

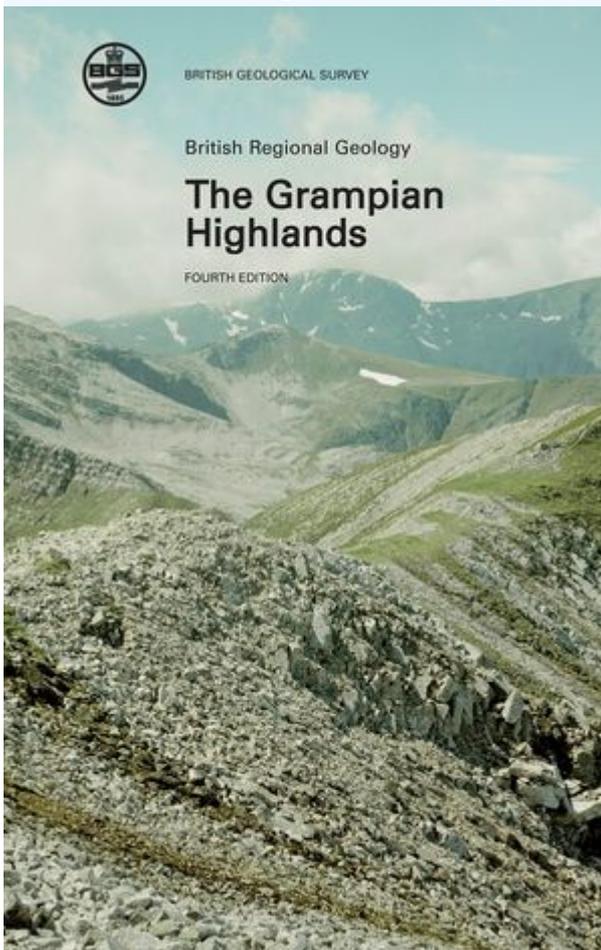
British regional geology: Grampian Highlands

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The British regional geology: South of Scotland has been converted to a series of articles for this wiki. The book is available for purchase at the [BGS Online Shop](#) Its full reference is:

Stephenson, D, and Gould, D. 1995. British regional geology: the Grampian Highlands. Fourth edition. Reprint 2007. Keyworth, Nottingham: British Geological Survey.



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Foreword to the fourth edition

The first edition of the Grampian Highlands regional guide was published in 1935, with subsequent editions being issued in 1948 and 1966. Throughout the period since the appearance of the third edition there has been a considerable amount of work in the Grampian Highlands region (which here is taken to include the South-west Highlands), both systematic mapping by the British Geological Survey and research by the universities. The result of this work has been substantial improvement to our understanding of the geology. Even now, however, that understanding is incomplete and there is still controversy over several issues of fundamental significance. The present edition of the guide presents a comprehensive summary of our existing knowledge and reviews the on-going debates, particularly those relating to the Precambrian geology.

The Grampian Highlands region covers a large area and understanding its complex geology calls for a wide variety of geological expertise. In consequence, this fourth edition of the guide is a cooperative product from the BGS Highlands and Islands Group, (including several former members of staff), and other parts of BGS.

The Grampians region is mostly one of uplands and mountains, and includes the highest peak in Britain, Ben Nevis (1343 m). It is an area much admired for its wild and unspoiled rugged topography and the deep and beautiful valleys in which run some of the most renowned of salmon and trout rivers such as the Spey and the Dee. In the north of the region, however, the countryside along the southern side of the Moray Firth is rather different, with more gently undulating hills, and a flat coastal plain is largely cultivated. These and other topographical differences reflect the underlying geology which provides an insight into the evolution of the area over 700 million years. The rocks of the uplands mostly record the development of the root zone of the Caledonian mountain belt in late Precambrian and early Palaeozoic times; subsequently many kilometres of rock were eroded to expose the rocks we see at present.

It is only at the margins of the region that there are large developments of younger rocks, most notably the Devonian of the southern margin of the Moray Firth basin and the widespread but thin cover of Quaternary glacial and periglacial deposits.

Understanding the nature of the rocks, the geological history of the area and the processes involved to produce the present-day landscapes is essential if we are to properly understand and conserve the beautiful country and wild scenery which is the very heart of the region. It is also essential if we are to understand the distribution of natural resources and possible hazards which may result from any manmade developments. The resources include gold, baryte, small amounts of copper, lead, zinc and manganese and large quantities of both hard rock for aggregate and sand and gravel.

I am sure that this fourth edition of the regional guide to the Grampian Highlands will prove as popular as its predecessors with geologists, planners, environmentalists, students and tourists and all those whose wish to have a better geological understanding of this magnificent region of Britain.

Acknowledgements

This fourth edition of the Grampian Highlands regional guide is mostly a cooperative product from BGS Highlands and Islands Group, with input also from former members of its staff. The major part of the work, Chapters 4, 5 and 6 on the metamorphic rocks, was written by Dr D Stephenson, with contributions from Dr R M Key, Dr J R Mendum and Mr G S Johnstone. The other major chapter, on the Caledonian igneous rocks, was written by Dr D Gould who also contributed to Chapters 11 and 12. Other authors and contributors were Dr G C Clark on Chapter 1, Dr D I J Mallick on Chapters 2 and 3, Dr D J Fettes, Chapters 7 and 9; the Devonian, Carboniferous and Mesozoic chapters, 10, 11 and 12, were written by the late Dr W Mykura and by Dr T P Fletcher. The chapter on the Quaternary is by Dr J D Peacock and Mr J W Merritt, the latter also contributing the short chapter on the Neogene. Dr D I Smith was responsible for the chapters on the minor intrusions ([Post-Caledonian minor intrusions](#)) and late brittle faulting ([Faulting and seismicity](#)); Dr R M W Musson contributed the seismicity section in the latter. The final chapter, 17, on the economic geology was prepared by the late Dr M J Gallagher and by Mr J W Merritt. The guide was compiled and edited by Dr D I J Mallick and Dr G C Clark. We are grateful to the following copyright holders who have given permission to reproduce or modify their illustrative material: Blackie for Figures 5, 6 and 8; the Geological Society of London for Figures 19 and 25; the Royal Society of Edinburgh for Figure 20 and the Edinburgh Geological Society and the Geological Society of Glasgow for Figures, 11, 12, 13, 14, 15, 16, 17, 18, 28 and 29.

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