Fluvial geomorphology of Great Britain

Edited by K.J. Gregory, Goldsmiths College, University of London, UK

Sections co-ordinated by A. Werritty, J. Lewin, A.M. Harvey, M.G. Macklin and K.J. Gregory

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The authors

Professor Ken Gregory is Warden of Goldsmiths College, University of London and Professor of Geography, University of London.

Professor Alan Werritty is Professor of Geography, University of Dundee.

Professor John Lewin is Professor of Geography, Institute of Earth Studies, University of Wales, Aberystwyth.

Dr Mark Macklin is Reader in Geography, University of Leeds.

Dr Adrian Harvey is Reader in Geography, University of Liverpool.

Other contributors

Richard Davis is a Hydrologist with the Environment Agency.

Professor Angela Gurnell is Professor of Geography, University of Birmingham.

Dr Gary Higgs is Lecturer in GIS, Department of City and Regional Planning, University of Wales, Cardiff.

Dr Richard Hey is Reader in Environmental Sciences, University of East Anglia.

Dr Lindsey McEwen is Lecturer in Geography, Cheltenham and Gloucester College of Higher Education.

Dr Tony Jones is Reader in Geography, Institute of Earth Studies, University of Wales, Aberystwyth.

Dr John Gordon is Quaternary Geomorphologist, Scottish National Heritage, Edinburgh.

Professor Janet Hooke is Professor of Physical Geography, University of Portsmouth.

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Work on the identification of fluvial geomorphology sites for the Geological Conservation Review (GCR) was started by the Nature Conservancy Council (NCC) in 1985 with a widespread consultation exercise coordinated by John Gordon (now of Scottish Natural Heritage). The task of site selection and data compilation had been largely completed before the Nature Conservancy Council was reorganized into three country-based conservation agencies and their Joint Nature Conservation Committee ONCC) in 1991.

The task of selecting and documenting the results of the fluvial geomorphology site review necessarily took a number of years; it was a complex project which was further complicated by the senior author and two of the regional authors moving to new posts during the period of text production. Therefore, the first stage of the data assembly and compilation of the recommended list of sites was undertaken at the University of St Andrews for GCR sites in Scotland, at the University of Newcastle-upon-Tyne for north-east England, and at the University of Southampton for southern England, before Alan Werritty moved to Dundee, Mark Macklin to Leeds and Ken Gregory to London. Data for the sites in Wales

were compiled at the University of Wales, Aberystwyth, and for north-west England at the University of Liverpool. The necessary research was undertaken for these five separate regions ('Fluvial Geomorphology GCR Blocks') from the five universities mentioned above. During the course of data collection, a considerable amount of field work was involved; for the larger areas a research assistant worked with the respective GCR Block coordinator in finalizing the list of sites and in collecting the necessary data. Lindsay McEwen worked in this role with Alan Werritty for Scotland, Gary Higgs with John Lewin for Wales and Huw Rowlands and subsequently Richard Davis with Ken Gregory for southern England.

Work towards publication of the results of the review was initiated by the NCC, and resumed in 1992 under the auspices of the JNCC on behalf of the three statutory nature country agencies, the Countryside Council for Wales, English Nature and Scottish Natural Heritage.

As evidenced by the text for each site, major reliance is placed necessarily on the work of many individuals, and particularly on the contributions made by members of the British Geomorphological Research Group. For each site, all of the source material is acknowledged as fully as possible and we have endeavoured to provide the most up-to-date summary; we are of course aware that research at the time of publication and also in the future will continue to provide more knowledge and understanding for many of the sites described in this volume. However, during the course of producing the site descriptions, many individuals have contributed comments and assistance in respect of particular sites. Grateful acknowledgement is therefore made for the contributions made in different ways by Dr Tony Brown, Mr Tim Heap, Dr Richard Hey, Mr Chris Hill, Dr Tony Jones, Professor Malcolm Newson, Dr Dave Passmore, Professor Keith Richards, Mr Huw Rowlands, Dr Barbara Rumsby, Mr Watts Stelling and Professor Des Walling.

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To all people who have assisted, over more than ten years, grateful acknowledgement is recorded, particularly to the way in which the authors have collaborated.

Access to the countryside

This volume is not intended for use as a field guide. The description or mention of any site should not be taken as an indication that access to a site is open or that a right of way exists. Most sites described are in private ownership, and their inclusion herein is solely for the purpose of justifying their conservation. Their description or appearance on a map in this work should in no way be construed as an invitation to visit. Prior consent for visits should always be obtained from the landowner and/or occupier.

Information on conservation matters, including site ownership, relating to Sites of Special Scientific Interest (SSSIs) or National Nature Reserves (NNRs) in particular counties or districts may be obtained from the relevant country conservation agency headquarters listed below:

English Nature, Northminster House, Peterborough PE1 1UA.

Scottish Natural Heritage, 12 Hope Terrace, Edinburgh EH9 2AS.

Countryside Council for Wales, Plas Penrhos, Ffordd Penrhos, Bangor, Gwynedd LL57 2LQ.

Preface

This book summarizes the results of part of the Geological Conservation Review (GCR), an extensive research programme that aimed to assess the scientific significance of Britain's geological and geomorphological localities so that

the most important ones could be protected by law. Ultimately, the GCR sites were selected with a view to their designation as Sites of Special Scientific Interest (SSSIs).

In this volume the scientific importance of the set of fluvial geomorphology GCR sites is described.

The surveys of fluvial geomorphology sites were carried out initially for five areas of the country (i.e. for five fluvial geomorphology GCR 'Blocks'), reflected in chapters 2–6 of this volume. In each block, a list of candidate GCR sites was established on the basis of previous research and published material; after consultation with as many people as possible and visits to as many sites as possible, the list was refined to contain only the most scientifically important localities. The comments made, and advice received, from a large number of experts became a significant element in the finalization of the list of GCR sites which were needed to reflect the diversity of the fluvial geomorphology of Britain, and the history of research and investigation already undertaken. When finalizing the list of GCR sites, the criteria of minimum duplication of special scientific interest between sites within an overall framework of selecting the most representative, exceptional, unique and internationally important GCR sites were kept clearly in mind.

Because much of the landscape of Britain owes a great deal to rain and rivers, there is potentially a great wealth of sites from which to choose; inevitably we have had to rely on those that have already been discovered, documented and researched. Also, while some of the sites described have been the subject of research or study very recently, others have been known for as long as 100 years, and there may be other classic sites emerging as a result of research that is under way at the present time. This emphasizes the fact that the GCR sites described in this volume represent what might be thought of as a snapshot of a particular point in time, reflecting the way in which the need for a range of sites of different types is reconciled with the background of the information that has become available. It is also important to remember that some potential fluvial geomorphology sites may overlap with sites described in other volumes of the Geological Conservation Review Series, which were selected for the GCR for other special interests such as stratigraphy or Quaternary geology and geomorphology.

Most of the SSSI proposals made as a result of the Geological Conservation Review have already been translated into site designations by the appropriate country conservation agencies (the Countryside Council for Wales, English Nature and Scottish Natural Heritage).

This volume is not intended as a field guide to fluvial geomorphology sites, nor is it intended to cover the practical problems involved in future site conservation. The purpose is to record the scientific justification for conserving particular sites and to demonstrate the character and significance that the sites have against the background of a wider geomorphological context. Each site is documented in a self-contained account, starting with the highlights (appraisal of its special scientific interest) and a general introduction (with a note of investigation and research literature concerning the site). A morphologic description of the various features of the site in order to place them in context is followed by an interpretation of the site and its significance. A conclusion is produced to give a clear indication of the characteristics of the site, their present significance and, where appropriate, any suggestions about future work. Although some of the interpretation sections necessarily use some technical terms, the accounts have been constructed to be accessible to the non-specialist as much as possible; also the glossary at the end of the volume is compiled with this in mind.

Readers will appreciate that this volume is not intended to provide a final 'domesday' list of protected fluvial geomorphology sites in Britain. The purpose of the volume is not only to ensure that the selected GCR sites are available and documented for future generations, but to acknowledge that, as further research is undertaken, additional knowledge can be added to that contained in this volume. Not only will more be learnt about many of the sites included, but also other potential sites will be identified. However, the range of sites described here should demonstrate the wealth of evidence of and interest in the fluvial geomorphology environment of Britain and, as such, provide a vital ingredient for the scientific and natural heritage of the country.

Ken Gregory January 1997

References