

Sealochs in west Scotland

Area summaries

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with additional text by
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Series editor: David Connor

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Loch a' Chumhainn

Location

<i>Position (centre)</i>	NM 410 534	56°36.5'N 6°14'W
<i>Administrative area</i>	Argyll and Bute	
<i>Conservation agency/area</i>	Scottish Natural Heritage	West Areas (Argyll and Stirling)

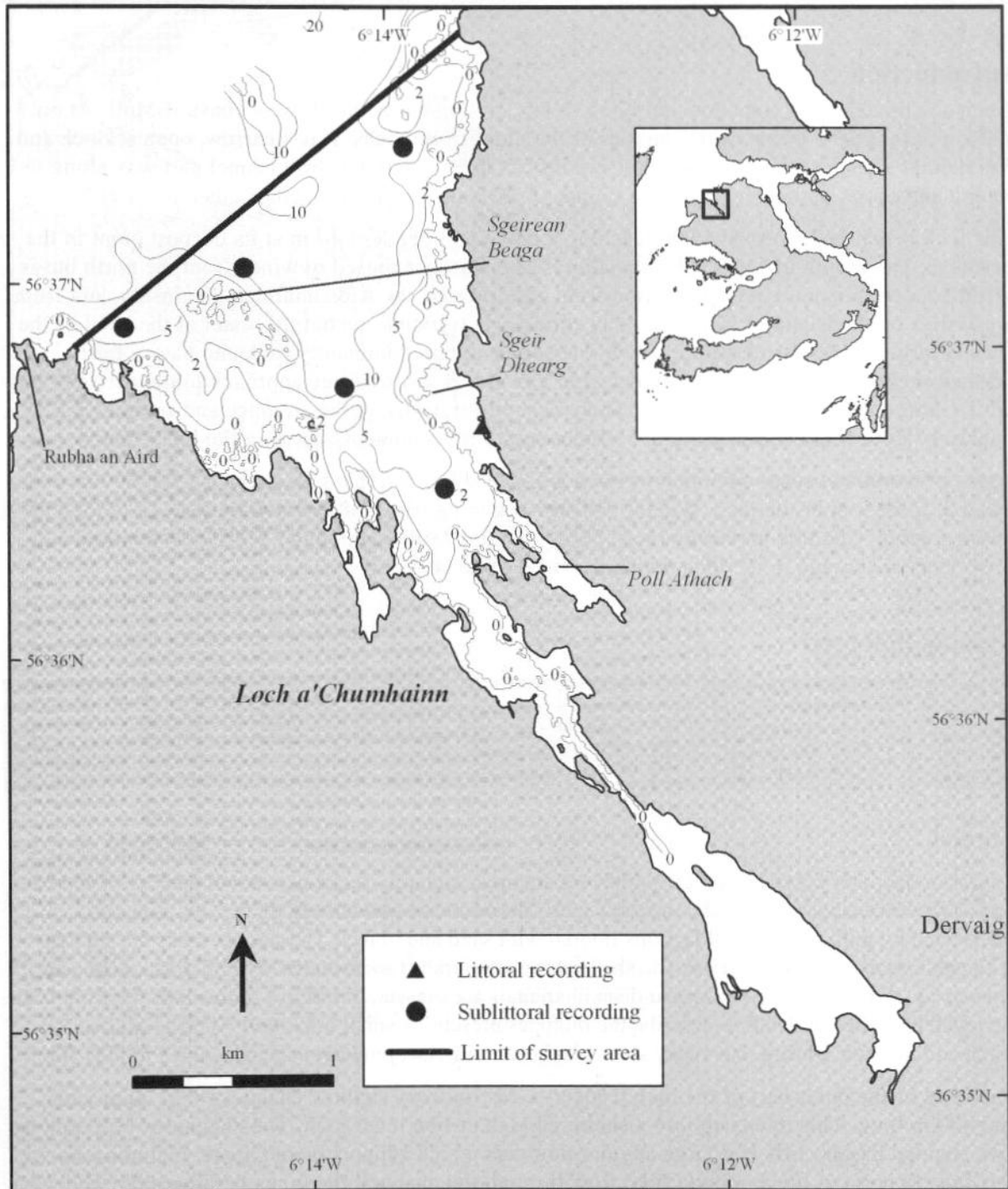


Figure 18.1 Main features of the area, showing sites surveyed.

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Physical features

<i>Physiographic type</i>	Open sealoch
<i>Length of coast</i>	22.19 km
<i>Length of inlet</i>	4.2 km
<i>Area of inlet</i>	3.9 km ² (HW); 2.9 km ² (LW)
<i>Bathymetry</i>	14 m (max)
<i>Wave exposure</i>	Moderately exposed to northerly winds at mouth; extremely sheltered at southern end
<i>Tidal streams</i>	1 knot at mouth of loch
<i>Tidal range</i>	Springs: 3.8 m; neaps: 1.4 m (Sound of Ulva)
<i>Salinity</i>	Outer basin fully marine; southern end influenced by freshwater inflow

Introduction

Loch a' Chumhainn is a shallow cut lying in low ground on the north-west coast of Mull. At only 4.2 km in length, it is one of the smaller of the Scottish sealochs. It is a narrow, open sealoch and has neither sills nor basins, although it is constricted by a very narrow channel part way along its length and opens up beyond this. The village of Dervaig lies at the head of this inner area.

The loch is generally very shallow reaching a maximum depth of 14 m at its deepest point in the entrance. The mouth of Loch a' Chumhainn is moderately exposed to winds from the north but is afforded a certain amount of protection from easterlies by the Ardnamurchan Peninsula, and from westerlies by the island of Coll. The loch entrance is fully marine but the water at the head of the loch is influenced by freshwater inflow. The shores are predominantly rock and have a fairly gradual inclination, and there are wider sand and gravel shores at the approach to the narrows, while shingle fringes the inner basin. There is sublittoral rock at the entrance and sediments here consist of sand, shell and maerl-gravel. Finer sublittoral sediments occur in the inner loch.

Areas of woodland surround much of Loch a' Chumhainn and there are meadows on the low-lying ground to the east of the loch. Whale- and seal-watching trips are operated by 'Sea Life Surveys' out of Loch a' Chumhainn during the summer months. Mull is a popular sailing destination and there is an anchorage in the loch which provides some shelter.

Marine biology**Marine biological surveys**

	<i>Survey methods</i>	<i>No. of sites</i>	<i>Date(s) of survey</i>	<i>Source</i>
<i>Littoral</i>	Recording (epibiota)	1	June 1983	Smith & Gault (1983)
<i>Sublittoral</i>	Recording (epibiota)	5	August 1989	Davies (1990)

Littoral

Shores in the outer part of Loch a' Chumhainn are predominantly rocky with small patches of sand and gravel. There is a beautiful, wide, irregular rocky platform at Sgeir Dhearg on the east side. This is intersected by gullies and small lagoons floored with sand and gravel. The steeper rocks are riddled with crevices and holes which provide shelter for edible crabs *Cancer pagurus* and lobsters *Homarus gammarus*. A wide variety of algae and small animals are present, but shores in this loch have not been surveyed in sufficient detail to describe the biotopes present. A small inlet, Poll Athach, lying at the south end of Sgeir Dhearg, has rocky sides blanketed with *Ascophyllum nodosum*, and a muddy floor.

The head of the outer part of the loch leads to a very narrow, shallow channel about 60 m wide and 400 m long. This opens up into a sheltered lagoon-like inner loch. The channel is bordered by low, stepped basalt cliffs and large angular boulders which support fucoid algae, including *Fucus serratus*. In spite of the moderate tidal flow through the channel, the fauna is rather poor and restricted to species, such as the mussel *Mytilus edulis*, that are tolerant to reduced salinity. Shores within the inner loch consist of mud and boulders, with a poor fauna resulting from the lowered salinity prevailing in this upper end of the loch.

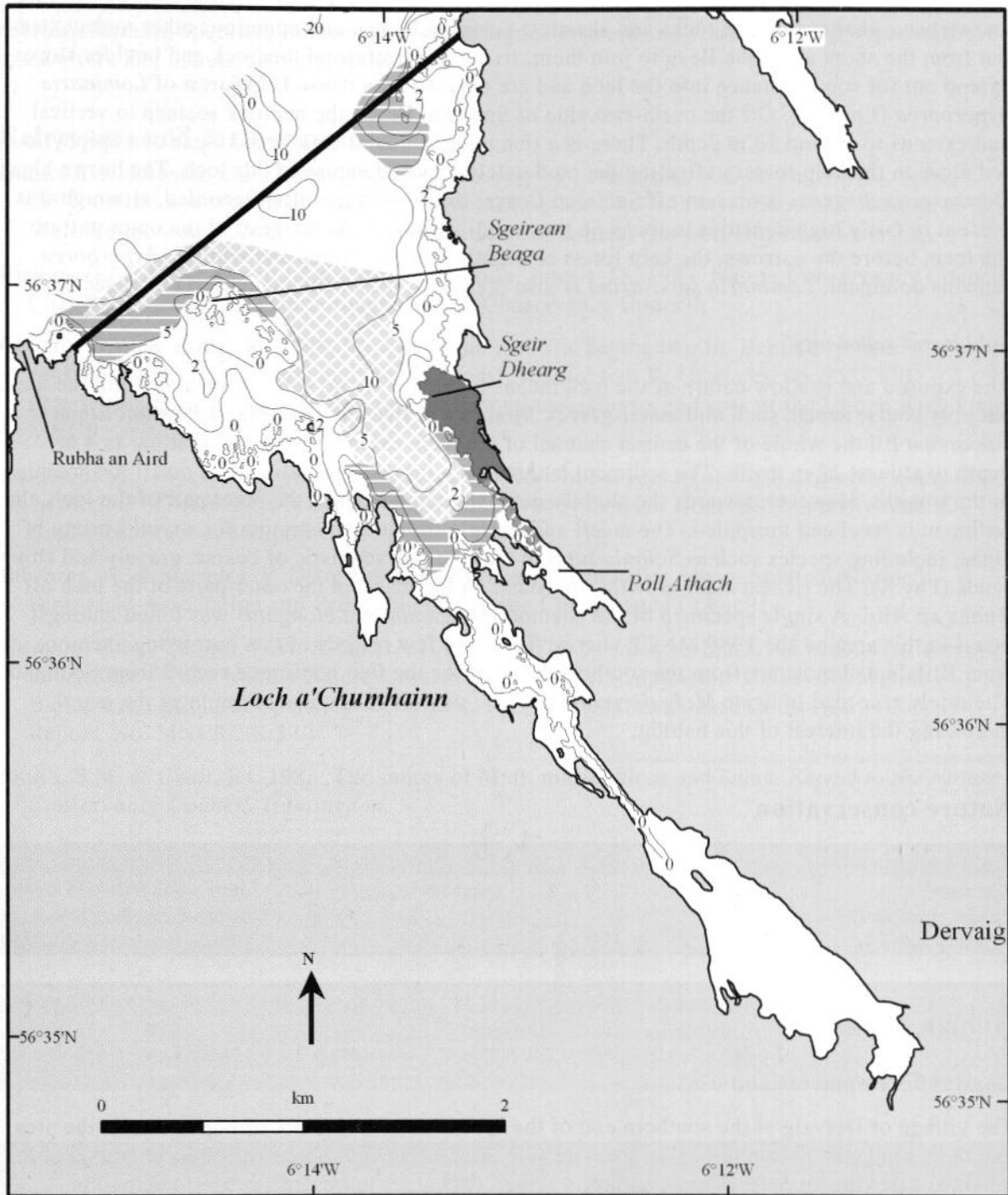


Figure 18.2 Indicative distribution of the main biotopes in the area (based on data from survey sites shown in Figure 18.1, cited literature and additional field observations).

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Sublittoral

Sublittoral rock

Loch a' Chumhainn is shallow throughout its length, with gently sloping sides. There are no steep sublittoral rocky areas and no circalittoral rock. On the southern side of the loch entrance there is

an extensive shallow area of rocks and skerries, Sgeirean Beaga, and numerous other rocks extend out from the shore at Rubha Beag to join them. Irregular infralittoral, bedrock and boulder slopes extend out for some distance into the loch and are covered by a dense kelp forest of *Laminaria hyperborea* (Lhyp.Ft). Off the north-east side of Sgeirean Beaga the bedrock is steep to vertical and extends to around 13 m depth. There is a rich understorey of foliose red algae and epiphytic red algae in the kelp forest, reflecting the moderately exposed nature of this loch. The brown alga *Desmarestia dresnayi* is present off Sgeirean Beaga; this alga is not often recorded, although it is present in fairly high densities in lochs on the Argyll mainland. At the head of the outer part of the loch, before the narrows, the kelp forest is slightly more sheltered and while *L. hyperborea* remains dominant, *Laminaria saccharina* is also present in reasonable amounts (LhypLsac.Ft).

Sublittoral sediments

The exposed and shallow nature of the loch means that there are no soft sediments within the loch, but only coarse sands, shell and maerl-gravel. Mixtures of live and dead maerl *Phymatolithon calcareum* fill the whole of the central channel of the loch, extending from as shallow as 4 m depth to at least 12 m depth. The sediment is thrown up into waves and the live maerl lies mainly in the troughs. However, towards the slightly more sheltered head of the outer part of the loch, the sediment is level and unrippled. The maerl and gravel provide a substratum for a wide variety of algae, including species such as *Sciniaia turgida* that are characteristic of coarse, gravely and stony sands (Phy.R). The richest algal growths are found on the maerl in the outer parts of the loch off Rubha an Aird. A single specimen of the anemone *Halcampoides elongatus* was found amongst maerl in this area by the 1989 MNCR survey. There are few records of this burrowing anemone from Britain and most are from the south-west. This was the first confirmed record from Scotland. The rarely recorded tunicate *Molgula oculata* is also present in abundance amongst the maerl, increasing the interest of this habitat.

Nature conservation

Conservation sites			
Site name	Status	Location	Main features
Central, South and West Mull	RSA		Includes west shore of loch
Argyll Islands	ESA		Includes area surrounding loch

Human influences

Coastal developments and uses

The village of Dervaig at the southern end of the loch is the main centre of population in the area and there are houses scattered along the loch side. The village has a number of guest houses and hotels to cater for tourists. A local authority sewer discharges untreated sewage to below the loch's mean low water mark. There are tracks and narrow roads on both sides of the loch, one of which leads to the 'Sea Life Surveys' Centre which has an exhibition on whales and operates boat trips to the Treshnish Isles from a nearby jetty.

There is a saltmarsh at the head of the loch where stock-grazing occurs. Areas of woodland surround much of Loch a' Chumhainn and there are meadows on the low-lying ground to the east of the loch.

Marine developments and uses

Despite Loch a' Chumhainn's small size, it supports a certain amount of marine activity. Whale- and seal-watching trips are operated out of the loch, usually during the summer months. For visiting yachts there is an anchorage in the middle of the loch offering a fair amount of shelter. A

shellfish farming operation in the narrows, potting for lobsters and winkle picking, represents the mariculture and fishing activities of the loch.

References and further reading

- Barne, J.H., Robson, C.F., Kaznowska, S.S., Doody, J.P., Davidson, N.C. & Buck, A.L. (eds.) 1997. Coasts and seas of the United Kingdom. Regions 14 South-west Scotland: Ballantrae to Mull. Peterborough, Joint Nature Conservation Committee. (Coastal Directories Series.)
- Bishop, G.M. 1984. Report of the Mull expedition, June 4–18, 1983. Nature Conservancy Council CSD Report No. 528. Peterborough, Nature Conservancy Council.
- Connor, D.W. & Little, M. 1998. West Scotland (MNCr Sector 14). In: Benthic marine ecosystems of Great Britain and the north-east Atlantic (ed. K. Hiscock), pp. 355–370. Peterborough, Joint Nature Conservation Committee. (Coasts and seas of the United Kingdom. MNCr series.)
- Davies, L.M. 1990. *Marine Nature Conservation Review. Surveys of Scottish Sealochs. Sealochs on the Isle of Mull*. Report to the Nature Conservancy Council from the University Marine Biological Station, Millport.
- Edwards, A. & Sharples, F. 1986. *Scottish sea lochs: a catalogue*. Oban, Scottish Marine Biological Association and Peterborough, Nature Conservancy Council.
- Howson, C.M., Connor, D.W. & Holt, R.H.F. 1994. The Scottish sealochs. An account of surveys undertaken for the Marine Nature Conservation Review. (Contractor: University Marine Biological Station, Millport.) *JNCC Report*, No. 164. (Marine Nature Conservation Review Report, No. MNCr/SR/27.)
- Smith, S.M. & Gault, F.I. 1983. The shores of Mull: marine flora and fauna. *Report to the Nature Conservancy Council, Huntingdon*.

Sites surveyed

Survey 26: 1989 UMBSM Mull sealochs survey (Davies 1990).

Survey 85: 1983 Smith Mull littoral survey (Smith & Gault 1983; Bishop 1984).

Littoral sites					
Survey	Site	Place	Grid reference	Latitude/longitude	Biotopes recorded
85	23	Sgeir Dhearg, Loch a' Chumhainn, Mull	NM 408 546	56°36.7'N 06°13.4'W	LS, LR

Sublittoral sites					
Survey	Site	Place	Grid reference	Latitude/longitude	Biotopes recorded
26	12	NW of Dun Leathan, Loch a' Chumhainn, Mull	NM 405 560	56°37.4'N 06°13.8'W	Lhyp.Ft
26	13	NW of Sgeir Dhearg, Loch a' Chumhainn, Mull	NM 402 548	56°36.7'N 06°14.0'W	Phy.R
26	14	W of Quinish House, Loch a' Chumhainn, Mull	NM 407 543	56°36.5'N 06°13.5'W	Phy.R, LhypLsac.Ft
26	15	N of Sgeirean Beaga, Loch a' Chumhainn, Mull	NM 397 554	56°37.0'N 06°14.6'W	Phy.R, Lhyp.Ft
26	16	E of Port na Ba', Loch a' Chumhainn, Mull	NM 391 551	56°36.9'N 06°15.1'W	Phy.R, Lhyp.Ft

Compiled by: F.A. Dipper, C.M. Howson & D. Steele

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Loch na Keal

Location

Position (centre)	NM 500 380	56°28'N 6°05'W
Administrative area	Argyll and Bute	
Conservation agency/area	Scottish Natural Heritage	West Areas (Argyll and Stirling)

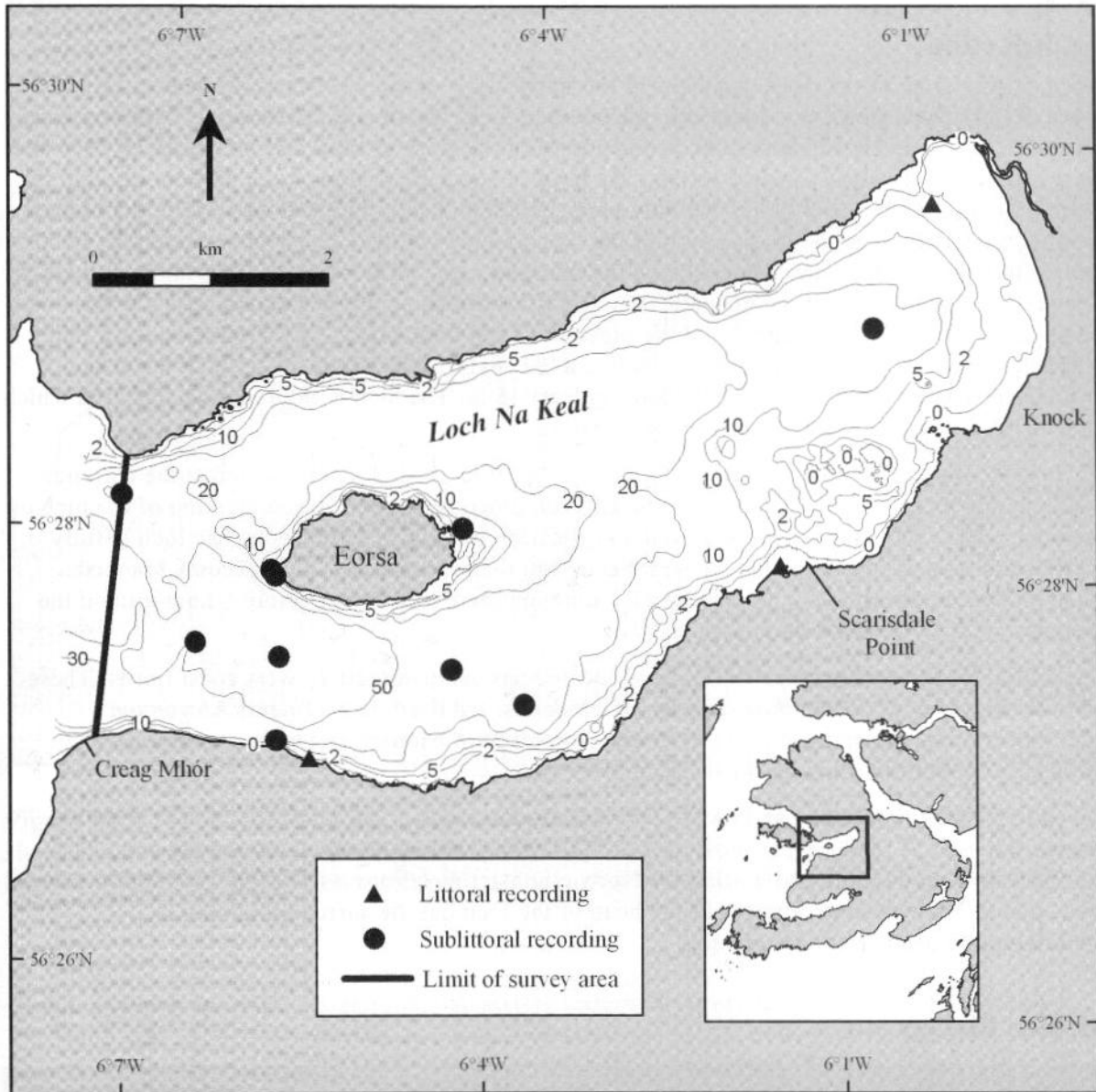


Figure 19.1 Main features of the area, showing sites surveyed.

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Physical features	
<i>Physiographic type</i>	Fjord with one sill
<i>Length of coast</i>	31.5 km
<i>Length of inlet</i>	3.8 km
<i>Area of inlet</i>	4.1 km ² (HW); 2.6 km ² (LW)
<i>Bathymetry</i>	124.0 m (max)
<i>Wave exposure</i>	Moderately exposed at mouth and at head of loch
<i>Tidal streams</i>	1 knot at mouth
<i>Tidal range</i>	Springs: 3.8 m; neaps: 1.4 m (Sound of Ulva)
<i>Salinity</i>	Fully marine

Introduction

Loch na Keal, one of the major sealochs in the basalt lavas of the west coast of Mull, originated as a heavily glaciated fjord. It is located to the south of Loch Tuath and the island of Ulva and faces due west, but its entrance gains some protection from the Ross of Mull and the island of Ulva and so is moderately exposed to wave action. The head of Loch Tuath joins Loch na Keal through the narrow Sound of Ulva, and this is the only very sheltered area in the loch. Ben More, the highest mountain on Mull, lies just to the south of the loch and the whole of this southern coast is steep and mountainous. There are lower hills on the northern side, while at the head of the loch there is a lower area formed by a large raised beach. The River Ba enters the sea here across a wide, muddy shingle shore. The majority of the other shores in the loch consist of steep bedrock and boulder, with sand beaches on Inch Kenneth and the adjacent mainland. Steep bedrock at the entrance continues underwater to a depth of at least 45 m. The loch is floored with soft mud which extends from the loch head to outside the entrance.

Loch na Keal extends to a maximum depth of 124 m. It has a single sill, located at the entrance, reaching a depth of 50 m. The depth of the sill, combined with the exposed location of the loch on the open west coast, may reduce seasonal stratification inside the main basin. The loch is fully marine and its very small catchment area means that the head is unlikely to become brackish. Tidal streams within the loch are negligible, although there is a flow of about 1 knot around the entrance area and through the Sound of Ulva.

The loch contains a wide range of biotopes and species characteristic of west coast fjords. These include the anemone *Protanthea simplex*, brachiopods, red dead man's fingers *Alcyonium glomeratum* and the sea-fan *Swiftia pallida* on circalittoral bedrock and beds of sea-pens *Funiculina quadrangularis* on the deep mud.

Given its proximity to Oban and the Sound of Mull, there is surprisingly little human activity around the loch. A road fringes most of the shore, along which there is scattered housing. There are fish farms on the loch and potting for Norway lobster *Nephrops norvegicus* and other crustacea takes place. There is some forestry at the head of the loch but the surrounding land is predominantly used for rough grazing.

Marine biology

Marine biological surveys				
	<i>Survey methods</i>	<i>No. of sites</i>	<i>Date(s) of survey</i>	<i>Source</i>
<i>Littoral</i>	Recording (epibiota)	3	June 1983	Smith & Gault (1983)
<i>Sublittoral</i>	Recording (epibiota)	6	August 1989	Davies (1990)
	Recording (epibiota)	4	June 1983	Bishop (1984)

Littoral

Loch na Keal was formed as a result of glaciation and consequently is deep and relatively steep-sided. The shores in the entrance and around the island of Eorsa are mainly steep bedrock and

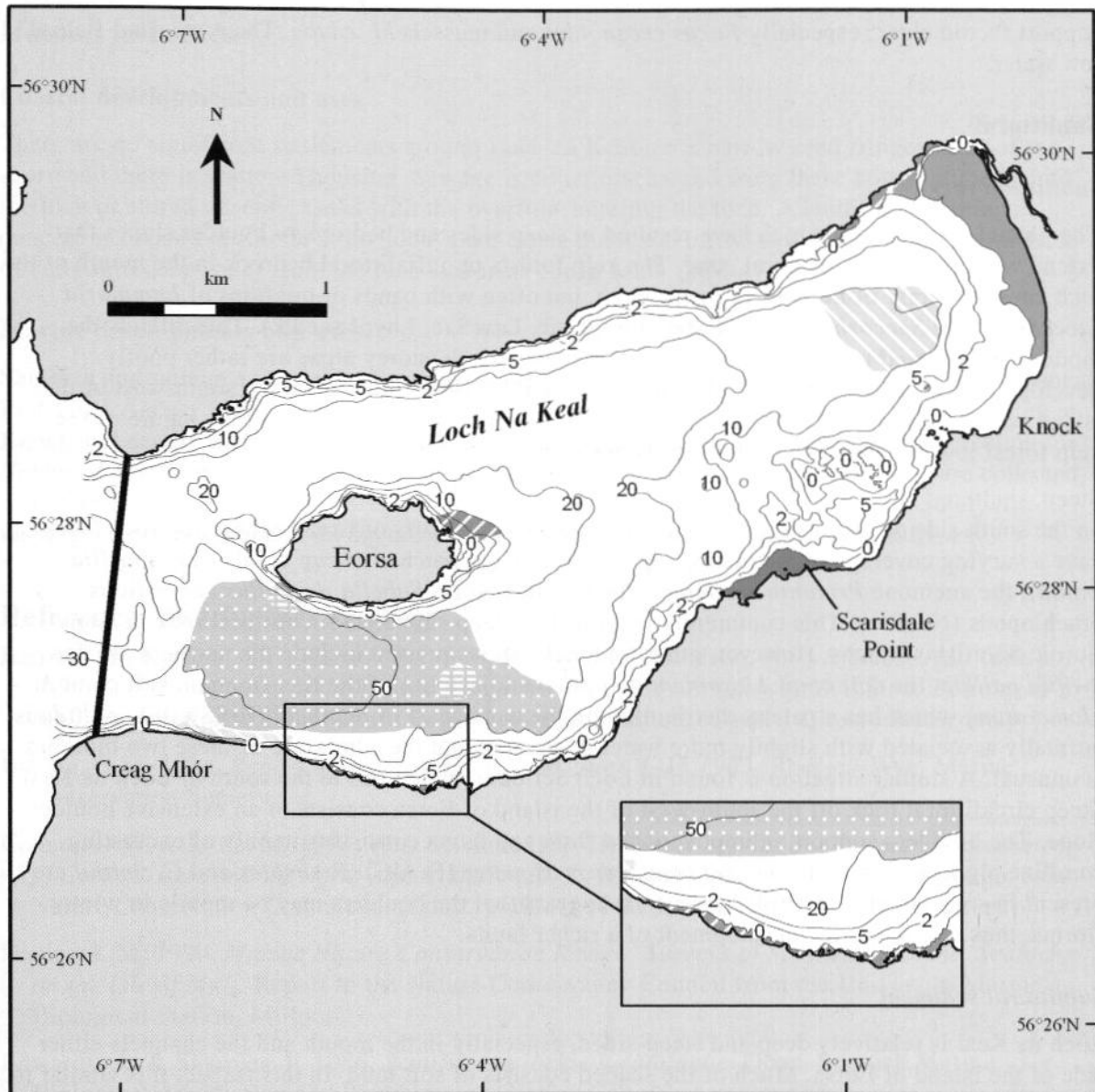


Figure 19.2 Indicative distribution of the main biotopes in the area (based on data from survey sites shown in Figure 19.1, cited literature and additional field observations).

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boulders, which are either moderately exposed or sheltered. There are no very sheltered shores. The south side of the loch entrance at Creag Mhór consists of 200 m high cliffs. At the eastern end of these cliffs, about 2 km into the loch, the boulder shore is backed by low basalt cliffs. The remainder of the southern shore of the loch consists mainly of cobble beaches with irregular, low rocky outcrops and patches of sediment. Where small rivers flow into the loch, such as at Scarisdale Point, small outwash fans of cobbles and gravel are formed on which mussels *Mytilus edulis* grow.

At the head of the loch there is a wide expanse of gravel and mixed sediment flats backed by a cobble and gravel ridge of glacial origin. The River Ba flows down from Loch Ba at the southern end of these flats. However, it does not enter the loch here but is diverted north by the cobble ridge and eventually flows over the north end of the littoral flats in two wide channels. The gravel flats within the sphere of influence of the freshwater river have a reduced flora and fauna and

support fucoid algae, especially *Fucus ceranoides* and mussels *M. edulis*. There are sand-flats at low water.

Sublittoral

Sublittoral rock

The glacial origins of this loch have resulted in steep sides and bedrock or boulder slopes that extend well into the circalittoral zone. The kelp forests on infralittoral bedrock in the mouth of the loch consist mainly of *Laminaria hyperborea*, but often with bands or mixtures of *Laminaria saccharina* and *Saccorhiza polyschides* (LhypLsac, LsacSac, LhypLsac.Pk). This reflects the moderately exposed to sheltered nature of these sites. Understorey algae are rather poorly developed, especially where the substratum is a boulder slope, such as on the south-west of the island of Eorsa. Rocky sites further into the loch have not been surveyed and the nature of the kelp forest towards the head of the loch is not known.

Steep, sheltered circalittoral rock, consisting of bedrock cliffs and very large boulders, is present on the south side of the entrance beneath the steep littoral cliffs of Creag Mhór. The rock faces have a varying coverage of encrusting algae and frequent patches of cup corals *Caryophyllia smithii*, the anemone *Protanthea simplex*, the peacock worm *Sabella penicillus* and various brachiopods (NeoPro). This community is typical of steep sheltered circalittoral rock in many fjordic Scottish sealochs. However, other frequent species present include the northern sea-fan *Swiftia pallida*, the soft coral *Alcyonium digitatum* and patches of the less common soft coral *A. glomeratum*, which has a patchy distribution on the west coast of Scotland (ErSSwi). *S. pallida* is normally associated with slightly more water movement and the admixture of these two biotopes is unusual. A similar situation is found in Loch Scridain, which lies to the south of Loch na Keal. Steep circalittoral rock off the south-west of the island of Eorsa consists of an extensive boulder slope. The boulders support an impoverished flora and fauna consisting mainly of encrusting coralline algae, and the tube worm *Pomatoceros triqueter* (FaAIC). *P. simplex* and *C. smithii* are present in some areas (NeoPro); however, it appears that the boulders may be mobile in winter storms, thus restricting the development of a richer fauna.

Sublittoral sediment

Loch na Keal is relatively deep and steep-sided, especially in the mouth and the channels either side of the island of Eorsa. Much of the seabed consists of soft mud. In this respect it is similar to Loch Scridain and both lochs support large numbers of the large deep-water sea-pen *Funiculina quadrangularis* (SpMeg.Fun). In the shallower water towards the head of the loch, the sediment becomes much coarser due to the moderately exposed nature of the loch. Here a plain of firm muddy sand predominates at depths between 12 and 14 m. The sediment supports a limited fauna, including the opisthobranch mollusc *Philine aperta*, burrowing anemones *Cerianthus lloydii* and clumps of the ascidian *Asciidiella aspersa* (VirOph). In shallow water above 10 m depth, on the east side of the island of Eorsa, this sediment is dominated by brown algae, mainly *L. saccharina*, *Chorda filum* and *Asperococcus* sp. (LsacX). This biotope is likely to be widespread around the shallow edges of the loch. However, only a few sites have been surveyed and the boundaries of the various sediment types cannot yet be drawn with any confidence.

Nature conservation

Conservation sites			
Site name	Status	Location	Main features
Gribun shore and cliffs	SSSI, GCR	NM 456 355	Geological, botanical
Scarisdale	SSSI, GCR	NM 530 370	Geological
Loch Na Keal	NSA	NM 500 380	Entire area surrounding loch
Argyll Islands	ESA		Includes area surrounding loch

Human influences

Coastal developments and uses

There are no significant settlements around Loch na Keal but a narrow road fringes most of the shore and there is scattered housing. Sewage is either discharged from these houses directly into the loch or stored in septic tanks with the overflow entering the loch. A land-based fishing concern is located at Knock at the loch head. Some domestic refuse is dumped from the roadside directly into deep water from the loch side near Creag Mhór (NM 475 365).

Marine developments and uses

Shellfish and salmon *Salmo salar* farming takes place in Loch na Keal and the Scottish Environment Protection Agency (SEPA) has granted discharge consents for the fish cages, the land-based unit at Knock and nearby shellfish holding premises. Lobster pots are set around the loch and creeling for *Nephrops norvegicus* takes place. Winkles *Littorina littorea* and oysters *Ostrea edulis* are collected from the shores. There are anchorages at various points around the loch, which is popular with visiting yachts. Some scuba-diving takes place on the deep cliff faces at the loch entrance.

References and further reading

- Barne, J.H., Robson, C.F., Kaznowska, S.S., Doody, J.P., Davidson, N.C. & Buck, A.L. (eds.) 1997. *Coasts and seas of the United Kingdom. Regions 14 South-west Scotland: Ballantrae to Mull*. Peterborough, Joint Nature Conservation Committee. (Coastal Directories Series.)
- Bishop, G.M. 1984. *Report of the Mull Expedition, June 4–18 1983*. Ross-on-Wye, Marine Conservation Society.
- Connor, D.W. & Little, M. 1998. West Scotland (MNCR Sector 14). In: *Benthic marine ecosystems of Great Britain and the north-east Atlantic* (ed. K. Hiscock), pp. 355–370. Peterborough, Joint Nature Conservation Committee. (Coasts and seas of the United Kingdom. MNCR series.)
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- Smith, S.M. & Gault, F.I. 1983. *The shores of Mull: marine flora and fauna*. Report to the Nature Conservancy Council, Huntingdon.

Sites surveyed

- Survey 26: 1989 UMBSM Mull sealochs survey (Davies 1990).
- Survey 48: 1983 UCS Mull sublittoral survey (Smith & Gault 1983; Bishop 1984).
- Survey 85: 1983 Smith Mull littoral survey (Smith & Gault 1983; Bishop 1984).

Littoral sites					
Survey	Site	Place	Grid reference	Latitude/longitude	Biotopes recorded
85	6	Head, Loch na Keal, Mull	NM 531 408	56°29.7'N 06°00.7'W	SLR
85	15	Creag Mhór, Loch na Keal, Mull	NM 477 361	56°27.0'N 06°05.6'W	SLR
85	16	Scarisdale Point, Loch na Keal, Mull	NM 518 377	56°28.0'N 06°01.8'W	Rkp, MLR, Pcer

Sublittoral sites					
<i>Survey</i>	<i>Site</i>	<i>Place</i>	<i>Grid reference</i>	<i>Latitude/longitude</i>	<i>Biotores recorded</i>
26	32	SW of Eorsa, Loch na Keal, Mull	NM 475 377	56°27.8'N 06°05.9'W	SpMeg, Fun, FaAIC, Lsac.T
26	35	SE of Eorsa, Loch na Keal, Mull	NM 490 369	56°27.4'N 06°04.4'W	SpMeg, Fun
26	36	Beneath E end of Creag Mhór, Loch na Keal, Mull	NM 475 363	56°27.0'N 06°05.8'W	SpMeg, ErSSwi, LhypLsac.Pk
26	38	E of Eorsa, Loch na Keal, Mull	NM 491 381	56°28.0'N 06°04.4'W	FaMx, LsacX
26	39	SE of Sgeir a' Charraigein, Loch na Keal, Mull	NM 462 384	56°28.1'N 06°07.2'W	VirOph, NeoPro
26	40	N of Rubha Aird nan Eisrein, Loch na Keal, Mull	NM 526 398	56°29.1'N 06°01.1'W	VirOph
48	41	Eorsa, Loch na Keal, Mull	NM 474 377	56°27.8'N 06°06.0'W	NeoPro, LsacSac
48	42	S channel cliffs, Loch na Keal, Mull	NM 468 371	56°27.5'N 06°06.6'W	ErSSwi
48	43	Derryguaig Beach, Loch na Keal, Mull	NM 496 366	56°27.3'N 06°03.8'W	AmenCio, SpMeg
48	44	S channel cliffs, Loch na Keal, Mull	NM 475 370	56°27.4'N 06°05.9'W	VirOph.HAs, NeoPro, Oph

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Loch Scridain

Location

Position (centre)	NM 470 260	56°27'N 6°05'W
Administrative area	Argyll and Bute	
Conservation agency/area	Scottish Natural Heritage	West Areas (Argyll and Stirling)

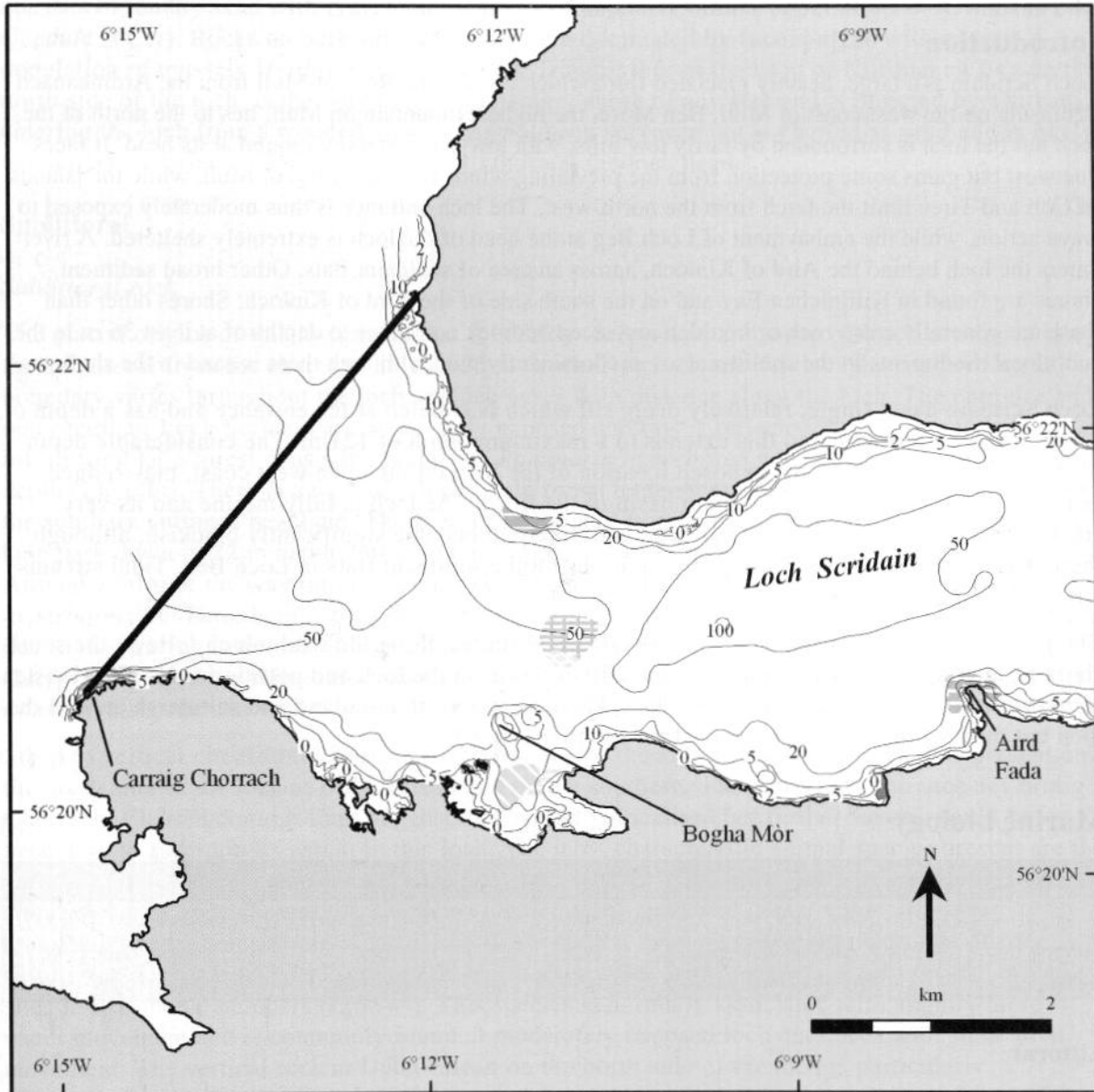


Figure 20.1 Main features of the area, showing sites surveyed.

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Physical features

<i>Physiographic type</i>	Fjord with one sill
<i>Length of coast</i>	47.99 km
<i>Length of inlet</i>	12 km
<i>Area of inlet</i>	28.5 km ² (HW); 25.3 km ² (LW)
<i>Bathymetry</i>	121.0 m (max)
<i>Wave exposure</i>	Moderately exposed at mouth; increasing shelter towards the head
<i>Tidal streams</i>	Negligible
<i>Tidal range</i>	Springs: 3.5 m; neaps: 1.5 m (Iona)
<i>Salinity</i>	Fully marine

Introduction

Loch Scridain is a large, heavily glaciated fjord which divides the Ross of Mull from the Ardmeanach Peninsula on the west coast of Mull. Ben More, the highest mountain on Mull, lies to the north of the loch but the loch is surrounded by fairly low hills, with low-lying marshy ground at its head. It faces due west but gains some protection from the prevailing winds from the Ross of Mull, while the islands of Coll and Tiree limit the fetch from the north-west. The loch entrance is thus moderately exposed to wave action, while the embayment of Loch Beg at the head of the loch is extremely sheltered. A river enters the loch behind the Aird of Kinloch, across an area of sediment flats. Other broad sediment shores are found in Kilfinichen Bay and on the south side of the Aird of Kinloch. Shores other than these are generally steep rock or boulder, and steep bedrock continues to depths of at least 36 m in the sublittoral. Sediments in the sublittoral are predominantly mud, although there is sand in the shallows.

Loch Scridain has a single, relatively deep, sill which is situated at the entrance and has a depth of 53 m. The loch basin behind this extends to a maximum depth of 121 m. The considerable depth of the sill, combined with the exposed location of the loch on the open west coast, may reduce seasonal stratification inside the main basin of the fjord. The loch is fully marine and its very small catchment area means that the head is unlikely to become significantly brackish, although there may well be localised estuarine conditions on the sediment flats in Loch Beg. Tidal streams within the loch are negligible.

The population in this area is sparse, with houses scattered along the road which follows the south shore of the loch. There are salmon and shellfish farms on the loch and potting for Norway lobster *Nephrops norvegicus* and crabs takes place. There are areas of woodland and saltmarsh around the loch but most of the hinterland is used for rough grazing.

Marine biology**Marine biological surveys**

	<i>Survey methods</i>	<i>No. of sites</i>	<i>Date(s) of survey</i>	<i>Source</i>
<i>Littoral</i>	Recording (epibiota)	5	June 1983	Smith & Gault (1983)
<i>Sublittoral</i>	Recording (epibiota)	12	August 1989	Davies (1990)

Littoral

The majority of the shoreline around Loch Scridain consists of sheltered, steep bedrock and boulders dominated by furoid algae. The head of the loch is very sheltered and here the biomass of furoids is high. Rocky shores in the mouth of the loch are moderately exposed, as are west-facing shores further into the loch. While general information is available on these rocky shores, site-specific biotope information is generally lacking. A native oyster bed of *Ostrea edulis* is present on the pebbly lower shore at Killunaig on the south side of the loch, east of a chain of islets and intertidal rocks that extends into the loch.

There are three sedimentary intertidal bays within the loch. At the head of the loch a large river, the Coladoir, empties into the semi-enclosed Loch Beg on the north side of the Aird of Kinloch. It

passes first through a large tract of saltmarsh and then onto a muddy gravel flat, where it forms a large, shallow, low-salinity pool. It then winds through an expanse of low, intertidal rocky ridges which restrict the flow of the tides from Loch Beg through a complex series of channels. The gravel flats support an impoverished fauna of *Fucus vesiculosus* and *Mytilus edulis*. To the west of the rocks, where the river channel joins Loch Beg, there is an expanse of muddy sand with the lugworm *Arenicola marina*, cockles *Cerastoderma edule* and the bivalves *Macoma balthica* and *Mya arenaria* (PCer). There are also large patches of the loose-lying form of *Ascophyllum nodosum* ead *mackaii* (AscX.mac). The interest of this whole area lies in the changes in community structure with changing salinities. On the south side of the Aird of Kinloch there is another expanse of sediment flats, An Sailean. This bay faces westward down the loch and consists of muddy sand with gravel and boulders. It supports similar populations of *A. marina* and *C. edule* (PCer). Rocks on both sides of the bay are dominated by fucoid algae with a large population of mussels *Mytilus edulis* (Asc.VS). Tràigh Mhór at the head of Kilfinichen Bay on the north side of the loch, is the only other sedimentary shore of any size and is bisected by a stream entering the loch from a wooded glen. It has not been surveyed but is charted as sand and is likely to support estuarine communities similar to those at the loch head.

Sublittoral

Sublittoral rock

The glacial origins of this loch mean that it is fairly steep-sided and steep bedrock continues into the sublittoral from the shores to at least 35 m depth. However, the depth of the rock/sediment boundary varies throughout the loch and decreases with distance along the loch. The entrance and outer parts of Loch Scridain are moderately exposed and this is reflected in the presence of an infralittoral kelp forest consisting mainly of *Laminaria hyperborea* which extends to at least 10 m depth (Lhyp.Ft). There is a well-developed kelp forest understorey of foliose red algae at sites on the southern entrance headland. There is sufficient sublittoral rock here for the development of a kelp park down to 22 m depth, but with only a sparse understorey of red algae (LhypGz.Pk). Around a third of the way into the loch at Aird Fada, the kelp forest is still predominantly *L. hyperborea*, but here there is poor development of the understorey algae even at shallow depths, due to the grazing activities of brittlestars and smothering by featherstars *Antedon* spp. (LhypGz.Ft). Beyond this point conditions become more sheltered and the kelp forest consists of *Laminaria saccharina* with *Chorda filum* and a poor understorey of red algae.

Steep to vertical circalittoral bedrock extending below the kelp forest to 36 m depth is present on the north side of the loch at Dubh Eilean and on the southern side of the loch entrance at Carraig Chorrach. Charted contour lines suggest this habitat is localised but further survey would be necessary to ascertain its extent in this loch. The most characteristic animal species present are the anthozoans *Protanthea simplex* and *Caryophyllia smithii*, the brachiopods *Terebratulina retusa* and *Neocrania anomala* and the tubeworms *Sabella pavonina* and *Pomatoceros triqueter* (NeoPro). Steep sheltered circalittoral bedrock with this type of community is typical of deep fjordic sealochs, but in Loch Scridain the northern sea-fan *Swiftia pallida* is also present at these sites in reasonable numbers (ErSSwi). This species is normally associated with slightly more water movement and is commonly found at moderately exposed loch entrances with some tidal movement. The vertical rock at Dubh Eilean on the north side of the loch is particularly interesting as it supports a number of other species rarely recorded from the shallow Scottish sublittoral. These include the sponges *Axinella polypoides*, *Phakellia ventilabrum* and *Hymenophyllum stellifera* and the anthozoans *Alcyonium glomeratum* and *Parerythropodium coralloides*.

Level, silty circalittoral bedrock and boulders outcrop from sediment in the outer part of the loch, both in the centre at around 30 m depth and in the sheltered area to the south of Bogha Mòr at 15–20 m depth. This habitat may be fairly widespread as other areas of rock away from the loch edges are indicated on the chart. These areas support an impoverished fauna of silt-tolerant species, including the cup coral *C. smithii* and the tunicate *Ascidia mentula* as well as encrusting

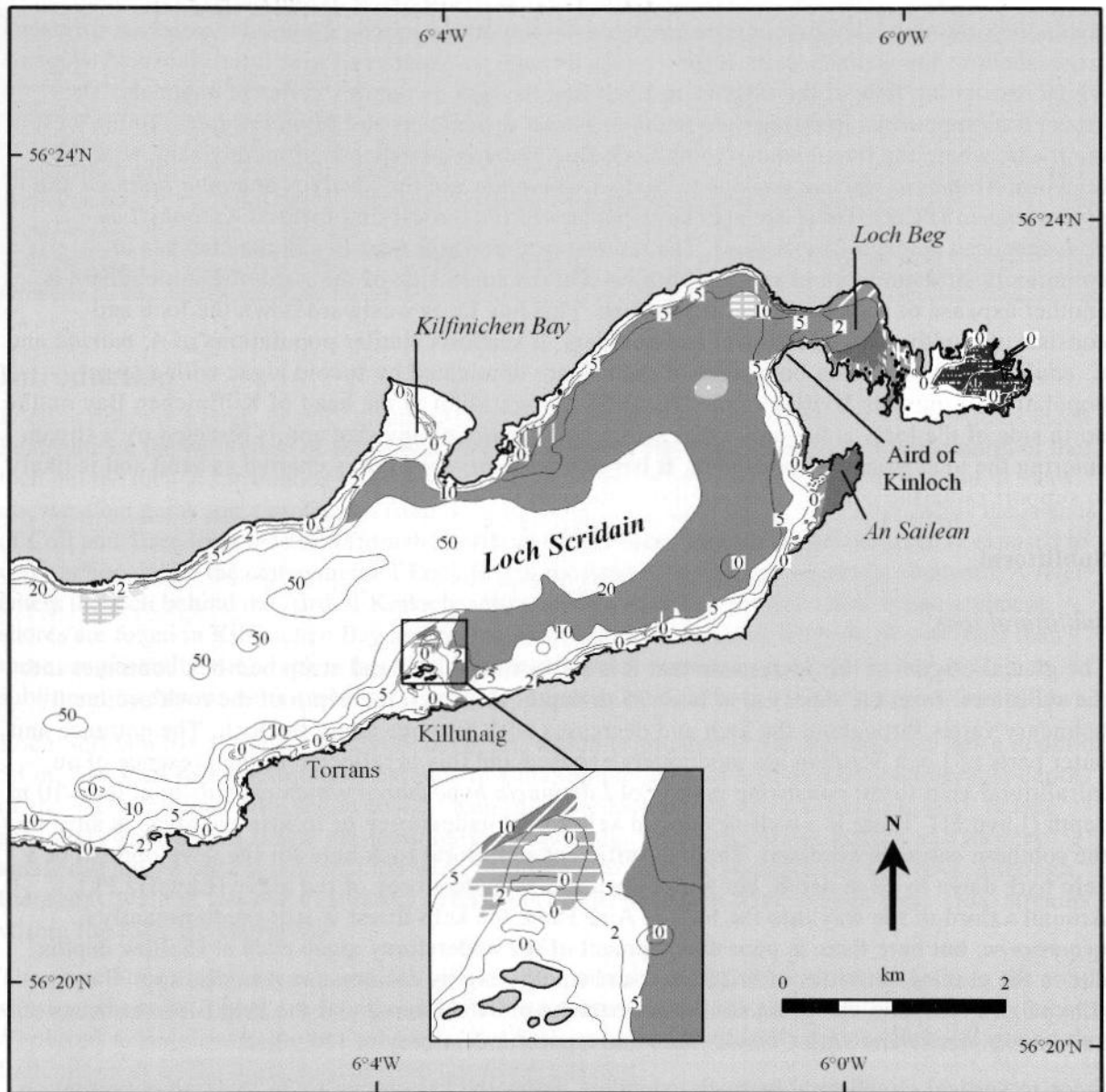


Figure 20.2 Indicative distribution of the main biotopes in the area (based on data from survey sites shown in Figure 20.1, cited literature and additional field observations).

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algae and bryozoans (FaAIC). The anemone *Hormathia coronata*, which is only sporadically recorded from Scottish sealochs, is also present in this habitat in Loch Scridain. The outcrop in the loch centre (site 50 of Davies 1990) showed some similarities with the sheltered vertical rock described above, as it also supported low numbers of *S. pallida* and *P. simplex*. Very sheltered silty bedrock also outcrops from the mud in the upper parts of the loch, at around 14 to 16 m depth. Where sufficient light is available there is an algal cover, mainly of *Trailliella* sp. The sponge *Suberites domuncula*, the anemone *Metridium senile* and the hydroid *Nemertesia antennina* are frequent (AmenCio.Met). Again the extent of such outcrops in the upper loch is not known.

Sublittoral sediment

Due to the depth and relatively sheltered nature of Loch Scridain, mud is the predominant sublittoral sediment. Coarser sediments are confined to shallow water along the edges and coarse sand is only

present in shallow water at the mouth of the loch. Soft mud extends the entire length of the loch and is populated by sea-pens and burrowed by crustaceans. The large sea-pen *Funiculina quadrangularis*, characteristic of deep, sheltered sealochs, is present in large numbers (SpMeg.Fun). It has been recorded from the mouth of the loch and right at the head of the loch where, in extreme shelter, it extends up to 18 m depth, and it is therefore probably common throughout the loch. This species was recorded as common in Loch Scridain and the nearby Loch na Keal as long ago as 1890, by a Scottish Fishery Board trawling expedition (Smith 1891). In the upper loch, soft mud extends into the infralittoral, to as shallow as 2 m at some sites. In the shallower areas the mud surface may have a cover of flocculent algae, while a little deeper the sea-pen *Virgularia mirabilis* and the opisthobranch mollusc *Philine aperta* are common (PhiVir). In the middle and outer reaches of the loch, firm sandy and shelly sediment is present below the rock slope at around 20 m depth. These coarser circalittoral sediments vary in the epifauna they support but common species include *V. mirabilis*, the sand mason worm *Lanice conchilega*, brittlestars *Ophiura ophiura* and *Amphiura chiajei* and the scallop *Pecten maximus* (VirOph, VirOph.HAs). At Killunaig a series of rocky islets extends from the shore for around a kilometre into the loch. Here and at some other outer and middle sites, such coarse sediments extend into the infralittoral and are colonised by filamentous algae (LsacX).

Nature conservation

Conservation sites

Site name	Status	Location	Main features
Ardmeanach	SAC, SSSI	NM 440 290	Geological, botanical
Coladoir Bog	SSSI	NM 537 301 NM 550 297 NM 549 289	
Ardtun (3 sites)	GCR	NM 390 230	Geological
Burg	NTS site	NM 417 275	Headland, cliffs and beach
Central, South and West Mull	RSA		Includes area surrounding loch
Argyll Islands	ESA		Includes area surrounding loch

Human influences

Coastal developments and uses

The population in this area is sparse. Houses are scattered along the road to Fionnphort, which follows the south shore of the loch, with fewer houses along the road and tracks on the northern shore. Sewage is either discharged directly from these premises into the loch or held in septic tanks with overflow into the loch.

Tracts of woodland abut the loch around the loch head, and saltmarsh around Loch Beg is grazed. The low hills of the hinterland are used primarily for rough grazing.

Marine developments and uses

Mariculture is a strong feature of Loch Scridain, with salmon *Salmo salar*, mussel *Mytilus* sp. and scallop *Pecten* sp. farming all in evidence. The Scottish Environment Protection Agency (SEPA) has granted a discharge consent for the land-based mariculture unit at Torrains, mid-way along the southern shore. Pots are laid for Norway lobsters *Nephrops norvegicus* on the deep mud and for crabs and lobsters around the rocky inshore areas. Winkles *Littorina littorea* and native oysters *Ostrea edulis* are collected from the shores. There is a sea salmon fishery in this area and salmon nets are set in Loch Scridain.

Anchorage are available at various points around the loch, which is popular with visiting yachts.

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Sites surveyed

Survey 26: 1989 UMBSM Mull sealochs survey (Davies 1990).

Survey 85: 1983 Smith Mull littoral survey (Smith & Gault 1983; Bishop 1984).

Littoral sites						
Survey	Site	Place	Grid reference	Latitude/longitude	Biotores recorded	
85	9	An Leth-onn, Loch Scridain, Mull	NM 535 285	56°23.0'N 05°59.6'W	FX, AscX.mac, PCer	
85	10	An Sailein, Loch Scridain, Mull	NM 526 278	56°22.6'N 06°00.4'W	Pcer, Asc.VS	
85	11	Rubh Aird nan Carnal, Loch Scridain, Mull	NM 523 278	56°22.7'N 06°00.7'W	MLR	
85	12	Eilean an Fheoir, Loch Scridain, Mull	NM 490 258	56°21.5'N 06°03.8'W	SLR, Ost	
85	28	Eilean Oighrige, Loch Scridain, Mull	NM 449 251	56°21.0'N 06°07.7'W	Rkp, MLR	

Sublittoral sites						
Survey	Site	Place	Grid reference	Latitude/longitude	Biotores recorded	
26	44	S of Garadh na Sroine, Loch Scridain, Mull	NM 411 262	56°21.4'N 06°11.5'W	CGS, LhypLsac.Ft, LsacX	
26	45	E of Bogha Paisart, Loch Scridain, Mull	NM 375 249	56°20.6'N 06°14.9'W	ErSSwi, VirOph, Lhyp.Ft, LhypGz.Pk	

Sublittoral sites – continued

<i>Survey</i>	<i>Site</i>	<i>Place</i>	<i>Grid reference</i>	<i>Latitude/longitude</i>	<i>Biotopes recorded</i>
26	46	SW of Dubh Eilean, Loch Scridain, Mull	NM 462 267	56°21.8'N 06°06.5'W	SpMeg, Fun
26	47	W of Ardchrishnish, Loch Scridain, Mull	NM 411 240	56°20.2'N 06°11.3'W	VirOph, FaAIC
26	48	Dubh Eilean, Loch Scridain, Mull	NM 463 269	56°21.9'N 06°06.5'W	AmenCio, Lsac.Ft, NeoPro, ErSSwi
26	49	N Sgeir Alltachd, Loch Scridain, Mull	NM 490 265	56°21.8'N 06°03.8'W	LsacX, Lsac.Ft
26	50	Mid-loch NE of Bogha Mòr, Loch Scridain, Mull	NM 414 252	56°20.9'N 06°11.1'W	SpMeg, Fun, ErSSwi
26	51	Aird Fada, Loch Scridain, Mull	NM 447 249	56°20.8'N 06°07.9'W	VirOph.HAs, LhypGz.Ft, LhypGz.Pk
26	52	W of Pennyghael, Loch Scridain, Mull	NM 511 266	56°21.9'N 06°01.8'W	AmenCio, CMU, PhiVir
26	53	NW of mouth, Loch Beag, Loch Scridain, Mull	NM 520 294	56°23.5'N 06°01.1'W	SpMeg, Fun
26	54	W of Lub na Cloiche Duibhe, Loch Scridain, Mull	NM 516 288	56°23.1'N 06°01.4'W	SpMeg
26	55	NE of Eilean na h-Ordaigh, Loch Scridain, Mull	NM 501 284	56°22.9'N 06°02.9'W	PhiVir

21

Loch na Lathaich

Location

<i>Position (centre)</i>	NM 370 230	56°19.5'N 6°15.5'W
<i>Administrative area</i>	Argyll and Bute	
<i>Conservation agency/area</i>	Scottish Natural Heritage	West Areas (Argyll and Stirling)

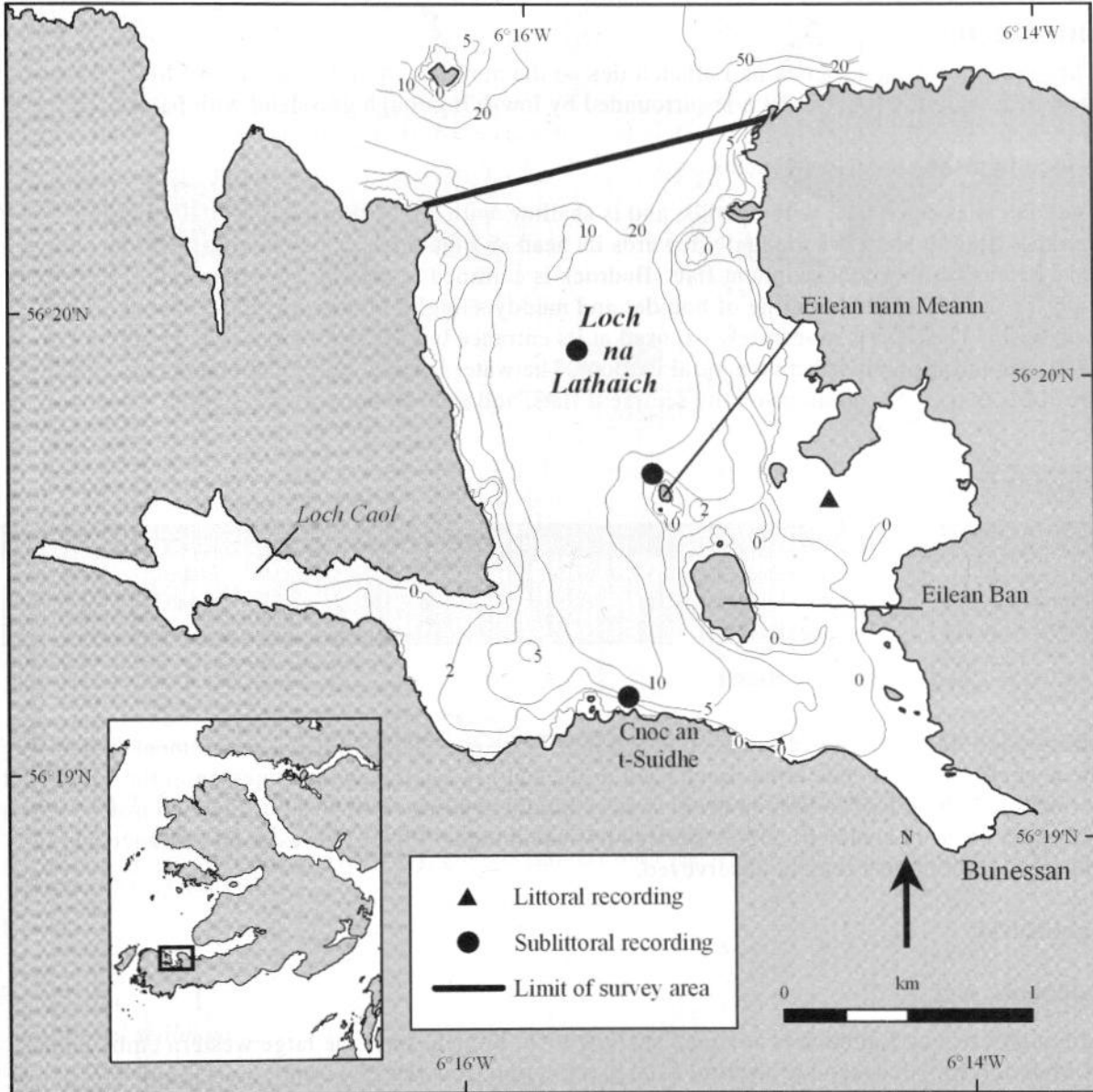


Figure 21.1 Main features of the area, showing sites surveyed.

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Physical features	
<i>Physiographic type</i>	Open sealoch
<i>Length of coast</i>	17.09 km
<i>Length of inlet</i>	3.8 km
<i>Area of inlet</i>	4.1 km ² (HW); 2.6 km ² (LW)
<i>Bathymetry</i>	20.0 m (max)
<i>Wave exposure</i>	Moderately exposed at mouth; extremely sheltered further inland
<i>Tidal streams</i>	Negligible
<i>Tidal range</i>	Springs: 3.7 m; neaps: 1.2 m (Bunessan)
<i>Salinity</i>	Fully marine

Introduction

The small, north-facing Loch na Lathaich lies on the northern shore of the Ross of Mull to the west of Loch Scridain. The loch is surrounded by low-lying rough grassland with patches of woodland, and the village of Bunessan is located at its head. Bunessan has a small harbour which is used by fishing boats and yachts.

The loch is an open one, with no sills, and is shallow, with a maximum depth of 20 m in the entrance area. It shallows gradually towards its head and the three embayments around its shores have extensive intertidal sediment flats. Bedrock is confined to the entrance shores and sublittoral, with the inner shores consisting of boulder and muddy shingle. Muddy mixed sediments floor the loch basin. The loch is moderately exposed at its entrance but the inner areas are extremely sheltered and form an effective natural harbour. The water is fully marine, although there may be localised estuarine conditions on the sediment flats, and tidal streams are negligible.

Marine biology

Marine biological surveys				
	<i>Survey methods</i>	<i>No. of sites</i>	<i>Date(s) of survey</i>	<i>Source</i>
<i>Littoral</i>	Recording (epibiota)	1	June 1983	Smith & Gault (1983)
<i>Sublittoral</i>	Recording (epibiota)	3	August 1989	Davies (1990)

Littoral

Information on the shores of this loch is lacking. There are extensive areas of sediment flats in three small, sheltered side arms: Loch Caol at the south-western end, at Bunessan in the south-east corner and behind Eilean Ban on the east side. Boulder shores at the head of the loch near Bunessan are very sheltered and dominated by furoid algae. Rocky shores at the entrance and on either side of the loch remain unsurveyed.

Sublittoral

Sublittoral rock

Although Loch na Lathaich is an open, shallow loch, it opens onto the large western embayment of Mull and so gains some protection from wave action. It is therefore only moderately exposed at the mouth and this is reflected in the composition of the kelp forest, as seen at Eilean nam Meann, just over half-way along the loch. Here a silty forest of *Laminaria hyperborea* is present on a gently sloping boulder and cobble plain down to 8 m depth (Lhyp). *Laminaria saccharina* is also present but does not predominate and there is a reasonably diverse understory of foliose algae. No further rocky areas have been surveyed but the rock sediment boundary is likely to be at 10 m depth or less throughout the loch.

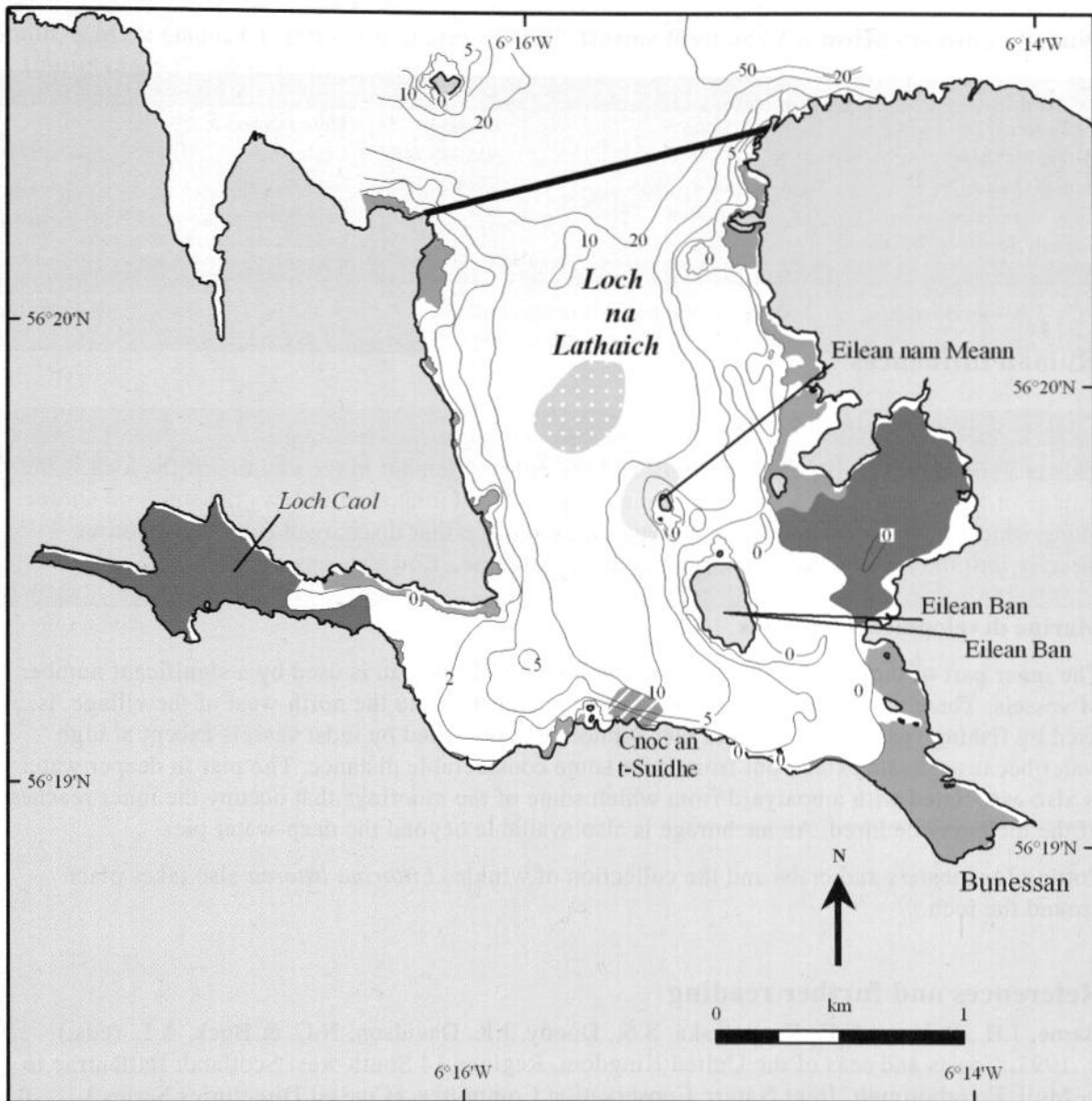


Figure 21.2 Indicative distribution of the main biotopes in the area (based on data from survey sites shown in Figure 21.1, cited literature and additional field observations).

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Sublittoral sediment

Sediments within the loch have not been studied in detail. However, they appear to be mainly muddy, mixed sediments. At the sheltered head of the loch, at Cnoc an t-Suidhe, muddy sediment is present in shallow water at around 5 m depth. The mud surface is bound by the filamentous red alga *Trilliella* sp. and there is a heavy cover of the brown alga *Asperococcus turneri* (LsacX). Sediment in the middle of the loch at around 20 m depth consists of sandy mud with sea-pens *Virgularia mirabilis* and some Norway lobster *Nephrops norvegicus* (SpMeg). These sediments are intermediate between very sheltered, soft, deep mud with sea-pens and shallower muds with algal mats. The opisthobranch mollusc *Philine aperta*, normally characteristic of shallow, organically enriched muds, is common on these deeper sediments.

Nature conservation

Conservation sites			
Site name	Status	Location	Main features
Ardtun leaf beds	SSSI	NM 379 248	Geological
Ardtun (3 sites)	GCR	NM 390 230	Geological
Cnoc an t-Suidhe	GCR	NM 370 215	Geological
Central, South and West Mull	RSA		Includes area surrounding loch
Argyll Islands	ESA		Includes area surrounding loch

Human influences

Coastal developments and uses

This is a sparsely populated part of Mull and the only settlement in the vicinity of the loch is the village of Bunessan in the south-east corner. The road to Fionnphort follows the southern shore, along which there are other scattered houses. Sewage is either discharged from these houses directly into the loch or stored in septic tanks with the overflow entering the loch.

Marine developments and uses

The inner part of the loch acts as a natural harbour and Bunessan is used by a significant number of vessels. There are two piers at Bunessan and one of these, to the north-west of the village, is used by fishing vessels. The second pier cannot be approached by most vessels except at high water because shoals extend out from it for some considerable distance. The pier in deeper water is also associated with a boatyard from which some of the moorings that occupy the inner reaches of the loch may be hired. An anchorage is also available beyond the deep-water pier.

Potting for lobsters and crabs and the collection of winkles *Littorina littorea* also takes place around the loch.

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Sites surveyed

Survey 26: 1989 UMBSM Mull sealochs survey (Davies 1990).

Survey 85: 1983 Smith Mull littoral survey (Smith & Gault 1983; Bishop 1984).

Littoral sites					
Survey	Site	Place	Grid reference	Latitude/longitude	Biotopes recorded
85	27	Bunessan, Loch na Lathaich, Mull	NM 376 232	56°19.7'N 06°14.6'W	F

Sublittoral sites					
Survey	Site	Place	Grid reference	Latitude/longitude	Biotopes recorded
26	56	NW Eilean nam Meann, Loch na Lathaich, Mull	NM 369 233	56°19.7'N 06°15.4'W	K
26	57	Mid-loch, Loch na Lathaich, Mull	NM 366 238	56°19.9'N 06°15.7'W	SpMeg, PhiVir
26	58	N of Cnoc an t-Suidhe, Loch na Lathaich, Mull	NM 368 224	56°19.2'N 06°15.4'W	LsacX



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

Location

<i>Position (centre)</i>	NM 600 230	56°20'N 5°54'W
<i>Administrative area</i>	Argyll and Bute	
<i>Conservation agency/area</i>	Scottish Natural Heritage	West Areas (Argyll and Stirling)

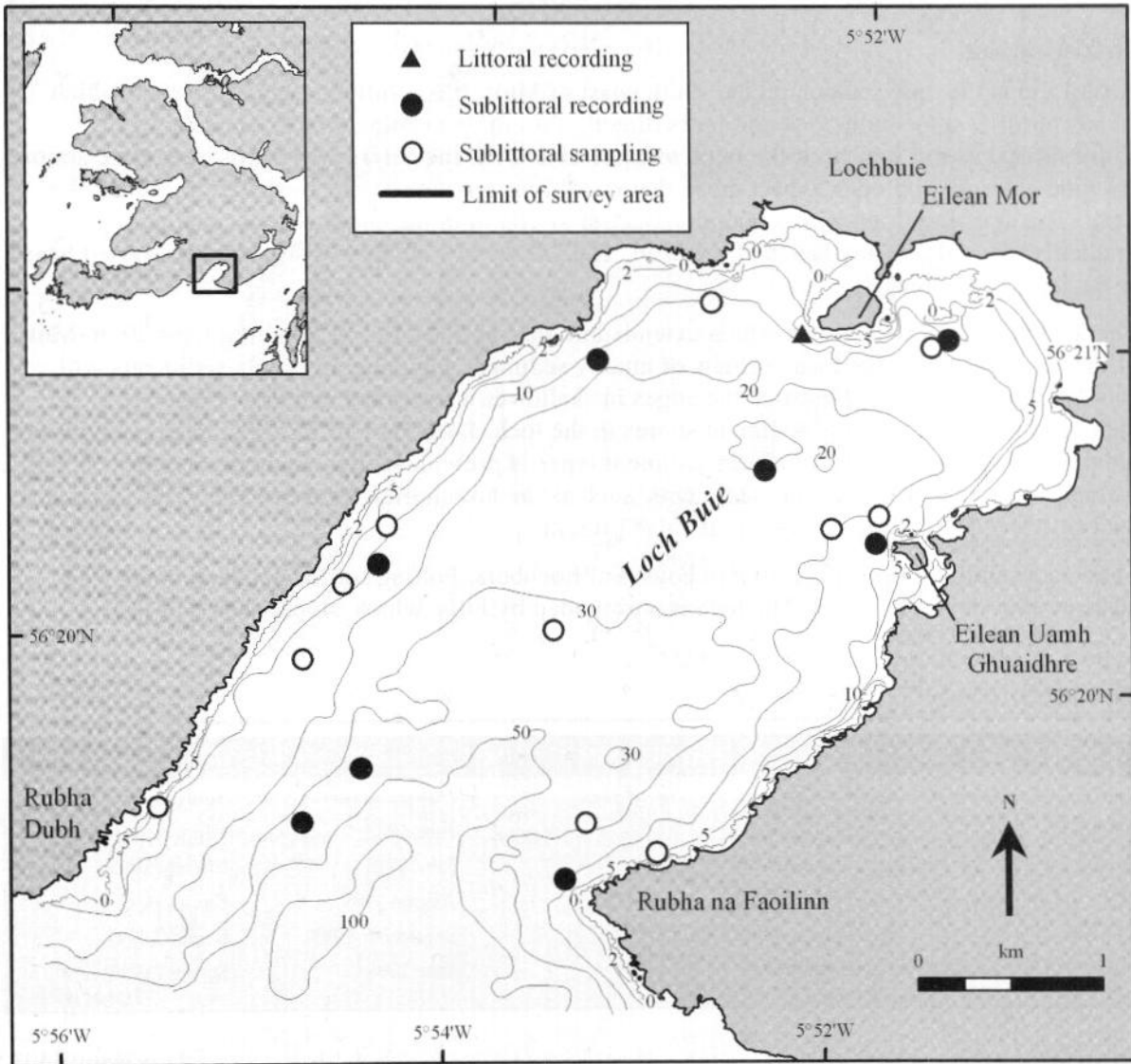


Figure 22.1 Main features of the area, showing sites surveyed.

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Physical features

<i>Physiographic type</i>	Open sealoch
<i>Length of coast</i>	19.31 km
<i>Length of inlet</i>	4.4 km
<i>Area of inlet</i>	11.6 km ² (HW); 10.6 km ² (LW)
<i>Bathymetry</i>	105.0 m (max)
<i>Wave exposure</i>	Moderate exposure at loch entrance; more sheltered further in
<i>Tidal streams</i>	Negligible
<i>Tidal range</i>	Springs: 3.5 m; neaps: 1.3 m (Carsaig Bay)
<i>Salinity</i>	Fully marine

Introduction

Loch Buie is the only sealoch on the south coast of Mull. It is a fully marine, open loch which trends north-east to south-west and faces directly into the prevailing winds. The islands of Colonsay, Islay and Jura limit the fetch to some extent but the entrance is exposed to wave action. Its wide entrance and open aspect mean that conditions are no better than sheltered even at the head. This is a deep loch with a maximum depth of 105 m in the entrance area, shallowing gradually towards a sandy beach at the head. The village of Lochbuie is situated on a raised beach at the head of the loch.

The loch is fringed by bedrock which extends into the sublittoral to a depth of a least 20 m. Most of the central floor of the loch consists of muddy sediment and there are sandy sediments with pebble, cobble and gravel towards the edges in shallower water. Sand and gravel beaches at the loch head represent the only sediment shores in the loch. Loch Buie differs from other sealochs around Mull in that a range of mixed sediment types is present, shallow enough to support algae. Animals characteristic of coarse sediments, such as the holothurian *Neopentadactyla mixta* and the brittlestar *Amphiura securigera*, are also present.

There is a small village with scattered houses at Lochbuie. Potting for lobsters and crabs takes place around the rocky areas. The loch is surrounded by hills, which support herds of deer.

Marine biology**Marine biological surveys**

	<i>Survey methods</i>	<i>No. of sites</i>	<i>Date(s) of survey</i>	<i>Source</i>
<i>Littoral</i>	Recording (epibiota)	1	June 1983	Smith & Gault (1983)
<i>Sublittoral</i>	Recording (remote)	11	June 1998	Davies (1999)
	Recording (epibiota)	7	August 1989	Davies (1990)
	Recording (epibiota)	1	September 1983	Buehr (1984)
	Infaunal sampling (grabs)	6	June 1998	Davies (1999)

Littoral

The shoreline in Loch Buie is almost entirely rocky, with mixed sand and boulder shores at the head. The shores have not been surveyed, with the exception of the head of the loch. Shores here are described by Smith (1983) as flat *Tellina* sands and cobble shores backed by storm beaches with boulders up to 1 m across. The tidal islet of Eilean Mor extends around 500 m into the loch from the head of the loch. The seaward end is composed of irregular rock and is exposed to wave action. The majority of the other rocky shores within the loch are also likely to be exposed or moderately exposed to wave action, but no details are available of biotopes present.

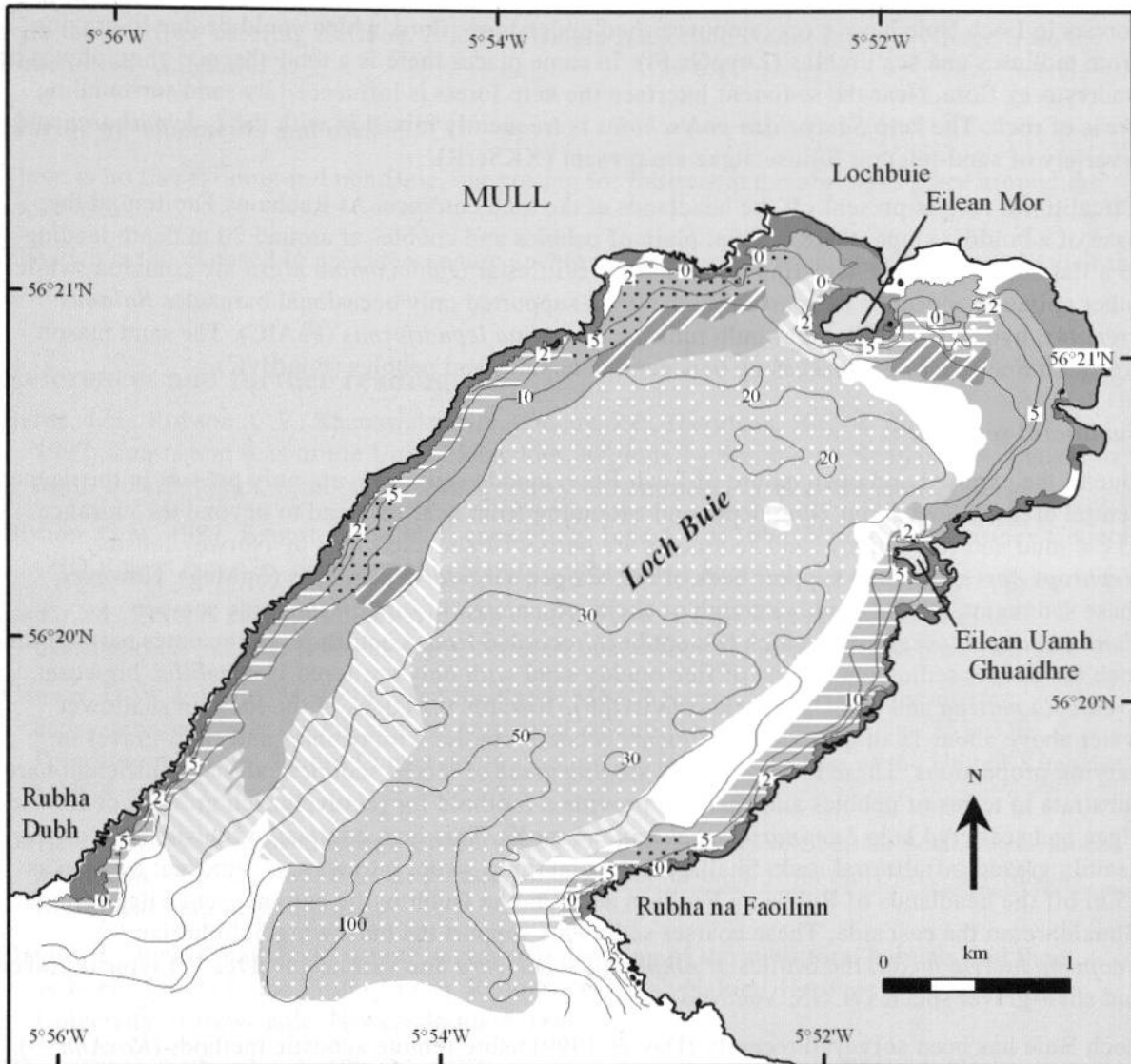


Figure 22.2 Indicative distribution of the main biotopes in the area (based on data from survey sites shown in Figure 22.1, cited literature and additional field observations).

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Sublittoral

Sublittoral rock

Sublittoral rock extends down from the rocky shores to at least 20 m depth within the entrance to the loch. However, the rocky slopes shelve gradually and generally meet sediment between 7 and 12 m depth further into the loch. There is no sharp interface with the sediment and silty bedrock outcrops also occur well away from the sides of the loch in sediment areas. The extent of these outcrops is not known. In the centre of the loch, to the north-west of Eilean Uamh Ghuaidhre (site 8 in Davies 1990) such outcrops have an impoverished fauna and are dominated by brittlestars *Ophiothrix fragilis* (FaAIC).

The infralittoral rock around the edges of the loch supports forests of *Laminaria hyperborea*. Due to the exposed nature of the loch, these extend right to the head of the loch. However, unlike the exposed lochs on the north-west and west of Mull where foliose algae are abundant, the kelp

forests in Loch Buie have a very impoverished understory flora, which could be due to grazing from molluscs and sea urchins (LhypGz.Ft). In some places there is a total absence of epiphytes or understory flora. Near the sediment interface the kelp forest is influenced by sand surrounding areas of rock. The kelp *Saccorhiza polyschides* is frequently mixed in with the *L. hyperborea* and a variety of sand-tolerant foliose algae are present (XKScrR).

Circalittoral rock is present off the headlands at the loch entrance. At Rubha na Faoilinn at the base of a boulder slope, there is a flat plain of pebbles and cobbles at around 20 m depth leading to a flat bedrock area. Encrusting algae and the brittlestar *Ophiocomina nigra* are common, while other epifauna appear to be sparse. The bedrock supported only occasional barnacles *Balanus crenatus*, hydroids and the light-bulb tunicate *Clavelina lepadiformis* (FaAIC). The sand mason worm *Lanice conchilega* pushes up between the cobbles and pebbles (PomByC).

Sublittoral sediment

Due to the exposed and open nature of Loch Buie, muddy sediments are only present in the deeper central areas, below about 20 m depth and extending from near the head to beyond the entrance. These mud and fine muddy sand sediments are burrowed and excavated by Norway lobster *Nephrops norvegicus* and support beds of the sea-pen *Virgularia mirabilis* (SpMeg). However, these sediments are not muddy enough or sheltered enough to support the large sea-pen *Funiculina quadrangularis*, which has not been recorded from Loch Buie. In the outer parts of the loch the deeper sediments consist of fine muddy sand with only scattered *V. mirabilis*, lugworm *Arenicola marina* and no *N. norvegicus* (VirOph). Towards the edges of the loch, in shallower water above about 15 m depth, the sediments become sandier with pebbles and shell-gravel in varying proportions. These level or gently sloping areas of mixed sediment all have sufficient hard substrata in terms of pebbles and shells to provide a foothold for relatively rich growths of foliose algae and scattered kelp *Laminaria saccharina* (LsacX). This is in contrast to the situation on the heavily grazed infralittoral rock. Shell-gravel, sometimes swept into waves, is present as deep as 15 m off the headlands of Rubha na Faoilinn and Rhubha Dubh in the entrance and Eilean Uamh Ghuaidhre on the east side. These coarser sediments support the burrowing holothurian *Neopentadactyla mixta*, the brittlestar *Amphiura securigera* and various bivalves, all typical gravel and shell-gravel species (CGS, Ven.Neo).

Loch Buie has been surveyed recently (Davies 1999) using remote acoustic methods (*RoxAnn*TM). The predicted distribution of the most likely biotope complexes for this area corresponds well with the biotopes recorded on previous MNCR diving surveys (Davies 1990). However, the sediments within this loch are quite variable, especially in the entrance and around the edges, and the mapped distribution of these sediments is only approximate.

Nature conservation

Conservation sites			
Site name	Status	Location	Main features
Argyll islands	ESA		Includes area surrounding loch
West coast of loch	SSSI	NM 590 240 NM 450 193	Biological
Central, South and West Mull	RSA		Includes area surrounding loch

Human influences

Coastal developments and uses

The village of Lochbuie with scattered housing is located on a raised beach at the head of the loch. Sewage is either discharged from these houses directly into the loch or stored in septic tanks

with the overflow entering the loch. A narrow single-track road comes into the village from the direction of Craignure.

Marine developments and uses

There is no fish farming in Loch Buie, but potting for lobsters and crabs takes place around the rocky areas.

The loch is too exposed to provide a secure anchorage but passing yachts almost certainly visit the loch.

References and further reading

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- Smith, S.M. & Gault, F.I. 1983. The shores of Mull: marine flora and fauna. (Contractor: S.M. Smith, Edinburgh) Nature Conservancy Council, CSD Report, No. 497.

Sites surveyed

- Survey 26: 1989 UMBSM Mull sealochs survey (Davies 1990).
- Survey 47: 1983 MCS Firth of Lorn sublittoral survey (Buehr 1984).
- Survey 85: 1983 Smith Mull littoral survey (Smith & Gault 1983; Bishop 1984).
- Survey 812: 1996–1998 SNH Firth of Lorn remote sublittoral survey.

Littoral sites					
Survey	Site	Place	Grid reference	Latitude/longitude	Biotopes recorded
85	17	Eilean Mòr, Loch Buie, Mull	NM 608 242	56°21.0'N 05°52.3'W	Cor, LS, LR

Sublittoral sites					
<i>Survey</i>	<i>Site</i>	<i>Place</i>	<i>Grid reference</i>	<i>Latitude/longitude</i>	<i>Biotopes recorded</i>
26	1	SW of loch, Loch Buie, Mull	NM 584 219	56°19.6'N 05°54.5'W	VirOph, VirOph.HAs
26	2	W of Rubha na Faoilinn, Loch Buie, Mull	NM 595 213	56°19.3'N 05°53.4'W	PomByC, FaAIC, Lhyp.Ft, Lhyp.Pk
26	3	Middle of W side, Loch Buie, Mull	NM 585 230	56°20.2'N 05°54.4'W	LsacX
26	4	Point SW of Rubha na h-Airde Glaise, Loch Buie, Mull	NM 597 241	56°20.8'N 05°53.3'W	Ldig.Ldig, Lhyp.Ft, XKScrR, LsacX
26	5	NW of Eilean Uamh Ghuaidhre, Loch Buie, Mull	NM 612 231	56°20.4'N 05°51.8'W	Ven.Neo
26	7	S of Moie Castle, head of loch, Loch Buie, Mull	NM 616 242	56°21.0'N 05°51.5'W	LsacX, LhypGz.Ft
26	8	Middle of upper loch, Loch Buie, Mull	NM 606 235	56°20.5'N 05°52.4'W	SpMeg, FaAIC
47	4	'Meldon', Loch Buie, Mull	NM 580 216	56°19.5'N 05°54.8'W	
812	285	Loch Buie, Firth of Lorn	NM 573 217	56°19.5'N 05°55.5'W	CGS
812	286	Loch Buie, Firth of Lorn	NM 580 224	56°19.9'N 05°54.8'W	FaMS
812	287	Loch Buie, Firth of Lorn	NM 583 228	56°20.2'N 05°54.6'W	XKScrR
812	288	Loch Buie, Firth of Lorn	NM 585 232	56°20.3'N 05°54.4'W	FaMS
812	289	Loch Buie, Firth of Lorn	NM 603 244	56°21.0'N 05°52.7'W	FaMS
812	290	Loch Buie, Firth of Lorn	NM 615 241	56°20.9'N 05°51.5'W	FaAIC, XKScrR, LhypGz.Pk
812	291	Loch Buie, Firth of Lorn	NM 612 232	56°20.4'N 05°51.8'W	Oph
812	292	Loch Buie, Firth of Lorn	NM 609 231	56°20.4'N 05°52.1'W	SpMeg
812	293	Loch Buie, Firth of Lorn	NM 594 226	56°20.1'N 05°53.5'W	SpMeg
812	294	Loch Buie, Firth of Lorn	NM 596 216	56°19.5'N 05°53.3'W	CGS
812	295	Loch Buie, Firth of Lorn	NM 600 214	56°19.4'N 05°52.9'W	FaS, XKScrR

23

Loch Spelve

Location

Position (centre)	NM 690 280	56°23.2'N 5°44'W
Administrative area	Argyll and Bute	
Conservation agency/area	Scottish Natural Heritage	West Areas (Argyll and Stirling)

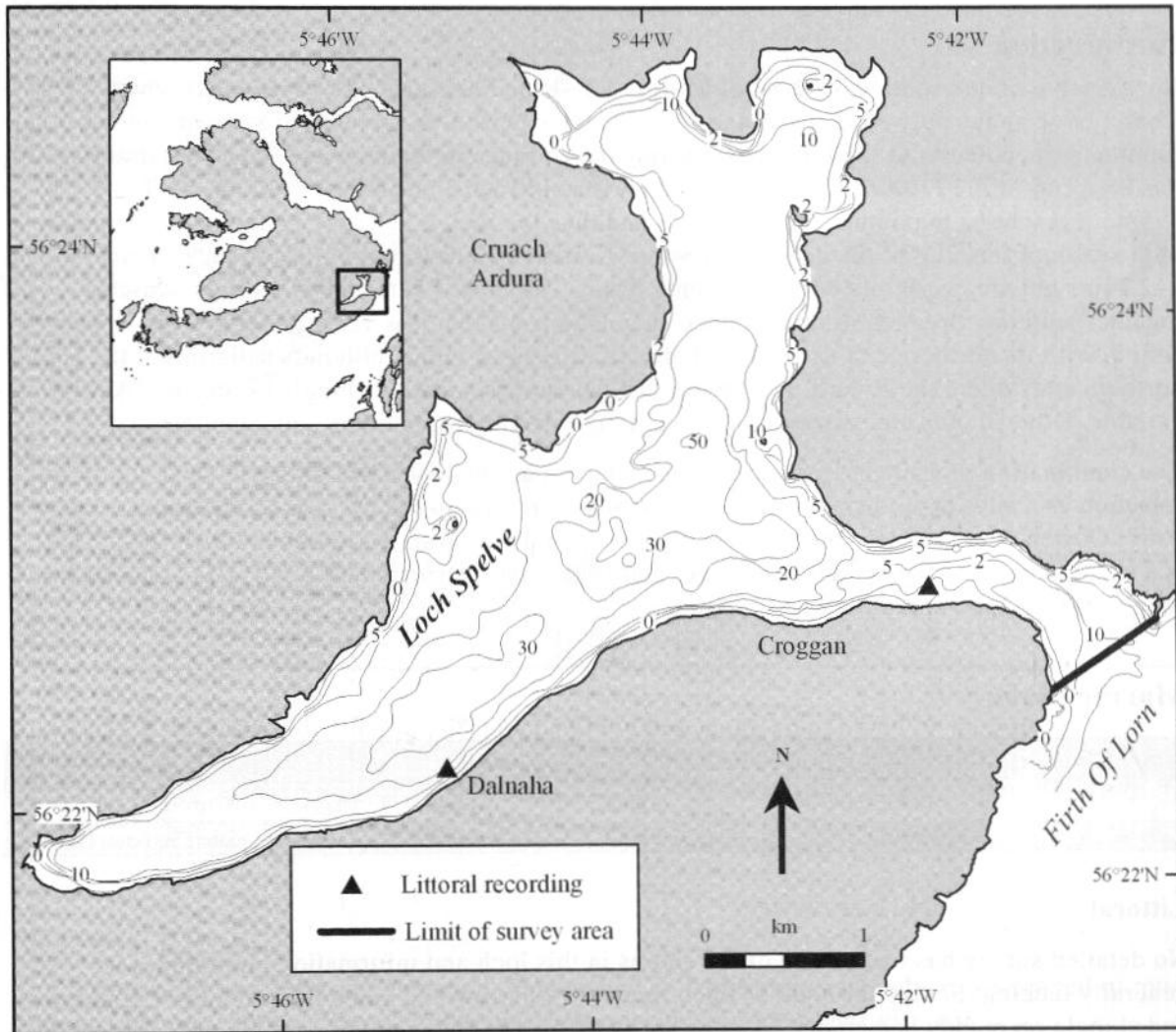


Figure 23.1 Main features of the area, showing sites surveyed.

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Physical features

<i>Physiographic type</i>	Fjord with one sill
<i>Length of coast</i>	27.55 km
<i>Length of inlet</i>	7.7 km
<i>Area of inlet</i>	9.9 km ² (HW); 8.8 km ² (LW)
<i>Bathymetry</i>	58.0 m (max)
<i>Wave exposure</i>	Very sheltered to extremely sheltered
<i>Tidal streams</i>	1–2 knots through entrance channel; negligible in inner basin
<i>Tidal range</i>	Springs: 3.3 m; neaps: 1.1 m (Oban)
<i>Salinity</i>	Fully marine; salinity may be variable near mouth of River Lusse

Introduction

Loch Spelve on the south-east coast of Mull is a T-shaped loch that possesses rocks which stem from a large and deeply eroded volcano of the tertiary period. A narrow and very shallow channel running perpendicular to the inner basin forms the entrance to the loch and opens out into the northern end of the Firth of Lorn. This channel is a sill with a mean depth of 3 m; the basin behind it reaches a maximum depth of 58 m and thus the loch is subject to summer stratification with seasonal flushing of the deep basin water. Current speeds through the entrance channel reach 1–2 knots but are negligible within the inner basin. The loch is surrounded by hills, which, together with the direction of the entrance channel, means that it is very sheltered from wave action, with its northern end extremely sheltered. It is fully saline, although salinities at the northern end, where the River Lusse enters the loch across a muddy shingle beach, are likely to be variable. Other shores are narrow, consisting predominantly of boulders and cobbles.

The combination of sheltered conditions, deep water and the loch's proximity to Oban led to its selection as a site for studies into the effects of fish farming on the environment (Brown *et al.* 1987; Gowen *et al.* 1988). A number of salmon and mussel farms are situated on the loch. There is a small amount of woodland around the loch edges and the surrounding hillsides are used for rough grazing and support herds of red deer.

Marine biology**Marine biological surveys**

	<i>Survey methods</i>	<i>No. of sites</i>	<i>Date(s) of survey</i>	<i>Source</i>
<i>Littoral</i>	Recording (epibiota)	2	June 1983	Smith & Gault (1983)

Littoral

No detailed survey has been made of the shores in this loch and information on biotopes is generally lacking. Shores throughout Loch Spelve are narrow and composed mainly of boulders and shingle on muddy sediments. The northern arm of the loch is the most sheltered and the shores here consist of boulders and shingle giving way to mud. The boulders are covered by the eggwrack *Ascophyllum nodosum*. The Lussa River enters at the north-west corner and brackish conditions are likely to prevail over the shore at this point. The south-east shores near Dalnaha are slightly less sheltered and the boulders in this area have a heavy cover of fucoids, but are not completely blanketed by them (F). At low water the boulders give way to gravel with a *Venerupis* community (VsenMtru).

The shores on the south side of the narrow entrance channel consist of steep rocks or cobble banks re-worked from fluvio-glacial deposits (SLR). The lower shore consists of boulders on gravel and sand-flats (LMX). The flora and fauna are rather poor and there are no species-rich under-boulder communities. The north shore of the channel is rockier but has not been surveyed.

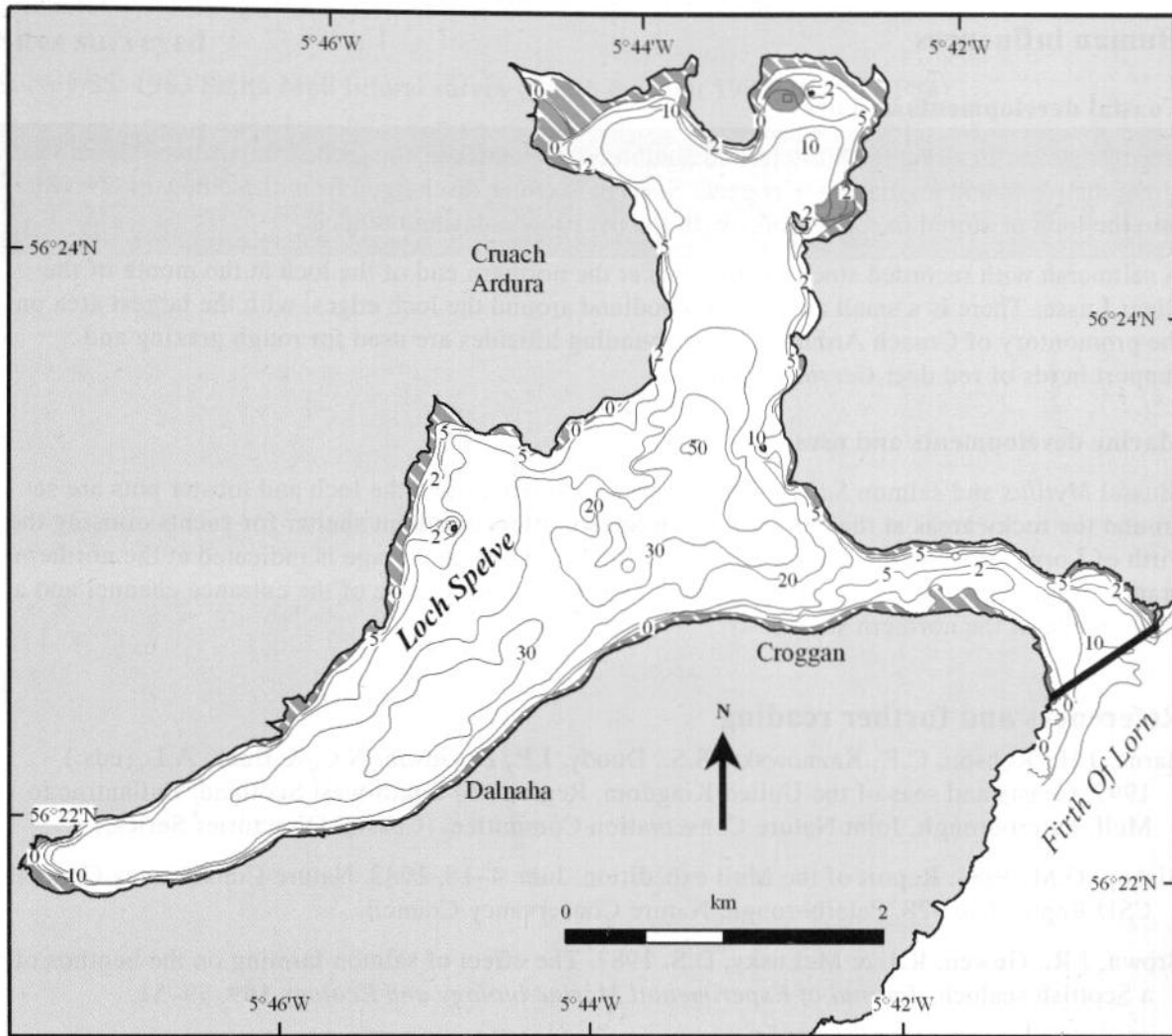


Figure 23.2 Indicative distribution of the main biotopes in the area (based on data from survey sites shown in Figure 23.1, cited literature and additional field observations).

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Sublittoral

There have been no sublittoral surveys in this loch. The admiralty chart indicates a seabed of mud, sand and shingle, with rock and shingle in the current-exposed entrance channel.

Nature conservation

Conservation sites			
Site name	Status	Location	Main features
Ardura–Achnacraig	SSSI	NM 705 290	Geological, biological
Loch Spelve–Achnacraig	GCR	NM 737 301	Geological, biological
Argyll Islands	ESA		Includes area surrounding loch

Human influences

Coastal developments and uses

Narrow roads run along the western and south-eastern shores of the loch, with scattered housing along the roads and a village at Croggan. Sewage is either discharged from these houses directly into the loch or stored in septic tanks with the overflow entering the loch.

A saltmarsh with recorded stock grazing lies at the northern end of the loch at the mouth of the River Lusse. There is a small amount of woodland around the loch edges, with the largest area on the promontory of Cruach Ardura. The surrounding hillsides are used for rough grazing and support herds of red deer *Cervus elaphus*.

Marine developments and uses

Mussel *Mytilus* and salmon *Salmo salar* farms are dotted around the loch and lobster pots are set around the rocky areas at the entrance. Loch Spelve offers excellent shelter for yachts cruising the Firth of Lorn, although the entrance is very shallow, and an anchorage is indicated at the northern branch of the loch. There is a pier at Croggan on the southern shore of the entrance channel and a jetty on one of the northern shores.

References and further reading

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- Smith, S.M. & Gault, F.I. 1983. *The shores of Mull: marine flora and fauna*. Report to the Nature Conservancy Council, Huntingdon.

Sites surveyed

Survey 85: 1983 Smith Mull littoral survey (Smith & Gault 1983, Bishop 1984).

Littoral sites					
Survey	Site	Place	Grid reference	Latitude/longitude	Biotopes recorded
85	18	Lean Mòr, Loch Spelve, Mull	NM 684 264	56°22.4'N 05°44.9'W	F, VsenMtru
85	19	Narrows, Loch Spelve, Mull	NM 715 275	56°23.1'N 05°42.1'W	LMX, SLR

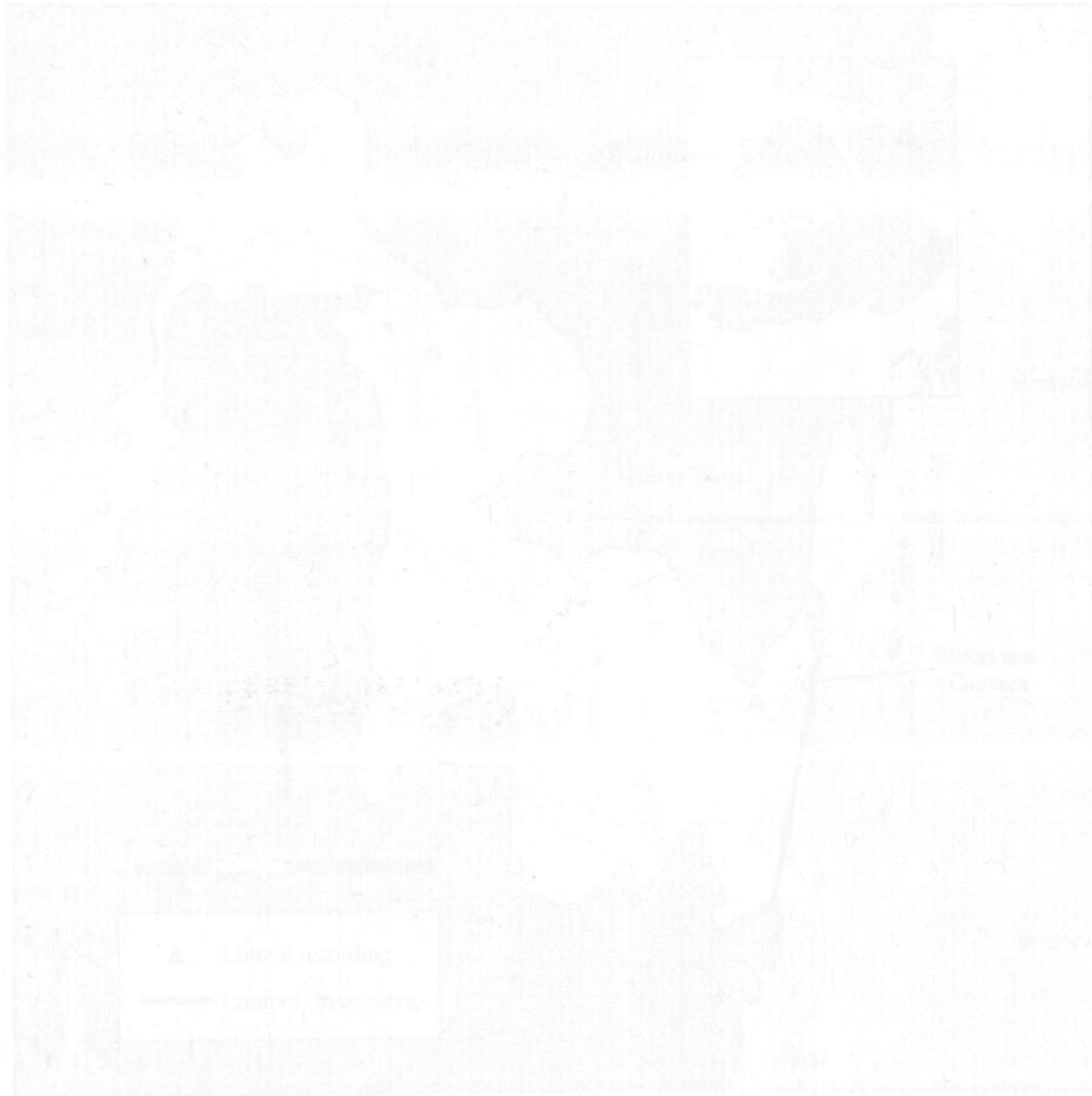


Figure 24.1 Main features of the Mull area. The area surveyed in 1983 is shown in the inset map. The inset map shows the location of the survey area in the Mull area.

Location

<i>Position (centre)</i>	NM 740 315	56°25.3'N 5°39.8'W
<i>Administrative area</i>	Argyll and Bute	
<i>Conservation agency/area</i>	Scottish Natural Heritage	West Areas (Argyll and Stirling)

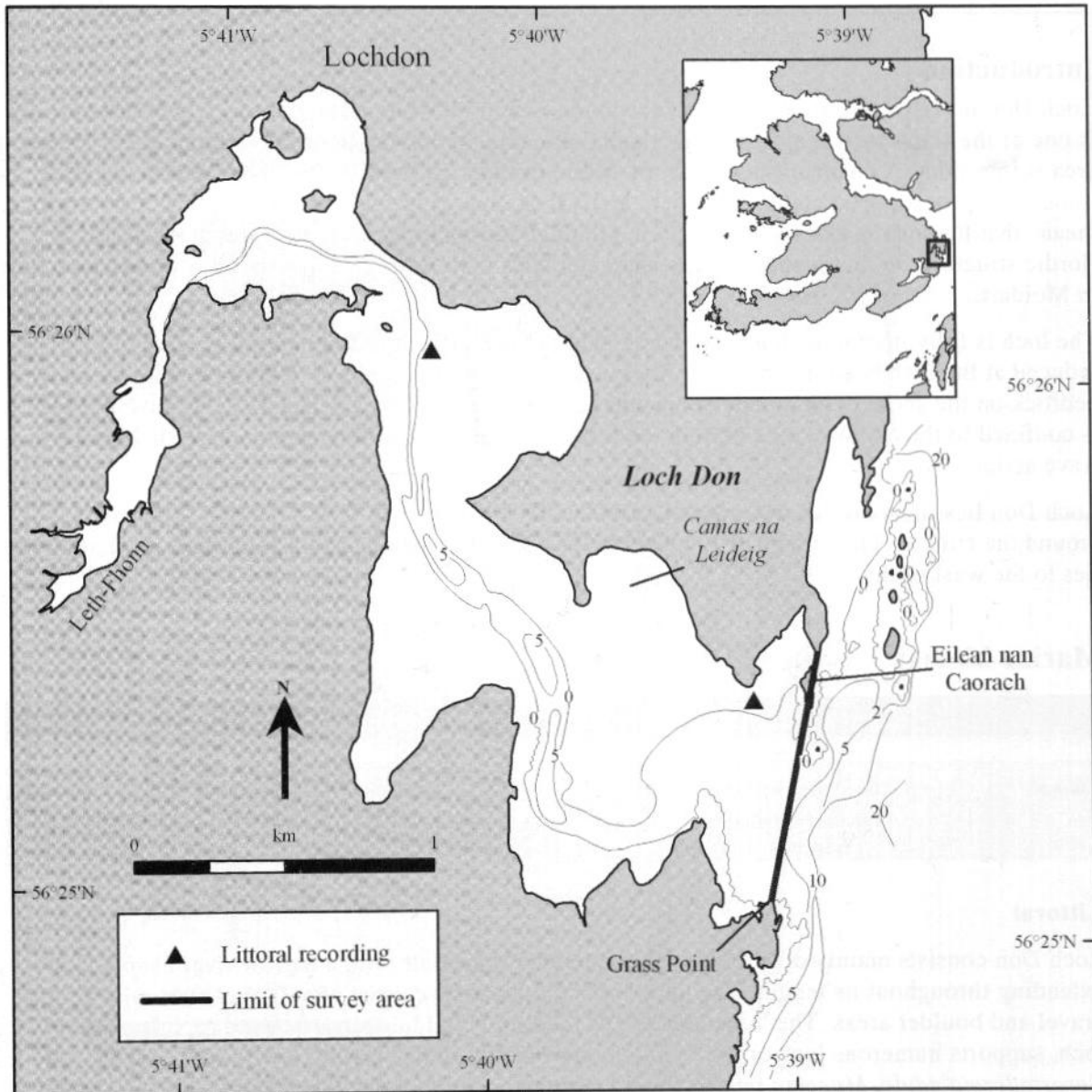


Figure 24.1 Main features of the area, showing sites surveyed.

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Physical features	
<i>Physiographic type</i>	Fjord with two sills
<i>Length of coast</i>	13.22 km
<i>Length of inlet</i>	3.4 km
<i>Area of inlet</i>	2 km ² (HW); 0.4 km ² (LW)
<i>Bathymetry</i>	8.0 m (max)
<i>Wave exposure</i>	Very sheltered to extremely sheltered
<i>Tidal streams</i>	Negligible
<i>Tidal range</i>	Springs: 3.3 m; neaps: 1.1 m (Oban)
<i>Salinity</i>	Entrance fully marine; basin of Leth-fhonn probably brackish. Overall salinity reduction of 0.6 ppt

Introduction

Loch Don is situated south of the entrance to the Sound of Mull on the island's south-east coast. It is one of the shallowest sealochs in Scotland, with a maximum depth of only 8 m, and 80% of its area is intertidal. A channel runs down the centre of the loch from the brackish lagoon of Leth-fhonn in the north-west corner, and there are two shallow sills and basins along this channel. This means that the loch is classified as a fjord, although its shallow profile is highly unusual for a fjordic structure. In fact it shares many characteristics with Loch Gruinart on Islay and Kentra Bay in Moidart.

The loch is fully marine with a very short flushing time, although it is likely that salinities are reduced at the loch head in periods of high rainfall. There are stretches of shingle, boulder and bedrock on the shore, with muddy sediments forming the majority of the intertidal flats; bedrock is confined to the entrance area in both the littoral and sublittoral. The loch is very sheltered from wave action.

Loch Don lies in an area of low ground, reflected its shallow profile, and there is some saltmarsh around the fringes. The village of Lochdon is located at the loch head and a coniferous plantation lies to the west of this.

Marine biology

Marine biological surveys				
	<i>Survey methods</i>	<i>No. of sites</i>	<i>Date(s) of survey</i>	<i>Source</i>
<i>Littoral</i>	Recording (epibiota)	1	June 1983	Smith & Gault (1983)
	Infaunal sampling (digging)	1	June 1983	Smith & Gault (1983)

Littoral

Loch Don consists mainly of littoral mud and muddy sand-flats with a narrow river channel extending throughout its length. The upper and middle areas consist of soft mud-flats with some gravel and boulder areas. The large expanse of mud in the middle area, on the east side of the loch, supports numerous lugworms *Arenicola marina* and sparse bivalves including cockles *Cerastoderma edule*, *Macoma balthica* and *Scrobicularia plana* (HedScr). Boulder areas around the edges support eggwrack *Ascophyllum nodosum* and mussels *Mytilus edulis* (Asc.VS), with the ragworm *Nereis diversicolor* among the boulders where there is more gravel. Eelgrass *Zostera* sp. may be present near low water but this has not been confirmed. The outer basin, Camas na Leideig, is slightly more exposed and the sediment flats are composed of firm, sandy mud and boulders with a sparse *Arenicola/Cerastoderma* community.

Shores on the north and south sides of the loch entrance are rocky. The headland on the north side and the area around the nearby tidal islet, Eilean nan Caorach, form fairly steep-sided ridges running north-south. These are heavily blanketed by furoid algae, with an understorey of red algae

on the lower shore (F). Between Eilean nan Caorach and the mainland there are patches of mud with the spire shell *Hydrobia ulvae* and the sacoglossan *Limapontia depressa* grazing on the surface (LMU).

Sublittoral

The sublittoral area of this loch is very limited and has not been surveyed. The entrance area is very shallow, less than 2 m deep, and is charted as sand. The river channel about half-way along the loch reaches 8 m depth and the entire channel is likely to consist of mud.

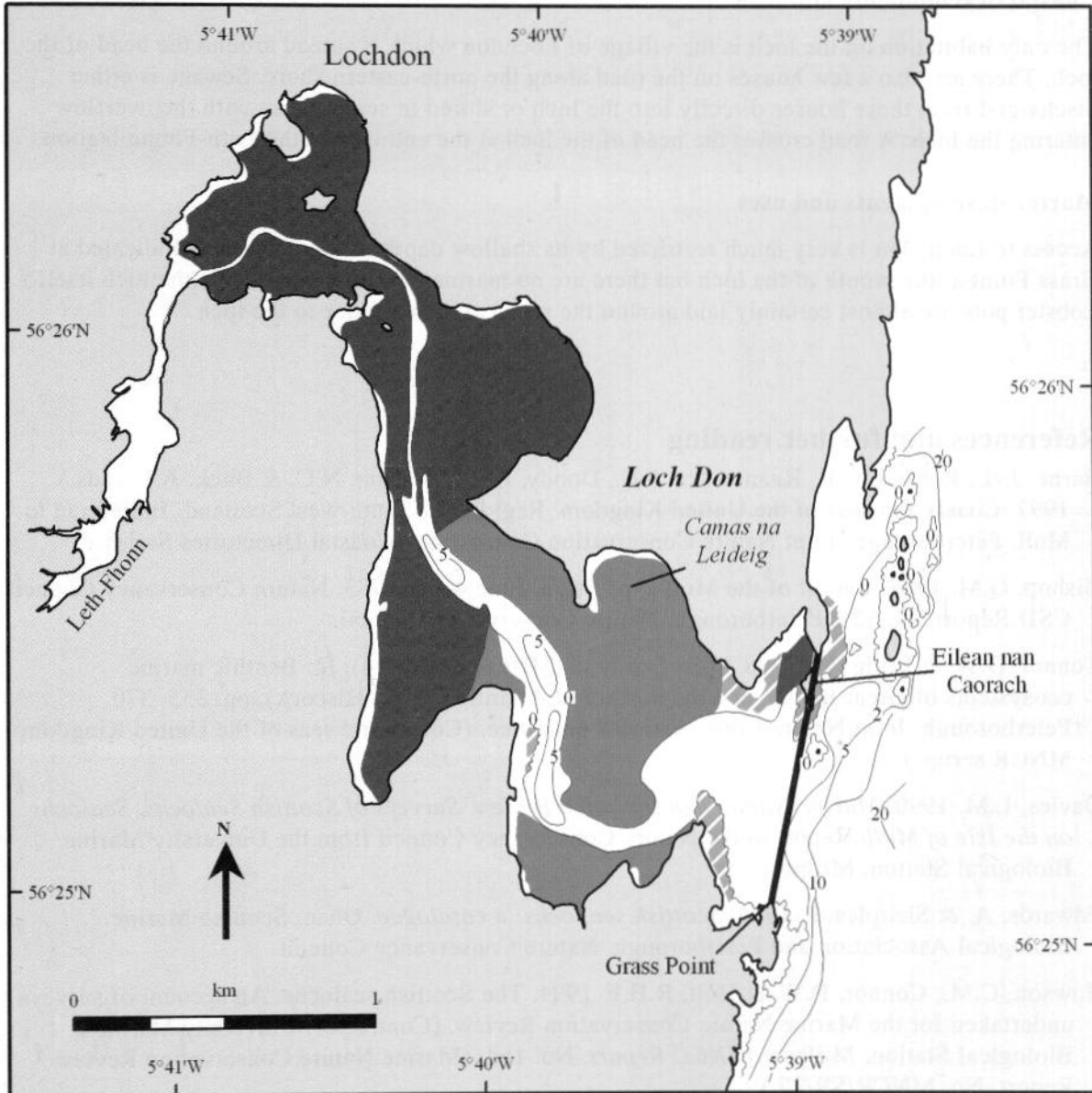


Figure 24.2 Indicative distribution of the main biotopes in the area (based on data from survey sites shown in Figure 24.1, cited literature and additional field observations).

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Nature conservation

Conservation sites			
Site name	Status	Location	Main features
Argyll Islands	ESA		Includes area surrounding loch

Human influences

Coastal developments and uses

The only habitation on the loch is the village of Lochdon which is spread around the head of the loch. There are also a few houses on the road along the north-eastern shore. Sewage is either discharged from these houses directly into the loch or stored in septic tanks with the overflow entering the loch. A road crosses the head of the loch at the entrance to the Leth-Fhonn lagoon.

Marine developments and uses

Access to Loch Don is very much restricted by its shallow depth. An anchorage is indicated at Grass Point at the mouth of the loch but there are no marine developments inside the loch itself. Lobster pots are almost certainly laid around the rocks at the entrance to the loch.

References and further reading

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Sites surveyed

Survey 85: 1983 Smith Mull littoral survey (Smith & Gault 1983, Bishop 1984).

Littoral sites					
<i>Survey</i>	<i>Site</i>	<i>Place</i>	<i>Grid reference</i>	<i>Latitude/longitude</i>	<i>Biotopes recorded</i>
85	7	Loch Don, Mull	NM 736 328	56°26.0'N 05°40.3'W	HedScr, Znol, Asc.VS
85	8	Eilean nan Caorach, Loch Don, Mull	NM 747 316	56°25.4'N 05°39.2'W	F, LMU, Ldig

Appendix A

Biotopes classification

A hierarchical classification of the biotopes recorded in MNCR Sector 13 (West Scotland) 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	Pra	<i>Prasiola stipitata</i> on nitrate-enriched supralittoral or littoral fringe rock
LR.L	Ver	<i>Verrucaria maura</i> on 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		Mytilus (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
MLR		Moderately exposed littoral rock (BARNACLE/FUCOID SHORES)
MLR.BF		Barnacles and fucoids (moderately exposed shores)
MLR.BF	PelB	<i>Pelvetia canaliculata</i> and barnacles on moderately exposed littoral fringe rock
MLR.BF	FvesB	<i>Fucus vesiculosus</i> and barnacle mosaics on moderately exposed mid-eulittoral rock
MLR.BF	Fser.R	<i>Fucus serratus</i> and red seaweeds on moderately exposed lower eulittoral rock

Higher code	Biotope code	Biotope
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.MF		Mytilus (mussels) and fucoids (moderately exposed shores)
MLR.MF	MytFves	<i>Mytilus edulis</i> and <i>Fucus vesiculosus</i> on moderately exposed mid-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.F	Fcer	<i>Fucus ceranoides</i> on reduced-salinity eulittoral rock
SLR.FX		Fucoids, barnacles or ephemeral seaweeds (mixed substrata)
SLR.FX	BLit	Barnacles and <i>Littorina littorea</i> on unstable eulittoral 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
SLR.FX	EphX	Ephemeral green and red seaweeds on variable-salinity or disturbed eulittoral mixed substrata
SLR.FX	FcerX	<i>Fucus ceranoides</i> on reduced-salinity eulittoral mixed substrata

Higher code	Biotope code	Biotope
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	SwSed	Seaweeds in sediment (sand or gravel)-floored 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.Sh		Shingle (pebble) and gravel shores
LGS.Sh	BarSh	Barren shingle or gravel shores
LGS.S		Sand shores
LGS.S	AP	Burrowing amphipods and polychaetes in 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.Est		Estuarine coarse sediment shores
LGS.Est	OI	Oligochaetes in reduced or low-salinity gravel or coarse sand shores
LMS		Littoral muddy sands
LMS.MS		Muddy sand shores
LMS.MS	Pcer	Polychaetes and <i>Cerastoderma edule</i> in fine sand and muddy sand shores
LMS.MS	MacAre	<i>Macoma balthica</i> and <i>Arenicola marina</i> in muddy sand shores

Higher code	Biotope code	Biotope
LMS.MS	MacArc.Mare	<i>Arenicola marina</i> , <i>Macoma balthica</i> and <i>Mya arenaria</i> in muddy sand shores
LMS.Zos		Littoral <i>Zostera</i> (seagrass) beds
LMS.Zos	Znol	<i>Zostera noltii</i> beds in upper to mid-shore muddy sand
LMU		Littoral muds
LMU.Sm		Saltmarsh
LMU.Sm		Saltmarsh (mid-upper)
LMU.Sm		Saltmarsh (low-mid)
LMU.Sm	NVC SM13	<i>Puccinellia maritima</i>
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
LMU.SMu	HedMac.Pyg	<i>Hediste diversicolor</i> , <i>Macoma balthica</i> and <i>Pygospio elegans</i> in sandy mud shores
LMU.SMu	HedMac.Mare	<i>Hediste diversicolor</i> , <i>Macoma balthica</i> and <i>Mya arenaria</i> in sandy mud shores
LMU.Mu		Soft mud shores
	HedScr	<i>Hediste diversicolor</i> and <i>Scrobicularia plana</i> in reduced-salinity mud shores
	HedOl	<i>Hediste diversicolor</i> and oligochaetes in low-salinity mud shores
LMX		Littoral mixed sediments
LMX	MytFab	<i>Mytilus edulis</i> and <i>Fabricia sabella</i> in poorly sorted muddy sand or muddy gravel shores
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

Higher code	Biotope code	Biotope
EIR.KFaR	Ala.Ldig	<i>Alaria esculenta</i> and <i>Laminaria digitata</i> on exposed sublittoral fringe bedrock
EIR.KFaR	LhypR.Ft	<i>Laminaria hyperborea</i> forest with dense foliose red seaweeds on exposed upper infralittoral rock
EIR.KFaR	LsacSac	<i>Laminaria saccharina</i> and/or <i>Saccorhiza polyschides</i> on exposed infralittoral rock
EIR.KFaR	FoR	Foliose red seaweeds on exposed or moderately exposed lower infralittoral rock
EIR.SG		Robust faunal cushions and crusts (surge gullies & caves)
EIR.SG	SCAn	Sponge crusts and anemones on wave-surged vertical infralittoral rock
EIR.SG	SCAs	Sponge crusts and colonial ascidians on wave-surged vertical infralittoral rock
EIR.SG	SCAs.DenCla	<i>Dendrodoa grossularia</i> and <i>Clathrina coriacea</i> 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
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

Higher code	Biotope code	Biotope
MIR.SedK		Sand or gravel-affected or disturbed kelp and seaweed communities
MIR.SedK	LsacChoR	<i>Laminaria saccharina</i> , <i>Chorda filum</i> and dense red seaweeds on shallow unstable infralittoral boulders and cobbles
MIR.SedK	XKScrR	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
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.Cod	Sparse <i>Laminaria saccharina</i> with <i>Codium</i> spp. and sparse red seaweeds on heavily silted very sheltered 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
SIR.K	LsacRS.Phy	<i>Laminaria saccharina</i> with <i>Phyllophora</i> spp. and filamentous green seaweeds on reduced or low-salinity infralittoral rock
SIR.K	Lsac.T	<i>Laminaria saccharina</i> , foliose red seaweeds, sponges & ascidians on tide-swept infralittoral rock
SIR.EstFa		Estuarine faunal communities (shallow rock/mixed substrata)
SIR.EstFa	MytT	<i>Mytilus edulis</i> beds on reduced-salinity tide-swept infralittoral rock

Higher code	Biotope code	Biotope
SIR.Lag		Submerged fucoids, green and red seaweeds (lagoonal rock)
SIR.Lag	FchoG	Mixed fucoids, <i>Chorda filum</i> and green seaweeds on reduced-salinity infralittoral rock
SIR.Lag	PolFur	<i>Polyides rotundus</i> and/or <i>Furcellaria lumbricalis</i> on reduced-salinity infralittoral rock
Infralittoral rock (other)		
IR.FaSwV		Fauna and seaweeds (shallow vertical rock)
IR.FaSwV	AlcByH	<i>Alcyonium digitatum</i> and a bryozoan, hydroid and ascidian turf on 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.Alc		<i>Alcyonium</i>-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
ECR.BS		Barnacle, cushion sponge and <i>Tubularia</i> communities (very tide-swept/wave-sheltered)
ECR.BS	BalHpan	<i>Balanus crenatus</i> and <i>Tubularia indivisa</i> on extremely tide-swept circalittoral rock
ECR.BS	HbowEud	<i>Halichondria bowerbanki</i> , <i>Eudendrium arbusculum</i> and <i>Eucratea loricata</i> on reduced-salinity tide-swept circalittoral mixed substrata
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)
MCR.ByH	Flu	<i>Flustra foliacea</i> and other hydroid/bryozoan turf species on slightly scoured circalittoral rock or mixed substrata

Higher code	Biotope code	Biotope
MCR.ByH	Flu.SerHyd	<i>Sertularia argentea</i> , <i>Sertularia cupressina</i> and <i>Hydrallmania falcata</i> on tide-swept circalittoral cobbles and pebbles
MCR.M		Mussel beds (open coast circalittoral rock/mixed substrata)
MCR.M	ModT	<i>Modiolus modiolus</i> beds with hydroids and red seaweeds on tide-swept circalittoral mixed substrata
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.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
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	Aasp	<i>Ascidella 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.BrAs	NeoPro.CaTw	Brachiopods, calcareous tubeworms (<i>Placostegus tridentatus</i> , <i>Hydroides</i> spp.) and sponges on variable-salinity circalittoral rock
SCR.BrAs	NeoPro.Den	<i>Neocrania anomala</i> , <i>Dendrodoa grossularia</i> and <i>Sarcodictyon roseum</i> on reduced or low-salinity 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)
CR.FaV	Ant	<i>Antedon bifida</i> and a bryozoan/hydroid turf on steep or vertical circalittoral rock

Higher code	Biotope code	Biotope
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.FaG		Shallow gravel faunal communities
IGS.FaG	HalEdw	<i>Halcampa chrysanthellum</i> and <i>Edwardsia timida</i> on sublittoral clean stone gravel
IGS.FaG	Sell	<i>Spisula elliptica</i> and venerid bivalves in infralittoral clean sand or shell-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
IGS.FaS	ScupHyd	<i>Sertularia cupressina</i> and <i>Hydrallmania falcata</i> on tide-swept sublittoral cobbles or pebbles in coarse sand
IGS.FaS	FabMag	<i>Fabulina fabula</i> and <i>Magelona mirabilis</i> with venerid bivalves in infralittoral compacted fine 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 marina/angustifolia</i> beds in lower shore or infralittoral clean or muddy sand
IMS.Sgr	Rup	<i>Ruppia maritima</i> in reduced-salinity infralittoral muddy sand

Higher code	Biotope code	Biotope
IMS		Shallow muddy sand faunal communities
IMS	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
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
CMS	Ser	<i>Serpula vermicularis</i> reefs on very sheltered circalittoral muddy sand
IMU		Infralittoral muds
IMU.Ang		Angiosperm communities (lagoons)
IMU.Ang	NVC A12	<i>Potamogeton pectinatus</i> community
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
IMU	LagMu	Sublittoral lagoonal mud communities Shallow typically anoxic muddy sediments in areas of reduced, although stable, salinity (the salinity may vary annually). The sediment supports largely ephemeral faunal communities characterised by lugworm <i>Arenicola marina</i> and blue-green algae, together with other species, including shore crabs <i>Carcinus maenas</i> , mysid shrimps and tubificid oligochaetes, which commonly occur in lagoons.
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

Higher code	Biotope code	Biotope
IMX		Infralittoral mixed sediments
IMX.KSwMx		<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>Trailiella</i> on infralittoral muddy gravel
IMX.KSw	Peri	Loose-lying mats of <i>Phyllophora crista</i> on infralittoral muddy sediment
IMX.KSw	FiG	Filamentous green seaweeds on low-salinity infralittoral mixed sediment or rock
IMX.MrlMx		Maerl beds (muddy mixed sediments)
IMX.MrlMx	Lcor	<i>Lithothamnion corallioides</i> maerl beds on infralittoral muddy gravel
IMX.Oy		Oyster beds
IMX.Oy	Ost	<i>Ostrea edulis</i> beds on shallow sublittoral muddy sediment
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
IMX.FaMx	Lim	<i>Limaria hians</i> beds in tide-swept sublittoral muddy mixed sediment
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

References

- Connor, D.W., Brazier, D.P., Hill, T.O. & Northen, K.O. 1997a. Marine Nature Conservation Review: marine biotope classification for Britain and Ireland. Volume 1. Littoral biotopes. Version 97.06. *JNCC Report*, No. 229.
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- Howson, C.M. & Picton, B.E. (eds.) 1997. *The species directory of the marine fauna and flora of the British Isles and surrounding seas*. Belfast/Ross-on-Wye, Ulster Museum and Marine Conservation Society. (Ulster Museum Publication, No. 276.)

Appendix B

Biotores recorded in each area

The biotores 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	Loch Indaal	7	Loch Crinan
2	Loch Gruinart	8	Loch Craignish
3	Loch Tarbert, Jura	9	Loch Melfort
4	West Loch Tarbert	10	Loch Feochan
5	Loch Caolisport	11	Loch Etive
6	Loch Sween	12	Loch Creran

Area	1	2	3	4	5	6	7	8	9	10	11	12
<i>Littoral rock</i>												
L						•						
LR						•						
YG			•			•					•	
Pra												
Ver.B					•	•						
Ver.Ver			•			•					•	
ELR						•						
MytB					•	•						
BPat					•	•						
BPat.Cht					•	•						
BPat.Lic					•							
BPat.Sem												
BPat.Fvesl						•						
MLR												
PelB			•			•						•
Fser						•						
FvesB												
Fser.R						•						
Fser.Fser						•						
Fser.Fser.Bo						•						
SLR						•	•					
F			•			•						•
MytFves												
Pel			•	•		•					•	
Fspi			•			•					•	•
Fves			•			•					•	•
Asc											•	
Asc.Asc			•	•		•					•	•
Asc.T			•			•						
Asc.VS			•			•					•	
Fserr						•						•
Fserr.T			•			•						
Fserr.VS			•			•					•	
Fcer											•	
FX						•					•	•
BLit						•						
FvesX				•		•					•	
AscX				•	•	•						
AscX.mac			•			•						

Area	1	2	3	4	5	6	7	8	9	10	11	12
FserX						•						•
FserX.T						•						
FcerX											•	
EphX												
MytX						•					•	
Rkp												
G			•			•						
Cor						•						
SwSed												
Ov			•									
SByAs			•									
<i>Littoral sediment</i>												
LS		•					•					
LGS	•	•	•			•		•				
BarSh						•						
S												
AP												•
AP.P												
Lan						•						
Est												
Ol												
LMS						•					•	•
PCer			•		•	•						
MacAre											•	
Sm												
MacAre.Mare						•					•	
Znol				•		•						
LMU						•						
NVC SM13						•						
HedMac						•					•	
HedMac.Are											•	
HedMac.Mare											•	
HedMac.Pyg											•	•
HedScr						•						
HedOl											•	
LMX			•			•						•
MytFab												
<i>Sublittoral rock</i>												
IR						•		•				•
Ala						•						
Ala.Ldig	•				•	•						
LhypR.Ft						•						
LsacSac						•						
KFaR	•											
MIR	•											
FoR												
Ldig			•			•		•				
Ldig.Ldig												
Ldig.Ldig.Bo						•						
Ldig.T			•									
Lhyp						•		•				
Lhyp.Ft	•		•	•		•			•			
Lhyp.Pk			•									
Lhyp.TFt			•			•		•				
Lhyp.TPk								•				
KR						•						
LhypGz.Ft						•						
LhypGz.Pk						•						

Area	1	2	3	4	5	6	7	8	9	10	11	12
SedK					•							
XKScrR	•					•		•				
EphR								•				
HalXK	•								•			
SIR						•		•				
K			•			•		•				
LhypLsac.Ft				•	•	•	•	•				
LhypLsac.Pk								•		•		
LhypLsac	•						•		•			
Lsac						•		•				•
Lsac.Ldig					•	•		•				
Lsac.Ft			•	•	•	•		•	•	•	•	•
Lsac.Pk			•		•	•						
Lsac.Cod						•						
FChoG											•	
EchBriCC						•						
LsacRS												
LsacRS.Psa												•
PolFur						•						
LsacRS.Phy											•	
Lsac.T			•			•	•		•	•	•	•
FaSwV	•		•		•	•			•			
CR						•						•
PomByc												
AlcTub												
AlcC												
BalHpan											•	
HbowEud											•	
MCR								•				
ErSSwi							•	•				
Flu.SerHyd			•			•						
ModT												•
Oph						•		•	•			•
FaAIC						•			•			
SCR						•						
AntAsH								•		•		
SubSoAs						•		•		•		
AmenCio			•			•						
Aasp						•		•	•			
NeoPro									•			
NeoPro.CaTw												
NeoPro.Den											•	
ModHAs					•			•		•		•
FaV												
Ant												
<i>Sublittoral sediment</i>												
SS						•						
IGS			•			•		•			•	•
Mrl						•						
Phy			•			•						
Phy.R						•						
Phy.HEc				•								
Lgla			•			•						
HalEdw			•									•
FaS	•											
ScupHyd			•			•						•
Lcon			•							•	•	
FabMag												•

Area	1	2	3	4	5	6	7	8	9	10	11	12
CGS						•						
Ven.Neo					•							
IMS						•						•
Zmar	•					•		•				•
FaMS			•	•		•			•			
EcorEns			•			•						•
SpiSpi												
Cap												
CMS			•	•	•	•						
AbrNucCor												
AfilEcor					•				•			
VirOph					•	•		•	•	•	•	•
VirOph.HAs			•			•				•	•	•
NVC A12						•						
Ser						•						•
IMU			•			•		•			•	•
AreSyn			•			•						
PhiVir			•	•		•		•		•		•
Ocn								•				
CMU								•	•			
Novo.LagMu												
SpMeg				•	•	•	•	•	•	•	•	•
SpMeg.Fun												
Beg						•		•		•		•
IMX	•		•			•		•				•
KSwMx						•						
LsacX	•		•	•	•	•	•	•	•	•	•	•
Tra						•		•				
Peri						•						
MrlMx						•						
FiG						•		•				
Ost						•						
VsenMtru						•						
Lim												
FaMx			•	•	•	•			•		•	•
CMX						•					•	•
ModHo				•	•	•		•	•		•	

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Connor, D.W., Brazier, D.P., Hill, T.O. & Northen, K.O. 1997a. Marine Nature Conservation Review: marine biotope classification for Britain and Ireland. Volume 1. Littoral biotopes. Version 97.06. *JNCC Report*, No. 229.

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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	Loch Indaal	13	Lower Loch Linnhe
2	Loch Gruinart	14	Loch Leven
3	Loch Tarbert, Jura	15	Upper Loch Linnhe and Loch Eil
4	West Loch Tarbert	16	Loch Aline
5	Loch Caolisport	17	Loch Sunart and Loch Teacuis
6	Loch Sween	18	Loch a'Chumhainn
7	Loch Crinan	19	Loch na Keal
8	Loch Craignish	20	Loch Scridain
9	Loch Melfort	21	Loch na Lathaich
10	Loch Feochan	22	Loch Buie
11	Loch Etive	23	Loch Spelve
12	Loch Creran	24	Loch Don

PROTOZOA

<i>Haliphysema tumanowiczi</i>	1
<i>Foraminifera</i>	6, 13
PORIFERA	3, 4, 6, 8, 17
<i>Clathrina</i> sp.	6, 24
<i>Clathrina coriacea</i>	1, 6, 7, 13, 17
<i>Clathrina lacunosa</i>	8
<i>Leucosolenia</i> sp.	3, 6, 8, 17, 18, 21, 22, 24
<i>Leucosolenia botryoides</i>	1, 3, 4, 6, 8, 10, 12, 13, 17, 18, 19, 22
<i>Leucosolenia variabilis</i>	12
<i>Scypha</i> sp.	18
<i>Scypha ciliata</i>	1, 3, 6, 8, 10, 13, 17, 18, 20, 21, 22, 24
<i>Scypha coronata</i>	6
<i>Leuconia</i> sp.	6
<i>Leuconia nivea</i>	1
<i>Leuconia pumila</i>	6
<i>Grantia compressa</i>	1, 3, 6, 13, 17, 18, 19, 20, 21, 22, 24

PORIFERA

<i>Oscarella lobularis</i>	6, 11, 12, 20
<i>Pachymatisma johnstonia</i>	1, 7, 8, 11, 13, 17, 18
<i>Tethya aurantium</i>	6
<i>Suberites</i> sp.	6, 8, 13, 15
<i>Suberites carnosus</i>	3, 5, 6, 7, 8, 10, 11, 12, 13, 16, 17, 18, 19, 20, 21
<i>Suberites ficus</i>	3, 4, 6, 7, 8, 10, 12, 13, 14, 15, 16, 17, 19, 20, 21, 22
<i>Pseudosuberites sulphureus</i>	6
<i>Prosuberites epiphytum</i>	6
<i>Polymastia</i>	6
<i>Polymastia boletiformis</i>	3, 6, 7, 8, 13, 17, 19, 20

<i>Polymastia mamillaris</i>	3, 4, 6, 8, 10, 13, 16, 17, 20
<i>Cliona</i> sp.	6, 17
<i>Cliona celata</i>	3, 4, 6, 8, 11, 13, 16, 17, 18, 20
<i>Axinella damicornis</i>	7
<i>Axinella infundibuliformis</i>	7, 8, 13, 17, 19, 20
<i>Axinella dissimilis</i>	13, 17, 20
<i>Phakellia ventilabrum</i>	13, 17, 20
<i>Stelligera rigida</i>	17
<i>Stelligera stuposa</i>	7, 8, 13, 17, 20
<i>Raspailia hispida</i>	7, 13, 17, 20
<i>Raspailia ramosa</i>	7, 17, 20
<i>Eurypon</i> sp.	20
<i>Hymeraphia stellifera</i>	20
<i>Halichondria</i> sp.	1, 6, 8
<i>Halichondria bowerbanki</i>	3, 6, 8, 11, 17, 20
<i>Halichondria panicea</i>	1, 2, 3, 4, 6, 8, 10, 11, 12, 13, 14, 15, 17, 18, 19, 20, 21, 22, 23, 24
<i>Hymeniacion</i> sp.	6
<i>Hymeniacion perleve</i>	3, 4, 5, 6, 9, 13, 17
<i>Hymeniacion sanguinea</i>	3, 6, 18, 2, 20, 22
<i>Rhaphidostyla kitchingi</i>	6
<i>Ulosa digitata</i>	3, 19
<i>Mycale</i> sp.	5, 6, 12, 17, 20
<i>Mycale contarenii</i>	4, 6, 17
<i>Mycale lingua</i>	8, 13, 17
<i>Mycale lobata</i>	11
<i>Mycale rotalis</i>	15
<i>Mycale similis</i>	4
<i>Esperiopsis fucorum</i>	1, 3, 5, 6, 8, 10, 12, 13, 15, 17, 18, 20, 22, 24
<i>Myxilla</i> sp.	1, 6, 17

<i>Myxilla fimbriata</i>	8, 17, 19, 20	<i>Halecium plumosum</i>	4
<i>Myxilla incrustans</i>	1, 3, 4, 6, 8, 10, 12, 13, 14, 15, 17, 20, 22	<i>Aglaophenia</i>	19
<i>Myxilla rosacea</i>	18	<i>Aglaophenia acacia</i>	17
<i>Iophonopsis nigricans</i>	3, 7, 8, 10, 11, 13, 17, 19, 20	<i>Aglaophenia pluma</i>	1, 3
<i>Iophon hyndmani</i>	6, 7, 8, 11, 12, 20	<i>Aglaophenia tubulifera</i>	7, 8, 13, 17
<i>Hymedesmia</i> sp.	8, 11, 20	<i>Lytocarpia myriophyllum</i>	6, 7, 8, 13, 17
<i>Hymedesmia brondstedii</i>	11	<i>Antennella secundaria</i>	13, 22
<i>Hymedesmia paupertas</i>	8, 13, 17, 19, 20	<i>Halopteris catharina</i>	6, 7, 8, 11, 12, 13, 14, 15, 17, 22
<i>Stylostichon plumosum</i>	6	<i>Kirchenpaueria pinnata</i>	3, 5, 6, 7, 8, 9, 10, 12, 13, 14, 15, 16, 17, 19, 20, 21
<i>Hemimycale columella</i>	6, 17	<i>Nemertesia</i>	6
<i>Ophlitaspongia seriata</i>	6	<i>Nemertesia antennina</i>	4, 5, 6, 7, 8, 9, 10, 12, 13, 14, 15, 17, 19, 20, 21, 22
<i>Plocamionida ambigua</i>	6, 11	<i>Nemertesia ramosa</i>	3, 4, 5, 6, 7, 8, 9, 10, 12, 13, 15, 16, 17, 19, 20, 22
<i>Haliclona</i> sp.	6, 8, 1, 13, 15, 17, 19, 22, 24	<i>Plumularia setacea</i>	1, 6, 8, 9, 11, 12, 13, 14, 17, 19, 20, 21, 22
<i>Haliclona cinerea</i>	6	<i>Polyplumaria frutescens</i>	7, 8, 9, 12, 13, 14, 15, 17, 19, 20
<i>Haliclona rosea</i>	6	<i>Abietinaria abietina</i>	1, 3, 8, 11, 13, 17, 19
<i>Haliclona urceolus</i>	7, 8, 9, 10, 11, 12, 13, 14, 15, 17, 19, 20	<i>Diphasia</i>	1, 17
<i>Haliclona viscosa</i>	6, 13, 17, 18	<i>Diphasia alata</i>	13
<i>Dysidea fragilis</i>	1, 3, 6, 12, 14, 17, 19	<i>Diphasia fallax</i>	15
<i>Aplysilla</i> sp.	6	<i>Diphasia pinaster</i>	7, 8, 17
<i>Aplysilla sulfurea</i>	17	<i>Diphasia rosacea</i>	6, 11, 13, 14, 15, 17
<i>Halisarca dujardini</i>	6, 8, 11, 12, 13, 17, 20, 3	<i>Dynamena pumila</i>	1, 3, 5, 6, 11, 12, 13, 14, 15, 17, 19, 20, 21, 22, 23, 24
<i>Porifera indet crusts</i>	1, 6, 7, 11, 12, 13, 15	<i>Hydrallmania falcata</i>	4, 8, 11, 12, 13, 15, 17, 22
<i>Porifera indet.</i>	6, 17	<i>Thuaria articulata</i>	13, 14, 17
CNIDARIA		<i>Sertularella gayi</i>	4, 6, 9, 17
SCYPHOZOA		<i>Sertularella polyzonias</i>	5, 6, 8, 10, 13, 14, 17, 22
<i>Lucernaria</i> sp.	3	<i>Sertularella rugosa</i>	6
<i>Aurelia aurita</i>	6, 9, 10, 17, 19, 20	<i>Sertularia</i>	6
HYDROZOA		<i>Sertularia argentea</i>	3, 4, 11, 12, 13, 14, 15, 17
<i>Corymorpha nutans</i>	10, 13, 15, 17, 18	<i>Sertularia cupressina</i>	1, 6, 8
<i>Tubularia</i> sp.	13	<i>Campanularia</i>	6
<i>Tubularia indivisa</i>	11, 13, 15, 17	<i>Campanularia hincksii</i>	6
<i>Tubularia larynx</i>	6, 11, 13, 15, 17	<i>Clytia hemisphaerica</i>	6, 11
<i>Coryne</i> sp.	13, 17	<i>Gonothyrea loveni</i>	3, 6
<i>Sarsia</i> sp.	22	<i>Laomedea flexuosa</i>	3, 6, 14, 17
<i>Sarsia eximia</i>	3	<i>Obelia</i>	3, 4, 6, 8, 10, 11, 12, 13, 15, 17, 19, 20, 22, 23
<i>Eudendrium</i>	3, 4, 6, 10, 11, 13, 14, 15, 17	<i>Obelia bidentata</i>	11
<i>Eudendrium arbusculum</i>	11, 12, 13	<i>Obelia dichotoma</i>	3, 6, 9, 10, 12, 13, 14, 15, 17, 20, 22
<i>Eudendrium rameum</i>	6	<i>Obelia geniculata</i>	3, 4, 5, 6, 7, 8, 10, 12, 13, 14, 15, 17, 18, 19, 20, 21, 22
<i>Eudendrium ramosum</i>	13, 15, 16, 17	<i>Obelia longissima</i>	3, 6, 10, 13, 15, 17
<i>Leuckartiara octona</i>	17	<i>Obelia plicata</i>	6
<i>Bougainwillia ramosa</i>	3, 4, 6, 10, 11, 12, 13, 15, 17, 20, 21	<i>Rhizocaulus verticillatus</i>	
<i>Garveia nutans</i>	17	ANTHROZOA	4, 6, 8, 9, 12, 13, 14, 15, 17, 22
<i>Hydractinia</i> sp.	6	<i>Sarcodictyon roseum</i>	6, 11, 14, 15, 17
<i>Hydractinia echinata</i>	1, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 20, 21	<i>Alcyonium digitatum</i>	4, 5, 6, 7, 8, 9, 10, 12, 13, 14, 15, 16, 17, 19, 20, 22
<i>Clava</i> sp.	11	<i>Alcyonium glomeratum</i>	17, 19, 20
<i>Clava multicornis</i>	3, 6, 11, 13, 14, 17, 24	<i>Parerythropodium</i>	20
<i>Cordylophora caspia</i>	6	<i>coralloides</i>	
<i>Calycella syringa</i>	11	<i>Swiftia pallida</i>	7, 8, 13, 17, 19, 20
<i>Lovenella clausa</i>	17	<i>Funiculina</i>	22
<i>Lafoea dumosa</i>	6, 11, 13, 14, 17		
<i>Halecium</i>	3, 6, 17		
<i>Halecium beanii</i>	3, 4, 13, 15		
<i>Halecium halecinum</i>	3, 4, 6, 8, 9, 10, 11, 12, 13, 14, 15, 17, 19, 20, 21, 22		
<i>Halecium muricatum</i>	13, 17		

<i>Funiculina quadrangularis</i>	6, 13, 15, 17, 19, 20	<i>Tubulanus</i>	5, 11, 17
<i>Virgularia</i>	22	<i>Tubulanus annulatus</i>	5, 9, 11, 12, 13
<i>Virgularia mirabilis</i>	3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 19, 20, 21, 22	<i>Tubulanus superbus</i>	5, 15, 17
<i>Pennatula phosphorea</i>	3, 8, 11, 13, 14, 15, 16, 17, 22	<i>Cerebratulus fuscus</i>	6, 20
<i>Cerianthus lloydii</i>	1, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21	<i>Cerebratulus marginatus</i>	15
<i>Pachycerianthus multiplicatus</i>	11, 13, 15, 16, 17	<i>Lineus</i>	8
<i>Epizoanthus couchii</i>	7, 8, 10, 12, 13, 17, 20	<i>Lineus longissimus</i>	3, 4, 6, 10, 13, 14, 15, 17, 18
<i>Parazoanthus anguicomus</i>	7, 17	<i>Lineus ruber</i>	6
<i>Isozoanthus sulcatus</i>	6	<i>Myoisophagos sanguineus</i>	6
ACTINIARIA	6	<i>Psammamphiporus elongatus</i>	6
<i>Gonactinia prolifera</i>	14	<i>Amphiporus lactiflores</i>	6, 24
<i>Protanthea simplex</i>	9, 11, 13, 14, 15, 17, 19, 20	<i>Oerstedtia</i>	6
<i>Actinia equina</i>	1, 2, 3, 4, 5, 6, 13, 14, 17, 18, 19, 20, 21, 22, 23, 24	<i>Oerstedtia dorsalis</i>	6
<i>Anemonia viridis</i>	1, 3, 4, 6, 7, 8, 13, 17, 18, 19, 20, 21, 22, 23, 24	NEMATODA	3, 6, 17
<i>Urticina felina</i>	1, 3, 4, 5, 6, 8, 10, 11, 13, 14, 17, 18, 20, 21, 22, 24	ENTOPROCTA	3
<i>Urticina eques</i>	8, 11, 13, 17, 20	<i>Pedicellina cernua</i>	6
<i>Anthopleura</i>	22, 23	<i>Sipunculus nudus</i>	3
<i>Aureliania heterocera</i>	7, 13, 15, 17, 20	<i>Golfingia elongata</i>	6
<i>Stomphia coccinea</i>	11, 13, 15, 17	<i>Golfingia margaritacea</i>	3
<i>Haliplanella lineata</i>	6	<i>Golfingia vulgaris vulgaris</i>	6
<i>Metridium senile</i>	3, 4, 6, 8, 10, 11, 12, 13, 14, 15, 16, 17, 19, 20	<i>Thysanocardia procera</i>	6, 12, 13
<i>Sagartia elegans</i>	1, 3, 4, 5, 6, 8, 10, 12, 13, 15, 17, 18, 20, 23	<i>Phascolion strombus</i>	3, 13, 15, 17
<i>Sagartia troglodytes</i>	3, 6, 13	<i>Phascolosoma granulatum</i>	18, 20, 22
<i>Cereus pedunculatus</i>	4, 6, 17, 19, 24	ECHIURA	6
<i>Actinothoe sphyrodeta</i>	8, 17	<i>Amalosoma eddystonense</i>	6, 17
<i>Sagartiogeton</i>	6, 17	<i>Maxmuelleria lankesteri</i>	6, 11, 12, 17, 20
<i>Sagartiogeton laceratus</i>	3, 4, 6, 8, 10, 11, 12, 13, 14, 15, 16, 17	ANNELIDA	1, 3, 6, 8, 11, 13, 17, 19
<i>Sagartiogeton undatus</i>	4, 6, 8, 13, 14, 15, 17, 19, 20	Aphroditidae	17
<i>Hormathia coronata</i>	17, 20	<i>Aphrodita aculeata</i>	4, 5, 6, 7, 8, 12, 13, 15, 17, 20
<i>Adamsia carciniopados</i>	3, 5, 6, 7, 8, 10, 13, 14, 15, 16, 17, 19, 20, 22	Polynoidae	6, 13
<i>Amphianthus dohrnii</i>	7	<i>Alentia gelatinosa</i>	6, 7, 12, 13
<i>Halcampoides elongatus</i>	18	<i>Gattyana cirrosa</i>	11
<i>Peachia cylindrica</i>	5, 13, 17	<i>Harmothoe</i>	3, 6, 8, 10, 13, 17, 18, 19, 20, 21, 22, 23, 24
<i>Halcompa chrysanthellum</i>	3, 5, 10, 15	<i>Harmothoe extenuata</i>	3, 6
<i>Edwardsiella carnea</i>	6, 10, 11, 13	<i>Harmothoe fragilis</i>	11
<i>Edwardsia</i>	3	<i>Harmothoe imbricata</i>	3, 6, 18, 24
<i>Edwardsia claparedii</i>	5, 6, 9, 11, 12, 13, 15, 16, 17, 19	<i>Harmothoe impar</i>	11, 17, 20, 22
<i>Edwardsia timida</i>	3, 10	<i>Lepidonotus</i>	18, 20
<i>Scolanthus callimorphus</i>	17	<i>Lepidonotus squamatus</i>	3, 6, 11, 17, 22
<i>Corynactis viridis</i>	17	<i>Polynoe scolopendrina</i>	3
<i>Caryophyllia smithii</i>	6, 7, 8, 10, 11, 13, 14, 17, 18, 19, 20, 22	<i>Pholoe inornata</i>	3, 6, 11, 12, 13, 17
<i>Caryophyllia inornata</i>	7	<i>Pholoe synophthalmica</i>	3
PLATYHELMINTHES	3, 14	<i>Sthenelais boa</i>	17
<i>Uteriporus vulgaris</i>	6	Phyllodocidae	11, 12, 13
<i>Prostheceraeus vittatus</i>	6	<i>Eteone</i>	11, 13
NEMERTEA	3, 11, 12, 13, 14, 17	<i>Eteone longa</i>	3, 13, 17
<i>Carinoma armandi</i>	6	<i>Anaitides groenlandica</i>	17
		<i>Anaitides maculata</i>	6, 17
		<i>Anaitides mucosa</i>	17
		<i>Eulalia</i>	6
		<i>Eulalia viridis</i>	6, 17
		<i>Eumida sanguinea</i>	3, 11, 13
		<i>Phyllodoce</i>	6, 11
		<i>Sige fusigera</i>	17
		<i>Glycera</i>	6, 10, 11, 17
		<i>Glycera alba</i>	14, 17

<i>Glycera gigantea</i>	17	<i>Polydora socialis</i>	8, 17
<i>Glycera lapidum</i>	3	<i>Polydora quadrilobata</i>	11
<i>Glycera rouxii</i>	6, 11, 12, 13, 14	<i>Prionospio fallax</i>	12, 13
<i>Glycera tridactyla</i>	17	<i>Prionospio steenstrupi</i>	11, 12
<i>Goniada maculata</i>	11, 12, 13, 14, 17	<i>Prionospio caspersi</i>	6
<i>Sphaerodorum gracilis</i>	3, 11	<i>Pygospio elegans</i>	3, 11, 12, 13, 14, 17
<i>Gyptis rosea</i>	3	<i>Scolecopsis</i>	6
<i>Kefersteinia cirrata</i>	3, 6	<i>Scolecopsis bonnieri</i>	17
<i>Nereimyra punctata</i>	6	<i>Scolecopsis foliosa</i>	12
<i>Ophiodromus flexuosus</i>	6, 9, 12, 13, 14, 15	<i>Scolecopsis squamata</i>	6
Pilargidae	12	<i>Spio filicornis</i>	11, 12
<i>Ancistrosyllis groenlandica</i>	14	<i>Spiophanes bombyx</i>	11, 12, 13, 14, 17
<i>Eurysyllis tuberculata</i>	3	<i>Magelona alleni</i>	13
<i>Ehlersia cornuta</i>	3	<i>Magelona filiformis</i>	6
<i>Trypanosyllis coeliaca</i>	3	<i>Chaetopterus</i>	8
<i>Typosyllis prolifera</i>	6	<i>Chaetopterus variopedatus</i>	3, 4, 5, 6, 9, 11, 13, 14, 15, 17, 18, 19, 20, 21, 22
<i>Streptosyllis websteri</i>	3	<i>Spiochaetopterus</i>	11
<i>Exogone</i>	12	Cirratulidae	3, 6, 11, 17
<i>Exogone hebes</i>	13	<i>Caulleriella</i>	11, 12, 13, 17
<i>Sphaerosyllis</i>	3, 12	<i>Chaetozone setosa</i>	6, 11, 12, 17
<i>Sphaerosyllis bulbosa</i>	3, 14	<i>Cirratulus cirratus</i>	2, 6, 11, 12, 14, 17
Nereididae	11, 13	<i>Cirriformia tentaculata</i>	2, 6, 17
<i>Hediste diversicolor</i>	5, 6, 11, 14, 15, 17, 24	<i>Tharyx</i>	17
<i>Neanthes</i>	13	<i>Aphelochaeta marioni</i>	6, 17
<i>Nereis</i>	6, 17	<i>Cossura</i>	11
<i>Nereis pelagica</i>	1, 3, 6, 18, 19, 20, 21, 22, 23, 24	<i>Cossura longocirrata</i>	6
<i>Platynereis dumerilii</i>	3	<i>Diplocirrus glaucus</i>	11, 12, 13, 14
<i>Nephtys</i>	1, 2, 6, 7, 8, 11, 13, 15, 20	<i>Flabelligera affinis</i>	3, 6, 17
<i>Nephtys caeca</i>	17	<i>Pherusa</i>	3
<i>Nephtys cirrosa</i>	6, 17	<i>Pherusa eruca</i>	11
<i>Nephtys hombergii</i>	3, 6, 11, 12, 13, 17	<i>Pherusa plumosa</i>	6, 17
<i>Nephtys kersivalensis</i>	17	<i>Macrochaeta clavicornis</i>	3
<i>Nephtys hystrix</i>	6, 12	<i>Capitella capitata</i>	2, 3, 6, 11, 12, 17
<i>Nephtys incisa</i>	14, 17	<i>Capitellides giardi</i>	11, 12, 13
<i>Nephtys longosetosa</i>	13	<i>Capitomastus minimus</i>	11, 12, 13
<i>Aponuphis bilineata</i>	17	<i>Heteromastus filiformis</i>	17
<i>Eunice pennata</i>	11, 14	<i>Mediomastus fragilis</i>	3
<i>Marphysa bellii</i>	12, 17	<i>Notomastus latericeus</i>	2, 3, 6, 11, 14
<i>Nematonereis unicornis</i>	17	<i>Arenicola marina</i>	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 17, 18, 19, 20, 22, 23, 24
<i>Lumbrineris</i>	14	<i>Arenicolides ecaudata</i>	1, 2, 6
<i>Lumbrineris fragilis</i>	14	Maldanidae	6, 13, 17
<i>Lumbrineris hibernica</i>	6, 12, 17	<i>Praxillura longissima</i>	11, 12, 13
<i>Lumbrineris tetraura</i>	12	<i>Maldane</i>	8
<i>Protodorvillea kefersteini</i>	3, 6, 14	<i>Euclymene</i>	13, 14
Orbiniidae	6	<i>Praxillella</i>	13
<i>Orbinia</i>	13	<i>Rhodine gracilior</i>	14
<i>Orbinia latreillii</i>	6	<i>Ophelia</i>	11, 12
<i>Scoloplos armiger</i>	2, 3, 6, 7, 11, 12, 13, 17	<i>Travisia forbesii</i>	11, 13
<i>Aricidea minuta</i>	3, 17	<i>Ophelina acuminata</i>	6, 12, 13
<i>Aricidea suecica</i>	14	<i>Polyopthalmus pictus</i>	6, 18
<i>Aricidea catherinae</i>	11	<i>Scalibregma inflatum</i>	6, 12, 13, 14, 17
<i>Aonides oxycephala</i>	3, 17	<i>Myriochele heeri</i>	11, 12, 13
<i>Laonice cirrata</i>	11	<i>Owenia fusiformis</i>	10, 13, 14, 15, 17, 20, 22
<i>Malacoceros tetracerus</i>	17	<i>Amphictene auricoma</i>	14, 17
<i>Minuspio cirrifera</i>	17	<i>Lagis koreni</i>	6, 11, 15, 17
<i>Polydora</i>	3, 13, 17	<i>Pectinaria belgica</i>	11, 14, 17
<i>Polydora caulleryi</i>	11		
<i>Polydora ciliata</i>	6		

<i>Melinna cristata</i>	17	<i>Filograna implexa</i>	1, 3, 6, 8, 19, 22
<i>Melinna palmata</i>	6, 11, 12, 14	<i>Protula tubularia</i>	4, 5, 6, 8, 10, 11, 12, 13, 14, 15, 17, 19, 20, 21
<i>Ampharete baltica</i>	3	<i>Salmacina dysteri</i>	7, 8, 18, 20
<i>Ampharete grubei</i>	11, 12, 13	Spirorbidae	1, 3, 6, 8, 10, 11, 12, 13, 14, 17
<i>Ampharete lindstroemi</i>	17	<i>Circeis spirillum</i>	6, 17
<i>Amphicteis</i>	6	<i>Janua pagenstecheri</i>	3, 6, 22
<i>Amphicteis gunneri</i>	6, 14, 17	<i>Spirorbis</i>	3, 6, 10, 11, 13, 14, 15, 16, 17, 19
<i>Sosane sulcata</i>	14	<i>Spirorbis corallinae</i>	1, 6, 17, 18, 20, 22
<i>Terebellides stroemi</i>	11, 14, 17	<i>Spirorbis cuneatus</i>	3
<i>Trichobranchus glacialis</i>	11, 12, 13	<i>Spirorbis rupestris</i>	3, 6, 17
Terebellidae	1, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21	<i>Spirorbis spirorbis</i>	3, 6, 13, 14, 17, 18, 19, 20, 21, 22, 23, 24
<i>Amphitrite</i>	6, 8, 12	<i>Spirorbis tridentatus</i>	6, 17, 20, 22
<i>Amphitrite cirrata</i>	12, 14, 17	OLIGOCHAETA	14, 17
<i>Amphitritides gracilis</i>	6	Tubificidae	3, 14
<i>Eupolymnia nebulosa</i>	3, 5, 6, 8, 10, 11, 12, 13, 14, 16, 17, 18, 20	<i>Heterochaeta costata</i>	14
<i>Lanice conchilega</i>	1, 3, 4, 5, 6, 7, 8, 10, 11, 12, 13, 14, 15, 17, 18, 19, 20, 21, 22	<i>Tubificoides benedii</i>	3, 11, 12, 14, 17
<i>Neoamphitrite</i>	6, 14	Enchytraeidae	14, 3
<i>Neoamphitrite figulus</i>	6	CHELICERATA	13, 17
<i>Pista cristata</i>	11, 12	PYCNOGONIDA	3, 6, 11, 14
<i>Pista lornensis</i>	11, 14	<i>Nymphon</i>	6
<i>Amaeana trilobata</i>	11, 13	<i>Nymphon brevirostre</i>	18
<i>Polycirrus</i>	11	<i>Nymphon gracile</i>	6
<i>Thelepus cincinnatus</i>	14	<i>Achelia echinata</i>	3, 6
<i>Thelepus setosus</i>	7	Pycnogonidae	6
Sabellidae	3, 4, 5, 6, 8, 10, 12, 14	Halacaridae	6, 15, 17
<i>Bispira volutacornis</i>	7	CIRRIPIEDIA	
<i>Branchiomma bombyx</i>	6, 10, 20	<i>Scalpellum scalpellum</i>	13, 14, 17, 22
<i>Chone</i>	5, 8, 10	<i>Verruca stroemia</i>	1, 3, 6, 15, 17, 18, 20, 21, 23, 24
<i>Chone filicaudata</i>	11, 13	<i>Chthamalus</i>	6
<i>Chone infundibuliformis</i>	9, 12, 17, 18	<i>Chthamalus montagui</i>	4, 5, 6, 13, 17, 24
<i>Euchone</i>	12	<i>Chthamalus stellatus</i>	3, 6, 17
<i>Fabricia sabella</i>	11	<i>Balanus</i>	6, 17
<i>Jasmineira caudata</i>	11	<i>Semibalanus balanoides</i>	1, 2, 3, 4, 5, 6, 7, 8, 11, 12, 13, 14, 15, 17, 18, 19, 20, 21, 22, 23, 24
<i>Megalomma vesiculosum</i>	4, 5, 6, 10, 12, 17	<i>Balanus balanus</i>	1, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 19, 20, 22, 23, 24
<i>Myxicola</i>	6	<i>Balanus crenatus</i>	1, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24
<i>Myxicola aesthetica</i>	6	<i>Balanus perforatus</i>	17, 19
<i>Myxicola infundibulum</i>	3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17	<i>Elminius modestus</i>	17
<i>Sabella</i>	3, 6	<i>Sacculina carcini</i>	4
<i>Sabella pavonina</i>	3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 19, 20, 21, 22	CRUSTACEA	
Serpulidae	5, 6, 17	OSTRACODA	
<i>Ditrupa arietina</i>	18	Mysidae	3, 6, 7, 1, 11, 13, 15, 17, 18
<i>Hydroides</i>	17	<i>Neomysis integer</i>	6
<i>Hydroides elegans</i>	14	<i>Praunus flexuosus</i>	6, 11, 17
<i>Hydroides norvegica</i>	3	AMPHIPODA	
<i>Placostegus tridentatus</i>	11, 14, 17	<i>Eusirus longipes</i>	11
<i>Pomatoceros</i>	6, 8, 10, 17, 22	Oedicerotidae	11
<i>Pomatoceros lamarcki</i>	6	<i>Periculodes longimanus</i>	11, 13
<i>Pomatoceros triqueter</i>	1, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24	<i>Westwoodilla caecula</i>	11
<i>Serpula vermicularis</i>	5, 6, 9, 10, 11, 12, 13, 14, 15, 17, 19, 20	<i>Parapleustes bicuspis</i>	18

<i>Leucothoe incisa</i>	3	<i>Phthisica marina</i>	6, 18
<i>Metopa</i>	6	ISOPODA	6, 14, 17
<i>Stenothoe</i>	6	<i>Gnathia</i>	17
<i>Stenothoe marina</i>	6	<i>Gnathia oxyuraea</i>	17
<i>Stenothoe monoculoides</i>	3, 6	<i>Eurydice pulchra</i>	12
<i>Hyale</i>	6	<i>Dynamene bidentata</i>	6, 23
<i>Hyale prevostii</i>	14, 17	<i>Sphaeroma</i>	6
Talitridae	3, 14	<i>Jaera albifrons</i>	3, 6, 14, 17, 18, 20, 22, 23, 24
<i>Harpinia antennaria</i>	11, 12, 13	<i>Janira maculosa</i>	6
<i>Parametaphoxus fultoni</i>	3, 14	<i>Munna</i>	6
<i>Aristias neglectus</i>	11, 12, 13	<i>Jaeropsis brevicornis</i>	6
<i>Lysianassa ceratina</i>	6	<i>Idotea</i>	3, 6, 14, 17
<i>Lysianassa plumosa</i>	17	<i>Idotea baltica</i>	6, 18, 20
<i>Socarnes erythrophthalmus</i>	3, 14	<i>Idotea chelipes</i>	6
<i>Tryphosella sarsi</i>	3	<i>Idotea granulosa</i>	3, 6, 15, 18, 20, 22, 23
<i>Iphimedia obesa</i>	10	<i>Idotea linearis</i>	17
<i>Liljeborgia kinahani</i>	3	<i>Idotea neglecta</i>	6, 18, 20
<i>Dexamine spinosa</i>	6, 11, 12, 18	<i>Idotea pelagica</i>	3
<i>Dexamine thea</i>	3	<i>Astacilla longicornis</i>	11, 17, 19
<i>Guernea coalita</i>	3	EPICARIDEA	
<i>Ampelisca</i>	11, 13	<i>Ligia oceanica</i>	3, 4, 5, 6, 14, 15, 17, 18, 22, 24
<i>Ampelisca brevicornis</i>	8, 11, 12, 13	TANAIDACEA	11, 13
<i>Ampelisca diadema</i>	17	<i>Tanais dulongii</i>	6, 22
<i>Bathyporeia</i>	8, 11, 13	<i>Tanaopsis graciloides</i>	17
<i>Bathyporeia elegans</i>	11, 13, 17	CUMACEA	13
<i>Bathyporeia guilliamsoniana</i>	11, 12, 13	<i>Vauntomponia cristata</i>	17
<i>Bathyporeia pilosa</i>	11	<i>Leucon nasica</i>	11, 12
<i>Bathyporeia sarsi</i>	11	<i>Nannastacus unguiculatus</i>	3
Gammaridae		<i>Diastylis</i>	17
<i>Echinogammarus marinus</i>	14, 15	<i>Diastylis rugosa</i>	11
<i>Echinogammarus obtusatus</i>	11	DECAPODA	
<i>Gammarus duebeni</i>	3	<i>Palaemon serratus</i>	3, 6, 9, 13, 14, 18, 22, 23
<i>Gammarus finmarchicus</i>	17	<i>Eualus pusiolus</i>	3
<i>Gammarus locusta</i>	6, 14	<i>Hippolyte</i>	10, 13
<i>Gammarus oceanicus</i>	17	<i>Hippolyte varians</i>	7, 18, 20
<i>Gammarus zaddachi</i>	14	<i>Thorulus cranchii</i>	10
<i>Cheirocratus intermedius</i>	11	<i>Processa nouveli holthuisi</i>	6
<i>Cheirocratus sundevallii</i>	3	Pandalidae	6
<i>Maera loveni</i>	17	<i>Pandalina brevirostris</i>	10, 12
<i>Melita palmata</i>	11, 13	<i>Pandalus borealis</i>	12, 13
<i>Ampithoe rubricata</i>	6	<i>Pandalus montagui</i>	3, 10, 11, 12, 13, 14, 16, 17, 18
<i>Gammaropsis cornuta</i>	12, 13	Crangonidae	6, 12
<i>Erichthonius punctatus</i>	6, 21	<i>Crangon</i>	6
<i>Jassa</i>	1, 6	<i>Crangon crangon</i>	3, 4, 6, 8, 10, 12, 13, 15, 17, 18
<i>Jassa falcata</i>	1, 3, 6	<i>Homarus gammarus</i>	4, 6, 8, 17, 18, 19, 20
<i>Parajassa pelagica</i>	1, 6	<i>Nephrops norvegicus</i>	4, 6, 7, 8, 9, 11, 12, 13, 14, 15, 16, 17, 19, 20, 21, 22
<i>Aora</i>	6	<i>Calocaris macandreae</i>	6, 12, 13, 14, 17
<i>Lembos websteri</i>	6	<i>Jaxea nocturna</i>	6
<i>Leptocheirus hirsutimanus</i>	3	<i>Callianassa subterranea</i>	6, 12, 13, 17, 20
<i>Leptocheirus pectinatus</i>	3, 14	<i>Upogebia stellata</i>	6
<i>Microdeutopus versiculatus</i>	6	<i>Palinurus elephas</i>	10, 17, 19, 22
<i>Corophium</i>	6	<i>Lithodes maia</i>	13, 14
<i>Corophium bonnellii</i>	11	Paguridae	1, 3, 8, 12, 14, 17, 22
<i>Corophium crassicornis</i>	11, 12, 13	<i>Anapagurus chiroacanthus</i>	5
<i>Corophium volutator</i>	11, 12, 17	<i>Anapagurus hyndmanni</i>	3, 5, 6, 7, 10, 13, 17, 18, 21, 22
<i>Dyopedos porrectus</i>	13		
Caprellidae	1, 3, 6, 8, 13, 17, 19		
<i>Caprella acanthifera</i>	6		
<i>Caprella linearis</i>	3, 6, 18, 20, 23		

<i>Anapagurus laevis</i>	17	<i>Portumnus latipes</i>	6
<i>Pagurus</i>	6, 8, 9, 12, 17	<i>Goneplax rhomboides</i>	6, 8, 17
<i>Pagurus bernhardus</i>	3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24	<i>Pilumnus hirtellus</i>	6
<i>Pagurus cuanensis</i>	3, 6, 7, 12, 13, 15, 17, 18, 19, 20, 21	<i>Xantho incisus</i>	3
<i>Pagurus prideaux</i>	3, 5, 6, 7, 10, 12, 13, 15, 17, 19, 20, 22	<i>Xantho pilipes</i>	18
<i>Pagurus pubescens</i>	8, 13, 14, 15, 21	<i>Pinnotheres pisum</i>	17
<i>Galathea</i>	6	<i>Chironomida</i>	17
<i>Galathea dispersa</i>	10, 17	<i>Strigamia maritima</i>	12, 14
<i>Galathea intermedia</i>	4, 10, 13, 17, 18, 21	<i>Apterygota</i>	17
<i>Galathea nexa</i>	11, 13, 17, 21	<i>Petrobius maritimus</i>	6, 17
<i>Galathea squamifera</i>	3, 4, 5, 6, 9, 10, 12, 13, 14, 17, 21	<i>Diptera larva</i>	11
<i>Galathea strigosa</i>	1, 3, 5, 8, 9, 11, 13, 14, 17, 18, 20	<i>Anurida maritima</i>	3, 4, 5, 6, 11, 14, 17, 20
<i>Munida</i>	6	CAUDOFOVEATA	
<i>Munida rugosa</i>	3, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 19, 20, 22	<i>Chaetoderma nitidulum</i>	17
<i>Pisidia longicornis</i>	1, 3, 6, 10, 12, 13, 17, 18, 19, 20, 22, 23	POLYPLACOPHORA	
<i>Porcellana platycheles</i>	6, 10, 12, 13, 17, 18, 19, 20, 21	<i>Leptochiton asellus</i>	3, 6, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 22
<i>Ebalia tuberosa</i>	13, 16	<i>Leptochiton cancellatus</i>	17
Majidae	12	<i>Ischnochiton albus</i>	3, 10, 13, 14, 15, 17, 19
<i>Maja squinado</i>	8	<i>Lepidochitona cinerea</i>	2, 3, 5, 6, 8, 13, 17, 18, 19, 20, 21, 22, 24
<i>Hyas</i>	3, 6, 9, 12, 17, 19	<i>Tonicella</i>	9, 11, 17
<i>Hyas araneus</i>	3, 4, 6, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23	<i>Tonicella marmorea</i>	3, 5, 6, 9, 12, 13, 14, 15, 17, 20
<i>Hyas coarctatus</i>	3, 6, 8, 9, 10, 12, 13, 15, 17	<i>Tonicella rubra</i>	6, 10, 12, 13, 15, 16, 17
<i>Inachus</i>	6, 8, 22	<i>Acanthochitona crinita</i>	17, 22
<i>Inachus dorsettensis</i>	4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18, 19, 21, 22	MOLLUSCA	
<i>Inachus leptochirus</i>	14, 17	GASTROPODA	
<i>Inachus phalangium</i>	3, 4, 8, 11, 13, 17, 19, 20, 22	<i>Emarginula crassa</i>	11, 15, 17
<i>Macropodia</i>	1, 6	<i>Emarginula fissura</i>	3, 6, 13, 14, 17
<i>Macropodia rostrata</i>	3, 4, 5, 6, 7, 8, 9, 10, 12, 13, 14, 16, 17, 18, 19, 20, 21, 22	<i>Diodora graeca</i>	12, 15
<i>Macropodia tenuirostris</i>	6	<i>Tectura</i>	6, 13, 14, 21
<i>Eurynome aspera</i>	14	<i>Tectura testudinalis</i>	3, 4, 5, 6, 7, 10, 12, 13, 14, 17, 19, 20, 21, 22, 23, 24
<i>Corystes cassivelaunus</i>	6	<i>Tectura virginea</i>	1, 3, 6, 7, 8, 12, 13, 14, 16, 17, 23, 24
<i>Atelecyclus rotundatus</i>	13	<i>Patella</i>	1, 6
<i>Cancer pagurus</i>	1, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 15, 17, 18, 19, 2, 20, 21, 22, 23, 24	<i>Patella ulyssiponensis</i>	6, 20, 22
<i>Liocarcinus</i>	3, 6	<i>Patella vulgata</i>	3, 5, 6, 11, 12, 13, 14, 17, 18, 19, 20, 21, 22, 23, 24
<i>Liocarcinus arcuatus</i>	3	<i>Helcion pellucidum</i>	1, 3, 5, 6, 8, 12, 13, 16, 17, 18, 20, 22, 23, 24
<i>Liocarcinus corrugatus</i>	4, 21	<i>Margarites helicinus</i>	3, 6, 13, 15, 18, 23
<i>Liocarcinus depurator</i>	3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22	<i>Jujubinus miliaris</i>	12, 13, 15, 17
<i>Liocarcinus holsatus</i>	1, 3	<i>Gibbula magus</i>	4, 5, 6, 7, 10, 13, 17, 18, 20, 21
<i>Liocarcinus marmoreus</i>		<i>Gibbula tumida</i>	5, 8, 12, 13, 15, 17, 20, 21, 22, 23
<i>Necora puber</i>	1, 3, 4, 5, 6, 7, 8, 9, 10, 11, 13, 14, 17, 18, 19, 20, 21, 22	<i>Gibbula cineraria</i>	1, 2, 3, 4, 5, 6, 7, 8, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24
<i>Liocarcinus pusillus</i>	4, 10, 14, 17	<i>Gibbula umbilicalis</i>	3, 6, 13, 14, 17, 18, 19, 2, 20, 21, 22, 24
<i>Carcinus maenas</i>	1, 3, 4, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24	<i>Calliostoma zizyphinum</i>	1, 3, 4, 5, 6, 7, 8, 10, 12, 13, 16, 17, 18, 19, 20, 21, 22, 23
		<i>Tricolia pullus</i>	3, 6, 22, 23
		<i>Lacuna</i>	11
		<i>Lacuna pallidula</i>	3, 6, 13, 17, 18, 19, 20, 21, 22, 23, 24
		<i>Lacuna parva</i>	3, 6, 18, 24

<i>Lacuna vincta</i>	3, 5, 6, 7, 8, 10, 13, 15, 17, 18, 19, 20, 21, 22, 23, 24	<i>Turbonilla lactea</i>	6
Littorininae		<i>Melanella alba</i>	13, 22
<i>Littorina</i>	13	<i>Aporrhais pespelecani</i>	6, 12, 13, 14, 15, 17, 20, 21, 22
<i>Littorina littorea</i>	1, 3, 4, 5, 6, 7, 10, 11, 12, 13, 14, 15, 17, 18, 19, 2, 20, 21, 22, 23, 24	<i>Capulus ungaricus</i>	13, 17
<i>Melarhappe neritoides</i>	5, 6, 17, 19, 20, 22	<i>Trivia arctica</i>	6, 8, 12, 13, 14, 17, 20, 22
<i>Littorina mariae</i>	3, 4, 6, 11, 12, 13, 14, 15, 17, 18, 19, 2, 20, 21, 22, 23, 24	<i>Trivia monacha</i>	4, 20
<i>Littorina obtusata</i>	2, 3, 6, 11, 12, 13, 14, 15, 17, 18, 19, 20, 21, 22, 23, 24	<i>Lamellaria latens</i>	6, 20, 23
<i>Littorina neglecta</i>	3, 5, 6, 13, 14, 17, 19, 20, 22, 24	<i>Lamellaria perspicua</i>	13
<i>Littorina nigrolineata</i>	3, 6, 13, 17, 19, 20, 22, 24	<i>Velutina velutina</i>	11, 12, 17, 18
<i>Littorina saxatilis</i>	3, 4, 5, 6, 11, 12, 13, 14, 15, 17, 18, 19, 2, 20, 21, 22, 23, 24	<i>Polinices</i>	17
<i>Littorina saxatilis tenebrosa</i>	3, 6	<i>Euspira catena</i>	18
<i>Littorina saxatilis var. rudis</i>	6, 17	<i>Euspira pallida</i>	6
<i>Littorina obtusata/mariae</i>	6, 17	<i>Polinices pulchellus</i>	17
<i>Hydrobia</i>	6	<i>Nucella lapillus</i>	1, 2, 3, 5, 6, 11, 12, 13, 14, 15, 17, 18, 19, 20, 21, 22, 23, 24
<i>Hydrobia ulvae</i>	1, 3, 6, 11, 12, 14, 17, 19, 20, 24	<i>Ocenebra erinacea</i>	3, 10, 17
Rissoidae		<i>Buccinum undatum</i>	1, 2, 3, 4, 5, 6, 8, 9, 1, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 24
<i>Rissoa</i>	6	<i>Neptunea antiqua</i>	3, 6, 9, 11, 12, 13, 14, 15, 17
<i>Rissoa lilacina rufilabrum</i>	20, 23	<i>Colus gracilis</i>	13
<i>Rissoa interrupta</i>	3, 6, 13, 18, 19, 20, 21, 22, 23, 24	<i>Hinia</i>	1
<i>Rissoa parva</i>	3, 6, 13, 17, 18, 19, 20, 22, 23	<i>Hinia incrassata</i>	1, 6, 8, 11, 13, 17, 18, 20, 23
<i>Rissoa membranacea</i>	6, 17	<i>Hinia reticulata</i>	1, 3, 13, 14, 17, 18, 21, 22, 23
<i>Pusillina inconspicua</i>	6	<i>Mangelia attenuata</i>	13
<i>Pusillina sarsi</i>	3, 6, 20	<i>Mangelia nebula</i>	3, 18
<i>Alvania punctura</i>	6, 17	<i>Cylichna cylindracea</i>	17
<i>Alvania semistriata</i>	6	<i>Philine</i>	6
<i>Alvania (Punctulum)</i>	11	<i>Philine aperta</i>	1, 3, 4, 5, 6, 8, 9, 10, 12, 13, 16, 17, 19, 20, 21
<i>Cingula cingillus</i>	6, 17	<i>Philine punctata</i>	6, 13
<i>Onoba aculeus</i>	6, 17, 18, 19, 20, 22, 23, 24	<i>Philine pruinosa</i>	13
<i>Onoba semicostata</i>	3, 6, 11, 13, 17, 18, 19, 20, 22, 23, 24	<i>Diaphana minuta</i>	6
<i>Skeneopsis planorbis</i>	3, 6, 13, 17, 18, 20, 22, 23, 24	<i>Retusa</i>	11
<i>Skeneopsis planorbis var. trochiformis</i>	17	<i>Retusa obtusa</i>	6
<i>Omalogyra atomus</i>	3, 6, 17, 18, 22, 23, 24	<i>Retusa truncatula</i>	6, 19
<i>Ammonicerina rota</i>	6	<i>Runcina coronata</i>	6, 18, 22
<i>Rissoella diaphana</i>	3, 6, 18, 24	<i>Elysia viridis</i>	3, 6, 13, 17, 18, 20
<i>Rissoella globularis</i>	6, 18	<i>Hermaea bifida</i>	3
<i>Rissoella opalina</i>	3, 6	<i>Placida dendritica</i>	6
<i>Turritella communis</i>	3, 5, 6, 7, 8, 9, 12, 13, 14, 15, 16, 17, 19, 20	<i>Limapontia</i>	6
<i>Bittium</i>	6	<i>Limapontia capitata</i>	3, 6, 18, 19, 20, 22, 24
<i>Bittium reticulatum</i>	6, 17, 19, 20, 21	<i>Limapontia depressa</i>	6, 24
<i>Cerithiopsis tubercularis</i>	3, 6	<i>Limapontia senestra</i>	3, 6, 24
<i>Chrysallida interstincta</i>	6	<i>Akera bullata</i>	4, 6, 7, 8
<i>Tragula fenestrata</i>	3	<i>Aplysia</i>	8
<i>Odostomia turrita</i>	3, 6, 13, 17, 19, 20, 24	<i>Aplysia punctata</i>	4, 6, 7, 8, 17, 18, 20
<i>Odostomia unidentata</i>	6, 17	<i>Pleurobranchus membranaceus</i>	6, 17
<i>Brachystomia carrozzai</i>	22	<i>Berthella plumula</i>	6
<i>Brachystomia eulimoides</i>	6, 13	NUDIBRANCHIA	6
<i>Brachystomia scalaris</i>	3, 6	<i>Tritonia hombergii</i>	13
<i>Turbonilla crenata</i>	13	<i>Tritonia lineata</i>	11
		<i>Lomanotus genei</i>	17
		<i>Lomanotus marmoratus</i>	17
		<i>Dendronotus frondosus</i>	6, 11, 13, 15, 17
		<i>Doto</i>	12, 13, 17
		<i>Doto coronata</i>	3, 11, 19

<i>Doto cuspidata</i>	17	<i>Mytilus edulis</i>	3, 4, 5, 6, 7, 8, 11, 12, 13, 14, 15, 17, 18, 19, 2, 20, 21, 22, 23, 24
<i>Doto dunnei</i>	17	<i>Crenella decussata</i>	3, 6, 11
<i>Doto fragilis</i>	8, 13, 17	<i>Musculus</i>	3, 11, 14
<i>Doto hystrix</i>	8, 13, 17	<i>Musculus costulatus</i>	17, 22
<i>Doto maculata</i>	17	<i>Musculus discors</i>	3, 6, 18, 19, 20, 22, 23, 24
<i>Doto millbayana</i>	6, 17	<i>Modiolarca tumida</i>	6, 11, 13, 14, 20, 22
<i>Doto pinnatifida</i>	17	<i>Modiolus barbatus</i>	6
DORIDOIDEA		<i>Modiolus modiolus</i>	1, 4, 5, 6, 8, 10, 11, 12, 13, 14, 15, 16, 17, 22, 24
<i>Goniodoris nodosa</i>	3, 6, 11, 17, 18	<i>Glycymeris glycymeris</i>	17
<i>Ancula gibbosa</i>	11	<i>Limaria hians</i>	6, 13, 17
<i>Acanthodoris pilosa</i>	4, 6, 11, 13, 17, 20, 21	<i>Limatula subauriculata</i>	3
<i>Adalaria proxima</i>	11	<i>Crassostrea gigas</i>	13
<i>Onchidoris</i>	15	<i>Ostrea edulis</i>	3, 4, 6, 17, 19, 20
<i>Onchidoris bilamellata</i>	6, 11	<i>Pectinidae</i>	3
<i>Onchidoris muricata</i>	6, 13, 23, 24	<i>Palliolium striatum</i>	11, 13, 14, 17
<i>Diaphorodoris luteocincta</i>	17, 22	<i>Palliolium tigrinum</i>	15, 22
<i>Aegires punctilucens</i>	6, 18	<i>Pseudamussium septemradiatum</i>	11, 17
<i>Limacia clavigera</i>	17, 19	<i>Chlamys</i>	6, 8, 17
<i>Polycera faeroensis</i>	6, 8, 13, 17, 20	<i>Chlamys distorta</i>	3, 12, 13, 14, 15, 17
<i>Polycera quadrilineata</i>	5, 6, 10, 18, 20, 22	<i>Chlamys varia</i>	3, 4, 6, 8, 12, 13, 16, 17, 18
<i>Palio dubia</i>	11	<i>Chlamys varia var. nivea</i>	10, 12, 13, 14, 17, 20, 21, 23
<i>Cadlina laevis</i>	3, 6, 17, 18, 20, 21, 24	<i>Aequipecten opercularis</i>	4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20
<i>Aldisa zetlandica</i>	11	<i>Pecten maximus</i>	3, 4, 5, 6, 7, 8, 9, 10, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22
<i>Archidoris pseudoargus</i>	3, 5, 6, 8, 11, 13, 14, 17, 18, 19, 20, 21	<i>Anomiidae</i>	1, 3, 4, 6, 8, 12, 13, 17, 18
<i>Geitodoris planata</i>	6	<i>Anomia ephippium</i>	1, 3, 4, 5, 6, 7, 8, 17
<i>Jorunna tomentosa</i>	6, 18	<i>Pododesmus patelliformis</i>	3, 6, 8, 10, 11, 12, 13, 14, 15, 17, 18, 19, 20, 22, 24
<i>Janolus cristatus</i>	4, 8, 12, 13, 17	<i>Heteranomia squamula</i>	3, 6, 11, 13, 17, 18, 19, 20, 21, 22, 24
<i>Hero formosa</i>	17	<i>Myrtea spinifera</i>	14, 17
<i>Coryphella</i>	17	<i>Lucinoma borealis</i>	3, 6, 8, 11, 13, 14, 17
<i>Coryphella browni</i>	13, 15, 17	<i>Thyasira flexuosa</i>	3, 6, 11, 12, 13, 14, 17
<i>Coryphella gracilis</i>	11, 12, 15	<i>Thyasira gouldi</i>	11
<i>Coryphella lineata</i>	3, 11, 13, 14, 15, 17	<i>Thyasira ferruginea</i>	13
<i>Flabellina pedata</i>	14, 15, 17	<i>Lasaea adansoni</i>	6, 17, 22
<i>Flabellina pellucida</i>	12, 13, 17	<i>Kellia suborbicularis</i>	6, 17
<i>Cuthona caerulea</i>	5	<i>Mysella bidentata</i>	1, 3, 6, 11, 12, 13, 17
<i>Cuthona foliata</i>	15, 23	<i>Tellimya ferruginosa</i>	1, 12
<i>Cuthona nana</i>	11	<i>Astarte</i>	11, 13
<i>Cuthona rubescens</i>	14	<i>Astarte sulcata</i>	8, 10, 13, 15
<i>Catriona gymnota</i>	13	<i>Tridonta elliptica</i>	11, 14, 15
<i>Tergipes tergipes</i>	6	<i>Tridonta montagui</i>	14
<i>Eubbranchus</i>	11, 21	<i>Cardiidae</i>	12, 13
<i>Eubbranchus exiguus</i>	15, 17, 20	<i>Acanthocardia echinata</i>	14, 17, 3
<i>Eubbranchus farrani</i>	13, 17	<i>Parvicardium</i>	8
<i>Eubbranchus pallidus</i>	6, 11, 17	<i>Parvicardium exiguum</i>	6, 12, 17
<i>Eubbranchus tricolor</i>	9, 15, 17, 21, 22	<i>Parvicardium ovale</i>	4, 11, 13
<i>Eubbranchus vittatus</i>	17, 19, 20	<i>Parvicardium scabrum</i>	3, 6, 17
<i>Facelina bostoniensis</i>	3, 6, 7, 13, 15, 17, 20, 22	<i>Cerastoderma</i>	6
<i>Favorinus branchialis</i>	3, 6, 13, 20	<i>Cerastoderma edule</i>	1, 3, 4, 5, 6, 7, 13, 17, 19, 2, 20, 22, 23, 24
<i>Aeolidia papillosa</i>	6, 7, 12, 15, 18, 22	<i>Cerastoderma glaucum</i>	6
<i>Aeolidiella alderi</i>	17	<i>Spisula elliptica</i>	22
<i>Aeolidiella glauca</i>	4, 13		
<i>Auriculinella bidentata</i>	6		
PELECYPODA			
<i>Nucula nitidosa</i>	17		
<i>Nucula nucleus</i>	3, 6, 14		
<i>Nucula sulcata</i>	11, 12, 17		
<i>Nuculoma tenuis</i>	11, 14, 15		
<i>Mytilidae</i>	11, 12		

<i>Spisula subtruncata</i>	1, 13, 17	<i>Cochlodesma praetenu</i>	11, 13, 14, 17, 18
<i>Lutraria angustior</i>	17	CEPHALOPODA	
<i>Lutraria lutraria</i>	10	<i>Sepia officinalis</i>	3
<i>Ensis</i>	3, 4, 5, 10, 11, 13, 17, 18, 20, 21, 22	<i>Sepiola</i>	6
<i>Ensis arcuatus</i>	3, 4, 6, 13, 17, 18, 20, 22	<i>Sepiola atlantica</i>	4, 7, 8, 11, 12, 13, 15, 17, 19
<i>Ensis ensis</i>	5, 10, 11, 13	<i>Rossia macrosoma</i>	9, 11, 13, 17, 18
<i>Ensis siliqua</i>	6, 13	<i>Loligo</i>	1
<i>Phaxas pellucidus</i>	3, 6, 11, 13, 21	<i>Eledone cirrhosa</i>	5, 6, 7, 11, 13, 17, 18, 20, 22
Tellinidae	6	<i>Graneledone verrucosa</i>	17
<i>Angulus squalidus</i>	17	BRACHIOPODA	
<i>Angulus tenuis</i>	1, 6, 12, 13, 17, 20, 22	<i>Neocrania anomala</i>	6, 7, 8, 9, 10, 11, 13, 14, 15, 17, 19, 20
<i>Fabulina fabula</i>	1, 6, 8, 12, 13, 17	<i>Terebratulina retusa</i>	7, 8, 10, 11, 13, 14, 17, 19, 20
<i>Moerella donacina</i>	18	BRYOZOA	
<i>Moerella pygmaea</i>	17	CYCLOSTOMATIDA	
<i>Macoma balthica</i>	1, 6, 11, 12, 13, 14, 17, 19, 20, 24	Crisiidae	1, 3, 6, 13, 17, 20
<i>Gari tellinella</i>	6, 22	<i>Crisidia cornuta</i>	6
<i>Gari depressa</i>	17	<i>Crisia denticulata</i>	6
<i>Scrobicularia plana</i>	6, 17, 20, 24	<i>Crisia eburnea</i>	1, 3
<i>Abra alba</i>	3, 6, 12, 13, 17	<i>Crisia ramosa</i>	6
<i>Abra nitida</i>	6, 13	<i>Stomatopora incurvata</i>	15
<i>Abra prismatica</i>	6	<i>Tubulipora liliacea</i>	11, 14
<i>Solecurtus</i>	17	<i>Plagioecia patina</i>	3, 6, 8
<i>Arctica islandica</i>	3, 5, 6, 8, 10, 11, 12, 13, 14, 15, 17, 18, 19, 22	<i>Lichenopora</i>	6
<i>Glossus humanus</i>	15	<i>Disporella hispida</i>	3, 6
<i>Venus</i>	6	<i>Alcyonidium</i>	3, 5, 6, 15
<i>Circomphalus casina</i>	3, 6, 12, 13, 17, 22	<i>Alcyonidium diaphanum</i>	3, 4, 8, 10, 11, 12, 13, 14, 15, 16, 17, 18, 22
<i>Dosinia</i>	13, 17, 21	<i>Alcyonidium gelatinosum</i>	1, 3, 6, 12, 13, 14, 17, 19
<i>Dosinia lupinus</i>	13, 14, 15, 17	<i>Alcyonidium hirsutum</i>	1, 3, 6, 10, 11, 13, 14, 15, 17, 18, 19, 20, 21, 22, 23, 24
<i>Dosinia exoleta</i>	3, 6, 13, 17, 18, 22, 23	<i>Alcyonidium mytili</i>	1, 3, 11, 15, 17
<i>Tapes decussatus</i>	6, 20	<i>Flustrellidra hispida</i>	1, 3, 6, 11, 12, 13, 14, 15, 17, 18, 20, 23
<i>Tapes aureus</i>	6	<i>Walkeria uva</i>	6
<i>Tapes rhomboides</i>	6, 13, 17	<i>Bowerbankia</i>	6, 11
<i>Venerupis</i>	6	<i>Bowerbankia imbricata</i>	3, 11, 12, 17
<i>Venerupis senegalensis</i>	6, 12, 13, 17, 20, 23	<i>Cribrilina annulata</i>	6
<i>Chamelea gallina</i>	1, 6, 12, 13, 15, 17, 19, 20, 23	<i>Cribrilina punctata</i>	6
<i>Clausinella fasciata</i>	6, 11, 13, 17, 18, 22	<i>Umbonula littoralis</i>	5, 6, 13, 17, 22
<i>Timoclea ovata</i>	6, 14, 17	<i>Escharoides coccinea</i>	3, 6, 18, 22, 23
<i>Petricola</i>	6	<i>Cryptosula pallasiana</i>	6
<i>Mysia undata</i>	6, 13, 17	<i>Hippoporina pertusa</i>	6
<i>Turtonia minuta</i>	3, 6, 17, 18, 22, 24	<i>Parasmittina trispinosa</i>	5, 7, 8, 13, 17, 18, 19, 20
MYACEA		<i>Porella compressa</i>	7, 13, 17, 19, 20
<i>Mya</i>	6	<i>Porella concinna</i>	6
<i>Mya truncata</i>	3, 4, 5, 6, 8, 10, 12, 13, 14, 15, 17, 20, 21, 22, 23	<i>Escharella immersa</i>	3, 6
<i>Mya arenaria</i>	3, 6, 10, 11, 13, 14, 15, 17, 20	<i>Escharella variolosa</i>	6
<i>Corbula gibba</i>	3, 6, 11, 13, 15, 17	<i>Escharella ventricosa</i>	6, 14
<i>Hiatella arctica</i>	3, 6, 8, 1, 12, 13, 14, 15, 16, 17, 18, 22	<i>Schizoporella unicornis</i>	3, 6
<i>Saxicavella jeffreysi</i>	3, 6	<i>Schizomavella linearis</i>	1, 6, 18, 19
Pholadidae	6	<i>Microporella ciliata</i>	6, 17
<i>Pandora pinna</i>	17	<i>Fenestrulina malusii</i>	6
<i>Lyonsia norwegica</i>	17	<i>Chorizopora brongniartii</i>	6
<i>Thracia</i>	6, 17	<i>Celleporella hyalina</i>	6
<i>Thracia convexa</i>	6, 13	<i>Cellepora pumicosa</i>	6, 8, 17
<i>Thracia phaseolina</i>	1, 17, 18	<i>Celleporina hassallii</i>	1, 3, 6
<i>Thracia villosiuscula</i>	6, 13, 17, 22	<i>Omalosecosa ramulosa</i>	13, 17, 19, 20
		<i>Aetea anguina</i>	6

<i>Aetea truncata</i>	6	<i>Asterias rubens</i>	1, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24
<i>Scruparia chelata</i>	6	<i>Leptasterias muelleri</i>	3, 6, 10, 13, 15, 17
<i>Eucratea loricata</i>	6, 7, 8, 11, 13, 15, 17	<i>Marthasterias glacialis</i>	3, 4, 5, 6, 8, 9, 17, 18, 19, 20, 21
<i>Membranipora membranacea</i>	1, 3, 4, 5, 6, 7, 8, 9, 10, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24	OPHIUROIDEA	6, 8, 12, 17
<i>Conopeum reticulum</i>	14	<i>Ophiothrix fragilis</i>	3, 4, 5, 6, 8, 9, 10, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22
<i>Electra pilosa</i>	1, 3, 4, 5, 6, 7, 8, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24	<i>Ophiocomina nigra</i>	4, 6, 8, 9, 13, 14, 15, 17, 19, 20, 22
<i>Flustra foliacea</i>	7, 8, 11, 3	<i>Ophiopholis aculeata</i>	6, 8, 12, 13, 14, 15, 17, 18, 21, 22
<i>Securiflustra securifrons</i>	6, 7, 8, 13, 17	<i>Amphiura</i>	6, 9, 17
<i>Callopora dumerilii</i>	3, 6, 11	<i>Amphiura brachiata</i>	1, 3, 8, 17
<i>Callopora lineata</i>	6	<i>Amphiura chiajei</i>	5, 6, 9, 10, 11, 12, 13, 14, 15, 17, 20, 22
<i>Alderina imbellis</i>	6	<i>Amphiura filiformis</i>	5, 6, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 19, 21, 22
<i>Amphiblestrum flemingii</i>	6	<i>Amphiura securigera</i>	4, 5, 10, 13, 22
<i>Membraniporella nitida</i>	6	<i>Amphiura chiajei/filiformis</i>	3, 10, 13, 14, 15, 17
<i>Cellaria</i>	7, 8, 13, 17	<i>Amphipholis squamata</i>	3, 6, 1, 10, 13, 17, 18, 23, 24
<i>Cellaria fistulosa</i>	8, 17, 20	<i>Ophiura</i>	6, 11, 17
<i>Cellaria sinuosa</i>	8	<i>Ophiura affinis</i>	6, 11, 12, 13, 14, 15, 17
<i>Caberea ellisii</i>	7, 8, 13	<i>Ophiura albida</i>	5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22
<i>Scrupocellaria</i>	3, 4, 5, 6, 8, 10, 11, 13, 17, 18, 20, 21, 22	<i>Ophiura ophiura</i>	4, 7, 8, 10, 11, 12, 13, 15, 16, 17, 19, 20, 22
<i>Scrupocellaria reptans</i>	1, 3, 6, 17, 18, 19, 23	<i>Psammechinus miliaris</i>	1, 3, 5, 6, 12, 13, 14, 15, 17, 18, 20, 22, 24
<i>Scrupocellaria scruposa</i>	1, 6, 9, 12, 17	<i>Echinus esculentus</i>	3, 4, 5, 6, 7, 8, 9, 1, 10, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22
<i>Bicellariella ciliata</i>	6, 8, 17	<i>Echinocyamus pusillus</i>	4, 13
<i>Beania mirabilis</i>	6	<i>Echinocardium cordatum</i>	3, 6, 1, 11, 12, 13, 17
<i>Bugula</i>	6, 13	<i>Echinocardium flavescens</i>	4
<i>Bugula avicularia</i>	6, 10, 12, 13, 17	<i>Brissopsis lyrifera</i>	13, 17
<i>Bugula flabellata</i>	8, 13, 17	HOLOTHURIOIDEA	14
<i>Bugula plumosa</i>	6, 10, 13	Cucumariidae	8
<i>Bugula turbinata</i>	13, 17	<i>Leptopentacta elongata</i>	3, 4, 5, 6, 8, 9, 10, 12, 13, 15, 16, 17, 20
<i>Bryozoa indet crusts</i>	1, 3, 6, 8, 11, 13, 14, 15, 17	<i>Paracucumaria hyndmani</i>	14, 15, 17
<i>Phoronis</i>	6, 20	<i>Pawsonia saxicola</i>	5, 13, 14, 17, 18, 19, 20, 21, 22
<i>Phoronis hippocrepia</i>	4, 6, 9, 19	<i>Aslia lefevrei</i>	17, 18, 19, 20, 22
<i>Phoronis muelleri</i>	6, 12, 17	<i>Ocnus lacteus</i>	3, 8
ECHINODERMATA		<i>Ocnus planci</i>	13, 15, 17
<i>Antedon</i>	8, 12, 17	<i>Thyone fusus</i>	5, 8, 12, 13, 14, 15, 16, 17, 20, 22
<i>Antedon bifida</i>	1, 3, 4, 5, 6, 7, 8, 9, 10, 12, 13, 16, 17, 18, 19, 20, 21, 22	<i>Pseudothyone raphanus</i>	6
<i>Antedon petasus</i>	7, 8, 9, 10, 13, 17, 18, 19, 20, 22	<i>Thyone roscovita</i>	5, 8, 13, 14, 17, 18, 19, 20
<i>Leptometra celtica</i>	7, 8, 13, 17	<i>Neopentadactyla mixta</i>	1, 3, 4, 5, 13, 15, 18, 22
<i>Astropecten irregularis</i>	6, 9, 13, 15, 17, 19, 20, 21	<i>Thyonidium drummondii</i>	5, 8, 12, 13, 15, 17
<i>Luidia ciliaris</i>	5, 17, 19, 20, 22	<i>Psolus</i>	11
<i>Porania pulvillus</i>	4, 13, 17, 20	<i>Psolus phantapus</i>	11, 12, 13, 14, 15, 17
<i>Asterina gibbosa</i>	6, 18	<i>Leptosynapta</i>	6
<i>Asterina phylactica</i>	6	<i>Leptosynapta bergensis</i>	17
<i>Anseropoda placenta</i>	10, 13, 15, 16, 17	<i>Leptosynapta inhaerens</i>	6, 8, 11, 17, 19
<i>Solaster endeca</i>	3, 4, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 17, 20, 22	<i>Leptosynapta minuta</i>	3
<i>Crossaster papposus</i>	1, 3, 4, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23	<i>Labidoplax</i>	17
<i>Henricia</i>	1, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 17, 18, 19, 20, 21		
<i>Henricia oculata</i>	3, 4, 5, 6, 9, 10, 11, 12, 13, 14, 15, 17, 22		
<i>Henricia sanguinolenta</i>	6, 15, 17, 19		

<i>Labidoplax buskii</i>	17	<i>Botrylloides leachi</i>	1, 3, 6, 7, 10, 11, 12, 13, 17, 18, 19, 2, 20, 22, 24
<i>Labidoplax digitata</i>	6, 17	<i>Boltenia echinata</i>	8, 12, 17
<i>Labidoplax media</i>	17	<i>Pyura</i>	13
TUNICATA	6, 17	<i>Pyura microcosmus</i>	3, 12, 13, 15, 17, 20
ASCIDIACEA	1, 6, 8, 12, 14, 17	<i>Pyura tessellata</i>	11, 17
<i>Clavelina lepadiformis</i>	1, 3, 4, 5, 6, 7, 8, 9, 10, 13, 16, 17, 18, 19, 20, 21, 22	<i>Molgula</i>	7, 8
Polyclinidae	1, 6, 18, 22, 24	<i>Molgula citrina</i>	3, 17
<i>Polyclinum aurantium</i>	3, 6, 22	<i>Molgula complanata</i>	3
<i>Syνοicum pulmonaria</i>	12, 13, 14	<i>Molgula manhattensis</i>	8, 10, 11, 12, 13, 17, 20
<i>Morchellium argus</i>	8	<i>Molgula occulta</i>	10, 17
<i>Sidnyum</i>	6, 13, 17	<i>Molgula oculata</i>	18, 20
<i>Sidnyum elegans</i>	6	<i>Scyliorhinus</i>	6
<i>Sidnyum turbinatum</i>	3, 4, 6, 1, 17	<i>Scyliorhinus canicula</i>	4, 5, 6, 7, 8, 9, 12, 13, 15, 16, 17, 22
<i>Sidnyum</i>	6	<i>Scyliorhinus stellaris</i>	19
<i>Aplidium</i>	1, 17	<i>Squalus acanthias</i>	6
<i>Aplidium glabrum</i>	13	Rajidae	1
<i>Aplidium nordmanni</i>	17, 18, 24	<i>Raja clavata</i>	16
<i>Aplidium pallidum</i>	8, 17	<i>Anguilla anguilla</i>	2, 6, 11, 14, 23
<i>Aplidium punctum</i>	3, 8, 17	<i>Conger conger</i>	14, 21
Didemnidae	1, 3, 6, 12, 13, 17	<i>Clupea harengus</i>	4
<i>Trididemnum cereum</i>	6	<i>Salmo trutta</i>	3, 6
<i>Didemnum</i>	3	Gobiesocidae	14, 17
<i>Didemnum maculosum</i>	3, 6, 7, 8, 10, 13, 17, 18	<i>Diplecogaster bimaculata</i>	4, 10, 12, 13, 17
<i>Diplosoma</i>	6, 17	<i>Lophius piscatorius</i>	7, 8, 13
<i>Diplosoma listerianum</i>	1, 5, 6, 7, 8, 12, 13, 15, 17, 22	Gadidae	1, 5, 9, 11, 13, 14, 15, 17, 18, 19, 20, 21, 22
<i>Diplosoma spongiforme</i>	3, 12, 17	<i>Gadus morhua</i>	4, 5, 7, 8, 11, 14, 17, 18
<i>Leptoclinides faeroensis</i>	6	<i>Molva molva</i>	9, 19
<i>Lissoclinum perforatum</i>	3, 10	<i>Pollachius pollachius</i>	17, 19, 22
<i>Ciona intestinalis</i>	3, 4, 6, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22	<i>Pollachius virens</i>	8, 15, 16, 18, 20, 22
<i>Diazona violacea</i>	7, 8, 13, 17	<i>Raniceps raninus</i>	11, 15
<i>Corella parallelogramma</i>	1, 3, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 19, 20, 22	<i>Trisopterus luscus</i>	5, 14, 17, 20
<i>Asciadiella</i>	3, 6, 17	<i>Trisopterus minutus</i>	3, 4, 5, 6, 7, 8, 10, 12, 13, 17, 19, 20
<i>Asciadiella aspersa</i>	1, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 24	<i>Merluccius merluccius</i>	11
<i>Asciadiella scabra</i>	3, 5, 6, 8, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 22	<i>Gasterosteus aculeatus</i>	3, 6, 18, 20
<i>Asciadiella</i>	1	<i>Spinachia spinachia</i>	4, 5, 6, 11, 12, 13, 17, 18
<i>Ascidia</i>	6, 8, 17	Syngnathidae	6
<i>Ascidia conchilega</i>	3, 6, 8, 9, 10, 13, 17, 18, 20	<i>Nerophis lumbriciformis</i>	23
<i>Ascidia mentula</i>	3, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22	<i>Syngnathus</i>	6, 17
<i>Ascidia virginea</i>	3, 5, 6, 8, 9, 10, 11, 12, 13, 14, 17, 19, 20	<i>Syngnathus acus</i>	1, 3, 4, 6, 8, 11, 12, 13, 16, 17
Styelidae	3	<i>Syngnathus rostellatus</i>	6
<i>Styela</i>	6	<i>Sebastes viviparus</i>	6
<i>Styela coriacea</i>	6	Triglidae	13
<i>Polycarpa</i>	1, 6, 13	<i>Eutrigla gurnardus</i>	6, 7, 10, 11
<i>Polycarpa pomaria</i>	3, 6, 7, 8, 10, 11, 12, 13, 14, 15, 17, 18, 19, 20	<i>Myxocephalus scorpius</i>	1, 4, 6, 10, 11, 12, 13, 14, 15, 17, 18, 19, 20
<i>Polycarpa scuba</i>	3, 13, 17	<i>Taurulus bubalis</i>	6, 10, 11, 12, 14, 15, 20, 21, 22
<i>Dendrodoa grossularia</i>	3, 4, 6, 8, 9, 1, 10, 11, 12, 13, 14, 15, 17, 19, 20, 22, 24	<i>Agonus cataphractus</i>	13, 14, 15, 22
<i>Botryllus schlosseri</i>	1, 3, 6, 7, 8, 10, 12, 13, 15, 16, 17, 18, 20, 22	<i>Cyclopterus lumpus</i>	6, 22
		<i>Serranus</i>	6
		Mugilidae	6
		<i>Chelon labrosus</i>	6
		<i>Centrolabrus exoletus</i>	5, 6, 22
		<i>Crenilabrus melops</i>	4, 5, 6, 8, 9, 17, 20
		<i>Ctenolabrus rupestris</i>	5, 6, 7, 8, 9, 11, 13, 17, 18, 19, 20, 21

<i>Labrus bergylta</i>	6, 12, 13, 17, 19, 20	<i>Audouinella</i>	3, 6, 7, 11, 15, 16, 17
<i>Labrus mixtus</i>	7, 8, 13, 17, 19, 20, 22	<i>Rhodothamniella floridula</i>	3, 6, 17
<i>Lipophrys pholis</i>	8, 22	<i>Audouinella membranacea</i>	1
<i>Parablennius gattorugine</i>	6	<i>Audouinella purpurea</i>	7
<i>Chirolophis ascanii</i>	4, 7	<i>Audouinella virgatula</i>	13
<i>Lumpenus lumpretaeformis</i>	6, 13, 15, 17	<i>Nemalion helminthoides</i>	5, 6
<i>Zoarces viviparus</i>	14	<i>Scinaia</i>	6
<i>Pholis gunnellus</i>	3, 5, 6, 7, 8, 9, 1, 10, 11, 12, 13, 14, 15, 17, 18, 19, 2, 20, 22, 24	<i>Scinaia trigona</i>	3, 6, 7, 8, 17, 18, 20
<i>Ammodytes</i>	8, 17, 18	<i>Asparagopsis armata</i> (<i>Falkenbergia</i>)	6, 17
<i>Ammodytes marinus</i>	6	<i>Bonnemaisonia asparagoides</i>	3, 4, 5, 6, 7, 8, 10, 11, 13, 15, 16, 17, 18, 19, 20, 21, 22
<i>Callionymus</i>	5, 9, 11, 17	<i>Bonnemaisonia hamifera</i>	6, 17
<i>Callionymus lyra</i>	3, 4, 5, 6, 7, 9, 10, 11, 12, 13, 15, 16, 17, 18, 20, 22	<i>Trailiella intricata</i>	3, 6, 7, 8, 11, 13, 14, 16, 17, 19, 20, 22
<i>Callionymus reticulatus</i>	4, 5, 7, 8, 10, 11, 13, 17, 18, 20, 21	<i>Gelidium</i>	14, 19, 22
Gobiidae	1, 3, 6, 8, 11, 13, 17, 20	<i>Gelidium latifolium</i>	3, 6, 7, 11, 22
<i>Buena jeffreysii</i>	15	<i>Gelidium pusillum</i>	3, 6, 13, 17
<i>Gobius</i>	15	<i>Palmaria palmata</i>	1, 6, 11, 13, 14, 15, 17, 18, 20, 24
<i>Gobius niger</i>	6, 9, 11, 13, 17	<i>Rhodophysema elegans</i>	3
<i>Gobius paganellus</i>	13	<i>Rhodophysema georgii</i>	1
<i>Gobiusculus flavescens</i>	3, 4, 5, 6, 7, 8, 1, 10, 11, 12, 13, 14, 15, 17, 18, 19, 20	<i>Dilsea carnosa</i>	1, 3, 4, 5, 6, 7, 8, 10, 13, 14, 15, 16, 17, 18, 20, 22
<i>Lesueurigobius friesii</i>	3, 6, 9, 12, 13, 14, 15, 17, 19, 20	<i>Dudresnaya verticillata</i>	8, 18
<i>Pomatoschistus</i>	3, 5, 6, 9, 11, 12, 13, 15, 16, 17, 19, 20	<i>Dumontia contorta</i>	3, 6, 10, 13, 14, 17, 18, 20, 22, 24
<i>Pomatoschistus microps</i>	6	<i>Grateloupia filicina</i>	3, 6, 18, 19
<i>Pomatoschistus minutus</i>	4, 6, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17	<i>Callophyllis cristata</i>	8, 13, 15
<i>Pomatoschistus pictus</i>	3, 4, 5, 6, 7, 8, 9, 1, 10, 11, 12, 13, 15, 17, 18, 19, 20, 21, 22	<i>Callophyllis laciniata</i>	3, 4, 5, 7, 8, 10, 13, 15, 17, 18, 20, 22
<i>Thorogobius ephippiatus</i>	6, 7, 9, 11, 13, 15, 17, 18, 19, 20	<i>Kallymenia reniformis</i>	3, 8, 13, 17, 18
<i>Scomber scombrus</i>	17	<i>Meredithia microphylla</i>	1, 8
PISCES		<i>Gloiosiphonia capillaris</i>	1, 3, 13
<i>Phrynorhombus norvegicus</i>	12, 15, 17, 19	<i>Peyssonnelia</i>	3, 13, 22
<i>Phrynorhombus regius</i>	6, 8, 17, 19	<i>Peyssonnelia dubyi</i>	3
<i>Zeugopterus punctatus</i>	8, 13, 22	<i>Hildenbrandia</i>	3, 6, 7, 11, 13, 14, 17
Pleuronectidae	3, 4, 5, 7, 8, 9, 10, 11, 12, 13, 14, 15, 17, 18	<i>Hildenbrandia rubra</i>	4
<i>Hippoglossoides platessoides</i>	11	Corallinaceae	3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24
<i>Limanda limanda</i>	6, 11, 18	<i>Corallina</i>	1, 6
<i>Microstomus kitt</i>	20	<i>Corallina officinalis</i>	1, 3, 6, 7, 8, 13, 14, 17, 18, 19, 20, 21, 22, 24
<i>Platichthys flesus</i>	6, 11	<i>Hydrolithon</i>	6
<i>Pleuronectes platessa</i>	2, 6, 8, 9, 13, 16, 17, 18, 19, 20, 21	<i>Lithophyllum</i>	6
Alcidae	6	<i>Lithophyllum incrustans</i>	6, 17
ALGAE		<i>Lithothamnion</i>	1, 3, 6, 8, 17, 19
CYANOPHYCOTA		<i>Lithothamnion corallioides</i>	3, 4, 17, 21
<i>Oscillatoria rosea</i>	6	<i>Lithothamnion glaciale</i>	3, 4, 5, 6, 7, 10, 12, 13, 17, 20, 21
<i>Beggiatoa</i>	6, 8, 10, 11, 12, 13, 14, 17	<i>Mesophyllum lichenoides</i>	6
Blue-green algae	6, 11, 14	<i>Phymatolithon calcareum</i>	3, 4, 6, 12, 13, 17, 18, 21
RHODOPHYCOTA		<i>Phymatolithon lenormandii</i>	6, 14
<i>Porphyropsis coccinea</i>	1, 3, 10, 13, 15, 17, 18	<i>Pneophyllum fragile</i>	6
<i>Bangia atropurpurea</i>	14	<i>Titanoderma pustulatum</i>	1, 3
<i>Porphyra</i>	4, 6, 11, 13, 14, 15, 22	<i>Maerl indet</i>	1, 6
<i>Porphyra miniata</i>	3, 7, 10, 13, 15, 17, 18, 20	<i>Gracilaria</i>	6
<i>Porphyra umbilicalis</i>	5, 6, 14, 17, 20, 22	<i>Gracilaria gracilis</i>	1, 3, 4, 6, 7, 8, 11, 13, 17, 18, 20, 22
		<i>Schmitzia hiscockiana</i>	8

<i>Ahnfeltia plicata</i>	1, 3, 6, 10, 15, 22	<i>Ceramium diaphanum</i>	17
<i>Gymnogongrus crenulatus</i>	3, 10	<i>Ceramium nodulosum</i>	1, 3, 4, 5, 6, 7, 10, 11, 12, 13, 14, 17, 18, 20, 22, 24
<i>Phyllophora</i>	8, 17	<i>Ceramium shuttleworthianum</i>	6
<i>Phyllophora crispa</i>	1, 3, 4, 5, 6, 7, 8, 10, 11, 13, 14, 16, 17, 18, 22	<i>Ceramium strictum</i>	4, 5, 7, 10, 13, 17
<i>Phyllophora pseudoceranioides</i>	1, 3, 6, 7, 10, 11, 13, 15, 16, 18, 22	<i>Compsothamnion thuyoides</i>	3, 4, 5, 7, 8, 10, 11, 13, 15, 17, 18, 20
<i>Phyllophora sicula</i>	6	<i>Griffithsia</i>	6
<i>Erythrodermis traillii</i>	3, 4, 11, 12, 13, 15	<i>Griffithsia corallinoides</i>	3, 6, 13, 17, 22
<i>Coccotylus truncata</i>	3, 6, 8, 1, 10, 11, 13, 15, 17, 18, 22	<i>Halurus flosculosus</i>	3, 6, 7, 10, 13, 17, 22
<i>Schottera nicaeensis</i>	3, 6, 12	<i>Monosporus pedicellatus</i>	6
<i>Mastocarpus stellatus</i>	3, 6, 7, 13, 14, 15, 17, 18, 19, 20, 21, 22, 23, 24	<i>Pleonosporium borreri</i>	17
<i>Chondrus crispus</i>	1, 3, 5, 6, 8, 10, 11, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22	<i>Plumaria plumosa</i>	3, 6, 14, 17, 18, 19
Polyideaceae	6	<i>Pterothamnion plumula</i>	3, 4, 5, 6, 7, 10, 11, 12, 13, 15, 16, 17, 18, 20, 22
<i>Polyides rotundus</i>	1, 3, 4, 6, 8, 10, 11, 13, 14, 15, 17, 18, 21, 22, 24	<i>Ptilota gunneri</i>	1, 3, 5, 6, 8, 13, 16, 17, 18, 22
<i>Plocamium cartilagineum</i>	1, 3, 4, 5, 6, 7, 8, 10, 13, 16, 17, 18, 21, 22, 24	<i>Ptilothamnion pluma</i>	6
<i>Furcellaria lumbricalis</i>	1, 3, 4, 6, 7, 11, 17, 18, 20, 24	<i>Seirospora</i>	6
<i>Halarachnion ligulatum</i>	3, 4, 5, 7, 8, 10, 13, 15, 17, 18, 20, 21, 22	<i>Seirospora seirosperma</i>	17
<i>Catenella caespitosa</i>	3, 6, 7, 14, 17	<i>Spermothamnion repens</i>	1, 17
<i>Calliblepharis ciliata</i>	3, 4, 5, 7, 8, 16, 17	<i>Sphondylothamnion multifidum</i>	6
<i>Calliblepharis jubata</i>	6	<i>Acrosorium reptans</i>	1, 8, 13
<i>Cystoclonium purpureum</i>	1, 3, 4, 5, 6, 7, 8, 10, 11, 13, 15, 17, 18, 20, 21, 22, 24	<i>Acrosorium venulosum</i>	6, 8, 18, 22
<i>Rhodophyllis</i>	4, 8, 13, 17, 19, 20	<i>Apoglossum ruscifolium</i>	3, 8, 1, 10, 20
<i>Rhodophyllis divaricata</i>	3, 4, 5, 6, 7, 8, 12, 13, 16, 17, 18, 19, 20, 21, 22	<i>Cryptopleura ramosa</i>	1, 3, 4, 5, 6, 7, 8, 10, 13, 15, 16, 17, 18, 19, 20, 21, 22
<i>Cruoria</i>	1, 6, 17	<i>Delesseria sanguinea</i>	1, 3, 4, 5, 6, 7, 8, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22
<i>Cruoria pellita</i>	1, 3	<i>Hypoglossum hypoglossoides</i>	3, 8, 1, 11, 13, 17, 18
<i>Haemescharia</i>	6	<i>Membranoptera alata</i>	3, 5, 6, 7, 1, 10, 11, 13, 14, 15, 16, 17, 18, 19, 20, 22, 23, 24
<i>Cordylecladia erecta</i>	3, 6, 10, 20	<i>Haraldiophyllum</i>	6
<i>Rhodymenia delicatula</i>	3	<i>Haraldiophyllum bonnemaisonii</i>	1, 3, 8, 10, 13, 17, 18, 20, 22
<i>Rhodymenia pseudopalmata</i>	11, 17	<i>Nitophyllum punctatum</i>	1, 3, 5, 7, 8, 10, 13, 15, 16, 17, 18, 22
<i>Rhodymenia ardissonae</i>	8	<i>Phycodrys rubens</i>	1, 3, 4, 5, 6, 7, 8, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23
<i>Chylocladia verticillata</i>	4, 6, 7, 10, 13, 14, 17, 18, 19, 20	<i>Erythroglossum laciniatum</i>	3, 17, 20
<i>Gastroclonium ovatum</i>	6, 18, 20	<i>Dasya</i>	6
<i>Lomentaria articulata</i>	1, 3, 6, 13, 17, 18, 19, 20, 22, 23, 24	<i>Heterosiphonia plumosa</i>	3, 4, 5, 6, 7, 8, 10, 11, 13, 17, 18, 19, 20, 21, 22
<i>Lomentaria clavellosa</i>	3, 6, 9, 10, 13, 15, 17, 18, 22	<i>Brongiartella byssoides</i>	1, 3, 4, 5, 6, 7, 8, 10, 11, 12, 13, 15, 16, 17, 18, 19, 20, 21, 22
<i>Lomentaria orcadensis</i>	8, 13, 17	<i>Chondria dasyphylla</i>	1, 6
CERAMIALES		<i>Osmundea hybrida</i>	3, 6, 13, 17, 18, 20, 22
<i>Antithamnion</i>	6, 11, 13, 18	<i>Laurencia obtusa</i>	6
<i>Antithamnion cruciatum</i>	17	<i>Osmundea pinnatifida</i>	3, 6, 13, 14, 17, 18, 19, 20, 22
<i>Antithamnionella spirographidis</i>	13, 17, 20	<i>Odonthalia dentata</i>	3, 4, 5, 6, 7, 8, 1, 10, 11, 12, 13, 14, 15, 16, 17, 18, 20, 22, 23
<i>Callithamnion</i>	3, 5, 6, 14, 17, 18, 20	<i>Polysiphonia</i>	3, 5, 6, 7, 8, 11, 13, 14, 16, 17, 18
<i>Aglaothamnion bipinnatum</i>	13	<i>Polysiphonia atlantica</i>	6
<i>Aglaothamnion byssoides</i>	3, 13, 17	<i>Polysiphonia brodiei</i>	6
<i>Callithamnion corymbosum</i>	17	<i>Polysiphonia elongata</i>	3, 4, 5, 6, 7, 8, 10, 11, 12, 13, 15, 16, 17, 19, 20, 22
<i>Aglaothamnion hookeri</i>	3, 6		
<i>Callithamnion tetragonum</i>	6, 13		
<i>Ceramium</i>	3, 5, 6, 7, 9, 11, 13, 14, 15, 17, 18, 19, 22		
<i>Ceramium ciliatum</i>	6		
<i>Ceramium deslongchampsii</i>	1, 3, 6		

<i>Polysiphonia fibrata</i>	13	<i>Desmarestia</i>	6
<i>Polysiphonia lanosa</i>	3, 6, 7, 11, 12, 13, 14, 15, 17, 18, 19, 20, 21, 22, 23, 24	<i>Desmarestia aculeata</i>	3, 4, 5, 6, 7, 8, 9, 1, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 22
<i>Polysiphonia nigra</i>	1, 6, 7, 13, 15, 17	<i>Desmarestia dresnayi</i>	8, 18
<i>Polysiphonia fucooides</i>	1, 3, 4, 5, 6, 7, 8, 10, 11, 13, 14, 15, 16, 17, 22	<i>Desmarestia ligulata</i>	1, 13, 17
<i>Polysiphonia stricta</i>	1, 3, 6, 10, 12, 13, 14, 15, 17, 18, 22	<i>Desmarestia viridis</i>	1, 3, 4, 5, 6, 7, 8, 9, 10, 12, 13, 14, 15, 17, 18, 20, 21, 22
<i>Polysiphonia violacea</i>	11	<i>Arthrocladia villosa</i>	4, 5, 7, 18, 22
<i>Pterosiphonia parasitica</i>	1, 3, 6, 12, 13, 16, 17, 18, 20, 22	<i>Leblondiella densa</i>	1
<i>Rhodomela</i>	3, 6, 13, 16	<i>Stictyosiphon</i>	4, 8
<i>Rhodomela confervoides</i>	1, 3, 4, 5, 6, 7, 10, 12, 13, 14, 15, 16, 17, 18	<i>Stictyosiphon tortilis</i>	9
<i>Rhodomela lycopodioides</i>	1, 3	<i>Striaria attenuata</i>	6
Filamentous red algae	3, 6, 7, 8, 9, 17, 22	<i>Asperococcus</i>	4, 6, 8, 9, 17, 19, 20
Foliose red algae	6, 8, 15, 17, 22	<i>Asperococcus compressus</i>	4, 7, 9, 13, 18
<i>Rhodophycota indet. (non-calc. crusts)</i>	1, 3, 5, 6, 7, 8, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22	<i>Asperococcus fistulosus</i>	3, 5, 6, 10, 13, 17, 18, 20
<i>Diatoms – colonial</i>	1, 3, 6, 10, 13, 17, 18	<i>Asperococcus bullosus</i>	3, 4, 6, 7, 8, 17, 20, 21
<i>Diatoms – film</i>	3, 4, 5, 6, 7, 8, 12, 13, 14, 15, 17	<i>Litosiphon pusillus</i>	6
CHROMOPHYCOTA		<i>Dictyosiphon</i>	6, 11, 13, 17, 20
Ectocarpaceae	1, 3, 7, 8, 10, 11, 12, 13, 14, 15, 16, 17, 18, 20	<i>Dictyosiphon chordaria</i>	6
<i>Pilayella littoralis</i>	3, 6, 7, 13	<i>Dictyosiphon foeniculaceus</i>	6, 20
<i>Pseudolithoderma</i>	6	Scytosiphonaceae	17
<i>Pseudolithoderma extensum</i>	1, 6, 12, 13, 14, 15, 17, 22	<i>Colpomenia peregrina</i>	3, 6, 17, 18, 20
<i>Elachista</i>	4, 6, 13, 17	<i>Petalonia fascia</i>	3
<i>Elachista fucicola</i>	6, 11, 12, 17, 18, 24	<i>Scytosiphon lomentaria</i>	3, 6, 13, 17, 18
<i>Halothrix lumbricalis</i>	5	LAMINARIALES	22
<i>Leathesia difformis</i>	1, 3, 6, 13, 15, 17, 18, 20, 22, 24	<i>Chorda</i>	6
<i>Spermatochnus paradoxus</i>	6	<i>Chorda filum</i>	3, 4, 5, 6, 7, 8, 9, 1, 10, 11, 12, 13, 15, 17, 18, 19, 20, 21, 22, 24
<i>Stilophora</i>	6	<i>Laminaria</i>	3, 5, 6, 1, 11, 12, 13, 15, 17, 20, 21
<i>Stilophora tenella</i>	6, 10, 17, 18, 20	<i>Laminaria digitata</i>	3, 5, 6, 8, 9, 1, 13, 14, 15, 17, 18, 19, 20, 22, 23, 24
<i>Acrothrix gracilis</i>	1	<i>Laminaria hyperborea</i>	1, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23
<i>Chordaria flagelliformis</i>	6, 13	<i>Laminaria saccharina</i>	1, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23
<i>Cladosiphon zosteræ</i>	1, 6	<i>Saccorhiza polyschides</i>	4, 5, 6, 8, 10, 17, 18, 19, 20, 22
<i>Eudesme virescens</i>	1, 5, 10, 13, 17, 18, 20	<i>Alaria esculenta</i>	1, 3, 5, 6, 13, 17, 20, 23
<i>Mesogloia</i>	1, 6	Fucaceae	6
<i>Mesogloia vermiculata</i>	5, 6, 7, 17, 18, 20, 21	<i>Ascophyllum nodosum</i>	3, 4, 5, 6, 7, 8, 11, 12, 13, 14, 15, 17, 18, 19, 20, 21, 22, 23, 24
<i>Myriocladia lovenii</i>	1, 3	<i>Ascophyllum nodosum mackaii</i>	3, 6, 14, 17, 20
<i>Sauvageaugloia</i>	6	<i>Fucus</i>	6, 8, 11, 12, 14, 15, 17
<i>Sauvageaugloia griffithsiana</i>	6	<i>Fucus ceranoides</i>	4, 6, 7, 8, 11, 14, 15, 17, 18, 19, 20, 22, 24
<i>Cutleria multifida</i>	3, 4, 5, 6, 10, 13, 17, 18, 20, 22	<i>Fucus cottonii</i>	6
<i>Aglaozonia (Asexual Cutleria)</i>	3, 5, 6, 7, 12, 13, 17, 18, 19, 20, 21, 22	<i>Fucus serratus</i>	3, 4, 6, 7, 8, 11, 12, 13, 14, 15, 17, 18, 19, 20, 21, 22, 23, 24
<i>Sphacelaria</i>	6, 17	<i>Fucus spiralis</i>	3, 4, 6, 7, 11, 12, 13, 14, 15, 17
<i>Sphacelaria cirrosa</i>	1, 6	<i>Fucus vesiculosus</i>	3, 4, 5, 6, 7, 8, 11, 12, 13, 14, 15, 17, 18, 19, 20, 21, 22, 23, 24
<i>Sphacelaria plumosa</i>	6, 13, 17	<i>Pelvetia canaliculata</i>	3, 4, 5, 6, 7, 11, 12, 13, 14, 15, 17, 18, 19, 20, 21, 22, 23, 24
<i>Sphacelaria plumula</i>	10		
<i>Halopteris filicina</i>	3		
<i>Cladostephus spongiosus</i>	1, 3, 6, 18, 20, 22,		
<i>Dictyopteris membranacea</i>	19		
<i>Dictyota dichotoma</i>	1, 3, 4, 5, 6, 7, 8, 10, 13, 16, 17, 18, 19, 20, 21, 22		
<i>Taonia atomaria</i>	5		
<i>Sporochnus pedunculatus</i>	4, 5, 6, 17, 18, 20, 22		

<i>Himantalia elongata</i>	6, 17, 18, 20, 22	<i>Codium fragile</i> subsp.	6, 13, 20
<i>Cystoseira</i>	6	<i>atlanticum</i>	
<i>Cystoseira tamariscifolia</i>	20	<i>Codium fragile</i> subsp.	6
<i>Halidrys siliquosa</i>	1, 3, 4, 5, 6, 8, 9, 13, 14, 16, 17, 18, 20, 21, 22, 24	<i>tomentosoides</i>	
<i>Filamentous brown algae</i>	3, 8, 9, 11, 12, 14, 15, 17	<i>Codium tomentosum</i>	6
<i>Chromophycota indet.(crusts)</i>	3, 5, 6, 9, 12, 13, 14, 17, 22	<i>Encrusting green algae</i>	13
<i>Foliose brown algae</i>	6	<i>Filamentous green algae</i>	3, 6, 8, 11, 13, 15, 17
CHLOROPHYCOTA	7, 8, 13, 14, 15, 17	<i>Foliose green algae</i>	6
<i>Enteromorpha</i>	1, 3, 4, 6, 7, 8, 10, 11, 12, 13, 14, 15, 17, 18, 19, 20, 21, 22, 23, 24	<i>Vaucheria</i>	3, 6, 24
<i>Enteromorpha compressa</i>	8, 13, 14	ANGIOSPERMAE	
<i>Enteromorpha intestinalis</i>	6, 15, 17	<i>Zostera</i>	6, 8, 24
<i>Enteromorpha linza</i>	3	<i>Zostera marina</i>	1, 6, 8, 12, 17
<i>Enteromorpha prolifera</i>	17	<i>Zostera noltii</i>	3, 4, 6, 17
<i>Ulva</i>	1, 3, 5, 6, 7, 8, 10, 11, 13, 14, 15, 16, 17, 18, 20, 21, 22, 23	<i>Ruppia</i>	6
<i>Ulva lactuca</i>	6, 7, 8, 13, 14	<i>Ruppia maritima</i>	6
<i>Blidingia</i>	6	<i>Armeria</i>	6
<i>Blidingia minima</i>	7	<i>Armeria maritima</i>	6, 13, 15
<i>Prasiola</i>	6	<i>Potamogeton</i>	6
<i>Prasiola stipitata</i>	6, 12, 14, 15	LICHENS	
<i>Urospora</i>	14	<i>Anaptychia fusca</i>	3, 6, 13, 14, 15, 17
<i>Spongomorpha</i>	10, 13	<i>Arthrospyrrenia halodytes</i>	17
<i>Spongomorpha arcta</i>	3, 17, 24	<i>Caloplaca</i>	6, 14
<i>Chaetomorpha</i>	3, 6	<i>Caloplaca marina</i>	3, 4, 5, 6, 11, 13, 14, 15, 17
<i>Chaetomorpha melagonium</i>	1, 3, 4, 6, 10, 11, 13, 15, 17	<i>Caloplaca thallincola</i>	6, 13, 14, 17
<i>Cladophora</i>	3, 6, 10, 11, 13, 14, 15, 17, 18	<i>Lecanora</i>	6, 13, 14, 17
<i>Cladophora pellucida</i>	1, 6	<i>Lecanora atra</i>	3, 4, 6, 7, 11, 13, 14, 15, 17
<i>Cladophora rupestris</i>	3, 5, 6, 7, 12, 13, 14, 15, 17, 18, 19, 20, 21, 22, 23, 24	<i>Lichina confinis</i>	3, 6, 13, 14, 17
<i>Bryopsis hypnoides</i>	6, 12, 13, 15, 17	<i>Lichina pygmaea</i>	3, 4, 5, 6, 13, 17, 18, 20, 22
<i>Bryopsis plumosa</i>	1, 3, 4, 5, 6, 7, 10, 12, 13, 15, 17, 18	<i>Ochrolechia</i>	6
<i>Derbesia</i>	17	<i>Ochrolechia parella</i>	3, 11, 14, 17
<i>Derbesia marina</i>	6	<i>Ramalina</i>	3, 4, 6, 13, 14, 15, 17
<i>Derbesia marina (Halicystis)</i>	17, 20	<i>Ramalina siliquosa</i>	3, 6, 13
<i>Codium</i>	4, 6, 12, 17	<i>Verrucaria</i>	6
<i>Codium fragile</i>	3, 6, 17	<i>Verrucaria maura</i>	3, 4, 5, 6, 7, 11, 12, 13, 14, 15, 17
		<i>Verrucaria mucosa</i>	3, 6, 7, 11, 13, 14, 15, 17
		<i>Xanthoria parietina</i>	3, 6, 7, 11, 13, 14, 15, 17
		<i>Grey lichens</i>	3, 6, 11, 13, 14, 15, 17
		<i>Lecanora gangaleoides</i>	3

Biotope key to be used in conjunction with biotope distribution maps

Code	Description
ELR1	Exposed littoral rock with <i>Mytilus edulis</i> and barnacles (sometimes with fucoids and foliose red algae on lower shore) (MytB, BPat, Fser.R, Ala.Ldig)
MLR1	Moderately exposed or steep sheltered littoral rock with barnacles and fucoids (PelB, BPat.Sem, Fves, Fser.Fser, Ldig.Ldig)
MLR2	Moderately exposed littoral boulders on muddy gravel and stones with fucoids (Fser.Fser.Bo, Ldig.Ldig.Bo, Lsac.Ldig, VsenMtru)
MLR10	Moderately exposed littoral rock – unsurveyed (MLR)
SLR1	Sheltered littoral rock or mixed substrata with dense fucoids, often with barnacles on steeper rock faces (Asc, Fves, Fser, BPat)
SLR2	Very sheltered mixed boulder, cobble, pebble and gravel shores subject to moderate tidal streams (AscX, FserX, Ldig.T)
SLR3	Littoral very reduced salinity boulders and cobbles with amphipods (FX)
SLR4	Sheltered littoral rock or mixed substrata subject to lowered salinity with fucoids (Pel, Fspi, Fves, Asc.VS, Fserr.VS, FcerX, FX)
SLR5	Tide-swept littoral rock with fucoids, ascidians and sponges (Asc.T, Fserr.T)
SLR6	Sheltered tide-swept littoral and sublittoral fringe mixed substrata with <i>Mytilus edulis</i> (MytX)
SLR9	Littoral mixed substrata of boulders and muddy gravel with fucoids (FvesX, MytX)
SLR12	Sheltered littoral stone, gravel and sediment shores, variously with fucoid algae (FX), <i>Mytilus edulis</i> (MytX) and bivalves (MacAre)
SLR14	Littoral mixed sediment with pebbles and cobbles with <i>Ascophyllum nodosum</i> f. <i>mackaii</i> bed
SLR15	Sheltered littoral rock – unsurveyed (SLR)
LGS1	Littoral gravel and/or sand (LGS)
LGS3	Moderately exposed littoral sand with some pebbles (Lan)
LGS6	Littoral sand and muddy gravel with polychaetes and bivalves (Lan, HedMac, MacAre.Mare, LMX)
LMS1	Littoral muddy sand with bivalve and polychaete communities (LMS, PCer, MacAre)
LMS2	Littoral muddy sand with <i>Zostera noltii</i> (ZnoI)
LMU1	Saltmarsh (Sm, NVC SM8)
LMU2	Very sheltered littoral muddy sand with <i>Hediste diversicolor</i> and <i>Macoma balthica</i> (HedMacMx)
LMU3	Reduced-salinity littoral soft mud (HedScr)
LMU6	Littoral mud (LMU)
LMX2	Littoral mixed sediment with pebbles and cobbles (LMX)
EIR6	Exposed infralittoral fringe gullies with <i>Dendroa</i> and <i>Clathrina</i> (SCAs.DenCla)
MIR1	Moderately exposed infralittoral rock with <i>Laminaria digitata</i> and <i>Laminaria hyperborea</i> , occasionally foliose red algae (Lhyp.Ft, Lhyp.PK, LhypCape)
MIR2	Tide-swept infralittoral rock with <i>Laminaria hyperborea</i> and dense foliose algae (sometimes also <i>Laminaria digitata</i>) (Lhyp.TFt, Lhyp.TPk, Ldig.T)
MIR3	Sand-scoured infralittoral rock and mobile substrata with kelp and scour-tolerant algae (XKScrR, EphR)
MIR4	Infralittoral rock outcrops with <i>Laminaria hyperborea</i> and <i>Halidrys siliquosa</i> (HalXk)
MIR8	Moderately exposed infralittoral rock with grazed <i>Laminaria hyperborea</i> forest (LhypGz.Ft)
MIR9	Tide-swept infralittoral rock, or mixed substrata and coarse sediments, in sheltered channels with mixed kelp and seaweed communities (Lhyp.TFt, Lhyp.TPk, Lsac.T)
MIR+SIR	Sheltered infralittoral rock with <i>Laminaria hyperborea</i> (above) and <i>Laminaria saccharina</i> (below) (LhypLsac.Ft)
SIR1	Moderately exposed or sheltered infralittoral bedrock with either mixed <i>Laminaria</i> spp. (LhypLsac.Ft) or <i>Laminaria saccharina</i> (Lsac)
SIR2	Tide-swept infralittoral rock with <i>Laminaria saccharina</i> , sponges and ascidians (Lsac.T, XKT)
SIR6	Sheltered infralittoral rock with kelp <i>Laminaria saccharina</i> , sparse red algae and <i>Psammechinus miliaris</i> (LsacRS.Psa, Lsac)
SIR7	Sheltered infralittoral rock with the cape form of <i>Laminaria hyperborea</i> (LhypCape)
SIR8	Moderately exposed sublittoral fringe boulders on muddy gravel and stones with <i>Codium</i> spp., <i>Mesophyllum lichenoides</i> and an algal turf (Lsac.Cod)
SIR9	Sheltered sublittoral reduced-salinity mixed substrata with fucoid algae (FChoG)
SIR10	Sheltered, grazed infralittoral rock in slightly reduced salinity, with <i>Laminaria saccharina</i> and <i>Psammechinus miliaris</i> (LsacRS.Psa)
SIR11	Sheltered infralittoral reduced-salinity rock with <i>Laminaria saccharina</i> , <i>Phyllophora</i> spp. and filamentous green seaweeds (LsacRS.Phy)
ECR1	Tide-swept sheltered circalittoral rock with <i>Balanus crenatus</i> , <i>Halichondria</i> spp. and <i>Alcyonidium diaphanum</i> (BalHpan) or mixed hard substrata with <i>Halichondria bowerbanki</i> , <i>Eucratea loricata</i> and <i>Eudendrium arbusculum</i> (HbowEud)
ECR4	Tide-exposed circalittoral cliffs with rich faunal turfs of sponges, hydroids, bryozoans and anthozoans (FaV)
ECR6	Circalittoral pebbles and cobbles with sparse fauna (PomByC)
MCR2	Tide-swept cobble and pebble plains with bryozoans and hydroids (Flu. SerHyd, Byh)
MCR9	Sheltered circalittoral mixed sediment and rock with dense brittlestars (Oph)
MCR10	Circalittoral rock with sparse fauna, encrusting algae and/or brittlestars (FaAlc)
MCR11	Tide-swept <i>Modiolus</i> beds (ModT)
MCR12	Moderately exposed circalittoral rock with <i>Swiftia pallida</i> and a turf of sponges, bryozoans and hydroids (ErSSwi, AlcTub, AlcC)
MCR13	Moderately exposed circalittoral rock (MCR)
SCR1	Sheltered circalittoral rock with barnacles, sponges and ascidians (SubSoAs) or with stones and shells on sediment with ascidians (Aasp)

Code	Description
SCR2	Very sheltered circalittoral rock, variously with brachiopods, anthozoans and ascidians (NeoPro, AmenCio, AntAsH)
SCR4	Moderately exposed to sheltered steep bedrock and boulders on sediment with ascidians and hydroids (AntAsh)
SCR5	Sheltered sublittoral reduced-salinity mixed hard substrata with ascidians (AmenCio)
SCR7	Circalittoral rock, unclassified (SCR)
IGS1	Infralittoral gravel and sand with maerl beds (Phy, Phy.R, MrlMx, Mrl)
IGS2	Circalittoral cobble, pebble and gravel with hydroids and barnacles and burrowing anemones (HalEdw)
IGS4	Infralittoral fine sand – undefined but probably with <i>Zostera</i> beds
IGS8	Infralittoral coarse sand, occasional maerl (IGS)
IGS10	Infralittoral sand with <i>Lanice conchilega</i> (Lcon)
IGS8+CGS4	Coarse sand and gravel (IGS, CGS)
CGS1	Circalittoral shell-gravel with <i>Neopentadactyla mixta</i> (VenNeo)
IMS1	Infralittoral and/or lower shore sediment with <i>Zostera marina</i> beds (Zmar)
IMS2	Sublittoral fine sand with <i>Echinocardium</i> and <i>Ensis</i> spp. (EcorEns)
IMS3	Infralittoral fine sand or muddy sand usually with <i>Ensis</i> spp. and <i>Echinocardium cordatum</i> (EcorEns)
IMS5	Sublittoral sand with shell fragments (IMS, FaMS)
IMS8	Saline lagoon with <i>Ruppia</i> spp.
IMS+IMX	Sublittoral muddy sand (LsacX, FaMx, FaMs)
IMS5+IMX9	Infralittoral mixed sediment or stones – undefined (IMX) and muddy sand – undefined (IMS)
CMS3	Circalittoral shelly and sandy mud with <i>Virgularia mirabilis</i> and <i>Turritella communis</i> (VirOph, VirOph.HAs)
CMS4	Medium fine sand (CMS)
CMS5	<i>Serpula vermicularis</i> reefs (Ser)
IMU5	Sublittoral soft mud and stones with dense <i>Ocnus planci</i> (Ocn)
IMU6	Shallow sublittoral mud – undefined
IMU8	Sublittoral soft mud with dense <i>Arenicola marina</i> , terebellids and <i>Leptosynapta</i> spp. (AreSyn)
IMU9	Sublittoral soft stable mud with <i>Philine aperta</i> and <i>Sagartiogeton</i> spp. (PhiVir)
IMU10	Sublittoral soft reduced-salinity mud with polychaetes (LagMu)
CMU1	Circalittoral soft mud with sea-pens and burrowing megafauna (SpMeg)
CMU8	Sublittoral anoxic mud with <i>Beggiatoa</i> (Beg)
CMU9	Circalittoral mud with pebbles, gravel and shell debris (CMU)
CMU10	Circalittoral soft mud with <i>Funiculina quadrangularis</i> and burrowing megafauna (SpMeg.Fun)
IMX1	Infralittoral mixed sediment with <i>Laminaria saccharina</i> , <i>Chorda filum</i> and filamentous algae (LsacX)
IMX3	<i>Ostrea edulis</i> beds (Ost)
IMX4	Infralittoral mixed sediment with faunal communities (VSenMtru)
IMX7	Sublittoral tide-swept mixed sediment with <i>Limaria hians</i> (Lim)
IMX9	Infralittoral mixed sediment (IMX)
IMX10	Infralittoral mixed sediment with algal mats of <i>Trailliella</i> (Tra)
IMX12	Infralittoral muddy sand with shells and stones with <i>Laminaria saccharina</i> and a dense cover of seasonal filamentous green algae (FiG)
IMX13	Mussel culture
CMX1	Tide-swept cobble, pebble and sediment plains (CMX)
CMX3	Sheltered sublittoral mixed sediments with <i>Modiolus modiolus</i> and ascidians (ModHo, ModHAs)



ELR1



SLR15



MIR2



SIR11



SCR5



IMS8



CMU9



MLR1



LGS1



MIR3



ECR1



SCR7



IMS+IMX



CMU10



MLR2



LGS3



MIR4



ECR4



IGS1



IMS5+IMX9



IMX1



MLR10



LGS6



MIR8



ECR6



IGS2



CMS3



IMX3



SLR1



LMS1



MIR9



MCR2



IGS4



CMS4



IMX4



SLR2



LMS2



MIR+SIR



MCR9



IGS8



CMS5



IMX7



SLR3



LMU1



SIR1



MCR10



IGS10



IMU5



IMX9



SLR4



LMU2



SIR2



MCR11



IGS8+CGS4



IMU6



IMX10



SLR5



LMU3



SIR6



MCR12



CGS1



IMU8



IMX12



SLR6



LMU6



SIR7



MCR13



IMS1



IMU9



IMX13



SLR9



LMX2



SIR8



SCR1



IMS2



IMU10



CMX1



SLR12



EIR6



SIR9



SCR2



IMS3



CMU1



CMX3



SLR14



MIR1



SIR10



SCR4



IMS5



CMU8