

Research and Development

Final Project Report

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Guidebook of Applied Fluvial Geomorphology

DEFRA project code

FD1914

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and locationNottingham University Consultants Limited, University Park, Nottingham
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Project end date

31 January 2003

Executive summary (maximum 2 sides A4)

The guidebook produced by this project collates and summarises the results of geomorphological R&D projects performed for the Environment Agency and its predecessor the NRA during the 1990s. During that period the use of geomorphology in river engineering, management, conservation and restoration increased dramatically. In the UK, the application of geomorphological science and practice now forms a regular part of projects involving flood protection, fisheries, conservation, recreation, environmental protection and river restoration. The responsibilities to be placed upon the UK Environment Agency and other organisations concerned with river management by the EU Water Framework Directive to assess the status of, and pressures on, river morphology will ensure that the uptake of geomorphology continues and expands. In this context, the project produced a guidebook intended for use by individuals involved in any area of river engineering or management. The guidebook produced by the project:

- Fosters understanding of geomorphology in the river environment;
- Stresses the significance of considering geomorphological processes in river management applications;
- Gives an overview of the different methods of incorporating geomorphological science into river engineering and management;
- Provides guidance on when to seek expert geomorphological advice and where to find it.

The volume produced is a guidebook rather than a handbook. It does not contain detailed, step-by-step instructions on how to perform geomorphological analyses and investigations because material of this type cannot be found in the R&D performed during the 1990s that forms the basis for the book. However, recent advances in academic thought and professional practice mean that it would now (September 2003) be possible to produce a handbook of methods and techniques for use by scientists and engineers who have been trained in geomorphology. It is **recommended** that Defra and the Environment Agency commission the production of such a Handbook for use alongside this guide.

In selecting material for inclusion in the guidebook, the Principal Investigators not only sought advice from relevant individuals, but also drew on the results of information gathered as part of training in geomorphology provided by the Environment Agency to its staff and lead by the University of Newcastle. In drawing together material from R&D Reports produced in the 1990s, the Principal Investigators have made reference to the opinions of trainees by;

- Concentrating content on channel form and change, sediment systems, catchment issues and example applications relevant to (and within the context of) the work of the Defra and the Environment Agency;
- Using examples drawn from flood control projects, bank erosion problems, rehabilitation/restoration schemes and a range of site-specific applications of geomorphology;
- Drawing largely on experience gained in the 1990s through project-related fieldwork, analysis and input to the design process.

It was also decided to include in the guidebook existing materials used to support training. These materials are outlined in the text of the Guidebook and recorded on a CD-ROM that may be found inside the back cover of the volume.

Scientific report (maximum 20 sides A4)

The 'Guidebook of Applied Fluvial Geomorphology' constitutes the scientific report produced by this project. A separate scientific report is not required here. However, the CONTENTS list is included for completeness. See the following webpage for a copy of the report www2.defra.gov.uk/research/project_data/ (enter FD1914 as search criteria)

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