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LOCH GLENCOUL
Site of Special Scientific Interest

SITE MANAGEMENT STATEMENT

Site code: 986

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Purpose

This is a public statement prepared by SNH for owners and occupiers of the SSSI. It outlines the reasons it is designated as an SSSI and provides guidance on how its special natural features should be conserved or enhanced. This Statement does not affect or form part of the statutory notification and does not remove the need to apply for consent for operations requiring consent.

We welcome your views on this statement.

This statement is available in Gaelic on request.

Natural features of Loch Glencoul SSSI	**Condition of feature** (and date monitored)
Moine (geology)	Favourable, maintained (June 2008)
Upland birch woodland	Unfavourable, declining (July 2009)

Description of the site

Loch Glencoul Site of Special Scientific Interest (SSSI) lies in the west of Sutherland, 4km south-east of Kylestrome, at the head of Loch Glencoul. The site comprises rugged upland terrain, reaching 494m on the Stack of Glencoul. This SSSI has nationally important rock exposures throughout the site, providing one of the most informative sections across the Moine Thrust Belt. The site also contains nationally important birch woodlands.

Moine geology

A geological thrust occurs when two parts of the Earth's crust are pushed together, for example due to continental drift. As the crust is squeezed, the rocks within it eventually have to move. Mountains are formed and rocks that used to lie side by side are deformed and stacked up in layers on top of one another. Sequences of sedimentary rocks normally have younger rock on top of older ones, but thrusts push old rocks on top of younger ones. These unusual sequences of rocks are of great interest to geologists as they provide vital clues to the geological history of Scotland. Loch Glencoul SSSI contains excellent exposures of a series of thrusts known as the 'Moine Thrust Belt' which formed around 430 million years ago.

The Moine Thrust Belt is a major fracture in the Earth's crust that runs from the north coast of Sutherland at Loch Eriboll to the Isle of Skye. Before the Moine Thrust occurred the oldest rocks (Lewisian Gneiss, 1700 million years old) lay underneath

rocks of intermediate age (Torridonian rocks, 1000-800 million years old) and the youngest rocks (Cambrian rocks, 500 million years old) were on top. This sequence of rocks can still be seen at the western end of Loch Glencoul SSSI at Bagh an Liath Bhaid in an area that was not affected by movements in the Moine Thrust Belt. Areas where this original sequence of rocks are found are known by geologists as the Foreland.

The Moine Thrust Belt includes the Glencoul Thrust and the Sole Thrust as well as the Moine Thrust itself. Each of these thrusts carried slices of the Foreland rocks westward, to form a stack of thrusts. Moving further east from the Foreland within Loch Glencoul SSSI, the Sole Thrust can be seen on the slopes of Tom na Toine. The Sole Thrust shows a well-exposed zone of imbrication. Here, rock slices stacked up by movements along small-scale thrust faults developed in relatively soft Cambrian rocks between the Sole Thrust and the overlying Glencoul Thrust.

Further east again, the Glencoul Thrust is magnificently exposed in a classic section on the southern shores of Loch Glencoul (see Figure 1). Here, the ancient Lewisian Gneisses of the Glencoul Thrust Sheet have been carried westwards by movement on the Glencoul Thrust so that they now lie on top of the much younger dolomites of the Cambrian 'Durness Group'.

Figure 1. Gneiss (the darker rock, 1700 million years old) has been pushed on top of Cambrian dolomites (the lighter rock, only 500 million years old). The line of the Glencoul thrust is exceptionally clear here.

Figure 2. Birch woodland along the cliff line

In the east of the site, the Stack of Glencoul provides a famous and comprehensive section through mylonitised Moine psammites. Psammites are rocks that have formed from muddy sediments that have been heated and compressed by thrusting to form a fine-grained, platy rock. The psammites have been carried westwards by movement on the Moine Thrust and now lie on top of the Lewisian and Cambrian rocks of the Glencoul Thrust Sheet.

Much of the most important evidence for understanding the Moine Thrust Belt is found within this site. Notably, small-scale thrust faults, between the Glencoul Thrust and the Sole Thrust, are interpreted as having formed one after another, with new thrusts forming below old ones. This is crucial to understanding the sequence in which the

thrust faults in the Moine Thrust Belt formed. This classic area also enables Lewisian rocks from the Foreland, unaffected by movements in the Moine Thrust Belt, to be compared directly with Lewisian rocks involved in the Moine Thrust Belt.

Monitored in June 2008 found that the visibility and accessibility of the key rock exposures had been maintained. The geological feature was assessed as being in favourable condition.

Upland birch woodland

There is scattered birch woodland on the south and north sides of Loch Glencoul. The entire woodland is part of the notified feature. Two areas of woodland which are particularly species-rich are found on Fucoid bed crags. Fucoid bed rocks are orange/brown in appearance, are potash-rich and are a type of the Cambrian rocks described above. This potash-rich environment allows plants to grow that would not normally be found in the more acidic, boggy environment that dominates the northwest Highlands. One of the woodlands found on the Fucoid Bed crags is in the northern part of the SSSI. These crags have a south-west facing aspect. The other woodland lies on the Fucoid bed crags of the southern part of the SSSI. Here the crags have a north/north-west aspect. The main species present are birch, rowan, aspen and hazel with some wych elm, holly, goat willow, bird cherry and gean. These trees grow mostly on very steep banks and ledges, undisturbed by herbivores due to the steep, rugged terrain. Honeysuckle and dog rose are found in the shrub layer. Due to the rich geology of the Fucoid beds, the ground flora is well developed and also contains a number of notable ferns, including the locally scarce hartstongue fern, hay-scented buckler-fern, maidenhair spleenwort and black spleenwort, and brittle bladder-fern. Because of this unusually diverse understory, this is the best example of this type of woodland in north-west Sutherland.

The woodland on the southern side of the loch was monitored in July 2009 and some significant changes in condition from the previous survey were identified. These suggest that grazing pressure in the woodland has increased since the previous survey and is now at a level which is too high to allow the woodland to regenerate. Trampling had also occurred in breaks between the crags where deer were moving through the SSSI between high and low ground. A small number of sheep were also found on the site.

Encouraging aspects of the survey results included the presence of standing dead trees throughout the site as well as fallen, rotting trees, providing good habitat for a diversity of animals, lichens and fungi. No non-native species were present. In the parts of the site that are inaccessible to grazing animals there was a diverse ground flora including herb robert, meadowsweet, golden rod, angelica, fairy flax, water avens, sanicle, bramble, green spleenwort, black spleenwort, wood false-brome and woodrush. However areas that are accessible to deer and sheep had a much less diverse ground flora, dominated by heavily browsed heather, again showing that the current level of grazing is too heavy for this habitat.

Other interests

Many flowering plants that benefit from low levels of grazing can be found on the cliff ledges including garlic, red campion, meadow sweet and valerian. There are also species-rich grasslands growing where there are limestone rock outcrops. These are all locally important.

Past and present management

The area has traditionally been grazed by deer and sheep. There are few sheep on the hill now and the Kylesku and Newton crofters are erecting sheep enclosures off site on the north side which will exclude sheep altogether from the area.

Stalking is carried out by the owners, who access the area via the old stalkers paths which run through the hills in this area. Access to fishing in hill lochans is taken from a track starting at Glencoul bothy at the head of the loch. This track has recently been widened to take quad bikes.

The Eas a' Chual Aluinn waterfall is a popular walk with hillwalkers. The waterfall itself is just inside the south-east boundary of the site. Most of the approach path to the top of the waterfall is outwith the SSSI but a 0.5 km section at the start (north side of Loch na Gainmhich) is inside the boundary.

The stalkers tracks passing through the site are often used by walkers accessing the hills and are one of the routes taken by long distance walkers undertaking the popular, Cape Wrath long distance walk. Most of these walkers wild camp outwith the SSSI around Glencoul bothy or stay in the bothy itself. Loch Glencoul is also a popular destination for canoeists who approach by sea from Kylesku and for geologists and geology students who visit the rock exposures within the site.

Objectives for Management (and key factors influencing the condition of natural features)

We wish to work with land managers to protect the site and to maintain and where necessary enhance its features of special interest. SNH aims to ensure that site condition surveys, monitoring and research are continued as appropriate, to increase our knowledge and understanding of the site and its natural features.

The list of Operations Requiring Consent, and the discussions on land management involved in the issuing of formal consents are intended to minimise the threat of any damage to the natural features.

1. To maintain the visibility and accessibility of the geological features by ensuring that the rock exposures remain visible and that access to them is maintained. This can be achieved by continuing present site management.

2. To enhance the condition and maintain the distribution and extent of the upland birch woodland. This objective can be achieved by keeping browsing from sheep and deer light enough to allow trees to regenerate and the ground flora to flower and set seed. Light grazing can be beneficial by creating small open patches that allow seedlings and ground flora to establish. However, it is important that the grazing pressure is not so great that all seedlings and saplings are suppressed and the ground flora is destroyed by browsing or trampling. The woodland should support trees of mixed age and contain a diverse mosaic of open and more shaded habitat types. Dead timber within the woodland, both standing and fallen, provides an important habitat particularly for fungi and invertebrate species and should not be removed from the site. Fires should not be started within or close to the woodland and care should be taken not to allow fire elsewhere to spread into the woodland.

Date last reviewed: 21 January 2010