Scottish Natural Heritage

GREENLAW MOOR
Site of Special Scientific Interest

SITE MANAGEMENT STATEMENT

Site code: 743

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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.

Description of the site

Greenlaw Moor Site of Special Scientific Interest (SSSI) lies at mid-altitude on gently undulating foothills at the south of the Lammermuir massif, 2km north of Greenlaw. The site is largely open country, strongly exposed to the north-west, west and south.

The SSSI comprises primarily a large expanse of heather moor rising to Kyleshill woodland at c. 437m in the east, Dogden Moss raised bog in the west, the two lochans known as Hule Moss on the heather moor and the very distinctive snaking gravel ridge of Bedshiel Kaimes lying on the northern flank of Dogden Moss.

Dogden Moss has formed partly because its drainage has been confined by the Bedshiel Kaims. The area comprises a relatively large, intact and well-developed raised bog. The peat, known to be at least 3m deep, is dominated by typical peat-forming vegetation, especially bog mosses (*Sphagnum* spp.), cotton grass and sedges as well as heather and cross-leaved heath. Cranberry is frequent and a number of regionally rare mosses and liverworts are also found including *Sphagnum subsecundum, Dicranum bergeri, Hypnum imponens* and *Sphagnum imbricatum sensu lato,* a fire sensitive hummock-forming moss which has declined over much of Europe since the last ice age. Dogden Moss is internationally important being designated as a special area of conservation (SAC) for its active raised bog. Seven species of breeding wader as well as black grouse have been recorded on the bog.

The most extensive area of Greenlaw Moor is dominated by dry heather moorland which has few other plant species due to historic intense burning. It is however, an important habitat for breeding moorland birds.

The c. 5km long, 15 m high grassy gravel ridge of Bedshiel Kaims is the best example of a single ridged, upland esker in Scotland (SNH Commissioned Report 2003). It has an almost intact morphology of gravels and in association with the nearby meltwater channels (Greenlaw Dean and Fangrist Burn for example), the esker provides clear evidence of sub-glacial erosion and deposition processes resulting from ice streams which drained the Dimlington Stadial ice sheet.

Acid dry, rushy wet and flushed grasslands occur at the interface between the watercourses and moorland such as along Fangrist Burn and the southern slopes of Bedshiel Kaims. Fangrist Burn flows north to south through floodplain grasslands and almost bisects the site. There are several regionally rare flowering plants present including narrow-leaved water-parsnip, bristle sedge, broad blysmus and water speedwell along this incised valley.

Kyleshill Wood consists of a small area of old sessile oak with some ash, beech, Scots pine and regenerating birch and rowan. Spreading out across the heather moor is a scattering of naturally regenerated Scots pine. The woodland provides important habitat for small passerine birds including common crossbill, siskin, spotted flycatcher, tree sparrow, finches and tits as well as thrush, tawny owl, sparrowhawk and great spotted and green woodpeckers. The Goat Wood conifer plantation which previously existed on the lower slopes was felled in 2004.

Within Greenlaw Moor lie two small shallow lochans known as Hule Moss and East Loch, which were probably originally kettle-holes (caused by melted glacial iceblocks). The lochans are surrounded by narrow bands of sedges, rushes and rough grasses, with patches of willow and beyond this, sparsely vegetated heather moorland. The lochans, especially Hule Moss, the larger western one, form the focus for an internationally important pink-footed goose roost.

Over the previous 13 years to winter 2003-04 the pink-footed goose population has fluctuated between 8,100 and 19,675 with the October mean being 13,892 (WeBS - Wetland Bird Survey). The geese usually arrive in mid September and roosting numbers generally decline to near zero by December as they move further south. They return, although in lower numbers, in spring on their way to breeding grounds in Iceland and Greenland.

The open waters are also important summer breeding and wintering waterfowl sites. The wintering waterfowl include whooper swan and barnacle goose, as well as greylag goose, canada goose, wigeon, tufted duck, teal, mallard, shoveler, pochard, goldeneye, and goosander. Black-headed and common gull have also been known to roost here.

The assemblage of birds which breed in summer on the SSSI (although not necessarily every year) includes teal, mallard, shoveler and tufted duck on Hule Moss; ground nesting birds and waders such as golden plover, curlew, lapwing, snipe and redshank; wheatear, stonechat, buzzard, short-eared owl, black grouse and red

grouse. Several Schedule 1 raptor species (both breeding and wintering) also use the site. The diverse breeding bird assemblage reflects the importance of the range of suitable habitats and niches within the SSSI.

In 1994, an area of 247.6 ha around and including Hule Moss qualified as a Ramsar site for pink-footed goose and Greenlaw Moor special protection area (SPA) was classified in 1996 with the same area and feature. Annual counts for pink-footed geese are undertaken over October for the Wetland Bird Survey (WeBS) which provides a reliable source of information on the population.

The most recent site condition monitoring (SCM) assessment of the 'raised bog' in 2002 found the feature to be in favourable condition. During the survey visit grazing levels appeared to be benefitting the bog vegetation, drains were infilling naturally thereby helping maintain appropriate water levels, and little scrub regeneration/encroachment was recorded across the site.

The 'pink-footed goose' feature was found to be in favourable condition during the 2002 SCM assessment with the population having been maintained at acceptable levels and no overall decline in habitat extent recorded.

The 'breeding bird assemblage' was found to be in favourable condition during the 2009 SCM assessment, with the assemblage exceeding the qualifying threshold for the component species.

The 'Quaternary of Scotland' feature has yet to be formally monitored.

Natural features of Greenlaw Moor SSSI	**Condition of feature** (and date monitored)	**Other relevant designations**
Quaternary of Scotland	No current assessment	
Raised bog	Favourable - maintained (May 2002)	Dogden Moss SAC
Pink-footed goose (*Anser brachyrhynchus*), non-breeding	Favourable - maintained (February 2002)	Greenlaw Moor SPA
Breeding bird assemblage	Favourable - maintained (May 2009)	

Dogden Moss with Kyles Hill in background	Pink foot geese arriving at Hule Moss
	

Past and present management

There is archaeological evidence that the area was used for farming from prehistoric times. It was certainly recorded as part of an extensive commonty possibly from medieval times, where people had rights to various usages such as taking materials for thatching, grazing with cattle and extraction of peat, possibly from both lochans. Aerial photographs of Dogden Moss show criss-crossing parallel surface drainage channels in its peat body. Peat cutting has occurred around the bog edges and the bog vegetation indicates past modification possibly through alternate wetting and drying and severe burning.

Greenlaw Moor is now covered by two stock farms in separate ownerships. The primary use is rough grazing, mostly for sheep, but the nature of the soils and the type of muirburn practised, unusually, has maintained the heather-moor. Sheep are on the open moor all year round, with feedblock supplementary feeding. The maximum stocking rate is 1 ewe per 3 acres (0.86 ewe / ha), but numbers have been reduced slightly in recent years and with more regular muirburn and consequently young nutritious heather, lambing percentages have improved. This area of the SSSI is managed under a 5 year Rural Development Contract (RDC) (from January 2010) issued under the Scotland Rural Development Programme (SRDP) which includes 350ha muirburn, predator control for black grouse and other ornithological interests, creation of 0.5ha native wet woodland and management of moorland grazing. Stock fencing of the moorland was agreed by SNH due to a lack of shepherd in order to manage the grazing appropriately.

In the late 1980‘s more concentrated management for grouse-shooting occurred on the heather moor, with appropriate heather-burning and some lines of butts constructed without detriment to the site interest. Since 2005 a vigorous programme of muirburn, renovation of butts, new wader scrapes, track building, predator control and positive action to encourage black grouse has been undertaken by new shooting interests. Game shooting is limited around the lochans during the main goose post-migration settlement in early autumn and winter.

The area of Dogden Moss raised bog forms part of Halliburton Farm, which also extends north and south beyond the designated site boundary. SNH has a management agreement over the Moss to ensure a level of grazing by sheep in order to keep rank heather and scrub in control and to facilitate drain blocking if needed. A Rural Development Contract (started January 2010) aimed at benefitting black grouse on the farm, allows for very little muirburn on heather-dominated dry areas to the south east but not on the moss itself. The Moss is recovering well from past treatments without intensive intervention however, especially as the drains naturally block with bog mosses and cotton grass.

Bedshiel Kaims is part of the farmed area of Greenlaw Moor SSSI and sheep and rabbit grazing maintains the visibility of its striking form. There has been very little extraction of the feature, scrub is minimal and no tree planting has occurred.

A small wooden observation “hide” is located at the main goose roost for the use of local ornithologists.

There are a number of important archaeological interests on the site, including Bronze Age burial cairns, rig and furrow markings and more conspicuously Heritts Dyke, a linear mound and ditch earthwork and Scheduled Ancient Monument (SAM).

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 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, in so far as 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 Dogden Moss raised bog.**

Maintaining a high water table and low nutrient status are key factors in assisting favourable condition. Ideally water levels should be, on average, within 5cm-10cm of the surface to support near 100% cover of typical peat forming flora. As ditches continue to fill with vegetation this may happen naturally, but if the bog shows signs of drying (loss of bog mosses) then blocking may be required. Non-native, undesirable or invasive species should be absent and trees or scrub no more than occasional. Muirburn should not occur on any moss-rich areas.

2. **To maintain the goose and waterfowl interests.**

The extent and depth of water in the two lochans must be maintained and the sluice at the outflow of the eastern loch should be kept in working order to hold the water. Open ground around the lochans is important to allow the birds all round visual access. Avoiding disturbance to the roost site is critical in the 6 weeks after the geese arrive to allow their recovery. After this, disturbance should be kept to as low a level as possible during the roosting period.

3. **To protect and enhance the ornithological interest of the SSSI.**

This can be achieved on site by maintaining the variety of habitats and the structure and age diversity of dwarf shrub (heather) cover over an 8 -12 year muirburn rotation; maintaining wetland patches for invertebrate food by blocking erosion runnels and making wader scrapes; providing extra food or cover – e.g. through

planting or natural regeneration of native scrub and allowing rank heather development under woodland or public highway edges; maintaining Kyleshill woodland (no burning) and some of the Scots pine outliers; retaining all mature and dead trees for habitat and food resources and maintaining legal predator control.

4. To maintain and conserve the physical and visual integrity of the geomorphic landform of Bedshiel Kaims by ensuring protection from damaging impacts, in particular afforestation, quarrying, damaging agricultural practices, burrowing damage, dumping or infilling and scrub or tree encroachment.

Other factors affecting the natural features of the site

The area surrounding the Hule Moss should be kept free of afforestation which might adversely affect the quality of the goose and waterfowl roost site. Changes to off-site water levels through mineral extraction, intensification of agricultural operations, afforestation or development which could adversely affect Dogden Moss should be avoided.

Date last reviewed: 22 February 2011