



## 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.

<b>Natural features of Ben Hope SSSI</b>	<b>Feature Condition (date monitored)</b>
Moine (geology)	Favourable, maintained (August 2002)
Upland assemblage (a mosaic of upland habitats)	Favourable, maintained (July - September 2004)
Upland birch woodland	Unfavourable, declining (July 2002)
Vascular plant assemblage (flowering plants)	Unfavourable, declining (July - September 2004)

## Description of the site

Ben Hope Site of Special Scientific Interest (SSSI) is located in northwest Sutherland between Hope and Altnaharra and includes the mountain of Ben Hope (927m). The wider area is one of great natural beauty and the SSSI lies within the Kyle of Tongue National Scenic Area. This is an extremely diverse site, extending across a wide altitudinal range (approximately 900m) and there are a wide variety of vegetation types. The site has been designated as an SSSI for the geological outcrop at Allt na Caillich, the upland and woodland habitats and the rare upland plant species.

## Geology

The streambed of the Allt na Caillich, and adjacent crags, provide an excellent section through the Ben Hope Sill. A sill is a band of rock that was molten when it was forced into a crack between the adjacent rocks to form a horizontal layer. The Ben Hope Sill can be traced from the Allt na Caillich to Tongue. The sill formed around 800 million years ago when molten rock forced its way into the existing 'psammitic gneiss' rock. The psammitic gneiss was originally sandy sediment deposited on the floor of an ancient sea, sometime after 1000 million years ago; but by the time the sill intruded into them, these sediments had been compressed to form rock. The psammitic gneisses

and the Ben Hope Sill belong to a group of rocks known as the 'Moine'. The Moine rocks were all metamorphosed (heated and compressed causing deformation and replacement of the original minerals by new ones) during a series of massive continental collisions around 435 million years ago. These collisions resulted in an episode of mountain building known as the Caledonian Orogeny which also involved the formation of a number of geological faults. One of these faults, known as the 'Hope Thrust', cuts through the rocks at Allt na Caillich just below the sill, and movement along this fault has brought older rocks known as 'Lewisian gneiss' adjacent to the Moine rocks.

The main interest of the site is that the Ben Hope Sill contains information about what happened 800 million years ago, well before the Caledonian Orogeny. The composition of the sill is similar to magmas being erupted in the Red Sea today and this indicates that the sill formed in a similar 'tectonic setting' 800 million years ago – in this case an area where the Earth's crust was being stretched.

Monitoring of the geology at Allt na Caillich in August 2002 found the feature to be in favourable condition with the rock outcrops visible and accessible.

### **Upland habitats**

Ben Hope has a mosaic of upland features, including wet heath, dry heath and blanket bog on the lower slopes, and wind-swept montane habitats higher up.

These habitats were monitored in summer 2004. The areas of the notable vegetation types were maintained and most of the characteristic species were found during the survey. Overall, there was low to medium grazing, browsing and trampling pressure and there was no damage from burning. The route used by hill walkers near the Allt a' Mhaiseil showed signs of erosion but, although this is an issue of concern, the area involved forms only a small proportion of the site. Overall, the upland assemblage was in favourable condition.

### **Vascular plant assemblage**

The plant communities that are associated with a thick band of base-rich rock are of particular interest. These species have a restricted distribution in northwest Scotland because they generally do not grow in soil that is acidic or low in nutrients that covers most of the area. The species include purple mountain saxifrage, moss campion, rock whitlowgrass, mountain avens, alpine saxifrage and downy willow. There is also a small population of the nationally rare mountain sandwort.. The alpine heath of the summit plateau and Creag Raibhach Mhor has species such as alpine bearberry.

Sixteen rare plant species recorded from Ben Hope SSSI were monitored in summer 2004. For ten of the sixteen species, populations were large enough to be viable, however, there were only small populations of six species, including the nationally rare mountain sandwort. There were 32 mountain sandwort cushions in 1995 but only 21 cushions in 2004. Mountain sandwort colonises very fragile, open sites so cushions can easily be lost, but the species has the potential to recover since suitable habitat is available and there is good seed production. Successful regeneration was found for all sixteen notable species apart from rock whitlowgrass. It is not clear why rock whitlowgrass was not flowering during the year that the plant was monitored. This feature was assessed as being in unfavourable condition due to the decline in

mountain sandwort and lack of regeneration by rock whitlowgrass.

### Upland birch woodland



Birch woodland extends along the northwest slopes of Ben Hope. Birch woodland has a restricted distribution in NW Scotland and this is one of the larger areas of this habitat in the vicinity. The woodland also contains hazel, whitebeam, holly and bird cherry and supports a rich community of mosses, liverworts and lichens. The ground vegetation within the woodland contains plants that are typical of this habitat such as primrose and wood anemone.

The birch woodland on Ben Hope SSSI was monitored in July 2002. Inside the exclosures, there were no signs of grazing and birch was regenerating. However, there were no sapling trees outwith the exclosures and although there were many seedlings, these had not been able to grow above the height of the surrounding vegetation due to grazing and browsing. Since the majority of the woodland is not regenerating (exclosure area = 18.4ha, total birch woodland area = 70.4ha), and there is no tree regeneration outwith the exclosures, the feature was assessed as being in unfavourable condition.

### Other interests on the site

Mosses, liverworts and lichens are locally abundant throughout the site. So far, 25 nationally scarce mosses and liverworts and eight nationally scarce lichens have been identified on this site. There are large populations of several of these species in the block scree in the northern and eastern corries. The calcareous crags that have the vascular plant interest also hold two nationally rare mosses, elongate copper-moss *Mielichhoferia elongata* and nerved leskea *Pseudoleskeella nervosa*, and a nationally rare liverwort, coral frostwort *Gymnomitrium corallioides*. This is the first site in the UK at which the nationally scarce lichen *Gyalideopsis scotica* was identified. This lichen is only known from eight sites in the UK, three of which are Scottish mountains.

Although the site is not notified for birds, it also supports a number of scarce bird species that are typical of mountainous areas including dotterel, ptarmigan, ring ouzel, peregrine falcon and golden eagle.

Mountain avens	Mountain sandwort (in bud)
	

## **Past and present management**

Most of the SSSI has been, and continues to be, managed as grazing for sheep and deer, as well as for nature conservation. The cliffs are not actively managed due to the steep and dangerous nature of the ground. The current level of light to moderate grazing appears to be beneficial for much of the vegetation interest of the site, although the level of grazing/browsing is hindering tree regeneration. Current grazing levels are not thought to have caused the reduction in the mountain sandwort population or the lack of flowering by rock whitlow. The losses of mountain sandwort may be caused by natural movements of the scree on the cliffs where this plant grows. It is not clear why rock whitlow was not in flower when this species was monitored. Bracken is found on some of the lower slopes in western parts of the site and dense areas of bracken have been controlled in the past by cutting or spraying.

Just under 1800ha of the site is covered by a management agreement to protect and enhance the woodland interest on the west of the site. This agreement allows for the erection of woodland exclosures and two exclosures (of 2.8ha and 15.6ha) have been in place since 1992 for this purpose. To further protect the woodland, the agreement restricts muirburn in the vicinity of the woodlands on the crags south of Creag Merkan.

Approximately 250ha in the north of the site is currently covered by Peatland Management Scheme (PMS) agreements. Until March 2008, a similar area was covered by a PMS agreement in the east of the site. PMS agreements provide an incentive for good conservation management. In the case of Ben Hope, good conservation management consists mainly of allowing natural processes to continue without any adverse intervention or disturbance. The PMS agreement covers grazing and sporting management over part of the site and identify areas in which livestock and deer feeding, muirburn and peat cutting can take place without damaging the notified features. They also encourage land managers to minimise use of ATVs, keeping to drier ground and avoiding sensitive areas.

There is a car park adjacent to the road at the Allt a' Mhuisseil and many hill walkers ascend Ben Hope from here. There is no formal path or path management and the increased number of visitors in recent years has caused localised damage to a small part of the site. This has caused some damage to part of the site, and path management would be beneficial, although the erosion is confined to a relatively small area and thus only has a small impact on the entire 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 carry out site survey, monitoring and research as appropriate to increase our knowledge and understanding of the site and its natural features and to monitor the effectiveness of the management agreements. A list of Operations Requiring Consent forms part of the formal notification documents of the SSSI. These, 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 condition, extent, visibility and access to the key geological outcrops** at Allt na Caillich by keeping them free of obstructions.

**2. To maintain the condition and extent of the assemblages of upland habitats, and vascular plants** by keeping the stocking of grazing animals, including deer, at a level that is low enough to prevent obvious damage to the vegetation by overgrazing or trampling and allow the heathland and montane plants to flower and set seed. Livestock numbers on areas covered by the Peatland Management Scheme should not exceed the agreed stocking levels. Burning is not a desirable form of management for the higher parts of the site where the montane plants grow, as short vegetation is maintained through a combination of grazing and wind clipping. The Muirburn Code states that burning should not be carried out above 300m. Any muirburn in areas covered by a management agreement (such as a Peatland Management Scheme agreement or Rural Development Contract) must follow the agreed muirburn plan. Outwith areas covered by a management agreement, any muirburn should be carried out following the Muirburn Code and be restricted to areas of long heather in the lower parts of the site, avoiding blanket bog and deep peat. Areas of blanket bog and areas rich in bryophytes and lichens should not be burnt, as burning would damage the species that grow in these areas. Vehicle use on wet areas or the higher parts of the site is likely to damage the fragile soils and vegetation. Use of vehicles other than on existing tracks should therefore be restricted to use of low ground pressure vehicles on the lower parts of the site, taking care not to damage the vegetation by avoiding soft wet areas and by not using the same route too often. The choice of route can be critical: soft ground, sharp turns and areas where erosion is beginning to start should be avoided as any bare peat or soil that is exposed can be very slow to revegetate.

**3. To maintain extent and enhance the condition and regeneration of the upland birch woodland.** Tree regeneration is expected to continue successfully within the exclosures however the current level of grazing/browsing by sheep and deer is preventing tree regeneration outside the exclosures. To attain favourable status in SNH's Site Condition Monitoring programme the woodland should support trees of mixed age and contain a diverse mosaic of open and more shaded habitat types so that a variety of plants can flourish beneath the tree canopy. Dead timber within the woodland provides an important habitat particularly for fungi and invertebrate species and should not be removed from the site. Although fencing can be used in some circumstances to help woodland regeneration, the most beneficial way to enhance a woodland is to reduce the number of grazing animals (including deer) to a level that is low enough for there to be no obvious damage from trampling or browsing. This is because light grazing is beneficial to woodland by creating small open patches that allow seedlings and ground flora to establish. If grazing animals are excluded for long periods it is possible that long ground vegetation may restrict germination of new seedlings in the future. Exclosures can also lead to the problem of all the trees being the same age, if large numbers of trees establish in a few years, rather than achieving a woodland with a mix of tree ages. Fires should not be started within or close to the woodland and care should be taken not to allow fire to spread into areas of woodland.

Date last reviewed: 7 August 2008