

## *Foreword*

It is timely on several counts that there appear under international scientific auspices an authoritative review of the potential and the problems, the opportunities and the limitations, the successes and the failures of simulation modelling of environmental processes. In the first place, this activity is good science – the attempt to explain in quantified form phenomena we observe in nature. Secondly, the imperatives of improving our capability to develop more meaningful environmental impact assessments are mounting daily, and modelling appears to be the most potentially powerful tool on the horizon to answer the recurring ‘what if?’ questions these assessments entail. Thirdly, there is an explosively growing technology of modelling with which environmental modelling can interact, draw upon and to which it can provide guidance.

Finally, and perhaps most importantly, the world has awakened to the realization that human activity has now reached a magnitude in scale and scope that nearly equals – and in some cases exceeds – those natural forces that influence the environment. To understand those natural forces, and to manage constructively that human activity, are the challenges to the environmental modeller. In this sense, modelling in one way or another enters into every *single* aspect of environmental investigations and management and is the thread held in common by each area SCOPE has chosen for priority study.

It was for this reason that the Holcomb Research Institute welcomed the privilege of working with and assisting Dr. Frenkiel and Dr. Goodall and their distinguished Commission Members from many parts of the world in undertaking the enormous task of providing structure and guidance to this important field. How well they have succeeded – in what can only be a start – is demonstrated in the clarity and perceptiveness of the pages that follow.

*The Holcomb Institute  
Indianapolis, Indiana*

THOMAS F. MALONE  
Director

