Scottish Natural Heritage
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BEN HEASGARNICH
Site of Special Scientific Interest

SITE MANAGEMENT STATEMENT

Site code: 180

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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.

Natural features of Ben Heasgarnich SSSI	**Condition of feature (date monitored)**	**Other relevant designations**
Mineralogy of Scotland	Favourable, maintained (July 2016)	
Alpine calcareous grassland	Unfavourable, recovering (July 2014)	Ben Heasgarnich SAC
Rocky slopes (includes inland cliff, rocky outcrops, chasmophytic vegetation)	Favourable, maintained (July 2014)	Ben Heasgarnich SAC
Snowbed	Unfavourable, recovering (September 2010)	Ben Heasgarnich SAC
Vascular plant assemblage	Favourable, maintained (July 2014)	
Bryophyte assemblage	Favourable, maintained (October 2015)	
Lichen assemblage	Favourable, maintained (July 2017)	
Flies	Favourable recovered (August 2017)	
Sawflies	Unfavourable, recovering (June 2013)	

Features of overlapping Natura sites that are not notified as SSSI natural features	**Condition of feature (date monitored)**	**Designation (SAC or SPA)**
Alpine and subalpine calcareous grasslands	Unfavourable, recovering (September 2010)	SAC
Base-rich fens	Unfavourable, recovering (July 2014)	SAC

High-altitude plant communities associated with areas of water seepage	Unfavourable, recovering (July 2014)	SAC
Montane acid grasslands	Favourable recovered (July 2014)	SAC
Mountain willow scrub	Unfavourable, recovering (September 2010)	SAC
Plants in crevices on acid rocks	Favourable, maintained (July 2014)	SAC
Plants in crevices on base-rich rocks	Favourable, maintained (September 2004)	SAC
Species-rich grassland with mat-grass in upland areas	Unfavourable, recovering (September 2010)	SAC
Tall herb communities	Unfavourable, recovering (July 2014)	SAC
Clear-water lakes or lochs with aquatic vegetation and poor to moderate nutrient levels	Favourable, maintained (August 2009)	SAC
Otter (Lutra lutra)	Favourable, maintained (September 2012)	SAC
Atlantic salmon (Salmo salar)	Favourable, maintained (September 2011)	SAC
Brook lamprey (Lampetra planeri)	Favourable, maintained (November 2007)	SAC
River lamprey (Lampetra fluviatilis)	Favourable, maintained (November 2007)	SAC
Sea lamprey (Petromyzon marinus)	Favourable, maintained (November 2007)	SAC

Description of the site

Ben Heasgarnich Site of Special Scientific Interest (SSSI) is a large upland site located 14 km west of Killin. It is nationally important for its minerals rich in barium and internationally important for its relict montane arctic-alpine flora associated with the underlying calcareous rocks (Dalradian limestone and Ben Lawers mica-schists) found in these areas. The elevation of the SSSI ranges from approximately 250m in the south east corner of the site to a peak of 1078m (Ben Heasgarnich). Creag Mhor (1047m) is also part of the site.

The barium-enriched rock occurs in small areas within the north east part of the site, on the eastern slopes and near the summit of Beinn Sheasgarnaich. The main barium-enriched minerals are colourless platy muscovite (which gives 'schist' rocks their silvery shine) and has up to 10% barium oxide at this site; and the barium-rich potassium feldspar 'hyalophane', named from the Greek for 'glass' and 'to appear' which describes its often colourless, glassy appearance. The rock in which the unusual barium-enriched minerals occur is Dalradian rock that formed around 620-600 million years ago by burial (resulting in compression and heating) of sediments that had been deposited on the floor of an ancient ocean. Barium enrichment was a result of warm brine, rich in dissolved barium (and also in iron, manganese, zinc and lead) circulated through the oceanic crust. The water, heated by its proximity to molten rock, scavenged elements from the rocks it was flowing through under high pressure. As the hot briny water, carrying its mineral cargo, reached then percolated through the accumulating sediments on the ocean floor, it cooled and various minerals crystallized from solution. The minerals were preserved in sediments, when they became compressed into rock.

Ben Heasgarnich is one of a series of SSSIs within the Breadalbane Hills designated for its

arctic-alpine flora. This scarce flora also supports an important invertebrate assemblage. The site is of international importance for species-rich mat-grass grasslands, high altitude plant communities associated with areas of water seepage, mountain willow scrub, alpine calcareous grasslands, plants in crevices in limestone rocks and tall-herb communities. The flora includes an exceptionally large number of Nationally Rare and Nationally Scarce species.

During site condition monitoring, a number of features have been classed as being in unfavourable recovering or favourable recovered condition, as noted above. This is generally related to the levels of grazing, browsing and trampling from herbivores recorded at the time of monitoring. In general the reduction of grazing levels across the site has been of benefit to most of the interest features but some of the fens and flushes are still showing impacts from trampling. Care also needs to be taken that rank vegetation does not begin to outcompete interests such as lichens and bryophytes.

Mountain Avens	Mosses and Lichens
	

Past and present management

Ben Heasgarnich contains four land holdings, with two small land parcels on the south western edge of the site of 20 ha and 116 ha, and the majority of the site split between two large estates at the north (2292 ha) and south (1620 ha) of the SSSI. The march boundary between these large estates runs along the watershed and is not fenced.

Historically, most of the site has been grazed extensively by sheep, which graze all but the most inaccessible crags. Cattle also form part of the agricultural management of the site, occasionally grazing within the SSSI. Red deer which form the basis for the sporting management of the area also graze the site.

In recent years there has been a reduction in flock size across the whole site. Both of the large estates have entered in to SRDP contracts supporting stock reduction and away wintering. Additionally, Glen Lochay Estate has planted several large areas of south facing hill ground with native trees in recent years. This has taken a considerable amount land out of grazing and stock numbers have been adjusted to reflect this. This planting is contributing to the re-establishment of the Forest of Mamlorn. In recent years sheep have been removed entirely from the small SRUC land holding at the western edge of the site.

Ben Heasgarnich SSSI/SAC is within the West sub-group of the Breadalbane Deer Management Group. Three herbivore impact assessments (HIAs) have been carried out since 2007 and trends in herbivore impacts are now becoming apparent. In the initial 2007 survey long-term herbivore impacts, including over grazing and trampling, were noted throughout the Breadalbane sites. Since then across much of the area there has been a decrease in sheep

numbers, and an increase in deer management to meet agreed cull targets. The latest HIA in 2014 reported mostly low or moderate to low grazing impacts. Impacts from trampling were still noted in some habitats, particularly flush communities.

Grazing levels are at roughly the right levels for several of the grassland features across extensive areas of this large site. There are some localised areas and more sensitive habitats where overgrazing is still apparent.

Glen Lochay and Glen Lyon both form part of SSE Scottish Hydro's power generation scheme which was constructed in the 1950s. A series of water intakes divert water from the catchments and, by siphon, deliver it to Loch Lyon. These include intakes across the SSSI.

Public access and recreation in the hills is increasing - this site contains several high mountains including Ben Heasgarnich and Creag Mhor which are both Munros and form part of a popular route from Glen Lochay. A new vehicle track was constructed along the south shore of Loch Lyon within the SSSI in 1998 to facilitate stock management.

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

We will work with the owners and occupiers 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, to increase our knowledge and understanding of the site and its natural features. This will also help to monitor the effectiveness of the management agreement and Rural Priorities contracts on the site.

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. **To maintain the extent or populations of all notified features of the SSSI and qualifying SAC habitats by:**
    - ensuring that grazing levels, sporting interests and recreational uses are compatible with the features of interest.
    - working with members of the Deer Management Group (DMG), SGRPID, Scottish Forestry, and individuals as necessary to encourage appropriate management of deer populations through the Joint Working Initiative and the implementation of the Section 7 Agreement.
    - ensuring that any burning follows The Muirburn Code and be restricted to areas of long heather in the lower parts of the site. 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. Areas rich in bryophytes and lichens should not be burnt, as burning would damage these species.
    - ensuring use of vehicles other than on existing tracks is restricted to use of low ground pressure vehicles on the lower parts of the site. Any vehicle use on the higher parts of the site is likely to damage the fragile soils and vegetation. Care should be taken not to damage the vegetation by avoiding soft wet areas and by not using the same route too often.
    - ensuring that any changes in land use (including planting of woodland), are compatible with the features of interest'

2. **To increase the extent of important habitats which have become scarce (e.g. montane willow scrub and tall herb communities) by:**
    - ensuring that grazing levels, sporting interests and recreational uses are compatible with increasing the extent of the features of interest.
    - considering the creation of exclosures around areas that are not of high importance for bryophytes and lichens to encourage regeneration of willow.

Other factors affecting the natural features of the site

Climatic conditions and changes may be an important factor in relation to some features – for example the increased levels of rainfall and temperature.

Date last reviewed: 4 December 2019