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## LOCH FLEET Site of Special Scientific Interest

### SITE MANAGEMENT STATEMENT

Site code: 984

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

#### 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 Loch Fleet SSSI	Condition of feature (and date monitored)	Other relevant designations
Eelgrass beds	Favourable, maintained (September 2000)	
Sandflats	Favourable, maintained (August 2004)	Ramsar
Saltmarsh	Favourable, maintained (July 2005)	Ramsar
Sand dunes	Unfavourable, recovering (October 2003)	Ramsar
Native pinewood	Unfavourable, recovering (July 2005)	
Vascular plant assemblage	Favourable, maintained (June 2005)	
Breeding bird assemblage	Favourable, declining (July 2008)	SPA
Eider ( <i>Somateria mollissima</i> ), non-breeding	Unfavourable, no change (February 2001)	

See Annex 1 for a list of natural features of overlapping Natura/ Ramsar sites that are not notified features of Loch Fleet SSSI.

#### Description of the site

Loch Fleet Site of Special Scientific Interest (SSSI) is the most northerly inlet on the east coast of mainland Britain and lies within the Moray Firth basin about 3km south of Golspie. Extensive sandflats support internationally important numbers of wintering birds. The surrounding coastal habitats are of outstanding variety and quality and support an assemblage of coastal breeding birds.

Loch Fleet SSSI is also part of Dornoch Firth and Loch Fleet Special Protection Area

(SPA) and Ramsar site. Loch Fleet SSSI also overlaps with part of the Moray Firth Special Area of Conservation (SAC) at the mouth of the loch.

### **Saltmarsh, Sandflats, Eelgrass beds, Sand dunes**

Extensive intertidal flats support beds of eelgrass and a rich marine invertebrate fauna which are an important source of food for birds.

The saltmarsh at Loch Fleet, dominated by seagrass and thrift is relatively species-rich and is unusual in being only lightly grazed (mainly by rabbits). Noteworthy areas of saltmarsh are present at Balblair Bay, Cambusmore and Coul. Some areas of saltmarsh are actively growing, whilst others are eroding.

Coul Links is an extensive dune system which is unusual in displaying a complete transition from foredune to wooded slacks. Coastal heathland is well developed in drier areas, supporting juniper scrub. Flooded slacks and winter lochs contribute to the variety of habitat, and a large range of vascular plants have been recorded here such as sea centaury, moonwort and frog orchid. Ferry Links is slightly less rich in vascular plants, but has large areas of lichen-rich and moss-rich heathland. A breach in the dune front allows occasional flooding from the sea, creating a large and almost pure stand of sea milkwort.

When monitored during September 2000, August 2004 and July 2005 respectively, the eelgrass beds, sandflats and saltmarsh habitats were found to be in favourable condition. Most saltmarsh habitats are slowly building, however, the Cambusmore saltmarsh is actively eroding through weather-related wave action combined with high tides. On balance, saltmarsh systems are being maintained throughout the SSSI, but future assessment will have to carefully assess erosion rates at Cambusmore where the saltmarsh is important for roosting coastal birds.

Sand dune habitats at Loch Fleet comprise an impressive range of dune types, such as; embryonic (building), fixed, heath and slacks. They all support their own particular range of plant species and these dune habitat types merge to form large expanses of dune flats, hollows, slopes and dune ridges. The dune heath habitats host a wealth of lichens, often present in carpets, interspersed with heather-dominated areas.

The sand dune habitat was monitored in 2003 and found to be in unfavourable condition. Tree saplings (e.g. Scots pine, birch and willow) and gorse encroachment of the dune habitats has been causing gradual modification of the dune system. Works are ongoing in the worst affected locations to remove encroaching scrub and saplings which will turn this feature towards favourable condition.

### **Pinewood**

Both Balblair and Ferry Wood support Scots pine plantation woodland which has been established on the site of an old native pinewood. The original native pine woodland ground flora survives in some areas and supports a number of scarce pinewood species.

The woodland in Balblair is of one age, with a mature dense woodland canopy. As a result, young and semi-mature pine is scarce. Ferry Wood comprises mainly semi-mature pine plantation and large compartments of mature native Scots pine. These more open areas support pockets of natural pine regeneration amidst very impressive

lichen-rich lawns, sensitive to trampling.

Monitoring of the native woodland was carried out in 2005 and it was found to be in unfavourable but recovering condition. Deer browsing has damaged young Scots pine and rowan trees within Balblair Wood. Deer control is now being undertaken to good effect and should result in the ongoing natural regeneration of the woodland. In the longer term, a more diverse age structure of the woodland is required to bring the site into favourable condition. Although in its early stages, a long-term woodland plan is in place identifying woodland blocks for thinning to help trigger natural pine regeneration and aid development of individual Scots pine trees. It also identifies a commitment to control non-native species, which may include; spruce, rhododendron, gorse, cotoneaster, sycamore and beech.

### **Vascular plants (flowering plants)**

Nationally scarce plants grow in the woods, including pinewood species such as one-flowered wintergreen, creeping ladies' tresses and twinflower. Loch Fleet SSSI is one of the few sites in the UK where all of these special species can be found by people of all-abilities, close to woodland trails. It also boasts the largest population of one-flowered wintergreen in the UK.

Other nationally scarce plants include sea centaury which prefers a short lightly grazed saltmarsh sward. Both dwarf and narrow-leaved eelgrass grow within the soft mud and sandflats of the intertidal zone. Often plants can number thousands in a good year. However, in 2007, it was first noted that fibrous algal mats covered large areas of the intertidal zone. Algal growth of this nature can smother eelgrass beds reducing their extent. Future monitoring of eelgrass aim to investigate this algal growth to gauge if this is an ongoing or one-off issue.

The vascular plant assemblage was found to be in favourable condition when last monitored during June 2005.

One-flowered wintergreen ( <i>Moneses uniflora</i> ) a pine wood speciality at Loch Fleet.	Native pinewood with impressive carpets of <i>Cladonia</i> lichens.
	

### **Breeding bird assemblage**

A wide range of coastal and woodland birds breed regularly throughout the site. In 2008, the breeding bird assemblage was found to be in favourable condition, although it was identified that this feature is in decline. It is not known if there are on-site management issues, such as increased human disturbance, or whether the decline in numbers of breeding birds is the result of influences off the site. Future site condition monitoring surveys may help to tell us how site management is affecting breeding bird habitat.

### **Wintering birds - Eider**

The rich marine invertebrate fauna of the flats attracts large numbers of wintering wildfowl and waders, including nationally important numbers of Eider. This species was considered to be in unfavourable condition when monitored in February 2001. Sea ducks can be difficult to survey accurately, especially when outwith sheltered firths. Eiders have decreased nationwide, as well as in Loch Fleet, however the decline in Loch Fleet has been greater than the national average. It is not known whether this reduction is related to the food resource or disturbance within the site, or if off site factors are affecting the population.

### **Past and Present Management**

#### *Forestry*

The woodland in the SSSI was previously a Scots pine plantation grown for timber. The current trees were planted in 1905 after a storm flattened a large part of the previous plantation. The rare pinewood plants suggest the plantation may be on the site of an old native pinewood.

Today, the future of the pinewood is secured through a long term woodland management plan which is part of a Management Agreement between the owners and SNH. The woodland plan identifies positive management which includes thinning of small woodland blocks. This should stimulate natural regeneration of Scots pine to help achieve pine woodland of a more natural character. The management agreement also ensures deer control is undertaken in the woodland to reduce browsing damage to young trees.

#### *Agriculture*

Parts of the dune grasslands are used for stock grazing. Agriculture has existed on this site for many years, but presently only occurs on the southern part of the site, around Coul Links. Ferry Links may have been grazed in the past (about the 1970s) but has not been grazed by stock since then.

There are currently problems with encroaching scrub and trees on both Coul Links and Ferry Links. Continuing stock grazing will be important to help reduce scrub growth over the drier sand dune habitats. Stock type, grazing density and grazing periods should be identified to enhance the sand dune interest of the site, but it is also important to balance this with public access to the site.

#### *Access and recreation*

A large part of the SSSI lies within Loch Fleet National Nature Reserve (NNR). The estuary, pine woodland, dunes and saltmarsh (on the northern shore) make up the

NNR and are managed in partnership by Sutherland Estates, Scottish Natural Heritage and Scottish Wildlife Trust) under two management agreements.

As a NNR, Loch Fleet is promoted to the public to enjoy and understand the area and its wildlife. Disturbance to wildfowl and waders is a potential problem, particularly in cases where dogs are not kept under proper control. There have also been concerns regarding the illegal use of motor vehicles over the stabilised sand dunes and saltmarsh. Although the Littleferry Links is now protected against damage from 4-wheel drive vehicles through use of small fixed bollards, this area is still subject to occasional damage by off-road motor bikes.

Terns nest on the ground and are often susceptible to human disturbance on the upper beach. Occasionally terns attempt to nest on Coul Links where dog walkers, horse riding and unauthorised vehicle use can cause inadvertent disturbance. Access and recreation within the terms of the Scottish Outdoor Access Code appear to be largely compatible with protecting the nature conservation objectives of the site, but only if they are being fully adhered to.

At the northern end of Ferry Links there is an area which is occasionally used for clay pigeon shooting by a local club. This activity is undertaken irregularly, but when shooting is being carried out, it is close to public paths linked to the NNR. Litter associated with the clay pigeon shooting range detracts from the lichen heath habitats of this nationally important site and should be cleared up after each event.

#### *Nature Conservation Order*

The mudflats support good populations of cockles, blue mussels and other invertebrates. In the 1990s, the scale of mechanical bait collection and subsequent damage to intertidal habitats and disturbance of waders and wildfowl gave rise to such concern that the Secretary of State granted a Nature Conservation Order on the site and this is still in force. The harvesting of marine invertebrates, including the use of vehicles, is prohibited under the Loch Fleet and Dornoch Firth and Cuthill Sands Nature Conservation Order 1995.

Signs are erected in the early autumn to make any collectors aware of the Order. Occasionally, unauthorised collecting requires Police action to move collectors off the site. Compliance with this Order is regularly monitored by SNH staff, and informally by interested public.

#### *Other: rabbits*

The rabbit population on the site is normally high in localised areas. Rabbits are known to cause erosion to vegetation through grazing and scraping on the dunes at specific locations. Rabbits are not actively controlled, but natural factors help keep numbers in check, such as natural predators (e.g. wildcat, fox, stoat and otter), hard winters and viruses which all play their part in controlling the population.

Some rabbit grazing on the site is beneficial as they help to browse and kill gorse seedlings and young trees on the sand dunes. Some minor ground disturbance from rabbit scraping on the dune heath assists the spread of rare lichens. Rabbit grazing has helped to maintain the saltmarsh in good condition at Balblair Bay.

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

We wish to work with land managers to protect the site and to maintain and where necessary enhance its features of special interest. SNH aims 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 .

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).

The list of Operations Requiring Consent 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, distribution and extent of the eelgrass beds, sandflats and saltmarsh habitats.**

At Cambusmore the saltmarsh is being slowly eroded and regular monitoring is needed. Further investigation into the algal growth on the eelgrass beds is also needed. This may also help inform on the management of species for which eelgrass is the primary food source, such as wigeon. Sandflats remain largely free from management but illegal shellfish or bait collecting has the potential to damage the habitat, especially when done on a commercial scale.

### **2. To restore the condition of the sand dune habitat.**

Encroaching scrub such as gorse and pine seedlings should be removed from the coastal dune areas to prevent nutrient enrichment and shading out of the important lichen heath communities. Birch and willow scrub on the Coul Links dune slacks are also having a detrimental effect.

Scrub encroachment works on the sand dune habitat should continue to prevent modification of this habitat and move the feature towards favourable condition. Grazing of stock at appropriate levels can help to keep encroaching scrub and trees to a minimum whilst helping to keep dune grassland swards more diverse for flowering plants. Stocking should continue at a level at which there is no obvious damage to the vegetation from over-grazing or trampling, allowing plants to flower and set seed.

### **3. To maintain the condition, distribution, and extent of pinewood habitat.**

The woodland should be thinned to trigger natural pinewood regeneration. Any non-natives should be controlled or removed. Dead wood, whether standing or fallen should be left on the site in a natural state, unless it is next to the public road or path

through the woods. In this case, dead trees may need to be removed for public safety. Fires should not be lit within the woodland as these would damage both trees and plants that grow on the woodland floor. Care should also be taken not to allow any fires on adjacent ground to spread into areas of woodland. Deer should continue to be controlled to prevent damage to young pine.

Vehicle access should take careful and planned routes through the pine woodlands to ensure that existing scarce plant locations are not damaged. This requires close cooperation with SNH. Other more sensitive ways of tree extraction could be explored.

Non-native species are beginning to seed into the pinewood habitats and both seedlings and scrub may become a problem if not controlled soon. Cotoneaster and rhododendron are both found in Balblair Wood and would pose a threat to the pinewood habitat and the rare flowers it supports. Spruce and fir species, as well as beech, sycamore and larch, can be found within the woodland areas and may crowd out native species, preventing the regeneration of pine.

#### **4. To maintain the distribution and population size of rare and scarce plants.**

The highest priority is to maintain the quality and extent of the habitat for the rare and scarce plants. A forest management plan is agreed with Sutherland Estate to allow the sustainable thinning of the pinewood to maintain the populations of rare and scarce plants, fungi and lichens. Care needs to be taken when planning any changes in management such as felling, or removal of windblow, or a change in the grazing pattern to ensure that the site is still suitable for the rare and scarce plants. Access to the saltmarsh and intertidal areas should be limited and trampling of the sensitive habitats minimised.

Research by Royal Botanic Garden Edinburgh has shown that one-flowered wintergreen can benefit from woodland management which maintains and creates micro-habitats dominated by open areas of damp moss with very little other types of competing vegetation. This is often created naturally as wind-blown brash falls onto the woodland ground floor. This suppresses tall heather and creates shade where humid conditions provide the ideal habitat for one-flowered wintergreen to thrive. When woodland thinning is carried out, SNH can advise on the management of brash piles to benefit the wintergreen.

#### **5. To maintain the population of breeding birds and to avoid significant disturbance to these birds during the breeding season.**

If the habitats on this site are maintained following the advice 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 nesting ospreys which are a notified feature in the Dornoch Firth and Loch Fleet Special Protection Area (SPA). A few osprey nest within this site but others nest outwith the designated site but regularly hunt over it. Disturbance within and outwith the SSSI can reduce breeding success. Nesting trees will be used year after year therefore it is important that these are retained. Activities within or close to the estuary which displace foraging birds from their preferred tidal fishing sites should be avoided

Disturbance can reduce the time that birds can spend feeding. The most likely causes of disturbance are recreation based. The majority of disturbance is not deliberate and can be controlled by raising awareness of the problem should it occur. The Scottish Outdoor Access Code provides guidance on this.

#### **6. To increase the wintering population of eider and to avoid significant disturbance to this species.**

If the supporting habitats on this site are maintained in good condition, wintering bird populations are also expected to be healthy. Eider, currently in unfavourable condition, requires low levels of disturbance for feeding and roosting, therefore disturbance on the intertidal and coastal edge should be reduced as far as possible. The Nature Conservation Order (prohibiting shellfish collection) will assist in reducing disturbance for both species.

The most likely causes of disturbance are from informal recreation. The majority of disturbance is likely to be unintentional and can be controlled by raising awareness of the problem should it occur. The Scottish Outdoor Access Code provides guidance on this.

Current levels of wildfowling are difficult to quantify, but an increase has been noted at Loch Fleet over the recent past. Punt gun activity has also been noted as increasing on the site after years of very low use. As Loch Fleet SSSI is only a small estuary, it is important that all recreational activities have minimal disturbance impacts, or alternative larger sites should be found instead of Loch Fleet. The British Association for Shooting & Conservation (BASC) provide a code for flight pond use and adherence to this code will help to reduce disturbance.

The Cambusmore saltmarsh is an important roosting site for coastal birds, and it has been noted that small scale erosion is occurring through weather and tidal forces.

#### **7. To maintain non-breeding populations of waterfowl and avoid significant disturbance**

Disturbance can reduce the time available that wildfowl and waders (i.e. waterfowl) spend feeding in the cold winter months and during migration. It is important that activities on the site are carefully planned to avoid disturbance to roosting and feeding birds. The most likely cause of regular disturbance is through recreation. Most disturbance is likely to be accidental and most of the time this disturbance is identified as of low consequence, but cumulatively this disturbance has the potential to alter bird distribution if sustained. This can be controlled by raising awareness of the problem should it occur. The Scottish Outdoor Access Code provides guidance on how both recreational users of the countryside and land managers are expected to behave responsibly to ensure that people can continue to enjoy Scotland's outdoors.

Current levels of wildfowling are difficult to quantify, but are thought to be increasing. The British Association for Shooting & Conservation (BASC) provides a code for flight pond use and coastal wildfowling. Adherence to this code will help to reduce disturbance to roosting and feeding waterfowl.

## **8. To maintain the distribution and extent of marine habitats and species which are part of Moray Firth SAC**

The Moray Firth SAC is designated for its bottlenose dolphin and subtidal sandbank interest. Due to their location subtidal sandbanks are unlikely to be affected by activity on the SSSI. The overlap is in the narrow channel between Ferry and Coul Links and due to the fast flowing tide, activity that could affect the sand banks is unlikely. Bottlenose dolphins may be affected by on site disturbance or pollution events.

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

- Egg collecting: The osprey that breed on Loch Fleet SSSI are potential targets for illegal egg collecting. Any suspicious activity should be reported to the Police.
- Changes in climate or sea level: Since much of the land next to Loch Fleet SSSI is low-lying, any changes in sea level or in the number of storms could lead to erosion of the coast or flooding.

Date last reviewed: 24 March 2011

**Annex 1 List of natural features of overlapping Natura sites that are not notified features of Loch Fleet SSSI**

<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>
Bar-tailed godwit, non-breeding	Favourable, maintained (February 2001)	SPA, Ramsar
Curlew, non-breeding	Favourable, maintained (February 2001)	SPA
Dunlin, non-breeding	Favourable, maintained (February 2001)	SPA
Greylag Goose, non-breeding	Favourable, maintained (February 2008)	SPA, Ramsar
Osprey, breeding	Favourable, maintained (July 2003)	SPA
Oystercatcher, non-breeding	Favourable, maintained (February 2001)	SPA
Teal, non-breeding	Favourable, maintained (February 2008)	SPA
Waterfowl assemblage, non-breeding	Favourable, maintained (February 2008)	SPA, Ramsar
Wigeon, non-breeding	Favourable, maintained (February 2008)	SPA
Subtidal sandbanks	Favourable, maintained (August 2004)	SAC
Bottlenose dolphin	Unfavourable, recovering (March 2005)	SAC

Notes

The list of features of overlapping Natura and Ramsar sites includes habitats and species found in the whole of the Dornoch Firth and Loch Fleet SPA and Ramsar site, and Moray Firth SAC. Some of these features may not be present on Loch Fleet SSSI and the presence of some species may vary from year to year.