

Preface

There has been 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.

A conference on *Wildfire and Water Quality: Processes, Impacts and Challenges* was held in Banff Alberta, Canada, 11–14 June 2012, to bring together researchers and practitioners from diverse fields of hydrology, sediment transport, water quality and watershed management. The goals of the symposium were to improve knowledge of the impacts of large-scale landscape disturbances by wildfire on freshwater ecosystems and better elucidate processes that influence the source, transport and fate of sediment-associated contaminants in the aquatic environment. The symposium was sponsored by the International Committee on Continental Erosion (ICCE) of the International Association for Hydrological Sciences (IAHS), the Government of Alberta, Alberta Innovates – Energy and Environment Solutions, ADAS (UK) and the University of Waterloo.

This IAHS publication contains a selection of peer-reviewed papers presented at the symposium and contains 15 papers from six countries, reflecting the international dimension of the symposium. The symposium addressed several key themes and provided an opportunity for state-of-the-art knowledge transfer and exchange regarding the impacts of large-scale landscape disturbance by wildfire on water quality and its implications for sustainable management of water-sediment systems. Specific themes addressed in this volume include: (1) impacts of wildfire on hillslope hydrology, (2) effects of wildfire on the physical, chemical and biological composition of soils, (3) changes in sediment transport dynamics and yields resulting from wildfires, (4) methodologies used to evaluate the provenance and fate of wildfire impacted sediments and associated contaminants, (5) prediction of hydrological and sediment transport recovery trajectories at the local and catchment scale, (6) impacts of wildfire on aquatic ecology, (7) post-fire sedimentation and water quality impacts in reservoirs, and (8) management actions to reduce the impact of wildfires or river ecosystems.

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