

**SCOTTISH
NATURAL
HERITAGE**



**Loch Creran
Special Area of Conservation**

Advice under Regulation 33(2)
of The Conservation (Natural Habitats, &c.) Regulations 1994
(as amended)

30 March 2006

About this Package:

Section 1 of this document provides a general introduction and Sections 2 and 3 fulfil Scottish Natural Heritage's duties under Regulation 33(2) of The Conservation (Natural Habitats, &c.) Regulations 1994 (Habitats Regulations) (as amended by The Conservation (Natural Habitats, &c.) Amendment (Scotland) Regulations 2004). This requires that SNH advises other relevant authorities as to the conservation objectives of the site (see Section 2) and any operations which may cause deterioration of natural habitats or the habitats of species, or disturbance of species, in so far as such disturbance could be significant, for which the site has been designated (see Section 3).

Annexes A and B provide supplementary, non-statutory information. Annex A gives information on the sensitivity and vulnerability of the qualifying interest: 'Reefs'. Annex B gives some indication as to the extent, distribution, structure, function and processes that affect the qualifying interest. It should be noted that this is indicative and not definitive, and as more site information is gathered these sections may be updated.

Loch Creran was designated by Scottish Ministers as a Special Area of Conservation (SAC) on 17th March 2005. This site is also referred to as a 'European site' (Regulation 10(1)). A 'European marine site' is a 'European site' which is wholly or in part marine (Regulation 2(1)) and is hereafter referred to as a marine SAC.

Although the following statutory information is for the benefit of relevant authorities (see below for explanation of their role), it can also be used by other competent authorities when assessing plans or projects.

1 Introduction

1.1 Background

The Conservation (Natural Habitats, &c.) Regulations 1994 (as amended by The Conservation (Natural Habitats, &c.) Amendment (Scotland) Regulations 2004), commonly referred to as the Habitats Regulations, transpose the EC Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora (Habitats Directive) into domestic legislation. Regulation 33(2) gives Scottish Natural Heritage a statutory responsibility to advise other relevant authorities as to the conservation objectives for marine SACs in Scotland, and any operations which may cause deterioration of natural habitats or the habitats of species, or disturbance of species for which the site has been designated.

This document presents the Regulation 33 advice, plus supporting information, for Loch Creran SAC to assist relevant and competent authorities, local interest groups and individuals in considering management (including any management scheme) of the site. This advice, plus supporting information, will also help to determine the scope and nature of any “appropriate assessment”, which the Habitats Directive requires to be undertaken for proposed plans and projects that are not connected to the conservation management of the site and are considered likely to have a significant effect. Where necessary Scottish Natural Heritage will also provide more detailed advice to relevant, and other competent, authorities to inform assessment of the implications of any such plans or projects.

1.2 Relevant and competent authorities

Within the context of a marine SAC, a relevant authority is a body or authority that has a function in relation to land or waters within or adjacent to the site (Regulation 5) and include: a nature conservation body; a local authority; water undertakers; a navigation authority; a harbour authority; a lighthouse authority; a river purification board (SEPA); a district salmon fishery board; and a local fisheries committee. All *relevant authorities* are *competent authorities*.

A competent authority is defined in Regulation 6 as “any Minister, government department, public or statutory undertaker, public body of any description or person holding a public office”. In the context of a plan or project, the *competent authority* is the authority with the power or duty to determine whether or not the proposal can proceed.

1.3 The role of relevant authorities

The Habitats Regulations require relevant authorities to exercise their functions so as to secure compliance with the Habitats Directive. A management scheme may be drawn up for each marine SAC by the relevant authorities as described under Regulation 34. For marine SACs with overlapping interests a single management scheme may be developed.

Where a management scheme is in place the relevant authorities must ensure that all plans for the area integrate with it. Such plans may include shoreline

management plans, Sites of Special Scientific Interest (SSSI) management plans, local Biodiversity Action Plans (BAPs) and sustainable development strategies for estuaries. This must occur to ensure that only a single management scheme is produced through which all relevant authorities exercise their duties under the Habitats Regulations.

1.4 Responsibilities under other conservation designations

Other designations within or adjacent to the Loch Creran marine SAC are: Lynn of Lorn National Scenic Area; Glasdrum National Nature Reserve (NNR); Glasdrum SAC (underpinned by Glasdrum SSSI); Glen Creran Woods SAC; South Shian and Balure SSSI. The obligations of relevant, and other competent authorities and organisations under such designations and legislation are not affected by the advice contained in this document.

1.5 Conservation objectives

Section 2 of this document contains the conservation objectives for the Loch Creran marine SAC, a site which consists entirely of a marine qualifying interest. The conservation objectives have been developed to ensure that the obligations of the Habitats Directive are met.

1.6 Advice as to operations

SNH advise that the operations listed in Section 3 have the potential to cause deterioration of natural habitats, for which the site has been designated. This does not necessarily mean that the operations are *presently* ongoing or, if they are, that they are at levels incompatible with the conservation objectives.

1.7 Plans and projects

The Habitats Regulations require that, where an authority concludes that a development proposal is unconnected with the nature conservation management of a Natura site and is likely to have a significant effect on that site, it must undertake an appropriate assessment of the implications for the qualifying interest for which the area has been designated.

1.8 Review of Consents

Competent authorities are required by the Habitats Regulations to undertake a review of all consents and permissions for activities affecting the site as soon as reasonably practicable after it becomes a European site. This will have implications for discharge and other consents, which will need to be reviewed in the light of the conservation objectives.

2 Statutory advice given by SNH under Regulation 33(2) Conservation Objectives

2.1 Introduction

This section provides conservation objectives, which have been developed by SNH in agreement with the Scottish Executive and are to be provided to the relevant authorities in fulfilment of the requirements under Regulation 33(2) of The Conservation (Natural Habitats, &c.) Regulations 1994 (as amended by The Conservation (Natural Habitats, &c.) Amendment (Scotland) Regulations 2004).

The conservation objectives ensure that the obligations of the Habitats Directive are met; that is, there should not be deterioration or significant disturbance of the qualifying interests. This will also ensure that the integrity of the site is maintained and that it makes a full contribution to achieving favourable conservation status for its qualifying interest.

The Loch Creran marine SAC has been designated for the habitat 'Reefs', which is listed on Annex I of the Habitats Directive.

The Loch Creran SAC consists entirely of a marine qualifying interest.

The conservation objectives for the Loch Creran marine SAC are as follows:

To avoid deterioration of the qualifying habitat (Reefs) thus ensuring that the integrity of the site is maintained and the site makes an appropriate contribution to achieving favourable conservation status for the qualifying interest.
To ensure for the qualifying habitat that the following are maintained in the long term:
<ul style="list-style-type: none"> • Extent of the habitat on site • Distribution of the habitat within site • Structure and function of the habitat • Processes supporting the habitat • Distribution of typical species of the habitat • Viability of typical species as components of the habitat • No significant disturbance of typical species of the habitat

3 Statutory advice given by SNH under Regulation 33(2) Operations

The following advice as to operations to be considered by relevant authorities is provided by SNH with respect to Loch Creran marine SAC in fulfilment of the requirements under Regulation 33(2)(b) of The Conservation (Natural Habitats, &c.) Regulations 1994 (as amended by The Conservation (Natural Habitats, &c.) Amendment (Scotland) Regulations 2004). The advice identifies those operations, either on or affecting the SAC, which may cause deterioration of the marine natural habitats or the habitats of species, or disturbance of species, for which the site has been designated. These include operations that may not be currently affecting the Loch Creran marine SAC.

Operations (in alphabetical order)

Aquaculture

Finfish farming
Shellfish farming

Coastal Development

Agriculture
Civil engineering
Forestry operations

Discharges / Waste Disposal

Discharge of commercial effluent
Discharge of sewage

Fishing

Hydraulic fishing
Mobile gear: Dredging
Mobile gear: Trawling
Static gear: Creel / Pot fishing
Static gear: Netting

Gathering / Harvesting

Diver collection of shellfish
Intertidal collection of shellfish

Marine Traffic

Boat maintenance and antifoulant use
Commercial vessels

Recreational Activities

Boat anchorages
Boat moorings
Charter / recreational vessels
Scuba diving

Scientific Research

Scientific research

Annex A

Non-statutory advice given by SNH Sensitivity and Vulnerability of Loch Creran SAC 'Reefs' to activities listed in Section 3

The comments below are general and should not be considered to be definitive. They are made without prejudice to any comments SNH may provide or any assessment that may be required for specific proposals to be considered by a relevant authority. The level of any impact will depend on the location and intensity of the relevant activity. This advice is provided to assist and focus the relevant authorities in their consideration of the management of these operations.

Operations	Comments
Aquaculture	
Finfish farming	<p>Finfish farming has the potential to cause deterioration of reef habitats and communities through changes in water quality, smothering from waste material, physical disturbance (in the case of rocky reefs), and physical damage (in the case of more fragile biogenic reefs) from mooring systems. There is also potential for accidental introduction of new non-native species and increasing the spread of existing non-native plants and animals (e.g. <i>Caprella mutica</i> Japanese skeleton shrimp), which are already widely distributed in the UK. Invasive species have the potential to cause deterioration of the qualifying interest by altering community structure and quality.</p> <p>The associated environmental effects mentioned above are usually localised but the reduced water exchange within Loch Creran may exacerbate these effects and cumulative impacts should be considered.</p>
Shellfish farming	<p>This activity has the potential to cause deterioration of the reef habitats and communities through physical damage (e.g. installation of mooring blocks and continued scouring by riser chains) and changes in community structure caused by smothering from pseudo-faeces (undigested waste products) and debris (including dead shells) falling from the farm. There is also potential for accidental introduction of new non-native species and increasing the spread within the UK of existing non-native plants and animals (e.g. <i>Sargassum muticum</i> Wireweed) through importation and translocation of shellfish stocks. Invasive species have the potential to cause deterioration of the qualifying interest by altering community structure and quality.</p> <p>The associated environmental effects mentioned above are usually localised but the reduced water exchange within Loch Creran may exacerbate these effects and cumulative impacts should be considered.</p>
Coastal Development	
Agriculture	<p>Diffuse run-off from agricultural practices has the potential to cause deterioration of reef habitats and communities through the smothering of qualifying interest, and / or altering water quality through discharge of organic and inorganic pollutants.</p>

Coastal Development contd.	
Civil engineering	The construction and maintenance of structures, both within and adjacent to the sea have the potential to cause direct loss of reef habitat and deterioration of adjacent reef habitats and communities as tidal currents, and therefore coastal processes, are affected. For example coastal structures such as linear coastal defences or erosion control measures (e.g. gabions) can affect local sediment suspension and deposition patterns and therefore have the potential to cause deterioration of reef habitat through smothering. Installation, replacement and maintenance of undersea cables have the potential to cause direct loss of reef habitat as well as local deterioration of reef habitats and communities.
Forestry operations	Increased concentrations of dissolved nutrients from fertiliser run-off has the potential to cause deterioration of reef habitats and communities. Large-scale run-off of terrestrial sediment, from forestry operations, has the potential to cause deterioration of reefs through smothering.
Discharges / Waste Disposal	
Discharge of commercial effluent	Commercial effluent has the potential to cause deterioration of reef habitats and communities. This would be through the effects of pollution and / or nutrient enrichment, which may cause subsequent changes in community structure.
Discharge of sewage	Sewage effluent (whether treated or untreated) has the potential to cause deterioration of reef habitats and communities. This would be through the effects of pollution and / or nutrient enrichment, which may cause subsequent changes in community structure.
Fishing	
Hydraulic fishing	Hydraulic fishing has the potential to cause deterioration of rocky reef and destruction of biogenic reef (reef created by living organisms) habitats and communities through the large volumes of sediment disturbed by this method smothering the qualifying interest and through direct physical impact.
Mobile gear: Dredging	Benthic dredging has the potential to cause deterioration of rocky reef and destruction of biogenic reef habitats and communities through direct contact with dredge gear, and sedimentation when dredging occurs close to the qualifying interest.
Mobile gear: Trawling	Benthic trawling has the potential to cause deterioration of rocky reef and destruction of biogenic reef habitats and communities through direct contact with trawling gear, and sedimentation when trawling occurs close to the qualifying interest.
Static gear: Creel / Pot fishing	The use of creels and / or pots has the potential to cause deterioration of rocky reef and destruction of biogenic reef habitats and communities through direct contact with creels / pots, particularly during their deployment and / or recovery.
Static gear: Netting	The use of bottom-set nets has the potential to cause deterioration of rocky reefs and destruction of biogenic reef habitats and communities, particularly during deployment and / or recovery.
Gathering / Harvesting	
Diver collection of shellfish	Collection of shellfish by diving has the potential to cause deterioration of the reef habitats and communities where the target species is a key component of that community, or where the collection method involves the use of invasive techniques (e.g. hydraulic equipment or salt solutions). Diving amongst fragile biogenic reefs could cause deterioration and physical damage.
Intertidal collection of shellfish	Collection of shellfish from intertidal areas has the potential to cause deterioration of reef habitats and communities through physical damage and disturbance to qualifying habitat (trampling and turning stones) and removal of the target species, which can cause an imbalance of communities and ecosystems.

Marine Traffic	
Boat maintenance and antifoulant use	Most antifoulant products are designed to kill or discourage naturally occurring organisms and, as such, cause damage to the water environment if used carelessly. Under such circumstances use of antifoulant has the potential to cause deterioration of reef habitats and communities within this site.
Commercial vessels	The pumping of bilges, discharge of ballast, accidental grounding, or accidental oil (or other chemical) spillage from commercial vessels could occur within or close to this SAC. Such incidents have the potential to cause deterioration of reef habitats and communities or destruction of fragile biogenic reefs through direct and / or indirect impacts. Local authority emergency plans and oil spill contingency plans should take into account specific qualifying interest and recognise the importance of marine SACs should such incidents occur.
Recreational Activities	
Boat anchorages	Anchors and continual scouring by riser chains have the potential to cause deterioration of rocky reefs and destruction of fragile serpulid reefs and horse mussel beds through direct contact with the qualifying interest.
Boat moorings	Moorings and continual scouring by riser chains have the potential to cause deterioration of rocky reefs and destruction of fragile serpulid reefs and horse mussel beds through direct contact with the qualifying interest.
Charter / Recreational vessels	Boats have the potential to cause deterioration of reef habitats and communities through repeated launching and recovery in specific areas, accidental grounding, and accidental fuel spills .
Scuba diving	Recreational diving in a specific area has the potential to cause deterioration of reef habitats and communities, particularly fragile erect biogenic reefs such as those of <i>Serpula vermicularis</i> .
Scientific Research	
Scientific research	Research activities have the potential to cause deterioration of reef habitats and communities through direct alteration, removal or manipulation of this qualifying interest and its associated species.

Annex B

Non-statutory advice given by SNH Site account

Site description

Loch Creran, situated at the northern end of the Firth of Lorn, is a fjordic sea loch with a constricted opening into the Lynn of Lorn at Eriska. The loch has a mean depth of 13.4 m and a low water area of 13.3 km². Loch Creran is divided into a large lower basin and a small upper basin, separated by silled narrows at Caolas Creagan. The lower basin is further divided into three basins of 14 m, 27 m and 49 m maximum depths. Spring tidal currents in excess of 4 knots occur over a shallow rocky sill at the loch entrance. The loch is typically a well-mixed system although temperature and salinity gradients are common, particularly during periods of high rainfall or snow-melt. Salinities in the lower basin of the loch are generally in the range of 30-33 ‰ and temperatures range from a low of around 6 °C to a high of 13-15 °C. Loch Creran is very sheltered from wave action; this is reflected in the muds and fine sands that characterise the bottom sediments.

Qualifying marine interest

Annex I Habitat: Reefs

Loch Creran SAC is a site of international conservation importance for reefs. The site is particularly notable for biogenic reefs of the calcareous tubeworm *Serpula vermicularis*, which occur in shallow water around the periphery of the loch. The species has a world-wide distribution but the development of reefs is extremely rare: Loch Creran is the only known site in the UK to contain living *S. vermicularis* reefs and there are no known occurrences of similarly abundant reefs in Europe. Biogenic reefs of the horse mussel *Modiolus modiolus* occur in the upper basin of the loch. *M. modiolus* reefs are an important element of Scotland's marine biodiversity, and are considered to be habitats of high conservation value. The biogenic reefs increase habitat complexity and are colonised by an abundant and diverse faunal assemblage including red alga *Phycodrys rubens*, solitary sea squirts *Pyura microcosmus* and *Asciidiella aspersa*, the sponge *Esperiopsis fucorum*, bivalves *Chlamys varia* and *Aequipecten opercularis*, and the hydroid *Halecium halecinum*. Predators and scavengers such as the common starfish *Asterias rubens*, swimming crabs *Liocarcinus depurator* and whelks *Buccinum undatum* are usually associated with the reef. Also present amongst the reef community are porcelain crabs *Pisidia longicornis*, hermit crabs *Pagurus* spp., brittle stars *Ophiothrix fragilis* and feather stars *Antedon bifida*.

Localised areas of bedrock reef occur within the loch and support further species-rich assemblages that are characteristic of a range of tidal stream conditions. An area of very sheltered infralittoral bedrock in the upper basin is characterised by a dense canopy of the kelp *Laminaria saccharina*. The sea urchin *Psammechinus miliaris*, the squat lobster *Munida rugosa*, the hermit crab *Pagurus bernhardus* and the queen scallop *Aequipecten opercularis* usually occur on or around the reef. Filter-feeders, thrive in the strong currents at the mouth of Loch Creran. These include the barnacle *Balanus crenatus* and numerous hydroids such as *Abietinaria filicula*.