Scottish Natural Heritage
Dualchas Nàdair na h-Alba
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Nàdair air fad airson Alba air fad

LOCH ECK
Site of Special Scientific Interest

SITE MANAGEMENT STATEMENT

Site code: 980

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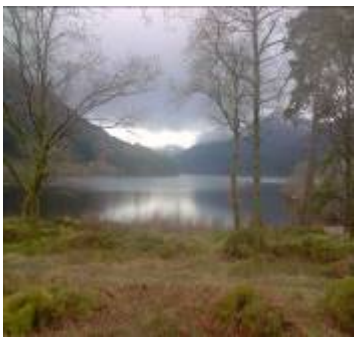
Purpose



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.

Natural features of Loch Eck SSSI	**Condition of feature (date monitored)**
Common whitefish (*Coregonus lavaretus*)	Favourable, maintained (October 2004)
Arctic charr (*Salvelinus alpinus*)	Favourable, maintained (October 2004)
Fish assemblage	Favourable, maintained (October 2004)
Oligotrophic loch	Favourable, maintained (June 2004)
Flood-plain fen	Favourable, maintained (August 2007)
Bryophyte assemblage	Favourable, maintained (April 2003)

Description of the site

Loch Eck is located approximately 10.5km north of Dunoon on the Cowal peninsula of Argyll. The loch comprises a large freshwater body, which is 9.7km long and 700m wide with an average depth of 17.1m (a maximum of 42.3m in parts). Situated at less than 10m above sea level, the loch has formed in a glacial trough.

The loch is of importance for its outstanding fish community which is believed to be one of the most natural remaining in Britain. Loch Eck is one of only two Scottish localities for the powan, a race of the nationally rare whitefish *Coregonus lavaretus* and is also one of two British sites, and the only Scottish site, where Arctic charr *Salvelinus alpinus* and powan co-exist. The Loch Eck charr itself is of interest as a dwarf form and as one of the most distinctive races in Britain. In addition, the presence of the migratory Atlantic salmon *Salmo salar* and sea trout *Salmo trutta trutta* make Loch Eck the only water body in Britain where these four species occur together.

The results of the 2004 monitoring found both the common whitefish and Arctic charr features to be in favourable condition. A range of age classes were found and the extent and quality of their habitat was considered suitable to support both fish populations. Atlantic salmon and sea trout were confirmed present within the loch and as both Arctic charr and powan are in favourable condition, consequently, the 'fish assemblage' is also considered to be in favourable condition.

The loch supports a good flora typical of oligotrophic (nutrient-poor) conditions. There are three characteristic open water vegetation associations, namely submerged vegetation on exposed shores, submerged vegetation in deeper water and sheltered bay community where floating species are most abundant. Species of particular note are the nationally scarce awlwort *Subularia aquatica* and the regionally uncommon floating bur-reed *Sparganium angustifolium*. Around the loch edge the vegetation is characterised by narrow stands of sharp-flowered rush *Juncus acutiflorus* mire and swampy stands of species such as water horsetail *Equisetum fluviatile* and common reed *Phragmites australis*.

The results of the 2004 monitoring also found the oligotrophic loch feature to be in favourable condition. The loch appeared to have the same surface area than as at the time of designation and the survey found an aquatic plant community indicative or associated with oligotrophic conditions. Water and habitat quality were generally good, however, the presence of the invasive species *Elodea nuttallii* indicated that Loch Eck is at risk of declining in status.

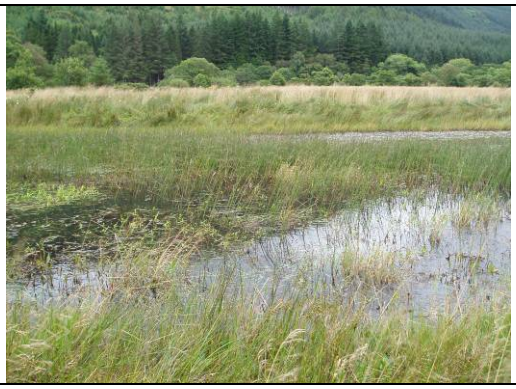
The flood-plain fen around the inflow at the north end of the loch is of particular interest for the intricate mosaic of swamp, mire, fen meadow and swampy carr communities and the hydrological zonation this illustrates. Communities of particular note include bladder sedge *Carex vesicaria,* swamp and yellow flag *Iris pseudacorus* – meadowsweet *Filipendula ulmaria* mire, the latter with abundant hemlock water-dropwort *Oenanthe crocata*. The sharp-flowered rush fen meadow is also of interest for the abundance of whorled caraway *Carum verticillatum*. On drier ridges within the fen mosaic there is a gradation to acid grassland with associated gorse *Ulex europaeus* scrub.

The flood-plain fen feature was found to be in favourable condition following monitoring of the site in 2007. The site was considered to be in good condition overall with most botanical interest located in the fields to the north of the site. No apparent threats to the site were identified, however, some scrub encroachment was recorded in the north-eastern field.

The oak/birch dominated woodland adjacent to Loch Eck at Meall an t-Sith is of outstanding interest for Atlantic bryophytes, for which Scotland holds internationally important populations, with 175 species currently recorded. Twelve species found here are regarded as threatened in Europe, with one - *Hageniella micans* considered to be endangered. Five of these species are also considered nationally scarce and include *H. micans, Plagiochila heterophylla, Adelanthus decipiens, Jamesoniella autumnalis*, and *Leptoscyphus cuneifolius.*

In 2003, the bryophyte assemblage feature was found to be in favourable condition. Almost all the species recorded had Western oceanic woodland as the most preferred habitat and they were almost entirely restricted to a small area of woodland at Meall an t-Sith on the western shore of Loch Eck. The woodland was found to support abundant populations of bryophyte species and no evidence of loss of extent, tree felling nor pollution was identified at this time.

Flood-plain fen	Arctic charr

	(*Salvelinus alpinus*)
	

Past and present management

Loch Eck SSSI hosts a diverse range of industrial, agricultural and recreational activities. The loch is dammed at the outflow in the south end and forms part of the public water supply serving the Cowal peninsula.

The construction of the weir has resulted in raised water levels and restricts the water level changes. This change in the water level may be one of the reasons for the restricted spawning substrate and for apparent changes in the biology of the powan and Arctic charr. The change in water levels also means that the area of shore exposed during the year is different from and smaller than that exposed previously. This may be the reason for the significant erosion and death of trees observed over recent years in parts of the upper shore.

The natural transition from open water through emergent vegetation to alder carr and drier woodland and grassland has been significantly altered through the impacts of road construction and through forestry and farming practices.

The fen and swamp areas have previously been drained and grazed extensively by sheep, cattle and horses. There has been a significant impact on the water table of this area as a result of the damming of Loch Eck. The water table is now consistently higher and the ground saturated for much of the year making grazing in this area impracticable.

Land further north and to the east of the loch is currently used for agricultural rough grazing and two Rural Development Contracts are in place to cover the management of this land.

It is likely that much of the woodland at Meall an t-Sith has been coppiced in the past and used for grazing by both cattle and sheep. Deer exclosures have been erected around the wood and small-scale felling has taken place to facilitate regeneration. There is currently grazing by cattle within some areas of the woodlands.

In other woodland areas, predominantly between the forest road and the shore on the west side of the loch, thinning , clear felling and restocking of coupes has taken place. Previously this has impacted upon the loch flora and gravel beds, however, the introduction of good forestry practice guidelines and the adoption of a SSSI Management Plan has now improved methods of working within the riparian habitats and close to the loch edge.

The recreational sport of angling is practiced on the loch. Fishing is for salmon, sea trout and brown trout and is regulated through a permit system managed by the Dunoon & District Angling Club and by Fishing Purchase Consultants.

A number of both motorised and non-motorised craft use the loch and this is reflected in the relatively large number of moorings anchored off the shore. Historically, boat launching,

especially on the east side of the loch, may have caused damage to floating communities in sheltered bays and to fish spawning sites. Designated boat launching sites have now been established with the aim of minimising impacts to the loch side vegetation and gravel beds.

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 to monitor the effectiveness of the SSSI Management Plan and Rural Development Contracts.

1. To maintain fish populations of interest, especially powan, Arctic charr and all salmonid species at no less than current levels

Maintain population size and density and ensure a range of age classes exist for powan and Arctic charr. Maintain the extent and quality of aquatic habitat suitable for viable fish populations of all fish species of interest. Ensure that there is no introduction of predatory fish or competitors and no fish stocking or use of live bait. Ensure that no fish farms are established and that any commercial exploitation of the fish is done on a sustainable basis.

2. To maintain oligotrophic loch conditions.

Maintain extent and quality of standing water habitat suitable for viable populations of macrophyte species characteristic of oligotrophic conditions. Ensure that there is no evidence of any accelerated sediment transport into Loch Eck and that the shoreline of the loch remains unmodified and natural. Maintain loch side transitional vegetation at no less than current levels and monitor colonisation of the loch by invasive species, particularity *Elodea nuttallii.*

3. To maintain the condition and extent of the flood-plain fen habitat.

Maintain stocking at a level at which there is no obvious damage to the vegetation from over-grazing or trampling and the vegetation continues to support key species. Maintain existing hydrological conditions across the site to maintain the mosaic of wet meadow and mire. Monitor scrub encroachment across the fen habitat.

4. Maintain the condition and extent of the woodland habitat, maintain suitable conditions for the growth of the lower plant communities and ensure that the nationally rare bryophytes remain present at the site within at least their current range and levels of abundance.

Ensure grazing pressure by stock and wild herbivores within the wood is at a level low enough to allow the successful regeneration of native tree species. Ensure that native tree species regeneration maintains tree cover on the site and control the spread of non-native invasive species on the site, particularly *Rhododendron ponticum* and Sitka spruce.

Other factors affecting the natural features of the site:

1. Water Treatment Works: Ongoing upgrading works to the existing treatment plant at the south-west end of the loch poses potential risks of eutrophication and increased sediment loading.
2. Forestry and farming practices: The potential exists for some run-off from agriculture and some levels of siltation and possible acidification linked to forestry practices.
3. Domestic and commercial effluent: There is potential for localised eutrophication of the loch from discharges from septic tanks.
4. Road works: Areas of scrub vegetation on the loch side adjacent to the A815 road are routinely cleared to increase sight-line visibility for the safety of motorists.

5. A caravan site and chalet village have been developed near the loch outflow.
6. A programme of non-native invasive species control is being implemented which targets a number of locations on the eastern shore of the loch.
7. Code of Conduct: Given the range of different user groups occupying the loch, a voluntary Code of Conduct leaflet has been published which encourages all users to have regard for one another and consider the sensitive natural heritage interests of the loch.

Date last reviewed: 28 March 2011