SCOTTISH NATURAL HERITAGE

Luce Bay and Sands 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 marine qualifying interests: 'Large shallow inlets and bays'; 'Sandbanks which are slightly covered by seawater all the time'; 'Mudflats and sandflats not covered by seawater at low tide'; and 'Reefs'. Annex B gives some indication as to the extent, distribution, structure, function and processes that affect the qualifying interests. It should be noted that this is indicative and not definitive, and as more site information is gathered these sections may be updated.

Luce Bay and Sands 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 the Luce Bay and Sands 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 Luce Bay and Sands marine SAC are: Loch of Inch and Torrs Warren Ramsar site; The Mull of Galloway SAC; Burrow Head SAC; Loch of Inch and Torrs Warren Special Protection Area (SPA); Back Bay to Carghidown SSSI; Burrow Head SSSI; Mull of Galloway SSSI; Scare Rocks SSSI; Torrs Warren – Luce Sands 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 marine components of the Luce Bay and Sands SAC, a site which consists of both marine and terrestrial qualifying interests. The conservation objectives have been developed to ensure that the obligations of the Habitats Directive are met.

1.6 Advice as to operations

The operations, set out in Section 3, are those which SNH advise may cause deterioration of marine 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 interest. 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 interests.

The Luce Bay and Sands marine SAC has been designated for the habitats: 'Large shallow inlets and bays'; 'Sandbanks which are slightly covered by seawater all the time'; 'Mudflats and sandflats not covered by seawater at low tide'; 'Reefs', which are all listed on Annex I of the Habitats Directive.

The Luce Bay and Sands SAC also consists of terrestrial qualifying interests, which are listed below the conservation objectives (see the SNH website www.snh.org.uk for more information).

The conservation objectives for the marine qualifying interests of the Luce Bay and Sands SAC are as follows:

To avoid deterioration of the qualifying habitat (**Large shallow inlets and bays**, **Sandbanks which are slightly covered by seawater all the time, Mudflats and sandflats not covered by seawater at low tide** and **Reefs**) thus ensuring that the integrity of the site is maintained and the site makes an appropriate contribution to achieving favourable conservation status for each of the qualifying interests.
To ensure for the qualifying habitats that the following are maintained in the long term:
• 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

The terrestrial qualifying interests of the Luce Bay and Sands SAC are as follows:

- Coastal dune heathland
- Dune grassland
- Shifting dunes
- Shifting dunes with marram
- *Triturus cristatus* Great crested newt

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 the Luce Bay and Sands 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 Luce Bay and Sands marine SAC.

Operations (in alphabetical order)

Aquaculture
Finfish farming
Shellfish farming

Coastal Development
Agriculture
Civil engineering

Discharges / Waste Disposal
Discharge of commercial effluent
Discharge of sewage

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

Gathering / Harvesting
Bait gathering
Diver collection of shellfish
Intertidal collection of shellfish

Marine Development
Maintenance dredging

Marine Traffic
Boat maintenance and antifoulant use
Commercial vessels

Recreational Activities
Angling
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 the Luce Bay and Sands SAC 'Large shallow inlets and bays', 'Sandbanks which are slightly covered by seawater all of the time, 'Mudflats and sandflats not covered by seawater at low tide' and '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.

NB. References to deterioration in the comments section below should be taken to mean *deterioration of all the qualifying interests*. If specific qualifying interests are particularly at risk they may be referred to individually where relevant.

Operations		Comments
Aquaculture		
Finfish farming		Finfish farming has the potential to cause deterioration of qualifying habitats and communities through changes in water quality, smothering from waste material and physical disturbance from mooring systems. There is potential for accidental introduction of new non-native species and increasing the spread of existing non-native plants and animals (e.g. *Caprella mutica* Japanese skeleton shrimp), which are already widely distributed in the UK. Invasive species have the potential to cause deterioration of the qualifying interests by altering community structure and quality.
Shellfish farming		This activity has the potential to cause deterioration of the qualifying 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. *Sargassum muticum* Wireweed), through importation or translocation of shellfish stocks. Invasive species have the potential to cause deterioration of the qualifying interests by altering community structure and quality.
Coastal Development		
Agriculture		Diffuse run-off from agricultural practices has the potential to cause deterioration of qualifying habitats and communities through the smothering of qualifying interests, and / or altering water quality through discharge of organic and inorganic pollutants.

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 qualifying habitat and deterioration of adjacent 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 qualifying habitats, particularly reefs, through smothering. Installation, replacement and maintenance of undersea cables have the potential to cause direct loss of qualifying habitats as well as local deterioration of qualifying habitats and communities.
Discharges / Waste Disposal		
Discharge of commercial effluent		Commercial effluent has the potential to cause deterioration of qualifying 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 qualifying habitats and communities. This would be through the effects of pollution and / or nutrient enrichment, which may cause subsequent changes in community structure.
Fishing		
Electrofishing		N.B. This method of fishing is unlawful. Electrofishing for bivalve species has the potential to cause deterioration to infaunal communities through mortality of both target and non-target species.
Hydraulic fishing		Hydraulic fishing has the potential to cause deterioration of the qualifying interests, particularly sedimentary habitats but also rocky reef and biogenic reef (reef created by living organisms) habitats and communities. This deterioration will be caused by direct impact on sedimentary habitats and communities, and sedimentary deposition onto adjacent reef habitats and communities.
Mobile gear: Dredging		Benthic dredging has the potential to cause deterioration of qualifying habitats and communities through direct contact with dredge gear, and sedimentation when dredging occurs close to the qualifying interests, particularly reefs.
Mobile gear: Trawling		Benthic trawling has the potential to cause deterioration of qualifying habitats and communities through direct contact with trawling gear, and sedimentation when trawling occurs close to the qualifying interests, particularly reefs.
Static gear: Creel / Pot fishing		The use of creels and / or pots in a localised area has the potential to cause deterioration of qualifying habitats and communities, particularlyreefs and biogenic reefs, through direct contact, particularly during their deployment and / or recovery.
Static gear: Line fishing		Commercial line fishing for tope and other species has the potential to cause deterioration of qualifying interests through loss or imbalance of associated species, communities and ecosystems. Deployment and recovery of gear may cause deterioration to qualifying interests such as fragile and erect reef species. Similarly lost gear may continue to have an impact on these qualifying interests.
Static gear: Netting		The use of shore-based or bottom-set nets has the potential to cause deterioration of qualifying habitats and communities, particularly fragile and erect reef species, mainly during deployment and / or recovery.
Gathering / Harvesting		
Bait gathering		Bait gathering on the foreshore has the potential to cause deterioration of qualifying habitats and communities through physical damage and disturbance of intertidal habitats and communities. This may cause deterioration of the qualifying interests by indirect impact through loss or imbalance of associated species, communities and ecosystems.

Gathering / Harvesting contd.		
Diver collection of shellfish		Collection of shellfish by diving has the potential to cause deterioration of qualifying 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). Diving amongst reefs could cause deterioration and physical damage, in particular to biogenic reefs, and erect and fragile reef species.
Intertidal collection of shellfish		Collection of shellfish from intertidal areas has the potential to cause deterioration of qualifying habitats and communities through physical damage and disturbance to qualifying habitats (trampling and turning stones), and removal of the target species, which can cause an imbalance of communities and ecosystems.
Marine Development		
Maintenance dredging		Capital and maintenance dredging and subsequent disposal has the potential to cause deterioration of qualifying habitats and communities through direct loss, smothering, possible contamination and disturbance of the qualifying interests.
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 qualifying 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 qualifying habitats and communities through direct and / or indirect impacts. Local authority emergency plans and oil spill contingency plans should take into account specific qualifying interests and recognise the importance of marine SACs should such incidents occur.
Recreational Activities		
Angling		Sea angling has the potential to cause deterioration of qualifying interests by removing target species, which could subsequently cause changes in community structure.
Boat anchorages		Anchors and continual scouring by riser chains have the potential to cause deterioration of qualifying habitats and communities, particularly reefs and biogenic reefs, through direct contact with the qualifying interests.
Boat moorings		Moorings and continual scouring by riser chains have the potential to cause deterioration of qualifying habitats and communities, particularly reefs and biogenic reefs, through direct contact with the qualifying interests.
Charter / recreational vessels		Boats have the potential to cause deterioration of qualifying habitats and communities through repeated launching and recovery in specific areas, accidental grounding, and accidental fuel spillages.
Scuba diving		Recreational diving in specific areas has the potential to cause deterioration of qualifying habitats and communities, in particular to erect and fragile reef species.
Scientific Research		
Scientific Research		Research activities have the potential to cause deterioration of qualifying habitats and communities through direct alteration, removal or manipulation of this qualifying interests and its associated species.

Annex B

Non-statutory Advice given by SNH
Site account

Site description

Luce Bay and Sands SAC is a broad, shallow embayment on the south-west coast of Scotland extending to some 47,942ha. The bay is approximately 10.5km wide in the inner bay, and extends to 31km between the outer tide-swept headlands of the Mull of Galloway and Burrow Head. The site comprises the whole of Luce Bay with the seaward boundary marked by a straight line between the headlands of the Mull of Galloway and Burrow Head.

The Mull of Galloway headland is the most southerly point in mainland Scotland. With the exception of the headland cliffs, much of the coast is low-lying and sheltered from wave action, with an extensive intertidal area composed of sand and boulders. Much of the head of Luce Bay is characterised by extensive intertidal sandy sediments, backed by sand dunes, scrub and an area of saltmarsh, while the headlands are composed of steep rock. The offshore rocks known as The Scares lie within the site at the mouth of the bay.

Bathymetric charts (for example chart number 2094) show that the majority of the embayment is covered by shallow water less than 20m deep. Deeper waters of 20-30m are generally found outwith the line of the SAC boundary, with the exception of two channels running into the bay either side of The Scares; 23m and 26m respectively. Deep waters of 30-50m and more lie offshore of the Mull of Galloway and Burrow Head.

The Water of Luce Bay joins the Piltanton Burn, and flows into the North-East side of the bay from the drainage basin of the western Southern Uplands.

Qualifying marine interests
Annex I Habitats:
Large shallow inlets and Bays

Large shallow inlets and bays are complex systems composed of an interdependent mosaic of subtidal, intertidal and surrounding terrestrial habitats. These habitat types are large indentations of the coast, which are generally more sheltered from wave action than the open coast. They are relatively shallow, usually averaging less than 30m in depth; ‘shallow’ has been defined by the depth limit of the light penetration in open coastal waters adjoining the inlet and bay. In the UK large shallow inlets and bays have been interpreted as having a depth of 30m below chart datum or shallower across at least 75 % of the site.

Water depths in Luce Bay are shallow, ranging from 0-10m fringing the coastline and at the head of the bay. Shallow depths extend further out into the bay where the major sandbanks are located along the western and northern shores. The water deepens to 20m at the site boundary between the

two headlands, with two deeper channels either side of The Scares that drop to maximums of 23m and 26m.

Most of the intertidal area of the bay comprises small boulders often resting on sediment. Some larger boulders on the lower shores have spaces beneath and between them which provide shelter for false Irish moss *Mastocarpus stellatus* and permit rich under-boulder communities to develop including, ascidians, sponges and crustose corraline algae. The large boulders are relatively stable, but small boulders tend to move around in winter storms, creating bare areas due to their scouring action. The associated sediment consists of fine to medium grained sand, with small amounts of mud, shell gravel and empty shells. In the subtidal area mixed boulders and sediment harbour a shallow-water community of sparse kelp *Laminaria hyperborea* and sea oak *Halidrys siliquosa*, red algae and the dahlia anemone *Urticina felina*, typical of sand-influenced hard substrata. The mixed boulders and sediment habitat extends into deeper water near the mouth of the bay where current-swept, kelp dominated, rocky reefs are present. An extremely sparse biota is found around the fringes of the rocks, which is due to constant scouring by sediments mobilised by tidal currents. The subtidal sediment associated with the boulders contains epifauna such as crabs, prawns and juvenile lugworms *Arenicola marina*.

Much of the central part of Luce Bay consists of slightly deeper sediments that are not as mobile as the fringing sand. These sediments support a rich community of polychaetes, bivalves, echinoderms, brittlestars, particularly *Ophiura* spp. The holothurian *Labidoplax digitata* has also been recorded in the bay, a species not recorded during other surveys of Marine Nature Conservation Review Sector 11 (MNCR11).

Luce Bay is a nursery ground for commercially important fish stocks, such as plaice *Pleuronectes platessa*, whiting *Merlangius merlangus*, cod *Gadus morhua* and herring *Clupea harengus*. Both the outer bay and areas close to the western coast contribute to local shellfish fisheries of scallop *Pecten maximus* and queen scallop *Aequipecten opercularis*. However, there is currently no managed fishery in the bay.

This complex system is composed of a mosaic of other habitats that qualify as Annex I features in their own right:

- Mudflats and sandflats not covered by seawater at low tide;
- Reefs;
- Sandbanks which are slightly covered by seawater all the time.

Mudflats and sandflats not covered by seawater at low tide

Mudflats and sandflats not covered by seawater at low tide characterise the western shore and the head of Luce Bay. In the upper shore, above the zone of drying, fine sands contain a sparse biota of amphipods and the isopod *Eurydice pulchra.* The extensive sediment beach at the head of Luce Bay consists of fine sands, with a rich biota of crustaceans, polychaetes and bivalve molluscs such as cockles *Cerastoderma edule*. This area has already been identified as a SPA as it is an important feeding and roosting area for

wintering wildfowl and waders. On the mid-shore, where water is retained during low tides, a community of amphipods with abundant lugworm *Arenicola marina* is present, grading on the lower shore into a rich community of burrowing amphipods, polychaetes and bivalves in clean sand. These two communities are particularly rich in the western part of Luce Sands.

Reefs

The reef habitat feature is represented to a lesser extent within the proposed site. Wave exposed shores and tide-swept rocky reefs are present around the Mull of Galloway, Burrow Head and The Scares, a group of rocks located centrally near the mouth of the bay. The tideswept reefs are characteristic of those found in this region and consist of horizontal and vertical bedrock and boulders colonised in shallower waters with sea-oak *Halidrys siliquosa*. In slightly deeper water, kelp *Laminaria hyperborea* provide attachment for stipe communities of red algae such as *Phycodrys rubens, Membranoptera alata* and *Palmaria palmata,* and below the kelp lie anemones such as *Actinothoe sphyrodeta*. The strong tidal currents favour the development of short faunal-turf communities with erect sponges, hydroids *Tubularia indivisa*, and featherstar-dominated circalittoral bedrock below 10m. Within the bay, to the west of Burrow Head, a rich sublittoral community on tide-swept boulders is present comprising dense, biogenic reefs of the polychaete *Sabellaria spinulosa* and an associated biota of hydroids and bryozoans with ten species of ascidians; the most abundant being *Polycarpa pomaria*. This biotope is of particular note for its high species richness. Around the edges of the bay the reefs and boulders in the shallow sublittoral support sea-oak *Halidrys siliquosa* and sea-whip *Chorda filum*. Edible crabs (partans) *Cancer pagurus* and lobsters *Homarus gammarus* are found on the reefs within the bay. In intertidal areas blue mussels *Mytilus edulis* and whelks *Buccinum undatum,* are present on moderately sheltered shores. In more exposed areas the rocky shores consist of bare rock with occasional limpets *Patella vulgata* and barnacles.

Sandbanks which are slightly covered by seawater all the time

Sandbanks which are slightly covered by seawater all the time are also notable features of Luce Bay. The majority of the bay consists of this habitat, covering some 35,495 ha, or 74%, of the site.

Subtidally much of the bay consists of sandbanks, with a fringe of shallow sublittoral mixed boulders and sediment around the eastern and western sides of the bay. These sediments range from clean coarse sands in tide-swept areas, to shallow fine muddy sands and shell gravel. The plant and animal communities associated with these habitats are characteristic of large shallow inlets and bays on the south-west coast of Scotland. The mobile sediment supports epifauna such as hermit crabs *Pagurus bernhardus*, prawns, brown shrimp *Crangon crangon* and the echinoderms *Ophiura ophiura, Amphiura brachiata, Echinocardium cordatum* and *Labidoplax digitata*. The sediment also supports a rich community of bivalves and polychaetes, such as sand masons *Lanice conchilega* and lugworms *Arenicola marina*. In the areas with shell gravel species such as the bryozoans *Alcyonidium diaphanum* and *Obelia diaphanum* grow attached to larger shell fragments.