

Sealochs in the Outer Hebrides

Area summaries

Ruth Beaver & Frances A. Dipper



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Series editor: David Connor

21

Loch Càrnan

Location

<i>Position (centre)</i>	NF 830 435	57°22'N 07°15'W
<i>Administrative area</i>	Western Isles	
<i>Conservation agency/area</i>	Scottish Natural Heritage	North Areas (Western Isles)

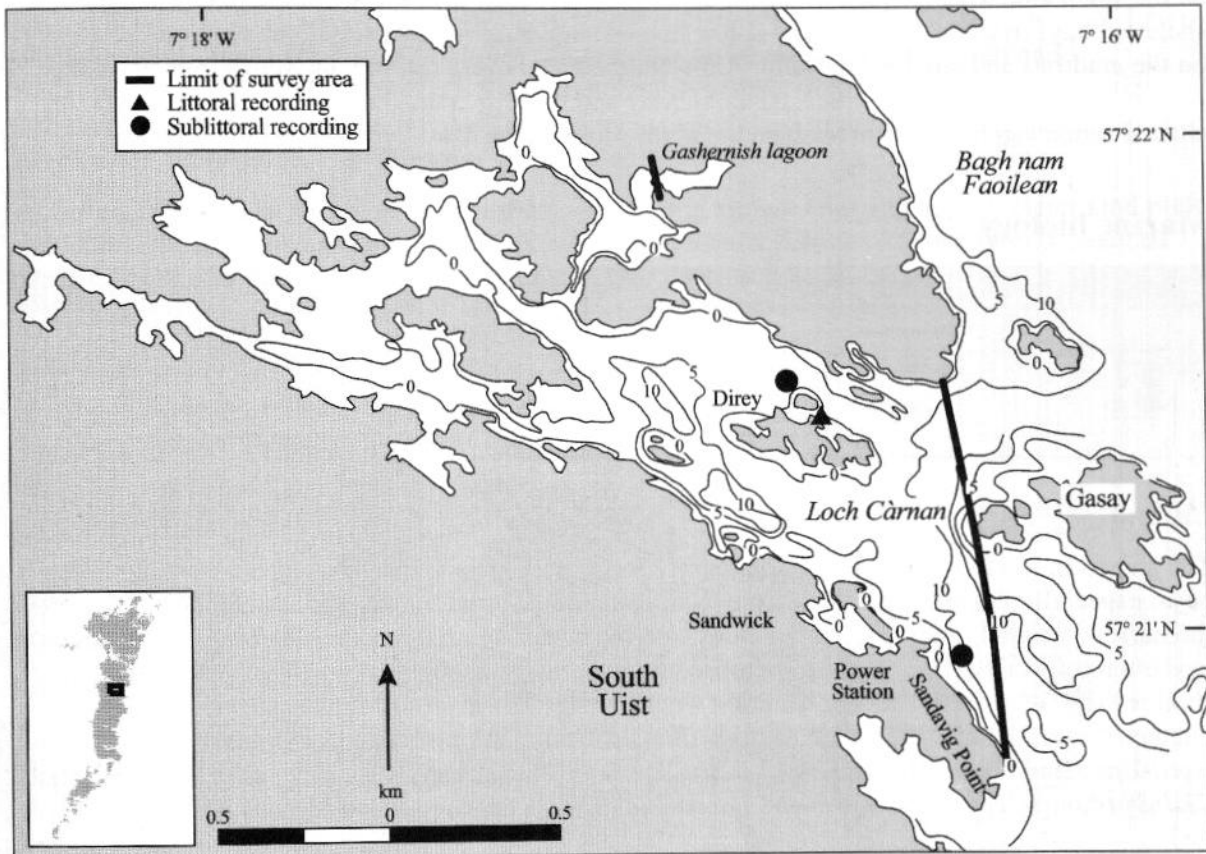


Figure 21.1 Main features of the area, showing sites surveyed.
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Physical features

<i>Physiographic type</i>	Fjardic sealoch
<i>Length of coast</i>	17.2 km (23.2 km including islands)
<i>Length of inlet</i>	2.54 km
<i>Area of inlet</i>	1.9 km ² (1.7 km ² excluding islands)
<i>Bathymetry</i>	Maximum depth 13 m at entrance on south side
<i>Wave exposure</i>	Sheltered to moderately exposed
<i>Tidal streams</i>	Moderately strong
<i>Tidal range</i>	3.9 m (mean springs); 1.3 m (mean neaps)
<i>Salinity</i>	Fully marine

Introduction

Loch Càrnan lies on the north-east coast of South Uist, directly south of Bàgh nam Faoilean or South Ford, the stretch of shallow water crossed by the causeway which joins South Uist to Benbecula. This part of South Uist is low-lying with a highly indented coastline with several complex shallow fjardic sealochs, including Loch Càrnan and Loch Sheilavaig. Further south, in contrast, the coast is steep and rugged and indented by the long narrow sealochs of Skipport, Eynort and Boisdale, overlooked by the imposing summits of Beinn Mhór and Hecla at over 600 m.

Loch Càrnan is fjardic in nature and mostly less than 8 m deep, although there are one or two areas on the south side where depths reach 11–13 m. Some areas of the loch, particularly those in the sheltered bays towards the head, dry at low tide and otters *Lutra lutra* are often seen in these areas on the mudflats and amongst the kelp. Although the loch is very open to the Minch, it is protected from extreme wave action by the island of Gasay and numerous small outlying islets and reefs. A sluiced saline lagoon at Gashernish on the north shore is described by Thorpe *et al.* (1998).

Marine biology

Marine biological surveys

	Survey methods	No. of sites	Date(s) of survey	Source
Littoral	Recording (epibiota)	1	May 1978	Powell <i>et al.</i> (1979)
Sublittoral	Recording (epibiota)	1	July 1984	Rostron (1984)
	Recording (epibiota)	1	May 1978	Dipper (1980)

Littoral

The shores in Loch Càrnan are predominantly rocky with areas of muddy sediment in sheltered bays, especially towards the head of the loch. Detailed information is only available from one site, the narrow channel running between Direy and the mainland on the north side of the loch, which is sheltered from wave action but is exposed to moderately strong tidal streams. The channel is shallow, and almost dries at low water on a spring tide. The shores of the channel are steep and blanketed with the knotted wrack *Ascophyllum nodosum* with associated hydroids *Clava multicornis* and *Dynamena pumila* (Asc.T). The floor of the channel is sandy, with bootlace weed *Chorda filum* and cape-form oarweed *Laminaria digitata* attached to small stones.

Sublittoral

Detailed information concerning the sublittoral biotopes in Loch Càrnan is available from two sites. The entrance to the loch is moderately exposed and sublittoral rock extends to around 10 m depth on the south side between Sandwick and Sandavaig Point. In this area, approximately 100 m from the power station intake, sublittoral rock consists of a bedrock cliff with many overhangs, crevices and a boulder slope at the base to a depth of 8.5 m. Below the boulder slope is a sandy plain sloping gently to a maximum depth of 12 m, interspersed with patches of coarse shell-sand or fine sand and irregular rock outcrops. The fauna and flora of both habitats is rich and diverse. On the cliff face and boulder slope there is a dense kelp forest of *Laminaria hyperborea* with occasional *Saccorhiza polyschides* (Lhyp.Ft). The stipes of the kelp plants have heavy epiphytic growths of red algae including *Palmaria palmata* and *Delesseria sanguinea*. Where red algae are excluded on the cliff overhangs, there are dense aggregations of sessile animals, such as the soft coral *Alcyonium digitatum* and the ascidians *Ascidella scabra* and *Ascidella aspersa*. Smaller numbers of the anemone *Sagartia elegans* and *Metridium senile*, the ascidian *Clavelina lepadiformis* and the cup coral *Caryophyllia smithii* are also present. Scavengers such as starfish and crabs *Carcinus maenas*, *Cancer pagurus*, *Liocarcinus depurator* and *Necora puber* are frequent. The squat lobster *Munida rugosa*, sea cucumbers and the goldsinny wrasse *Ctenolabrus rupestris* find refuge in the numerous rock crevices and in between boulders.

The sandy plain supports a variety of algae including the kelp *Laminaria saccharina*, bootlace weed *Chorda filum* and foliose algae such as *Ulva* sp. (LsacX). Large numbers of *A. aspersa* are found attached to algae and to stones and shells from a depth of 10 m downwards. The sand is well-worked with many crab excavations and a rich and diverse epifauna and infauna, including the anemones *Cereus pedunculatus* and *Cerianthus lloydii*, the burrowing brittlestar *Amphiura* sp. and the bivalves *Pecten maximus*, *Mya truncata*, *Ostrea edulis* and *Arctica islandica*. Fish include the short-spined sea scorpion *Myoxocephalus scorpius*, conger eel *Conger conger* and greater pipefish *Syngnathus acus*.

The tidal channel to the west of Direy Island holds several farmed Atlantic salmon cages. The seabed beneath and adjacent to the cages consists of mud and, in 1984, had a well developed mat of filamentous algae including *Furcellaria lumbricalis*, *Rhodothamniella floridula* and *Bonnemaisonia* sp. (*Trailliella*) (*Tra*). Fauna included *C. pedunculatus*, *C. maenas* and the tiny holothurian *Labidoplax media*. Some of the sediments very close to the salmon cages were anoxic (*Beg*) when surveyed in 1984 (Rostron 1984).

At the entrance to Loch Càrnan, east of the power station around Glas Eilean, is a clean sand plain with a maerl bed interspersed with bedrock outcrops at depths between 15 and 18 m. *C. smithii* and the black brittlestar *Ophiocomina nigra* colonise the bedrock, while the plain is inhabited by large scallops *P. maximus*.

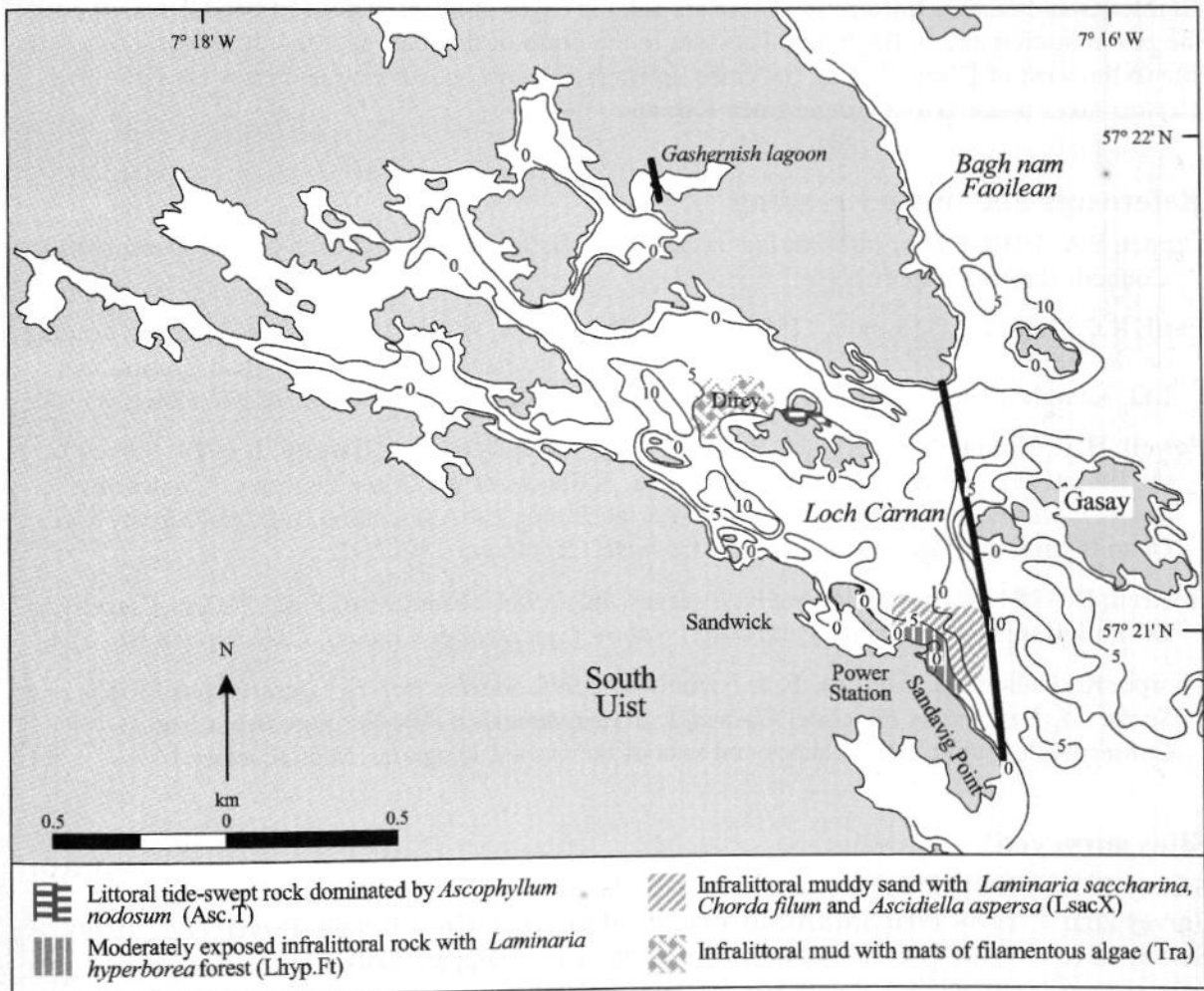


Figure 21.2 Indicative distribution of the main biotopes in the area (based on data from survey sites shown in Figure 21.1, cited literature and additional field observations).

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Nature conservation

There are no designated nature conservation sites in the area at present.

Human influences

Coastal developments and uses

Minor roads run across the head of Loch Càrnan and along the south side past the loch entrance towards Loch Sheilavaig. An oil-fired power station at Sandwick has operated only as a standby since 1990, when the Uists and Benbecula were connected to the national grid by a submarine cable that spans the Minch from Skye. The cable makes landfall at the power station.

Also at Sandwick is a slipway owned by the army which is primarily used to service landing craft that supply St Kilda. Adjacent to this is a pier owned by British Petroleum where oil and petrol for the Uists is offloaded. Further up the coast is a quay and several buildings owned by the local salmon farm.

Marine developments and uses

At Sandwick, opposite Direy, a set of yacht moorings were established in the mid-1980s by Highlands and Islands Enterprise. There are salmon cages at the entrance to Loch Càrnan opposite the power station and in Bàgh nam Faoilean to the north of the loch. In 1984 there was a fish farm site to the west of Direy. Potting for crabs, lobsters *Homarus gammarus* and crawfish *Palinurus elephas* takes place in and around Loch Càrnan.

References and further reading

- Dipper, F.A. 1980. *File of information on the Outer Hebrides*. Unpublished, Nature Conservancy Council. (Internal report.)
- Earll, R.C., James, J.G., Lumb, C.M. & Pagett, R.M. 1984. A report on the effects of fish farming on the marine environment of the Western Isles. (Contractor: Marine Biological Consultants Ltd, Kempley, Gloucestershire.) *Nature Conservancy Council, CSD Report*, No. 524.
- Powell, H.T., Holme, N.A., Knight, S.J.T., Harvey, R., Bishop, G. & Bartrop, J. 1979. Survey of the littoral zone of the coast of Great Britain. 3. Shores of the Outer Hebrides. (Contractor: Scottish Marine Biological Association/Marine Biological Association Intertidal Survey Unit, Oban/Plymouth.) *Nature Conservancy Council, CSD Report*, No. 272.
- Rostron, D. 1984. Western Isles sea loch survey, July 1984. (Contractor: Field Studies Council, Oil Pollution Research Unit, Pembroke.) *Nature Conservancy Council, CSD Report*, No. 594.
- Thorpe, K., Dalkin, M., Fortune, F. & Nichols, D. 1998. *Marine Nature Conservation Review Sector 14. Lagoons in the Outer Hebrides: area summaries*. Peterborough, Joint Nature Conservation Committee. (Coasts and seas of the United Kingdom. MNCR series.)

Sites surveyed

- Survey 58: 1984 OPRU Western Isles sealochs survey (Rostron 1984).
- Survey 265: 1970–1980 SMBA/MBA intertidal survey of Great Britain (Powell *et al.* 1979).
- Survey 281: 1978 NCC sublittoral survey of the Uists (Dipper 1980).

Littoral sites					
Survey	Site	Place	Grid reference	Latitude/longitude	Biotopes recorded
265	135	Direy Channel, Loch Càrnan, South Uist	NF 832 435	57°22.2'N 07°16.2'W	YG; Ver.Ver; Pel; Asc.T

Sublittoral sites

<i>Survey</i>	<i>Site</i>	<i>Place</i>	<i>Grid reference</i>	<i>Latitude/longitude</i>	<i>Biotopes recorded</i>
58	6/1	Loch Càrnan	NF 831 436	57°22.3'N 07°16.3'W	IMX; Beg; Tra
281	S1	Power station intake, Loch Càrnan, South Uist	NF 836 428	57°21.9'N 07°15.8'W	Lhyp.Ft; LsacX; Lsac.PK

Loch Sheilavaig

Location

<i>Position (centre)</i>	NF 840 405	57°21'N 07°15'W
<i>Administrative area</i>	Western Isles	
<i>Conservation agency/area</i>	Scottish Natural Heritage	North Areas (Western Isles)

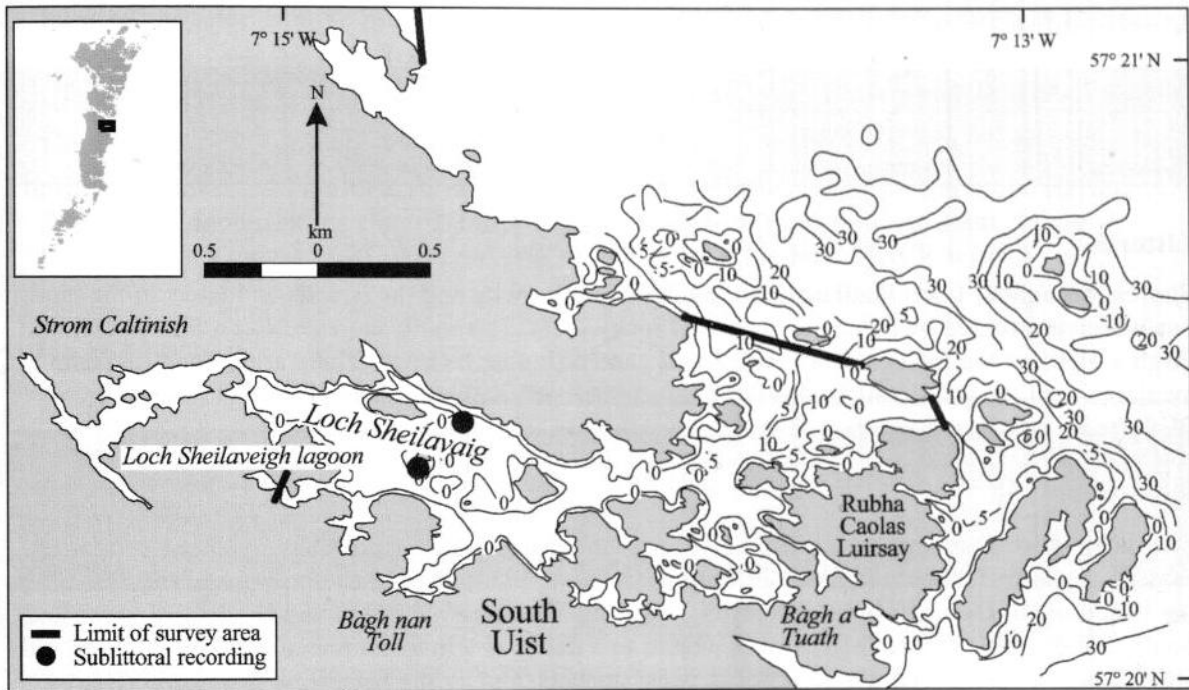


Figure 22.1 Main features of the area, showing sites surveyed.

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Physical features

<i>Physiographic type</i>	Fjord with fjard-like features
<i>Length of coast</i>	24.1 km (27 km including islands)
<i>Length of inlet</i>	3.75 km
<i>Area of inlet</i>	1.92 km ² (1.85 km ² excluding islands)
<i>Bathymetry</i>	Maximum depth 11 m; majority less than 2 m
<i>Wave exposure</i>	Sheltered to extremely sheltered
<i>Tidal streams</i>	Weak
<i>Tidal range</i>	4.1 m (mean springs); 1.6 m (mean neaps) (Loch Skipport)
<i>Salinity</i>	Fully marine

Introduction

Loch Sheilavaig is one of the smaller sealochs on the east coast of South Uist, situated between Loch Càrnan and Loch Skipport. In common with these lochs it has both fjordic and fjardic characteristics. Like true fjords, the loch has a very narrow entrance channel relative to the width of the main basin, with a very shallow sill across it. The entrance lies some way back from the open sea and is well protected by islets, making it very sheltered from wave exposure. The depth

just inside the entrance channel is approximately 12 m, but rapidly decreases and most of the loch is less than 2 m deep with a convoluted fjard-like coastline. At the head there is a causeway with a minor road running across it, and inland of this lies Strom Caltinish, an extensive area of flat intertidal rock. Adjacent to the entrance channel to Loch Sheilavaig is the entrance to a sheltered inlet, Bàgh a' Tuath, which runs in a north-south direction. The loch also has several smaller inlets, especially along its southern shore. One of these is crossed by another boulder causeway carrying the road, impounding a small, shallow percolation lagoon (Loch Sheilavaig lagoon) described by Thorpe *et al.* (1998).

Marine biology

Marine biological surveys				
	Survey methods	No. of sites	Date(s) of survey	Source
Sublittoral	Recording (epibiota)	2	July 1984	Rostron (1984)

Littoral

Shores throughout Loch Sheilavaig are predominantly rocky and the islands and islets in the main basin are surrounded by extensive intertidal rocky reefs. The south shores of Loch Sheilavaig, and Bàgh a Tuath at the loch entrance, consist of gently-sloping bedrock. There are no detailed data available for littoral habitats in this loch but its sheltered nature indicates that most shores are likely to be dominated by knotted wrack *Ascophyllum nodosum*.

Sublittoral

The only information on the sublittoral of Loch Sheilavaig comes from a survey aimed primarily at studying the effects of marine fish farming (Rostron 1984). Two sites to the south and east of the island of Bo Dearg have been studied, revealing a mixture of muddy and shelly sediments and boulder and cobble slopes. Mud slopes extend to a depth of 9 m and were covered by diatoms and algal debris, which accumulated in the deepest pockets, and by the bacterium *Beggiatoa* (Beg) with occasional crabs *Carcinus maenas* and lugworms *Arenicola marina*. Shell-gravel patches were silty with scattered, intact shells. Amphipods inhabited the surface but no other live macrofauna occurred. There were patches of dead maerl with empty scallop and razor shells to the south of Bo Dearg. Boulders and cobbles at a depth of 7 m were silted and covered with the barnacle *Balanus crenatus*. Frequently recorded fauna included crabs *Liocarcinus puber* and *C. maenas* and the ascidians *Asciidiella aspersa* and *Diplosoma listerianum*. South-east of Bo Dearg, in the vicinity of a series of fish cages, the mud and boulders supported *A. marina* and the sand mason worm *Lanice conchilega*, the ascidians *Ciona intestinalis* and *A. aspersa* and the sponge *Pachymatisma johnstonia*.

Nature conservation

There are no designated nature conservation sites in the area at present.

Human influences

Coastal developments and uses

A minor road runs from the north across causeways which separate Strom Caltinish and the lagoon to its south-east from the main loch. The road extends as far as the head of the small inlet of Bàgh nan Toll, on the south side of Loch Sheilavaig. A number of crofts are scattered along this one-kilometre stretch of road, while the rest of the area is uninhabited moorland.

Marine developments and uses

Due to the shallow nature of Loch Sheilavaig and poor access, the majority of the loch is unsuitable for salmon or shellfish farming with the exception of the small area to the north and south of Bo Dearg. There have been several fish farms here in the past; however some or all are no longer in use due to relocation to more suitable sealochs.

References and further reading

- Earll, R.C. & Pagett, R.M. 1984. A classification and catalogue of the sea lochs of the Western Isles. (Contractor: Marine Biological Consultants Ltd, Kempley, Gloucestershire.) *Nature Conservancy Council, CSD Report*, No. 525.
- Rostron, D 1984. Western Isles sea loch survey, July 1984. (Contractor: Field Studies Council, Oil Pollution Research Unit, Pembroke.) *Nature Conservancy Council, CSD Report*, No. 594.
- Thorpe, K., Dalkin, M., Fortune, F., & Nichols, D. 1998. *Marine Nature Conservation Review Sector 14. Lagoons in the Outer Hebrides: area summaries*. Peterborough, Joint Nature Conservation Committee. (Coasts and seas of the United Kingdom. MNCR series.)

Sites surveyed

Survey 58: 1984 OPRU Western Isles sealoch survey (Rostron 1984).

Sublittoral sites					
<i>Survey</i>	<i>Site</i>	<i>Place</i>	<i>Grid reference</i>	<i>Latitude/longitude</i>	<i>Biotopes recorded</i>
58	5/1	Loch Sheilavaig	NF 839 411	57°21.0'N 07°15.3'W	IMX; LsacX; Lsac.Ft; AmenCio; Lsac.PK
58	5/2	Loch Sheilavaig	NF 839 409	57°20.9'N 07°15.3'W	IMX; Beg

Loch Skipport

Location

Position (centre)	NF 830 385	57°20'N 07°16'W
Administrative area	Western Isles	
Conservation agency/area	Scottish Natural Heritage	North Areas (Western Isles)

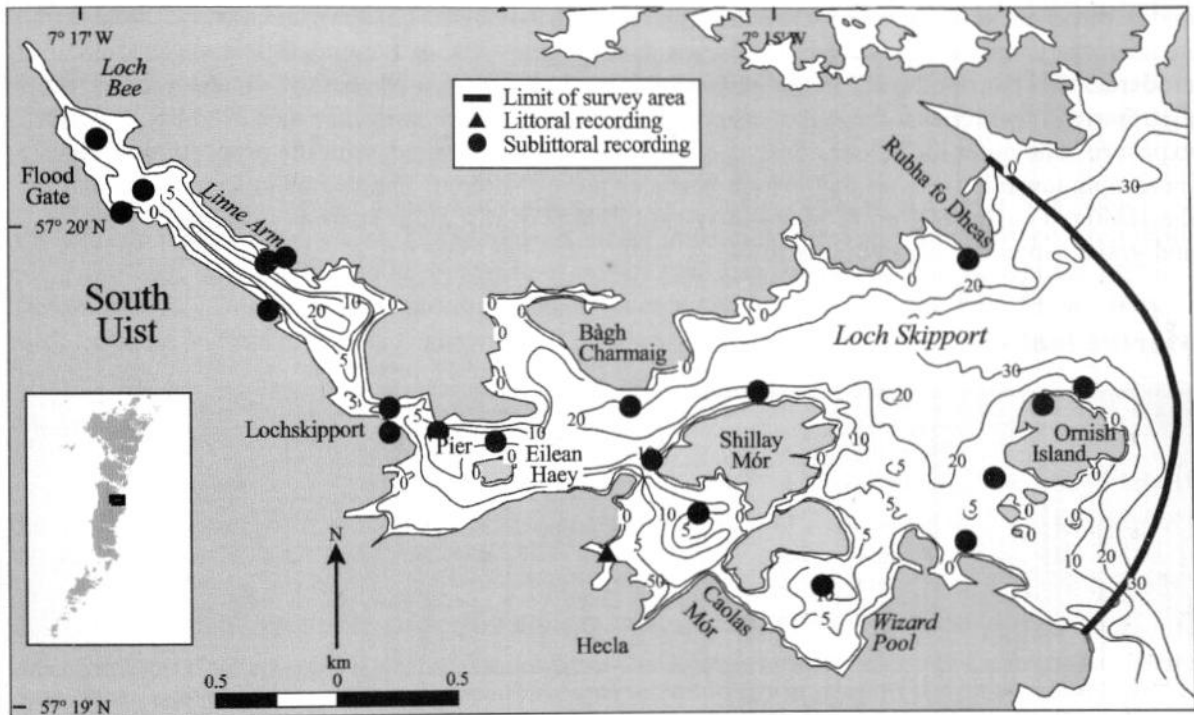


Figure 23.1 Main features of the area, showing sites surveyed.

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Physical features

Physiographic type	Fjardic sealoch with 4 sills (no entrance sills)
Length of coast	18.6 km (25.6 km including islands)
Length of inlet	5.4 km
Area of inlet	3.6 km ² (3.2 km ² excluding islands)
Bathymetry	Maximum 40 m deep at entrance; Linne Arm 27 m deep
Wave exposure	Entrance moderately exposed; Linne Arm ultra-sheltered
Tidal streams	Weak to very weak, moderate in narrows by pier
Tidal range	3.9 m (mean springs); 1.3 m (mean neaps) (Loch Skipport)
Salinity	Main loch fully marine; variable in Linne Arm

Introduction

Loch Skipport lies on the east coast of South Uist in a peat moorland landscape with numerous freshwater and brackish lochans. It is overlooked from the south by the summit of Hecla, at a height of over 600 m. The whole of this east coast is highly indented and, in addition to Loch Skipport, Lochs Eynort (area summary 24) and Boisdale (area summary 25), also penetrate deep inland. Loch Skipport is joined via a floodgate to Loch Bee to the north-west, the most extensive brackish loch in the Western Isles (Thorpe *et al.* 1998).

The main loch is long, narrow and divided into two sections by a narrow sill at 2 m depth. The inner part, Linne Arm, has a 27-m deep basin behind the sill which then shallows gradually towards the head, where the depth is less than 5 m. The head of the loch narrows gradually and eventually passes into a long, narrow cut leading to the lagoonal Loch Bee. The outer part of Loch Skipport is 40 m deep at the entrance but shallows steadily towards the sill. There are three main side arms, all with maximum depths between 13 and 15 m: Caolas Mór and Wizard Pool in the south, and Bàgh Charmaig on the north shore. Caolas Mór and Wizard Pool are separated from the main loch and from each other by sills.

Loch Skipport has a fairly open mouth without the protection of large numbers of small islands and is therefore moderately exposed through much of its length. The long and narrow Linne Arm is, however, extremely sheltered. Tidal streams throughout the loch are negligible except for a moderate flow across the sill in the narrows joining Linne Arm to the outer loch. As a result, the distribution of sediments throughout the loch is influenced predominantly by a gradient of wave exposure. The outer loch floor consists of shelly mud and fine sand, with the proportion of mud increasing towards the west as the loch becomes more sheltered. The seabed in Linne Arm and in the sheltered basins of Caolas Mór and Wizard Pool is of soft mud. There is a seabed of pebbles and gravels over the sill in the narrows.

Marine biology

Marine biological surveys				
	Survey methods	No. of sites	Date(s) of survey	Source
Littoral	Recording (epibiota)	1	May 1978	Smith (1978)
Sublittoral	Recording (epibiota)	10	May 1990	Howson (1991)
	Recording (epibiota)	8	May 1979	Dipper and Mitchell (1980)
	Recording (epibiota)	1	May 1978	Dipper (1980)
	Recording (epibiota)	2	July 1984	Rostron (1984)

Littoral

The majority of the shores around Loch Skipport are composed of bedrock and boulders, with just a few small areas of sediment at the heads of sheltered bays. Shores in the shelter of Linne Arm consist predominantly of boulders dominated by knotted wrack *Ascophyllum nodosum* (Asc.Asc). At the very head of the loch, this occurs as the loose-lying *A. nodosum* ecad *mackaii* (AscX.mac) (Dipper & Mitchell 1980). However, detailed information is only available for one area near Caolas Mór (Smith 1978). This area is very sheltered and consists of gravel and mud shores with boulders. Furoid algae are abundant (FserX) and cape-form kelp *Laminaria digitata* is present with unusually long stipes. Foliose algae are sparse and small. The bivalves *Venerupis senegalensis* and *Mya truncata* are present in the sediment (VsenMtru).

Sublittoral

Relatively extensive and steep bedrock slopes are found in the entrance and outer parts of Loch Skipport, with the rock-sediment boundary at a depth of around 20–25 m. Sediments in this outer part are predominantly fine mud in the deeper areas, and shelly muds and sand in the shallower parts. The rock-sediment boundary shallows rapidly to 9 m around Shillay Mór. West of this point bedrock is restricted to depths of 3–6 m with very short, mainly boulder slopes in Linne Arm. The inner loch areas of Linne Arm, Bàgh Charmaig and Wizard Pool consist predominantly of soft, fine mud with a narrow zone of bedrock around the edge of the loch. Tide-swept boulders and sediment occur in the narrows to the west of the pier.

Infralittoral rock

Infralittoral rock in the outer and middle parts of Loch Skipport as far west as Shillay Mór is dominated by a *Laminaria hyperborea* kelp forest. In the outer part of the loch the kelp is silt-free and occurs with a variable cover of undergrowth foliose algae and considerable numbers of featherstars *Antedon bifida* (Lhyp.Ft; Lhyp.Pk). Common understorey algae include *Dictyota dichotoma*, *Brongniartella byssoides*, *Phycodrys rubens*, *Delesseria sanguinea*, *Nitophyllum punctatum*, *Cryptopleura ramosa* and *Plocamium cartilagineum*. This habitat also supports two algae of particular interest: *Carpomitra costata*, a brown alga only rarely recorded in Scotland, and the red alga *Meredithia microphylla*, an uncommon species with a western and southern distribution, characteristic of vertical rock. Common understorey fauna include the soft coral *Alcyonium digitatum*, the cup coral *Caryophyllia smithii* and the ascidians *Clavelina lepadiformis* and *Ascidia mentula*. The jewel anemone *Corynactis viridis* colonises overhangs and vertical surfaces in colourful patches along with *A. digitatum*, *C. smithii*, *A. bifida* and *C. lepadiformis* (CorMetAlc).

In the middle reaches around Eilean Haey and in the semi-enclosed basin of Caolas Mór, which are less exposed to wave action, *L. hyperborea* occurs in its cape form and is heavily covered with silt. *Laminaria saccharina* and *Saccorhiza polyschides* are also usually present (LhypLsac.Ft). The understorey flora is again somewhat variable in composition and quantity, with filamentous turfs frequent and the red algae *Porphyropsis coccinea*, *Bonnemaisonia hamifera* (*Trailliella*), *Callophyllis laciniata*, *Polysiphonia elongata* and *Ceramium* spp. common. Silt-tolerant animal species, especially the ascidians *Asciidiella aspersa* and *A. mentula*, are characteristic of vertical surfaces and crevices at these sites, whilst *C. viridis* is notably absent and *A. digitatum* is rarer.

Kelp forest in the sheltered Linne Arm is dominated by cape-form *L. saccharina* (Lsac.Ft). The understorey can be moderately diverse but at many sites species are restricted to the red algae *D. sanguinea* and *P. elongata* and the green alga *Ulva* sp. Epifauna are mainly found on vertical or steeply sloping surfaces and include the silt-tolerant ascidians *A. mentula*, *Ciona intestinalis* and *C. lepadiformis*, the keel worm *Pomatoceros triqueter*, the brittlestar *Ophiothrix fragilis* and *C. smithii*. The understorey on the boulder slope at the edges of the channel at the entrance to Linne Arm, when surveyed in 1990, was particularly sparse due to the grazing of the common urchin *Echinus esculentus* (LsacRS).

Circalittoral rock

Extensive areas of deep circalittoral rock are scarce and restricted to the moderately exposed loch entrance on the north shore, and on the north side of Ornish Island. Occasional bedrock outcrops also occur in the more sheltered Wizard Pool.

Steep circalittoral bedrock on the north side of Ornish Island supports a diverse faunal community typical of the entrances to many sealochs on the east coast of the Western Isles. Particularly characteristic are colonies of the sea-fan *Swiftia pallida*, found at Rubha fo Deas, and the ascidian *Diazona violacea*, two species found together on the west coast of mainland Scotland in areas with weak to moderate tidal streams (ErSSwi). This biotope only occurs at moderately wave-exposed sites, although some silt is often present covering red coralline algae on upward-facing surfaces. Sponges are frequent, including *Cliona celata* and *Myxilla fimbriata*, the latter being a more typically open-coast species. Sessile animals include the bryozoan *Parasmittina trispinosa*, the ascidian *Clavelina lepadiformis*, the barnacle *Balanus balanus* and the cup coral *C. smithii*, which is particularly abundant. There are several mobile species, notably *A. bifida* and *E. esculentus* and the squat lobster *Munida rugosa*, which finds shelter in crevices and holes.

Small outcrops of smooth circalittoral bedrock on a soft mud-plain are found in the extremely sheltered basin of Wizard Pool. The rock is covered with silt, and fauna is sparse with the exception of conspicuous patches of the sponge *Polymastia mamillaris* and many colonies of *Suberites carnosus* (SubSoAs). The only other species found here during the 1990 MNCR survey

were the hermit crab *Pagurus bernhardus*, the nudibranch *Flabellina pedata*, the ascidian *Corella parallelogramma*, *A. bifida* and *C. smithii*, although none were particularly abundant.

Sublittoral sediment

Coarse sediments of gravel and sand are only found in shallow areas at the exposed mouth of Loch Skipport and in the channel leading to Linne Arm where tidal streams are moderate. In this shallow channel, infralittoral mobile shell-gravel and empty shells support a diverse attached algal flora with *Desmarestia* sp. and *L. saccharina* dominant with occasional *L. hyperborea*. Foliose red and brown algae are present but sparse, with the exception of frequent large clumps of *Desmarestia aculeata* and some *D. dichotoma*. The fauna of these sediments are characterised predominantly by burrowing animals, including the holothurian *Neopentadactyla mixta*, which occurs in moderate numbers, the polychaetes *Lanice conchilega* and *Chaetopterus variopedatus*, and the bivalves *Mya truncata* and *Ensis ensis* (Lcon). Also present on the sediment surface are the brittlestars *Ophiura albida* and *Ophiothrix fragilis* and a variety of benthic fish species.

Infralittoral soft mud and shelly mud occurs throughout the sheltered central portions of the loch around Eilean Haey and in the basins of Caolas Mór and Wizard Pool. These sediments are characterised by the sea-pen *Virgularia mirabilis* and the anemone *Cerianthus lloydii* (PhiVir). Other frequent animals include the anemone *Sagartiogeton laceratus*, the lugworm *Arenicola marina* and occasionally the holothurian *Labidoplax media*. At the shallower sites, such as in Caolas Mór, there is a good cover of filamentous and foliose algae including the red algae *B. hamifera*, *Pterothamnion plumula*, *Polysiphonia elongata*, *Rhodomela confervoides* and *Ceramium* spp. (Tra).

Sediments in the very sheltered, shallow Linne Arm consist of very soft, wobbly mud in which only a few species survive. The mud is too soft and flocculent to support an algal turf, but in many areas the surface is covered by a diatom film (IMU). Species found in this rather inhospitable habitat include the burrowing anemones *C. lloydii* and *S. laceratus*, the opisthobranch *Philine aperta*, *A. marina*, terebellid worms and the crabs *Liocarcinus depurator* and *Carcinus maenas*. This assemblage of species is typical of extremely sheltered basins in many sealochs which are undisturbed by tidal streams or wave action and potentially exposed to salinity changes. In some areas, especially those with fish farm cages in the vicinity, the mud surface is covered in the white bacterium *Beggiatoa* sp. (Beg).

Circalittoral soft mud is found in the deeper water in the outer parts of the loch. A plain of mud between Shillay Mór and Ornish Island supports a reasonably diverse but sparse community at a depth of 20–40 m, characterised by burrows and mounds and with frequent sea-pens *V. mirabilis* and *Pennatula phosphorea* and brittlestars *Amphiura chiajei* and *Ophiura ophiura* (SpMeg). Towards the loch entrance the mud is shelly, and shell fragments provide attachment for small clumps of ascidians *Asciidiella aspersa*, *Asciidiella scabra* and *C. parallelogramma*. Infrequently recorded species, including the opisthobranch *Scaphander lignarius*, the anemone *Aureliania heterocera* and the more rarely recorded holothurian *Mesothuria intestinalis*, were found in this habitat during the 1990 MNCr survey. This soft burrowed mud grades into more sandy and shelly mud at shallower depths, dominated by *V. mirabilis*, *O. ophiura*, *O. albida* and *P. aperta* (VirOph). This biotope occurs in depths of 13–22 m in Loch Skipport. Additional species include the turret shell *Turritella communis* and *C. lloydii*.

Nature conservation

Conservation sites (adjacent to Loch Skipport)

Site name	Status	Main features
Loch Bee	SSSI	Ornithology; presence of the cockle <i>Cerastoderma glaucum</i>

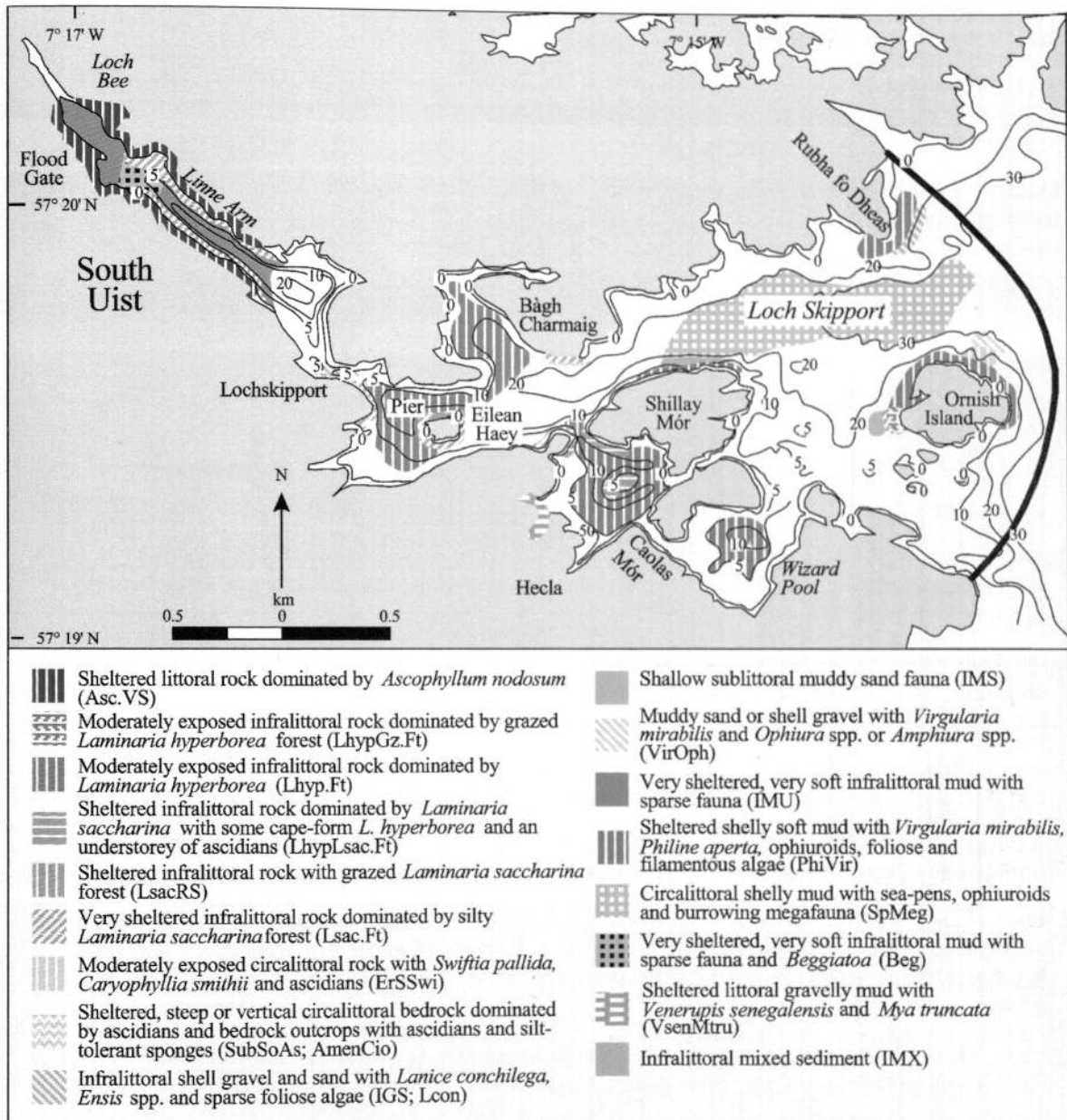


Figure 23.2 Indicative distribution of the main biotopes in the area (based on data from survey sites shown in Figure 23.1, cited literature and additional field observations).

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Human influences

Coastal developments and uses

The surrounding area is mainly uninhabited moorland. The B890 road from Stilligarry terminates at the pier at Lochskipport on the south shore, which is now disused and falling apart, but provides access to an interesting dive site. A minor road from the north stops at East Gerinish, to the north of Bàgh Charmaig, with only a track continuing to the northern shore. There is no other road access or habitation around Loch Skipport.

Marine developments and uses

Two fish farm leases and two shellfish farm leases have been granted for the sheltered Linne Arm and the side basins in the south of Loch Skipport; at the time of writing these farms were in operation.

The narrow rocky channel connecting Loch Skipport with the lagoonal Loch Bee to the north-west was originally a canal; a floodgate imposes a one-way system, only allowing brackish water to flow out of Loch Bee into the head of the Linne Arm. This gate was broken in autumn 1966 and repaired in the 1970s (Thorpe *et al.* 1998).

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Sites surveyed

- Survey 29: 1990 UMBSM survey of sealochs of North and South Uist and Benbecula (Howson 1991).
- Survey 58: 1984 Western Isles sealochs survey (Rostron 1984).
- Survey 59: 1979 NCC Uists and Outer Hebrides sublittoral survey (Dipper & Mitchell 1980).
- Survey 94: 1978 Smith survey of Mollusca of rocky shores of the Uists (Smith 1978).
- Survey 281: 1978 NCC sublittoral survey of the Uists (Dipper 1980).

Littoral sites

<i>Survey</i>	<i>Site</i>	<i>Place</i>	<i>Grid reference</i>	<i>Latitude/longitude</i>	<i>Biotopes recorded</i>
94	13	Caolas Mór, Loch Skipport, South Uist	NF 840 382	57°19.5'N 07°15.0'W	VsenMtru; FserX

Sublittoral sites

<i>Survey</i>	<i>Site</i>	<i>Place</i>	<i>Grid reference</i>	<i>Latitude/longitude</i>	<i>Biotopes recorded</i>
29	17	NW end of Linne Arm, Loch Skipport, South Uist	NF 818 395	57°20.1'N 07°17.2'W	Lsac.Ft; Beg
29	18	N side, middle of Linne Arm, Loch Skipport, South Uist	NF 823 392	57°20.0'N 07°16.7'W	IMU; Lsac.Ft
29	19	Off pier, Loch Skipport, South Uist.	NF 829 381	57°19.4'N 07°16.1'W	LsacRS; Oph; Lcon
29	20	N of Eilean Haey, Loch Skipport, South Uist	NF 833 385	57°19.6'N 07°15.7'W	LhypLsac.Ft; PhiVir
29	21	Between Eilean nan Each and Shillay Mór, Loch Skipport, Loch Skipport, South Uist	NF 839 384	57°19.6'N 07°15.1'W	LhypLsac.Ft; PhiVir; Tra
29	22	N of rock in Caolas Mór, Loch Skipport, South Uist	NF 841 382	57°19.5'N 07°14.9'W	LhypLsac.Ft; PhiVir
29	23	Wizard Pool, Loch Skipport, South Uist	NF 846 379	57°19.3'N 07°14.3'W	SubSoAs; PhiVir
29	24	N of Shillay Mór, Loch Skipport, South Uist	NF 844 387	57°19.8'N 07°14.6'W	IMX; Lhyp.Ft; CorMetAlc; SpMeg
29	25	Entrance area, Loch Skipport, South Uist	NF 852 381	57°19.5'N 07°13.8'W	SpMeg
29	26	N Ornish Island, Loch Skipport, South Uist	NF 857 387	57°19.8'N 07°13.3'W	Lhyp.Ft; Lhyp.Pk; ErSSwi; VirOph
58	4/1	Loch Skipport, Loch Skipport, South Uist	NF 824 393	57°20.0'N 07°16.7'W	IMU; PhiVir; Beg
58	4/2	Loch Skipport, Loch Skipport, South Uist	NF 824 393	57°20.0'N 07°16.7'W	IMU; PhiVir; Beg
59	1/8	Pier, Loch Skipport, South Uist	NF 829 386	57°19.6'N 07°16.1'W	Lsac; AmenCio; VirOph
59	2/7	Linne Arm, Loch Skipport, South Uist	NF 824 391	57°19.9'N 07°16.7'W	IMX; LsacX
59	3	Ornish Island N, Loch Skipport, South Uist	NF 856 387	57°19.8'N 07°13.5'W	LhypGz.Ft
59	4	Ornish Island W, Loch Skipport, South Uist	NF 854 384	57°19.6'N 07°13.7'W	IMS; LhypGz.Ft; Lsac.Ft
59	5	Head (E) of Linne Arm, Loch Skipport, South Uist	NF 817 398	57°20.2'N 07°17.4'W	IMU; Asc.Asc
59	6	Head (W) of Linne Arm, Loch Skipport, South Uist	NF 818 395	57°20.0'N 07°17.3'W	IMU; Asc.Asc
59	17	Rubha fo Deas, Loch Skipport, South Uist	NF 853 393	57°20.1'N 07°13.8'W	Lhyp.Ft
59	18	E Gerinish, Loch Skipport, South Uist	NF 839 387	57°19.7'N 07°15.2'W	Lsac.Ft; AmenCio; VirOph
281	S7	Old pier, Loch Skipport, South Uist	NF 839 387	57°19.7'N 07°16.2'W	LhypLsac.Ft; VirOph

Location

<i>Position (centre)</i>	NF 810 260	57°13.8'N 07°19.2'W
<i>Administrative area</i>	Western Isles	
<i>Conservation agency/area</i>	Scottish Natural Heritage	North Areas (Western Isles)

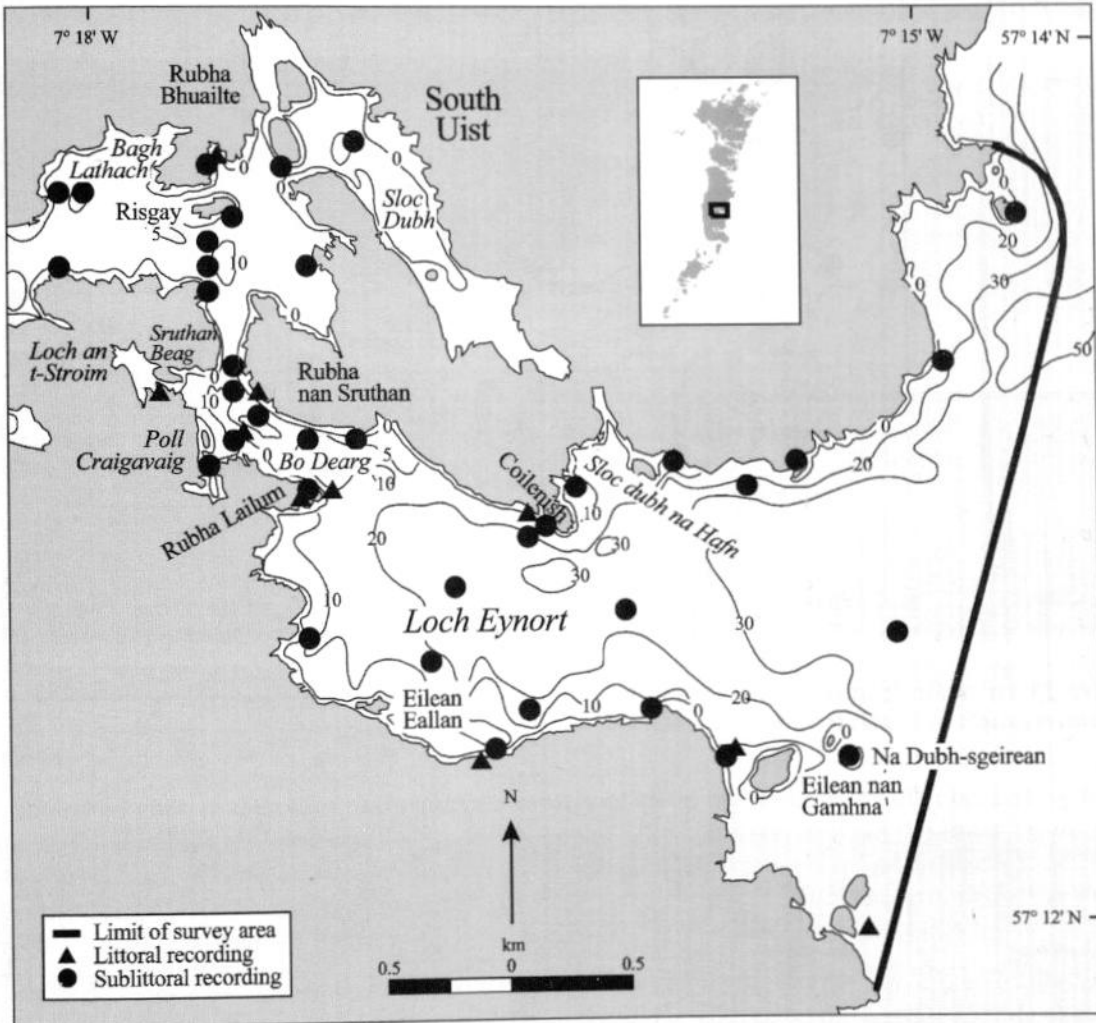


Figure 24.1a Main features of the area (eastern part), showing sites surveyed.

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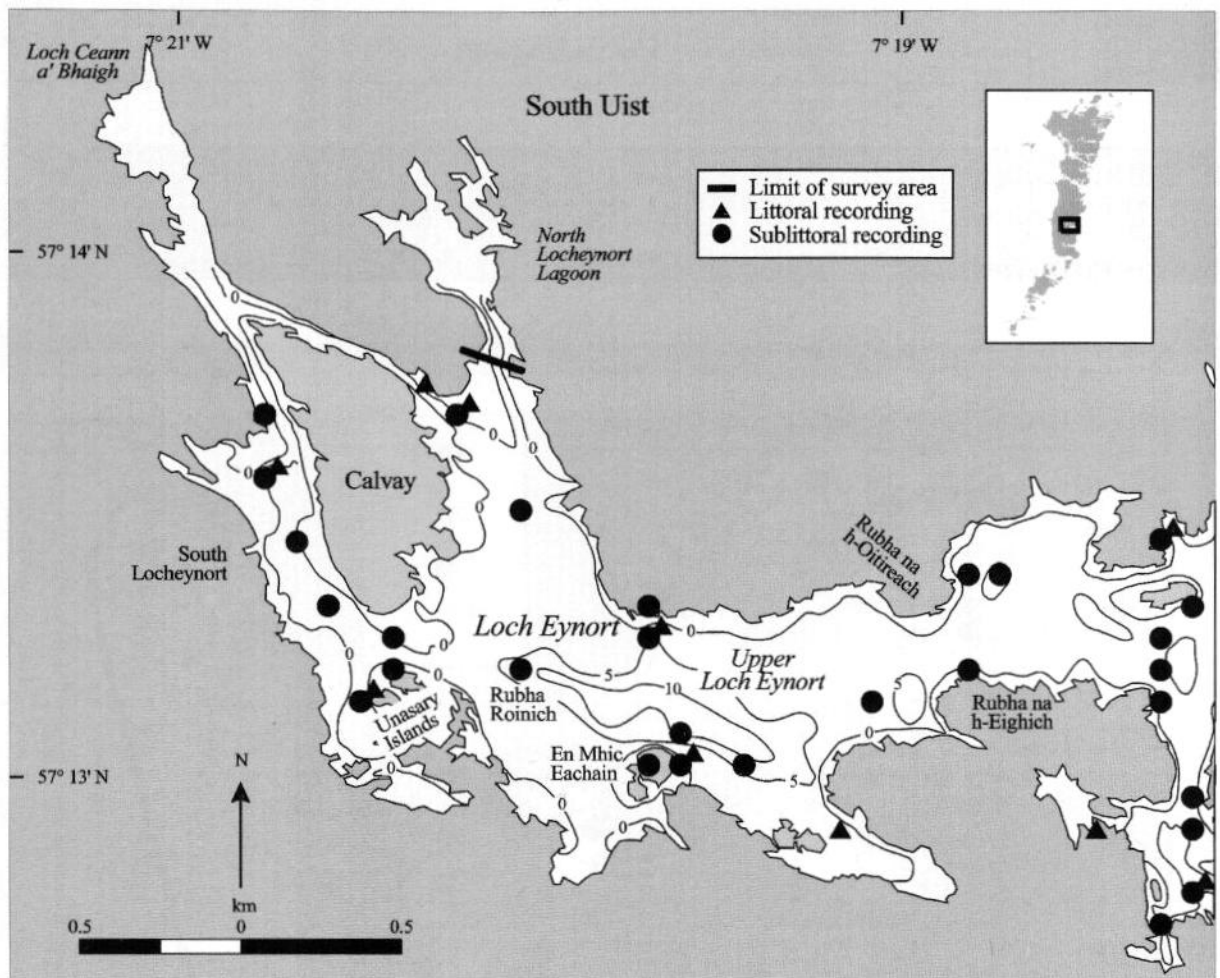


Figure 24.1b Main features of the area (western part), showing sites surveyed.
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Physical features

<i>Physiographic type</i>	Fjord with fjard-like features with five sills
<i>Length of coast</i>	44.5 km (57 km including islands)
<i>Length of inlet</i>	7.4 km
<i>Area of inlet</i>	7.6 km ² (7.2 km ² excluding islands)
<i>Bathymetry</i>	41 m at entrance; upper Loch Eynort maximum depth 15 m
<i>Wave exposure</i>	Upper Loch Eynort east to Risgay extremely sheltered; outer loch east to Coilenish sheltered; Coilenish to Na Dubh-sgeirean moderately exposed
<i>Tidal streams</i>	Very weak to weak throughout much of loch; moderate in channel between Calvay and Unasary islands; strong through channels to Loch an t-Stroim, between Rubha Bhualte and Risgay, and between Strue Beag and Rubha nan Sruthan.
<i>Tidal range</i>	3.6 m (mean springs); 1.3 m (mean neaps) (Loch Boisdale)
<i>Salinity</i>	Fully marine throughout (Dipper 1985)

Introduction

Loch Eynort lies to the south of Beinn Mhór which, at 620 m, is the highest mountain in the Uists and the second highest in the Outer Hebrides. Earll & Pagett (1984) classified Loch Eynort as a fjord with fjard-like features since it exhibits some true fjordic characteristics, being long and narrow and subject to glacial deepening. However, it has a relatively shallow bathymetry compared with classic fjords and a highly indented coastline with a number of sills, islands and

skerries. The deeper outer loch is separated from a shallow inner basin by tide-swept narrows. The narrows extend for about 1 km, turning northwards before opening into the inner basin. At the narrowest point, which is 150 m wide, tidal streams reach 5–7 knots. There is a long intertidal reef, Bo Dearg, in the centre of the channel at its southern end which is the first of five sills within the loch. The second spans the narrows between Struthan Beag and Rubha nan Sruthan, the third is at the entrance to Sloc Dubh and the fourth and fifth occur in upper Loch Eynort. All of the sills are shallow with maximum depths of 2–6 m.

The shallow inner basin has many sheltered bays, islands, rocks and channels leading to smaller arms. At the head of the loch two narrow channels run either side of Calvay Island, re-joining at its northern tip. These channels are swept by weak to moderately strong tidal streams. Another large enclosed side arm, Sloc Dubh, in the north-east corner of the loch, is reached through the narrows and over the sill to the east of Risgay. Two lagoons on the north side of Loch Eynort, North Locheynort lagoon (Na BBighe-dubha) and Loch Ceann a' Baigh, are described by Thorpe *et al.* (1998).

The many small islands and skerries in Loch Eynort provide ideal haul-outs for seals which occur in moderate numbers within the loch and at the loch entrance.

Marine biology

Marine biological surveys				
	Survey methods	No. of sites	Date(s) of survey	Source
<i>Littoral</i>	Recording (epibiota)	12	July 1984	Dipper (1985)
	Recording (epibiota)	3	May 1979	Powell <i>et al.</i> (1979)
	Recording (epibiota)	2	May 1978	Smith (1978)
<i>Sublittoral</i>	Recording (epibiota)	43	July 1984	Dipper (1985)
	Recording (epibiota)	9	May 1979	Dipper & Mitchell (1980)
	Recording (epibiota)	2	May 1978	Dipper (1980)

Littoral

The intertidal zone in the outer basin consists mostly of steep bedrock, much of it backed by high cliffs which continue underwater. The intertidal zone of the southern shore in the inner basin is mostly short and low, often consisting of scattered boulders and stones on mud. The northern shores of Upper Loch Eynort and the intertidal zone around Risgay consist mostly of bedrock with some boulders. Littoral mud is present on the sheltered enclosed shores at the southern tip of Sloc Dubh and at South Locheynort.

On the open coast and at moderately exposed sites in the loch entrance to the east of Sloc Dubh na Hafn on the north coast and Eilean Eallan on the south coast, the lower shores are characterised by a distinct band of dabberlocks *Alaria esculenta* with the red alga *Porphyra umbilicalis* in the sublittoral fringe (Ala). Below the *A. esculenta* a narrow band of kelp *Laminaria digitata* is present with the red algae *Phycodrys rubens*, and *Palmaria palmata* and the bryozoan *Alcyonidium gelatinosum* (Ldig.Ldig). In areas where *A. esculenta* does not occur, which includes the majority of the outer basin, a *L. digitata* kelp forest makes up the sublittoral fringe. The upper shore at these moderately exposed sites has a wide band of barnacles and small mussels *Mytilus edulis* but is typically poor in fucoids with only small amounts of *Fucus spiralis* and *Pelvetia canaliculata*.

Shores in Upper Loch Eynort are typically fucoid-dominated except where the bedrock is near vertical at Rubha Bhualte and around Risgay, where barnacles and limpets *Patella* sp. form the dominant component of the biotope (BPat.Sem). Wherever there are suitable hard substrata, gently sloping shores have a blanket fucoid covering of *Ascophyllum nodosum* with an understorey of

Fucus serratus and *Cladophora rupestris*, *Asperococcus fistulosus* and *Enteromorpha* sp. (Asc.Asc). Associated fauna beneath the algae include the sponge *Halichondria panicea* and *Grantia compressa* and the ascidians *Didemnum maculosum*, *Sidnyum turbinatum*, *Botrylloides leachi* and *Botryllus schlosseri*. This understory is particularly rich in areas of increased tidal streams, such as in the narrows leading to Upper Loch Eynort (Asc.T). In the inner basin, only small amounts of *L. digitata* are present in the sublittoral fringe, at scattered sites around Risgay, Rubha na h-Eighich and Rubha na h-Oitireach, and are often rather stunted and difficult to recognise.

The shore and shallow sublittoral zones on the east and west sides of Calvay and around the Unasary Islands consist of mud with some boulders and stones. These areas have a sparse flora restricted to rock surfaces, comprising *Fucus spiralis* and *A. nodosum* with *Enteromorpha* sp. (AscX). Fauna are also sparse, comprising mainly lugworms *Arenicola marina* and the whelk *Buccinum undatum*.

Sublittoral

The rock-sediment boundary in the outer loch lies at 8–19 m, increasing in depth with proximity to the loch mouth. The rock slope in the inner basin is short, reaching the rock/sediment boundary between chart datum and 8 m depth. The sediment floor of the outer loch is mostly mud with varying amounts of shell and sand. At shallow sites directly exposed to the east and in gullies between rocky ridges, including Na Dubh-Sgeirean and Eilean nan Gamhna, coarse shell-sand is present. The substratum in the narrows is mostly of broken bedrock with patches of coarse shell-sand and areas of cobbles in deeper pockets. The sediment floor in the inner basin is predominantly of soft mud; however coarse shell sand and maerl are present in channels subjected to tidal flow.

Infralittoral rock

Well-developed kelp forest dominated by *Laminaria hyperborea* with a rich understory of foliose algae is found in the outer loch, from the loch entrance west to the narrows to Upper Loch Eynort (Lhyp.Ft). These sites are moderately exposed to wave action and surrounded by clear water such that the kelp at the entrance extends to 15 m depth, with the deepest plants at 24 m depth. Kelp stipes support many epiphytes, including the red algae *P. palmata*, *Membranoptera alata*, *P. rubens*, *Ptilota plumosa* and *Cryptopleura ramosa*. The soft coral *Alcyonium digitatum*, *H. panicea* and the hydroid *Sertularella polyzonias* are common stipe epifauna. Kelp fronds are heavily encrusted with the bryozoan *Membranipora membranacea* and the hydroid *Obelia geniculata*. In the outer loch the *L. hyperborea* forest often gives way to a band of *Laminaria saccharina* kelp forest (Lsac.Ft).

Within Upper Loch Eynort the kelp forest is silty and poorly developed with the exception of sites with a clean stable bedrock slope, such as the sides of channels in South Locheynort and around Rubha na h-Eighich and Risgay. At these sites the kelp is often dominated by cape-form *L. hyperborea* (LhypLsac.Ft) with an understory of brown algae *Desmarestia viridis*, *A. turneri*, red algae *P. rubens* and *C. ramosa* and an epifauna consisting of the cup coral *Caryophyllia smithii* and the ascidians *Clavelina lepadiformis* and *Asciidiella aspersa*. Where the rock slope consists of mixed boulders and sediment the kelp forest is dominated by *L. saccharina* with bootlace weed *Chorda filum* and the green algae *Ulva* sp. and *Enteromorpha* sp. (Lsac.Ft). The snakelocks anemone *Anemonia viridis* is common in shallow water attached to kelp fronds. The sponge *Polymastia mamillaris* and a variety of silt-tolerant solitary ascidians are frequent on sheltered bedrock beneath the kelp. At extremely sheltered sites there is no kelp.

Tide-swept infralittoral bedrock occurs in Upper Loch Eynort in the narrows and in the channel at Risgay. The narrows are relatively shallow throughout most of their length, with a substratum of bedrock and rocky reefs with pockets of coarse shell-sand and pebbles. These areas of bedrock are covered by dense *L. hyperborea* forest with an almost continuous understory of *A. digitatum*, especially in the narrowest parts (Lhyp.TFt; Lhyp.TPk). The vertical sides of submerged reefs

support a variety of hydroids, sponges, ascidians and anemones. The tops of the reefs under the kelp forest at 6–8 m depth are heavily grazed by common urchins *Echinus esculentus* such that large areas of bare rock remain, covered only by the red encrusting alga *Lithothamnion* sp. The deepest part of the narrows leading to Upper Loch Eynort at 14–17 m depth is floored by pebbles and cobbles. The stones are covered by red encrusting algae, barnacles and the keel worm *Pomatoceros triqueter* with only a few hydroids *Nemertesia antennina* and *Nemertesia ramosa* (Lhyp.TPK). This biotope is typical of stones that are frequently disturbed during the strongest tides. Few foliose algae are found except *Scinaia turgida* and *Dictyota dichotoma*. Infauna include the holothurian *Neopentadactyla mixta*, the polychaetes *Chaetopterus variopedatus* and *Lanice conchilega*, the bivalves *Pecten maximus* and *Venerupis rhomboides* and the black brittlestar *Ophiocomina nigra*.

Steep, vertical and overhanging cliffs are present along the north side of the outer loch, particularly to the east of Sloc Dubh na Hafn where the steep cliffs continue underwater. These underwater cliffs support a dense population of the anemones *Corynactis viridis*, *Metridium senile* and *Sagartia elegans*, the cup coral *C.ia smithii*, the zoanthid *Parazoanthus anguicomus* and *A. digitatum* (CorMetAlc). The rock-boring sponge *Cliona celata* and scyphistomae of the jellyfish *Aurelia aurita* are also common.

Circalittoral rock

Throughout most of Loch Eynort the rock slope meets sediment before the circalittoral is reached. However, circalittoral stepped bedrock occurs at the entrance to the loch. Conditions here are moderately exposed, and the sea-fan *Swiftia pallida* is common (ErSSwi). Species typically associated with *S. pallida* include the erect sponges *Axinella infundibuliformis*, *Stelligera stuposa* and *Raspailia ramosa*, the bryozoans *Porella compressa*, *Pentapora foliacea* and *Securiflustra securifrons* and the ascidian *Diazona violacea*. Also found at these sites are the sponges *Polymastia boletiformis*, *Myxilla fimbriata* and *Cliona celata*.

Circalittoral bedrock and outcrops from mud-plains below 20 m in the outer loch, in areas of weak or moderately strong tidal streams, support rich communities with a variety of sponges, hydroids and bryozoans. The bedrock tends to be silty with a turf of low, encrusting species including numerous cup-corals *C. smithii* and red encrusting algae. At some sites the jewel anemone *C. viridis* is abundant where rock surfaces are cleaner and more vertical.

Bedrock outcrops in Upper Loch Eynort are found to the east of the Unasary Islands and at Eilean Mhic Eachain at a depth of 10–12 m surrounded by mud and mostly about 1–2 m high. These areas are colonised by red encrusting algae and a limited fauna of mostly silt-tolerant species including the hydroids *N. antennina* and *N. ramosa*, the bryozoans *P. foliacea* and *Flustra foliacea*, the sponges *Polymastia mamillaris* and *Suberites carnosus* and a variety of solitary ascidians (Flu.HByS; SubSoAs; AmenCio).

Sublittoral sediments

Most of the seabed in the outer basin of Loch Eynort from the mouth to the narrows is composed of soft mud with variable amounts of shell and sand. This mud extends up to the edge of the rock slope, which lies at around 10 m depth near the narrows but nearer 25 m at the loch entrance. Nearshore shallow sediments at 9–18 m depth are characterised by the sea-pen *Virgularia mirabilis*, the burrowing anemone *Cerianthus lloydii* and the brittlestars *Amphiura filiformis* and *Ophiura albida* (VirOph). Where the sediments contain a higher proportion of pebbles and shells, the hydroids *N. ramosa* and *Halecium halecinum* and the ascidian *Asciidiella aspersa* are frequent (VirOph.HAs); this biotope occurs at Rubha Lailum and around the islands and headlands at the loch entrance. Other species found occasionally in this habitat are the sand mason worm *Lanice conchilega*, the burrowing anemone *Peachia hastata*, *P. maximus* and the goosefoot starfish *Anseropoda placentia*. Shallower sediments less than 12 m depth have a patchy algal turf of *Polysiphonia* sp., *Asperococcus turneri* and *Desmarestia aculeata*.

Deeper sediments below 18 m found in the centre of the outer basin are characterised by a community of burrowing brittlestars *Amphiura chiajei* and the sea-pen *Pennatula phosphorea* (SpMeg). The Norway lobster *Nephrops norvegicus*, *C. lloydii*, *V. mirabilis* and *P. maximus* also characterise this biotope but are not always present.

At the bottom of the extensive rock slopes on the open coast and at shallow sites facing east in the mouth of the loch, the sediment plain is predominantly of coarse shell sand with variable amounts of mud and pebbles. Hydroids such as *N. antennina*, *H. halecinum* and *Rhizocaulus verticillatus* are common, attached to pebbles along with occasional kelp *L. saccharina*. Prominent species include *P. maximus*, *L. conchilega*, *O. albida* and *E. esculentus*. This community is similar to that found in coarse shell sand in the inner loch but with few algae due to the greater depth.

Much of the seabed in the inner loch beyond the narrows, which is extremely sheltered from wave action and with negligible tidal streams, consists of soft, wobbly mud with an anoxic layer beneath the brown surface. In very sheltered areas, such as Sloc Dubh and Bàgh Lathach, the mud is very easily penetrable and almost liquid. Where kelp debris settles, colonies of the bacterium *Beggiatoa* form (Beg). Some sites are covered with a brown film of diatoms. Conspicuous fauna are sparse with the exception of the lugworm *A. marina*, evidenced by its casts, *C. lloydii* and *O. albida*. Dense populations of holothurians *Thyone* sp. are present to the east and west of Calvay Island. A mat of the filamentous alga *Audouinella floridula* occurs in Sloc Dubh and this tends to increase algal diversity by providing a foothold for additional algal species such as *A. turneri*, *Bonnemaisonia asparagoides*, *Chylocladia verticillata* and *Ulva* sp. (Tra).

A dense healthy *Phymatolithon calcareum* maerl bed with few dead patches is present at South Locheynort, overlying a mixture of shelly mud and sand (Phy.R). Tidal flow here is significant as water is channelled between the islands. The maerl bed is restricted to the south side of the narrow channel between Unasary Islands and Calvay, extending to the southern end of Calvay, a distance of around 300 m. A small, live maerl bed with *P. calcareum* overlying coarse shelly sand is present in the centre of the channel between Rubha na h-Eighich and Rubha na h-Oitireach, where tidal flow is also appreciable (Phy.R). The variety of animals growing on and in the maerl beds is fairly limited. The bed at Unasary Islands has a dense cover of *D. dichotoma* which ends abruptly at the edge of the maerl bed. The ascidian *Ascidia mentula* is frequently found in groups, while other animal species include the daisy anemone *Cereus pedunculatus*, *L. conchilega* and *N. mixta*. Occasional algae include *L. saccharina*, *Halarachnion ligulatum*, *D. aculeata* and *C. filum*.

Coarse shell-sand and gravel with some pebbles and scattered pieces of maerl, present at sites within the inner loch, are swept by tidal streams but extremely sheltered from wave action. These occur to the north of the narrows, to the north and south of Risgay, at Rubha na h-Eighich and at South Locheynort. At some sites the sand is almost barren whereas at other sites with a higher mud component a wider variety of fauna is present. Algae occurring in the upper part of this habitat include *C. filum*, *Scinaia turgida*, *H. ligulatum*, *D. dichotoma*, *A. turneri* and *Ulva* sp. Fauna are sparse and include the polychaetes *C. variopedatus* and *L. conchilega*, *P. maximus*, *N. mixta* and less commonly *C. lloydii* (Ven.Neo). Scavenging crabs are also common in this habitat.

Nature conservation

Conservation sites		
Site name	Status	Main features
South Uist machair	NSA	Machair landscape
Loch Eynort	MCA	Marine biological

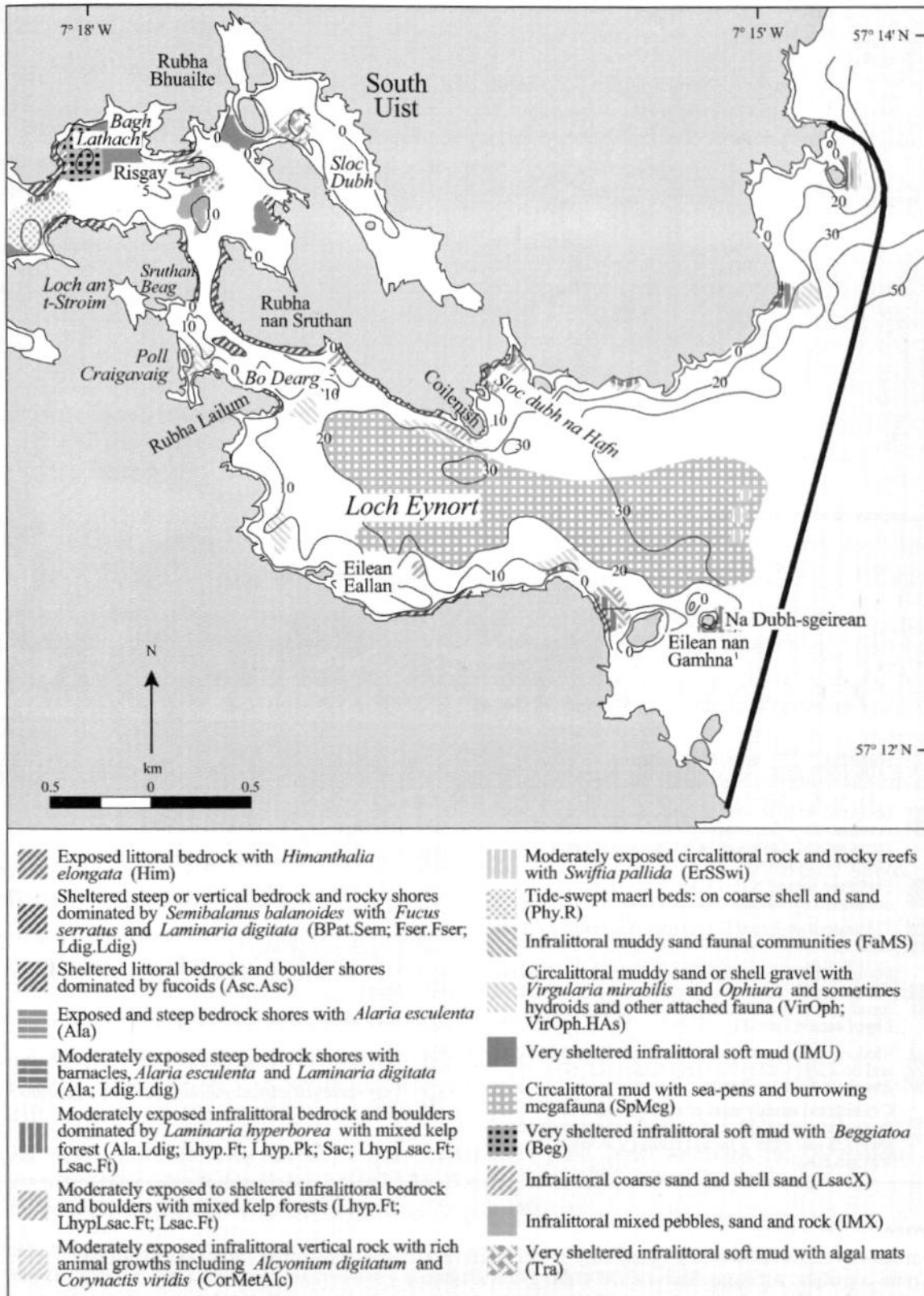


Figure 24.2a Indicative distribution of the main biotopes in the area (eastern part) (based on data from survey sites shown in Figure 24.1a, cited literature and additional field observations).

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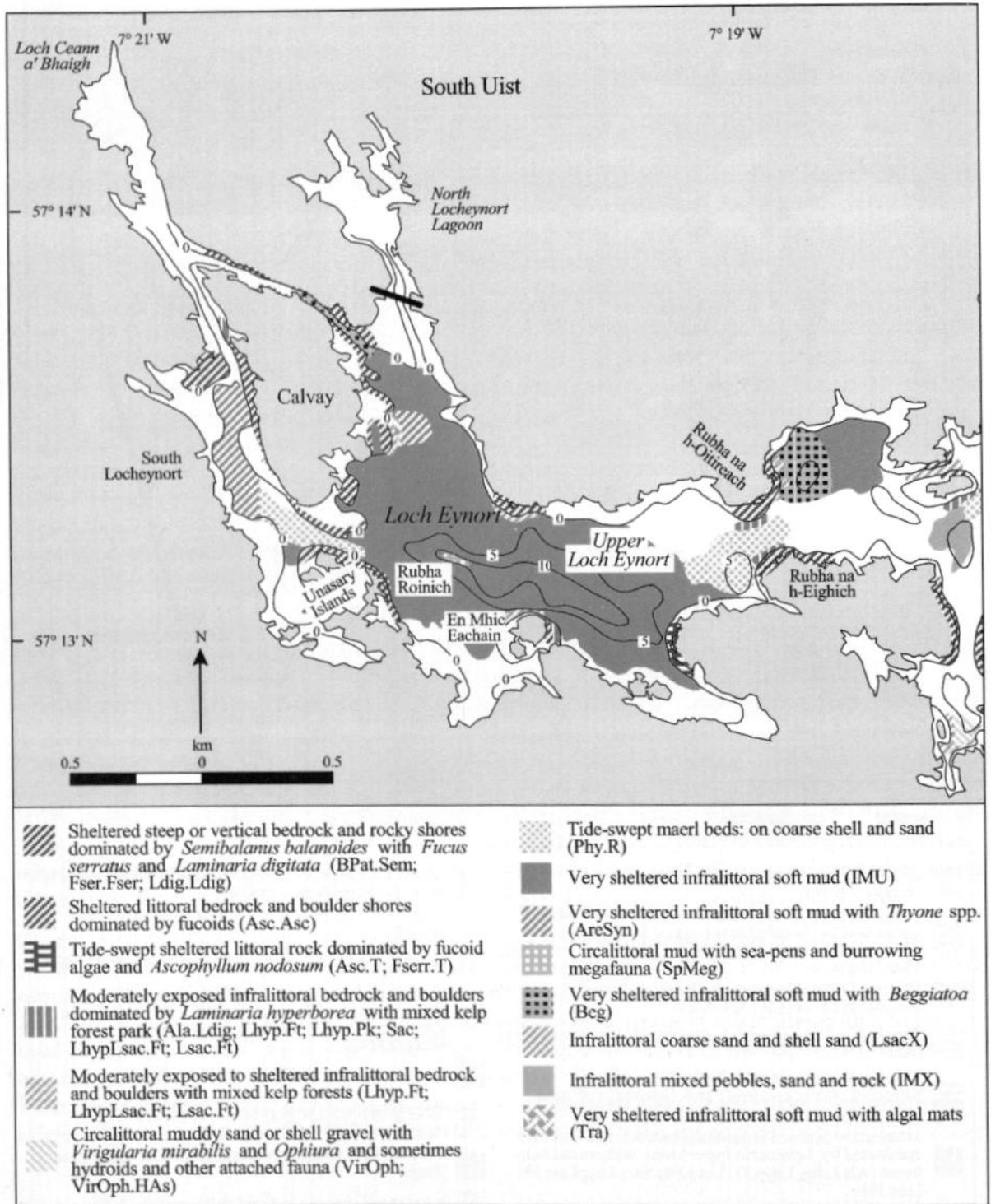


Figure 24.2b Indicative distribution of the main biotopes in the area (western part) (based on data from survey sites shown in Figure 24.1b, cited literature and additional field observations).
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Human influences

Coastal developments and uses

The majority of the shores around Loch Eynort are uninhabited with no road access. Two minor roads around the head of the loch serve the few scattered crofts at North Locheynort and South Locheynort, both roads ending less than one-third of the way down the loch at Rubha na h-Oitireach on the northern shore and at Rubha Roinich on the southern shore.

Marine developments and uses

There is a trout cage at Poll Craigavaig and a mussel raft to the north of the narrows. Two leases have been granted for Atlantic salmon cages in Upper Loch Eynort. Few sailing boats use Loch Eynort as an anchorage due to the difficulty of access through the narrows.

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Sites surveyed

- Survey 59: 1979 NCC Uists & Outer Hebrides survey (Dipper and Mitchell 1980).
 Survey 64: 1984 MCS sublittoral survey of Loch Eynort, South Uist (Dipper 1985).
 Survey 94: 1978 Smith survey of molluscs of rocky shores in the Uists (Smith 1978).
 Survey 265: 1970–1980 SMBA/MBA intertidal survey of Great Britain (Powell *et al.* 1979).
 Survey 281: 1978 NCC sublittoral survey of the Uists (Dipper 1980).

Littoral sites					
Survey	Site	Place	Grid reference	Latitude/longitude	Biotopes recorded
64	1	Rubha Lailum, Loch Eynort, South Uist	NF 802 271	57°13.3'N 07°17.9'W	Fser.Fser
64	3	Coast next to Still Rocks, Loch Eynort, South Uist	NF 809 260	57°12.8'N 07°17.2'W	YG; Ver; Fser.Fser; Pel; Fspi; Asc.Asc
64	6	Mainland behind Eilean nan Gmhna, Loch Eynort, South Uist	NF 819 260	57°13.5'N 07°15.8'W	Him; Ala.Ldig
64	23	Coilenish, Loch Eynort, South Uist	NF 811 270	57°13.3'N 07°17.0'W	Fser.Fser; Pel; Fspi; Asc
64	26	Calvay East Channel (a), Loch Eynort, South Uist	NF 776 288	57°14.1'N 07°20.6'W	Asc
64	27	Calvay East Channel (b), Loch Eynort, South Uist	NF 775 289	57°14.2'N 07°20.7'W	AscX;SR
64	32	Risgay Channel, Loch Eynort, South Uist	NF 793 272	57°14.1'N 07°18.5'W	BPat.Sem
64	35	Narrows, South Island, Loch Eynort, South Uist	NF 799 273	57°13.4'N 07°18.2'W	Asc.T
64	41	Rubha na Meine, Loch Eynort, South Uist	NF 782 281	57°13.8'N 07°20.0'W	Fspi
64	42	Eilean Mhic Eachain, Loch Eynort, South Uist	NF 783 277	57°13.6'N 07°19.9'W	Fser.Fser
64	43	Calvay West Channel (Mid), Loch Eynort, South Uist	NF 770 286	57°14.0'N 07°21.2'W	AreSyn
64	46	Unasary Islands W Channel, Loch Eynort, South Uist	NF 773 279	57°13.6'N 07°20.9'W	Asc.Asc
94	8	Sandavaig Point, South Uist	NF 824 253	57°12.5'N 07°15.6'W	LR
94	9	Loch Eynort, South Uist	NF 800 275	57°13.5'N 07°18.2'W	Fser
265	154	Loch an t-Sroim, Loch Eynort, South Uist	NF 796 275	57°13.5'N 07°18.6'W	YG; Ver; Asc.T; Fserr.T
265	160	Mhic Eachain, Loch Eynort, South Uist	NF 788 275	57°13.5'N 07°19.4'W	Asc.T; Fserr.T
265	181	Rubha Lailum, Loch Eynort, South Uist	NF 803 271	57°13.3'N 07°17.8'W	YG; Fves; Fser; Ldig.Ldig

Sublittoral sites					
Survey	Site	Place	Grid reference	Latitude/longitude	Biotopes recorded
59	19	Rubha na Meine, Loch Eynort, South Uist	NF 782 282	57°13.8'N 07°20.0'W	Lsac.Ft; AmenCio; IMS
59	20	Eilean Mhic Eachain, Loch Eynort, South Uist	NF 782 277	57°13.6'N 07°20.0'W	Lsac
59	21	Unasary Islands, Loch Eynort, South Uist	NF 774 281	57°13.7'N 07°20.8'W	LhypLsac; AmenCio; Mrl; Ven.Neo
59	22	S side of entrance, Loch Eynort, South Uist	NF 811 262	57°12.9'N 07°17.0'W	Sac
59	23	N side of entrance, Loch Eynort, South Uist	NF 811 269	57°13.3'N 07°17.0'W	Lsac.Ft
59	27	Calvay Narrows, Loch Eynort, South Uist	NF 771 284	57°13.9'N 07°21.1'W	AreSyn
59	28	Risgay, Loch Eynort, South Uist	NF 798 281	57°13.8'N 07°18.4'W	IMS; Sac
59	29	Craigavaig, Loch Eynort, South Uist	NF 798 272	57°13.4'N 07°18.3'W	Lsac.Ft

Sublittoral sites – continued

Survey	Site	Place	Grid reference	Latitude/longitude	Biotores recorded
59	30	Tidal rapids, Loch Eynort, South Uist	NF 799 276	57°13.6'N 07°18.3'W	Lhyp.TFt; Urt.Urt
64	1	Rubha Lailum, Loch Eynort, South Uist	NF 802 271	57°13.3'N 07°17.9'W	Ldig.Ldig; LhypLsac; VirOph.HAS
64	2	Anchorage; NE end rapids, Loch Eynort, South Uist	NF 804 273	57°13.4'N 07°17.8'W	SR; Ldig.Ldig; Lhyp.Ft; Lsac.Ft; VirOph
64	3	Coast next to Still Rocks, Loch Eynort, South Uist	NF 809 260	57°12.8'N 07°17.2'W	Ldig.Ldig; Lsac.Ft; Lhyp.Ft; PhiVir
64	4	Outer Basin (a), Loch Eynort, South Uist	NF 808 267	57°13.1'N 07°17.3'W	SpMeg
64	5	Outer Basin (b), Loch Eynort, South Uist	NF 807 264	57°13.0'N 07°17.4'W	SpMeg
64	6	Mainland behind Eilean nan Gamhna, Loch Eynort, South Uist	NF 819 260	57°12.8'N 07°16.2'W	FaMS; Lhyp.Pk; XKScrR
64	7	Outer Basin (c), Loch Eynort, South Uist	NF 826 265	57°13.1'N 07°15.5'W	ErSSwi; SpMeg
64	8	Na Dubh-sgeirean, Loch Eynort, South Uist	NF 824 260	57°12.8'N 07°15.7'W	Ala; Ldig.Ldig; Lhyp.Pk; Lhyp.Ft; Lsac.Pk; ErSSwi; VirOph.HAS
64	9	Risgay, Loch Eynort, South Uist	NF 799 282	57°13.9'N 07°18.3'W	Lhyp.Ft; AmenCio; Phy.R; Lcon; EcorEns; LsacX
64	10	Eilean Mhic Eachain (1), Loch Eynort, South Uist	NF 783 278	57°13.6'N 07°19.9'W	IMU; EchBriCC
64	12	Culagach, Loch Eynort, South Uist	NF 828 276	57°13.7'N 07°15.4'W	Lhyp.Ft; Lhyp.Pk; Lsac.Pk; ErSSwi; VirOph.HAS
64	13	Eilean An Easbuig, Loch Eynort, South Uist	NF 801 284	57°14.0'N 07°18.1'W	Ldig.Ldig; LhypLsac.Ft
64	14	Rubha Airigh, Loch Eynort, South Uist	NF 803 284	57°14.0'N 07°17.9'W	Lsac.Ft; Tra
64	15	Bagh Lathach, Loch Eynort, South Uist	NF 793 283	57°13.9'N 07°18.9'W	Beg
64	17	Dubh-sgeir Mhor, Loch Eynort, South Uist	NF 772 282	57°13.8'N 07°21.0'W	Ala.Ldig; Lhyp.Ft; Lhyp.TPk; Flu.HByS; Ven.Neo; FaSwV
64	18	Unasary Islands, Loch Eynort, South Uist	NF 774 280	57°13.7'N 07°20.8'W	SIR; IMU; IMX; Lsac.Ft; Phy.R; FaSwV
64	19	South Loch Eynort Channel, Loch Eynort, South Uist	NF 772 282	57°13.8'N 07°21.0'W	Lsac.Ft; Phy.R
64	20	Eilean Mhic Eachain (2), Loch Eynort, South Uist	NF 785 277	57°13.6'N 07°19.7'W	AmenCio
64	21	Narrows, Rubha nan Sruthan, Loch Eynort, South Uist	NF 799 276	57°13.6'N 07°18.3'W	Lhyp.TFt; FaSwV
64	22	Bay N of Rubha nan Sruthan, Loch Eynort, South Uist	NF 802 280	57°13.8'N 07°18.0'W	IMU; Ldig.Ldig; LhypLsac.Ft; LsacX
64	23	Coilenish, Loch Eynort, South Uist	NF 811 270	57°13.3'N 07°17.0'W	Ldig; Lhyp.Ft; Lsac.Ft; VirOph
64	24	Outer basin (d), Loch Eynort, South Uist	NF 815 266	57°13.1'N 07°16.6'W	SpMeg
64	25	Between Rubha Lailum and Eilean Eallan, Loch Eynort, South Uist	NF 802 265	57°13.0'N 07°17.9'W	IMU; Lsac.Ft; Lsac.Ft; LsacX
64	26	Calvay East Channel (a), Loch Eynort, South Uist	NF 776 288	57°14.1'N 07°20.6'W	Beg; LsacX
64	28	Calvay West Channel (a), Loch Eynort, South Uist	NF 770 288	57°14.1'N 07°21.2'W	IGS; Ldig.Ldig; Lhyp.Ft
64	29	Near Rubha Roinish, Loch Eynort, South Uist	NF 778 280	57°13.7'N 07°20.4'W	SpMeg

Sublittoral sites – continued					
<i>Survey</i>	<i>Site</i>	<i>Place</i>	<i>Grid reference</i>	<i>Latitude/longitude</i>	<i>Biotopes recorded</i>
64	30	Rubha an h-Eighish, Loch Eynort, South Uist	NF 792 280	57°13.8'N 07°19.0'W	Lhyp.Ft; Phy.R
64	1	Rubha na h-Oitireach, Loch Eynort, South Uist	NF 792 283	57°13.9'N 07°19.0'W	Lsac.Ft; AreSyn
64	32	Risgay Channel, Loch Eynort, South Uist	NF 798 284	57°14.0'N 07°18.4'W	Lsac.Ft; LsacX
64	33	Narrows, Sruthan Beag, Loch Eynort, South Uist	NF 799 275	57°13.5'N 07°18.3'W	Lhyp.TPK
64	34	Narrows, Bo Dearg, Loch Eynort, South Uist	NF 800 274	57°13.5'N 07°18.2'W	Lhyp.Ft; LhypGz.Ft
64	35	Narrows, South Island, Loch Eynort, South Uist	NF 799 273	57°13.4'N 07°18.2'W	Asc.T; Ldig.T; Lhyp.TFt; EphR; Phy.R
64	36	N side of entrance, Loch Eynort, South Uist	NF 820 271	57°13.4'N 07°16.2'W	IGS; Lsac.Pk; CorMetAlc
64	37	Sloc dubh na Hafn, Loch Eynort, South Uist	NF 813 271	57°13.4'N 07°16.8'W	Ldig.Ldig; Lhyp.Ft; Lsac.Ft; LsacX
64	38	Aird Bhuidhe, Loch Eynort, South Uist	NF 798 279	57°13.7'N 07°18.4'W	IMX; LhypLsac
64	39	Between Risgay and S Mainland, Loch Eynort, South Uist	NF 798 280	57°13.8'N 07°18.4'W	Lhyp.TFt; Ven.Neo
64	40	Narrows, N side near entrance, Loch Eynort, South Uist.	NF 802 273	57°13.4'N 07°18.0'W	LhypGz.Ft; Lsac.T
64	41	Rubha na Mèine, Loch Eynort, South Uist.	NF 782 281	57°13.8'N 07°20.0'W	Lsac.Ft; SubSoAs
64	42	Eilean Mhic Eachain, Loch Eynort, South Uist.	NF 783 277	57°13.6'N 07°19.9'W	IMU; Lsac.Ft; Lsac.Pk; AmenCio
64	44	Calvay East Channel (Mid), Loch Eynort, South Uist.	NF 778 285	57°14.0'N 07°20.4'W	IMU; Lsac
64	45	Near Sgeir na Oitireach, Loch Eynort, South Uist.	NF 789 279	57°13.7'N 07°19.3'W	SIR
64	46	Unasary Islands W Channel, Loch Eynort, South Uist.	NF 773 279	57°13.6'N 07°20.9'W	AscX; LsacX
64	47	Inshore Bo Carrack, Loch Eynort, South Uist.	NF 816 262	57°12.9'N 07°16.5'W	Lhyp.Pk; LsacX; FaSwV
281	S4	Bay in loch, Loch Eynort, South Uist.	NF 817 272	57°13.4'N 07°16.5'W	Lhyp.Ft
281	S5	Cliffs, Loch Eynort, South Uist.	NF 822 272	57°13.5'N 07°16.0'W	CMS; Lhyp.Ft

Location

<i>Position (centre)</i>	NF 790 190	57°9'N 07°18.5'W
<i>Administrative area</i>	Western Isles	
<i>Conservation agency/area</i>	Scottish Natural Heritage	North Areas (Western Isles)

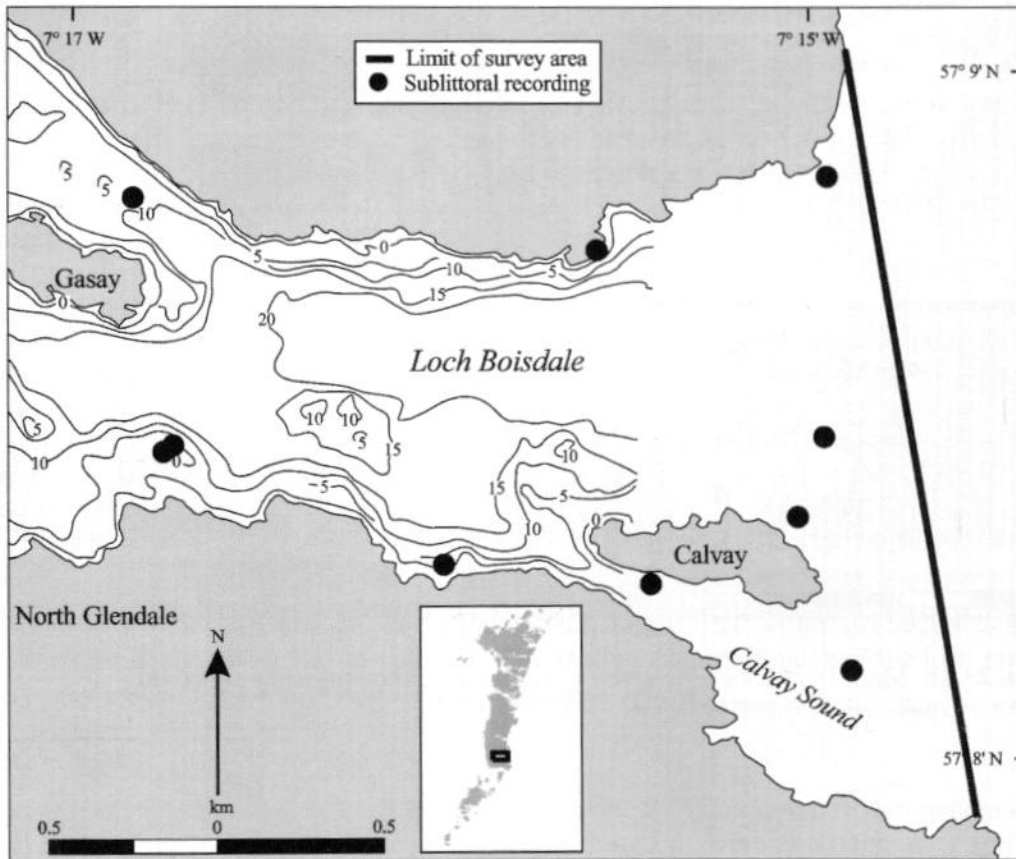


Figure 25.1a Main features of the area (eastern part), showing sites surveyed.

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Physical features

<i>Physiographic type</i>	Fjardic sealoch with one sill
<i>Length of coast</i>	34.8 km (57.7 km including islands)
<i>Length of inlet</i>	6.4 km
<i>Area of inlet</i>	9.1 km ² (8.1 km ² excluding islands)
<i>Bathymetry</i>	Maximum 35 m at mouth; mostly less than 10 m
<i>Wave exposure</i>	Moderately exposed at entrance north and east of Calvay; becoming extremely sheltered west of Gasay
<i>Tidal streams</i>	Very weak to weak throughout most of loch; moderately strong in channels between Rubha Bhuailt and Eileanan Iasgaich, between Eileanan Iasgaich and Rubha Arinangallan, and north-east side of Calvay
<i>Tidal range</i>	3.6 m (mean springs); 1.3 m (mean neaps)
<i>Salinity</i>	Fully marine

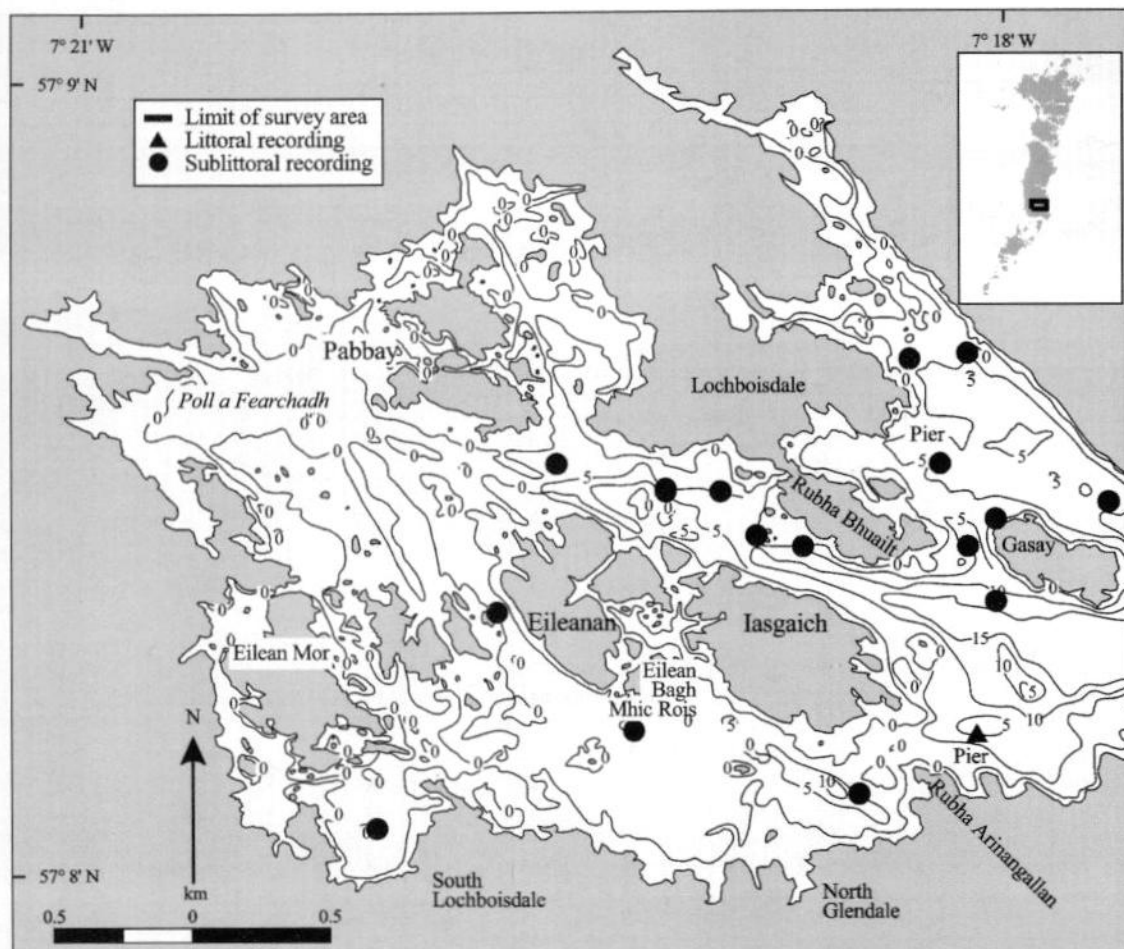


Figure 25.1b Main features of the area (western part), showing sites surveyed.
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Introduction

Loch Boisdale is the most southerly of the sealochs on South Uist. It opens onto the Minch on the east coast and is surrounded by acid moorland. Loch Boisdale exhibits the classic features of a fjard, being predominantly shallow with a highly irregular outline. The loch is spoon-shaped, being narrower at the mouth than at the head. There are many skerries and islands, the main ones being Calvay and Gasay at the entrance and Eileanan Iasgaich in the middle. Moderately strong tidal streams flow through the channels between the islands, and at low tide extensive areas of intertidal rock are exposed. The majority of the loch is very shallow, with 80% of it less than 5 m depth, and there are many small submerged or intertidal rocks. Three lagoons in the northern part of the loch (Loch a' Bharp, Lochboisdale lagoon and Aird Buidhe lagoon) are described by Thorpe *et al.* (1998).

Marine biology

Marine biological surveys

	Survey methods	No. of sites	Date(s) of survey	Source
Littoral	Recording (epibiota)	1	May 1990	Howson (1991)
Sublittoral	Recording (epibiota)	15	May 1990	Howson (1991)
	Recording (epibiota)	10	July 1984	Rostron (1984)
	Recording (epibiota)	1	July 1995	SNH unpublished survey (1995)

Littoral

Most of the shores in Loch Boisdale, including the entrance channel, are of broken bedrock and boulders, becoming shingle and mud at the head of the loch and with a small area of intertidal sand at Pabbay. Only the west shore of Gasay has been studied in any detail. The littoral zone here consists of broken bedrock with small boulders in the upper and mid-eulittoral zones, with a flora and fauna typical of sheltered rocky shores. Furoid algae predominate with *Pelvetia canaliculata* (Pel) and the barnacle *Semibalanus balanoides* in the lower littoral fringe, knotted wrack *Ascophyllum nodosum* dominating the upper and mid-eulittoral (Asc.Asc) and smaller amounts of *Fucus vesiculosus* present in the upper eulittoral. The algae *Gelidium pusillum*, *Cladophora rupestris* and *Plumaria elegans* are present amongst the furoids. The lower eulittoral zone is characterised by *Fucus serratus* with an understory of *P. elegans* and a variety of green algae (Fser.Fser). Fauna are generally sparse throughout the shore. The majority of shores within the main, sheltered body of the loch are likely to be similar to this shore, with *A. nodosum* predominant.

Sublittoral

Sublittoral rock within Loch Boisdale is confined to the infralittoral, with short bedrock and boulder slopes quickly giving way to sediment. The shallow nature of much of the loch means that rock may only extend for a few metres before sediment is reached.

Infralittoral rock

The predominant kelp throughout Loch Boisdale is *Laminaria hyperborea*. In the moderately exposed mouth of the loch it extends down to between 10–15 m depth as a rather silty kelp forest with a reasonable understory of foliose algae (Lhyp.Ft). This grades into a very silty kelp forest dominated by cape-form *L. hyperborea* which is widespread throughout the sheltered loch (LhypLsac.Ft). *Laminaria saccharina* may also be present below the *L. hyperborea* or mixed in with it. Few sites show evidence of heavy grazing despite the presence of the common urchin *Echinus esculentus* throughout the loch. The majority of sites have a good understory of foliose algae with many species being widespread and common including *Cryptopleura ramosa*, *Callophyllis laciniata*, *Phycodrys rubens*, *Dictyota dichotoma*, *Delesseria sanguinea* and *Brongniartella byssoides*. The nationally scarce red alga *Callophyllis cristata*, a northern species, is found on the north side of the entrance channel (Plaza & Sanderson 1997). Fauna are equally rich with a variety of solitary ascidians, gastropod molluscs, soft coral *Alcyonium digitatum*, the cup coral *Caryophyllia smithii*, featherstars and the sponges *Scypha ciliata* and *Cliona celata*. The sponge *Polymastia mamillaris* is a conspicuous part of the community at the most sheltered sites.

Kelp forest dominated by *L. saccharina* is less widespread and generally occurs on sheltered shallow bedrock such as in the channel to the north of Lochboisdale town (Lsac.Ft). *L. saccharina* also occurs as a narrow band on bedrock below the *L. hyperborea* forest at 14 m depth on the north side of the loch entrance. The understory generally consists of the red algae *Nitophyllum punctatum*, *P. rubens*, *C. ramosa* and *D. sanguinea*. Epifauna include *C. smithii*, *P. mamillaris*, the topshell *Gibbula cineraria*, and the ascidians *Clavelina lepadiformis* and *Ascidia conchilega*. The preponderance of *L. hyperborea* in such sheltered conditions in Loch Boisdale relates to the tidal

flow through the many channels between the islands. In their cape form, *L. hyperborea* and *L. saccharina* are very similar and the differences between the various types of kelp forest in Loch Boisdale are not marked.

Kelp forests in the moderately exposed loch entrance are made additionally attractive by areas of vertical rock and overhangs covered in jewel anemones *Corynactis viridis*, sponges including *Pachymatisma johnstonia* and *Stelligera rigida*, and *A. digitatum* (CorMetAlc). Cobble and boulder areas in tide-swept channels, such as between Rubha Bhuailt and Eileanan Iasgaich, are characterised by another kelp *Saccorhiza polyschides* and sea-oak *Halidrys siliquosa*. Stipes and vertical rock surfaces are rich in filter-feeders such as plumose anemones *Metridium senile* and *C. viridis*, *A. digitatum*, the hydroid *Tubularia larynx*, the featherstar *Antedon petasus* and the low-lying ascidian *Lissoclinum perforatum*, which favours tide-swept habitats (XKScrR).

Circalittoral rock

Loch Boisdale, like many other fjardic sealochs, has very few areas of circalittoral bedrock, as kelp forest generally extends down to the rock-sediment boundary, which at most sites does not extend beyond 10 m depth. Circalittoral bedrock occurs in the centre of the entrance channel, where silty bedrock outcrops from a soft mud plain at 25–28 m depth. These isolated rocky areas support a biotope characterised by the northern sea-fan *Swiftia pallida* (ErSSwi). This biotope is common in the mouths of other sealochs in this area but in Loch Boisdale the sea-fans are rather sparse and other species typical of the biotope are prevalent. These include a variety of axinellid cup sponges, *C. smithii*, the bryozoan *Porella compressa*, the ascidians *Polycarpa pomaria* and, in particular, *Diazona violacea*.

Sublittoral sediments

Loch Boisdale is predominantly sheltered from wave action and the variety of sediments found in the loch depends not on wave exposure but on tidal streams. The coarsest sediments are found in the areas of greatest tidal flow in the main channels to the north and south of Eileanan Iasgaich. These areas consist predominantly of coarse sand, shell gravel and stones with maerl. Both *Phymatolithon calcareum* and *Lithothamnion corallioides* are present, but the maerl does not occur in extensive beds and has not been studied in detail (Phy.R; Phy.HEC). A characteristic algal flora of *Dudresnaya verticillata*, *Chylocladia verticillata*, *Plocamium cartilagineum* and *Ulva* sp. occur attached to the maerl and underlying shell-gravel. Associated epifauna include the hermit crab *Anapagurus hyndmani*, the scallops *Aequipecten opercularis* and *Pecten maximus* and the brittlestar *Ophiura albida*, while burrowing animals include the anemones *Cerianthus lloydii* and *Peachia cylindrica* and the razor clam *Ensis ensis*. Maerl also occurs in shallow water in the moderately exposed mouth of the loch, on the north-east side of Calvay. Maerl and maerl-gravel here are swept into waves and support the holothurian *Neopentadactyla mixta* (Phy.HEC).

Shallow areas with less tidal flow consist of fine sand or sandy mud with some shell gravel, extending to around 10 m depth. These sediments are algal-dominated with a good turf of *Polysiphonia elongata*, *Enteromorpha* sp., *Ulva* sp., *Asperococcus turneri*, *Desmarestia viridis* and *Desmarestia aculeata* and patches of *L. saccharina* and the bootlace weed *Chorda filum* (LsacX; Tra). This habitat has a range of characterising fauna with no one species being dominant at all sites. Species widespread and common in occurrence are the polychaetes *Arenicola marina*, *Sabella pavonina* and *Lanice conchilega*, *C. lloydii* and *E. ensis*. This biotope is found on the west side of Gasay, in the narrowest part of Calvay Sound and in the shallow bay north of Lochboisdale.

Deeper circalittoral sediments at 8–18 m depth predominate in the mid region and entrance channel of Loch Boisdale and are characterised by the sea-pen *Virgularia mirabilis* and *C. lloydii* (VirOph). Also characteristic but less common are the brittlestars *Amphiura chiajei* and *O. albida*, *A. marina* and the turret shell *Turritella communis*, while the bivalves *Mya truncata* and *P. maximus* are occasional at some sites. Some drift algae are found in the shallower parts. This

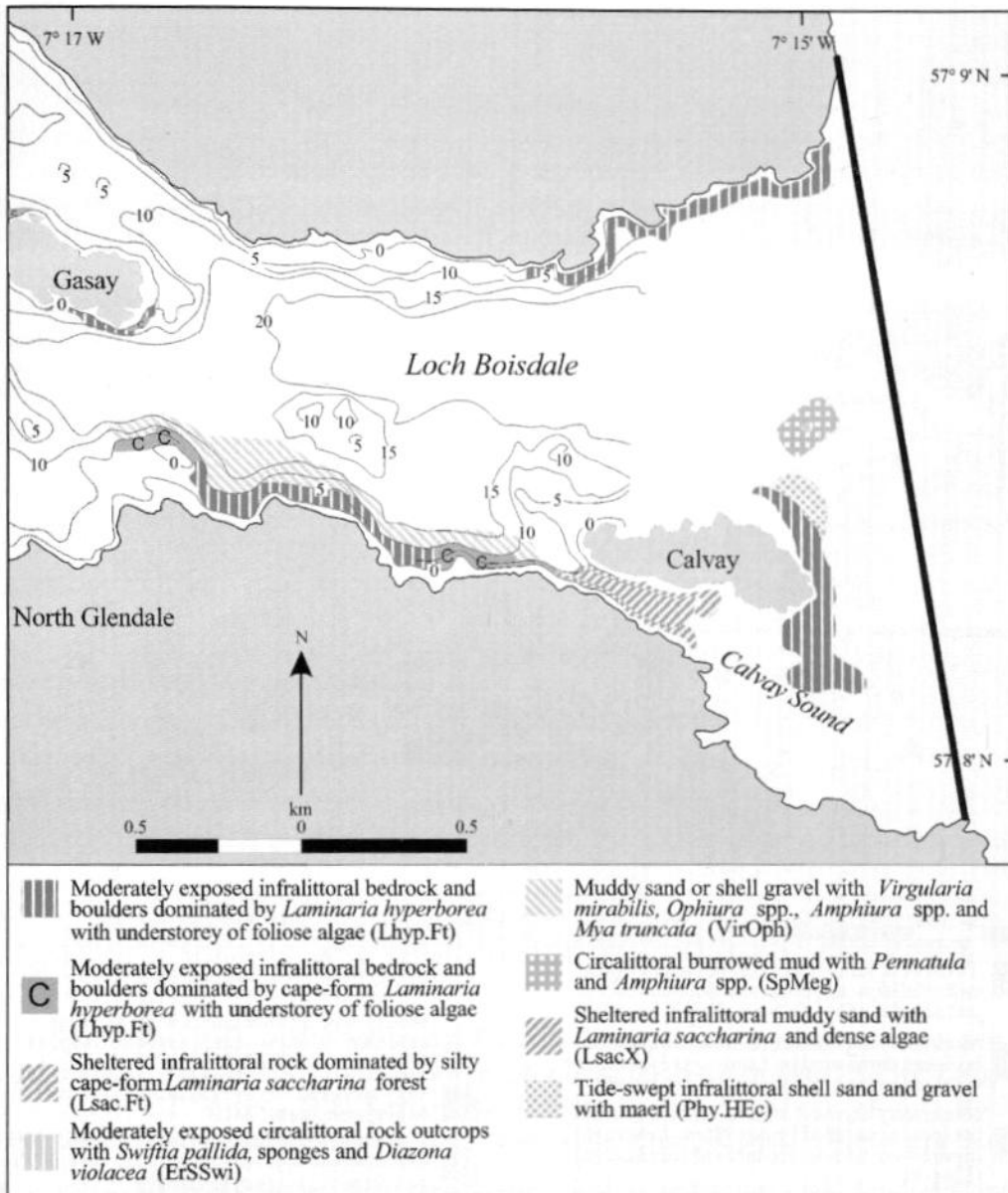


Figure 25.2a Indicative distribution of the main biotopes in the area (eastern part) (based on data from survey sites shown in Figure 24.1a, cited literature and additional field observations).
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biotope often grades into the shallower LsacX or Tra, with patches of *V. mirabilis* interspersed with patches of algal mats.

Extremely sheltered bays in the upper reaches of the loch consist of very shallow mud plains with few, if any, algae. The mud is very soft and often has mounds and casts, probably from *A. marina*. The holothurians *Labidoplax media* and *Leptopentacta elongata* occur in the enclosed bay south of Eilean Bàgh Mhic Rois (AreSyn). Occasional brittlestars *Ophiura ophiura* and scavenging crabs are frequent. Soft mud is also found in the shelter of deep water in the centre of the entrance channel at around 28 m depth, surrounding occasional bedrock outcrops. The mud is extensively burrowed by the crustacean *Callianassa subterranea* and supports numerous sea-pens *Pennatula phosphorea*, the brittlestars *A. chiajei* and *Amphiura filiformis*, and the gastropods *T. communis*, *Aporrhais pespelecani* and *Scaphander lignarius* (SpMeg).

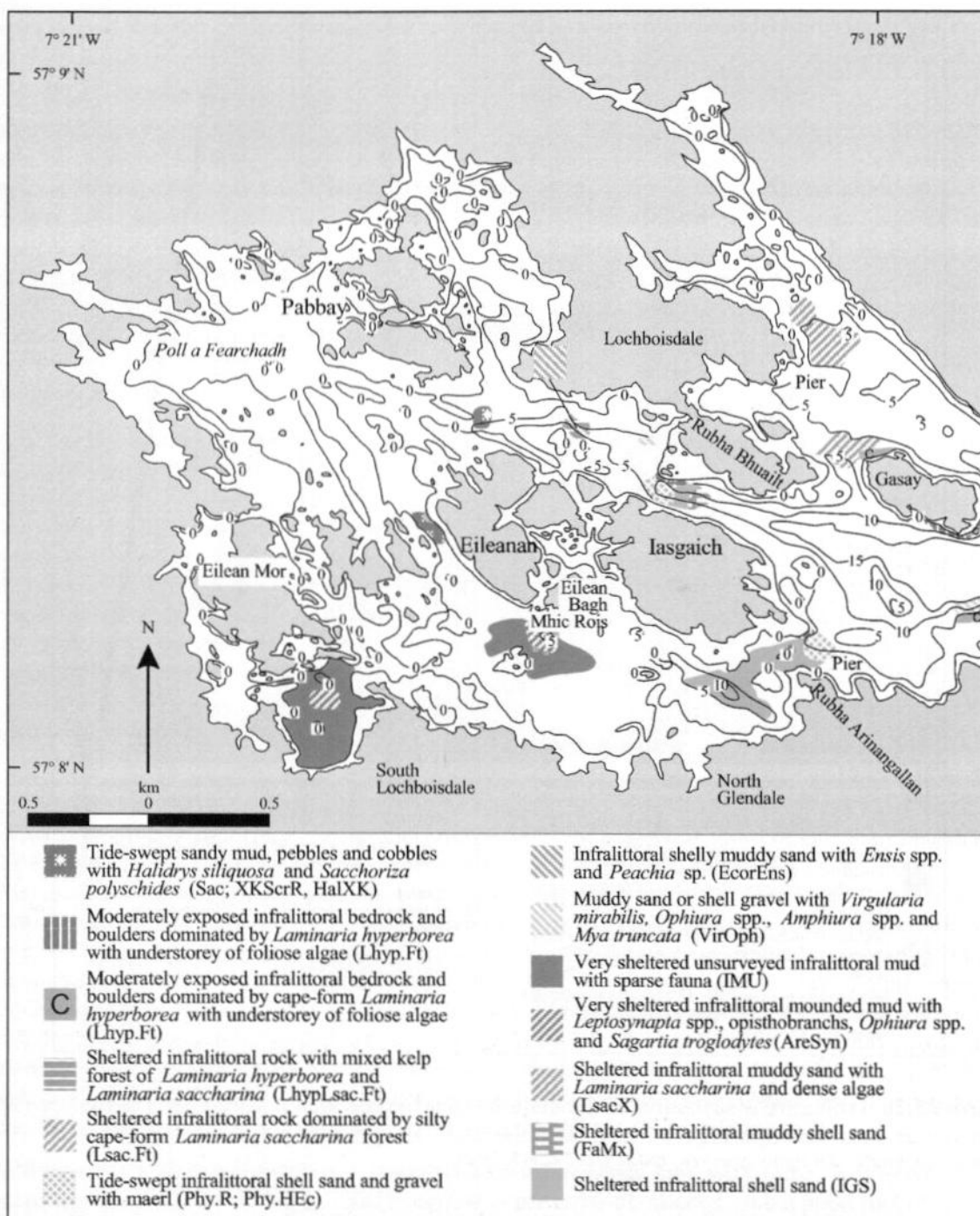


Figure 25.2b Indicative distribution of the main biotopes in the area (western part) (based on data from survey sites shown in Figure 24.1b, cited literature and additional field observations). © Crown copyright. All rights reserved. JNCC GD 27254X/1999.

Nature conservation

There are no designated nature conservation sites in the area at present.

Human influences

Coastal developments and uses

The A865 road serves the town and ferry port of Lochboisdale in the northern part of the loch, and houses are scattered along the length of the road. A minor road along the south shore of the loch serves scattered houses and crofts at South Glendale and South Lochboisdale. The outer reaches of Loch Boisdale are uninhabited moorland with no road access. Lochboisdale is a terminal for Caledonian MacBrayne ferries running to mainland Scotland and Barra. The ferry terminal is the only pier on the loch apart from a ruined pier on the south shore at Rubha Arinangallan. Lochboisdale has a population of about 300 and discharges sewage into the loch, although not through a single outfall.

Marine developments and uses

Leases have been granted for five shellfish farms and one salmon farm, all of which are situated on the sheltered south side except for one shellfish installation and fish cages in the channel north of Eileanan Iasgaich. Creeling for lobsters *Homarus gammarus* and crabs takes place from Lochboisdale.

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- Rostron, D. 1984. Western Isles sea loch survey, July 1984. (Contractor: Field Studies Council, Oil Pollution Research Unit, Pembroke.) *Nature Conservancy Council, CSD Report*, No. 594.
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Sites surveyed

- Survey 29: 1990 UMBSM survey of sealochs of North and South Uist and Benbecula (Howson 1991).
- Survey 58: 1984 OPRU Western Isles sealochs survey (Rostron 1984).
- Survey 651: 1995 SNH South Uist maerl bed survey (SNH, unpublished data).

Littoral sites					
Survey	Site	Place	Grid reference	Latitude/longitude	Biotopes recorded
29	8	Shore on NW Gasay	NF 793 190	57°08.9'N 07°18.2'W	YG; Ver.Ver; Fser.Fser; Pel; Fspi; Asc.Asc

Sublittoral sites					
<i>Survey</i>	<i>Site</i>	<i>Place</i>	<i>Grid reference</i>	<i>Latitude/longitude</i>	<i>Biotores recorded</i>
29	1	Poll Creadha, Loch Boisdale, South Uist	NF 770 178	57°08.3'N 07°19.9'W	AreSyn; Fser
29	2	Channel SW of Eileanan Iasgaich, Loch Boisdale, South Uist	NF 779 186	57°08.7'N 07°19.5'W	Sac; LhypLsac.Ft
29	3	S of Eilean Bagh Mhic Rois, Loch Boisdale, South Uist	NF 784 182	57°08.5'N 07°19.0'W	LhypLsac.Ft; AreSyn
29	4	Channel N of Eileanan Iasgaich, Loch Boisdale, South Uist	NF 786 191	57°09.0'N 07°18.9'W	LhypLsac.Ft; EcorEns
29	5	Channel S of Rubha Bhuailt, Loch Boisdale, South Uist	NF 789 189	57°08.9'N 07°18.6'W	XKScrR; EphR; Phy.HEc
29	6	Sgeir Liath, Loch Boisdale, South Uist	NF 794 200	57°09.3'N 07°18.1'W	IMS; Lsac.Ft
29	7	NW Gasay, Loch Boisdale, South Uist	NF 798 190	57°09.0'N 07°17.7'W	Ldig.Ldig; LhypLsac.Ft; LsacX
29	9	SW Gasay, Loch Boisdale, South Uist	NF 802 190	57°09.0'N 07°17.3'W	Lhyp.Ft; VirOph; Tra
29	10	N Hollisgeir, Loch Boisdale, South Uist	NF 803 183	57°08.6'N 07°17.1'W	Lhyp.Ft; VirOph
29	11	Rocks E of An Camas, Loch Boisdale, South Uist	NF 811 179	57°08.5'N 07°16.3'W	HalXK; VirOph
29	12	Middle of Calvay Sound, Loch Boisdale, South Uist	NF 817 179	57°08.4'N 07°15.7'W	Lsac.Ft; Zmar; LsacX
29	13	SW Sword Rock, Loch Boisdale, South Uist	NF 823 176	57°08.3'N 07°15.1'W	Lhyp.Ft; CorMetAlc
29	14	Entrance, Loch Boisdale, South Uist	NF 822 183	57°08.7'N 07°15.2'W	ErSSwi; SpMeg
29	15	A'Mhaol Bhuide, Loch Boisdale, South Uist	NF 816 189	57°09.0'N 07°15.9'W	Lhyp.Ft
29	16	Rubha na Cruibe, Loch Boisdale, South Uist	NF 822 191	57°09.1'N 07°15.3'W	Lhyp.Ft; Lsac.Pk
58	1/1	N Eileanan Iasgaich, Loch Boisdale, South Uist	NF 782 192	57°09.0'N 07°19.3'W	LsacChoR; Phy.R
58	1/2	E Rubha Bhuailt, Loch Boisdale, South Uist	NF 786 191	57°09.0'N 07°18.9'W	LhypLsac.Ft
58	1/3	Loch Boisdale (under mussel raft), Loch Boisdale, South Uist	NF 788 191	57°09.0'N 07°18.7'W	K
58	1/4	Rubha Bhuailt, Loch Boisdale, South Uist	NF 791 189	57°08.9'N 07°18.4'W	LhypLsac.Ft; FaMx
58	1/5	North Glendale, Loch Boisdale, South Uist	NF 793 180	57°08.4'N 07°18.1'W	IGS; LhypLsac.Ft
58	1/6	H Gasay, Loch Boisdale, South Uist	NF 796 192	57°09.1'N 07°17.9'W	EphR; LhypLsac.Ft; Phy.R
58	1/7	Lochboisdale, Loch Boisdale, South Uist	NF 803 183	57°08.6'N 07°17.2'W	LhypLsac.Ft; VirOph
58	1/8	S Gasay, Loch Boisdale, South Uist	NF 798 187	57°08.8'N 07°17.7'W	IMS; VirOph; Tra
58	1/9	N Gasay, Loch Boisdale, South Uist	NF 797 196	57°09.3'N 07°17.9'W	LsacX
58	1/10	E Beinn Ruigh Choinnich, Loch Boisdale, South Uist	NF 797 189	57°09.4'N 07°18.2'W	VirOph
651	5	S entrance to Loch Boisdale, South Uist	NF 822 181	57°08.6'N 07°15.3'W	LhypGz; MrlMx

Location

<i>Position (centre)</i>	NF 730 025	56°59.8'N 07°23.1'W
<i>Administrative area</i>	Western Isles	
<i>Conservation agency/area</i>	Scottish Natural Heritage	North Areas (Western Isles)

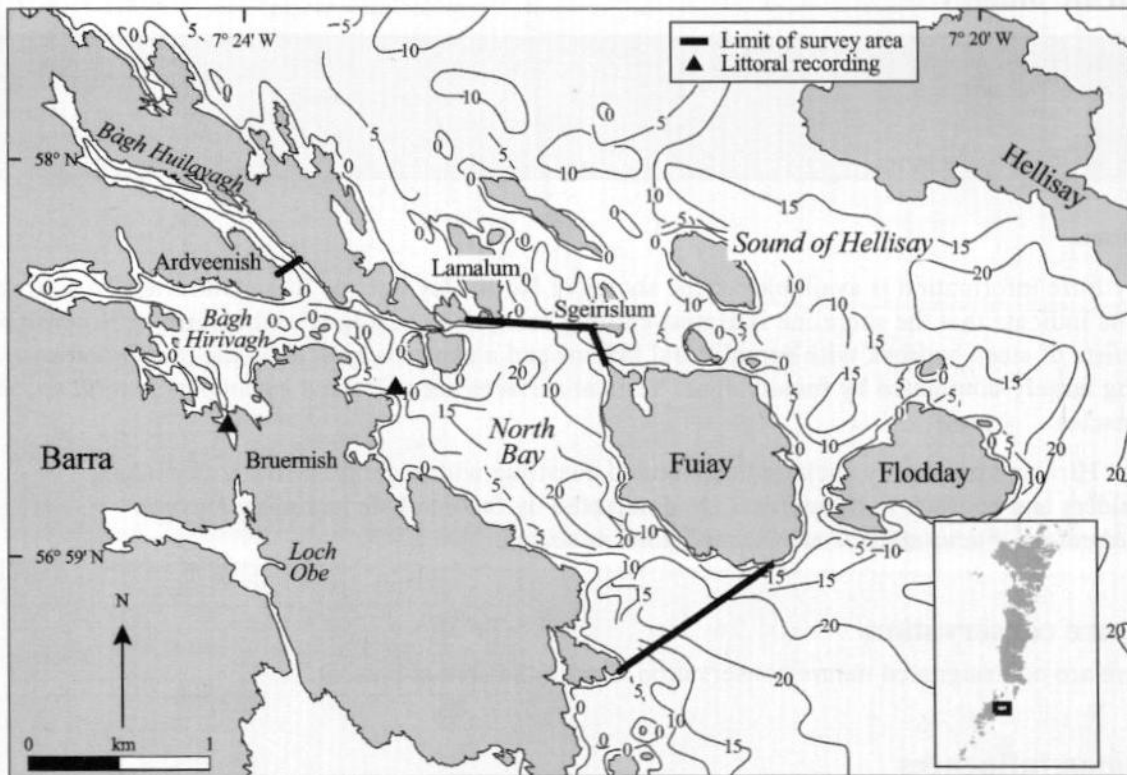


Figure 26.1 Main features of the area.

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Physical features

<i>Physiographic type</i>	Fjord with fjard-like features
<i>Length of coast</i>	15.9 km (18.2 km including islands)
<i>Length of inlet</i>	4.29 km
<i>Area of inlet</i>	2.43 km ² (2.36 km ² excluding islands)
<i>Bathymetry</i>	Maximum depths: North Bay 23 m; Bàgh Huilavagh 1.8 m; Bàgh Hirivagh 2.7 m
<i>Wave exposure</i>	Sheltered to ultra-sheltered
<i>Tidal streams</i>	Very weak
<i>Tidal range</i>	3.6 m (mean springs); 1.4 m (mean neaps)
<i>Salinity</i>	Fully marine; variable in parts of Bàgh Huilavagh and Bàgh Hirivagh

Introduction

North Bay is situated on the north-east coast of Barra. It acts as a secondary harbour for the island, after Castlebay, the main town and ferry port in the south. The main basin of North Bay is sheltered by the large island of Fuiay which lies at the entrance. Two long, narrow arms, Bàgh

Huilavagh and Bàgh Hirivagh, form the head of the loch, connected to the main basin by a constricted entrance channel only 0.1 km wide with a maximum depth of 8 m. The main entrance to North Bay is to the south of the island of Fuiay, although there are further narrow openings between the islands of Lamalum and Sgeirislum into the Sound of Hellisay. There are two sills, the first at the entrance to the south-west of Fuiay and the second at the entrance to Bàgh Huilavagh, forming a lagoonal inlet described by Thorpe *et al.* (1998). Little data is available for North Bay but it appears to be mostly sheltered from wave action and tidal streams.

Marine biology

Marine biological surveys				
	Survey methods	No. of sites	Date(s) of survey	Source
Littoral	Recording	2	August 1996	MNCR unpublished data

Littoral

Very little information is available for the shores of North Bay outside Bàgh Huilavagh. Admiralty charts indicate that the shoreline is almost entirely rocky. The headland to the north of Bruernish consists of steep bedrock with supralittoral lichens and a zonation typical of sheltered shores, being largely dominated by furoid algae. Vertical surfaces are colonised by limpets *Patella* sp. and barnacles.

Bàgh Hirivagh has a very sheltered convoluted coastline with several narrow rocky inlets. Boulders and bedrock in these inlets are dominated by furoid algae including *Pelvetia canaliculata*, *Fucus spiralis* and *Ascophyllum nodosum*.

Nature conservation

There are no designated nature conservation sites in the area at present.

Human influences

Coastal developments and uses

The inner part of North Bay is relatively populous, with roads and scattered houses and crofts around the inlets of Bàgh Huilavagh and Bàgh Hirivagh. The outer part is largely uninhabited except for a cluster of houses at Bruernish on the south-west coast. At the entrance to Bàgh Huilavagh at Ardveenish there is a large shellfish-processing factory.

Marine developments and uses

There is a pier used mainly by fishermen at Ardveenish, at the end of the peninsula separating Bàgh Huilavagh and Bàgh Hirivagh. Bàgh Huilavagh shows evidence of mooring and beaching of boats, and suffers from litter and debris.

References and further reading

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Sites surveyed

Survey 670: 1996 MNCR Barra survey (MNCR unpublished data).

Littoral sites					
<i>Survey</i>	<i>Site</i>	<i>Place</i>	<i>Grid reference</i>	<i>Latitude/longitude</i>	<i>Biotopes recorded</i>
670	28	Point of Bruernish, North Bay, Barra	NF 724 027	56°59.9'N 07°23.7'W	
670	29	Inlet of Bàgh Hirivagh, Barra	NF 715 025	56°59.8'N 07°24.6'W	

Appendix A

Biotopes classification

A hierarchical classification of the biotopes recorded in MNCR Sector 14 (Outer Hebrides) during the surveys given in Table 1, together with their higher types, is given below. The biotopes listed are derived from the MNCR national biotope classification version 97.06 (Connor *et al.* 1997a, b). Records of biotopes noted in the text but not shown here come from additional published sources cited in the individual area summaries. Species nomenclature follows Howson & Picton (1997).

Higher code	Biotope code	Biotope
LR		LITTORAL ROCK (and other hard substrata)
LR.L		Lichens or algal crusts
LR.L	YG	Yellow and grey lichens on supralittoral rock
LR.L	Ver	<i>Verrucaria maura</i> on littoral fringe rock
LR.L	Ver.Por	<i>Verrucaria maura</i> and <i>Porphyra umbilicalis</i> on very exposed littoral fringe rock
LR.L	Ver.B	<i>Verrucaria maura</i> and sparse barnacles on exposed littoral fringe rock
LR.L	Ver.Ver	<i>Verrucaria maura</i> on moderately exposed to very sheltered upper littoral fringe rock
ELR		Exposed littoral rock (MUSSEL/BARNACLE SHORES)
ELR.MB		<i>Mytilus</i> (mussels) and barnacles
ELR.MB	MytB	<i>Mytilus edulis</i> and barnacles on very exposed eulittoral rock
ELR.MB	Bpat	Barnacles and <i>Patella</i> spp. on exposed or moderately exposed, or vertical sheltered, eulittoral rock
ELR.MB	BPat.Cht	<i>Chthamalus</i> spp. on exposed upper eulittoral rock
ELR.MB	BPat.Lic	Barnacles and <i>Lichina pygmaea</i> on steep exposed upper eulittoral rock
ELR.MB	BPat.Fvesl	Barnacles, <i>Patella</i> spp. and <i>Fucus vesiculosus</i> f. <i>linearis</i> on exposed eulittoral rock
ELR.MB	BPat.Sem	<i>Semibalanus balanoides</i> on exposed or moderately exposed, or vertical sheltered, eulittoral rock
ELR.FR		Robust furoids or red seaweeds
ELR.FR	Him	<i>Himanthalia elongata</i> and red seaweeds on exposed lower eulittoral rock
MLR		Moderately exposed littoral rock (BARNACLE/FUCOID SHORES)
MLR.BF		Barnacles and furoids (moderately exposed shores)
MLR.BF	PelB	<i>Pelvetia canaliculata</i> and barnacles on moderately exposed littoral fringe rock

Higher code	Biotope code	Biotope
MLR.BF	FvesB	<i>Fucus vesiculosus</i> and barnacle mosaics on moderately exposed mid-eulittoral rock
MLR.BF	Fser	<i>Fucus serratus</i> on moderately exposed lower eulittoral rock
MLR.BF	Fser.R	<i>Fucus serratus</i> and red seaweeds on moderately exposed lower eulittoral rock
MLR.BF	Fser.Fser	Dense <i>Fucus serratus</i> on moderately exposed to very sheltered lower eulittoral rock
MLR.BF	Fser.Fser.Bo	<i>Fucus serratus</i> and under-boulder fauna on lower eulittoral boulders
MLR.Eph		Ephemeral green or red seaweeds (freshwater or sand-influenced)
MLR.Eph	Rho	<i>Rhodothamniella floridula</i> on sand-scoured lower eulittoral rock
SLR		Sheltered littoral rock (FUCOID SHORES)
SLR.F		Dense fucoids (stable rock)
SLR.F	Pel	<i>Pelvetia canaliculata</i> on sheltered littoral fringe rock
SLR.F	Fspi	<i>Fucus spiralis</i> on moderately exposed to very sheltered upper eulittoral rock
SLR.F	Fves	<i>Fucus vesiculosus</i> on sheltered mid-eulittoral rock
SLR.F	Asc	<i>Ascophyllum nodosum</i> on very sheltered mid-eulittoral rock
SLR.F	Asc.Asc	<i>Ascophyllum nodosum</i> on full salinity mid-eulittoral rock
SLR.F	Asc.T	<i>Ascophyllum nodosum</i> , sponges and ascidians on tide-swept mid-eulittoral rock
SLR.F	Asc.VS	<i>Ascophyllum nodosum</i> and <i>Fucus vesiculosus</i> on variable salinity mid-eulittoral rock
SLR.F	Fserr	<i>Fucus serratus</i> on sheltered lower eulittoral rock
SLR.F	Fserr.T	<i>Fucus serratus</i> , sponges and ascidians on tide-swept lower eulittoral rock
SLR.F	Fserr.VS	<i>Fucus serratus</i> and large <i>Mytilus edulis</i> on variable salinity lower eulittoral rock
SLR.FX		Fucoids, barnacles or ephemeral seaweeds (mixed substrata)
SLR.FX	FvesX	<i>Fucus vesiculosus</i> on mid-eulittoral mixed substrata
SLR.FX	AscX	<i>Ascophyllum nodosum</i> on mid-eulittoral mixed substrata
SLR.FX	AscX.mac	<i>Ascophyllum nodosum</i> ecad. <i>mackaii</i> beds on extremely sheltered mid-eulittoral mixed substrata
SLR.FX	FserX	<i>Fucus serratus</i> on lower eulittoral mixed substrata
SLR.FX	FserX.T	<i>Fucus serratus</i> with sponges, ascidians and red seaweeds on tide-swept lower eulittoral mixed substrata

Higher code	Biotope code	Biotope
SLR.FX	FcerX	<i>Fucus ceranoides</i> on reduced salinity eulittoral mixed substrata
SLR.MX		Mytilus (mussel) beds (mixed substrata)
SLR.MX	MytX	<i>Mytilus edulis</i> beds on eulittoral mixed substrata
Littoral rock (other)		
LR.Rkp		Rockpools
LR.Rkp	G	Green seaweeds (<i>Enteromorpha</i> spp. and <i>Cladophora</i> spp.) in upper shore rockpools
LR.Rkp	Cor	<i>Corallina officinalis</i> and coralline crusts in shallow eulittoral rockpools
LR.Rkp	FK	Fucoids and kelps in deep eulittoral rockpools
LR.Ov		Overhangs and caves
LR.Ov	SR	Sponges and shade-tolerant red seaweeds on overhanging lower eulittoral bedrock
LR.Ov	SByAs	Sponges, bryozoans and ascidians on deeply overhanging lower shore bedrock
LS		LITTORAL SEDIMENTS
LGS		Littoral gravels and sands
LGS.S		Sand shores
LGS.S	AP	Burrowing amphipods and <i>Eurydice pulchra</i> in well-drained clean sand shores
LGS.S	AP.P	Burrowing amphipods and polychaetes (often with <i>Arenicola marina</i>) in clean sand shores
LGS.S	Lan	Dense <i>Lanice conchilega</i> in tide-swept lower shore sand
LGS.S	AP.Pon	Burrowing amphipods <i>Pontocrates</i> spp. and <i>Bathyporeia</i> spp. in lower shore clean sand
LMS		Littoral muddy sands
LMS.MS		Muddy sand shores
LMS.MS	MacAre	<i>Macoma balthica</i> and <i>Arenicola marina</i> in muddy sand shores
LMU		Littoral muds
LMU.Sm		Saltmarsh
LMU.Sm		Saltmarsh (low-mid)
LMU.Sm	NVC SM13	<i>Puccinellia maritima</i>

Higher code	Biotope code	Biotope
LMU.Sm	NVC SM13	Sub-communities of <i>Puccinellia maritima</i> saltmarsh with <i>Limonium vulgare</i> and <i>Armeria maritima</i> ; <i>Puccinellia maritima</i> with <i>Glaux maritima</i> co-dominant in species-poor vegetation; <i>Puccinellia maritima</i> with <i>Plantago maritima</i> and/or <i>Armeria maritima</i>
LMU.SMu		Sandy mud shores
LMU.SMu	HedMac	<i>Hediste diversicolor</i> and <i>Macoma balthica</i> in sandy mud shores
LMU.SMu	HedMac.Are	<i>Hediste diversicolor</i> , <i>Macoma balthica</i> and <i>Arenicola marina</i> in muddy sand or sandy mud shores
LMX		Littoral mixed sediments
IR		INFRALITTORAL ROCK (and other hard substrata)
EIR		Exposed infralittoral rock
EIR.KFaR		Kelp with cushion fauna, foliose red seaweeds or coralline crusts (exposed rock)
EIR.KFaR	Ala	<i>Alaria esculenta</i> on sublittoral fringe bedrock
EIR.KFaR	Ala.Myt	<i>Alaria esculenta</i> , <i>Mytilus edulis</i> and coralline crusts on very exposed sublittoral fringe bedrock
EIR.KFaR	Ala.Ldig	<i>Alaria esculenta</i> and <i>Laminaria digitata</i> on exposed sublittoral fringe bedrock
EIR.KFaR	LhypFa	<i>Laminaria hyperborea</i> forest with a faunal cushion (sponges and polyclinids) and foliose red seaweeds on very exposed infralittoral rock
EIR.KFaR	LhypR.Ft	<i>Laminaria hyperborea</i> forest with dense foliose red seaweeds on exposed upper infralittoral rock
EIR.KFaR	LhypR.Pk	<i>Laminaria hyperborea</i> park with dense foliose red seaweeds on exposed lower infralittoral rock
EIR.KFaR	LsacSac	<i>Laminaria saccharina</i> and/or <i>Saccorhiza polyschides</i> on exposed infralittoral rock
EIR.SG		Robust faunal cushions and crusts (surge gullies and caves)
EIR.SG	SCAn	Sponge crusts and anemones on wave-surged vertical infralittoral rock
MIR		Moderately exposed infralittoral rock
MIR.KR		Kelp with red seaweeds (moderately exposed rock)
MIR.KR	Ldig	<i>Laminaria digitata</i> on moderately exposed or tide-swept sublittoral fringe rock
MIR.KR	Ldig.Ldig	<i>Laminaria digitata</i> on moderately exposed sublittoral fringe rock

Higher code	Biotope code	Biotope
MIR.KR	Ldig.Ldig.Bo	<i>Laminaria digitata</i> and under-boulder fauna on sublittoral fringe boulders
MIR.KR	Ldig.T	<i>Laminaria digitata</i> , ascidians and bryozoans on tide-swept sublittoral fringe rock
MIR.KR	Lhyp	<i>Laminaria hyperborea</i> and foliose red seaweeds on moderately exposed infralittoral rock
MIR.KR	Lhyp.Ft	<i>Laminaria hyperborea</i> forest and foliose red seaweeds on moderately exposed upper infralittoral rock
MIR.KR	Lhyp.Pk	<i>Laminaria hyperborea</i> park and foliose red seaweeds on moderately exposed lower infralittoral rock
MIR.KR	Lhyp.TFt	<i>Laminaria hyperborea</i> forest, foliose red seaweeds and a diverse fauna on tide-swept upper infralittoral rock
MIR.KR	Lhyp.TPk	<i>Laminaria hyperborea</i> park with hydroids, bryozoans and sponges on tide-swept lower infralittoral rock
MIR.GzK		Grazed kelp with algal crusts
MIR.GzK	LhypGz	Grazed <i>Laminaria hyperborea</i> with coralline crusts on infralittoral rock
MIR.GzK	LhypGz.Ft	Grazed <i>Laminaria hyperborea</i> forest with coralline crusts on upper infralittoral rock
MIR.GzK	LhypGz.Pk	Grazed <i>Laminaria hyperborea</i> park with coralline crusts on lower infralittoral rock
MIR.SedK		Sand or gravel-affected or disturbed kelp and seaweed communities
MIR.SedK	Sac	<i>Saccorhiza polyschides</i> and other opportunistic kelps on disturbed upper infralittoral rock
MIR.SedK	XXScrR	Mixed kelps with scour-tolerant and opportunistic foliose red seaweeds on scoured or sand-covered infralittoral rock
MIR.SedK	EphR	Ephemeral red seaweeds and kelps on tide-swept mobile infralittoral cobbles
MIR.SedK	HalXX	<i>Halidrys siliquosa</i> and mixed kelps on tide-swept infralittoral rock with coarse sediment
SIR		Sheltered infralittoral rock
SIR.K		Silted kelp (stable rock)
SIR.K	LhypLsac	Mixed <i>Laminaria hyperborea</i> and <i>Laminaria saccharina</i> on sheltered infralittoral rock
SIR.K	LhypLsac.Ft	Mixed <i>Laminaria hyperborea</i> and <i>Laminaria saccharina</i> forest on sheltered upper infralittoral rock
SIR.K	LhypLsac.Pk	Mixed <i>Laminaria hyperborea</i> and <i>Laminaria saccharina</i> park on sheltered lower infralittoral rock
SIR.K	Lsac	<i>Laminaria saccharina</i> on very sheltered infralittoral rock

Higher code	Biotope code	Biotope
SIR.K	Lsac.Ldig	<i>Laminaria saccharina</i> and <i>Laminaria digitata</i> on sheltered sublittoral fringe rock
SIR.K	Lsac.Ft	<i>Laminaria saccharina</i> forest on very sheltered upper infralittoral rock
SIR.K	Lsac.Pk	<i>Laminaria saccharina</i> park on very sheltered lower infralittoral rock
SIR.K	Lsac.T	<i>Laminaria saccharina</i> , foliose red seaweeds, sponges and ascidians on tide-swept infralittoral rock
SIR.K	EchBriCC	Echinus, brittlestars and coralline crusts on grazed lower infralittoral rock
SIR.K	LsacRS	<i>Laminaria saccharina</i> on reduced or low salinity infralittoral rock
SIR.K	LsacRS.Psa	<i>Laminaria saccharina</i> and <i>Psammechinus miliaris</i> on reduced salinity grazed infralittoral rock
Infralittoral rock (other)		
IR.FaSwV		Fauna and seaweeds (shallow vertical rock)
IR.FaSwV	CorMetAlc	<i>Corynactis viridis</i> , <i>Metridium senile</i> and <i>Alcyonium digitatum</i> on exposed or moderately exposed vertical infralittoral rock
CR		CIRCALITTORAL ROCK (and other hard substrata)
ECR		Exposed circalittoral rock
ECR.EFa		Faunal crusts or short turfs (wave-exposed rock)
ECR.EFa	PomByC	<i>Pomatoceros triqueter</i> , <i>Balanus crenatus</i> and bryozoan crusts on mobile circalittoral cobbles and pebbles
ECR.EFa	CCParCar	Coralline crusts, <i>Parasmittina trispinosa</i> , <i>Caryophyllia smithii</i> , <i>Haliclona viscosa</i> , polyclinids and sparse <i>Corynactis viridis</i> on very exposed circalittoral rock
ECR.Alc		Alcyonium-dominated communities (tide-swept/vertical)
ECR.Alc	AlcTub	<i>Alcyonium digitatum</i> with dense <i>Tubularia indivisa</i> and anemones on strongly tide-swept circalittoral rock
ECR.Alc	AlcC	<i>Alcyonium digitatum</i> , <i>Pomatoceros triqueter</i> , algal and bryozoan crusts on vertical exposed circalittoral rock
MCR		Moderately exposed circalittoral rock
MCR.XFa		Mixed faunal turfs (moderately exposed rock)
MCR.XFa	ErSSwi	Erect sponges and <i>Swiftia pallida</i> on slightly tide-swept moderately exposed circalittoral rock
MCR.ByH		Bryozoan/hydroid turfs (sand-influenced)

Higher code	Biotope code	Biotope
MCR.ByH	Flu	<i>Flustra foliacea</i> and other hydroid/bryozoan turf species on slightly scoured circalittoral rock or mixed substrata
MCR.ByH	Flu.HByS	<i>Flustra foliacea</i> with hydroids, bryozoans and sponges on slightly tide-swept circalittoral mixed substrata
MCR.ByH	Urt	<i>Urticina felina</i> on sand-affected circalittoral rock
MCR.ByH	Urt.Urt	<i>Urticina felina</i> on sand-scoured circalittoral rock
MCR.Bri		Brittlestar beds
MCR.Bri	Oph	<i>Ophiothrix fragilis</i> and/or <i>Ophiocomina nigra</i> beds on slightly tide-swept circalittoral rock or mixed substrata
MCR.Bri	Oph.Oacu	<i>Ophiopholis aculeata</i> beds on slightly tide-swept circalittoral rock or mixed substrata
MCR.GzFa		Grazed fauna (moderately exposed or sheltered rock)
MCR.GzFa	FaAIC	Faunal and algal crusts, <i>Echinus esculentus</i> , sparse <i>Alcyonium digitatum</i> and grazing-tolerant fauna on moderately exposed circalittoral rock
MCR.GzFa	FaAIC.Abi	Faunal and algal crusts, <i>Echinus esculentus</i> , sparse <i>Alcyonium digitatum</i> , <i>Abietinaria abietina</i> and other grazing-tolerant fauna on moderately exposed circalittoral rock
SCR		Sheltered circalittoral rock
SCR.BrAs		Brachiopod and solitary ascidian communities (sheltered rock)
SCR.BrAs	AntAsH	<i>Antedon</i> spp., solitary ascidians and fine hydroids on sheltered circalittoral rock
SCR.BrAs	SubSoAs	<i>Suberites</i> spp. and other sponges with solitary ascidians on very sheltered circalittoral rock
SCR.BrAs	AmenCio	Solitary ascidians, including <i>Ascidia mentula</i> and <i>Ciona intestinalis</i> , on very sheltered circalittoral rock
SCR.BrAs	AmenCio.Met	Large <i>Metridium senile</i> and solitary ascidians on grazed very sheltered circalittoral rock
SCR.BrAs	Aasp	<i>Ascidiella aspersa</i> on sheltered circalittoral rocks on muddy sediment
SCR.BrAs	NeoPro	<i>Neocrania anomala</i> and <i>Protanthea simplex</i> on very sheltered circalittoral rock
SCR.Mod		Sheltered <i>Modiolus</i> (horse-mussel) beds
SCR.Mod	ModHAS	<i>Modiolus modiolus</i> beds with fine hydroids and large solitary ascidians on very sheltered circalittoral mixed substrata
		Circalittoral rock (other)
CR.FaV		Faunal turfs (deep vertical rock)

Higher code	Biotope code	Biotope
CR.FaV	Ant	<i>Antedon bifida</i> and a bryozoan/hydroid turf on steep or vertical circalittoral rock
CR.Cv		Caves and overhangs (deep)
SS		SUBLITTORAL SEDIMENTS
IGS		Infralittoral gravels and sands
IGS.Mrl		Maerl beds (open coast/clean sediments)
IGS.Mrl	Phy	<i>Phymatolithon calcareum</i> maerl beds in infralittoral clean gravel or coarse sand
IGS.Mrl	Phy.R	<i>Phymatolithon calcareum</i> maerl beds with red seaweeds in shallow infralittoral clean gravel or coarse sand
IGS.Mrl	Phy.HEc	<i>Phymatolithon calcareum</i> maerl beds with hydroids and echinoderms in deeper infralittoral clean gravel or coarse sand
IGS.Mrl	Lgla	<i>Lithothamnion glaciale</i> maerl beds in tide-swept variable salinity infralittoral gravel
IGS.FaS		Shallow sand faunal communities
IGS.FaS	Mob	Sparse fauna in marine infralittoral mobile clean sand
IGS.FaS	Lcon	Dense <i>Lanice conchilega</i> and other polychaetes in tide-swept infralittoral sand
CGS		Circalittoral gravels and sands
CGS	Ven	Venerid bivalves in circalittoral coarse sand or gravel
CGS	Ven.Neo	<i>Neopentadactyla mixta</i> and venerid bivalves in circalittoral shell-gravel or coarse sand
IMS		Infralittoral muddy sands
IMS.Sgr		Seagrass beds (sublittoral/lower shore)
IMS.Sgr	Zmar	<i>Zostera marinalangustifolia</i> beds in lower shore or infralittoral clean or muddy sand
IMS.FaMS		Shallow muddy sand faunal communities
IMS.FaMS	EcorEns	<i>Echinocardium cordatum</i> and <i>Ensis</i> sp. in lower shore or shallow sublittoral muddy fine sand
CMS		Circalittoral muddy sands
CMS	AfilEcor	<i>Amphiura filiformis</i> and <i>Echinocardium cordatum</i> in circalittoral clean or slightly muddy sand
CMS	VirOph	<i>Virgularia mirabilis</i> and <i>Ophiura</i> spp. on circalittoral sandy or shelly mud

Higher code	Biotope code	Biotope
CMS	VirOph.HAs	<i>Virgularia mirabilis</i> and <i>Ophiura</i> spp. with hydroids and ascidians on circalittoral sandy or shelly mud with shells or stones
IMU		Infralittoral muds
IMU.MarMu		Shallow marine mud communities
IMU.MarMu	AreSyn	<i>Arenicola marina</i> and synaptid holothurians in extremely shallow soft mud
IMU.MarMu	PhiVir	<i>Philine aperta</i> and <i>Virgularia mirabilis</i> in soft stable infralittoral mud
IMU.MarMu	Ocn	<i>Ocnus planci</i> aggregations on sheltered sublittoral muddy sediment
CMU		Circalittoral muds
CMU	SpMeg	Sea-pens and burrowing megafauna in circalittoral soft mud
CMU	SpMeg.Fun	Sea-pens, including <i>Funiculina quadrangularis</i> , and burrowing megafauna in undisturbed circalittoral soft mud
CMU	Beg	<i>Beggiatoa</i> spp. on anoxic sublittoral mud
IMX		Infralittoral mixed sediments
IMX.KSw		<i>Laminaria saccharina</i> (sugar kelp) and filamentous seaweeds (mixed sediment)
IMX.KSw	LsacX	<i>Laminaria saccharina</i> , <i>Chorda filum</i> and filamentous red seaweeds on sheltered infralittoral sediment
IMX.KSw	Tra	Mats of <i>Trilliella</i> on infralittoral muddy gravel
IMX.KSw	Peri	Loose-lying mats of <i>Phyllophora crispa</i> on infralittoral muddy sediment
IMX.MrlMx		Maerl beds (muddy mixed sediments)
IMX.FaMx		Shallow mixed sediment faunal communities
IMX.FaMx	VsenMtru	<i>Venerupis senegalensis</i> and <i>Mya truncata</i> in lower shore or infralittoral muddy gravel
CMX		Circalittoral mixed sediments
CMX	ModHo	Sparse <i>Modiolus modiolus</i> , dense <i>Cerianthus lloydii</i> and burrowing holothurians on sheltered circalittoral stones and mixed sediment

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Appendix B

Biotopes recorded in each area

The biotopes recorded in each area, using the data listed in Table 1, are summarised below. Biotope codes are given according to MNCR classification version 97.06 (Connor *et al.* 1997a, b).

Numbers refer to the *area summaries* as follows:

1	West Loch Tarbert	14	East Loch Tarbert
2	Loch Resort	15	Loch Stockinish
3	Lochs Tealasavay and Tamanavay	16	Loch Finsbay
4	Camas Uig	17	Loch Maddy (Loch nam Madadh)
5	Loch Roag	18	Loch Eport
6	Broad Bay (Loch a Tuath)	19	Loch Uiskevagh
7	Loch Grimshader	20	Lochs a' Laip and Kilerivagh
8	Lochs Leurbost and Erisort	21	Loch Càrnan
9	Loch Odhairn	22	Loch Sheilavaig
10	Loch Shell (Loch Sealg)	23	Loch Skipport
11	Loch Bhrollum	24	Loch Eynort
12	Loch Claidh	25	Loch Boisdale
13	Loch Seaforth	26	North Bay

	Area	1	2	3	4	5	6	7	8	9	10	11	12	13
<i>Littoral rock</i>														
LR						•								
YG		•		•		•	•		•					•
Ver				•		•	•							
Ver.Por														
Ver.B									•					
Ver.Ver		•		•					•					
MytB						•	•							
BPat									•					
BPat.Cht						•	•		•					
BPat.Lic						•	•							
BPat.Fvesl							•							
BPat.Sem		•		•			•		•					•
Him						•								
PelB									•					
FvesB						•								
Fser			•			•								
Fser.R						•	•		•					
Fser.Fser		•		•		•			•					•
Fser.Fser.Bo						•								
Rho							•							
Pel		•		•		•	•		•					•
Fspi		•		•		•	•		•					•
Fves		•				•			•					
Asc														
Asc.Asc				•		•			•					
Asc.T						•		•	•					•
Asc.VS		•							•					•

	Area	1	2	3	4	5	6	7	8	9	10	11	12	13
Fserr														
Fserr.T						•		•	•					•
Fserr.VS											•			
FvesX	•								•					•
AscX	•		•			•			•					•
AscX.mac						•								•
FserX									•					•
FserX.T						•								
FcerX						•								
MytX											•			
Rkp							•							
G							•							
Cor						•	•		•					•
FK														
Ov							•							
SR														
SByAs														
<i>Littoral sediment</i>														
LS					•									
AP.P					•		•							
Lan							•							
AP.Pon						•	•							
MacAre						•	•		•					
NVC SM13														•
HedMac.Are					•									•
LMX									•		•			
<i>Sublittoral rock</i>														
Ala														
Ala.Myt				•										
Ala.Ldig						•	•		•					
LhypR.Ft						•		•						
LhypR.Pk								•						
LsacSac														•
SG														
SCAn				•										
Ldig				•							•			
Ldig.Ldig				•		•	•		•				•	•
Ldig.Ldig.Bo						•			•					
Ldig.T						•			•					•
Lhyp						•								
Lhyp.Ft	•	•	•			•			•			•	•	•
Lhyp.Pk	•	•	•			•								
Lhyp.TFt						•								
Lhyp.TPk						•								
LhypGz														
LhypGz.Ft	•	•	•			•			•					•
LhypGz.Pk	•					•							•	
Sac												•		
LsacChoR														

	Area	1	2	3	4	5	6	7	8	9	10	11	12	13
XKScrR						•								
EphR		•	•											
HalXK									•					•
SIR						•								
LhypLsac													•	
LhypLsac.Ft	•	•	•			•			•					
LhypLsac.Pk														
Lsac														
Lsac.Ldig							•							
Lsac.Ft		•	•			•			•				•	•
Lsac.Pk		•							•				•	•
Lsac.T						•			•					
EchBriCC	•								•					•
LsacRS														
PomByC						•								
CCParCar														•
LsacRS.Psa														•
FaSwV						•						•		•
CorMetAlc			•			•			•				•	
AlcTub														
AlcC						•								
ErSSwi									•			•	•	•
Flu.HByS						•								
Urt.Urt														
Oph	•	•							•					•
Oph.Oacu	•													
FaAIC	•	•	•			•		•						
FaAIC.Abi	•					•								
AntAsH													•	•
SubSoAs		•				•								•
AmenCio			•			•							•	•
AmenCio.Met		•												
Aasp														•
NeoPro														•
ModHAs						•								
Cv														•
Ant						•			•					•
<i>Sublittoral sediment</i>														
IGS	•	•				•								•
Mrl														
Phy														
Phy.R		•												
Phy.HEc	•													
Lgla	•					•								•
Mob						•								
Lcon			•											
CGS			•			•								
Ven									•					
Ven.Neo	•	•	•											

	Area	1	2	3	4	5	6	7	8	9	10	11	12	13
IMS			•			•								
Zmar						•								
FaMS														
EcorEns						•	•	•						
AfilEcor														•
CMS						•								
VirOph	•	•	•			•		•	•			•	•	•
VirOph.HAs	•								•				•	•
IMU			•			•							•	•
AreSyn														
PhiVir	•	•				•			•					
Ocn									•					
SpMeg		•	•						•				•	•
SpMeg.Fun									•				•	•
Beg						•		•	•					
IMX		•	•											•
LsacX			•			•		•	•			•	•	•
Tra			•						•					
Peri													•	
FaMx														
MrIMx														
VsenMtru						•								
CMX													•	
ModHo	•													

Area	14	15	16	17	18	19	20	21	22	23	24	25	26
<i>Littoral rock</i>													
LR													
YG	•	•		•	•			•			•	•	
Ver							•				•		
Ver.Por	•												
Ver.B													
Ver.Ver	•	•		•	•			•				•	
MytB													
BPat													
BPat.Cht	•												
Bpat.Lic													
Bpat.Fvesl		•											
BPat.Sem	•										•		
Him	•			•							•		
PelB				•									
FvesB	•			•									
Fser											•		
Fser.R													
Fser.Fser	•	•					•				•	•	
Fser.Fser.Bo					•								
Rho													
Pel	•	•		•	•			•			•	•	
Fspi	•	•		•	•						•	•	
Fves											•		
Asc					•						•		
Asc.Asc	•	•			•		•			•	•	•	
Asc.T	•			•	•		•	•			•		
Asc.VS	•												
Fserr	•												
Fserr.T	•			•	•						•		
Fserr.VS													
FvesX	•												
AscX	•										•		
AscX.mac													
FserX	•												
FserX.T													
FcerX													
MytX													
Rkp													
G							•						
Cor	•			•									
FK	•												
Ov													
SR	•	•									•		
SByAs	•												
<i>Littoral sediment</i>													
LS					•								
AP.P													
Lan													

	Area	14	15	16	17	18	19	20	21	22	23	24	25	26
AP.Pon														
MacAre		●				●								
NVC SM13														
HedMac.Are														
LMX														
<i>Sublittoral rock</i>														
Ala												●		
Ala.Myt														
Ala.Ldig												●		
LhypR.Ft														
LhypR.Pk														
LsacSac						●								
SG														
SCAn														
Ldig						●						●		
Ldig.Ldig		●	●		●			●				●	●	
Ldig.Ldig.Bo														
Ldig.T		●			●	●		●				●		
Lhyp														
Lhyp.Ft		●	●		●	●	●		●		●	●	●	
Lhyp.Pk		●			●	●					●	●		
Lhyp.TFt		●			●							●		
Lhyp.TPk		●										●		
LhypGz														●
LhypGz.Ft		●			●						●	●		
LhypGz.Pk		●												
Sac												●	●	
LsacChoR					●									●
XKScrR					●	●						●	●	
EphR						●						●	●	
HalXK						●								●
SIR					●							●		
LhypLsac					●	●						●		
LhypLsac.Ft		●	●		●	●	●				●	●	●	
LhypLsac.Pk					●									
Lsac					●						●	●		
Lsac.Ldig														
Lsac.Ft		●	●		●	●				●	●	●	●	
Lsac.Pk		●			●	●	●		●	●		●	●	
Lsac.T		●	●		●							●		
EchBriCC												●		
LsacRS											●			
PomByC														
CCParCar														
LsacRS.Psa														
FaSwV			●			●						●		
CorMetAlc		●									●	●	●	
AlcTub						●								
AlcC			●											

Area	14	15	16	17	18	19	20	21	22	23	24	25	26
ErSSwi	•			•	•	•				•	•	•	
Flu.HByS											•		
Urt.Urt											•		
Oph	•									•			
Oph.Oacu													
FaAIC					•	•							
FaAIC.Abi													
AntAsH	•												
SubSoAs				•	•					•	•		
AmenCio	•	•		•		•			•	•	•		
AmenCio.Met		•											
Aasp													
NeoPro													
ModHAs	•												
Cv													
Ant													
<i>Sublittoral sediment</i>													
IGS											•	•	
Mrl					•						•		
Phy						•							
Phy.R				•	•						•	•	
Phy.HEc												•	
Lgla				•									
Mob													
Lcon	•			•	•					•	•		
Ven	•												
CGS													
Ven.Neo	•			•	•	•					•		
IMS				•						•	•	•	
Zmar												•	
FaMS											•		
EcorEns				•							•	•	
CMS											•		
AfilEcor													
VirOph	•	•		•	•	•				•	•	•	
VirOph.HAs	•	•		•		•					•		
IMU	•	•		•	•					•	•		
AreSyn				•	•						•	•	
PhiVir				•	•	•				•	•		
Ocn													
SpMeg	•	•		•						•	•	•	
SpMeg.Fun													
Beg		•		•				•	•	•	•		
IMX	•			•				•	•	•	•		
LsacX	•	•		•	•	•		•	•	•	•	•	
Tra	•	•			•	•		•		•	•	•	
Pcri													
FaMx												•	
MrlMx												•	

	Area	14	15	16	17	18	19	20	21	22	23	24	25	26
VsenMtru											●			
CMX		●				●								
ModHo														

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- Connor, D.W., Dalkin, M.J., Hill, T.O., Holt, R.H.F. & Sanderson, W.G. 1997b. Marine Nature Conservation Review: marine biotope classification for Britain and Ireland. Volume 2. Sublittoral biotopes. Version 97.06. *JNCC Report*, No. 230.

Appendix C

Species recorded

All taxa recorded during the surveys given in Table 1 are listed below; records of species noted in the text but not shown here come from additional published sources noted in the individual area summaries. Marine species nomenclature follows Howson & Picton (1997); that for higher plants follows Stace (1991), and that for lichens follows Purvis *et al.* (1992).

Numbers refer to the *area summaries* as follows:

1	West Loch Tarbert	14	East Loch Tarbert
2	Loch Resort	15	Loch Stockinish
3	Lochs Tealasavay and Tamanavay	16	Loch Finsbay
4	Camas Uig	17	Loch Maddy (Loch nam Madadh)
5	Loch Roag	18	Loch Eport
6	Broad Bay (Loch a Tuath)	19	Loch Uiskevagh
7	Loch Grimshader	20	Lochs a' Laip and Kilerivagh
8	Lochs Leurbost and Erisort	21	Loch Càrnan
9	Loch Odhairn	22	Loch Sheilavaig
10	Loch Shell (Loch Sealg)	23	Loch Skipport
11	Loch Bhrollum	24	Loch Eynort
12	Loch Claidh	25	Loch Boisdale
13	Loch Seaforth	26	North Bay

PORIFERA	20	<i>Stelligera</i> sp.	24
<i>Clathrina coriacea</i>	2, 5, 11, 13, 14, 15, 25	<i>Stelligera rigida</i>	5, 17, 23, 25
<i>Clathrina lacunosa</i>	18	<i>Stelligera stuposa</i>	5, 11, 18, 23, 24, 25
<i>Leucosolenia</i> sp.	3, 5, 6, 8, 13, 14, 17, 18, 20, 24, 25	<i>Raspailia hispida</i>	5, 11, 24, 25
<i>Leucosolenia botryoides</i>	5, 7, 8, 12, 13, 14, 15, 17, 18, 19, 23, 24, 25	<i>Raspailia ramosa</i>	5, 11, 17, 25
<i>Leucosolenia variabilis</i>	25	<i>Eurypon</i> sp.	11
<i>Scypha</i> sp.	24	<i>Halichondria bowerbanki</i>	2, 17, 25
<i>Scypha ciliata</i>	3, 5, 6, 7, 8, 11, 12, 13, 14, 17, 18, 19, 20, 23, 24, 25	<i>Halichondria panicea</i>	1, 3, 5, 6, 8, 13, 14, 15, 17, 18, 20, 21, 24, 25
<i>Leuconia nivea</i>	1, 18	<i>Hymeniacion perleve</i>	8, 13, 14, 15, 17, 18, 24, 25
<i>Grantia compressa</i>	2, 5, 6, 8, 14, 15, 17, 18, 20, 21, 24, 25	<i>Hymeniacion sanguinea</i>	5, 6, 14, 20, 24
Demospongiae indet.	23	<i>Mycale lingua</i>	13, 17
<i>Oscarella lobularis</i>	11, 14	<i>Mycale rotalis</i>	5, 13
<i>Pachymatisma johnstonia</i>	2, 3, 5, 11, 12, 14, 15, 17, 22, 23, 24, 25	<i>Esperiopsis fucorum</i>	2, 5, 14, 15, 17, 23, 25
<i>Suberites</i> sp.	5, 14	<i>Myxilla</i> sp.	18, 23, 24
<i>Suberites carnosus</i>	2, 3, 5, 7, 13, 19, 23, 24, 25	<i>Myxilla fimbriata</i>	3, 5, 23, 24
<i>Suberites ficus</i>	1, 2, 3, 5, 7, 8, 12, 13, 14, 15, 17, 19, 23, 24, 25	<i>Myxilla incrustans</i>	1, 2, 3, 5, 6, 7, 8, 11, 12, 13, 14, 15, 17, 18, 19, 23, 24, 25
<i>Polymastia</i> sp.	5, 25	<i>Myxilla rosacea</i>	3, 14
<i>Polymastia boletiformis</i>	5, 8, 11, 12, 13, 17, 18, 22, 24, 25	<i>Iophon hyndmani</i>	19
<i>Polymastia mamillaris</i>	5, 12, 13, 17, 18, 19, 23, 24, 25	<i>Hymedesmia</i> sp.	11, 17
<i>Cliona</i> sp.	20, 24	<i>Hymedesmia paupertas</i>	2, 5, 8, 13
<i>Cliona celata</i>	1, 2, 3, 5, 7, 8, 11, 12, 13, 14, 15, 17, 18, 19, 23, 24, 25	<i>Hymedesmia stephensi</i>	5
<i>Axinella infundibuliformis</i>	5, 11, 13, 17, 18, 23, 24, 25	<i>Phorbas fictitius</i>	11
<i>Phakellia ventilabrum</i>	14, 17	<i>Hemimycale columella</i>	5
		<i>Microciona</i> sp.	11, 17
		<i>Microciona atrasanguea</i>	24
		<i>Haliclona</i> sp.	5, 14, 17, 20, 24, 25
		<i>Haliclona cinerea</i>	13
		<i>Haliclona oculata</i>	5
		<i>Haliclona urceolus</i>	2, 3, 13, 18

<i>Haliclona viscosa</i>	11, 13, 14, 17, 25	<i>Sertularella gayi</i>	3, 11, 13, 18, 25
<i>Dysidea fragilis</i>	5, 17	<i>Sertularella polyzonias</i>	2, 3, 5, 7, 8, 11, 13, 14, 17, 24
<i>Aplysilla sulfurea</i>	15, 17	<i>Sertularia</i> sp.	5, 6
<i>Halisarca dujardini</i>	5, 13, 14, 17, 18, 25	<i>Sertularia argentea</i>	1, 2, 3, 5, 13, 17, 18, 24
Porifera indet. crusts	5, 17, 18, 24, 25	<i>Campanularia</i> sp.	1
CNIDARIA		<i>Laomedea flexuosa</i>	5, 8, 14, 15
<i>Haliclystus auricula</i>	1, 2, 5	<i>Obelia</i> sp.	1, 3, 5, 7, 12, 13, 14, 15, 17, 25
<i>Lucernaria</i> sp.	5, 8	<i>Obelia dichotoma</i>	7, 8, 11, 12, 13, 14, 15, 17, 19, 23, 24, 25
<i>Lucernariopsis campanulata</i>	1, 5, 7	<i>Obelia geniculata</i>	1, 2, 3, 5, 7, 8, 11, 12, 13, 14, 15, 17, 18, 19, 23, 24, 25
<i>Cyanea</i> sp.	24	<i>Obelia longissima</i>	7, 23, 25
<i>Aurelia aurita</i>	5, 8, 14, 23, 24, 25	<i>Obelia plicata</i>	5, 25
Hydrozoa indet.	20, 25	<i>Rhizocaulus verticillatus</i>	1, 2, 5, 13, 14, 18, 19, 24
<i>Corymorpha nutans</i>	17, 23	<i>Sarcodictyon roseum</i>	8, 12
<i>Tubularia indivisa</i>	5, 13, 14, 17, 18, 19, 24	<i>Alcyonium digitatum</i>	1, 2, 3, 5, 7, 8, 11, 12, 13, 14, 15, 17, 18, 19, 21, 23, 24, 25
<i>Tubularia larynx</i>	1, 14, 17, 24, 25	<i>Parerythropodium coralloides</i>	12
<i>Coryne</i> sp.	14, 24	<i>Swiftia pallida</i>	8, 11, 12, 13, 14, 17, 18, 19, 23, 24, 25
<i>Sarsia</i> sp.	17, 18	<i>Funiculina quadrangularis</i>	8, 12, 13
<i>Sarsia eximia</i>	14	<i>Virgularia mirabilis</i>	2, 3, 5, 8, 11, 12, 13, 14, 15, 17, 18, 19, 23, 24, 25
<i>Eudendrium</i> sp.	13, 14, 24	<i>Pennatula phosphorea</i>	7, 8, 11, 12, 13, 17, 23, 24, 25
<i>Eudendrium arbusculum</i>	5	<i>Cerianthus lloydii</i>	1, 2, 3, 5, 7, 8, 11, 12, 13, 14, 15, 17, 18, 19, 20, 21, 23, 24, 25
<i>Eudendrium capillare</i>	5	<i>Pachycerianthus multiplicatus</i>	2, 13, 17
<i>Leuckartiara octona</i>	2	<i>Arachnanthus sarsi</i>	13
<i>Bougainvillia ramosa</i>	1, 2, 8, 13, 14, 18, 23, 25	<i>Epizoanthus couchii</i>	8, 12, 14
<i>Hydractinia</i> sp.	23	<i>Parazoanthus anguicomus</i>	24
<i>Hydractinia echinata</i>	1, 2, 3, 5, 8, 11, 12, 13, 14, 15, 17, 18, 19, 22, 23, 24, 25	<i>Gonactinia prolifera</i>	2
Clavidae sp.	18	<i>Protanthea simplex</i>	13
<i>Clava</i> sp.	17	<i>Actinia equina</i>	1, 3, 5, 6, 8, 13, 14, 15, 17, 18, 20, 24
<i>Clava multicornis</i>	5, 14, 17, 18, 20, 21, 24	<i>Actinia fragacea</i>	8, 14
<i>Merona cornucopiae</i>	19	<i>Anemonia viridis</i>	3, 5, 6, 7, 8, 14, 15, 17, 18, 19, 23, 24, 25
<i>Filellum serpens</i>	24	<i>Bolocera tuediae</i>	25
<i>Lafoea dumosa</i>	5, 24	<i>Urticina felina</i>	1, 2, 3, 5, 6, 7, 8, 12, 14, 15, 17, 18, 19, 20, 21, 23, 24, 25
<i>Halecium</i> sp.	17, 24	<i>Urticina eques</i>	3, 13, 24
<i>Halecium beanii</i>	11, 13, 14	<i>Anthopleura</i> sp.	5
<i>Halecium halecinum</i>	1, 2, 3, 5, 7, 8, 11, 12, 13, 14, 15, 17, 18, 19, 24, 25	<i>Aureliania heterocera</i>	17, 23
<i>Halecium muricatum</i>	13	<i>Stomphia coccinea</i>	3, 12, 13
<i>Aglaophenia pluma</i>	5	<i>Metridium senile</i>	1, 2, 3, 5, 6, 7, 8, 12, 13, 14, 15, 17, 18, 19, 21, 22, 23, 24, 25
<i>Aglaophenia tubulifera</i>	11, 13, 14, 17, 18	<i>Sagartia</i> sp.	5, 22
<i>Lytocarpia myriophyllum</i>	8, 13, 17	<i>Sagartia elegans</i>	1, 2, 3, 5, 6, 8, 11, 12, 13, 14, 15, 17, 18, 19, 20, 21, 22, 24, 25
<i>Antennella secundaria</i>	11, 14, 18	<i>Sagartia troglodytes</i>	5, 17, 24, 25
<i>Halopteris catharina</i>	1, 8, 11, 13, 14, 17, 24	<i>Cereus pedunculatus</i>	5, 14, 17, 21, 24
<i>Kirchenpaueria pinnata</i>	1, 2, 3, 5, 7, 8, 11, 12, 13, 14, 17, 18, 19, 23, 24, 25	<i>Actinothoe sphyrodeta</i>	3, 5, 18, 24
<i>Nemertesia antennina</i>	1, 2, 3, 5, 7, 8, 11, 12, 13, 14, 15, 17, 18, 19, 23, 24, 25	<i>Sagartiogeton</i> sp.	5, 14
<i>Nemertesia ramosa</i>	1, 2, 3, 5, 7, 8, 11, 12, 13, 14, 17, 18, 19, 24		
<i>Plumularia setacea</i>	1, 3, 5, 11, 12, 13, 14, 15, 18, 19, 24, 25		
<i>Polyplumaria frutescens</i>	8, 11, 13, 14		
Sertulariidae indet.	5		
<i>Abietinaria abietina</i>	1, 2, 3, 5, 8, 11, 14, 17, 18, 19		
<i>Abietinaria filicula</i>	5, 18		
<i>Amphisbetia operculata</i>	5, 24		
<i>Diphasia rosacea</i>	5, 17, 24		
<i>Dynamena pumila</i>	5, 6, 8, 14, 15, 17, 18, 20, 21, 24, 25		
<i>Hydrallmania falcata</i>	5, 13, 24		

<i>Sagartiogeton laceratus</i>	1, 2, 3, 5, 7, 8, 13, 14, 17, 23, 24, 25	<i>Polynoe scolopendrina</i>	5, 19
<i>Sagartiogeton undatus</i>	1, 2, 3, 5, 14, 23	<i>Pholoe inornata</i>	2, 13, 23
<i>Hormathia coronata</i>	1, 3, 8, 15, 17, 19	<i>Sigalion mathildae</i>	6
<i>Adamsia carciniopados</i>	1, 2, 3, 5, 7, 8, 12, 13, 14, 15, 17, 18, 23, 25	Phyllodocidae indet.	5
<i>Peachia cylindrica</i>	1, 2, 3, 5, 8, 13, 17, 19, 23, 24, 25	<i>Eteone longa</i>	2, 4
<i>Halcampa chrysanthellum</i>	17	<i>Anaitides mucosa</i>	25
<i>Edwardsiella carnea</i>	14	<i>Eulalia</i> sp.	5, 6, 23
<i>Edwardsia</i> sp.	8	<i>Eulalia viridis</i>	23, 24
<i>Edwardsia claparedii</i>	3, 13, 17, 25	<i>Eumida sanguinea</i>	13
<i>Corynactis viridis</i>	3, 5, 7, 8, 11, 13, 14, 15, 17, 18, 19, 23, 24, 25	<i>Phyllodoce</i> sp.	17, 23
<i>Caryophyllia smithii</i>	1, 2, 3, 5, 7, 8, 11, 12, 13, 14, 15, 17, 18, 19, 21, 23, 24, 25	<i>Glycera</i> sp.	5
<i>Ctenophora</i> indet.	5	<i>Glycera alba</i>	23
<i>Pleurobrachia pileus</i>	5	<i>Glycera lapidum</i>	13, 23
<i>Bolinopsis infundibulum</i>	5	<i>Glycera tridactyla</i>	23
PLATYHELMINTHES		<i>Goniada maculata</i>	2, 23
<i>Platyhelminthes</i> indet.	5, 14	<i>Ophiodromus flexuosus</i>	8, 12, 13, 17, 18, 19, 23, 25
<i>Prostheceraeus vittatus</i>	22	Nereididae indet.	5, 14, 20
NEMERTEA		<i>Hediste diversicolor</i>	4, 24
<i>Nemertea</i> indet.	2, 13, 18, 25	<i>Nereis pelagica</i>	5, 6, 24
<i>Tubulanus</i> sp.	8	<i>Perinereis</i> sp.	5
<i>Tubulanus annulatus</i>	2, 3, 5, 8, 14, 15, 24	<i>Platynereis dumerilii</i>	13, 23, 24
<i>Tubulanus superbus</i>	1, 17, 19	<i>Nephtys</i> sp.	5, 13
<i>Lineus</i> sp.	5	<i>Nephtys cirrosa</i>	4, 6, 20
<i>Lineus bilineatus</i>	5	<i>Nephtys hombergii</i>	2, 5, 6, 20, 23
<i>Lineus longissimus</i>	3, 6, 7, 8, 11, 12, 13, 14, 15, 17, 23, 25	<i>Nephtys hystricis</i>	2
<i>Lineus ruber</i>	18	<i>Nephtys longosetosa</i>	20
<i>Punnettia splendida</i>	2	<i>Euphrosine foliosa</i>	5
NEMATODA		<i>Hyalinoecia tubicola</i>	7
<i>Nematoda</i> indet.	2, 24	<i>Lumbrineris gracilis</i>	18, 23
ENTOPROCTA		<i>Lumbrineris latreilli</i>	13
<i>Pedicellina cernua</i>	13, 14	Dorvilleidae indet.	5
SIPUNCULA		<i>Scoloplos armiger</i>	5, 23
<i>Sipuncula</i> indet.	5	<i>Levinsenia gracilis</i>	2
<i>Golfingia vulgaris vulgaris</i>	5	Spionidae indet.	20, 23
<i>Thysanocardia procerca</i>	2	<i>Minuspio cirrifera</i>	13
<i>Phascolion strombus strombus</i>	8, 13, 23	<i>Pygospio</i> sp.	24
<i>Maxmuelleria lankesteri</i>	2, 3	<i>Scoletepis squamata</i>	4
ANNELIDA		<i>Spiophanes</i> sp.	23
<i>Polychaeta</i> indet.	1, 5, 7, 8, 14, 23	<i>Magelona alleni</i>	23
<i>Aphroditoidea</i> indet.	5, 14	<i>Magelona minuta</i>	2
<i>Aphroditidae</i> indet.	1, 5	<i>Chaetopterus variopedatus</i>	1, 2, 3, 5, 7, 8, 11, 12, 13, 14, 15, 17, 18, 19, 23, 24, 25
<i>Aphrodita aculeata</i>	1, 2, 3, 8, 15	<i>Chaetozone setosa</i>	2, 13
<i>Polynoidae</i> indet.	5, 14, 17, 18, 25	<i>Diplocirrus glaucus</i>	2, 18
<i>Alentia gelatinosa</i>	7, 8, 23	<i>Pherusa plumosa</i>	5
<i>Harmothoe</i> indet.	1, 2, 5, 6, 7, 8, 13, 14, 15, 17, 18	<i>Macrochaeta clavicornis</i>	19
<i>Harmothoe extenuata</i>	1, 17	<i>Capitellidae</i> indet.	4, 23
<i>Harmothoe fragilis</i>	1	<i>Capitella</i> sp.	5
<i>Harmothoe imbricata</i>	5	<i>Mediomastus fragilis</i>	13
<i>Harmothoe impar</i>	5	<i>Notomastus</i> sp.	5, 20
<i>Lepidonotus</i> sp.	5	<i>Notomastus latericeus</i>	13
<i>Lepidonotus clava</i>	5	<i>Arenicola</i> sp.	5, 22
<i>Lepidonotus squamatus</i>	1, 5, 24	<i>Arenicola marina</i>	1, 4, 5, 6, 8, 11, 12, 13, 14, 15, 17, 18, 19, 20, 21, 23, 24, 25
		<i>Euclymene</i> sp.	13
		<i>Nicomache</i> sp.	5
		<i>Ophelia</i> sp.	5
		<i>Ophelia rathkei</i>	4

<i>Travisia forbesii</i>	5, 20	<i>Spirorbis tridentatus</i>	5, 6, 20, 24
<i>Ophelina acuminata</i>	23	<i>Oligochaeta</i> indet.	2
<i>Scalibregma inflatum</i>	23	CHELICERATA	
<i>Owenia fusiformis</i>	1, 2, 20, 23	<i>Chelicerata</i> indet.	15
<i>Amphictene auricoma</i>	23	<i>Pycnogonida</i> indet.	12, 13, 18
<i>Lagis koreni</i>	5, 13	<i>Nymphon</i> sp.	5
<i>Pectinaria belgica</i>	2	<i>Nymphon brevirostre</i>	5
<i>Sabellaria alveolata</i>	20	<i>Achelia</i> sp.	5
<i>Melinna palmata</i>	18, 23	<i>Achelia echinata</i>	5
<i>Amphicteis</i> sp.	5	<i>Endeis</i> sp.	5
<i>Terebellides stroemi</i>	23	<i>Endeis charybdaea</i>	13
<i>Trichobranchus roseus</i>	2	<i>Endeis spinosa</i>	5, 18
<i>Terebellidae</i> indet.	1, 2, 3, 5, 6, 7, 8, 11, 12, 13, 14, 15, 17, 18, 19, 23, 24, 25	<i>Pycnogonidae</i> indet.	24
<i>Amphitrite</i> sp.	21	<i>Halacaridae</i> indet.	8, 17
<i>Eupolyornia nebulosa</i>	1, 3, 5, 6, 7, 8, 13, 14, 15, 19	<i>Thalassarachna basteri</i>	5
<i>Eupolyornia nesidensis</i>	8	CRUSTACEA	
<i>Lanice</i> sp.	22	<i>Cirrepedia</i> indet.	2, 3, 12, 13, 14, 22
<i>Lanice conchilega</i>	1, 2, 3, 5, 6, 7, 8, 11, 12, 13, 14, 15, 17, 18, 19, 22, 23, 24, 25	<i>Scalpellum scalpellum</i>	8, 14, 23
<i>Neoamphitrite</i> sp.	23	<i>Lepas anatifera</i>	4
<i>Pista cristata</i>	23	<i>Verruca stroemia</i>	5, 6, 8, 13, 14, 17, 18, 20, 24
<i>Streblosoma intestinalis</i>	1	<i>Chthamalus</i> sp.	18, 23
<i>Sabellidae</i> indet.	2, 11, 12, 14, 15, 17, 18, 19, 23, 25	<i>Chthamalus montagui</i>	1, 5, 8, 14, 15, 17, 20
<i>Branchiomma bombyx</i>	1, 2, 13	<i>Chthamalus stellatus</i>	1, 6, 8
<i>Chone</i> sp.	1, 15, 17	<i>Balanus</i> sp.	5, 18, 23, 24
<i>Chone duneri</i>	13	<i>Semibalanus balanoides</i>	1, 3, 5, 6, 8, 13, 14, 15, 17, 18, 20, 21, 22, 23, 24, 25
<i>Chone infundibuliformis</i>	13, 14	<i>Balanus balanus</i>	1, 2, 3, 5, 7, 8, 12, 13, 14, 15, 17, 18, 19, 20, 21, 23, 24, 25
<i>Demonax</i> sp.	7	<i>Balanus crenatus</i>	1, 2, 3, 5, 6, 7, 8, 11, 12, 13, 14, 15, 17, 18, 22, 24, 25
<i>Myxicola infundibulum</i>	2, 3, 5, 8, 11, 12, 13, 14, 15, 17, 18, 23, 25	<i>Balanus improvisus</i>	5
<i>Pseudopotamilla reniformis</i>	5	<i>Elminius modestus</i>	8
<i>Sabella</i> sp.	17, 18, 24	<i>Ostracoda</i> indet.	13
<i>Sabella pavonina</i>	1, 3, 5, 7, 8, 11, 13, 14, 15, 17, 18, 19, 20, 23, 24, 25	<i>Loxoconcha impressa</i>	5
<i>Serpulidae</i> indet.	3, 23	<i>Mysidae</i> indet.	1, 2, 8, 12, 14, 15, 17, 18, 19, 21, 23, 25
<i>Hydroides norvegica</i>	1, 2, 5, 8	<i>Praunus flexuosus</i>	17
<i>Pomatoceros</i> sp.	1	<i>Amphipoda</i> indet.	1, 5, 6, 7, 8, 12, 13, 14, 17, 18, 20, 23, 25
<i>Pomatoceros lamarcki</i>	18	<i>Apherusa bispinosa</i>	13
<i>Pomatoceros triqueter</i>	1, 2, 3, 5, 6, 7, 8, 11, 12, 13, 14, 15, 17, 18, 19, 20, 21, 22, 23, 24, 25	<i>Apherusa jurinei</i>	5
<i>Serpula vermicularis</i>	1, 2, 5, 7, 8, 12, 13, 14, 15, 23, 24, 25	<i>Gitana sarsi</i>	13
<i>Filigrana implexa</i>	2, 3, 5, 7, 8, 12, 13, 14, 15, 17, 19, 23, 24	<i>Leucothoe spinicarpa</i>	23
<i>Protula tubularia</i>	1, 2, 3, 8, 11, 12, 13, 14, 18, 19, 23	<i>Hyale prevostii</i>	3, 14, 17
<i>Salmacina dysteri</i>	18	<i>Talitridae</i> indet.	17, 25
<i>Spirorbidae</i> indet.	1, 3, 8, 13, 14, 15, 17, 18, 23, 25	<i>Orchestia</i> sp.	20
<i>Circeis spirillum</i>	5	<i>Talitrus saltator</i>	4
<i>Janua pagenstecheri</i>	5, 12, 14	<i>Parametaphoxus fultoni</i>	13
<i>Spirorbis</i> sp.	1, 2, 5, 7, 8, 12, 13, 14, 17, 18, 23, 24, 25	<i>Lysianassa ceratina</i>	5, 13
<i>Spirorbis corallinae</i>	5, 6, 15, 18	<i>Perrierella audouiniana</i>	8
<i>Spirorbis rupestris</i>	5, 6, 13, 14, 18, 20, 24, 25	<i>Iphimedia obesa</i>	17, 23
<i>Spirorbis spirorbis</i>	5, 6, 8, 14, 15, 17, 18, 20, 21, 24, 25	<i>Dexamine spinosa</i>	5, 13
		<i>Ampelisca</i> sp.	20
		<i>Ampelisca brevicornis</i>	20
		<i>Bathyporeia guilliamsoniana</i>	20
		<i>Gammaridae</i> indet.	1, 3, 5, 8, 13, 14, 17, 18, 25
		<i>Echinogammarus obtusatus</i>	14
		<i>Gammarus locusta</i>	5
		<i>Ampithoe rubricata</i>	5

<i>Erichthonius punctatus</i>	19, 25	<i>Galathea strigosa</i>	1, 5, 7, 8, 11, 12, 13, 14, 15, 17, 19, 23, 24
<i>Jassa falcata</i>	5	<i>Munida rugosa</i>	1, 3, 7, 8, 11, 12, 13, 14, 15, 17, 18, 19, 21, 23, 24, 25
<i>Parajassa pelagica</i>	5	<i>Pisidia longicornis</i>	1, 2, 5, 6, 14, 18, 23, 24, 25
<i>Corophium acherusicum</i>	13	<i>Porcellana platycheles</i>	1, 5, 14, 18
<i>Corophium volutator</i>	4	<i>Ebalia</i> sp.	1, 24
<i>Dyopedos porrectus</i>	18	<i>Ebalia tuberosa</i>	12, 14
Caprellidae indet.	2, 3, 5, 7, 8, 11, 12, 13, 14, 17, 18, 19, 24, 25	<i>Hyas</i> sp.	14, 18, 22, 23, 24
<i>Caprella linearis</i>	5	<i>Hyas araneus</i>	1, 3, 5, 7, 8, 11, 12, 13, 14, 15, 17, 18, 19, 21, 22, 23, 24, 25
<i>Pariambus typicus</i>	19	<i>Hyas coarctatus</i>	5, 14, 17, 18, 19, 23, 25
<i>Phtisica marina</i>	19	<i>Inachus</i> sp.	5, 8, 13, 24
<i>Eurydice pulchra</i>	4, 6	<i>Inachus dorsettensis</i>	1, 2, 3, 5, 8, 11, 12, 13, 14, 15, 18
<i>Dynamene bidentata</i>	5, 6	<i>Inachus leptochirus</i>	12, 14
<i>Sphaeroma rugicauda</i>	13	<i>Inachus phalangium</i>	1, 3, 5, 8, 13, 14, 17, 18, 19, 25
<i>Jaera albifrons</i>	5, 6	<i>Macropodia</i> sp.	5
<i>Janira maculosa</i>	5	<i>Macropodia rostrata</i>	1, 2, 3, 5, 7, 8, 11, 12, 13, 14, 15, 17, 18, 19, 23, 24, 25
<i>Janiropsis breviremis</i>	5	<i>Macropodia tenuirostris</i>	5
<i>Munna kroyeri</i>	5	<i>Eurynome aspera</i>	8, 12, 14
<i>Idotea</i> sp.	6, 8	<i>Eurynome spinosa</i>	5, 25
<i>Idotea baltica</i>	5, 13	<i>Atelecyclus rotundatus</i>	3, 8, 13, 14
<i>Idotea emarginata</i>	5	<i>Cancer</i> sp.	22
<i>Idotea granulosa</i>	5, 6, 14, 18	<i>Cancer pagurus</i>	1, 2, 3, 5, 6, 7, 8, 11, 12, 13, 14, 15, 17, 18, 19, 20, 21, 22, 23, 24, 25
<i>Idotea neglecta</i>	5, 23	<i>Liocarcinus</i> sp.	5
<i>Astacilla longicornis</i>	8, 12, 13	<i>Liocarcinus corrugatus</i>	5, 15, 17
Epicaridea indet.	25	<i>Liocarcinus depurator</i>	1, 2, 3, 5, 7, 8, 11, 12, 13, 14, 15, 17, 18, 19, 21, 22, 23, 24, 25
<i>Ligia oceanica</i>	5, 8, 13, 14, 17, 18	<i>Liocarcinus marmoreus</i>	5, 13, 14
<i>Tanaïs dulongii</i>	5	<i>Necora puber</i>	1, 2, 3, 5, 6, 7, 8, 11, 12, 13, 14, 15, 17, 18, 19, 21, 22, 23, 24, 25
Caridea indet.	18, 24, 25	<i>Liocarcinus pusillus</i>	5, 14, 15, 25
<i>Leander</i> sp.	5	<i>Carcinus maenas</i>	1, 2, 3, 4, 5, 6, 7, 8, 11, 12, 13, 14, 15, 17, 18, 19, 20, 21, 22, 23, 24, 25
<i>Palaemon serratus</i>	14, 15, 25	<i>Goneplax rhomboides</i>	2, 18
<i>Hippolyte inermis</i>	14	<i>Pilumnus hirtellus</i>	1
<i>Hippolyte varians</i>	17, 18, 19, 25	<i>Xantho pilipes</i>	1, 2
Pandalidae indet.	5	INSECTA	
<i>Pandalus</i> sp.	1	<i>Strigamia maritima</i>	17
<i>Pandalus montagui</i>	1, 2, 3, 11, 13, 17, 23	<i>Anurida maritima</i>	1, 3, 5, 8, 13, 14, 15, 17
<i>Crangon crangon</i>	4, 5, 6, 13, 17, 23, 24, 25	MOLLUSCA	
<i>Homarus gammarus</i>	5, 7, 8, 13, 15	Mollusca indet.	20
<i>Nephrops norvegicus</i>	8, 12, 13, 14, 15, 17, 24, 25	Polyplacophora indet.	1, 2, 3, 12, 13, 17, 18
<i>Calocaris macandreae</i>	1, 17, 25	<i>Leptochiton cancellatus</i>	14
<i>Callianassa subterranea</i>	12, 13	<i>Lepidochitona cinerea</i>	2, 5, 6, 8, 13, 14, 17, 20, 23, 25
<i>Palinurus elephas</i>	5, 7	<i>Tonicella</i> sp.	5, 13, 25
Paguridae indet.	5, 17, 23, 24, 25	<i>Tonicella marmorea</i>	1, 2, 3, 5, 8, 11, 12, 13, 14, 15, 17, 18, 19, 23, 25
<i>Anapagurus chiroacanthus</i>	1, 17	<i>Tonicella rubra</i>	1, 2, 3, 5, 12, 13, 14, 17, 20
<i>Anapagurus hyndmanni</i>	1, 5, 7, 8, 14, 17, 18, 19, 23, 25	<i>Callochiton septemvalvis</i>	5, 18, 23, 25
<i>Anapagurus laevis</i>	7, 8, 14	<i>Acanthochitona crinita</i>	5, 20
<i>Pagurus</i> sp.	5, 18, 23, 24, 25		
<i>Pagurus bernhardus</i>	1, 2, 3, 5, 6, 7, 8, 11, 12, 13, 14, 15, 17, 18, 19, 21, 22, 23, 24, 25		
<i>Pagurus cuanensis</i>	1, 7, 12, 14, 17, 18, 23		
<i>Pagurus prideaux</i>	1, 2, 3, 5, 7, 8, 11, 12, 13, 14, 15, 17, 18, 19, 21, 23, 25		
<i>Pagurus pubescens</i>	2, 3, 14, 17, 25		
<i>Galathea</i> sp.	1, 5		
<i>Galathea dispersa</i>	5, 23		
<i>Galathea intermedia</i>	1, 2, 8, 12, 14, 18, 23		
<i>Galathea nexa</i>	1, 3, 13, 15, 23		
<i>Galathea squamifera</i>	1, 2, 3, 5, 8, 13, 14, 15, 17, 18, 23, 24, 25		

<i>Acanthochitona fascicularis</i>	20	<i>Alvania beanii</i>	20
Gastropoda indet.	14	<i>Alvania punctura</i>	5, 8, 10, 20, 23
<i>Emarginula</i> sp.	12	<i>Alvania semistriata</i>	8, 20
<i>Emarginula fissura</i>	1, 7, 15, 17, 19	<i>Cingula cingillus</i>	5, 20
<i>Diodora graeca</i>	5	<i>Onoba aculeus</i>	5, 6, 20, 24
<i>Tectura</i> sp.	3, 5, 18, 25	<i>Onoba semicostata</i>	5, 6, 8, 10, 20, 23
<i>Tectura testudinalis</i>	2, 5, 7, 8, 10, 13, 14, 15, 20, 23	<i>Skeneopsis planorbis</i>	5, 6, 7, 8, 10, 14, 20, 23, 24
<i>Tectura virginea</i>	1, 2, 5, 6, 8, 13, 14, 15, 17, 18, 19, 20, 23, 25	<i>Omalogyra atomus</i>	5, 6, 8, 10, 20, 24
<i>Patella</i> sp.	5, 23, 24	<i>Rissoella diaphana</i>	5, 6, 8, 10, 20
<i>Patella ulyssiponensis</i>	5, 6, 24	<i>Rissoella globularis</i>	5, 8, 10, 20
<i>Patella vulgata</i>	1, 3, 5, 6, 8, 13, 14, 15, 17, 18, 20, 23, 24, 25	<i>Rissoella opalina</i>	5, 6, 8, 10, 20, 24
<i>Helcion pellucidum</i>	1, 2, 5, 6, 8, 12, 13, 14, 17, 18, 20, 23, 24, 25	<i>Caecum glabrum</i>	20
<i>Margarites helycinus</i>	5, 6, 7, 8, 10, 18, 20, 24	<i>Turritella communis</i>	1, 2, 3, 5, 8, 12, 13, 14, 15, 17, 18, 19, 23, 24, 25
<i>Jujubinus miliaris</i>	7, 8, 14, 17	<i>Bittium</i> sp.	14
<i>Jujubinus montagui</i>	1, 13, 14	<i>Bittium reticulatum</i>	5
<i>Gibbula magus</i>	1, 2, 3, 5, 8, 11, 12, 13, 14, 15, 17, 18, 19, 23, 24, 25	<i>Pyramidellidae</i>	2
<i>Gibbula tumida</i>	1, 2, 7, 8, 13, 14, 15, 17, 18, 23, 25	<i>Chrysallida indistincta</i>	8, 10
<i>Gibbula cineraria</i>	1, 2, 3, 5, 6, 7, 8, 10, 11, 12, 13, 14, 15, 17, 18, 19, 20, 21, 23, 24, 25	<i>Chrysallida interstincta</i>	8
<i>Gibbula umbilicalis</i>	1, 3, 5, 6, 8, 13, 14, 15, 18, 24	<i>Partulida pellucida</i>	5, 8
<i>Calliostoma zizyphinum</i>	1, 2, 3, 5, 6, 7, 8, 11, 12, 13, 14, 15, 17, 18, 19, 20, 21, 23, 24, 25	<i>Odostomia plicata</i>	5, 8
<i>Skenea ossiansarsii</i>	5	<i>Odostomia turrita</i>	5, 7, 8, 10, 20, 23, 24
<i>Tricolia pullus</i>	6, 14	<i>Odostomia unidentata</i>	8, 10, 20
<i>Lacuna</i> sp.	8, 14	<i>Brachystomia scalaris</i>	5, 6, 8, 10, 20
<i>Lacuna pallidula</i>	5, 6, 7, 8, 10, 20, 23, 24	<i>Turbonilla rufescens</i>	20
<i>Lacuna parva</i>	5, 6, 23, 24	<i>Melanella alba</i>	8, 14
<i>Lacuna (Epheria) sp.</i>	21	<i>Aporrhais pespelecani</i>	1, 7, 8, 12, 13, 14, 15, 19, 23, 25
<i>Lacuna vincta</i>	2, 3, 5, 6, 7, 8, 11, 12, 13, 14, 15, 18, 19, 20, 23, 24, 25	<i>Trivia</i> sp.	24
<i>Littorina littorea</i>	1, 3, 5, 6, 7, 8, 13, 14, 15, 18, 20, 23, 24	<i>Trivia arctica</i>	2, 3, 5, 6, 7, 8, 14, 15, 17, 20, 23, 24
<i>Melarhaphé neritoides</i>	1, 5, 6, 8, 14, 17	<i>Trivia monacha</i>	3, 5, 14, 17, 19, 20, 23, 24, 25
<i>Littorina mariae</i>	1, 5, 6, 7, 8, 10, 14, 15, 17, 18, 20, 23, 24, 25	<i>Erato voluta</i>	8
<i>Littorina obtusata</i>	1, 3, 5, 6, 8, 10, 13, 14, 18, 20, 21, 23, 24	<i>Lamellaria latens</i>	5
<i>Littorina neglecta</i>	5, 6, 7, 8, 20	<i>Lamellaria perspicua</i>	5, 20
<i>Littorina nigrolineata</i>	1, 5, 6, 8, 13, 14, 20	<i>Polinices</i> sp.	17, 23
<i>Littorina saxatilis</i>	1, 3, 5, 6, 8, 13, 14, 15, 17, 18, 20, 24, 25	<i>Euspira catena</i>	8
<i>Littorina saxatilis</i> var. <i>rudis</i>	5, 14, 18, 20, 23, 24	<i>Polinices montagui</i>	5
Rissoacea indet.	18	<i>Polinices pulchellus</i>	1, 5, 8, 17, 19, 23, 25
<i>Ventrosia ventrosa</i>	24	<i>Nucella lapillus</i>	1, 2, 3, 5, 6, 8, 13, 14, 15, 17, 18, 20, 23, 24, 25
<i>Hydrobia ulvae</i>	4, 5, 8, 13, 23	<i>Ocenebra erinacea</i>	1, 5, 17, 20, 25
Rissoidae indet.	8	<i>Buccinum undatum</i>	1, 2, 3, 5, 6, 7, 8, 10, 13, 14, 18, 20, 21, 23, 24, 25
<i>Rissoa</i> sp.	23, 24	<i>Neptunea antiqua</i>	1, 14
<i>Rissoa lilacina rufilabrum</i>	5, 7, 8, 10	<i>Colus gracilis</i>	14
<i>Rissoa interrupta</i>	5, 6, 7, 8, 10	<i>Hinia</i> sp.	23, 24
<i>Rissoa parva</i>	5, 6, 7, 8, 10, 14, 20, 23, 24	<i>Hinia incrassata</i>	1, 5, 6, 7, 8, 10, 14, 17, 20, 23, 25
<i>Pusillina inconspicua</i>	5, 7, 20	<i>Hinia reticulata</i>	1, 2, 3, 5, 12, 13, 14, 17, 18, 19, 23, 25
<i>Pusillina sarsi</i>	5, 7, 8, 10, 20, 23	<i>Mangelia brachystoma</i>	5
		<i>Mangelia coarctata</i>	5, 23
		<i>Mangelia nebula</i>	19
		<i>Raphitoma boothii</i>	8
		<i>Raphitoma linearis</i>	8
		<i>Opisthobranchia</i> indet.	14
		<i>Scaphander lignarius</i>	17, 19, 23, 25
		<i>Philine</i> sp.	5, 8, 23

<i>Philine aperta</i>	1, 2, 3, 5, 8, 13, 14, 19, 23, 24, 25	<i>Flabellina pedata</i>	5, 14, 17, 18, 19, 23, 24, 25
<i>Philine punctata</i>	8	<i>Flabellina pellucida</i>	5
<i>Philine scabra</i>	5	<i>Cuthona caerulea</i>	5
<i>Colpodaspis pusilla</i>	5	<i>Cuthona concinna</i>	5
<i>Retusa obtusa</i>	20	<i>Cuthona foliata</i>	8
<i>Retusa truncatula</i>	8, 20	<i>Cuthona nana</i>	13
<i>Retusa umbilicata</i>	5	<i>Cuthona rubescens</i>	13
<i>Runcina coronata</i>	8, 25	<i>Tergipes tergipes</i>	1
<i>Elysia viridis</i>	5, 15, 18, 19, 23, 24, 25	<i>Eubranchus</i> sp.	7
<i>Hermaea bifida</i>	18	<i>Eubranchus farrani</i>	5, 24
<i>Limapontia capitata</i>	5, 8	<i>Eubranchus pallidus</i>	11, 13
<i>Limapontia senestra</i>	5, 6, 20	<i>Eubranchus tricolor</i>	5, 11, 13, 19
<i>Akera bullata</i>	8	<i>Eubranchus vittatus</i>	2, 8, 13
<i>Aplysia punctata</i>	5, 8, 12, 13, 14, 15, 17, 19, 21, 23, 24, 25	<i>Facelina</i> sp.	24
<i>Pleurobranchus membranaceus</i>	13, 23	<i>Facelina bostoniensis</i>	2, 3, 5, 7, 8, 13, 14, 15, 19, 23, 24, 25
<i>Berthella plumula</i>	23	<i>Facelina auriculata</i>	24
<i>Tritonia hombergii</i>	1, 5, 18, 23	<i>Favorinus branchialis</i>	23
<i>Tritonia lineata</i>	12	<i>Aeolidia</i> sp.	5
<i>Lomanotus genei</i>	13	<i>Aeolidia papillosa</i>	5, 8, 12, 20, 24
<i>Dendronotus frondosus</i>	8, 14, 15, 18, 24	<i>Aeolidiella glauca</i>	5, 13, 14, 19
<i>Doto</i> sp.	1, 13, 17, 24	<i>Ovatella myosotis</i>	5
<i>Doto coronata</i>	5, 24	Scaphopoda indet.	24
<i>Doto cuspidata</i>	14	<i>Antalis entalis</i>	8
<i>Doto dunnei</i>	13	<i>Nucula nucleus</i>	5
<i>Doto eireana</i>	5	<i>Mytilus edulis</i>	1, 3, 5, 6, 8, 10, 13, 14, 15, 17, 18, 20, 23, 24
<i>Doto fragilis</i>	1, 8, 14	<i>Crenella decussata</i>	20
<i>Doto pinnatifida</i>	14	<i>Musculus</i> sp.	24
<i>Goniodoris nodosa</i>	5, 6, 7, 8, 20, 24	<i>Musculus costulatus</i>	5
<i>Ancula gibbosa</i>	5	<i>Musculus discors</i>	5, 6, 8, 10, 13, 20, 23, 24
<i>Acanthodoris pilosa</i>	1, 2, 5, 8, 11, 17, 18, 20, 23, 24	<i>Modiolarca tumida</i>	5, 8, 13, 18, 23
<i>Adalaria proxima</i>	5, 8, 14, 23	<i>Modiolus modiolus</i>	1, 5, 6, 8, 13, 14, 15, 20, 23
<i>Onchidoris bilamellata</i>	5, 8, 14, 15, 20, 24	<i>Arca tetragona</i>	14, 15, 17, 19, 20
<i>Onchidoris depressa</i>	5	<i>Limaria loscombi</i>	14
<i>Onchidoris muricata</i>	3, 5, 6, 7, 8, 13, 23, 24	<i>Limatula subauriculata</i>	20
<i>Diaphorodoris luteocincta</i>	5, 13, 14, 17, 18, 19	<i>Crassostrea</i> sp.	17
<i>Aegires punctilucens</i>	19, 24	<i>Ostrea edulis</i>	1, 8, 21
<i>Limacia clavigera</i>	3, 5, 12, 13, 14, 17, 19, 23, 24	Pectinidae indet.	5, 14
<i>Polycera</i> sp.	14, 24, 25	<i>Palliolum tigerinum</i>	13, 19, 23
<i>Polycera faeroensis</i>	2, 5, 11, 14, 17, 18, 19, 23, 24, 25	<i>Chlamys</i> sp.	5, 24, 25
<i>Polycera quadrilineata</i>	2, 5, 11, 13, 18, 24	<i>Chlamys distorta</i>	1, 2, 3, 5, 7, 8, 13, 14, 17, 20
<i>Palio nothus</i>	17	<i>Chlamys varia</i>	1, 3, 5, 7, 13, 14, 15
<i>Cadlina laevis</i>	2, 3, 5, 6, 8, 13, 14, 15, 18, 20, 24	<i>Chlamys varia</i> var. <i>nivea</i>	1, 2, 3, 13
<i>Rostanga rubra</i>	17, 24	<i>Aequipecten opercularis</i>	1, 2, 3, 5, 7, 8, 12, 13, 14, 15, 17, 24, 25
<i>Archidoris pseudoargus</i>	5, 6, 8, 13, 15, 23, 24, 25	<i>Pecten maximus</i>	1, 2, 3, 5, 7, 8, 11, 12, 13, 14, 15, 17, 18, 19, 21, 23, 24, 25
<i>Jorunna tomentosa</i>	2, 3, 5, 8, 14, 24	Anomiidae indet.	1, 3, 5, 11, 12, 13, 14, 17, 18, 20, 24, 25
<i>Armina loveni</i>	19	<i>Anomia</i> sp.	18, 24
<i>Janolus cristatus</i>	2, 5, 11, 12, 14, 23	<i>Anomia ephippium</i>	2, 3, 5, 12, 13, 14, 18, 21
<i>Janolus hyalinus</i>	5	<i>Pododesmus patelliformis</i>	1, 2, 3, 5, 6, 7, 8, 12, 13, 14, 15, 17, 18, 19, 20, 23, 25
<i>Hero formosa</i>	8	<i>Heteranomia squamula</i>	5, 6, 8, 10, 14, 20, 23, 24
<i>Coryphella</i> sp.	20	<i>Lucinoma borealis</i>	5, 23
<i>Coryphella browni</i>	11, 18, 19, 24	<i>Thyasira</i> sp.	5
<i>Coryphella lineata</i>	1, 3, 5, 18, 19, 23, 24, 25	<i>Thyasira flexuosa</i>	5
<i>Coryphella verrucosa</i>	24	<i>Lasaea adansoni</i>	5, 6, 20
		<i>Kellia suborbicularis</i>	5, 6, 13, 20, 24

<i>Mysella bidentata</i>	2, 5, 8, 20	<i>Sepiola atlantica</i>	5, 8, 13, 25
<i>Tellimya ferruginosa</i>	6, 20	<i>Sepietta oweniana</i>	5
<i>Epilepton clarkiae</i>	8	<i>Rossia macrosoma</i>	5, 13, 17
<i>Acanthocardia echinata</i>	8, 13, 14	<i>Octopus vulgaris</i>	24
<i>Acanthocardia tuberculata</i>	13	<i>Eledone cirrhosa</i>	2, 5, 7, 8, 11, 13, 14
<i>Parvicardium exiguum</i>	5, 10	BRACHIOPODA	
<i>Parvicardium ovale</i>	5	<i>Neocrania anomala</i>	5, 7, 8, 12, 13, 14, 15, 17, 18, 19
<i>Parvicardium scabrum</i>	5	<i>Terebratulina retusa</i>	17
<i>Laevicardium crassum</i>	5	BRYOZOA	
<i>Cerastoderma edule</i>	4, 5, 13, 14, 20, 23	Bryozoa indet.	1, 5, 6, 8, 12, 13, 14, 15, 17, 18, 19, 24, 25
<i>Lutraria angustior</i>	5, 8, 24	Cyclostomatida indet.	13
<i>Lutraria lutraria</i>	20, 24	Crisiidae indet.	2, 5, 8, 11, 13, 14, 15, 24
<i>Ensis</i> sp.	1, 5, 8, 13, 14, 15, 17, 18, 23, 24, 25	<i>Crisidia cornuta</i>	14
<i>Ensis arcuatus</i>	5, 7, 8, 13, 17, 19, 24	<i>Crisia denticulata</i>	5, 8, 24
<i>Ensis ensis</i>	2, 23, 25	<i>Crisia eburnea</i>	2, 3, 5, 14, 19, 24, 25
<i>Ensis siliqua</i>	6, 20	<i>Tubulipora liliacea</i>	5, 23
<i>Angulus squalidus</i>	20	<i>Tubulipora phalangea</i>	5
<i>Angulus tenuis</i>	4, 5, 6, 20	<i>Plagioecia patina</i>	25
<i>Fabulina fabula</i>	20	<i>Lichenopora verrucaria</i>	23
<i>Moerella donacina</i>	23	<i>Disporella hispida</i>	5, 23
<i>Macoma balthica</i>	4, 5, 20, 23	<i>Alcyonidium</i> sp.	5, 6, 8, 14, 20, 24
<i>Donax vittatus</i>	4, 6	<i>Alcyonidium diaphanum</i>	1, 2, 3, 8, 11, 12, 14, 17, 18, 19, 23
<i>Gari fervensis</i>	20	<i>Alcyonidium gelatinosum</i>	5, 8, 13, 14, 15, 17, 18, 24, 25
<i>Scrobicularia plana</i>	4, 8	<i>Alcyonidium hirsutum</i>	3, 5, 6, 8, 13, 14, 17, 18, 23, 24, 25
<i>Abra</i> sp.	24	<i>Alcyonidium mytili</i>	3, 13, 23
<i>Abra alba</i>	5, 17	<i>Alcyonidium parasiticum</i>	8, 14
<i>Abra nitida</i>	2, 5	<i>Flustrellidra hispida</i>	5, 6, 8, 13, 14, 15, 17, 18, 23, 24
<i>Abra prismatica</i>	5	<i>Bowerbankia imbricata</i>	8, 13, 14
<i>Arctica islandica</i>	3, 5, 7, 8, 13, 21	<i>Bowerbankia pustulosa</i>	8
<i>Venus</i> sp.	24	<i>Cribrilina cryptoecium</i>	23
<i>Venus verrucosa</i>	18, 24	<i>Umbonula littoralis</i>	8, 11, 13, 14, 15, 17, 18, 21
<i>Circomphalus casina</i>	14, 17, 20, 24	<i>Escharoides coccinea</i>	5, 6, 12, 13, 14
<i>Dosinia</i> sp.	5, 25	<i>Cryptosula pallasiana</i>	8, 14
<i>Dosinia lupinus</i>	5	<i>Pentapora foliacea</i>	11, 24
<i>Dosinia exoleta</i>	5, 6, 8, 14, 18, 20, 23	<i>Parasmittina trispinosa</i>	1, 2, 3, 5, 7, 8, 11, 12, 13, 14, 15, 17, 18, 19, 23, 24, 25
<i>Tapes decussatus</i>	8, 24	<i>Porella compressa</i>	2, 3, 5, 7, 8, 11, 14, 17, 18, 19, 24, 25
<i>Tapes rhomboides</i>	18	<i>Escharella labiosa</i>	5
<i>Venerupis</i> sp.	23, 24	<i>Schizoporella unicornis</i>	18
<i>Venerupis senegalensis</i>	5, 6, 14, 23	<i>Schizomavella linearis</i>	1, 23
<i>Chamelea gallina</i>	5, 8, 18, 20, 24	<i>Microporella ciliata</i>	23
<i>Clausinella fasciata</i>	1, 8, 17, 18, 20, 23, 24	<i>Fenestulina malusii</i>	5
<i>Timoclea ovata</i>	5, 20	<i>Celleporella hyalina</i>	5
<i>Turtonia minuta</i>	5, 6, 8, 10, 20, 23, 24	<i>Cellepora pumicosa</i>	5, 11, 14, 18, 25
<i>Mya</i> sp.	24	<i>Celleporina hassallii</i>	5
<i>Mya truncata</i>	1, 2, 5, 8, 12, 13, 14, 15, 17, 18, 19, 20, 21, 23, 24, 25	<i>Omalosecosa ramulosa</i>	3, 5, 7, 8, 11, 12, 14, 17, 18, 23, 24, 25
<i>Mya arenaria</i>	5, 8, 17, 21	<i>Scruparia chelata</i>	5
<i>Corbula gibba</i>	5	<i>Eucratea loricata</i>	11, 14, 18
<i>Hiatella arctica</i>	1, 2, 5, 6, 8, 10, 13, 14, 18, 20, 23, 24	<i>Membranipora membranacea</i>	1, 2, 3, 5, 6, 8, 11, 12, 13, 14, 15, 17, 18, 19, 24, 25
<i>Saxicavella jeffreysi</i>	2	<i>Electra pilosa</i>	1, 2, 3, 5, 6, 8, 11, 12, 13, 14, 15, 20, 23, 24
<i>Thracia convexa</i>	5, 18		
<i>Thracia phaseolina</i>	20		
<i>Thracia villosiuscula</i>	5		
<i>Cochlodesma praetenuae</i>	5, 2		
Cephalopoda indet.	13, 17		
<i>Sepia</i> sp.	24		
<i>Sepia officinalis</i>	5		

<i>Flustra foliacea</i>	5, 14, 24	<i>Ophiopholis aculeata</i>	1, 2, 3, 5, 8, 11, 12, 13, 14, 15, 17, 18, 23, 24, 25
<i>Securiflustra securifrons</i>	5, 14, 17, 18, 23, 24, 25	<i>Amphiura</i> sp.	5, 8, 14, 17, 25
<i>Membraniporella nitida</i>	5	<i>Amphiura brachiata</i>	5, 14
<i>Cellaria</i> sp.	5, 7, 8, 12, 14, 17, 18, 23	<i>Amphiura chiajei</i>	1, 2, 3, 5, 8, 11, 13, 14, 15, 17, 18, 19, 24, 25
<i>Cellaria fistulosa</i>	13, 14	<i>Amphiura filiformis</i>	1, 2, 3, 8, 11, 12, 13, 14, 15, 17, 19, 23, 25
<i>Cellaria sinuosa</i>	11	<i>Amphiura securigera</i>	8
<i>Scrupocellaria</i> sp.	1, 2, 3, 5, 7, 8, 12, 13, 14, 15, 23, 24	<i>Amphiura chiajei/filiformis</i>	1, 8, 14, 23, 25
<i>Scrupocellaria reptans</i>	1, 2, 3, 5, 8, 12, 13, 14, 15, 17, 18, 19, 23, 24, 25	<i>Amphipholis squamata</i>	5, 6, 8, 13, 21, 25
<i>Scrupocellaria scruposa</i>	2, 3, 5, 8, 11, 13, 14, 24	<i>Ophiura</i> sp.	5, 17, 24, 25
<i>Bicellariella ciliata</i>	5, 11, 13, 14, 18	<i>Ophiura affinis</i>	2, 3, 7, 12, 13, 17, 18
<i>Bugula</i> sp.	24	<i>Ophiura albida</i>	1, 2, 3, 5, 7, 8, 11, 12, 13, 14, 15, 17, 18, 19, 23, 24, 25
<i>Bugula avicularia</i>	24	<i>Ophiura ophiura</i>	1, 2, 3, 5, 8, 11, 12, 13, 14, 15, 17, 18, 19, 23, 24, 25
<i>Bugula flabellata</i>	5, 12, 14, 24	<i>Psammechinus miliaris</i>	1, 2, 3, 5, 6, 7, 8, 12, 13, 14, 15, 17, 18, 23, 25
<i>Bugula plumosa</i>	8, 17	<i>Echinus esculentus</i>	1, 2, 3, 5, 7, 8, 11, 12, 13, 14, 15, 17, 18, 19, 23, 24, 25
<i>Bugula turbinata</i>	2, 17, 18	<i>Echinocyamus pusillus</i>	5
Bryozoa indet. crusts	2, 5, 14, 18, 23, 24, 25	<i>Echinocardium cordatum</i>	1, 5, 6, 20
PHORONIDA		<i>Echinocardium pennatifidum</i>	2, 3
<i>Phoronis</i> sp.	2	<i>Mesothuria intestinalis</i>	23
<i>Phoronis hippocrepia</i>	15	Cucumariidae indet.	5, 18, 23, 24
ECHINODERMATA		<i>Leptopentacta elongata</i>	8, 14, 17, 25
<i>Antedon</i> sp.	5	<i>Pawsonia saxicola</i>	1, 2, 3, 5, 8, 12, 13, 14, 15, 17, 18, 19, 23, 24, 25
<i>Antedon bifida</i>	1, 2, 3, 5, 7, 8, 11, 12, 13, 14, 15, 17, 18, 19, 23, 24, 25	<i>Aslia lefevrei</i>	1, 7, 14, 17, 19, 21
<i>Antedon petasus</i>	1, 2, 3, 8, 11, 12, 13, 14, 17, 19, 25	<i>Ocnus planci</i>	7, 8, 14
<i>Leptometra celtica</i>	8, 13	<i>Thyone</i> sp.	5
<i>Astropecten irregularis</i>	1, 2, 3, 5, 7, 8, 11, 13, 15, 17, 24	<i>Thyone fusus</i>	1, 8, 13, 14, 17
<i>Luidia ciliaris</i>	5, 7, 8, 11, 12, 13, 14, 17, 18, 19, 23, 24, 25	<i>Thyone roscovita</i>	1, 2, 7, 17, 24
<i>Luidia sarsi</i>	5, 8, 13, 14, 23	<i>Neopentadactyla mixta</i>	1, 2, 3, 5, 13, 17, 18, 19, 23, 24, 25
<i>Porania pulvillus</i>	7, 8, 11, 13, 14, 17, 18, 19, 21, 23, 24, 25	<i>Leptosynapta</i> sp.	2, 8, 14
<i>Asterina gibbosa</i>	8, 24	<i>Leptosynapta bergensis</i>	25
<i>Anseropoda placenta</i>	2, 3, 5, 8, 13, 24	<i>Leptosynapta inhaerens</i>	5, 20
<i>Solaster endeca</i>	1, 2, 3, 5, 7, 8, 11, 12, 13, 14, 17, 23	<i>Labidoplax</i> sp.	21
<i>Crossaster papposus</i>	1, 2, 3, 5, 7, 8, 11, 12, 13, 14, 15, 17, 18, 21, 23, 24, 25	<i>Labidoplax digitata</i>	2, 19, 21
<i>Henricia</i> sp.	1, 2, 3, 5, 6, 8, 11, 12, 13, 14, 15, 17, 18, 23, 24, 25	<i>Labidoplax media</i>	17, 19, 23, 24
<i>Henricia oculata</i>	2, 3, 7, 8, 11, 12, 13, 14, 15, 17, 18, 19, 23, 25	TUNICATA	
<i>Henricia sanguinolenta</i>	1, 21, 24	Ascidacea indet.	5, 14, 20
<i>Stichastrella rosea</i>	7	<i>Clavelina lepadiformis</i>	2, 3, 5, 7, 8, 11, 12, 13, 14, 15, 17, 18, 19, 21, 22, 23, 24, 25
<i>Asterias rubens</i>	1, 2, 3, 5, 6, 7, 8, 11, 12, 13, 14, 15, 17, 18, 19, 20, 21, 22, 23, 24, 25	Polyclinidae indet.	5, 18
<i>Leptasterias</i> sp.	23	<i>Polyclinum aurantium</i>	5, 8, 11, 14, 15, 17, 18, 25
<i>Leptasterias muelleri</i>	2, 3, 5, 7, 11, 12, 13, 14, 15, 17, 18, 19, 21, 23, 25	<i>Synoicum incrustatum</i>	17
<i>Marthasterias glacialis</i>	1, 2, 3, 5, 7, 8, 11, 12, 13, 14, 15, 17, 18, 19, 21, 23, 24, 25	<i>Synoicum pulmonaria</i>	17, 18, 23
Ophiuroidea indet.	20	<i>Morchellium argus</i>	5, 14, 18
<i>Ophiothrix fragilis</i>	1, 2, 3, 5, 6, 7, 8, 12, 13, 14, 15, 17, 18, 19, 23, 24, 25	<i>Sidnyum turbinatum</i>	5, 6, 8, 12, 14, 17, 18, 24
<i>Ophiocomina nigra</i>	1, 2, 3, 5, 7, 8, 12, 13, 14, 18, 20, 23, 24, 25	<i>Aplidium</i> sp.	5, 24, 25
<i>Ophiactis balli</i>	7, 12, 18, 25	<i>Aplidium nordmanni</i>	8, 14, 17, 18, 23
		<i>Aplidium pallidum</i>	5, 14
		<i>Aplidium punctum</i>	3, 8, 11, 14, 17, 18, 19, 23, 24, 25
		Didemnidae indet.	5, 8, 13, 14, 17, 18, 19, 24, 25
		<i>Didemnum maculosum</i>	8, 14, 24

<i>Diplosoma</i> sp.	22	<i>Pollachius virens</i>	2, 3, 5, 7, 12, 13, 14, 15, 23
<i>Diplosoma listerianum</i>	5, 12, 13, 14, 15, 17, 18, 22, 23, 24, 25	<i>Trisopterus</i> sp.	23
<i>Lissoclinum perforatum</i>	3, 13, 17, 18, 25	<i>Trisopterus luscus</i>	3, 5, 14, 19
<i>Ciona</i> sp.	22	<i>Trisopterus minutus</i>	1, 3, 5, 8, 13, 24
<i>Ciona intestinalis</i>	1, 2, 3, 5, 7, 8, 11, 12, 13, 14, 15, 17, 19, 22, 23, 24, 25	<i>Gasterosteus aculeatus</i>	5, 15, 17
<i>Diazona violacea</i>	5, 11, 12, 13, 14, 17, 19, 23, 24, 25	<i>Spinachia spinachia</i>	5, 8, 14, 18, 23, 25
<i>Corella parallelogramma</i>	1, 2, 3, 5, 7, 11, 12, 13, 14, 15, 17, 18, 19, 23, 24, 25	<i>Entelurus aequoreus</i>	2, 25
<i>Asciidiella</i> sp.	22, 24	<i>Nerophis lumbriciformis</i>	14
<i>Asciidiella aspersa</i>	1, 2, 3, 5, 6, 8, 12, 13, 14, 15, 17, 18, 19, 21, 22, 23, 24, 25	<i>Syngnathus</i> sp.	5, 18, 23, 25
<i>Asciidiella scabra</i>	1, 2, 3, 5, 8, 11, 12, 13, 14, 15, 17, 18, 19, 20, 21, 23, 24, 25	<i>Syngnathus acus</i>	1, 8, 13, 17, 21, 25
<i>Ascidia conchilega</i>	1, 2, 5, 8, 12, 14, 17, 18, 19, 23, 24, 25	<i>Scorpaena scrofa</i>	17, 22, 25
<i>Ascidia mentula</i>	1, 2, 3, 5, 6, 7, 8, 11, 12, 13, 14, 15, 17, 18, 19, 23, 24, 25	Triglidae indet.	5
<i>Ascidia virginea</i>	2, 3, 5, 7, 11, 12, 13, 14, 15, 17, 19, 23, 24	<i>Eutrigla gurnardus</i>	8
Styelidae indet.	5	<i>Trigla lucerna</i>	14, 15
<i>Styela coriacea</i>	17	<i>Myxocephalus</i> sp.	21
<i>Polycarpa</i> sp.	1, 5, 13, 17, 18, 19, 24	<i>Myxocephalus scorpius</i>	1, 2, 3, 5, 8, 13, 14, 15, 21, 23, 24, 25
<i>Polycarpa fibrosa</i>	14	<i>Taurulus bubalis</i>	1, 2, 5, 7, 8, 13, 14, 15, 17, 23
<i>Polycarpa pomaria</i>	1, 2, 3, 5, 7, 8, 11, 12, 13, 14, 15, 17, 19, 23, 25	<i>Agonus cataphractus</i>	1, 3, 5, 13, 14, 17, 18
<i>Polycarpa scuba</i>	2, 3, 13, 17, 23	<i>Cyclopterus lumpus</i>	23
<i>Dendrodoa grossularia</i>	1, 3, 5, 8, 12, 13, 14, 15, 17, 18, 19, 20, 21, 24, 25	<i>Chelon labrosus</i>	14
<i>Botryllus schlosseri</i>	1, 2, 3, 5, 6, 8, 11, 12, 13, 14, 15, 17, 18, 19, 21, 22, 23, 24, 25	<i>Centrolabrus exoletus</i>	1, 3, 5, 7
<i>Botrylloides leachi</i>	1, 3, 5, 6, 8, 11, 12, 13, 14, 15, 17, 18, 20, 21, 23, 24, 25	<i>Crenilabrus melops</i>	2, 5
<i>Boltenia echinata</i>	11	<i>Ctenolabrus rupestris</i>	1, 2, 3, 5, 7, 8, 11, 12, 13, 14, 17, 19, 21, 24, 25
<i>Pyura</i> sp.	14, 17, 24	<i>Labrus bergylta</i>	2, 3, 5, 7, 8, 14, 18, 24
<i>Pyura microcosmus</i>	1, 5, 14, 15, 18, 19, 23	<i>Labrus mixtus</i>	1, 2, 3, 5, 7, 8, 13, 14, 15, 17, 24
<i>Pyura squamulosa</i>	1, 2, 8, 14, 15, 17, 19	<i>Coryphoblennius galerita</i>	20
<i>Pyura tessellata</i>	13, 17, 18, 25	<i>Lipophrys pholis</i>	2, 5
<i>Molgula manhattensis</i>	8, 11, 14	<i>Parablennius gattorugine</i>	12
<i>Salpa</i> sp.	24	<i>Chirolophis ascanii</i>	7, 19
PISCES		<i>Lumpenus lumpretaeformis</i>	11, 12, 13
<i>Scyliorhinus canicula</i>	1, 5, 8	<i>Pholis gunnellus</i>	1, 2, 3, 5, 6, 8, 13, 14, 15, 17, 18, 19, 23, 24, 25
<i>Raja clavata</i>	8	<i>Ammodytes</i> sp.	5, 6, 8, 20
<i>Raja naevus</i>	5, 17	<i>Ammodytes tobianus</i>	5, 6
Osteichthyes indet.	8	<i>Callionymus</i> sp.	8, 14, 15
<i>Conger conger</i>	5, 21	<i>Callionymus lyra</i>	1, 2, 3, 5, 7, 8, 11, 12, 13, 14, 15, 17, 18, 23, 24, 25
<i>Diplecogaster bimaculata</i>	1, 5, 13, 14	<i>Callionymus reticulatus</i>	14, 23, 25
<i>Lepadogaster</i> sp.	13	Gobiidae indet.	2, 3, 13, 24, 25
<i>Lophius piscatorius</i>	7, 11, 21, 24	<i>Gobius</i> sp.	12, 13
Gadidae indet.	1, 5, 7, 8, 12, 13, 14, 15, 17, 25	<i>Gobius niger</i>	15, 25
<i>Gadus morhua</i>	2, 5, 8, 13, 14, 24	<i>Gobiusculus flavescens</i>	1, 2, 3, 5, 7, 8, 12, 13, 14, 15, 17, 21, 23, 24, 25
<i>Melanogrammus aeglefinus</i>	8	<i>Lesueurigobius friesii</i>	8, 12, 13
<i>Molva molva</i>	2, 3, 5, 8, 14	<i>Pomatoschistus</i> sp.	1, 2, 5, 8, 11, 14, 15, 17, 18, 19, 23, 24, 25
<i>Pollachius</i> sp.	14	<i>Pomatoschistus microps</i>	5
<i>Pollachius pollachius</i>	1, 2, 3, 5, 8, 11, 13, 14, 15, 17, 21, 24, 25	<i>Pomatoschistus minutus</i>	1, 2, 3, 5, 8, 12, 13, 14, 15, 17, 18, 19, 23, 24, 25
		<i>Pomatoschistus pictus</i>	1, 2, 3, 5, 7, 8, 11, 12, 13, 14, 15, 17, 18, 19, 23, 24, 25
		<i>Thorogobius ephippiatus</i>	1, 2, 3, 5, 8, 12, 13, 19
		<i>Scomber scombrus</i>	5
		Pleuronectiformes indet.	5, 22, 23, 24
		Scophthalmidae indet.	5
		<i>Phrynorhombus norvegicus</i>	2, 3, 12, 14, 15, 23, 24

<i>Phrynorhombus regius</i>	1	<i>Lithothamnion corallioides</i>	18, 25
<i>Psetta maxima</i>	21	<i>Lithothamnion glaciale</i>	1, 2, 3, 5, 6, 7, 8, 12, 13, 14, 15, 17, 18, 20, 24, 25
<i>Zeugopterus punctatus</i>	1, 2, 3, 12, 13, 14	<i>Phymatolithon calcareum</i>	1, 2, 17, 19, 24, 25
Pleuronectidae indet.	3, 5, 8, 13, 14, 15, 17, 24, 25	<i>Phymatolithon lenormandii</i>	5, 14, 24
<i>Platichthys flesus</i>	7, 13, 14	<i>Phymatolithon purpureum</i>	18, 25
<i>Pleuronectes</i> sp.	21	Maerl indet.	1, 5, 18, 22, 24, 25
<i>Pleuronectes platessa</i>	1, 2, 5, 7, 8, 11, 13, 14, 15, 17, 19, 23, 24, 25	<i>Gracilaria gracilis</i>	3, 5, 7, 8, 12, 13, 14, 15, 17, 18, 19, 25
MAMMALIA		<i>Schmitzia hiscockiana</i>	2, 3
<i>Lutra lutra</i>	8	<i>Ahnfeltia plicata</i>	2, 5, 6, 14, 15, 17, 19
CYANOPHYCOTA		<i>Phyllophora</i> sp.	5, 13, 23, 25
<i>Beggiatoa</i> sp.	3, 5, 7, 8, 14, 15, 17, 18, 19, 21, 22, 23, 25	<i>Phyllophora crispa</i>	1, 2, 3, 5, 6, 7, 8, 11, 12, 13, 14, 15, 17, 18, 19, 22, 23, 24, 25
RHODOPHYCOTA		<i>Phyllophora pseudoceranoides</i>	2, 3, 5, 8, 12, 13, 18
<i>Porphyropsis coccinea</i>	2, 3, 11, 12, 13, 14, 17, 18, 19, 23, 24, 25	<i>Erythrodermis traillii</i>	2, 17, 18, 19, 25
<i>Porphyra</i> sp.	1, 5, 8, 17, 18, 24, 25	<i>Coccotylus truncata</i>	1, 2, 3, 12, 13, 17, 23, 25
<i>Porphyra miniata</i>	12, 18, 25	<i>Schottera nicaeensis</i>	11, 15, 17, 18, 23
<i>Porphyra umbilicalis</i>	5, 6, 8, 11, 13, 14, 20, 24	<i>Mastocarpus stellatus</i>	3, 5, 6, 7, 8, 13, 14, 15, 17, 18, 20, 23, 24, 25
<i>Audouinella</i> sp.	1, 3, 7, 8, 13, 14, 17, 18, 19, 23, 25	<i>Mastocarpus stellatus (Petrocelis)</i>	21
<i>Rhodothamniella floridula</i>	5, 6, 12, 14, 15, 17, 18, 20, 24	<i>Chondrus crispus</i>	1, 2, 3, 5, 6, 8, 13, 14, 15, 17, 18, 20, 24, 25
<i>Audouinella purpurea</i>	6, 14	<i>Polyides rotundus</i>	2, 3, 5, 8, 11, 13, 14, 17, 18, 19, 23, 24, 25
<i>Scinaia trigona</i>	1, 2, 7, 8, 11, 12, 13, 14, 15, 24, 25	<i>Plocamium cartilagineum</i>	1, 2, 3, 5, 6, 8, 11, 12, 13, 14, 15, 17, 18, 19, 23, 24, 25
<i>Asparagopsis armata</i>	24	<i>Furcellaria</i> sp.	21
<i>Asparagopsis armata (Falkenbergia)</i>	3, 25	<i>Furcellaria lumbricalis</i>	3, 5, 6, 8, 14, 15, 18, 21, 22, 23, 24, 25
<i>Bonnemaisonia asparagoides</i>	1, 2, 3, 5, 7, 8, 11, 12, 13, 14, 15, 17, 18, 19, 23, 24, 25	<i>Halarachnion ligulatum</i>	1, 2, 3, 7, 8, 11, 12, 13, 14, 17, 18, 19, 24, 25
<i>Bonnemaisonia hamifera</i>	2, 5, 17, 18, 24, 25	<i>Catenella caespitosa</i>	1, 3, 8, 14, 18, 20, 25
<i>Trailliella (sporophyte of B. hamifera)</i>	1, 2, 3, 5, 6, 7, 8, 11, 12, 13, 14, 15, 17, 18, 19, 23, 24, 25	<i>Calliblepharis ciliata</i>	17, 18, 25
<i>Gelidium</i> sp.	6, 8	<i>Cystoclonium purpureum</i>	1, 2, 3, 5, 6, 7, 8, 13, 14, 15, 17, 18, 19, 21, 23, 24, 25
<i>Gelidium latifolium</i>	1, 8	<i>Rhodophyllis</i> sp.	2, 3, 5, 7, 11, 12, 13, 14, 15, 17, 24
<i>Gelidium pusillum</i>	5, 8, 13, 17, 18, 20, 25	<i>Rhodophyllis divaricata</i>	1, 2, 3, 5, 7, 8, 11, 12, 13, 14, 15, 17, 18, 19, 23, 24
<i>Palmaria palmata</i>	1, 2, 3, 5, 6, 7, 8, 11, 13, 14, 15, 17, 18, 19, 21, 23, 24, 25	<i>Rhodophyllis divaricata var. wernerii</i>	17
<i>Dilsea carnosa</i>	2, 3, 5, 6, 8, 11, 13, 14, 17, 18, 23, 24, 25	<i>Cruoria</i> sp.	5, 18
<i>Dudresnaya verticillata</i>	2, 24, 25	<i>Cruoria pellita</i>	2, 3, 13
<i>Dumontia contorta</i>	5, 6, 8, 14, 17, 18, 20, 24	<i>Haemescharia</i> sp.	3, 5, 6, 14, 17, 20, 24
<i>Dermocorynus montagnei</i>	2	<i>Cordylecladia erecta</i>	8, 12, 13, 17, 18
<i>Callophyllis</i> sp.	3	<i>Rhodymenia</i> sp.	5
<i>Callophyllis cristata</i>	17, 25	<i>Rhodymenia delicatula</i>	18
<i>Callophyllis laciniata</i>	1, 2, 3, 5, 8, 11, 12, 13, 14, 15, 17, 18, 19, 23, 24, 25	<i>Rhodymenia holmesii</i>	13
<i>Kallymenia reniformis</i>	7, 11, 12, 13, 14, 15, 17, 18, 19, 23, 24, 25	<i>Rhodymenia pseudopalmata</i>	5, 14, 24, 25
<i>Meredithia microphylla</i>	12, 22, 23, 24	<i>Rhodymenia ardissoni</i>	14
<i>Peyssonnelia</i> sp.	14, 25	<i>Chylocladia</i> sp.	22
<i>Peyssonnelia dubyi</i>	2, 3, 13	<i>Chylocladia verticillata</i>	3, 8, 14, 15, 17, 18, 19, 22, 23, 24, 25
<i>Hildenbrandia</i> sp.	1, 3, 5, 8, 13, 14, 17, 18, 20	<i>Lomentaria articulata</i>	5, 6, 8, 14, 15, 17, 18, 20, 23, 24, 25
Corallinaceae indet.	1, 2, 3, 5, 6, 7, 8, 11, 12, 13, 14, 15, 17, 18, 19, 23, 24, 25	<i>Lomentaria clavellosa</i>	1, 2, 5, 6, 7, 8, 12, 13, 14, 17, 18, 19, 23, 24, 25
<i>Corallina officinalis</i>	1, 2, 3, 5, 6, 8, 13, 14, 15, 17, 18, 24, 25		
<i>Lithophyllum</i> sp.	5		
<i>Lithophyllum incrustans</i>	5, 6, 14, 20, 24		
<i>Lithothamnion</i> sp.	5, 17, 18, 21, 23, 24, 25		

<i>Lomentaria orcadensis</i>	5, 12, 13, 14, 17, 18, 19, 23, 25	<i>Heterosiphonia plumosa</i>	1, 2, 3, 5, 7, 8, 11, 12, 13, 14, 15, 17, 18, 19, 23, 24, 25
Ceramiales indet.	23	<i>Brongniartella byssoides</i>	1, 2, 3, 5, 7, 8, 11, 12, 13, 14, 17, 18, 19, 23, 24, 25
<i>Aglaothamnion bipinnatum</i>	23, 25	<i>Osmundea hybrida</i>	5, 6, 8, 20, 24
<i>Aglaothamnion byssoides</i>	23, 25	<i>Laurencia obtusa</i>	6
<i>Callithamnion corymbosum</i>	15	<i>Osmundea pinnatifida</i>	1, 3, 5, 6, 8, 14, 15, 17, 18, 20, 24
<i>Aglaothamnion hookeri</i>	8, 13	<i>Odonthalia dentata</i>	2, 3, 5, 6, 7, 8, 11, 12, 13, 14, 17, 18, 19, 24, 25
<i>Callithamnion</i> sp.	2, 5, 6, 12, 13, 14, 17, 24, 25	<i>Polysiphonia</i> sp.	2, 3, 5, 8, 12, 13, 15, 17, 18, 19, 23, 24, 25
<i>Callithamnion</i> spp. (spongy)	8	<i>Polysiphonia brodiei</i>	5
<i>Callithamnion tetragonum</i>	2, 3, 8, 11, 25	<i>Polysiphonia elongata</i>	2, 3, 7, 8, 12, 13, 14, 15, 17, 18, 19, 23, 25
<i>Ceramium</i> sp.	1, 2, 5, 6, 8, 17, 18, 19, 23, 25	<i>Polysiphonia elongella</i>	23
<i>Ceramium deslongchampsii</i>	2, 3, 13	<i>Polysiphonia fibrata</i>	17, 23, 25
<i>Ceramium diaphanum</i>	6, 19, 25	<i>Boergesenella fruticulosa</i>	15
<i>Ceramium nodulosum</i>	2, 3, 5, 6, 8, 11, 12, 13, 14, 15, 17, 18, 20, 23, 24, 25	<i>Polysiphonia furcellata</i>	8, 12
<i>Ceramium shuttleworthianum</i>	5, 6, 8, 14, 17	<i>Polysiphonia lanosa</i>	1, 3, 5, 6, 8, 13, 14, 15, 17, 18, 20, 24, 25
<i>Ceramium strictum</i>	8, 13, 14, 23	<i>Polysiphonia nigra</i>	13, 17, 23, 24, 25
<i>Ceramium tenuissimum</i>	2	<i>Polysiphonia fucoides</i>	1, 2, 3, 8, 13, 15, 17, 19, 23, 24, 25
<i>Compsothamnion thuyoides</i>	1, 2, 3, 8, 11, 12, 13, 14, 15, 17, 19, 23, 25	<i>Polysiphonia stricta</i>	2, 5, 6, 7, 8, 11, 12, 13, 14, 17, 18, 19, 23, 24, 25
<i>Griffithsia</i> sp.	5	<i>Polysiphonia violacea</i>	13, 15, 17, 23, 25
<i>Griffithsia corallinoides</i>	1, 5, 14, 15, 17, 19, 25	<i>Pterosiphonia parasitica</i>	1, 2, 3, 5, 7, 8, 11, 12, 13, 14, 17, 18, 19, 24, 25
<i>Halurus flosculosus</i>	1, 3, 8, 13, 14, 15, 17, 18, 19, 23, 24, 25	<i>Rhodomela confervoides</i>	1, 2, 3, 8, 11, 12, 13, 14, 15, 17, 18, 19, 23, 24, 25
<i>Pleonosporium caribbaeum</i>	20	<i>Rhodomela lycopodioides</i>	2, 3, 5, 13
<i>Pleonosporium borrieri</i>	13, 14, 23	Filamentous red algae	14, 25
<i>Plumaria plumosa</i>	3, 5, 6, 8, 13, 14, 15, 17, 18, 20, 24, 25	Foliose red algae	5, 14
<i>Pterothamnion plumula</i>	1, 2, 3, 5, 8, 12, 13, 14, 17, 18, 19, 23, 24, 25	Rhodophycota indet. (non-calc. crusts)	1, 3, 8, 12, 13, 14, 15, 17, 18, 19, 23, 24, 25
<i>Ptilota gunneri</i>	1, 2, 3, 5, 7, 8, 11, 12, 13, 14, 17, 20, 21, 24, 25	CHRYSOPHYCOTA	
<i>Ptilothamnion pluma</i>	24	Diatoms – colonial	1, 2, 17, 23, 24, 25
<i>Seirospora seirosperma</i>	12, 23, 24, 25	Diatoms – film	1, 2, 3, 5, 8, 11, 13, 14, 15, 17, 18, 19, 21, 22, 23, 24, 25
<i>Spermothamnion repens</i>	2, 3	CHROMOPHYCOTA	
<i>Acrosorium reptans</i>	2, 3, 18, 24, 25	Ectocarpaceae indet.	5, 8, 13, 14, 17, 18, 19, 23, 24, 25
<i>Acrosorium venulosum</i>	1, 2, 3, 5, 12, 17, 19, 24, 25	<i>Hincksia</i> sp.	13
<i>Apoglossum ruscifolium</i>	1, 2, 3, 13, 24	<i>Pilayella</i> sp.	17
<i>Cryptopleura ramosa</i>	1, 2, 3, 5, 6, 7, 8, 11, 12, 13, 14, 15, 17, 18, 19, 23, 24, 25	<i>Pilayella littoralis</i>	5, 6, 14, 18, 20, 21, 24
<i>Delesseria sanguinea</i>	1, 2, 3, 5, 6, 7, 8, 11, 12, 13, 14, 15, 17, 18, 19, 21, 22, 23, 24, 25	<i>Spongonema tomentosum</i>	5, 6, 13, 14, 24
<i>Hypoglossum hypoglossoides</i>	1, 2, 3, 5, 11, 12, 14, 15, 17, 18, 19, 23, 24, 25	<i>Pseudolithoderma extensum</i>	1, 2, 3, 7, 8, 12, 13, 14, 17, 19
<i>Membranoptera alata</i>	1, 2, 3, 5, 6, 7, 8, 11, 12, 13, 14, 15, 17, 18, 19, 20, 23, 24, 25	<i>Ralfsia</i> sp.	13, 14
<i>Haraldiophyllum</i> sp.	5	<i>Elachista</i> sp.	1, 3, 8, 14, 15, 17, 18
<i>Haraldiophyllum bonnemaisonii</i>	2, 3, 13, 17, 24, 25	<i>Elachista fucicola</i>	3, 5, 6, 8, 13, 14, 18, 24
<i>Drachiella heterocarpa</i>	5	<i>Leathesia difformis</i>	3, 5, 6, 14, 15, 24
<i>Nitophyllum punctatum</i>	1, 2, 3, 5, 17, 18, 19, 23, 24, 25	<i>Spermatochnus paradoxus</i>	3, 14, 24
<i>Phycodrys</i> sp.	22	<i>Stilophora tenella</i>	8, 14, 15, 17
<i>Phycodrys rubens</i>	1, 2, 3, 5, 7, 8, 11, 12, 13, 14, 15, 17, 18, 19, 21, 23, 24, 25	<i>Acrothrix gracilis</i>	2, 3, 24
<i>Erythroglossum laciniatum</i>	12, 17, 23, 25	<i>Chordaria flagelliformis</i>	8, 13, 14
<i>Radicilingua thysanorhizans</i>	5	<i>Eudesme virescens</i>	14, 17
<i>Dasya hutchinsiae</i>	15	<i>Mesogloia vermiculata</i>	2, 3, 13, 14, 15, 23
		<i>Cutleria multifida</i>	1, 2, 3, 7, 12, 13, 17, 24

<i>Aglaozonia</i> (asexual Cutleria)	1, 2, 3, 7, 8, 11, 12, 13, 14, 15, 17, 18, 19, 23, 24	<i>Fucus cottonii</i>	8, 13
<i>Sphacelaria</i> sp.	1, 2, 3, 8, 14, 15, 24	<i>Fucus serratus</i>	1, 2, 3, 5, 6, 7, 8, 10, 13, 14, 15, 17, 18, 20, 21, 23, 24, 25
<i>Sphacelaria cirrosa</i>	6, 24	<i>Fucus spiralis</i>	1, 3, 5, 6, 8, 13, 14, 15, 17, 18, 21, 24, 25
<i>Sphacelaria plumosa</i>	2, 3, 13, 14, 24	<i>Fucus vesiculosus</i>	1, 3, 5, 6, 8, 13, 14, 15, 17, 18, 20, 21, 24, 25
<i>Halopteris filicina</i>	2, 17, 25	<i>Pelvetia canaliculata</i>	1, 3, 5, 6, 8, 13, 14, 15, 17, 18, 20, 21, 24, 25
<i>Stypocaulon scoparia</i>	8	<i>Himanthalia</i> sp.	20, 24
<i>Cladostephus spongiosus</i>	5, 6, 8, 14, 15, 18, 20, 24	<i>Himanthalia elongata</i>	5, 6, 8, 14, 15, 17, 20, 24
<i>Dictyopteris membranacea</i>	22	<i>Halidrys siliquosa</i>	1, 2, 3, 5, 6, 8, 13, 14, 15, 17, 18, 20, 24, 25
<i>Dictyota dichotoma</i>	1, 2, 3, 5, 6, 7, 8, 11, 12, 13, 14, 15, 17, 18, 19, 23, 24, 25	Filamentous brown algae	23
<i>Carpomitra costata</i>	11, 23	CHLOROPHYCOTA	
<i>Sporochnus pedunculatus</i>	1, 2, 3, 7, 8, 13, 14, 24	Chromophycota indet. (crusts)	1, 5, 7, 8, 14, 15, 17, 19, 23, 25
<i>Desmarestia</i> sp.	24	Chlorophycota indet.	14
<i>Desmarestia aculeata</i>	1, 2, 3, 5, 7, 8, 12, 13, 14, 17, 18, 19, 21, 23, 24, 25	<i>Enteromorpha</i> sp.	1, 3, 4, 5, 6, 8, 12, 13, 14, 15, 17, 18, 19, 20, 23, 24, 25
<i>Desmarestia ligulata</i>	5, 17	<i>Enteromorpha intestinalis</i>	14
<i>Desmarestia viridis</i>	1, 2, 3, 5, 7, 8, 11, 12, 13, 14, 17, 18, 19, 23, 24, 25	<i>Enteromorpha kyllinii</i>	8
<i>Arthrocladia villosa</i>	2, 13, 14, 25	<i>Ulva</i> sp.	3, 5, 6, 7, 8, 12, 13, 14, 15, 17, 18, 19, 23, 24, 25
<i>Stictyosiphon tortilis</i>	5, 12, 13	<i>Ulva lactuca</i>	5, 6, 14, 18, 20, 21, 23, 24
<i>Striaria attenuata</i>	15	<i>Ulva rigida</i>	24
<i>Asperococcus</i> sp.	8, 14, 15, 17, 18, 19, 21, 23, 25	<i>Blidingia minima</i>	6
<i>Asperococcus compressus</i>	14	<i>Spongomorpha aeruginosa</i>	24
<i>Asperococcus fistulosus</i>	2, 5, 6, 7, 8, 12, 14, 15, 20, 21, 24	<i>Spongomorpha arcta</i>	5, 6, 14, 17, 20, 24
<i>Asperococcus bullosus</i>	2, 3, 7, 8, 11, 12, 13, 14, 15, 19, 24, 25	<i>Spongomorpha centralis</i>	20
<i>Punctaria latifolia</i>	17	<i>Chaetomorpha</i> sp.	5, 6, 14, 22
<i>Punctaria tenuissima</i>	17, 19	<i>Chaetomorpha linum</i>	5, 24
<i>Dictyosiphon</i> sp.	8	<i>Chaetomorpha melagonium</i>	2, 5, 6, 14, 17, 18, 24
<i>Dictyosiphon chordaria</i>	24	<i>Cladophora</i>	1, 2, 3, 5, 8, 13, 14, 15, 17, 18, 20, 23, 24, 25
<i>Dictyosiphon foeniculaceus</i>	5	<i>Cladophora albida</i>	23, 24
<i>Colpomenia peregrina</i>	5, 6	<i>Cladophora hutchinsiae</i>	24
<i>Petalonia</i> sp.	23	<i>Cladophora pellucida</i>	17
<i>Petalonia fascia</i>	14, 23, 25	<i>Cladophora pygmaea</i>	13, 14
<i>Petalonia filiformis</i>	23	<i>Cladophora rupestris</i>	1, 3, 5, 6, 8, 13, 14, 15, 17, 18, 20, 21, 24, 25
<i>Scytosiphon lomentaria</i>	5, 6, 8, 17, 24	<i>Cladophora sericea</i>	6, 20, 24
<i>Chorda filum</i>	2, 3, 5, 6, 7, 8, 12, 13, 14, 15, 17, 18, 21, 22, 23, 24, 25	<i>Bryopsis hypnoides</i>	3, 8, 23
<i>Laminaria</i> sp.	1, 2, 5, 8, 13, 15, 17, 25	<i>Bryopsis plumosa</i>	3, 5, 8, 14, 15, 17, 18, 24
<i>Laminaria digitata</i>	3, 5, 6, 8, 9, 10, 12, 13, 14, 15, 17, 18, 20, 21, 23, 24, 25	<i>Derbesia marina</i>	13
<i>Laminaria hyperborea</i>	1, 2, 3, 5, 6, 7, 8, 9, 11, 12, 13, 14, 15, 17, 18, 19, 21, 23, 24, 25	<i>Derbesia marina (Halicystis)</i>	1, 2, 7, 13
<i>Laminaria saccharina</i>	1, 2, 3, 5, 6, 7, 8, 11, 12, 13, 14, 15, 17, 18, 19, 20, 21, 22, 23, 24, 25	<i>Codium</i> sp.	5, 13, 15
<i>Saccorhiza polyschides</i>	5, 7, 8, 11, 13, 14, 15, 17, 18, 19, 21, 23, 24, 25	<i>Codium fragile</i>	5
<i>Alaria esculenta</i>	3, 5, 6, 8, 14, 24	<i>Codium tomentosum</i>	5
Fucaceae indet.	23	Foliose green algae	17
<i>Ascophyllum</i> sp.	20	ANGIOSPERMAE	
<i>Ascophyllum nodosum</i>	1, 3, 5, 6, 8, 13, 14, 15, 17, 18, 20, 21, 23, 24, 25	<i>Zostera marina</i>	5, 25
<i>Ascophyllum nodosum ecad mackaii</i>	5, 8, 14	LICHENS	
<i>Fucus</i> sp.	14	Lichens indet.	5
<i>Fucus ceranoides</i>	5	<i>Anaptychia fusca</i>	17, 18, 25
		<i>Caloplaca</i> sp.	5
		<i>Caloplaca marina</i>	1, 3, 8, 14, 15, 17, 18, 25
		<i>Caloplaca thallincola</i>	3, 8, 13, 14, 17, 18, 25
		<i>Lecanora</i> sp.	5, 6, 14, 21, 24
		<i>Lecanora atra</i>	3, 5, 8, 13, 14, 17, 18, 25

<i>Lichina confinis</i>	1, 3, 5, 8, 14, 15	<i>Verrucaria mucosa</i>	1, 5, 8, 14, 17, 18, 20, 21, 24, 25
<i>Lichina pygmaea</i>	3, 5, 6, 8, 13	<i>Xanthoria parietina</i>	1, 3, 5, 6, 8, 13, 14, 17, 18, 21, 24, 25
<i>Ochrolechia parella</i>	17, 18, 24, 25	Grey lichens indet.	1, 3, 8, 13, 14, 15, 17, 18, 25
<i>Ramalina</i> sp.	1, 3, 8, 13, 14, 17, 18, 25		
<i>Ramalina siliquosa</i>	5, 14, 21, 24		
<i>Verrucaria</i> sp.	3, 6, 14		
<i>Verrucaria maura</i>	1, 3, 5, 6, 8, 13, 14, 15, 17, 18, 20, 21, 24, 25		

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