



Scottish Natural Heritage
Dualchas Nàdair na h-Alba
 All of nature for all of Scotland
 Nàdair air fad airson Alba air fad

WEST BORGIE
Site of Special Scientific Interest

SITE MANAGEMENT STATEMENT

Site code: 1602

The Links, Golspie Business Park, Golspie, Sutherland, KW10 6UB.
Tel 01408 634063

north_highland@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.

This Statement is available in Gaelic on request.

| Natural features of West Borgie SSSI | Condition of feature (date monitored) | Other relevant designations |
|---|--|--|
| Caledonian igneous (geology) | Favourable, maintained (June 2006) | |
| Blanket bog | Favourable, maintained (May 2003) | Special Area of Conservation (SAC), Ramsar |
| Breeding bird assemblage | Favourable, maintained (May 2003) | Ramsar |

| Features of overlapping River Borgie SSSI / SAC that are not notified as natural features of West Borgie SSSI | Designation |
|--|--|
| Freshwater pearl mussel | River Borgie SSSI and River Borgie SAC |
| Atlantic salmon | River Borgie SAC |
| Otter | River Borgie SAC |

See Annex 1 for a list of natural features of overlapping Caithness and Sutherland Peatlands SAC, SPA and Ramsar sites that are not notified features of West Borgie SSSI.

Description of the site

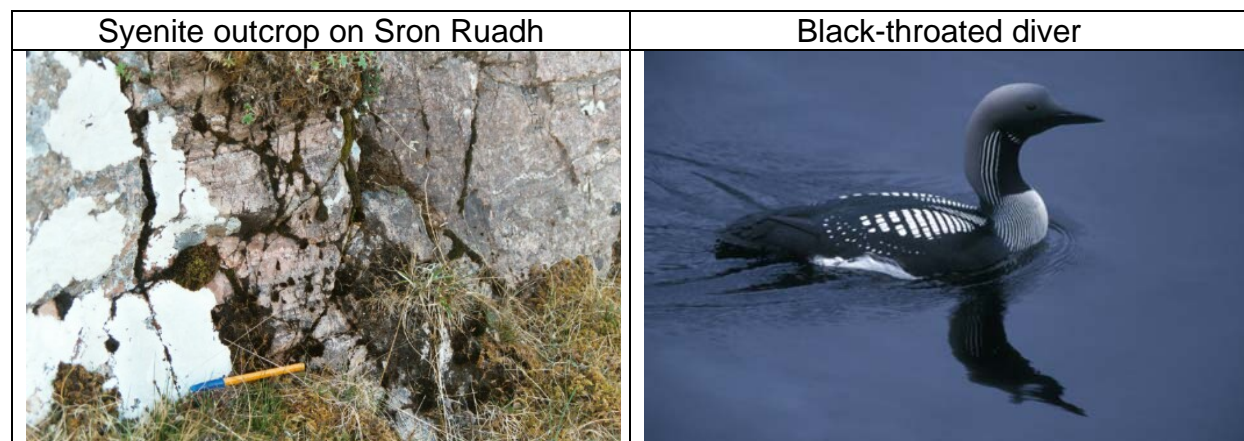
West Borgie Site of Special Scientific Interest (SSSI) straddles the upper reaches of the River Borgie 3km west of Tongue, north Sutherland. The site has nationally important geological outcrops and internationally important blanket bog and breeding birds. The site also forms part of the catchment of the River Borgie which has populations of otter, Atlantic salmon and freshwater pearl mussel which are internationally important for these species.

West Borgie SSSI forms part of an internationally important peatland and 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 geological interest of the site lies at the south end of the SSSI on the northern slopes of Sron Ruadh where exposures of an unusual body of rock called the 'Loch Loyal Syenites' occur. 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. Syenites are relatively alkaline (rich in sodium and potassium) compared to the majority of rocks formed from cooled magma. The rocks at Sron Ruadh and around Ben Loyal together form the largest area of intruded alkaline rock in the British Isles. The syenites within the West Borgie SSSI are part of one of the two smaller sections of the Loch Loyal Syenites intrusion known as the 'Ben Stumanadh intrusion'. This is thought to be part of the upper section of the syenite body. The Ben Stumanadh intrusion, along with the outer parts of the largest area of the Loch Loyal Syenites, are the only British examples of a syenite containing two chemically different types of the mineral 'feldspar'. 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.

Site Condition Monitoring of the site's geology took place in 2006. The Caledonian igneous feature was found to be in favourable condition with the key exposures both visible and accessible.



Blanket bog

The varied topography supports a wide range of peatland types. Terrace, valley side and valley bogs dominate the landscape. On one of the more distinctive blanket bog types, watershed blanket bog, high hummocks of woolly fringe moss are common

along with hummocks of some of the relatively rare and sensitive bog mosses including the nationally scarce Austin's bog moss *Sphagnum austinii* which indicate a lack of disturbance. The dominant plant species are deer sedge, purple moor-grass, heather and cross-leaved heath. The pools are oval and often contain bog bean or many-stemmed spike-rush.

The blanket bog was assessed as being in favourable condition in 2003. The extent of the blanket bog had been maintained since previous monitoring visits and the characteristic plant species of this habitat were present. No recent drainage, burning or grazing was noted. A small number of seedlings from adjacent conifer plantations had established at the edge of the site. This was not felt to be a problem at the current level, but should continue to be monitored in the future as the site would be damaged if mature conifers were to become established on the blanket bog.

Breeding bird assemblage

The peatland provides the necessary breeding and feeding habitats for a wide range of bird species. Among the less common birds to breed on the site are red-throated diver, black-throated diver, greylag goose and merlin. Of particular interest are the moorland waders, especially greenshank, golden plover and dunlin. More common species such as red grouse, dipper and snipe add to the diversity.

Monitoring of the breeding bird assemblage in 2003 found a diversity of bird species characteristic of blanket bog and open water habitats on the site. These included red-throated divers, merlin, greenshank and golden plover. The breeding bird assemblage was found to be in favourable condition.

Past and present management

The site is primarily managed for deer stalking and as grazing for sheep. A small number of cattle also graze the site. Salmon fishing occurs on the River Borgie and the hill lochs are fished for brown trout. Management activities include muirburn, pest control and the use of ATVs on the site. A limited amount of peat cutting is also carried out by the crofters.

The entire site is currently covered by Peatland Management Scheme agreements, which provide a positive incentive for good conservation management. In the case of West Borgie SSSI, good conservation management consists mainly of allowing natural processes to continue with minimal intervention or disturbance. The management scheme prescribes grazing levels on the site, and identifies areas suitable for muirburn, stock feeding, peat cutting and the use of vehicles. When the current PMS management agreements expire, we would encourage applications for the Rural Development Contract scheme that will replace them.

The rock exposures found on steep northern slopes of Sron Ruadh are partly wooded and lightly grazed by sheep.

There are no facilities for visitors to this site apart from paths for anglers near the River Borgie and few people visit this site other than for sporting activities or livestock management.

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

We wish to work with the owners 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 agreements.

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 maintain the condition, visibility and access to the key geological outcrops by keeping them free of obstructions such as trees or stored material and avoiding the extraction of minerals in the areas of geological interest.

2. To maintain the condition, extent and distribution of the peatland habitats.

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.

Some grazing of peatland habitats is beneficial, but deer stocks should be maintained at levels which result in no obvious damage to this vegetation from grazing or trampling.

Use of vehicles can also cause damage. 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.

Muirburn 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 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.

It is important to maintain the natural water table in peatland habitats so no new drains should be made nor existing ones cleared. It would be beneficial to block old drains that are still active as these drains alter the natural water table and dry out the peat

either side of the drain. They will also continually cut down through the peat until the underlying mineral layer is reached creating further bare peat erosion surfaces.

Peat cutting for domestic purposes can be carried out without damaging the 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 is needed to ensure that large areas of blanket bog are not accidentally damaged by altering drainage patterns.

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.

Red-throated and black-throated divers are particularly sensitive to human presence and, along with other uncommon species, are protected by special legislation. Their nests should not be disturbed during the breeding season since eggs may fail to hatch if they become chilled due to the parent birds being disturbed from the nest. Both eggs and young chicks are more likely to be eaten by predators if the parent birds are not there to protect them. It is important that anglers avoid disturbing these birds during the nesting period, from April to June inclusive,. Anglers should look out for divers when fishing on lochs and keep as far away from their nests as possible if fishing on larger lochs. On small lochs, anglers should move to a different loch if breeding divers are present. A leaflet on 'Black-throated divers and anglers' is available from SNH on request explaining how anglers can help divers by avoiding their nests.

Bird eggs and chicks are vulnerable to predation. Foxes, crows and mink are potential predators of eggs or young. Legal control of these species as part of general estate management is likely to be beneficial to breeding 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.

6. To maintain water quality of the River Borgie

Water levels and water quality play a crucial role in the suitability of the River Borgie for Atlantic salmon, freshwater pearl mussel and otter. Since West Borgie SSSI overlaps part of the River Borgie, any increase in drainage, abstraction or other activities affecting the hydrology of the river catchment should be avoided. Any agriculture or forestry operations within the catchment should be carefully managed to prevent the input of chemicals, nutrients or sediment into watercourses. This will maintain the high water quality required by Atlantic salmon and freshwater pearl mussel.

Other factors affecting the natural features of the site

- Forestry: Tree seedlings could potentially spread into the SSSI from the adjacent coniferous plantations, which would damage the blanket bog habitat. Forestry could also influence water flow rates and water quality in burns downstream of plantations.
- Egg collecting: Some of the rare birds that breed on West Borgie 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.

Date last reviewed: 25 June 2009

Annex 1. List of natural features of the overlapping Caithness and Sutherland Peatlands SAC, SPA & Ramsar sites that are not notified features of West Borgie SSSI

| Features of overlapping Caithness and Sutherland Peatlands Natura / 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 |
| Black-throated diver | Favourable, maintained (July 2004) | Special Protection Area (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 2004) | 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 list of features of overlapping Natura and Ramsar sites 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 West Borgie SSSI and the presence of some species may vary from year to year.