

Integrated Environmental Modelling to Solve
Real World Problems:
Methods, Vision and Challenges

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**Integrated Environmental Modelling to Solve
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Preface

This publication has its roots in a number of developments in Integrated Environmental Modelling (IEM) over the past few years. There has been an increasing groundswell of opinion, predominantly from North America, that the complex environmental problems that humans are faced with in the 21st Century require appropriate modelling solutions. This has been reflected in the number of meetings that have been convened both in the United States and the UK to further develop the concepts of integrated modelling and particularly the methodologies available for linking together models to solve specific problems – ‘model fusion’. These include meetings convened by the British Geological Survey (BGS) as a result of their Data and Research for Environmental Applications and Models (DREAM) programme which formed part of the BGS strategy from 2010–2015.

There is a growing community of IEM practitioners who are striving to solve the problems presented by this step change in how modelling takes place. The challenges are many and various,

but predominantly involve ‘professionalising’ the modelling approach, making models discoverable, linkable, reproducible and the results easily visualized all in a framework of assessing the uncertainty. The models themselves are applied to a wide range of environmental problems. It is the hope of the editors that this volume represents the current landscape of IEM by presenting papers on the vision and challenges, case studies of how IEM techniques are being applied, social aspects of IEM, and software solutions and methodology.

A volume of this size cannot be put together without the efforts of the reviewers and the following are thanked for their efforts: James Breck, Nina Burkhardt, Paul Conrads, Dan Cornford, Rachel Dearden, Paul Duller, Jon Ford, Pierre Glynn, Patricia Gober, James Griffiths, Rachel Heaven, Andrew Hughes, Gerry Laniak, Murray Lark, John Laxton, Jonathan Mackay, Christos Makropoulos, Majdi Mansour, John Rees, Carolyn Rosten, Jonty Rougier, Jan Stafleu, Jana Stewart, James Sutherland and Kyle Young.