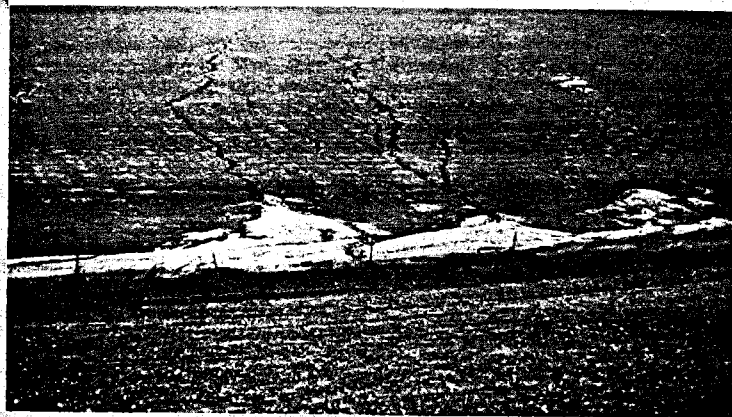


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SOIL EROSION ON AGRICULTURAL LAND

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Edited by
J. Boardman, I.D.L. Foster and J.A. Dearing

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SOIL EROSION ON AGRICULTURAL LAND

Edited by

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and

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This book contains the first state-of-the-art review of erosion research. It includes a series of major review papers covering substantial areas of this wide field. Management, policy and economic issues are covered, together with the physical processes of erosion. Many of the current debates are reflected in the articles: the problems of modelling; on-farm versus off-farm costs; persuasion or enforcement of conservation.

A broad geographical area has been covered in the book and the temporal range spans from Iron Age erosion, through the recording of current rates, to the prediction of future rates. Problems associated with erosion are also dealt with, for example, chemical pollution of lakes and watercourses, and damage to property by runoff.

The book includes a number of papers presented during a Workshop on Soil Erosion on Agricultural Land which was held in 1989 and sponsored by the British Geomorphological Research Group.

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Series Preface

The British Geomorphological Research Group (BGRG) is a national multi-disciplinary Society whose object is 'the advancement of research and education in geomorphology'. Today, the BGRG enjoys an international reputation and has a strong membership from both Britain and overseas. Indeed, the Group has been actively involved in stimulating the development of geomorphology and geomorphological societies in several countries. The BGRG was constituted in 1961 but its beginnings lie in a meeting held in Sheffield under the chairmanship of Professor D. L. Linton in 1958. Throughout its development the Group has sustained important links with both the Institute of British Geographers and the Geological Society of London.

Over the past three decades the BGRG has been highly successful and productive. This is reflected not least by BGRG publications. Following its launch in 1976 the Group's journal, *Earth Surface Processes* (since 1981 *Earth Surface Processes and Landforms*) has become acclaimed internationally as a leader in its field, and to a large extent the Journal has been responsible for advancing the reputation of the BGRG. In addition to an impressive list of other publications on technical and educational issues, BGRG symposia have led to the production of a number of important works including *Nearshore sediment Dynamics and Sedimentation* edited by J. R. Hails and A. P. Carr; *Geomorphology and Climate* edited by E. Derbyshire; *River Channel Changes* edited by K. J. Gregory, and *Timescales in Geomorphology* edited by R. Cullingford, D. Davidson and J. Lewin. This sequence of books culminated in 1987 with publication of the *Proceedings of the First International Geomorphology Conference* edited by Vince Gardiner. This international meeting, arguably the most important in the history of geomorphology, provided the foundation for the development of geomorphology into the next century.

This open-ended BGRG Symposia Series has been founded and is now being fostered to help maintain the research momentum generated during the past three decades, as well as to further the widening of knowledge in component fields of geomorphological endeavour. The series consists of authoritative volumes based on the themes of BGRG meetings, incorporating, where appropriate, invited contributions to complement chapters selected from presentations at these meetings under the guidance and editorship of one or more suitable specialists. Whilst maintaining a strong emphasis on pure geomorphological research, BGRG meetings are diversifying, in a very positive

way, to consider links between geomorphology *per se* and other disciplines such as ecology, agriculture, engineering and planning.

The first volume in the series was published in 1988. *Geomorphology in Environmental Planning*, edited by Janet Hooke, reflects the bent towards applied studies. The second volume, edited by Keith Beven and Paul Carling, *Floods—Hydrological, Sedimentological and Geomorphological Implications*, focuses on a traditional research theme. *Soil Erosion on Agricultural Land* reflects the international importance of this topic for researchers during the 1980s. The volume, edited by John Boardman, Ian Foster and John Dearing, forms the third in the series.

The BGRG Symposia Series will contribute to advancing geomorphological research and we look forward to the effective participation of geomorphologists and other scientists concerned with earth surface processes and landforms, their relation to Man, and their interaction with the other components of the Biosphere.

September 1989

Geoffrey Petts
BGRG Publications

Preface

The chapters in this book were presented at a workshop on Soil Erosion on Agricultural Land sponsored by the British Geomorphological Research Group (BGRG) as its contribution to the Annual Conference of the Institute of British Geographers (IBG). The conference was held at Coventry Polytechnic in January 1989. The four-day workshop included 35 oral presentations and 20 posters, plus two field excursions, and was attended by about 120 people from 20 countries.

The aim of this book is to provide a representative selection of aspects of the soil erosion problem presented at the conference. Soil erosion is a broad topic which cannot be comprehensively covered in a single book, let alone one based on a specific conference. However, several contributors were invited to review broad areas in a series of keynote papers.

A secondary aim of the workshop was to bring together erosion researchers from different disciplines rather than confining discussions to geomorphological aspects of the topic. This proved to be difficult to achieve, but to the extent that the volume contains contributions from computing, agronomy, soil science, sedimentology, geology and agricultural economics, the organizers were partially successful.

The contributions to the book are arranged in three sections: 1, Erosion Processes: Past and Present; 2, Assessment and Prediction, and 3, Conservation and Policy. These section titles represent the division of the topic into broad areas corresponding to assessment, prediction and management. Placement of some contributions proved difficult because they span more than one of these areas.

Many people have contributed to the production of this volume. First, the local organizing committee of the IBG conference and Professor D. E. Smith, Head of the Department of Geography, Coventry Polytechnic, facilitated the smooth running of the workshop. The World Association of Soil and Water Conservation sponsored a session on 'Soil Conservation, Policies and Practices' and stimulating field excursions were organized by Drs I. D. L. Foster and J. A. Dearing (Coventry Polytechnic) and Dr M. A. Fullen (Wolverhampton Polytechnic). The BGRG provided funding for several overseas contributors. Finally, we would like to thank the many referees who have reviewed these chapters, often under severe time constraints.

John Boardman
Ian Foster
John Dearing