



**British Geological Survey**  
NATURAL ENVIRONMENT RESEARCH COUNCIL



**CUMBRIA AND THE LAKE DISTRICT**  
(comprising Cumbria, the Lake District National Park and part of the Yorkshire Dales National Park)

A Summary of Mineral Resource Information  
for Development Plans  
**Sand & Gravel Resources**  
Scale 1:150 000

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**SAND & GRAVEL**

**Superficial deposits**

- River sand & gravel resources
- Glacial sand & gravel resources
- Concealed sand & gravel resources in assessed area
- Marine (beach) and estuarine sand & gravel resources
- Blown sand
- Boundary of area assessed for sand & gravel at the indicated resource level

**MINERAL PLANNING PERMISSIONS (as at 01.01.00)**

Source: Mineral Planning Authorities

- Surface planning permission (valid and expired)
- Note: these areas represent mineral planning permissions which have been granted in the past, irrespective of their current status.
- Planning Permission area undefined

**MINERAL WORKINGS**

- Cardewmires Active site
- Barrowwood Inactive, worked-out and/or restored site

**MINERAL COMMODITY**

- Sg Sand & gravel

**ENVIRONMENTAL DESIGNATIONS**

- Lake District and Yorkshire Dales National Parks
- Area of Outstanding Natural Beauty: Solway Coast, North Pennines (part), Arnsdale & Silverdale (part)
- Site of Special Scientific Interest
- National Nature Reserve
- Scheduled Monument

**ADMINISTRATIVE AREAS**

- District

**Sand & Gravel**

Sand & gravel production in Cumbria was 785 000 tonnes in 1999. Sand & gravel resources occur in a variety of geological environments and all occur within lithologies classified as superficial or 'drift' deposits, all deposited within the last two million years. For the purposes of the map these deposits have been subdivided into four sub-groups: River, Glacial, Marine sand & gravels and Blown sand. The variability of sand and gravel deposits, including their possible concealment within or beneath till (boulder clay), means that it is often more difficult to infer the location and likely extent of potentially workable resources from geological maps. Inefficient data are available in the BGS archive to permit a systematic survey of these deposits. In one area, around Brampton, Holme and Burton, however more detailed data are available from a Mineral Assessment Unit survey (MAU Report 45). In this area the possible extent of sand and gravel beneath till is shown. Elsewhere only exposed sand and gravel deposits are shown.

**River sand & gravel**

Essentially river-lain deposits ranging from silt and clay through to coarse gravel, including river terrace deposits, whose character and distribution may be highly variable. Terrace deposits occur at various levels above the current flood plain and may contain significant concentrations of sand and gravel. The areas shown on the map include the more extensive areas of alluvial deposits which may reasonably be expected to host some concentrations of sand and gravel.

**Glacial sand & gravel**

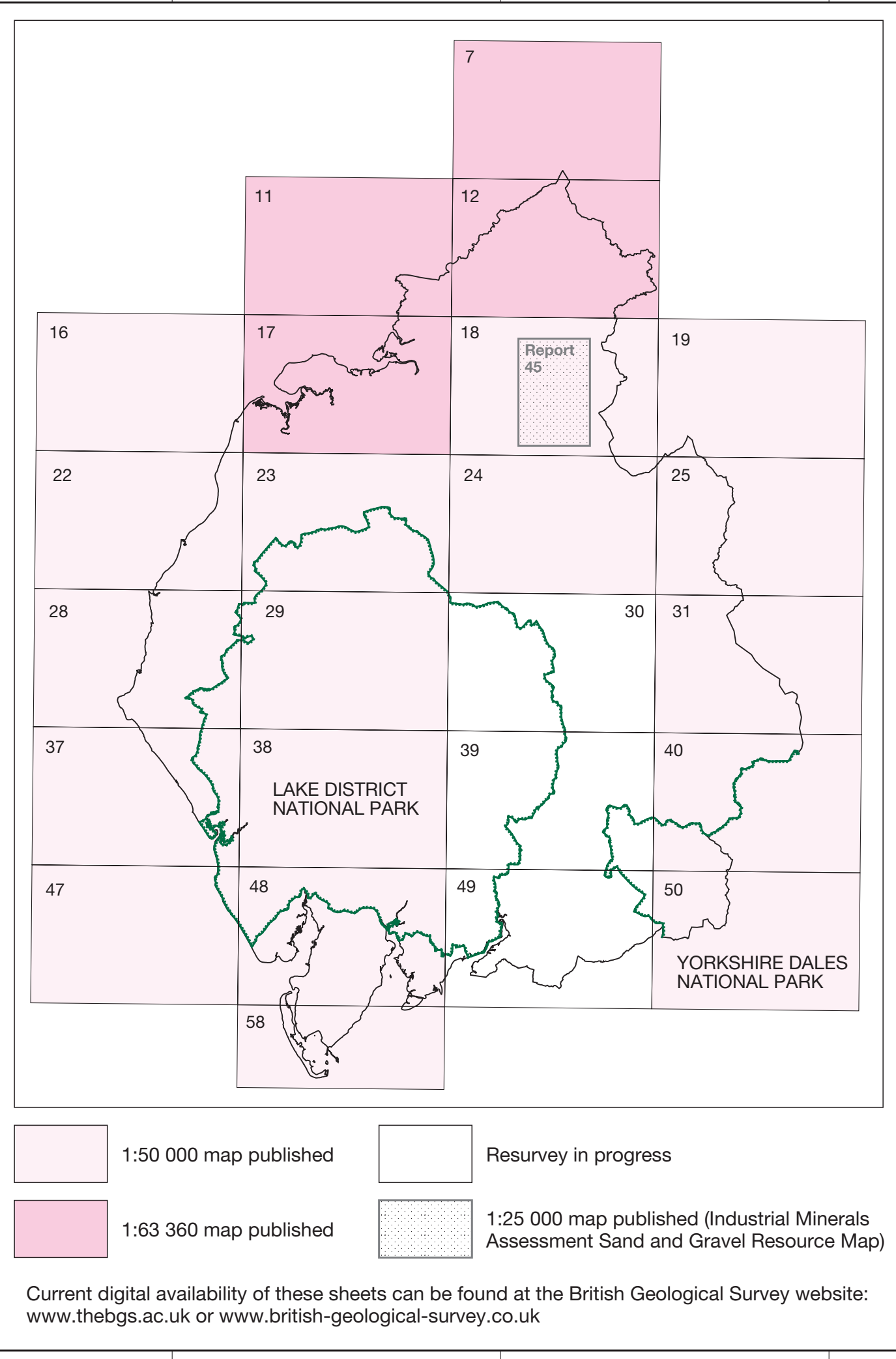
These are deposits mapped as the products of deposition by glacial meltwaters and are nowadays more commonly labelled on BGS maps as glaciofluvial and fluvioglacial, a more accurate description of their origin. In Cumbria, in common with elsewhere in the UK, the sequence of these deposits is problematic with mappable units commonly exhibiting intricate and complex relationships. Bodies of sand and gravel may occur as sheet- or delta-like layers above till deposits or as elongate, irregular lenses within the till sequence. Areas of wholly concealed, and thus unknown, bodies of sand and gravel may occur under extensive spreads of till and other drift deposits.

**Marine (beach) sand & gravel**

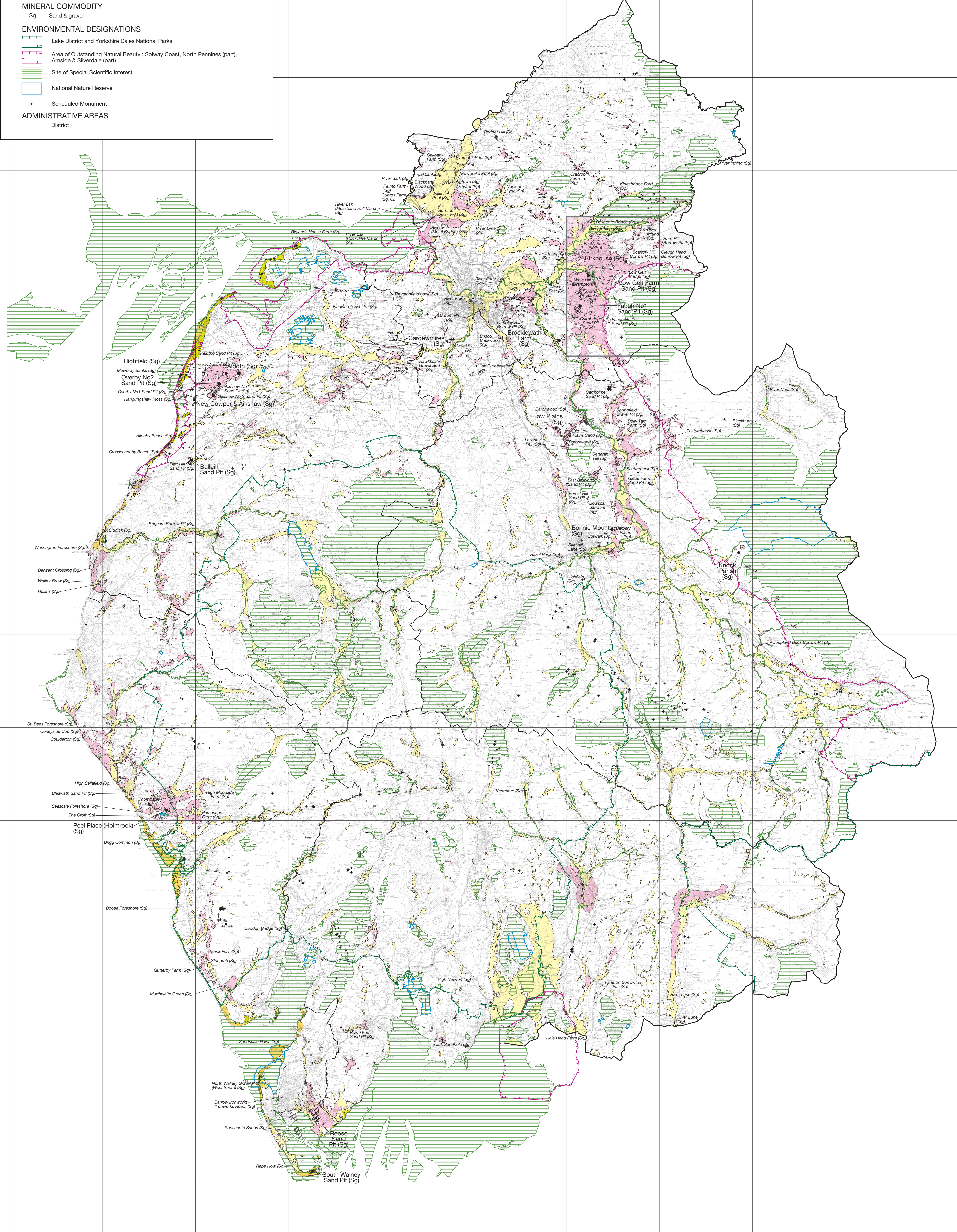
Included in this category are deposits mapped on BGS maps as 'Shoreface and Beach Deposits', 'Storm Beach Deposits' and a variety of raised beach deposits. Typically these occur as accumulations of sand and gravel restricted to the modern coast and a relatively narrow belt of country adjacent to it. Extensive deposits of this type are found around Gosforth and on the north coast of Morecambe Bay in the Ulverston area.

**Blown sand**

Coastal dunes, composed of wind-blown sand occur along parts of the Solway coast, near Ravenglass, and at Walney Island. Large tonnages of sand exist but little is known about the quality of the material. The extensive deposits around Ravenglass lie mainly within a National Nature Reserve and a weapons testing area.



Current digital availability of these sheets can be found at the British Geological Survey website: [www.thebgs.ac.uk](http://www.thebgs.ac.uk) or [www.british-geological-survey.co.uk](http://www.british-geological-survey.co.uk)



**AIMS AND LIMITATIONS**

The purpose of the maps and associated reports in this series is to show the broad distribution of those mineral resources which may be of current or potential economic interest and to relate these to selected nationally-recognized planning designations. The maps are intended to assist in the consideration and preparation of development policies in respect of mineral extraction and the protection of important mineral resources against sterilisation. They bring together a wide range of information, much of which is scattered and not always available in a convenient form.

The maps have been produced by collation and interpretation of mineral resource data principally held by the British Geological Survey. Information on the extent of mineral planning permissions has been obtained from the relevant Mineral Planning Authority (MPA). Location information on national planning designations has been obtained from the appropriate statutory body (Countryside Agency, English Nature and English Heritage). For further information the relevant body should be contacted.

The mineral resource data presented are based on the best available information, but are not comprehensive and their quality is variable. The inferred boundaries shown are, therefore, approximate. Mineral resources defined on the maps delineate areas within which potentially workable minerals may occur. These areas are not of uniform potential and also take no account of planning constraints that may limit their working. The economic potential of specific sites can only be proved by a detailed evaluation programme. Such an investigation is an essential precursor to submitting a planning application for mineral working. Extensive areas are shown as having no mineral resource potential, but some isolated mineral workings may occur in these areas. The presence of these operations generally reflect very local or specific situations which are referred to in the accompanying report.

The maps are intended for general consideration of mineral issues and not as a source of detailed information on specific sites. The maps should not be used to determine individual planning applications or in taking other decisions on the acquisition or use of a particular piece of land, although they may give useful background information which sets a specific proposal within context.

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Positions of Scheduled Monuments at 1st April 1996 as supplied by English Heritage. The majority of monuments are plotted using a centred NGR symbol. Consequently the actual area and/or length of a monument protected by the legal constraints of scheduling cannot be represented here.

Digital AONB boundaries © Countryside Commission 1986 (now Countryside Agency)

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