Scottish Natural Heritage
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BEN LOYAL
Site of Special Scientific Interest

SITE MANAGEMENT STATEMENT

Site code: 187

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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 Ben Loyal SSSI	Feature condition (date monitored)	Other relevant designation
Caledonian igneous geology	Favourable, maintained (May 2007)	
Blanket bog	Unfavourable, recovering (September 2004)	SAC, Ramsar
Upland assemblage (upland habitats)	Unfavourable, recovering (September 2004)	
Upland birch woodland	Unfavourable, recovering (September 2004)	

See Annex 1 for a list of features of overlapping Natura and Ramsar sites that are not features of Ben Loyal SSSI.

Description of the site

Ben Loyal Site of Special Scientific Interest (SSSI) lies at the head of the Kyle of Tongue on the north coast of Sutherland. It comprises the extensive summit ridge rising to 764m, largely of acidic, igneous rock, with shallow corries on the western side, and extensive cliffs on the northern and western flanks. The site has been designated as a SSSI for its nationally important blanket bog, upland habitats, birch woodland and geology.

Ben Loyal SSSI also forms part of an internationally important peatland which is one of the most extensive areas of blanket bog in the world. The peatlands of Sutherland and Caithness also support internationally important populations of upland birds and otters. These species naturally occur at low densities and require large areas of undisturbed land. The body of peat under the blanket bog is also a large store of carbon. Keeping this carbon locked up in the peat and continuing land management that maintains the peat-forming process makes an important contribution to reducing Scotland's carbon emissions, helping to combat climate change.

Caledonian igneous geology
The rocks exposed in the Ben Loyal SSSI are part of an unusual body of rock called the 'Loch Loyal Syenites'. These rocks were formed when molten rock (magma) was forced upwards ('intruded'), from deep within the Earth, into cracks in the Earth's crust where it cooled to form the rocks we see on this site today. Although these rocks were deposited deep within the earth, millions of years of erosion have removed that rock that used to be above them, revealing the syenites on the surface.

Syenites are relatively alkaline (rich in sodium and potassium) compared to the majority of rocks formed from cooled magma. The Loch Loyal Syenites are the largest area of intruded alkaline rock in the British Isles. They are also made up of an unusual combination of minerals. As it was forming, the largest of the three intrusions, the 'Ben Loyal Intrusion' expanded or 'ballooned' as more and more molten rock rose upwards. This is the only proven example of a 'ballooning' style of formation from alkaline intrusions in the Northwest Highlands.

The Loch Loyal syenites have been dated to around 425 million years ago, at the end of a major mountain building event known as the Caledonian Orogeny. During the orogeny, the rocks of northern Scotland were folded and deformed by immense forces. The lack of deformation of the syenites has enabled geologists to conclude the Caledonian Orogeny ended around the time the syenites formed 425 million years ago.

Summit heath	Bog-moss
	

Blanket bog
Blanket bog is found in localised patches at high altitude and extensively on the gentle, lower slopes. The dominant species are heather, deergrass and purple moor-grass with abundant bog-moss. Monitoring in 2004 revealed that, although the extent of blanket bog had been maintained since previous surveys and characteristic species of blanket bog were found across the site, the overall condition was assessed as unfavourable. Heavy browsing and trampling by deer and livestock had caused excessive levels of bare peat, crushed bog-moss and browsed dwarf shrubs. Muirburn had occurred on blanket bog, causing damage by burning into the moss and lichen layers. More recent changes in management should allow this habitat to recover.

Upland assemblage (upland habitats)

The summit plateau features a moss heath of stiff sedge and woolly hair-moss and a prostrate heath of heather and alpine bearberry containing trailing azalea. The slopes and corries carry wet heath, heather moorland and blanket bog. On the steep, west-facing slopes there is tall-herb vegetation dominated by blaeberry and greater woodrush. Monitoring in 2004 revealed heavy impacts on the upland habitats from browsing of dwarf shrubs and from trampling causing bare ground. Burning had also occurred in sensitive habitats leading to an overall assessment of this feature as unfavourable. Again, the recent changes in management should allow the habitats to recover.

Birch woodland

There is a fine birch-rowan wood on block scree on the steep western slopes. The field layer includes frequent mountain fern, and there are a few base-rich flushes. These woods are of great lichen interest, harbouring several rare or noteworthy species. Heavy browsing of the birch woodland was also found during monitoring in 2004. Although the extent of the woodland, the tree species and the canopy cover met the required standards there was a serious lack of regeneration of young trees giving a poor tree age range. The overall assessment of the condition of the birch woodland was unfavourable. As with the other habitats, the recent changes in management should allow this feature to recover.

Other interests

This range of habitats and topographic features supports a breeding population of upland waders and raptors, which make an important contribution to the populations of Caithness and Sutherland Peatlands Special Protection Area (SPA). A full list of the birds that are included in this SPA can be found in Annex 1.

Past and present management

The SSSI forms part of Ben Loyal Estate and a small part of Kinloch Estate. Land use is now focussed on red deer management although until 2006 both sheep and cattle also had access to the grazing.

Due to the unfavourable assessment of the woodland, peatland and upland habitats in 2004, the land management is currently under review through a Joint Working process involving public agencies and Ben Loyal Estate, led by the Deer Commission for Scotland. Through a signed agreement between the agencies and the Estate it is considered that the agreed management changes should allow the habitats to recover to a favourable condition.

Almost half of the site is currently covered by a Peatland Management Scheme agreement with SNH. This is likely to be taken forward into a new agreement under the Scotland Rural Development Programme (SRDP) to maintain management on the peatland areas which is compatible with the conservation objectives of the site. Currently, areas of muirburn are agreed and, where burning does take place, it must comply with the Muirburn Code. No stock feeding or peat cutting takes place within areas of the SSSI covered by the agreement. ATVs are used for normal estate management but avoiding soft, wet areas and an established track from Inchkinloch to Loch Haluim has been re-routed to prevent erosion damage.

There is a micro-hydro scheme on the waterfall above Lettermore and a telecoms mast on Creag Dhubh but there is no formal access track to either. 200-300ha of bracken was sprayed recently in the area south of Loch Loyal Lodge.

Ben Loyal is a well-known Corbett popular with hill climbers. The main access points are from Ribigill Farm and the south end of Loch Loyal.

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

We wish to work with the owner to protect the site and to maintain and where necessary enhance its features of special interest. SNH will 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 agreement.

The EU Habitats and Birds Directives oblige Government to avoid, in SACs and SPAs, the deterioration of natural habitats and the habitats of species, as well as disturbance of the species for which the areas have been designated, where such disturbance could be significant in relation to the objectives of these Directives. The objectives below have been assessed against these requirements. All authorities proposing to carry out or permit to be carried out operations likely to have a significant effect on the European interests of this SSSI must assess those operations against the relevant Natura conservation objectives (which are listed on our website through the SNHi – SiteLink facility).

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 enhance the condition and maintain the extent and distribution of the blanket bog, upland mosaic and woodland habitats by managing the red deer population to allow regeneration of trees in the woodland area and by keeping their trampling and browsing impacts on upland and peatland vegetation within acceptable levels. Deer management has been discussed and a population profile agreed with DCS to assist with this. In addition the continuation of the management agreed under the Peatland Management Scheme into SRDP would support this.

Light grazing is not usually damaging to woodland and 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 damaged by browsing or trampling. The approach which is being taken to achieve natural regeneration in the absence of fencing is particularly welcome, as fencing can actually suppress natural regeneration since ground flora can get too rank to allow tree seedlings to establish in the absence of any grazing. Ideally 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 to spread into the woodland.

Blanket bog depends on a continuous cover of special vegetation which continues the peat-forming process and protects the underlying body of peat. Damage to the moss cover exposes the peat surface to erosion from extremes of weather (drying, frost, wind) and trampling from animals.

It is important to maintain the natural water table in peatland habitats so no new drains should be made nor existing ones cleared. The blanket bog has currently been assessed as being in unfavourable condition due to creation of large drains next to a track on part of the site. These drains have since been restored and, given time, the blanket bog will recover as long as no further drainage occurs in this part of the site. It would also be beneficial to block old drains that are still active on the rest of the site as these drains alter the natural water table and dry out the peat either side of the drain. They may cut down through the peat until the underlying mineral layer is reached creating further bare peat erosion surfaces.

Use of vehicles can also cause damage to blanket bog and upland habitats. Off prepared tracks, only low ground pressure vehicles should be used and care should be taken in their use. The choice of route is important: soft ground, sharp turns and areas where erosion is beginning to start should be avoided as any bare peat can be very slow to revegetate.

No burning of the mosaic of upland habitats should take place, as the vegetation is kept short by a combination of the slow growth rate of the vegetation, exposure to wind and grazing. The Muirburn Code advises that no burning should be carried out on summits, ridges and other areas very exposed to the wind where the heather and other vegetation forms a creeping mat with wind-blasted shoot tips. The Muirburn Code also advises against burning on slopes steeper than 1 in 2. Muirburn on the lower slopes 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 on the lower parts of the mountain should be carried out following the Muirburn Code which recommends avoiding the burning of blanket bog and deep peat. Muirburn can cause serious long term damage to blanket bog.

Peat cutting for domestic purposes can be carried out without damaging blanket bog by continuing to cut from existing banks, replacing the turf with the vegetation upwards as soon as possible. This will allow new peat to start to form again in the area that has been cut and minimise drying out of the bog. SNH should be consulted before any new peat banks are opened since careful positioning of peat banks ensures that large areas of blanket bog are not accidentally damaged by altering drainage patterns.

2. To maintain the extent, visibility and accessibility of the Caledonian igneous geological features

The present management is suitable for this feature and no changes are needed. Surrounding vegetation is not encroaching upon the features and the current level of grazing is sufficient to maintain the visibility and accessibility of the outcrops.

3. To maintain the water levels, water quality, extent and distribution of the clear water lochs and dubh lochans

Management in the areas around lochs should avoid activities that would release sediment, excessive nutrients or chemicals into the water. Activities that might alter water levels of lochs should be avoided. This objective can readily be achieved by maintaining the present management of lochs that allows natural processes to continue with minimal intervention or disturbance.

4. To maintain breeding bird populations and to avoid significant disturbance of birds during the breeding season.
If the habitats on this site are maintained, following the advice given in the two Objectives for Management immediately above, breeding bird populations are also expected to be maintained. Disturbance can reduce the breeding success of nesting birds. It is important that any potential activities on the site are carefully planned to safeguard the nesting birds.

5. To maintain suitable otter habitat and access routes for otter across the site and avoid activities that might disturb otters. This objective can also be achieved by maintaining the present management that allows natural processes to continue with minimal intervention. Any known otter holts should not be disturbed. To safeguard the food supply of otters, water quality in burns, rivers and lochs should be maintained by avoiding activities that might add excess chemicals, nutrients or sediment. If any management is planned that might affect banks or piles of boulders where there could be otter holts, advice should be sought from SNH on how to avoid impacts on otters. Any fencing on the site that is likely to cross otter routes should have mesh with a large enough gauge to allow otters to pass through.

Other factors affecting the natural features of the site:

- Egg collecting: Some of the rare birds that breed on Ben Loyal SSSI are potential targets for illegal egg collecting. Any suspicious activity and description of cars and car numbers should be reported to the Police as soon as possible.

- Recreation: The impact of hill walkers on the montane vegetation should be kept under review so any potential erosion problems can be managed before irreversible damage is done.

Date last reviewed: 30 September 2009

Annex 1. List of natural features of overlapping Natura and Ramsar sites that are not notified features of Ben Loyal SSSI

Features of overlapping Natura and Ramsar sites that are not notified as SSSI natural features	Feature condition (date monitored)	Designation
Acid peat-stained lakes and ponds (dubh lochans)	Favourable, maintained (August 2004)	SAC
Clear-water lakes or lochs with aquatic vegetation and poor to moderate nutrient levels	Favourable, maintained (July 2004)	SAC
Depressions on peat substrates	Favourable, maintained (August 2004)	SAC
Very wet mires often identified by an unstable 'quaking' surface	Favourable, maintained (August 2004)	SAC
Wet heathland with cross-leaved heath	Not assessed	SAC
Breeding bird assemblage	Not assessed	Ramsar
Black-throated diver	Favourable, maintained (July 2004)	SPA
Common scoter	Favourable, maintained (August 2004)	SPA
Dunlin	Favourable, maintained (July 2004)	SPA, Ramsar
Golden eagle	Favourable, maintained (July 2003)	SPA
Golden plover	Favourable, maintained (July 2004)	SPA
Greenshank	Favourable, maintained (July 204)	SPA
Greylag goose	Not assessed	Ramsar
Hen harrier	Favourable, maintained (June 2003)	SPA
Merlin	Favourable, maintained (July 2004)	SPA
Red-throated diver	Not assessed	SPA
Short-eared owl	Not assessed	SPA
Wigeon	Not assessed	SPA
Wood sandpiper	Favourable, maintained (June 2004)	SPA
Otter	Favourable, maintained (October 2004)	SAC
Marsh saxifrage	Not assessed	SAC

Note - The Caithness and Sutherland Peatlands SAC, SPA and Ramsar site comprises 39 SSSIs. The list of overlapping Natura and Ramsar features in the table above includes habitats and species found in the whole of the Caithness and Sutherland Peatlands SAC, SPA and Ramsar site. Some of these features may not be present on Ben Loyal SSSI and the presence of some species may vary from year to year.