NWHG Ref. 043 — Loch Borralan Intrusion

Location, grid reference and photograph

The Loch Borralan intrusion lies towards the south of the Assynt region and is centred on Loch Borrolan, Grid Ref. [NC 235 110]–[NC 277 081] - [NC 297 085]–[NC 306 107]–[NC 298 140]–[NC 260 150]–[NC 235 150].

(Figure 39) Oblique aerial view taken from above Ledbeg, looking south-west onto the hill of Cnoc na Sroine forming the bulk of the Loch Borralan Pluton. BGS Photo P000784, A Christie.

GCR site reference, block, volume and notified feature of SSSI?

GCR Ref. 1220, Caledonian Igneous Block, Vol. 17. Confirmed GCR site, not SSSI notified.

Description and geological significance

The Loch Borralan intrusion is internationally important for petrological reasons. It contains the only known British examples of several rock-types, including nepheline- syenite, pseudoleucite-syenite and carbonatite. The local term “Borolanite” was coined by Horne and Teall (1892) for the syenite. Radiometric Age and structural relationships are important for the timing of movements within the Moine Thrust Zone. The Loch Borralan Intrusion contains some of the most extreme potassium-rich igneous rocks found anywhere on Earth. It is historically of great importance in the development of hypotheses for the evolution of igneous rocks.

Accessibility

The Loch Borralan intrusion occupies a large area of elevated ground, mostly covered with surface vegetation and the bedrock is poorly exposed. In some areas it has been afforested. As a rock-controlled landscape feature, however, it is easy to discern the main outcrop from the roadside, especially when viewed from a distance. In that sense, therefore, it is accessible to all abilities.

Conservation

Low conservation requirement due to the scale and location of the site area.

Visibility and “clarity”

The main area of the intrusion, forming a conspicuous area of high ground on the north-east side of Loch Borralan, is easily seen from a distance.

Interpretation and interpretation potential

The scale of the Loch Borralan intrusion and its widespread outcrop, coupled with the specialised geological interest, make it inappropriate to provide interpretation facilities for the general public. However, there is clearly a potential for some interpretation suitable for geology students and petrologists, and consideration might be given to developing the area for teaching purposes. Certainly, the site should be included in a future Geopark guide.

Key references

PARSONS, I. 1999. Late Ordovician to mid-Silutian alkaline intrusions of the North-west Highlands of Scotland. In Stephenson, D., Bevins, R. E., Milward, D., Highton, A. J., Parsons, I., Stone, P. & Wadsworth, W. J. (eds) Caledonian Igneous rocks of Great Britain. Geological Conservation Review Series, 17, Chapman & Hall, 345–393 . (site description page 353).

GOODENOUGH, K.M., MILLAR, I., STRACHAN, R.A., KRABBENDAM, M. & EVANS, J.A. 2011. Timing of regional deformation and development of the Moine Thrust Zone in the Scottish Caledonides: constraints from the U-Pb geochronology of alkaline intrusions. Journal of the Geological Society of London, 168, 99–114.

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