BEN LUI
Site of Special Scientific Interest

SITE MANAGEMENT STATEMENT

Site code: 188

Address: **The Beta Centre, Innovation Park, University of Stirling, Stirling. FK9 4NF**
Tel: 01786 450362 **email: Argyll_stirling@snh.gov.uk**

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.

Natural features of Ben Lui SSSI	**Condition of feature (date monitored)**	**Other relevant designations**
Dalradian	Not yet assessed	
Mineralogy of Scotland	Not yet assessed	
Upland Assemblage	Favourable, maintained (Nov 2005)	Special Area of Conservation (SAC)
Vascular Plant Assemblage	Unfavourable – recovering (Jan 2011)	
Invertebrate Assemblage	Not yet assessed*	

*The invertebrate assemblage was previously made up of Beetles, Flies and Moths features. These features were assessed as Favourable – maintained in July 1998, July 2003 and August 2003 respectively.

Features of overlapping Natura sites that are not notified as SSSI natural features	**Condition of feature (date monitored)**	**Designation (SAC or SPA)**
Acidic scree	Favourable, maintained (Nov 2005)	SAC
Alpine and subalpine calcareous grasslands	Unfavourable, declining (Nov 2005)	SAC
Base-rich fens	Unfavourable, no change (Jul 1998)	SAC
High-altitude plant communities associated with areas of water seepage	Unfavourable, no change (Jul 1998)	SAC

Montane acid grasslands	Unfavourable, no change (Nov 2005)	SAC
Mountain willow scrub	Unfavourable, declining (Nov 2005)	SAC
Plants in crevices on acid rocks	Favourable, maintained (Nov 2005)	SAC
Plants in crevices on base-rich rocks	Favourable, maintained (Nov 2005)	SAC
Species-rich grassland with mat-grass in upland areas	Unfavourable, declining (Nov 2005)	SAC
Tall herb communities	Unfavourable, recovering (Nov 2005)	SAC
Wet heathland with cross-leaved heath	Unfavourable, no change (Nov 2005)	SAC
Golden eagle *Aquila chrysaetos*, breeding	Not yet assessed	SPA

Description of the site

Ben Lui Site of Special Scientific Interest (SSSI) is an extensive and predominantly upland site which encompasses the north faces of five mountains at the Western edge of the Breadblane Range in Central Scotland. The elevation of the SSSI ranges from approximately 250m in Glen Cononish to the peak of Ben Lui at 1130m. The site also includes the summits of Ben Oss (1028m), Beinn Dubhchraig (978m), Beinn 'a Chleibh (917m) and Meall nan Tighearn (739m). The site is internationally important for the montane arctic-alpine flora which is associated with the underlying calcareous rocks (Ben Lawers mica-schists). The range of altitude and geology present at the site supports a diversity of habitats including important late snowbed communities on peaks and high corries, ledge and cliff vegetation, heath, montane willow scrub, grasslands, soligenous mires and on the southern flanks of Meall nan Tighearn an extensive blanket bog.

Within the Breadalbane Hills, there are a series of SSSI's that have been notified in recognition of the rich arctic-alpine flora that they support. As Ben Lui is the most westerly of these sites, it experiences a wetter, more oceanic climate than the other sites to the east, and this, along with the alternating acidic and calcareous soil conditions, gives rise to an exceptionally diverse range of plant communities and species.

The rocks within the site, the Ben Lui schist, form part of a major group of rocks known as the Dalradian. These are rocks that originated as layer-upon-layer of sediment on the floor of an ancient ocean that once separated Scotland from England during the Precambrian geological period over 540 million years ago. The rocks were deformed and baked when the ocean closed by plate tectonic processes, bringing together Scotland and England. Although this extreme pressure and heat changed these sediments into metamorphic rocks, they retain minerals and features associated with their original formation on the bed of the ocean. These features include mineralisation associated with a structure that can be seen in modern-day oceans called a 'black-smoker'. Creag Bhocan is one of the few sites in Scotland where such a feature can be readily demonstrated. In addition, this is the finest locality in Britain to see a chrome

muscovite mineral called fuchsite.

The north-eastern flanks of Ben Oss illustrate a major fault structure in the Dalradian rocks of the area known as the Ben Oss Fault. This geological structure can be seen on both the ground and from the air and formed toward the end of the upheavals that deformed and baked the ancient Dalradian rocks. The fault is important because it shows many of the features associated with a major fault or fracture in the Earth's crust such as crushed rock. It is also associated with the formation of mineral deposits such as those at Cononish and nearby Tyndrum.

The site is of international importance for the presence of eleven high altitude habitats, and is designated as a Special Area of Conservation (SAC), under the Habitats and Species Directives for these habitats. These habitats support a flora that contains an exceptionally large number of Nationally Rare and Nationally Scarce species.

The SSSI Upland Assemblage feature is made up of the high altitude Natura habitats. The site condition monitoring reports only on the area of a limited range of habitats within the site; calcareous grasslands, dwarf shrub heath, soligenous mires, blanket bog, montane habitats, tall herb communities and *Dryas* heath. Although the upland assemblage met its condition target, the results of monitoring indicate that there are some problems, with recommendations to alter management to tackle some of the localised problems listed for each component feature. A clearer understanding of the overall condition of the Upland habitats is gained from considering the condition of the NATURA features listed in the table above.

The mosaic of geology and habitats found at the site support an outstanding vascular plant assemblage, which include a number of rare and scarce montane calcicolous species. In places, curtains of vegetation cover almost vertical rock faces and these exhibit a very fine development of tall-herb ledge vegetation, with banks of different types of saxifrage, and some steep drier ledges support fragmentary examples of a moss-rich *Dryas* heath. The schists become progressively less calcareous above 760m so that the strongly calcicolous vegetation occupies the middle level of the mountain, and at higher levels the vegetation becomes increasingly acidophilous. At the highest altitudes there is an interesting range of late snow-bed vegetation, much of it dominated by alpine bryophytes.

On the slopes below and around the cliffs other communities are particularly well-developed. Calcareous flushes form a mosaic within the herb-rich grassland vegetation. The lower flanks away from calcareous schist and limestone outcrops have a largely acidophilous vegetation, The vascular plant feature was found to be in unfavourable condition in January 2011, as some of the plants that make up the assemblage were not found. However it is though that unfavourable – recovering is best representative of the current condition with many species found in good numbers, possibly reflecting the reduction in grazing over the past few years.

The characteristic montane invertebrate fauna of the Ben Lui range has been shown to include at least five Red Data Book species: the moth *Stigmella dryadella* and the flies Spilogona *depressiuscula, Limonia stylifera, Platycheirus melanopsis* and *Cheilosia chrysocoma*. There are also strong populations of the mountain ringlet butterfly *Erebia epiphron*, which is a BAP species.

Rock speedwell *Veronica fruiticans*	Mountain ringlet *Erebia epiphron*
	

Past and present management
Management and Land Use

Management of the site is complicated as the plant communities are in an intricate mosaic with each having different ideal management prescriptions. The key to managing these communities is to influence the numbers and distribution of the various animals grazing the site at different times of year. For many years, the site has been grazed extensively by sheep and cattle; however it is the sheep that have had the greatest impact as they can graze all but the most inaccessible crags. Further grazing pressure comes from the red deer which form the basis for the sporting management of parts of the area. In recent years however, one of the larger farm units has reduced its sheep flock and the vegetation in this area is in a state of dynamic change as a result of the reduced grazing pressure. The impact of grazing on the range of habitat types on Ben Lui is monitored, to assess the impact of any changes in management.

There is limited woodland on the site, mostly confined to crags at lower altitude and the site lies adjacent the Collie Corrie Chuilc pine forest remnant. Consideration has been given by owners to encouraging natural woodland regeneration and to plant some of the lower ground with native species, where this does not conflict with the existing interest.

The site is mountainous and includes four Munroe's, the presence of which attracts the attention of walkers and mountaineers during all seasons. Low key signage has been developed at the main access points onto that section of the site which has been declared as a National Nature Reserve.

A gold-mine exists on the periphery of the site, and owners have prospected for further deposits on the SSSI itself.

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

We wish to work with the owners and occupiers 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 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).

1. Maintain and enhance the extent and condition of upland habitats and key montane plant species.
SNH shall continue to monitor the effects of changing grazing regimes and manage these at a level at which there is no obvious over-grazing or browsing damage to the key upland vegetation communities and which will allow a more diverse sward to develop on the site. The species rich grasslands benefit from a low to moderate level of grazing and so the effects of lowered grazing on this habitat shall be observed closely.

2. Maintain the physical integrity and visibility of the geological features.
To maintain the favourable condition of the geological features at Ben Lui SSSI the most important management objective is to keep the exposures of Dalradian and Mineralogy of Scotland rocks clearly visible. Loose blocks of rock should be left in situ where it is safe to do so and access to the geological features should be maintained for visiting geologists.

3. To maintain and restore the populations and distribution of the vascular plant assemblage to favourable condition.
Although the vascular plant assemblage has been assessed as recovering this is a delicate time for the feature. Sheep are highly selective grazers preferring the most nutritious plants while leaving the poorest and overgrazing can lead to a loss of notable species. Therefore grazing should be maintained at a level which does not damage the recovering plant populations. The current grazing regime seems appropriate and SNH staff will continue to monitor the condition of the relevant features as part of the site condition monitoring programme.

4. Maintain and enhance populations of key invertebrates.
SNH shall continue to monitor notable invertebrates and research their habitat requirements to ensure that management will sustain and enhance key populations. Any fallen or standing deadwood should be left in place where it is safe to do so. Maintaining the water quality is important for many of the invertebrates found at Ben Lui SSSI and this should be considered when undertaking actions that may impact the hydrology of the site.

Long Term Objectives for Management

The long-term aim is to maintain the site as a fully functioning upland ecosystem with a

series of habitat transitions from valley floor to mountain top. In particular, the habitats for which the site qualifies as a SAC will need to be managed appropriately to ensure they are maintained in a favourable conservation condition.

Recommendations for Future Management

Current land management is broadly compatible with maintaining the conservation interest of the site. In the past, the prevailing grazing regime is probably the main factor that has restricted many of the features, however changes in management including a reduction in sheep and deer numbers is thought to be allowing for recovery. In contrast, the species rich grasslands benefit from a low to moderate level of grazing. The balance between this community and the other habitats onsite is a fine one and any management needs to consider the differing grazing requirements

SNH will seek to continue to monitor the features for which the site was notified as an SSSI as part of a GB wide programme on a six year cycle and advise as appropriate. In particular, SNH aim to undertake assessments of condition and extent of the Natura habitats on the site and the results of an extensive survey of the site are awaited. Grazing pressure can vary widely from year to year, due to weather, stock management needs and other factors. A key part of seeking to manage the grazing impact will be to consider the impacts exerted on the habitats over longer periods of, say, 5 years. The aim will be to find an average grazing pressure over this period that allows all of the habitats to thrive.

The aim of survey and monitoring will be to determine the effectiveness of management and to inform future management decisions. SNH will liaise fully, and seek to develop active partnerships, with the site owners and occupiers. SNH will also ensure that account is taken of the landscape, historic and cultural heritage of the SSSI.

Date last reviewed: 11 February 2011