CITATION

ARDNAMURCHAN
SITE OF SPECIAL SCIENTIFIC INTEREST
Highland (Lochaber)

Site code: 77

NATIONAL GRID REFERENCE: NM 483675, NM 432685, NM 455645, NM 487631

OS 1:50,000 SHEET NO: Landranger Series 47
1:25,000 SHEET NO: Explorer Series 390

AREA: 3827.41 ha

NOTIFIED NATURAL FEATURES:

Geological: Igneous Petrology: Tertiary Igneous

DESCRIPTION:

Ardnamurchan Site of Special Scientific Interest (SSSI) is a large geological site on the Ardnamurchan Peninsula, close to the most westerly point on the British mainland. The SSSI comprises four separate areas that encompass features of key geological interest relating to a large, igneous complex - an eroded volcano of Palaeogene (formally lower Tertiary) age, a period around 60 million years ago. It demonstrates more strikingly than other more rugged and mountainous complexes found along the west coast of Scotland, the characteristic geological features of such igneous complexes. This site is one of five major centres of volcanic activity centred within the British Tertiary Volcanic Province (BTVP).

The four areas which comprise the SSSI encompass five geologically distinct parts that illustrate, in chronological order, aspects of the development of the complex, and display two main categories of igneous bodies: cone sheets, that are thin arcuate (curved) dykes typically occurring in swarms, and ring-dykes which are larger and thicker arcuate bodies with vertical or outward dipping sides. From the dykes' disposition at the ground surface it is clear that they relate to three separate centres (referred to as Centres 1, 2 and 3) of volcanic activity that record the shifting focus of igneous activity with time; it is these features that confer upon the area its national and international geological importance.

Within the relatively small Glas Bheinn to Glebe Hill area of the site, ring dyke and cone sheet intrusions belonging to all three volcanic centres are in intimate association, enabling the major phases and chronology of the development of the volcanic complex to be studied. For example, the early Glas Bheinn dolerite of Centre 1 is cut by the gabbro of Centre 2, which in turn is truncated by Centre 3 intrusions.

The Beinn na Seilg to Beinn nan Ord section reveals a typical ring dyke complex and provides a valuable traverse through the cone sheet intrusions of Centre 2. Together, these features, representing the eroded roots of a volcano, illustrate the development of this phase in the volcanic complex. Here, too, the contacts between the volcanic rocks of the complex and the surrounding country rocks, into which the volcano grew and developed, are demonstrated to good effect.

The Ardnamurchan Point to Sanna section provides an excellent traverse across several of the intrusions of Centre 2 and demonstrates their truncation by 'the Great Eucrite' (a mass of gabbro which may be a huge ring dyke) of Centre 3, that cuts across them. The site also contains what are probably the best, most complicated and most easily accessible examples in the BTVP of net-veining and igneous brecciation, formed as different compositions of magma mixed.

The Glas Eilean to Mingary Pier part of the site encompasses one of the best sections through a 'swarm' of cone sheets to be found in the BTVP. Numerous basic, rare acidic and composite acid-basic intrusive sheets, formed at the time of Centre 2, are to be found. The fractures now occupied by the cone sheets are inward dipping, arcuate and concentric, forming an inverted cone shape, with the apex of the cone believed to represent the point on the roof of a magma chamber from which the sheets originated. On Glas Eilean there is a well exposed volcanic vent filled with agglomerate that cuts through the cone sheets. This structure is one of the youngest major volcanic bodies of the rock in Ardnamurchan.

The natural terraced amphitheatre of the Ardnamurchan section (Centre 3), which represents the final stage in the development of the Ardnamurchan volcanic complex, is accepted internationally as the most perfect example of a nested series of ring dykes, its form reflecting the concentric outcrops of up to 17 intrusions. New evidence suggests that Centre 3 is probably a saucer or funnel-shaped intrusion, with the intrusions being saucer or funnel shaped masses piled one on top of the other.

NOTIFICATION HISTORY:

First Notified under the 1949 Act: 1962 and 1974
Re-notified under the 1981 Act: 17 March 1989
Notification reviewed under the 2004 Act: 31 March 2009

REMARKS:

Measured area of site corrected (from 3870.8 ha)

Part of Ardnamurchan SSSI is part of Ardnamurchan Burns Special Area of Conservation (SAC) designated for the European species:

Freshwater pearl mussel *Margaritifera margaritifera*