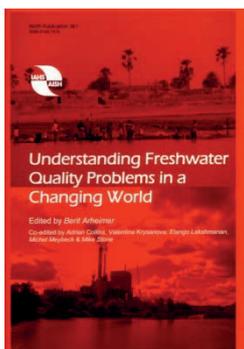
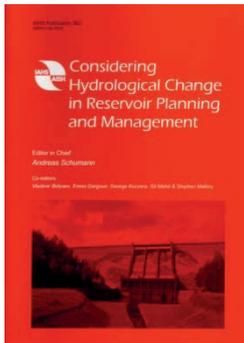
Co-edited by Adrian Collins, Valentina Krysanova, Elango Lakshmanan, Michel Meybeck & Mike Stone

IAHS Publ. 361 (July 2013)
ISBN 978-1-907161-39-1, 372 + xii pp. Price £87.00

Contributions from each continent provide a review of water quality problems worldwide, with articles describing present regional/local freshwater quality status and highlighting research needs. How the situation may develop into the future, given on-going changes in environment and society, is discussed. Questions addressed are: How to understand the behaviours of changing

hydrological systems and impacts on freshwater quality? How to effectively bring together theoretical and experimental hydrology, and new measurement techniques to advance knowledge of

water quality processes for the future? How can the typical timescales of change be identified? How to estimate and predict the behaviours and patterns of freshwater quality with uncertainty assessment to support risk evaluation?



Cold and Mountain Region Hydrological Systems Under Climate Change: Towards Improved Projections

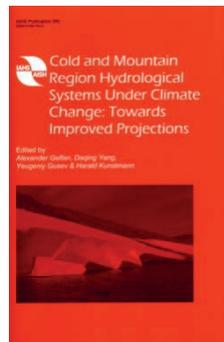
Edited by Alexander Gelfan, Daqing Yang, Yeugeniy Gusev & Harald Kunstmann

IAHS Publ. 360 (July 2013)
ISBN 978-1-907161-38-4, 184 + viii pp. Price £57.00

Presents new research results obtained from both experimental and modelling studies of river basins, snow cover, permafrost, glaciers and ecosystems in cold regions located in different physiographic and climatic conditions, from the Andes to the Siberian tundra. Collectively, the studies reveal physical mechanisms that control cold region hydrological responses to climate change, and consider the sources and magnitude of uncertainties to improve projections of these responses under different

geographical conditions and at various time scales. There are three sections to the volume:

- (1) Mountain hydrological systems under changes;
- (2) Lowland cold regions: changes in river flow;
- (3) Changes in cryo- and eco-systems.



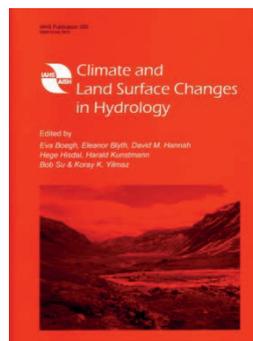
Climate and Land Surface Changes in Hydrology

Edited by Eva Boegh, Eleanor Blyth, David M. Hannah, Hege Hisdal, Harald Kunstmann, Bob Su & Koray K. Yilmaz

IAHS Publ. 359 (July 2013)
ISBN 978-1-907161-37-7, 470 + x pp. Price £95.00

Focuses on field-based and modelling studies addressing the sensitivity of hydrological and hydrometeorological fluxes of the coupled land-atmosphere system to climate and land-use change at local, regional and global scales. Includes model-based studies that evaluate methodologies and the impacts of using climate and weather prediction data. Hydrological sensitivity and effects due to spatial and temporal land-use and land-cover variability are reported for different environmental settings. Observational and model-based investigations assess the significance of land cover and hydrological dynamics for the development of land surface heat fluxes and regional climate.

Several empirical studies, some from remote data-scarce regions, and others using Earth Observations to evaluate temporal and spatial variability in precipitation, evapotranspiration and hydrological predictions, are included.

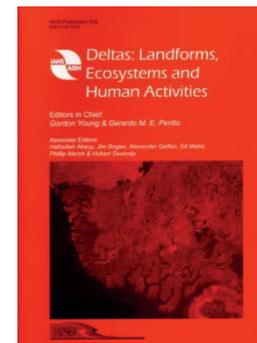


Deltas: Landforms, Ecosystems and Human Activities

Editors Gordon Young & Gerardo M. E. Perillo

Associate Editors H. Aksoy, J. Bogen, A.I. Gelfan, G. Mahé, P. Marsh & H. Savenije

IAHS Publ. 358 (July 2013)
ISBN 978-1-907161-36-0, 246 + x pp. Price £65.00



Deltas pose great challenges, whether marine or lacustrine, as regions of purely natural conditions or of intense human activity set in the context of complex and often rapidly changing

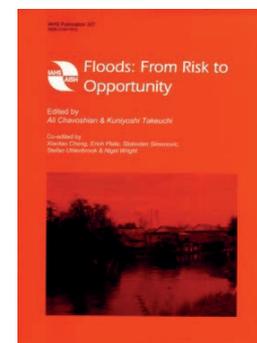
natural environments. Physically they are complex systems, the end-products of catchment processes involving water supply, sediment delivery and water quality – elements that are fast changing over time as a result both of human influences and change in climatic drivers. Tides, waves, sea level changes, storm surges, tsunamis and littoral currents all impact. The contributions result from a joint symposium of the international associations of Hydrological Sciences (IAHS) and of Physical Sciences of the Ocean (IAPSO).

Floods: From Risk to Opportunity

Edited by A. Chavoshian & K. Takeuchi

Co-edited by X. Cheng, E. Plate, S. Simonovic, S. Uhlenbrook & N. Wright

IAHS Publ. 357 (February 2013)
ISBN 978-1-907161-35-3, 470 + x pp. £96.00



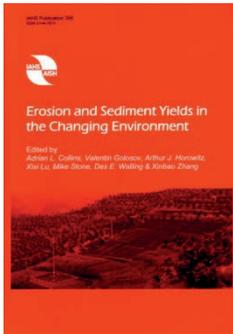
A paradigm shift from focusing on emergency response and recovery to flood risk management is required to build the capacity necessary to cope with floods. The process should

be supported by vulnerability monitoring and development of tools such as standard measures of risk and preparedness in an integrated approach to improve capacity to deal with floods, taking advantage of their benefits while minimizing the social, economic and environmental risks. The papers cover flood risk and disaster management, forecasting and early warning, and management in different regions.

Erosion and Sediment Yields in the Changing Environment

Edited by Adrian L. Collins, Valentin Golosov, Arthur J. Horowitz, Xixi Lu, Mike Stone, Des E. Walling & Xinbao Zhang

IAHS Publ. 356 (October 2012)
ISBN 978-1-907161-33-9, 452 + x pp. Price £90.00



The ICCE-2012 symposium, held in Chengdu, China, continued the successful, ongoing series of symposia and publications organized by the International Commission on Continental Erosion (ICCE) of IAHS, and focus-

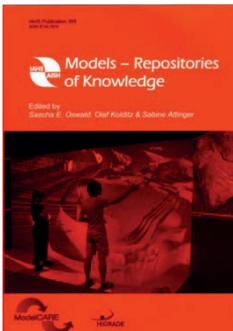
ed on understanding of the processes of erosion and sediment production in a world that is increasingly affected by anthropogenic activities.

- Dynamic processes of erosion and sediment transport in fluvial systems
- Impacts of climate change and human activities on erosion and sediment yield
- Modelling erosion and sediment yields
- Mountain hazards and debris flows
- Monitoring and tracing methodology

Models – Repositories of Knowledge

Edited by Sascha E. Oswald, Olaf Kolditz & Sabine Attinger

IAHS Publ. 355 (November 2012)
ISBN 978-1-907161-34-6, 374 + x pp. £77.00



Questions of global and climate change, use of energy resources and waste deposition, mean that work with groundwater now includes the interfaces to the atmosphere, surface waters and deeper formations that are potentially

used for geothermal energy and CO₂ storage. ModelCARE2011 reflected that and this proceedings volume considers:

- Parameter estimation,
- Uncertainty,
- Numerical and computational methods,
- Reactive transport and bioremediation
- Stochastic and multi-scale models,
- Coupled processes in the subsurface,
- Groundwater flow and climate.

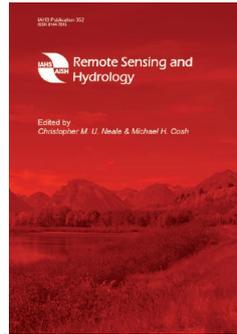
Remote Sensing and Hydrology

Edited by C. M. U. Neale & M. H. Cosh

IAHS Publ. 352 (August 2012)
ISBN 978-1-907161-27-8, 482 + xvi pp. £97.00

Remote sensing continues to expand the ability of scientists to study hydrological processes.

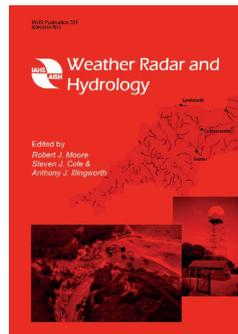
With each new technological development, more of the hydrological cycle is revealed. This impacts both the scientific understanding of hydrological processes and the models used for forecasting, and so the ability to improve decision-making processes and other applications is increasing. This compendium of more than 100 papers, an outcome of the latest ICRS International Symposium on Remote Sensing and Hydrology (Jackson Hole, Wyoming, USA, Sept 2010), reviews the status of technologies and highlights new directions and opportunities for hydrological remote sensing.



Weather Radar and Hydrology

Edited by Robert J. Moore, Steven J. Cole & Anthony J. Illingworth

IAHS Publ. 351 (August 2012)
ISBN 978-1-907161-26-1, 672 + xvi pp., £125.00



Weather Radar and Hydrology concerns the monitoring and forecasting of rainfall over space and time, and how the pattern of rainfall is transformed by a varied landscape into surface water runoff and river flow across a city,

region or country, and so has significant practical application across water resource functions, including flood forecasting and warning, flood design, urban drainage management, water supply and environmental services.

A valuable record of current activity with >100 peer-reviewed contributions from WRaH 2011, Exeter, UK.

Changes in Flood Risk in Europe

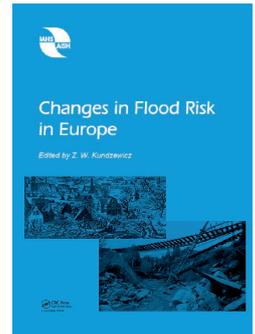
Edited by Zbigniew W. Kundzewicz

Special Publication 10 (April 2012)
978-1-907161-28-5,
516 + xvi pp. £85

Floods are the most prevalent natural hazard in Europe. But, has flood risk increased in the continent? If so, how, where, and why?

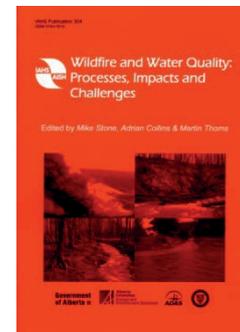
Are climate change impacts apparent? How do socio-economic trends and associated land-use change impact flood risk? This interdisciplinary book, authored by an international team, offers:

- A comprehensive overview of flood risk in Europe, past and present, and future
- National/regional chapters covering Central Europe, Western Europe, Southern Europe and Northern Europe, the Alpine region and the Iberian Peninsula.
- A focus on detection and attribution of change with respect to climate change and its impacts, water resources and flood risk, the re-insurer's view point, and future projections of flood risk



Wildfire and Water Quality: Processes, Impacts and Challenges

Edited by Mike Stone, Adrian Collins & Martin Thoms



Publ. 354
(June 2012)
978-1-907161-32-2,
124 + viii pp. £40

There is increasing global concern over the impacts of landscape disturbance by wildfire on a range of aquatic ecosystem services and drinking water supply. Profound and often irreversible changes in river ecosystem function, geomorphology, water quality and water supply occur due to the severity and magnitude of wildfire-related landscape disturbance. Such impacts have important management implications for source water supply and protection at the catchment scale.

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