

LISMORE LOCHS SPECIAL AREA OF CONSERVATION (SAC)

CONSERVATION ADVICE PACKAGE



Site Details

Site name:	Lismore Lochs
Map:	https://sitelink.nature.scot/site/8290
Location:	Highlands and Islands
Site code:	UK0012977
Area (ha):	107.61
Date designated:	17 March 2005

Qualifying Features

Qualifying feature	Assessed condition	SCM visit date	UK overall Conservation Status
Calcium-rich nutrient-poor lakes, lochs and pools	Favourable Maintained	22 July 2009	Unfavourable-bad

Notes:

Assessed Condition refers to the condition of the SAC feature assessed at a site level as part of NatureScot's [Site Condition Monitoring \(SCM\)](#) programme.

Conservation status is the overall condition of the feature throughout its range within the UK as reported to the European Commission under Article 17 of the Habitats Directive in 2019.

Overlapping protected areas

[Lismore Lochs SSSI](#)

Key factors affecting the qualifying interests

Calcium-rich nutrient-poor lakes, lochs and pools

The Calcium-rich nutrient-poor lakes, lochs and pools habitat is characterised by water with a high base content. This is usually confined to areas of limestone and other base-rich substrates (e.g. serpentine and boulder clays), or coastal sites based on calcium-rich shell-sands, also known as machair lochs. Such waterbodies are characterised by very clear water and low nutrient status. They are therefore largely restricted to situations where the catchment or aquifer, from which they are supplied with water, remains relatively unaffected by intensive land-use or other sources of nutrients.

The three component lochs that make up the SAC on Lismore all have very clear water and are low in nutrients but with high alkalinity. These marl lochs overlie metamorphic Dalradian limestone. Nutrient levels within the lochs are low and the water is extremely clear. The clarity of the water is reflected in the occurrence of long-stalked Pondweed at depths > 6m in one of the lochs and the high alkalinity is

reflected in the site supporting several rare stoneworts. At the ends of each loch are rich fens.

Key management issues include changes to the hydrology, pollution of surface waters, air pollution, invasive non-native species, fishing and harvesting of other aquatic resources.

Further information about this habitat can be found on the [JNCC website](#).

Conservation Objectives for Hard oligo-mesotrophic waters with benthic vegetation of *Chara* spp [H3140] (Calcium-rich nutrient-poor lakes, lochs and pools)

1. To ensure that the qualifying features of Lismore Lochs are in favourable condition and make an appropriate contribution to achieving favourable conservation status.

Favourable Conservation Status (FCS) is considered at a European biogeographic level. When determining whether management measures may be required to ensure that the conservation objectives for this site are achieved, the focus should be on maintaining or restoring the contribution that this site makes to FCS.

When carrying out appraisals of plans and projects against these conservation objectives, it is not necessary to understand the status of the feature in other SACs in this biogeographic region. The purpose of the appraisal should be to understand whether the integrity of the site (see objective 2) would be maintained. If this is the case then its contribution to FCS across the Atlantic Biogeographic Region will continue to be met. Further details on how these appraisals should be carried out in relation to maintaining site integrity is provided by objective 2 (including parts a, b and c). If broader information on the feature is available then it should be used to provide context to the site-based appraisal.

Note that “appropriate” within this part of the conservation objectives is included to indicate that the contribution to FCS varies from site to site and feature to feature.

2. To ensure that the integrity of Lismore Lochs is maintained by meeting objectives 2a, 2b and 2c for each qualifying feature.

The aim at this SAC is to maintain the Calcium-rich nutrient-poor lakes, lochs and pools habitat in a favourable condition as a contribution to its wider conservation status. Therefore any impacts on the objectives shown in 2a, 2b, or 2c below must not persist so that they prevent the achievement of this overall aim.

When carrying out appraisals of plans or projects the focus should be on maintaining site integrity, specifically by meeting the objectives outlined in 2a, 2b and 2c. If these are met then site integrity will continue to be maintained. Note that not all of these will be relevant for every activity being considered. Any impacts on the objectives shown in 2a, 2b or 2c below must not persist so that they prevent the maintenance of site integrity. Temporary impacts on these objectives resulting from plans or projects can only be permitted where there is certainty that the features will be able to quickly recover.

This objective recognises that the qualifying habitat is exposed to a wide range of drivers of change. Some of these are natural and are not a direct result of human influences. Such changes in the habitat's extent, distribution or condition within the site which are

brought about by natural processes, directly or indirectly, are normally considered compatible with the site's conservation objectives. An assessment of whether a change is natural or anthropogenic, or a combination of both, will need to be looked at on a case by case basis.

2a. Maintain the extent and distribution of the habitat within the site

The extent of Calcium-rich nutrient-poor lakes, lochs and pools habitat feature has been estimated at 32.28ha over 3 loch sites. This should be maintained.

The area figure has been taken from the Standard Data Form. Fundamentally there should be no measurable net reduction the extent of the habitat and, most importantly, its distribution throughout the site and the number of sites should be maintained.

This should include the total surface area, depth of water and type and distribution of loch substrate sediments.

This conservation objective is considered to be met if the conditions to ensure the habitat's long-term existence are in place. At Lismore Lochs this objective is currently considered to be met with the site in favourable maintained condition.

2b. Maintain the structure, function and supporting processes of the habitat

The structure and function of lochs are strongly influenced by activities within their catchment. Changes in land management or development can affect the integrity of the feature which will manifest itself in changes to the loch.

Lismore Lochs is a small island catchment with limited input to the system. Monitoring has however noted changes to vegetation due to agricultural input and invasive species in the past; observing any changes and altering management is important to maintain favourable condition of the site.

Physical Attributes

-Surface Area

Changes to surface area can indicate pressures on the structure and function of lochs. The surface area of a loch may fluctuate slightly naturally. However changes to surface area and the associated change to depth can adversely affect the character of the loch, particularly the edge vegetation.

Changes to the surface area may also indicate a number of pressures such as abstraction, regulation, construction, excessive sediment deposition and natural succession which may occur in the catchment.

-Hydrological regime

The hydrology of the loch affects both water level fluctuations and annual within year flushing patterns. Flushing is important as it is strongly related to dilution and removal of nutrients and plankton. Changes to the flushing pattern can be caused by factors similar to those affecting area; abstraction, regulation, construction, excessive sediment deposition and natural succession which may occur in the catchment.

-Loch substrate character

The type and distribution of sediment particles within a loch will affect the biology of the loch and the availability of habitats. Changes to the substrate character may also be indicative of changes to the area and hydrological regime. Reduction in area or flushing

may affect the substrate character as finer sediments become trapped and there is increased input of leaf-litter from scrub encroachment.

-Natural sediment load

Accumulation of nutrient-rich sediment may have a strong effect on the water quality and biology of the loch. Increases in sediment loading may result from both changes in land management practice in the catchment or on the shoreline and short term events such as construction. Evidence is growing that an increase in storm events associated with climate change may increase the amount of sediment deposited in lochs.

-Connectivity between the loch and the surrounding area

While a loch is often perceived as a discrete entity the connections between it and the surrounding area are vital to its functioning as part of a natural system. These natural connections can be reduced or changed by, for example, anything that impedes the exchange of water either on the surface or with the underlying water table.

Water Quality

Kilcheran Loch has previously been noted as suffering from localised nutrient enrichment arising from cattle encroachment on the west side of the loch resulting in cyanobacterial blooms and mats of filamentous algae. There is currently no baseline data on water chemistry; a survey is not considered necessary due to the isolated nature of the site with localised inputs. Monitoring will observe vegetation changes that may indicate changes to water quality.

2c. Maintain the distribution and viability of typical species of the habitat

Using the 2009 aquatic macrophyte results, Kilcheran Loch conforms as a hard oligo-mesotrophic loch; it has high diversity of plant species, including *Littorella uniflora* and *Lobelia dortmanna*, *Myriophyllum alterniflorum*, *Potamogeton perfoliatus* and *Chara* spp.

These lochs and associated fens support a rich assemblage of invertebrates. These include a rare species of water beetle (*Donacia aquatica*) which is only known to exist in three separate populations across Scotland. The areas of open water transition fen provide excellent habitat for a wide range of fly (Diptera) species including the fly, *Cnemacantha muscaria*. Additionally the lochs support one of the richest aquatic mollusc populations in the west of Scotland with over 19 separate species being recorded. The land surrounding the loch holds an important meta-population of marsh fritillary and otter are abundant on the island.

Chara is the dominant component of this habitat: lesser bearded stonewort (*C.curta*);; rugged stonewort (*C.rudis*); delicate stonewort (*C.virgata*); opposite stonewort (*C.contraria*); common stonewort (*C.vulgaris*). The viability of the characteristic species is determined by water quality and other conditions that support the plant community such as water clarity. Loss or reduction in frequency of species may therefore be an indicator of deteriorating or changing water quality or some other adverse impact.

Alien species can have direct effects upon the natural plant communities through competition. They may also have more subtle effects as the niche they fill is different and this may directly or indirectly affect the rest of the ecosystem. A list of high impact species has been agreed as part of the Water Framework Directive.

Sitka spruce were found to be present at Loch Baile a' Ghobhainn in 2018 within the reedbed/transitional habitat at the northern end of the loch. It is likely that Sitka will

continue to spread at this site artificially increasing the speed of habitat transition losing its aquatic features due to drying the area out. It should therefore be removed from this area.

Additionally in 2015, an area of Skunk Cabbage was recorded along the northwestern edge of Loch Baile a' Ghobhainn, although no sign was found of this invasive non-native species in 2018.

Conservation Measures

Lismore Lochs SAC is notified as a Site of Special Scientific Interest and management changes described on the list of Operations Requiring Consent must have prior consent from SNH (NatureScot).

Current and recommended management for Calcium-rich nutrient-poor lakes, lochs and pools

Issue	Measure	Responsible party
Hydrological flushing regime	Monitor any changes to the hydrological regime. Use this information to discuss any management changes required as appropriate.	SEPA NatureScot
Loch substrate character	Monitor any changes to the hydrological regime and loch substrate. Use this information to discuss any management changes required as appropriate.	SEPA NatureScot Landowner
Pollution	Monitor any changes that may indicate pollution or changes to water chemistry.	SEPA NatureScot
Alien and exotic species	Removal of Sitka spruce at Loch Baile a' Ghobhainn. Monitoring of this loch should also look for the recolonisation of skunk cabbage, and colonisation of any other invasive species.	SEPA River Board Scottish Government NatureScot

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