



**Scottish Natural Heritage**

All of nature for all of Scotland

**BEN LAWERS**  
**Site of Special Scientific Interest**

**SITE MANAGEMENT STATEMENT**

Site code: 185

Battleby,  
Redgorton,  
Perth  
PH1 3EW

Tel: 01738 444177

Email:  
Tayside\_clackmannanshire  
@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.

## Description of the site

Ben Lawers Site of Special Scientific Interest (SSSI) lies on the north side of Loch Tay, six kilometres east of Killin. The Lawers range (part of the Scottish Highlands Breadalbane range), forms the watershed between the Lyon and the Tay valleys. The majority of the site lies in Perth and Kinross, whilst a small section, Creag na Caillich, at the western end of the Meall nan Tarmachan ridge is within Stirling. The SSSI forms part of the Ben Lawers massif (with an altitudinal ranging from 310 to 1,214 metres) and is the best known of the series of arctic-alpine sites on calcareous schist in Tayside, Stirling and Argyll; such sites are a rare type in Britain.

This site was selected as an SSSI on account of its exceptionally rich and extensive arctic-alpine plants and habitats. A combination of the high altitude, late lying snow, widespread base rich rock, and central geographical position has led to the development of a range of upland habitats, including both calcareous and acid grassland, dwarf-shrub heath, blanket bog, springs and flushes, and chasmophytic vegetation<sup>1</sup>.

For example, Ben Lawers is considered to be one of the best known areas in the UK for its arctic-alpine willow scrub. It is one of the UK's most endangered habitats, and is very much restricted to the steep, rocky crags and rock ledges away from the pressure of grazing.

Ben Lawers is also considered to be one of the best areas in the UK for alpine calcareous grassland. This habitat consists of short, often grazed, species-rich mixtures which include mountain avens *Dryas octopetala*, arctic-alpine cushion herbs, small grasses, sedges and other small herbs.

The site also supports and is notified for its wide range of vascular plants many of

<sup>1</sup> Plants in crevices in limestone rocks.

which are of national rarity. There are at least four species which are specially protected under Schedule 8 (alpine woodsia *Woodsia alpina*, alpine fleabane *Erigeron borealis*, snow gentian or alpine gentian *Gentiana nivalis*, and drooping saxifrage *Saxifraga cernua*), a further 14 species or hybrids included within the British Red Data Book with an additional 36 species which are nationally scarce. These arctic-alpine plants, which thrived at the end of the last glaciation, survive today as they are best suited to the cold snowy conditions of these mountains. These include a range of species types from the woody willow shrubs to the more delicate flowering plants such as the alpine forget-me-not *Myosotis alpestris* and mountain avens *Dryas octopetala*. Many species such as rock whitlowgrass *Draba norvegica*, the nationally scarce rock sedge *Carex rupestris* and the rare fern mountain bladder-fern *Cystopteris montana* favour the calcareous schists and limestones outcropping and are confined to the crags and inaccessible ledges as a consequence of heavy grazing pressures elsewhere.

The site is also notified for and is considered to be the most important mountain in Britain for lichens and bryophytes. The bryophyte flora includes a total of over 350 species, including many nationally rare, as well as two Schedule 8 species (revolute hypnum moss *Hypnum vaucheri* and turgid scorpion-moss *Scorpidium turgescens*). Similarly Ben Lawers boasts a large number of lichens with over 450 species including many of which are nationally rare including 25 known in Britain only from this site e.g. rusty alpine psora *Psora rubiformis*.

The landscape of Ben Lawers SSSI is dominated by carved ridges and sculptural landforms as a result of its underlying geology and the effects of the last glaciation. The site has been acknowledged as a Geological Conservation Review Site (GCR). GCR sites have been identified to conserve earth heritage sites for their geology and physiography, and Ben Lawers is of interest for its Dalradian meta-sedimentary rocks and structure and the contribution these make to the understanding of Scottish geological history.

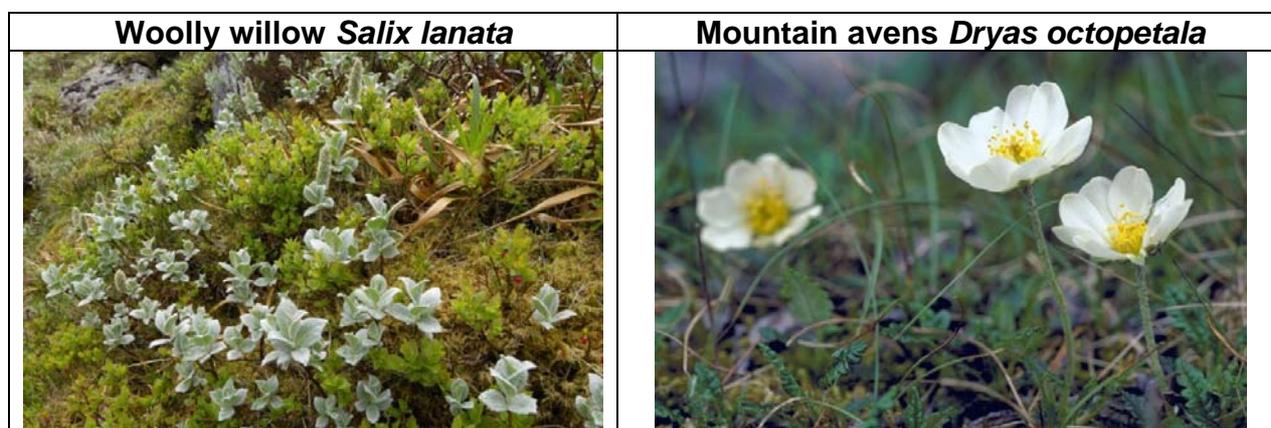
The underlying geology is mainly Dalradian calcareous schist, originally deposited as sands, muds and calcareous limestones in an ancient sea ca. 600 million years ago. Subsequently, a phase of mountain building, ca. 425 to 395 million years ago, squeezed these rocks which subjected them to intense heat and pressure. This activity changed the original rocks into completely new forms, in this case the schists, whilst the intense folding and mountain building phase resulted in the formation of the large-scale folds and high peaks of the Ben Lawers range we see today. One particularly large fold structure, the Tay Nappe, resulted in large areas of the original rock layering being turned completely upside down. This base rich geology and the glacial drift on the lower slopes has resulted in highly fertile soils which supports the outstanding montane flora.

Part of the SSSI lies within the Ben Lawers Special Area of Conservation (SAC) on account of 13 threatened plant communities and habitats that qualify under the European Habitats Directive. One of these, high altitude plant communities associated with areas of water seepage, is a threatened habitat in Europe, and the SAC probably contains the most extensive area in Britain. The rare but characteristic species of this habitat type include the two-flowered rush *Juncus biglumis*, bristle sedge *Carex microglochin* and scorched alpine-sedge *Carex atrofusca*. A range of other upland habitats are also present - see table below for full list.

Part of the Ben Lawers SSSI (mostly the southern part) lies within the Ben Lawers National Nature Reserve first declared as Meall nan Tarmachan NNR in 1964 extended as Ben Lawers NNR in 1975 and in 2005 extended to include NTS land at Morenish. Ben Lawers also lies within and the Loch Rannoch and Glen Lyon National Scenic Area (NSA).

Although not notified for their importance, Ben Lawers supports important communities of insects, fungi and birds (golden eagle, peregrine, dotterel, golden plover, and short-eared owl) associated with various upland habitats.

The SSSI and surrounding areas contain numerous archaeological remains and to date the Creag Dubh shielings have been scheduled under the Ancient Monuments and Archaeological Areas Act (1979).



### Current condition of the natural features

Ben Lawers SSSI was surveyed as part of SNH's programme of Site Condition Monitoring. At the time of condition monitoring in 2004 the **montane assemblage** as a whole was considered to be in favourable condition because of the broad assessment which was made at that time, but a number of individual SAC habitats were considered to be unfavourable (see table below) as a result of historic and current grazing levels.

In 2005 the **bryophyte assemblage** was monitored and although this feature is in favourable condition there are some negative issues which although not sufficient to make the site in unfavourable condition, are sufficient to flag up the site as favourable declining. These included over grazing, trampling and poor water quality in the flushes.

The **vascular plant assemblage** was monitored in 2003 and recorded a status of unfavourable no change. The site failed as several species did not have viable populations on the basis of the assessment criteria used.

A summary of the latest site monitoring information is given below:

<b>Natural features of Ben Lawers SSSI<sup>2</sup></b>	<b>Feature condition (date monitored)</b>
Montane assemblage	Favourable maintained (September 2004)
Bryophyte assemblage	Favourable declining (July 2005)
Lichen assemblage	Not assessed yet
Vascular plant assemblage	Unfavourable no change (September 2003)
Dalradian geology	Not assessed yet

<sup>2</sup> The list excludes "Rocky slopes (includes inland cliff, rocky outcrops, chasmophytic vegetation)" monitored in 2000 and "Springs (including flushes)" monitored in 2002, both of which recorded a status of favourable maintained, as these are now grouped and recorded under the "Montane assemblage" feature.

<b>Features of overlapping Natura sites that are not notified as SSSI natural features</b>	<b>Feature condition (date monitored)</b>	<b>SPA or SAC</b>
Alpine and subalpine calcareous grasslands	Unfavourable no change (June 2009)	SAC
Alpine and subalpine heaths	Unfavourable no change (July 2010)	SAC
Base-rich fens	Favourable recovered (July 2010)	SAC
Blanket bog	Unfavourable declining (September 2009)	SAC
Clear-water lakes or lochs with aquatic vegetation and poor to moderate nutrient levels	Favourable maintained (June 2004)	SAC
Dry heaths	Unfavourable no change (April 2010)	SAC
High-altitude plant communities associated with areas of water seepage	Favourable maintained (August 2007)	SAC
Montane acid grasslands	Unfavourable no change (September 2010)	SAC
Mountain willow scrub	Unfavourable recovering (June 2004)	SAC
Plants in crevices on acid rocks	Favourable maintained (July 2003)	SAC
Plants in crevices on base-rich rocks	Favourable maintained (July 2000)	SAC
Species-rich grassland with mat-grass in upland areas	Unfavourable no change (September 2010)	SAC
Tall herb communities	Unfavourable no change (July 1999)	SAC

### **Past and present management**

The extensive grasslands overlying Ben Lawers' mineral rich rocks have been used as pasture for hundreds of years, and it remains the predominant land-use within the SSSI. Sheep grazing rights are privately owned and sheep husbandry plays an important role in the viability of local farms. The condition of the important alpine and upland plants is affected by the character of this grazing. Whilst land management practices of sheep grazing and deer stalking should be broadly compatible with, and indeed help to maintain the open, grazing-dependant habitats, the intensity and timing of grazing by sheep and deer is currently leading several features to an unfavourable condition. Current levels of grazing confine plants intolerant of grazing to inaccessible ledges and in order to conserve and enhance some of these rare communities and habitats (notably mountain willows) several enclosures have been successfully created, to promote their restoration.

Deer stalking has been practised on most estates for more than a century and continues to be an important land-use and management tool today. There is currently a Section 7 deer management agreement over the SSSI and surrounding land to assist in the control of deer numbers for habitat management purposes.

Ben Lawers lies astride the Tay and Lyon catchments with drainage into each. Since the 1950s, water has been captured from the numerous burns on the south face of Ben Lawers and Meall nan Tarmachan and diverted to the enlarged Lochan na Lairige (reservoir). From here it is piped to drive hydro-electric turbines at Finlarig on the

shore of Loch Tay. The only significant area of open water within the SSSI is Lochan nan Cat, in the north-east corrie of Ben Lawers.

The SSSI lies within an area of nationally important landscape attracting many thousands of visitors annually. This landscape, the accessibility of the Ben Lawers range, appeal of the highest peak in Perthshire and Britain's ninth highest mountain combine to make Ben Lawers an attractive destination. This, together with increased wealth, mobility and leisure time and the popularity of hill walking, has resulted in large numbers of visitors in recent years. Their boots contributed to loss of vegetation, path erosion and scarring on the mountain sides and restoration projects were embarked on in the 1980s. More recently, Heritage Lottery Funding along with donations to the National Trust for Scotland (NTS) 'Sole Trading' appeal is securing the sustainable ongoing maintenance of the upland path network on Ben Lawers.

### **Nature Reserve Agreements –**

Nature Reserve Agreements allowing the declaration of Meall nan Tarmachan NNR with several landowners were signed in 1964. The NNR was extended in 1975 to include NTS land at Ben Lawers and in 1996 NTS extended their land holding with the purchase of Morenish Estate, part of which lay within the NNR. In 2005 the boundary of the NNR was changed as part of the NNR review of all NNRs in Scotland. Changes in 2005 led, in keeping with SNH policy for NNRs, to the inclusion of all NTS land at Ben Lawers in the Ben Lawers NNR. At the same time a concordat agreement was made with the NTS as the 'approved body' for the management of the NNR. Between 2006 and 2009 all Nature Reserve Agreements were dissolved. These arrangements remain in place today.

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

The long term goal is to maintain, and where possible enhance, the quality and diversity of the important alpine and upland montane habitats and species populations within the Ben Lawers SSSI.

1. To maintain the condition and extent of upland habitats, particularly the calcareous and acid grassland, dwarf-shrub heath, blanket bog, springs and flushes, and cliff and crag vegetation;
2. To maintain the populations and communities of the typical and rarer species of vascular plants;
3. To maintain the assemblage and communities of the typical and rarer lichen and bryophyte species:

These objectives can be achieved by:

- Managing grazing at appropriate levels on sensitive habitats and species by: manipulating stock numbers and controlling deer, controlling bracken and increasing available grazing in areas able to tolerate higher grazing levels; improving management of heathland to improve grazing; through the appropriate use and maintenance of fencing to keep stock and deer away from grazing intolerant habitats.
- Managing grazing levels to maintain or where possible enhance the condition of the grazing dependent habitats and species by directing grazing into these areas.

4. To avoid deterioration, and where appropriate promote the recovery of grazing-sensitive mountain willow scrub and tall herb communities: by supporting the maintenance and management of the large scale National Trust for Scotland enclosure initiative on Creag an Lochain and consider further enclosures with relevant landowners and graziers.
5. To promote the understanding and enjoyment of the features of the SSSI and the landscape of Ben Lawers through well managed access and informal recreation facilities and the provision of good information and interpretation by continuing to support The National Trust for Scotland Ranger Service.
6. To maintain key Dalradian outcrops in a condition suitable for geological research (eg by keeping them open and free of trees and scrub).

We wish to work with all owners and occupiers to protect the site 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 knowledge and understanding of the site, its natural features and the effectiveness of management. The National Trust for Scotland manages the National Nature Reserve on behalf of SNH and will assist SNH with monitoring on the Reserve.

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, in so far as such disturbance could be significant in relation to the objectives of these Directives. The objectives above 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).

#### **Other factors affecting the natural features of the site**

Climate change may be having an as yet unknown effect upon the upland environments of places like Ben Lawers. It is possible that the rare alpine plants of the mountain top will run out of 'climate space', and we risk losing some species.

There is some evidence of a recent reduction in snow cover, both in depth and duration, which may mean that plants that require late snow lie are finding habitats restricted, and they are vulnerable to grazing earlier as what snow there is melts.

Species may emerge or attempt to breed earlier because of warm weather in the first few months of the year, while heavy rain and low temperatures in the summer can cause problems for insects.

**Date last reviewed:** 25 March 2011