



Scottish Natural Heritage

LOCH MAREE
Site of Special Scientific Interest

Anancaun
Kinlochewe
Ross-shire
IV22 2PA

SITE MANAGEMENT STATEMENT

Site code: 1007

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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.

This statement is available in Gaelic on request.

Description of the site

Loch Maree SSSI is notified for its geological interest, native pinewood and loch habitats, breeding black-throated divers and its assemblages of vascular plants, beetles and dragonflies.

Loch Maree is important for paleo-ecological studies and paleo-environmental reconstruction. The pollen stratigraphy from the loch sediments and from basins on the islands (supported by radiocarbon dating) provides a valuable record of Flandrian vegetation history in north-west Scotland. In particular the results provide a detailed picture of the regional and local history of pine in the area. The results suggest that the decline in pine abundance after about 4250 years ago was in response to climatic change.

Loch Maree is one of the finest examples of clear, nutrient-poor standing water in the UK. It is a large, deep loch and whilst many parts of its shoreline are unsuitable for plant growth, due to strong wave action and steep rocky outcrops which extend below the surface, good stands of aquatic vegetation can be found in the more sheltered areas at the east and west ends and around the islands. Dense beds of alternate flowered water milfoil and stoneworts occur at the eastern end of the loch whilst water lobelia, bulbous rush and quillwort are common on the predominantly sand and silt substrate around the islands. The small lochans on Eileann Subhainn, the largest island, contain the nationally scarce six-stemmed waterwort.

The islands in Loch Maree, particularly the three largest, support one of the least disturbed remnants of native Scots pine woodland in Scotland. The woodland is one of a group of native pinewoods in Wester Ross, which are genetically distinct from the other Scottish pinewoods. These woods have retained a high degree of genetic variation and have affinities with the pinewoods of Spain and southern France.

The vegetation of the islands comprises a mosaic of Scots pine woodland and mire communities. Upright juniper, a species which is not found to any great extent in other western pinewoods, is locally abundant. On most of the islands, the pine woodland has

a varied age structure with larger mature trees within a matrix of younger trees. There are very few deciduous trees although the nationally scarce rock whitebeam occurs locally. In the wettest areas within the forest, there are small-scale examples of Scandinavian type 'bog woodland'.

The woodland ground flora is more typical of the pinewoods of central and eastern Scotland with drier areas dominated by blaeberry. The loch shore bordering the pinewood contains a number of uncommon plants such as marsh clubmoss, royal fern and bog hair grass. A typical ground flora dominates the mire areas although a number of uncommon plants are present including the nationally scarce brown-beaked sedge.

The loch supports the territories of up to 10 pairs of black-throated divers, which represents 6% of the British breeding population. This is the largest breeding concentration of this species in Britain. The site is also designated as a Special Protection Area (SPA) because of its European importance for this species.

The native pinewood, the lochans and fens on the islands and the shingle shores of the loch support a number of species of beetle including the nationally rare Carabidae beetle *Benbidion virens*. With 12 species recorded, the islands also contain a nationally outstanding assemblage of dragonflies. Of particular note is the Red Data Book species, Northern Emerald, and the nationally scarce species, Azure Hawker and White Faced Darter.



Although not notified features, a total of 114 mosses and 74 liverworts were identified during a survey of the islands in 1999. This high ratio of liverworts to mosses is indicative of an oceanic influence. Of the 188 species, recorded 15 are nationally scarce species. The main interest lies in the luxuriant moss ground layer under the pinewood, particularly on rocky slopes with northerly aspects.

Although not a notified feature the loch also supports populations of charr, which may belong to a genetically distinct 'race', and brown trout, whilst salmon and sea trout pass through the loch on their way to spawning streams.

Recent monitoring has shown that most of the designated features of the SSSI are in favourable condition. However, when monitored in October 2009, although a good proportion of the black-throated diver territories continued to be occupied by breeding adults the number of chicks that were successfully fledged continued to show a decline. The feature is therefore considered to be "favourable declining". As a result of these findings a research project has been initiated to look at the possible causes including predation, disturbance and the flooding of nest sites.

Loch Maree SSSI is part of the Loch Maree Complex Special Area of Conservation (SAC). Not all the SAC features associated with the complex are found within the Loch Maree SSSI, however the loch habitats, otter, alder woodland, Caledonian pinewood and bog woodland are all present.

Most of the SAC features found within the Loch Maree SSSI are also considered to be in favourable condition. However, the condition of the alder woodland is considered to be in an unfavourable condition. The loch fringe contains a number of significant fragments of alder woodland, particularly at Taagan at the south-east end of the loch. Here the alder woodland is subject to heavy grazing by deer and sheep and there is no regeneration. It should be noted that although the Caledonian forest feature is considered unfavourable in relation to the wider Loch Maree Complex SAC, at Loch Maree this feature is considered to be in a favourable condition since the woodland on the islands shows good regeneration and the full range of typical species.

Black-throated diver	Northern Emerald Dragonfly
	

Natural features of Loch Maree SSSI	Condition of Feature (and date monitored)	(Other relevant designations)
Oligotrophic Loch	Favourable, maintained (August 2004)	SAC (Clear-water lakes or lochs with aquatic vegetation and poor to moderate nutrient levels)
Vascular plant assemblage	Favourable, maintained (August 2008)	
Quaternary of Scotland	Favourable, maintained (July 2004)	
Beetles	Favourable, maintained (September 2003)	
Dragonfly assemblage	Favourable, maintained (August 2002)	
Native pinewood	Favourable, maintained (August 2008)	SAC (Caledonian Forest)
Black-throated diver	Favourable, declining (July 2007)	SPA

Features of overlapping Natura sites that are not notified as a SSSI natural feature	Condition of feature (date monitored)	SPA or SAC
Acidic scree	Favourable – maintained (November 2006)	SAC
Alder woodland on floodplains	Unfavourable – no change (July 2004)	SAC
Alpine and subalpine heaths	Favourable – maintained (November 2006)	SAC
Blanket bog	Favourable – maintained (November 2006)	SAC
Bog woodland	Favourable- maintained (August 2008)	SAC
Caledonian forest	Unfavourable – no change (August 2003)	SAC, SSSI
Depressions on peat substrate	Favourable – maintained (November 2006)	SAC
Dry heath	Unfavourable – no change (November 2006)	SAC
Montane acid grasslands	Favourable – maintained (November 2006)	SAC

Otter	Favourable - maintained (July 2004)	SAC
Plants in crevices on acid rock	Favourable – maintained (November 2006)	SAC
Plants in crevices on base-rich rocks	Favourable – maintained (August 2008)	SAC
Tall herb communities	Favourable – maintained (November 2006)	SAC
Western acidic oak wood	Unfavourable – no change (July 2004)	SAC
Wet heathland with cross-leaved heath	Unfavourable – no change (November 2006)	SAC

Past and present management

There has been a long association of people with the loch and this is reflected in a number of archaeological sites. On Isle Maree there is an early Christian chapel and a medicinal well, whilst on some of the other islands there are remains of fortifications and buildings. The oakwoods on the north shore of the loch were heavily exploited from the 17th century onwards to provide timber for iron smelting but there is little evidence that the pinewoods on the islands or the south shore were similarly exploited. Although historically there were a number of extensive settlements on the north shore only the Letterewe estate buildings are occupied today.

The majority of the catchment has been managed as traditional deer forest for over 100 years in association with extensive sheep grazing. As with other parts of the West Highlands, the area has suffered from some overgrazing and, in places, overburning. Deer numbers are relatively stable, but are too high in most locations to permit woodland regeneration except where trees are associated with crags and gorges. Native woodland has survived in places and much of it now lies within adjacent designated areas, for example, the oakwoods on the north shore at Ardlair-Letterewe SSSI, the pinewoods in Beinn Eighe NNR, and the oak woodland at Talladale SSSI. Many of these woodlands are now subject to active management and this should have a positive impact on their size and structure

New native woodlands have been established at Bad na Sgalaig and Baile Mor to the south west of Loch Maree. These cover approximately 5000 ha and extend to the shores of Loch Maree between Tollie Bay and Slattadale. Both schemes will bring benefits by helping to reduce the amount of erosion and run off from the catchment, improving overall habitat and species diversity and producing links between existing fragments of native woodland.

Areas of commercial woodland are situated at Slattadale and to the south of the loch. At Slattadale, management involves the restructuring of the eastern and western edges of the forest and the creation of riparian corridors along the Slattadale Burn and the shore of Loch Maree. These changes will be highly beneficial in the longer-term, since they will not only increase the areas of native woodland but they will also provide links between existing designated sites such as Talladale SSSI and the newly created native woodlands of Bad na Sgalaig and Baile Mor. Controls will need to be put in place to minimise the risk from increases in sediment load and acidification within specific watercourses during the transition phase.

Some rhododendron occurs which poses a threat to native woodland on the islands and the riparian fringe around the loch edge. There are also non-local origin Scots pines within the Loch Maree basin, which threatens the genetic integrity of the local Scots pine.

The water quality of the loch can be affected by human activity both within the

catchment and on the loch itself. However recent work involving an assessment of the nutrient levels within the water column and the sediments within the loch as well as an analysis of past and current land use would indicate that neighbouring land use presents no significant threat to the quality of the water. There may be some localised enrichment as a result of point sources but with fewer than 150 people currently residing permanently within the catchment these are considered unlikely to have any significant impact.

The main road to the coastal communities of Wester Ross, the A832, follows the southern shore. In recent decades this has been upgraded to double track and it is not envisaged that any major additional works will be required.

The loch itself is an important sea trout fishery although the fishery, like many west coast fisheries, has declined in recent years. Current use of the loch involves boats based at the Loch Maree Hotel, and a small number of individual boats at scattered locations around the loch shore - including a regular private ferry across the middle of the loch servicing the Letterewe Lodge. Boats are also used for conservation management such as the monitoring of black-throated divers and the maintenance of artificial nest sites. Recreational use by canoeists and wind-surfers also occurs .

Most of the islands in the loch are managed for conservation and public awareness as Loch Maree Islands National Nature Reserve.

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

We wish to work with the owners, occupiers and other interests 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.

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 and enhance the extent, condition and diversity of the semi-natural woodland habitats (pinewood, alder woodland and bog woodland) by, for example:

- Encouraging natural regeneration of trees, especially the alder woodland at Taggan.
- Encouraging removal of invasive non- native species such as rhododendron.
- Ensuring the impact of grazing animals on all islands remains light.

2. To maintain and enhance the Black-throated diver population by, for example:

- Managing and maintaining the existing diver rafts.
- Minimising disturbance to breeding black-throated divers by recreational water users.

3. To maintain the condition of the oligotrophic loch and the species-richness and distribution of important vascular plants by, for example:

- Maintaining the existing water quality.

4. To maintain the current status and distribution of the otter population by, for example:

- Maintaining suitable lochside conditions for foraging and shelter.

5. To maintain the current status and distribution of dragonflies and beetles by, for example:

- Maintaining the range of micro-habitats required by rare species.

6. To maintain the geology and geomorphology interest of the site by for example

- Ensuring the natural sediment sequence within the loch remains undisturbed.
- Ensuring the natural sediment accumulations around the three peat core sites are not disrupted.
- Maintaining the existing hydrological regime.

7. To ensure that the conservation objectives for other European habitats are maintained in favourable condition.

Other factors affecting the natural features of the site

Land based activities within the catchment could also affect the natural features of the site indirectly through diffuse or point source pollution.

Date last reviewed: 24 February 2010