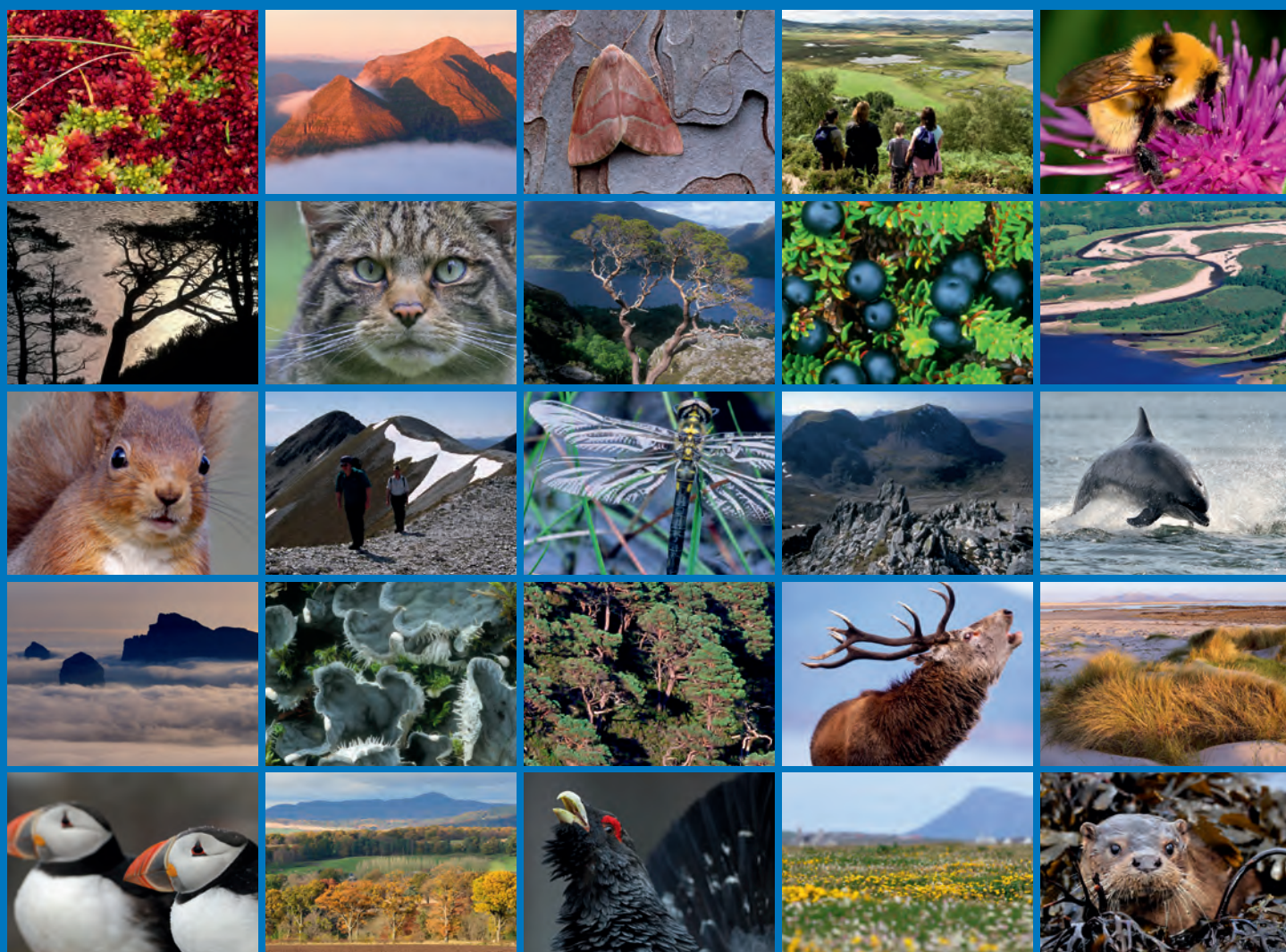


# Biological analyses of underwater video from proposed marine protected areas, renewable energy sites and spoil grounds around Scotland





**Scottish Natural Heritage**  
**Dualchas Nàdair na h-Alba**

All of nature for all of Scotland  
Nàdar air fad airson Alba air fad

# COMMISSIONED REPORT

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**Commissioned Report No. 746**

**Biological analyses of underwater video  
from proposed marine protected areas,  
renewable energy sites and spoil grounds  
around Scotland**

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## COMMISSIONED REPORT

# Summary

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## Biological analyses of underwater video from proposed marine protected areas, renewable energy sites and spoil grounds around Scotland

**Commissioned Report No. 746**

**Project no: 15165**

**Contractor: Dr Colin Moore**

**Year of publication: 2014**

### **Background**

Scottish Natural Heritage and the Joint Nature Conservation Committee have generated a focused list of habitats and species to target nature conservation action in Scottish waters - the Priority Marine Features (PMFs). A subset of these biological features, together with a list of large-scale features of functional importance to Scotland's seas (collectively termed MPA search features) have driven the identification of a network of 33 locations currently under consideration by the Scottish Government as possible Nature Conservation Marine Protected Areas (pMPAs). A further four MPA search locations in territorial waters remain to be fully assessed. These will be the subject of formal advice to Scottish Ministers later in 2014. To ensure that the network meets the legislative obligations for MPAs, other features representative of Scotland's seas more generally have also been recommended for formal designation as protected features of these new sites. The combination of MPA search features and representative features recommended for protection within a pMPA are collectively referred to as proposed protected features (PPFs).

The aim of the present investigation was to improve knowledge of the occurrence and distribution of species and habitats of recognised conservation importance in Scottish waters, particularly PPFs and other PMFs, but also to take into consideration other importance measures. This was achieved through the analysis of seabed video and still photographic imagery collected during research cruises around Scotland, chiefly in 2013. Areas covered included the Shiant East Bank MPA search location in the Minch, the approaches to Ullapool (North-west sea lochs and Summer Isles pMPA [in their 2014 MPA consultation feedback report, SNH recommend that this site be renamed the Wester Ross pMPA], including the Ullapool spoil ground and the Carn Skerries) and the Noss Head pMPA off Wick (including a spoil ground). Further spoil grounds were studied off Orkney and around the mouth of Cromarty Firth, as well as areas identified for the development of renewable energy schemes off Islay, Lewis, Orkney, Shetland and to the east of Peterhead (Buchan Deeps) and Aberdeen.

### **Main findings**

- Features of high conservation importance in the Shiant East Bank MPA search location included extensive development of deep sponge (**CR.HCR.DpSp.PhiAxi**) and northern sea fan (**CR.MCR.EcCr.CarSwi.LgAs**) communities. The offshore sand (**SS.SSa.OSa**) and offshore mixed sediment (**SS.SMx.OMx**) PPF habitats were also widely recorded

below the 50 m depth contour. Other PMFs observed at this location included densely burrowed mud (**SS.SMu.CFiMu.SpMmeg**) with its component species *Pachycerianthus multiplicatus*, and tentative sightings of ling.

- Burrowed mud was also recorded in the North-west sea lochs and Summer Isles pMPA, with some very good examples of the PPF **SS.SMu.CFiMu.SpMmeg.Fun**. Other PPFs included muddy sand communities (**SS.SSa.CMuSa**), especially off the Carn Skerries, and a rich maerl bed (**SS.SMp.Mrl.Pcal.R**) and aggregations of *Leptometra celtica* on the outer sill at the mouth of Little Loch Broom.
- Dense *Modiolus modiolus* shells were recorded at one site within the Noss Head pMPA. The record has been tentatively assigned to the biotope **SS.SBR.SMus.ModT**, which is the sole PPF for this pMPA.
- Few PMFs were observed at the remaining, non-MPA locations. Five sites off Shetland displayed sediments of fine sand supporting bivalve siphons resembling those of *Arctica islandica*. Sandeels appeared to be fairly numerous locally over fine sand on the Sutors spoil ground in Cromarty Firth.
- No clear impact of anthropogenic activity was observed within any of the five spoil grounds surveyed. However, it was found that the Ullapool spoil ground overlaps with an area of burrowed mud supporting *Funiculina quadrangularis* (**SS.SMu.CFiMu.SpMmeg.Fun**). This habitat might be expected to be sensitive to certain aspects of spoil dumping.

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## **ACKNOWLEDGEMENTS**

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# 1. INTRODUCTION

Provisions to designate new Marine Protected Areas (MPAs) within Scottish waters have been introduced through the Marine (Scotland) Act 2010 and the UK Marine and Coastal Access Act 2009. Scottish Natural Heritage (SNH) and the Joint Nature Conservation Committee (JNCC) have generated a focused list of habitats and species of importance in Scottish waters - the Priority Marine Features (PMFs) (SNH, 2012), which are regarded as priorities for conservation action in territorial waters.

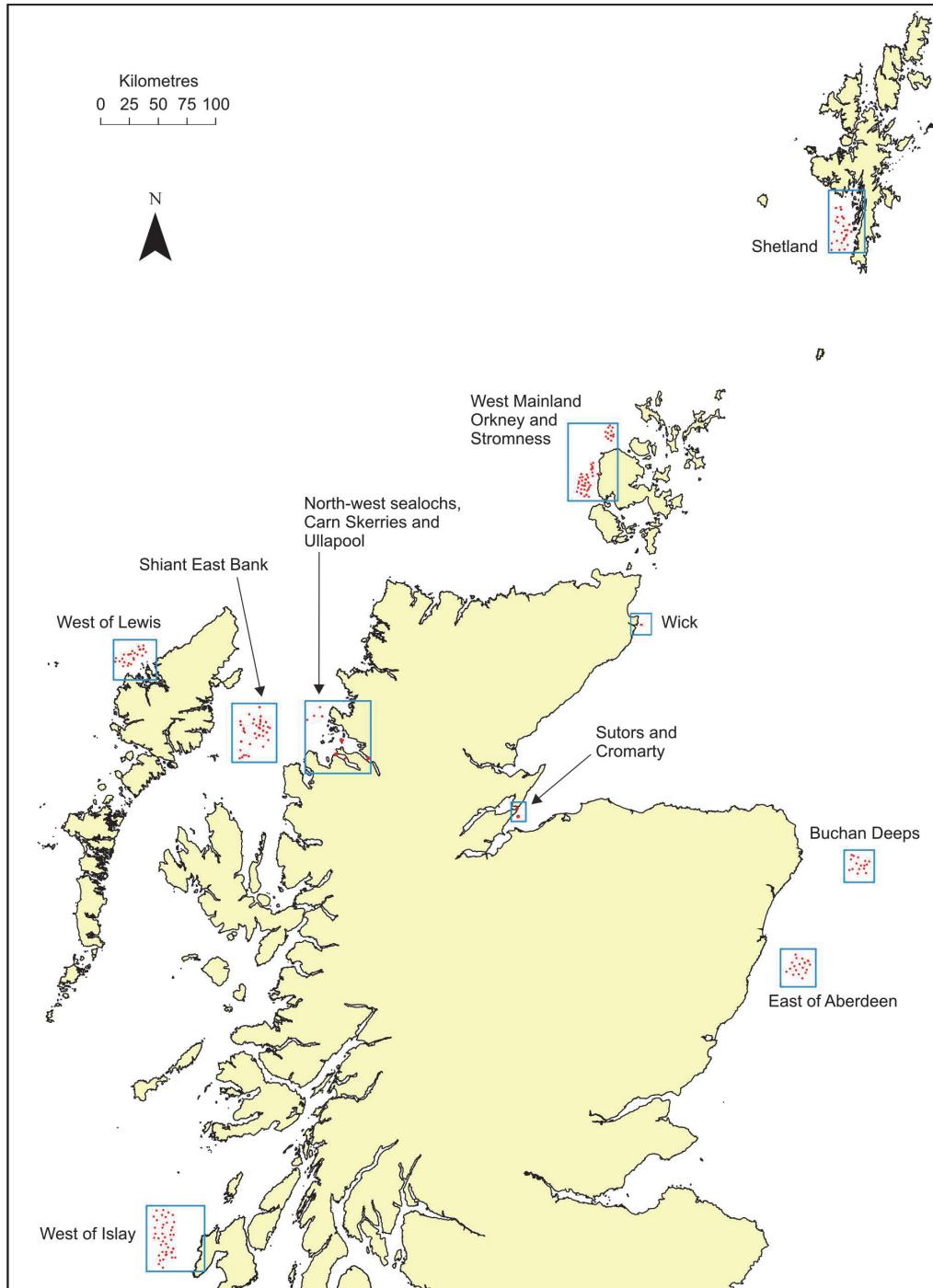


Figure 1. Distribution of survey locations (blue boxes) and sites (red dots). Reproduced by permission of Ordnance Survey on behalf of HMSO. © Crown copyright and database right [2014]. All rights reserved. Ordnance Survey Licence number 100017908.

A subset of these biological features, together with a list of large-scale features of functional importance to Scotland's seas (collectively termed MPA search features - see Marine Scotland, 2011 for list) have driven the identification of a network of 33 areas currently under consideration by the Scottish Government as possible Nature Conservation MPAs (pMPAs). To ensure that the network meets the legislative obligations for MPAs, other features representative of Scotland's seas more generally have also been recommended for formal designation as protected features of these new sites. The combination of MPA search features and representative features recommended for protection within a pMPA are collectively referred to as proposed protected features (PPFs). Annex 1 shows details of the PPFs of the three pMPAs covered in this report.

The aim of the present investigation was to improve knowledge of the occurrence and distribution of species and habitats of recognised conservation importance in thirteen locations through the analysis of seabed video and still photographic imagery collected during research cruises by Marine Scotland Science (MSS) and SNH in 2013 (Figure 1). The opportunity has also been taken to report on the results of a similar, small survey carried out off Ullapool Harbour in 2009. The conservation importance of features has been assessed through consideration of not only PPFs and other PMFs, but also taking cognisance of other published importance measures. Survey areas included the North-west sea lochs, Carn Skerries and Ullapool, all of which lie within the North-west sea lochs and Summer Isles pMPA<sup>1</sup>, sites within the Shiant East Bank MPA search location in the Minch, and two sites off Wick, which lie within the Noss Head pMPA. Surveys were also carried out at a number of proposed renewable energy locations including off the islands of Islay, Lewis, Orkney and Shetland, as well as off Peterhead (Buchan Deeps) and east of Aberdeen. Five spoil grounds were also studied: west of Stromness (Orkney), Sutors and Cromarty (respectively in the mouth and to the southeast of the entrance to Cromarty Firth), and Wick and Ullapool, which also lie within pMPAs (see above). Reasons for survey location selections are summarised in Table 1.

## 2. METHODS

Survey details are given in Table 1. Video images were obtained from dropdown video drifts. For cruises 0713S and 1013A the camera frame also carried a vertically-orientated, digital stills camera, which took photographs of the seabed at intervals, and a laser scaling system. For cruise 1213A a forward-looking video camera was also employed. Track and depth data were displayed on a video overlay system. No video was available for the Carn Skerries survey. Instead, five photographs were taken at intervals along transects at each site. All depths were converted to depth below chart datum, employing TotalTide software (Admiralty, Taunton) to determine tidal rise at the most appropriate secondary port.

The images were used to describe the nature of the seabed in terms of the physical structure and the species assemblages. Species present were, as far as possible, identified and quantified using the semi-quantitative MNCR SACFOR scale (Hiscock, 1996). Based on the physical and biological attributes, biotopes were allocated (Connor *et al.*, 2004). Runs traversing a sequence of biotopes were split into corresponding segments; with the transition points recorded using the time, position and depth. Segmentation of runs was not practicable in the case of mosaics of recurring biotopes, in which case all biotopes observed were simply listed.

Runs and run segments were assessed for the presence of PPFs and other PMFs, as well as for the presence of species and habitats of recognised conservation importance

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<sup>1</sup> As a result of feedback received during the 2013 MPA consultation SNH recommend that the name of the North-west sea lochs and Summer Isles pMPA is changed to the Wester Ross pMPA (SNH, 2014).

according to a number of additional criteria, including citation on the following lists: the IUCN Red List of Threatened Species (lower risk category) (IUCN, 2013), the OSPAR List of Threatened and/or Declining Species and Habitats (OSPAR, 2008) and the Scottish Biodiversity List (Scottish Government, 2013).

Table 1. Survey details.

Survey	Organisation	Vessel	Cruise	Date(s)	No. sites	Site prefix	Interest
West of Islay	MSS	FRV Scotia	0713S	21/06/2013 - 03/07/2013	39	WIS	Renewable energy
Shiant East Bank	MSS/SNH	FRV Alba na Mara	1213A	21-24/09/2013	36	SEB	MPA search location
North-west sea lochs	MSS/SNH	FRV Alba na Mara	1213A	24-25/09/2013	9	NWS	pMPA
Carn Skerries	MSS/SNH	FRV Alba na Mara	1213A	14/09/2013	16	CS	pMPA
Ullapool	MSS	FRV Alba na Mara	1609A	02/10/2009	3	ULL	Spoil ground & pMPA
West of Lewis	MSS	FRV Alba na Mara	1013A	05-06/08/2013	23	WOL	Renewable energy
West of Mainland Orkney	MSS	FRV Alba na Mara	1013A	29-31/07/2013	46	WMO	Renewable energy
Stromness	MSS	FRV Alba na Mara	0713A	01/06/2013	1	STROM	Spoil ground
Shetland	MSS	FRV Alba na Mara	1013A	25-27/07/2013	25	SHT	Renewable energy
Wick	MSS	FRV Alba na Mara	0713A	05/06/2013	2	WICK	Spoil ground & pMPA
Sutors	MSS	FRV Alba na Mara	0713A	06-07/06/2013	5	SUT	Spoil ground
Cromarty	MSS	FRV Alba na Mara	0713A	07/06/2013	3	CROM	Spoil ground
Buchan Deeps	MSS	FRV Alba na Mara	1013A	10-11/08/2013	16	BUD	Renewable energy
East of Aberdeen	MSS	FRV Alba na Mara	1013A	08-09/08/2013	18	EAB	Renewable energy

### 3. RESULTS

The presence and distribution of habitats, biotopes and species in each survey area is summarised in this section, but presented in detail for each site in Annex 3, with site location data in Annex 2. In this section PPF biotopes and species are highlighted using red text. Annex 4 provides an inventory of the biotopes recorded, as well as PPF species, together with illustrative photographs and lists of their occurrence.

#### 3.1 West of Islay (Figure 2)

The predominant habitat in the northern half of the surveyed area, covering most of the seabed beyond the 50 m depth contour, was rippled fine sand (**SS.SSa.CFiSa**). This supported little visible evidence of life, although the clarity of the video imagery was often poor. Sparse, conspicuous elements of the fauna included *Astropecten irregularis* and *Corystes cassivelaunus*. Patches of silty coarse sand were also recorded at two of the sites in this area (**SS.SCS.CCS**).

In the southern half of the study area in shallower waters (33 - 50 m) in the vicinity of a charted region of heavy overfalls, sand-scoured bedrock and dense cobbles and boulders were widely recorded. The biota was characterised by a bryozoan turf, strongly dominated by *Flustra foliacea*, which was abundant at several sites, and accompanied by *Urticina felina*, *Echinus esculentus* and *Crossaster papposus* (**CR.MCR.EcCr.FaAICr.Flu**). At the shallowest bedrock site (WIS03, depth 29 - 31 m) the superabundant faunal turf appeared to be dominated by hydroids and was accompanied by frequent red foliose algae; the habitat has been tentatively referred to **CR.HCR.XFa**. An adjacent site (WIS02, depth 36 - 37 m) also showed characteristics of strong hydrodynamic activity, with the fauna including abundant *Dendrodoa grossularia*, as well as *Pachymatisma johnstonia*, *Tubularia indivisa*, *Pentapora foliacea* and *Sagartia elegans*. This site has been ascribed to **CR.HCR.FaT.CTub.CuSp**, although the fit is not very strong. A number of the **CR.MCR.EcCr.FaAICr.Flu** sites share some of these faunal elements, especially *D. grossularia*, and so appear to be somewhat intermediate in character. A dense faunal turf on boulders at one of the most northerly sites (WIS20, depth 45 - 47 m) was co-dominated by *Securiflustra securifrons* and *F. foliacea*, whilst also supporting dense *Alcyonium digitatum* and patches of *Cliona celata* (**CR.MCR.EcCr.FaAICr.Sec**).

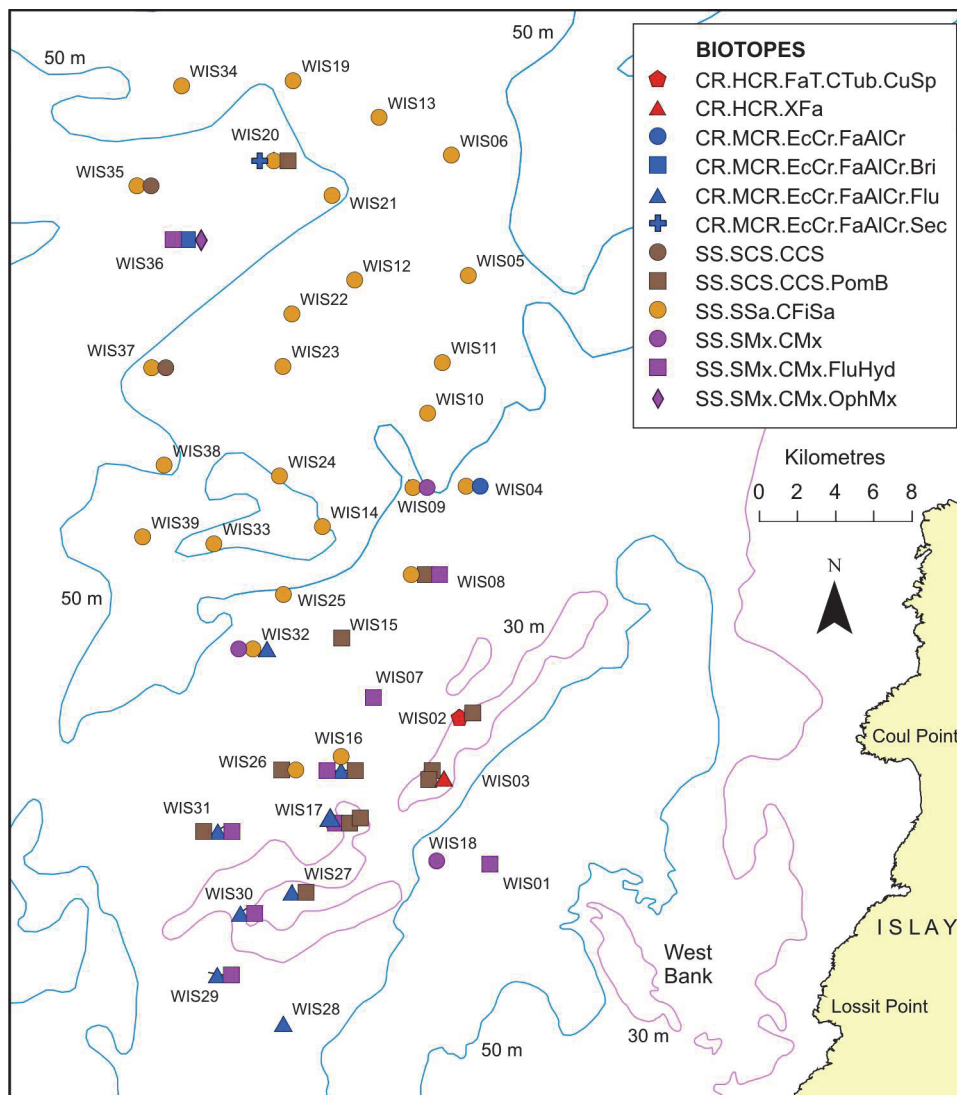


Figure 2. Distribution of biotope records west of Islay. Reproduced by permission of Ordnance Survey on behalf of HMSO. © Crown copyright and database right [2014]. All rights reserved. Ordnance Survey Licence number 100017908. Bathymetry © Crown Copyright, 2014. All rights reserved. Licence No. EK001-201310001. Not to be used for navigation.

Many sites, particularly in the southern region of the survey area, displayed mixed habitats of scattered stones on sediment. Larger stones tended to support a similar fauna to that of **CR.MCR.EcCr.FaAlCr.Flu**, including *F. foliacea*, as well as patches of hydroids, such as *Sertularia* spp. Such areas of scattered cobbles and boulders on sand, generally with significant quantities of gravel and pebbles, have been largely ascribed to **SS.SMx.CMx.FluHyd**, although there is a gradation between this biotope and the boulder and cobble form of **FaAlCr.Flu**. At one site (WIS36) abundant *Ophiocomina nigra* accompanied a sessile fauna of dense *Alcyonium digitatum*, with serpulid worms and bryozoan and hydroid patches including *F. foliacea* and *Nemertesia antennina*, on dense cobbles and boulders (**CR.MCR.EcCr.FaAlCr.Bri**) and over a more mixed habitat of scattered stones on sand (**SS.SMx.CMx.OphMx**). Patches of mixed substrates consisting of smooth, rounded gravel, pebbles and cobbles on sand were widely recorded above the 50 m depth contour. The stones generally supported little else but small individuals of *Balanus* spp. (**SS.SCS.CCS.PomB**), but in a few cases no visible life at all (ascribed to **SS.SMx.CMx**).

### 3.2 Shiant East Bank (Figure 3)

The poor video quality and absence of still imagery limited the level of detail discernible in the biota. Video runs located in the shallowest regions of the bank traversed largely smooth, flat bedrock with areas of dense cobbles and boulders at depths of 29 - 46 m. The rock supported a low diversity community including an encrusting component of *Spirobranchus* spp., pink coralline algae and orange bryozoans (probably chiefly *Parasmittina trispinosa*), accompanied in places by sparse *Axinella infundibuliformis* and/or *Phakellia ventilabrum* and apparently small patches of *Corynactis viridis* (**CR.MCR.EcCr.FaAlCr**). Where *Spirobranchus* spp. was dense (common - abundant) the biotope **FaAlCr.Pom** was recognised, whilst at two sites the rock apparently also supported large numbers (frequent - common) of *Caryophyllia smithii* (**FaAlCr.Car**).

Reef biotopes were also widely recorded in deeper water from 44 - 91 m in the form of bedrock, or cobbles and boulders in dense fields or scattered over sandy sediments. The fauna was dominated by sponges, principally *Axinella infundibuliformis* / *Phakellia ventilabrum*, which was frequent - common, and accompanied by *Iophon nigricans*?, *Polymastia boletiformis* and *Tetilla zetlandica*, and a non-sponge component including *Porella compressa* and hydroid/bryozoan clumps (**CR.HCR.DpSp.PhaAxi**). The fauna was augmented by frequent - common *Swiftia pallida* at eight sites widely distributed over the surveyed area (**CR.MCR.EcCr.CarSwi.LgAs**).

Below the 50 m depth contour to the maximum recorded depth of 93 m sedimentary habitats were chiefly recorded. Silty sands occurred widely at depths of 64 - 91 m generally revealing little evidence of life apart from motile forms such as *Porania pulvillus* and *Pagurus prideaux* and a very sparse epibiota on widely scattered stones (**SS.SSa.OSa**). However, at many locations at depths of 46 - 84 m the sand was accompanied by significant proportions of gravel, pebbles, cobbles and sometimes boulders supporting a similar but impoverished version of the community observed at the **CR.HCR.DpSp.PhaAxi** sites. Recent evidence from the faunal analysis of grab samples collected from such mixed sediments around the Shiant East Bank (Axelsson *et al.*, 2012) has suggested that they can be ascribed to the biotope **SS.SMx.OMx** and so this approach is followed here. A similar but shallower site (34 - 43 m) where the stones also supported pink coralline algae has been referred to **SS.SMx.CMx**.

Three sites to the north of Shiant East Bank at depths of 72 - 86 m have been assigned to the burrowed mud biotope **SS.SMu.CFiMu.SpMieg**. The mud at two of these sites was densely burrowed by *Calocaris macandreae*, with *Nephrops norvegicus* also present. Burrows were comparatively sparse at the third sandy mud site but seapens were present in

the form of *Pennatula phosphorea*; the biotope allocation here is more tentative. Very sparse burrows were also recorded in sandy mud at the deepest site (93 m) surveyed to the east of the bank (SEB\_V36), which has been tentatively assigned to the biotope **SS.SMx.OMu**.

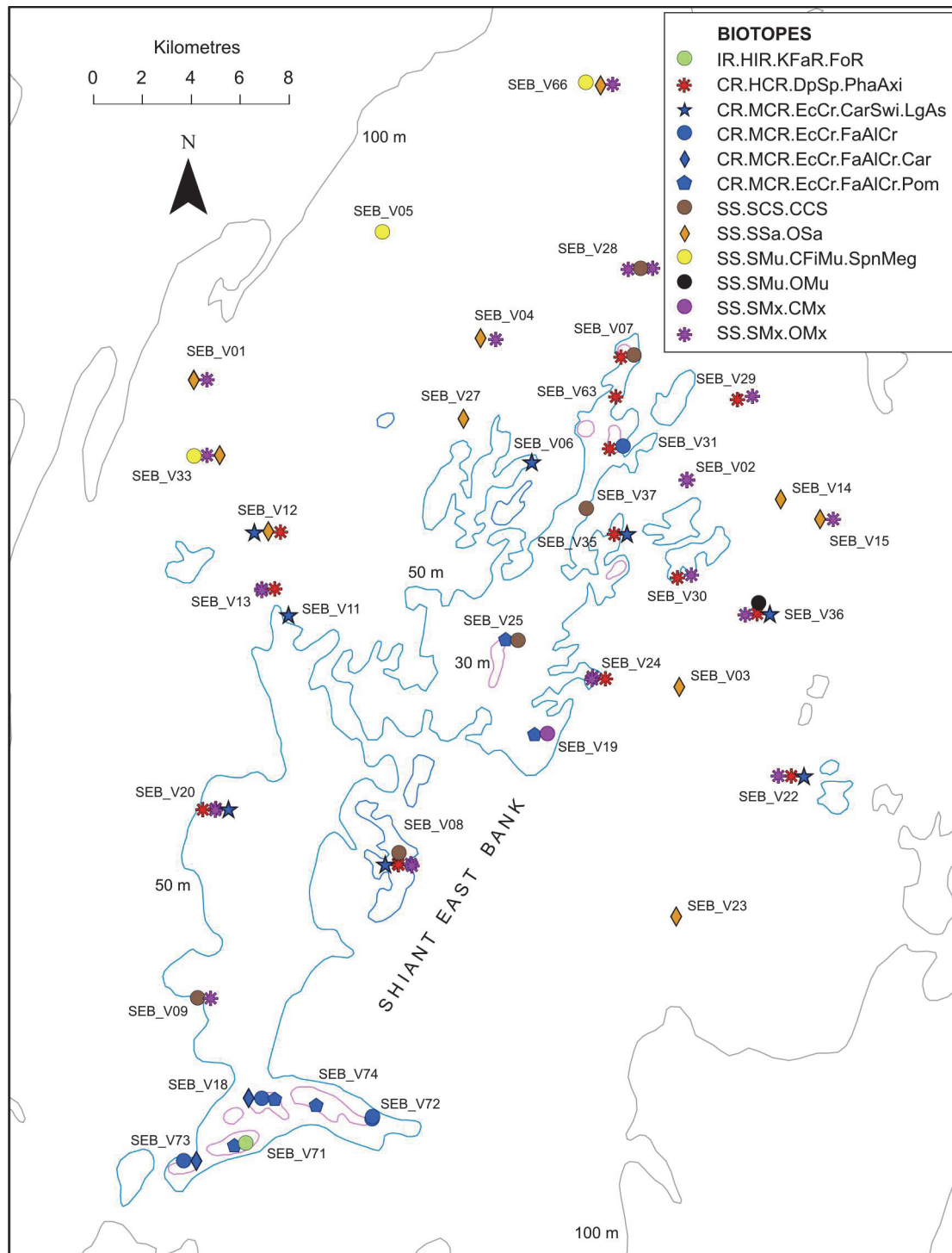


Figure 3. Distribution of biotope records around the Shiant East Bank. Reproduced by permission of Ordnance Survey on behalf of HMSO. © Crown copyright and database right [2014]. All rights reserved. Ordnance Survey Licence number 100017908. Bathymetry © Crown Copyright, 2014. All rights reserved. Licence No. EK001-201310001. Not to be used for navigation.

Waves of medium-coarse sand exhibiting little visual evidence of the associated biota occurred widely over the bank at depths of 35 - 66 m (**SS.SCS.CCS**).

PMF species records include frequent *Pachycerianthus multiplicatus* at one site and sparse presence at a further two sites, as well as tentative observations of *Molva molva* at two sites.

### 3.3 North-west sea lochs (Figure 4)

Four sites were located west of Rubha Còigeach. The seabed at the two shallowest sites (33 - 62 m depth) was composed principally of dense cobbles and boulders supporting a low-diversity fauna characterised by encrusting forms including serpulid worms and bryozoans.

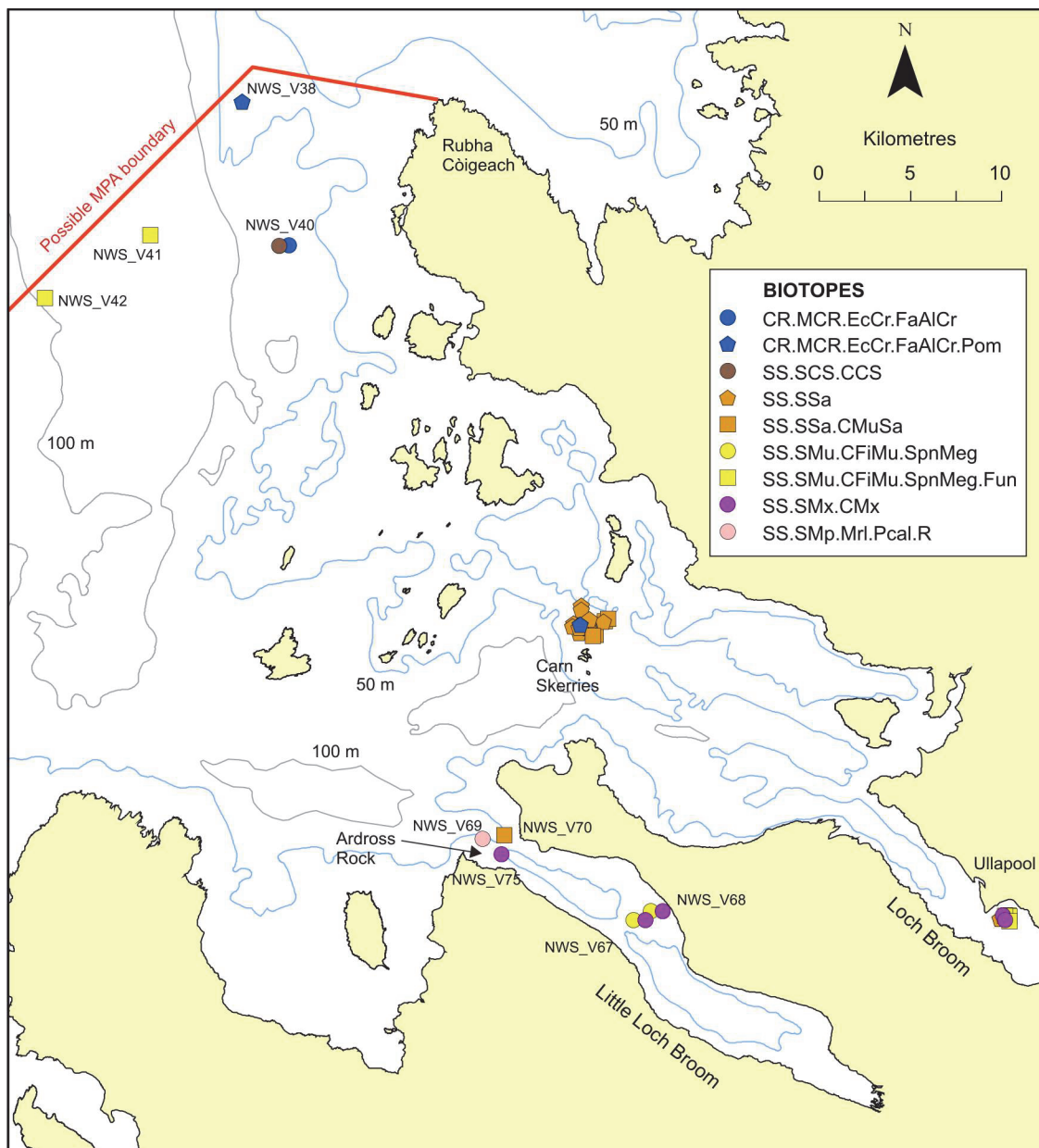


Figure 4. Distribution of biotope records in the north-west sea lochs including the Carn Skerries and off Ullapool Harbour. Reproduced by permission of Ordnance Survey on behalf of HMSO. © Crown copyright and database right [2014]. All rights reserved. Ordnance Survey Licence number 100017908. Bathymetry © Crown Copyright, 2014. All rights reserved. Licence No. EK001-201310001. Not to be used for navigation.

Pink coralline algae was also present and *Spirobranchus* spp abundant at the shallower site (**CR.MCR.EcCr.FaAICr.Pom**), whilst the deeper site supported a sparse sponge fauna (**CR.MCR.EcCr.FaAICr**). Soft mud was recorded at the other two sites at depths of 108 - 149 m. These were good examples of the biotope **SS.SMu.CFiMu.SpnMeg.Fun**, with a dense megafaunal burrowing component including *Calocaris macandreae* (abundant) and *Nephrops norvegicus* (common) and a high density of *Funiculina quadrangularis* (frequent - common).

Three sites were located on the sill at the mouth of Little Loch Broom. Run NWS\_V69 passed through a patchy maerl bed on coarse sand at 16 - 22 m depth just north of Ardross Rock. Live *Phymatolithon calcareum* was common and locally abundant, and supported a fairly dense red algal turf and sparse *Saccharina latissima* (**SS.SMp.Mrl.Pcal.R**). Muddy sand was recorded at 47 - 57 m depth at NWS\_V70 (**SS.SSa.CMuSa**) and also at NWS\_75 where it was accompanied by scattered gravel, pebbles and cobbles, which supported abundant *Leptometra celtica* for part of the run at depths of 36 - 40 m (**SS.SMx.CMx**).

Two sites were located on the inner sill of Little Loch Broom at 31 - 47 m depth. The predominant substrate appeared to be sandy mud which supported a megafaunal burrowing fauna including *Nephrops norvegicus*, accompanied by the large motile holothurian, *Mesothuria intestinalis* at one site and possibly sparse juvenile *Funiculina quadrangularis* at the other site. However, both sites have been referred to the biotope **SS.SMu.CFiMu.SpnMeg**, except where the muddy sediment was mixed with gravel, pebbles and cobbles (**SS.SMx.CMx**).

### 3.4 Carn Skerries (Figure 5)

Observations at this location are based solely on still photographic images and no depth data were available. The seabed throughout the surveyed area appeared to be fairly similar, being composed principally of sand with a surface scatter of gravel, shells, pebbles and cobbles in varying proportions and densities. However, there was a gradient in sediment composition running roughly west to east corresponding with an increase in charted depths. Sites in the western half of the surveyed area lie mostly between the 20 and 30 m depth contours, where the sediment appeared to be a poorly sorted fine sand supporting dense, small *Cerianthus lloydii* and *Munida rugosa* with stones encrusted with serpulid worms, pink coralline algae and *Parasmittina trispinosa*. These sites have largely been ascribed to **SS.SSa**, with the closest fit possibly represented by **SS.SSa.IFiSa**. Cobbles and boulders dominated at one site (CS1140), where the biotope **CR.MCR.EcCr.FaAICr.Pom** was recognised. The mud content increased in an easterly direction with most of the easternmost sites, probably at depths of around 45 - 50 m, composed of muddy sand, perforated by small holes and some burrows including those of *Nephrops norvegicus*. These sites have been tentatively assigned to **SS.Sa.CMuSa**, although **SS.SMu.CSaMu** is also a possible fit. Between these eastern and western groups of sites the substrate appears to be somewhat intermediate in nature, although the biota is similar to that of the shallower western group and so they have been assigned to the biotope **SS.SSa**.

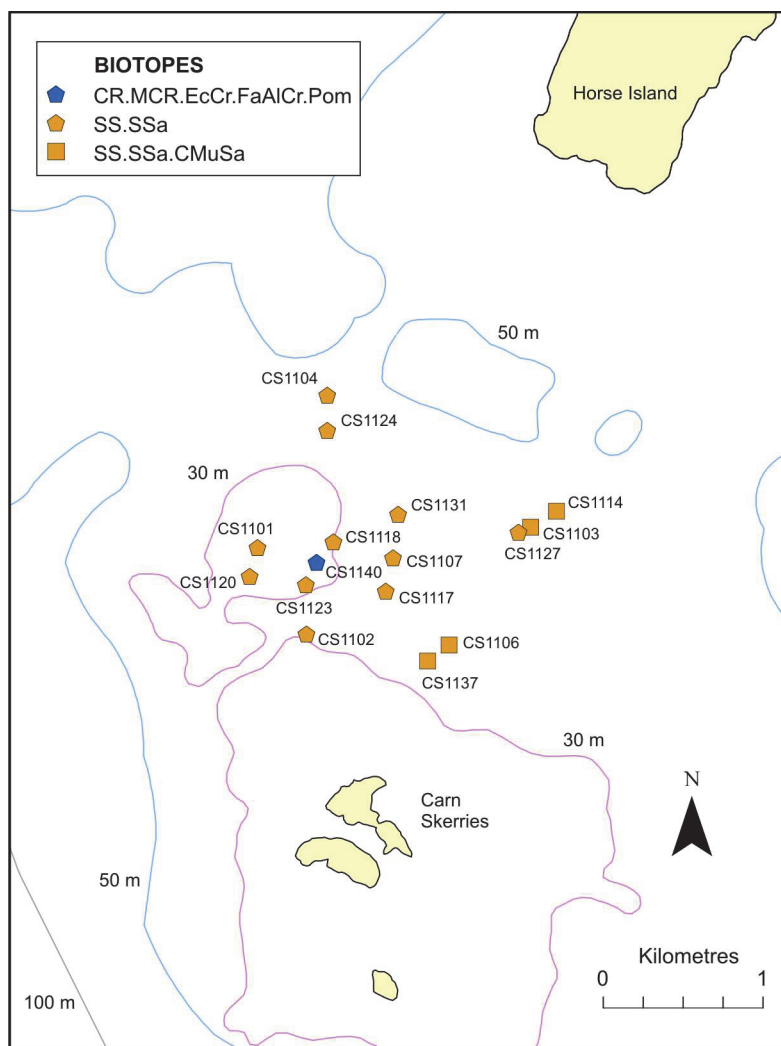


Figure 5. Distribution of biotope records off the Carn Skerries. Reproduced by permission of Ordnance Survey on behalf of HMSO. © Crown copyright and database right [2014]. All rights reserved. Ordnance Survey Licence number 100017908. Bathymetry © Crown Copyright, 2014. All rights reserved. Licence No. EK001-201310001. Not to be used for navigation.

### 3.5 Ullapool (Figure 6)

The video runs indicate the presence of an east-west gradient of substrate type. Moving from west to east, a predominantly sandy sediment in the southwest containing much shell material displayed a fairly sparse epibiotic community (**SS.SSa**). The sand became muddier with progression eastwards and was accompanied by increasing quantities of stones, which supported a low diversity epibiotic community including serpulid worms (**SS.SMx.CMx**). With farther progression eastwards the mud content increased to form sandy mud and the stones became infrequent. This habitat supported a moderate density of megafaunal burrowers (chiefly *Nephrops norvegicus*) and good numbers of seapens, including *Pennatula phosphorea* (frequent) and *Funiculina quadrangularis* (frequent but locally common) (**SS.SMu.CFiMu.SpnMeg.Fun**). This habitat was less well-developed along Run 3 to the south of the spoil ground but within the boundaries of the spoil ground the density of the PMF component species, *F. quadrangularis*, was frequent where the habitat was recorded.

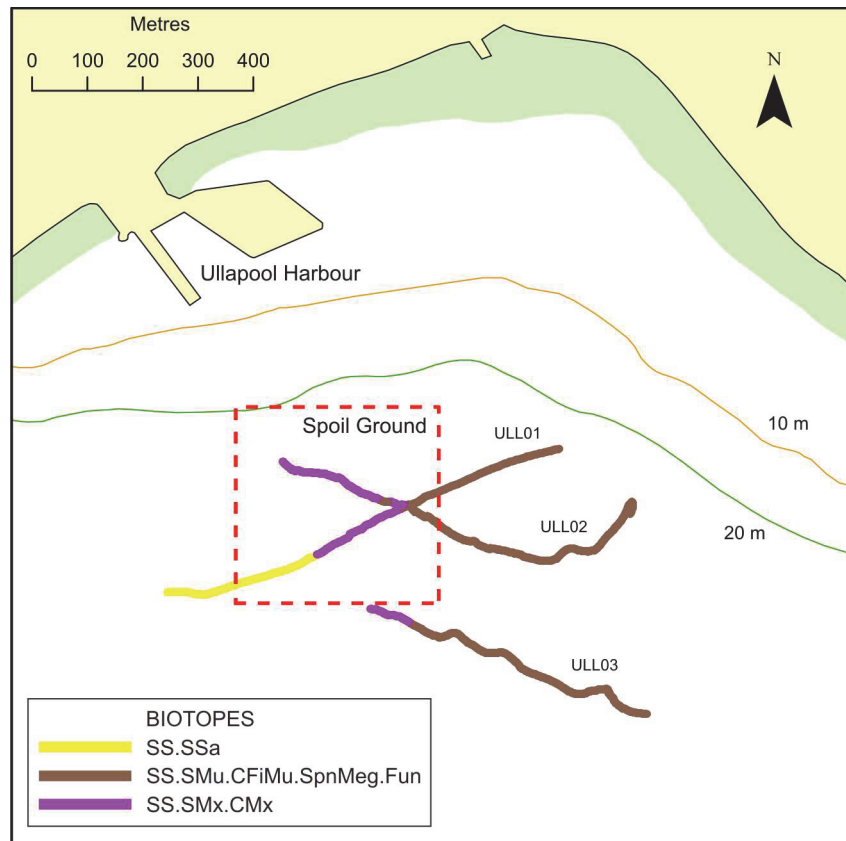


Figure 6. Distribution of biotope records off Ullapool Harbour. Reproduced by permission of Ordnance Survey on behalf of HMSO. © Crown copyright and database right [2014]. All rights reserved. Ordnance Survey Licence number 100017908. Bathymetry © Crown Copyright, 2014. All rights reserved. Licence No. EK001-201310001. Not to be used for navigation.

### 3.6 West of Lewis (Figure 7)

Much of the surveyed area spanning a depth range of 63 - 93 m was floored by fine-medium sand, generally exhibiting a rippled topography and with little visual evidence of the fauna associated with the sediment (**SS.SSa.CFiSa**). However, at many sites areas of scattered gravel, pebbles, cobbles and boulders on the sand provided a substrate for an encrusting fauna of bryozoans and serpulid worms (**SS.SMx.CMx**), often accompanied by tufts of hydroids and bryozoans including *Flustra foliacea*, as well as *Polymastia boletiformis*, *Urticina* sp., *Porella compressa* and echinoderms such as *Echinus esculentus*, *Porania pulvillus*, *Luidia ciliaris* and *Stichastrella rosea* (**SS.SMx.CMx.FluHyd**). Abundant *Ophiocomina nigra* was also recorded at four sites (**SS.SMx.CMx.OphMx**). Where the substrate was predominantly boulders and cobbles, the biotope **CR.MCR.EcCr.FaAICr** was recognised. Waves of medium-coarse sand supporting little visible life were observed at three sites at depths of 68 - 76 m (**SS.SCS.CCS**). The greatest depths (100 - 123 m) were recorded near the western boundary of the surveyed area, where the silty fine-medium sand was punctuated by small holes and infaunal tubes and supported an epifauna including *Astropecten irregularis* and *L. ciliaris* (**SS.SSa.OSa**).

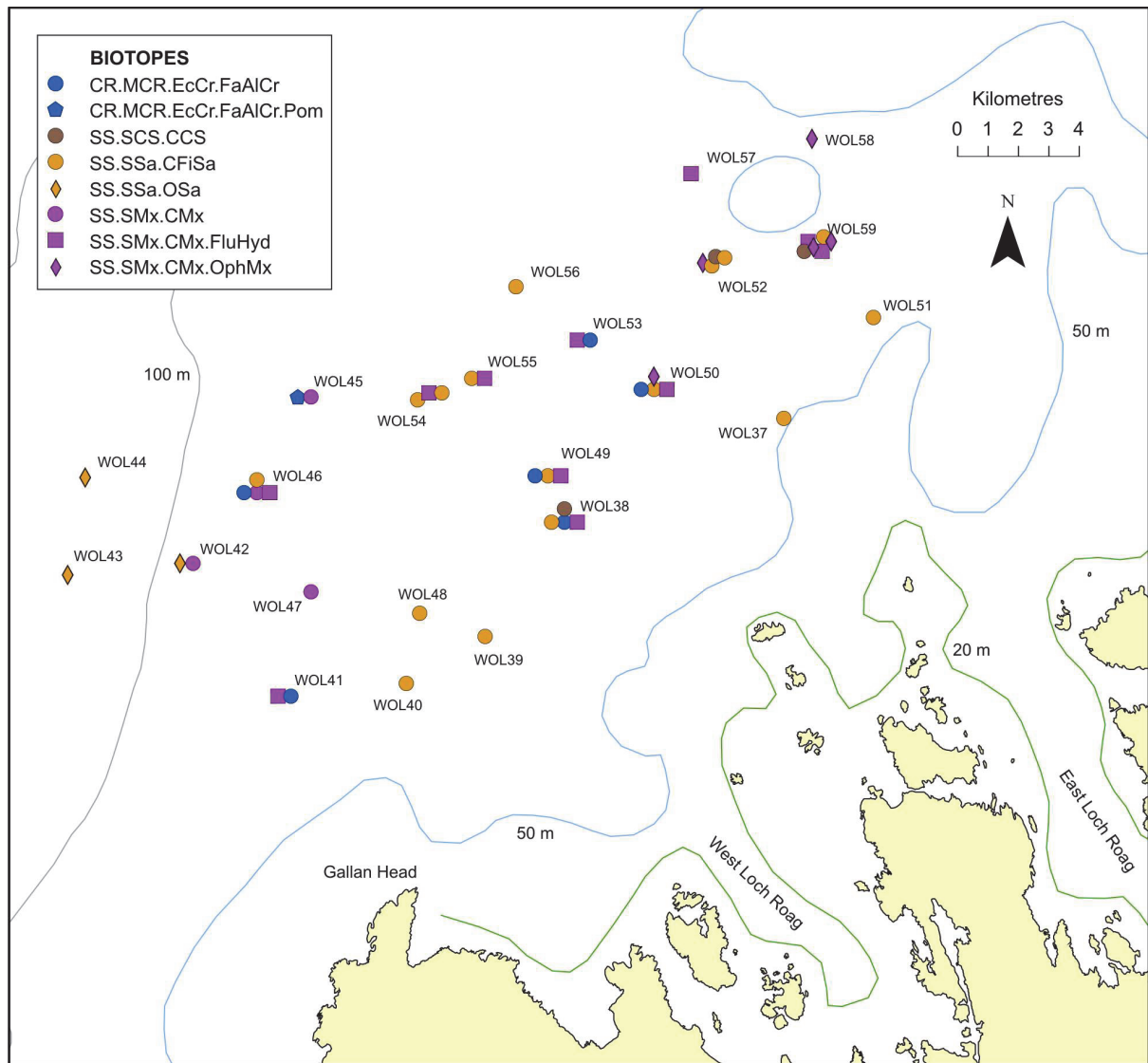


Figure 7. Distribution of biotope records to the west of Lewis. Reproduced by permission of Ordnance Survey on behalf of HMSO. © Crown copyright and database right [2014]. All rights reserved. Ordnance Survey Licence number 100017908. Bathymetry © Crown Copyright, 2014. All rights reserved. Licence No. EK001-201310001. Not to be used for navigation.

### 3.7 West of Mainland Orkney (Figure 8)

Survey sites were located in two clusters, a southern grouping to the west of Mainland and a northern one to the north of Brough Head. However, these areas exhibited similar characteristics and will be considered together. The great majority of sites spanned a narrow depth range of 52 - 76 m and displayed a heterogeneous seabed, with multiple biotopes being recorded at most sites. Sediment habitats were recorded extensively throughout the region in the form of fine sand (**SS.SSa.CFiSa**) and as waves of medium-coarse sand (**SS.SCS.CCS**), with examples of both often present at the same site. These habitats provided little visual evidence of the infaunal community and supported a sparse epifaunal component including *Astropecten irregularis* and *Luidia ciliaris*. Apart from an area off Neban Point in the south-western part of the study ground, the above homogeneous sediment habitats were generally accompanied by localised concentrations of gravel, pebbles, cobbles and boulders on sand. Stones were encrusted with serpulid worms, especially *Spirobranchus* spp., bryozoans, and often supported *Caryophyllia smithii*,

*Polymastia boletiformis*, *Axinella infundibuliformis*, *Echinus esculentus*, *Stichastrella rosea*, *Porania pulvillus*, *Luidia ciliaris* and *Urticina* sp. (SS.SMx.CMx).

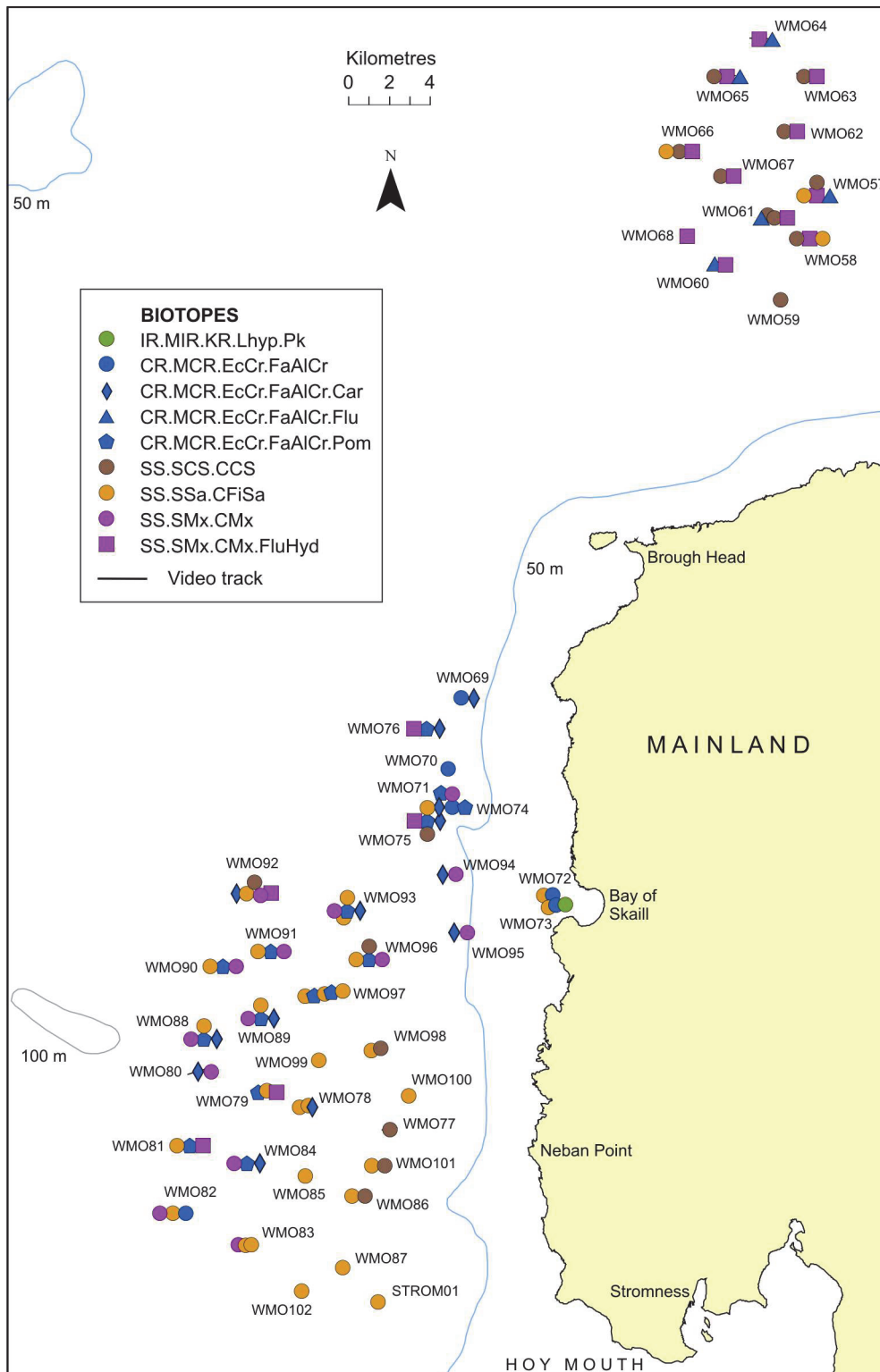


Figure 8. Distribution of biotope records to the west of Mainland Orkney. Reproduced by permission of Ordnance Survey on behalf of HMSO. © Crown copyright and database right [2014]. All rights reserved. Ordnance Survey Licence number 100017908. Bathymetry © Crown Copyright, 2014. All rights reserved. Licence No. EK001-201310001. Not to be used for navigation.

Where significant populations of hydroids and bryozoans, especially *Flustra foliacea* and *Securiflustra securifrons*, were recorded, the biotope **SS.SMx.CMx.FluHyd** was recognised. Patches of dense cobbles and boulders, as well as occasional bedrock outcrops supported a similar fauna which was ascribed to **CR.MCR.EcCr.FaAICr** or **FaAICr.Pom**, except where the rock supported significant populations of *Caryophyllia smithii* (**FaAICr.Car**) or *Flustra foliacea* (**FaAICr.Flu**). Two adjacent sites were located in relatively shallow water (25 - 32 m depth) off the Bay of Skail. The seabed in this area was found to consist of rippled fine sand (**SS.SSa.CFiSa**) with partially sand-dusted bedrock platforms. The rock was encrusted with pink coralline algae (**CR.MCR.EcCr.FaAICr**), with some vertical faces supporting dense stands of *Alcyonium digitatum* (**CR.MCR.EcCr.FaAICr.Adig**). Above 26 m depth the flora was augmented by a park of small *Laminaria hyperborea* and a foliose red algal turf (**IR.MIR.KR.Lhyp.Pk**). Elsewhere in the surveyed area sparse patches of pink coralline algae were recorded to a depth of around 60 m.

### 3.8 Stromness (Figure 8)

One video run was carried out in the western approaches to Hoy Mouth, west of Stromness at a depth of 68 m. The short video was of very poor quality. The substrate apparently consisted of medium sand with a surface scatter of gravel and unencrusted angular stones (tentatively assigned to **SS.SSa.CFiSa**). No living biota was discernible, only dead algal material. There were no clear indications of spoil dumping activity.

### 3.9 Shetland (Figure 9)

The surveyed area was floored predominantly by fine sand. The sediment was formed into ripples over an extensive depth range (77 - 124 m) with a sparse visible fauna of which the most conspicuous elements included pagurids (*Pagurus prideaux* and *P. bernhardus*), *Luidia ciliaris*, *Pecten maximus* and teleosts including *Callionymus lyra*. Siphons resembling those of *Arctica islandica* were observed at five sites. At several sites scattered gravel, pebbles and cobbles on the sand provided a substrate for serpulid worms and sparse hydroids (**SS.SMx.CMx**). At greater depths (124 - 130 m) the fine sand became slightly silty and the ripples were lost or barely perceptible (**SS.SSa.OSa**). The visible fauna was similar, although sediment-dwelling hard corals were frequent at one site (SHT15) and *Arctica*-like siphons were not observed. At three of the deeper sites (122 - 130 m) in the northern part of the survey area, the mud content increased to form a cohesive muddy sand which supported a low-density burrowing megafaunal community including frequent *Nephrops norvegicus*, tentatively assigned to **SS.SSa.OMu**. Sparse, small individuals of *Pennatula phosphorea* were also possibly present at one of these sites.

Patches of medium-coarse sand waves with gravel and shells in the troughs (**SS.SCS.CCS**) were widely recorded at depths of 54 - 108 m, mostly at sites also exhibiting areas of rippled fine sand. The sparse visible fauna included a similar suite of motile species to that observed on **SS.SSa.CFiSa** grounds.

Most of the shallower sites (at depths of 47 - 86 m) displayed patches of bedrock and boulders supporting a low diversity community dominated by *Spirobranchus* spp. and *Echinus esculentus*, accompanied by encrusting bryozoans, *Luidia ciliaris*, *Porania pulvillus*, *Stichastrella rosea*, dense patches of *Antedon* sp. at the shallowest site, and sparse *Axinella infundibuliformis* at a few sites (**CR.MCR.EcCr.FaAICr.Pom**). At one site this community was augmented locally by dense *Caryophyllia smithii* (**CR.MCR.EcCr.FaAICr.Car**) and by a bed of *Ophiothrix fragilis* and *Ophiocomina nigra* (**CR.MCR.EcCr.FaAICr.Bri**). Scoured bedrock at two sites supported patches of *Flustra foliacea* and *Urticina felina* (**CR.MCR.EcCr.FaAICr.Flu**).

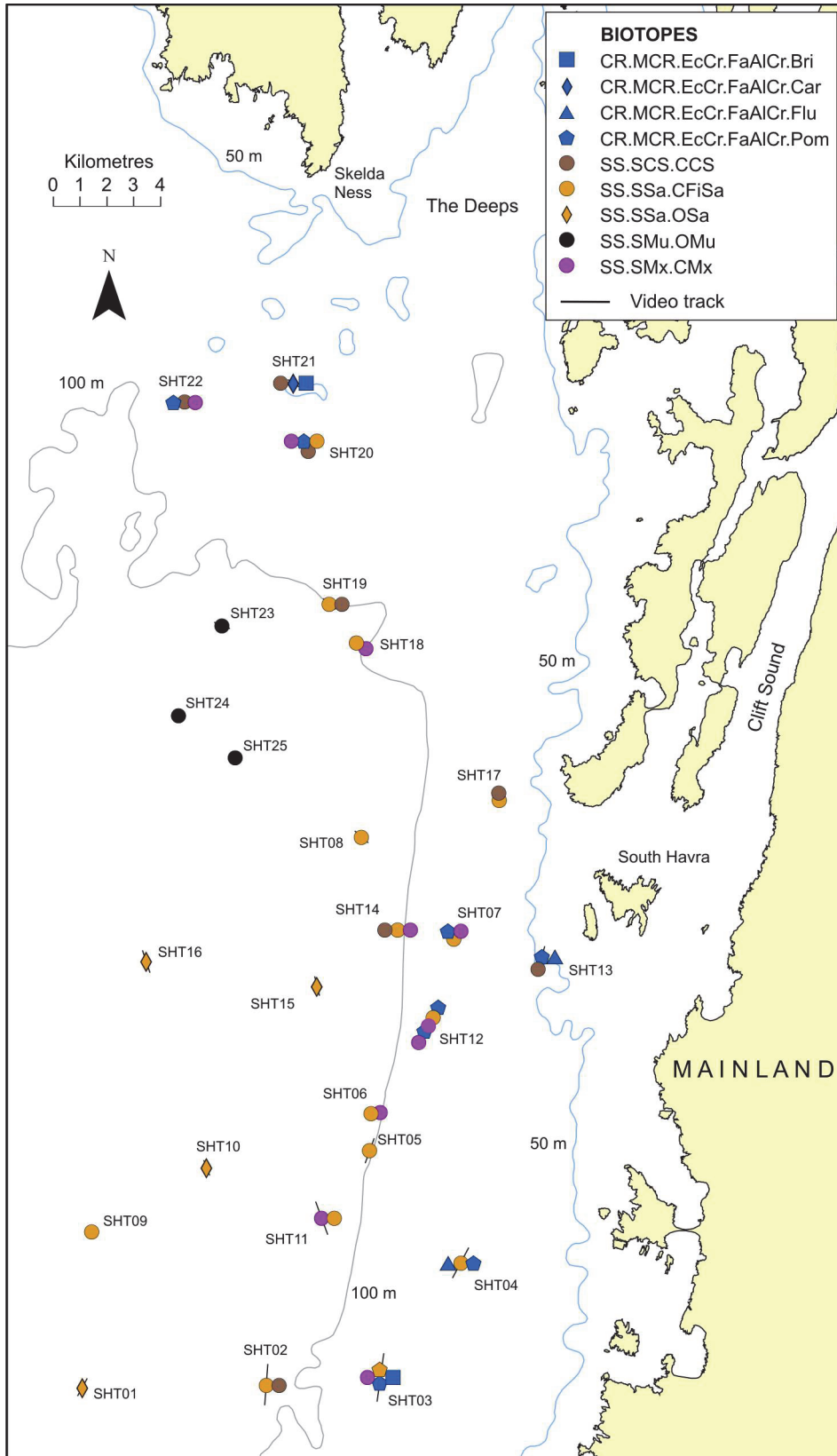


Figure 9. Distribution of biotope records to the west of Shetland. Reproduced by permission of Ordnance Survey on behalf of HMSO. © Crown copyright and database right [2014]. All rights reserved. Ordnance Survey Licence number 100017908. Bathymetry © Crown Copyright, 2014. All rights reserved. Licence No. EK001-201310001. Not to be used for navigation.

### 3.10 Wick (Figure 10)

Two video runs passed through a spoil ground to the east of Wick at depths of 44 - 49 m. The substrate at this tide-swept site was a mixed coarse sediment with conspicuous elements of the fauna including *Echinus esculentus* and *Asterias rubens* (**SS.SMx.CMx**) and dense patches of ophiuroids, probably *Ophiothrix fragilis* (**SS.SMx.CMx.OphMx**). *Modiolus modiolus* shells were present, and dense in places, along run WICK02. Significant numbers of live specimens were possibly present, resulting in the tentative ascription of the biotope, **SS.SBR.SMus.ModT**. Bedrock outcrops and scattered cobbles and boulders were present along run WICK01, encrusted with serpulid worms and pink coralline algae and supporting clumps of hydroids/bryozoans (**CR.MCR.EcCr.FaAlCr**). No impact of spoil dumping was evident.

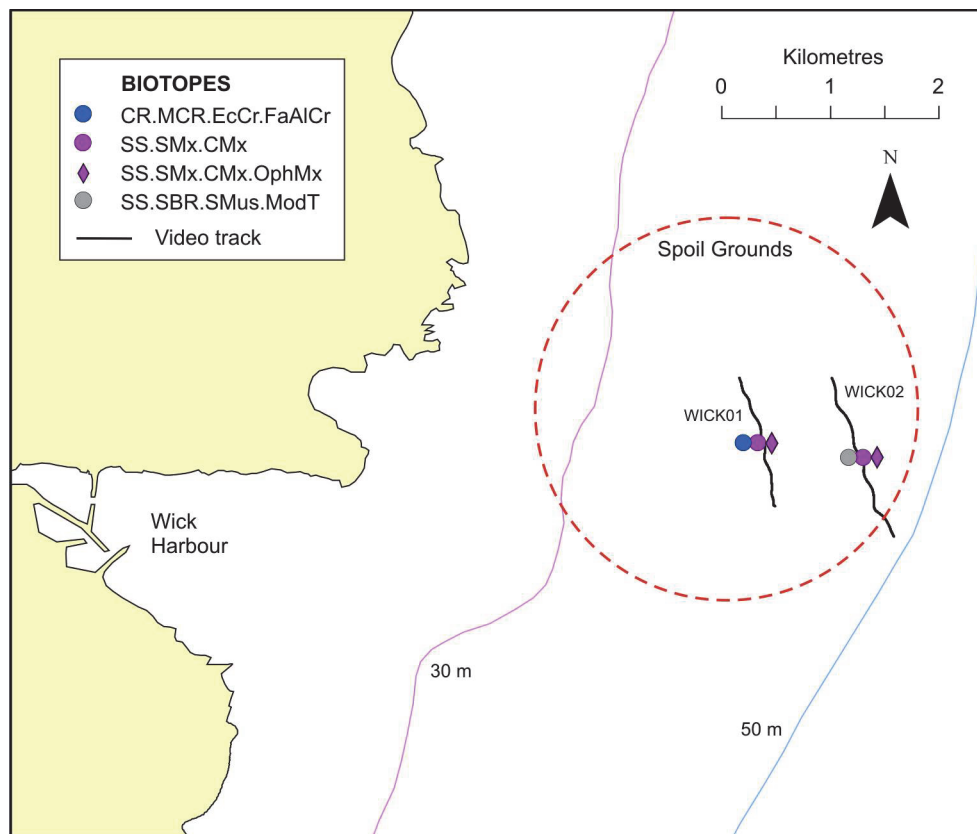


Figure 10. Distribution of biotope records to the east of Wick. Reproduced by permission of Ordnance Survey on behalf of HMSO. © Crown copyright and database right [2014]. All rights reserved. Ordnance Survey Licence number 100017908. Bathymetry © Crown Copyright, 2014. All rights reserved. Licence No. EK001-201310001. Not to be used for navigation.

### 3.11 Sutors (Figure 11)

This ground is located in the mouth of Cromarty Firth. The substrate consisted predominantly of rippled fine sand with a low diversity epifauna dominated by frequent - common *Asterias rubens*, whilst sparsely scattered boulders and cobbles supported *Alcyonium digitatum*, *Metridium senile* and *Urticina* spp. (**SS.SSa.CFiSa**). This habitat was found in the central, deeper area of the channel over a depth range of 47 - 55 m. With decreasing depth along the northern side of the channel the substrate changed to a mixed, silty sediment with pebbles, shells and scattered cobbles at depths of 17 - 48 m supporting a similar visible fauna to that found in deeper water (**SS.SMx.CMx**). No clear impact of spoil dumping was discernible, although video quality was very poor.

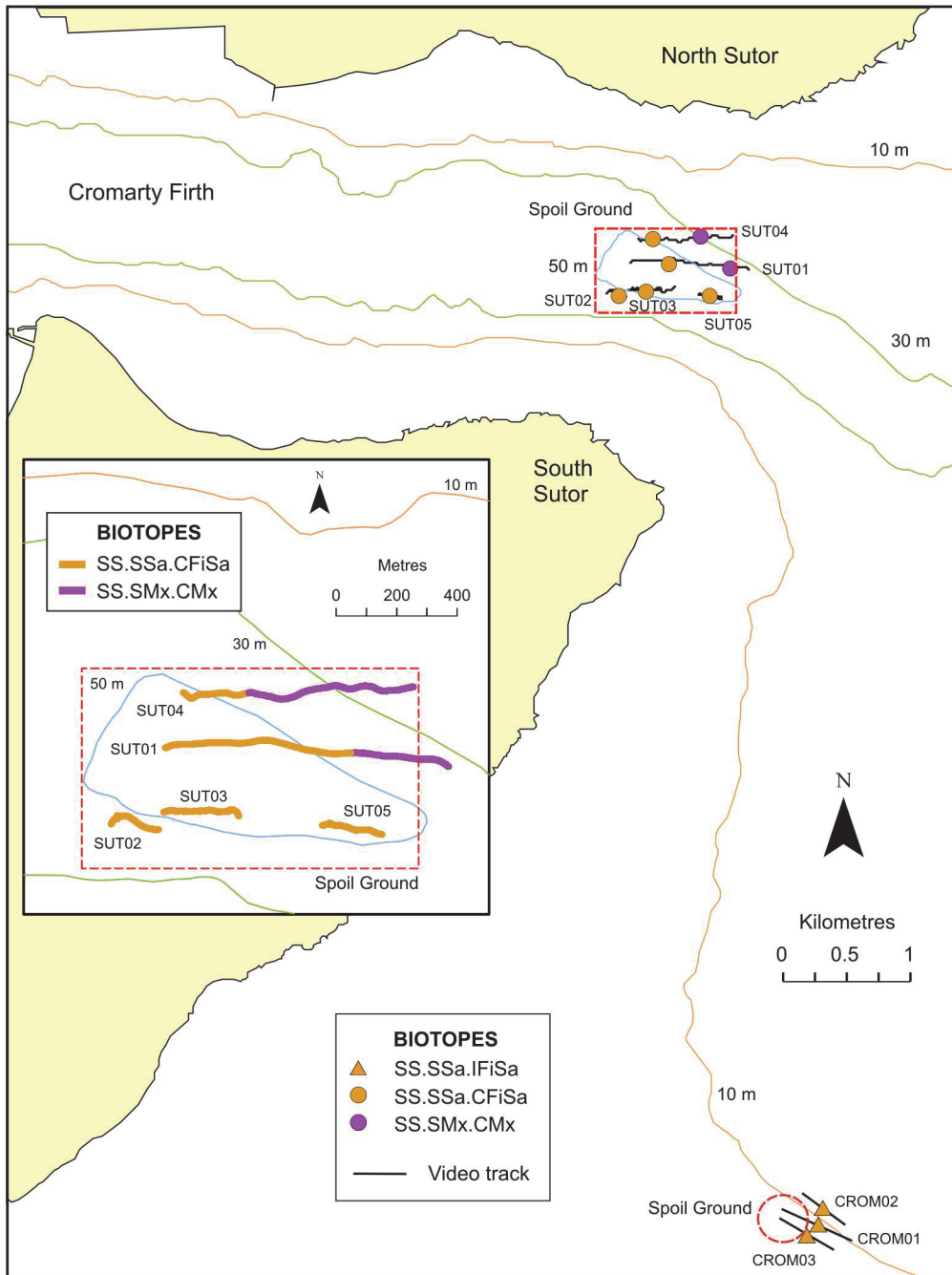


Figure 11. Distribution of biotope records on the Sutors and Cromarty spoil grounds, with inset showing detail for Sutors. Reproduced by permission of Ordnance Survey on behalf of HMSO. © Crown copyright and database right [2014]. All rights reserved. Ordnance Survey Licence number 100017908. Bathymetry © Crown Copyright, 2014. All rights reserved. Licence No. EK001-201310001. Not to be used for navigation.

### 3.12 Cromarty (Figure 11)

The three video runs partly crossing the spoil ground in the approaches to Cromarty Firth all revealed a similar habitat of clean, rippled, fine sand at a depth of 10 - 11 m. There was little visual evidence of life apart from frequent *Asterias rubens*. The clarity of the imagery was relatively high and the area appeared to support a typical example of **SS.SSa.IFiSa**, with no signs of disturbance from spoil dumping.

### 3.13 Buchan Deeps (Figure 12)

The surveyed sites spanned a depth range of 103 - 121 m, all exhibiting a substrate of rippled, fine sand, generally with a slight silt content (**SS.SSa.CFiSa**), although at some of the deeper stations sediment rippling was more subdued or absent and the silt content possibly raised in patches displaying scattered cobbles. This may signify the presence of a second biotope, such as **SS.SSa.OSa**. Poor visibility limited the precision of faunal identification; however, there was little visual evidence of the infaunal community apart from sparse emergent tubes and small holes. The epifauna appeared to be poorly developed with sparse pagurids and *Ophiura* sp., as well as hydroid clumps and possibly contracted anemones on the scattered cobbles. Fish were recorded at all sites, generally in low numbers, but they were frequent at a few sites, with dominant forms including flatfish and possibly *Trisopterus luscus* and other gadoids.

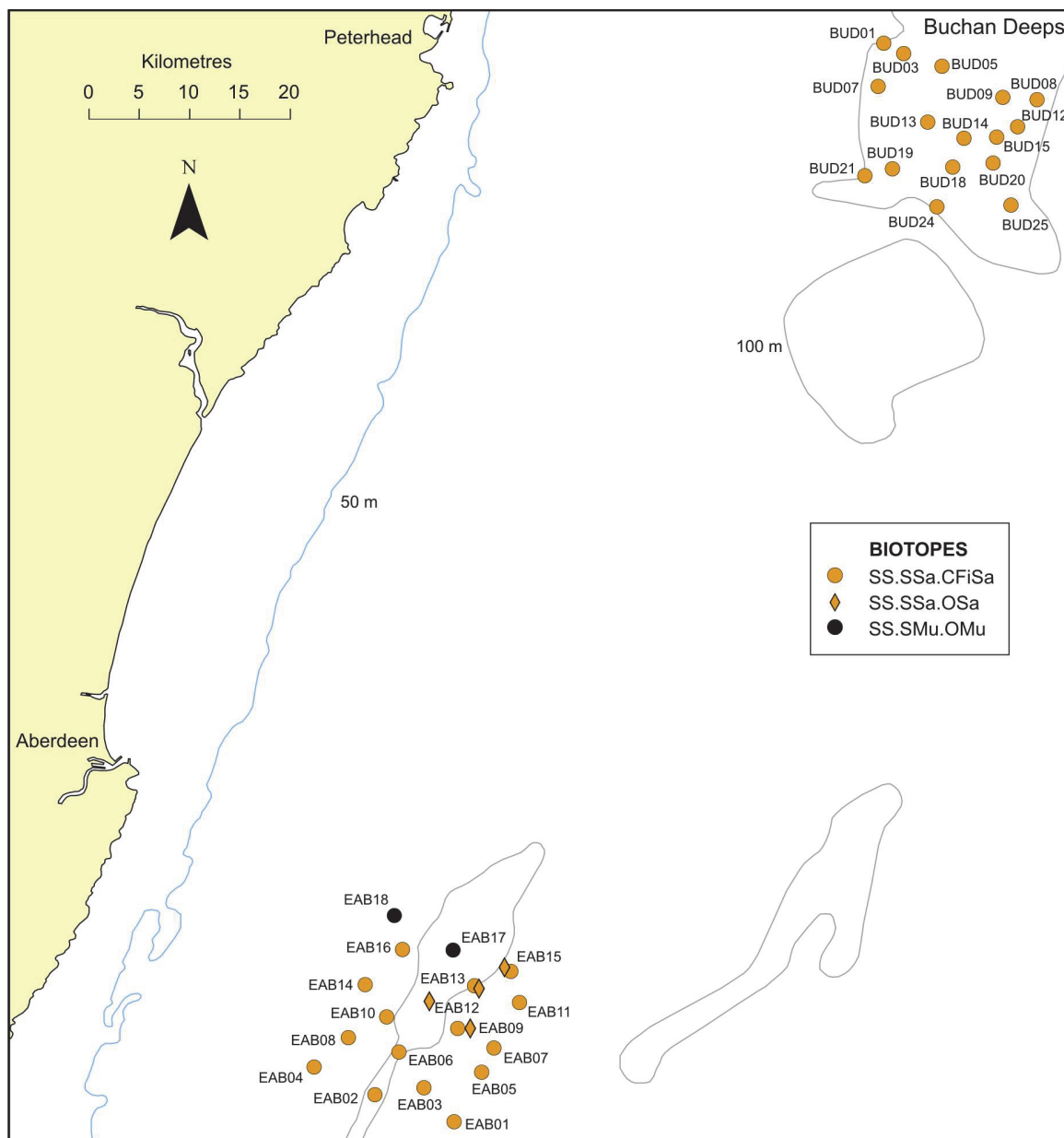


Figure 12. Distribution of biotope records in the Buchan Deeps and east of Aberdeen. Reproduced by permission of Ordnance Survey on behalf of HMSO. © Crown copyright and database right [2014]. All rights reserved. Ordnance Survey Licence number 100017908. Bathymetry © Crown Copyright, 2014. All rights reserved. Licence No. EK001-201310001. Not to be used for navigation.

### 3.14 East of Aberdeen (Figure 12)

The dominant habitat recorded throughout most of the surveyed area over a depth range of 64 - 119 m was slightly silty, rippled, fine sand (**SS.SSa.CFiSa**). Occasional stones and probably shells provided a substrate for a sparse sessile fauna including *Alcyonium digitatum*, *Flustra foliacea*, hydroids and *Urticina* sp., although some of the hydroids and bryozoans observed were clearly drift material. The motile component was also sparse, including pagurids and occasional flatfish and other teleosts. Poor visibility limited the level of faunal identification. The silt content increased to form an unrippled muddy sand with scattered stones at several sites in the north-eastern region of the surveyed area at depths of 70 - 133 m (tentatively assigned to **SS.SSa.OSa**). The fauna appeared similar to that of the rippled sand, although evidence of the infaunal community was somewhat more apparent through the presence of small holes, tubes and casts at some sites. A similar fauna was observed at two of the northernmost sites exhibiting cohesive muddy sand at depths of 93 - 127 m. However, the community was augmented by sparse *Nephrops norvegicus*. These sites have been ascribed to **SS.SSa.OMu**, although more detailed sedimentary and faunal data are needed to confirm the identity of both these and the offshore sand biotope records.

#### 4. DISCUSSION

This section considers the conservation importance of the species and habitats encountered during the surveys and also provides a summary appraisal of the distribution of PPFs and any other PMFs. The conservation importance of species and habitats and their occurrence in each of the survey locations is summarised in Table 2. A number of biotopes listed in the lower part of the table fall within broad habitat types included in the Scottish Biodiversity List (Scottish Government, 2013) but are generally of wide occurrence.

Table 2. Species and biotopes recorded during the surveys of recognised conservation importance and their frequency of occurrence in each survey location. Importance indicators are SBL = Scottish Biodiversity List 3 of Habitats and Species, Osp = OSPAR List of Threatened and/or Declining Species and Habitats, IUCN = IUCN Red List of Threatened Species, PMF = Priority Marine Feature, SF = MPA Search Feature, PPF = Proposed Protected Feature. See Table 1 for survey location codes

Biotope/species	SBL	Osp	IUCN	PMF	SF	PPF	WIS	SEB	NWS	CS	ULL	WOL	WMO	STROM	SHT	WICK	SUT	CROM	BUD	EAB
CR.HCR.DpSp.PhaAxi	•			•	•	•		14												
CR.MCR.EcCr.CarSwi.LgAs	•			•	•	•		8												
<i>Swiftia pallida</i>	•			•	•	•		10												
SS.SMu.CFiMu.SpnMeg	•	•		•	•	•		3	2											
SS.SMu.CFiMu.SpnMeg.Fun	•	•		•	•	•			2		3									
<i>Funiculina quadrangularis</i>	•			•	•	•			3		3									
<i>Pachycerianthus multiplicatus</i>	•			•	•			3												
SS.SMp.Mrl.Pcal.R	•	•		•	•	•			1											
SS.SBR.SMus.ModT	•			•	•	•										1				
<i>Leptometra celtica</i> agg.				•	•	•			1											
<i>Arctica islandica</i> ?		•		•											5					
<i>Ammodytes</i> spp.	•			•	•												1			
<i>Molva molva</i> ?	•			•				2												
SS.SSa.CMuSa	•					•			1	4										
SS.SSa.OSa	•					•		10			3				4					4
SS.SMx.CMx	•					•	3	1	3		3	4	14		9	2	2			
SS.SMx.OMx	•					•		16												
CR.HCR.FaT.CTub.CuSp	•						1													
CR.MCR.EcCr.FaAlCr.Sec	•						1													
SS.SCS.CCS	•						2	6	1		3	16		8						
SS.SCS.CCS.PomB	•						10													
SS.SSa	•									11	1				1					
SS.SSa.IFiSa	•																	3		
SS.SSa.CFiSa	•						26				14	27	1	14		5		16	15	
SS.SMu.OMu	•							1							3					2
SS.SMx.CMx.FluHyd	•						9				10	16								
SS.SMx.CMx.OphMx	•						1									2				
<i>Phymatolithon calcareum</i>	•								1											
<i>Echinus esculentus</i>			•				11	26	3	3	3	14	37		9	2	1			

Only one non-PMF species, *Echinus esculentus*, has been afforded any formal conservation status, being included on the IUCN Red List of Threatened Species as a near-threatened species (IUCN, 2013). However, *Echinus esculentus* was widely recorded, reflecting its healthy status in Scottish waters.

Five PPF biotopes were recorded on and around Shiant East Bank. As also revealed by a 2011 survey of the area (Moore, 2012), the deep sponge community **CR.HCR.DpSp.PhiAxi** was widely distributed on bedrock, boulders and cobbles. However, unlike the earlier survey, the current study also found the sponge fauna to be augmented by high densities of *Swiftia pallida* over a wide area (**CR.MCR.EcCr.CarSwi.LgAs**). All three components of the PPF "Circalittoral sands and mixed sediment communities" were observed, with **SS.SSa.OSa** and **SS.SMx.OMx** being widely recorded below the 50 m depth contour around the bank, although additional confirmatory evidence from the analysis of infaunal samples would be desirable. A single instance of **SS.SMx.CMx** was identified in shallower waters.

Several additional PMFs were recorded during the Shiant East Bank survey. Three sites to the north of the bank supported burrowed mud communities (**SS.SMu.CFiMu.SpnMeg**). Although two of the sites exhibited high concentrations of megafaunal crustaceans, especially *Calocaris macandreae*, the seapen population was poorly developed. By contrast, the 2011 survey (Moore, 2012) recorded high numbers of *Funiculina quadrangularis* in the same general area. The burrowed mud component species, *Pachycerianthus multiplicatus*, was recorded at three sites and there were tentative observations of ling, *Molva molva*, amongst boulders and cobbles on the bank.

The three surveys carried out within the limits of the North-west sea lochs and Summer Isles pMPA revealed the presence of four PPF biotopes. Good examples of the burrowed mud habitat, **SS.SMu.CFiMu.SpnMeg.Fun**, with well developed populations of megafaunal crustaceans and *Funiculina quadrangularis*, were observed just inside the proposed western boundary of the pMPA. This biotope was also recorded off Ullapool Harbour, where sparser megafaunal burrowers accompanied frequent *F. quadrangularis*. Patches of burrowed sandy mud possibly supporting sparse juvenile *F. quadrangularis* (ascribed to **SS.SMu.CFiMu.SpnMeg**) were also observed on the inner sill in Little Loch Broom. This sill is located in a transitional area between extensive development of **SS.SMu.CFiMu.SpnMeg** in the outer loch and **SpnMeg.Fun** in the inner loch (Moore *et al.*, 2011). The "circalittoral muddy sand communities" PPF was represented by records of **SS.SSa.CMuSa** to the north of Carn Skerries and on the outer sill of Little Loch Broom, although these records would benefit from additional granulometric and infaunal data.

Other PPFs noted on the outer sill of Little Loch Broom include an aggregation of *Leptometra celtica* on mixed substrata and a maerl bed. A band of dense *L. celtica* extending across the outer sill of Little Loch Broom has recently been mapped by Moore (2012) based on a 2011 survey. The 2013 record is in the same location, although it extends the known southern boundary of the band by around 30 m. Although the video clarity was very poor, a patchy maerl bed was recorded to the north of Ardrossan Rock. Despite the patchiness, the impression was of a rich bed with locally abundant live maerl supporting a fairly dense red algal turf (**SS.SMp.Mrl.Pcal.R**). This is supported by similar observations in the same area in 2010 (Moore *et al.*, 2011).

Dense shells of *Modiolus modiolus* were recorded along one of the video runs through the Wick spoil ground. A tentative biotope allocation of **SS.SBR.SMus.ModT** was made, although the proportion of live material could not be discerned due to very poor image quality. This habitat is a PPF for the Noss Head pMPA, whose proposed southern boundary just includes the area of this observation.

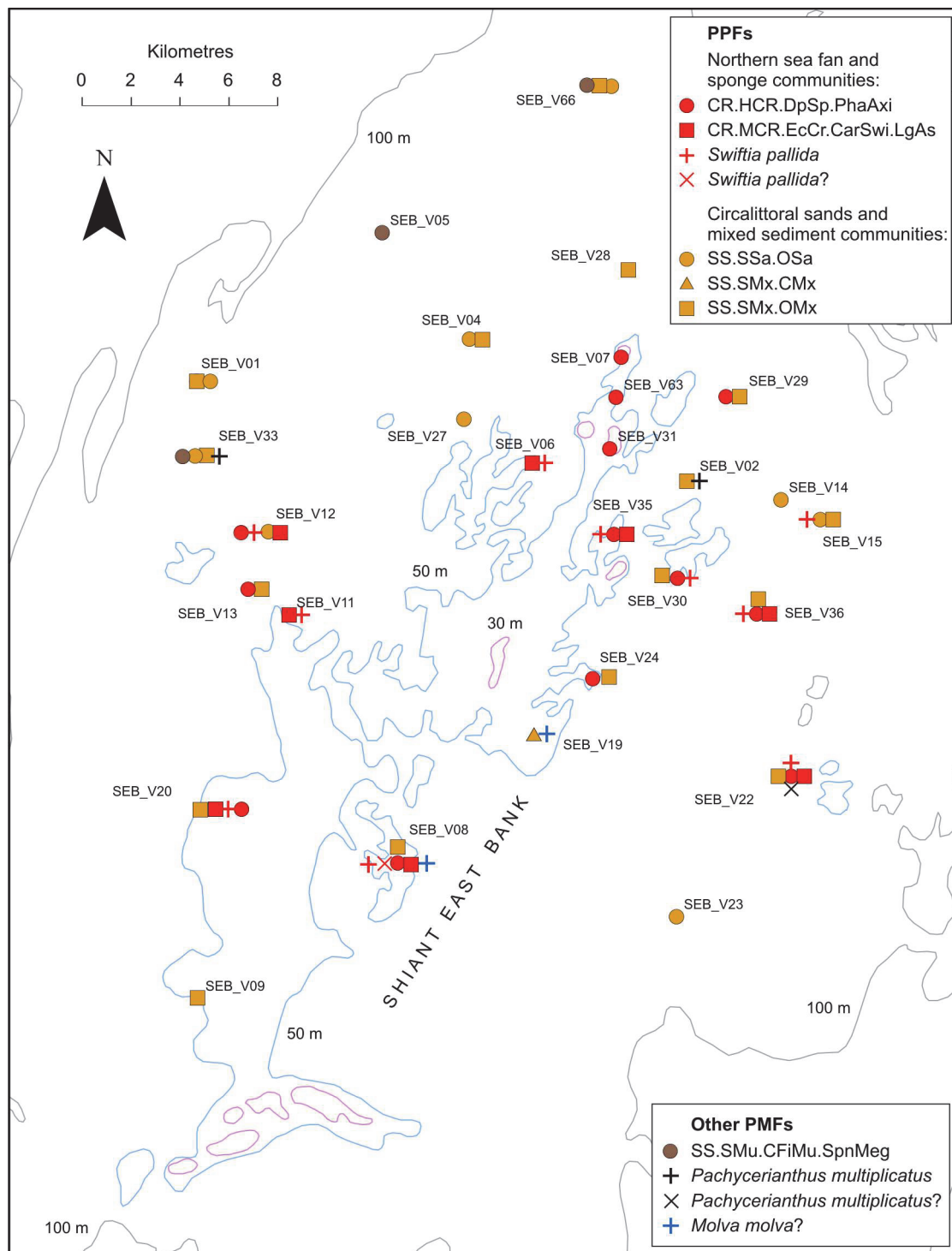


Figure 13. Distribution of records of proposed protected feature biotopes and species (PPFs) and other PMFs around the Shiant East Bank. Reproduced by permission of Ordnance Survey on behalf of HMSO. © Crown copyright and database right [2014]. All rights reserved. Ordnance Survey Licence number 100017908. Bathymetry © Crown Copyright, 2014. All rights reserved. Licence No. EK001-201310001. Not to be used for navigation.

Few PMFs were observed at the remaining, non-MPA locations. Five of the Shetland fine sand sites displayed bivalve siphons resembling those of *Arctica islandica*, although nowhere was there evidence of aggregations. Sandeels appeared to be fairly numerous over fine sand along part of one of the runs through the Sutors spoil ground.

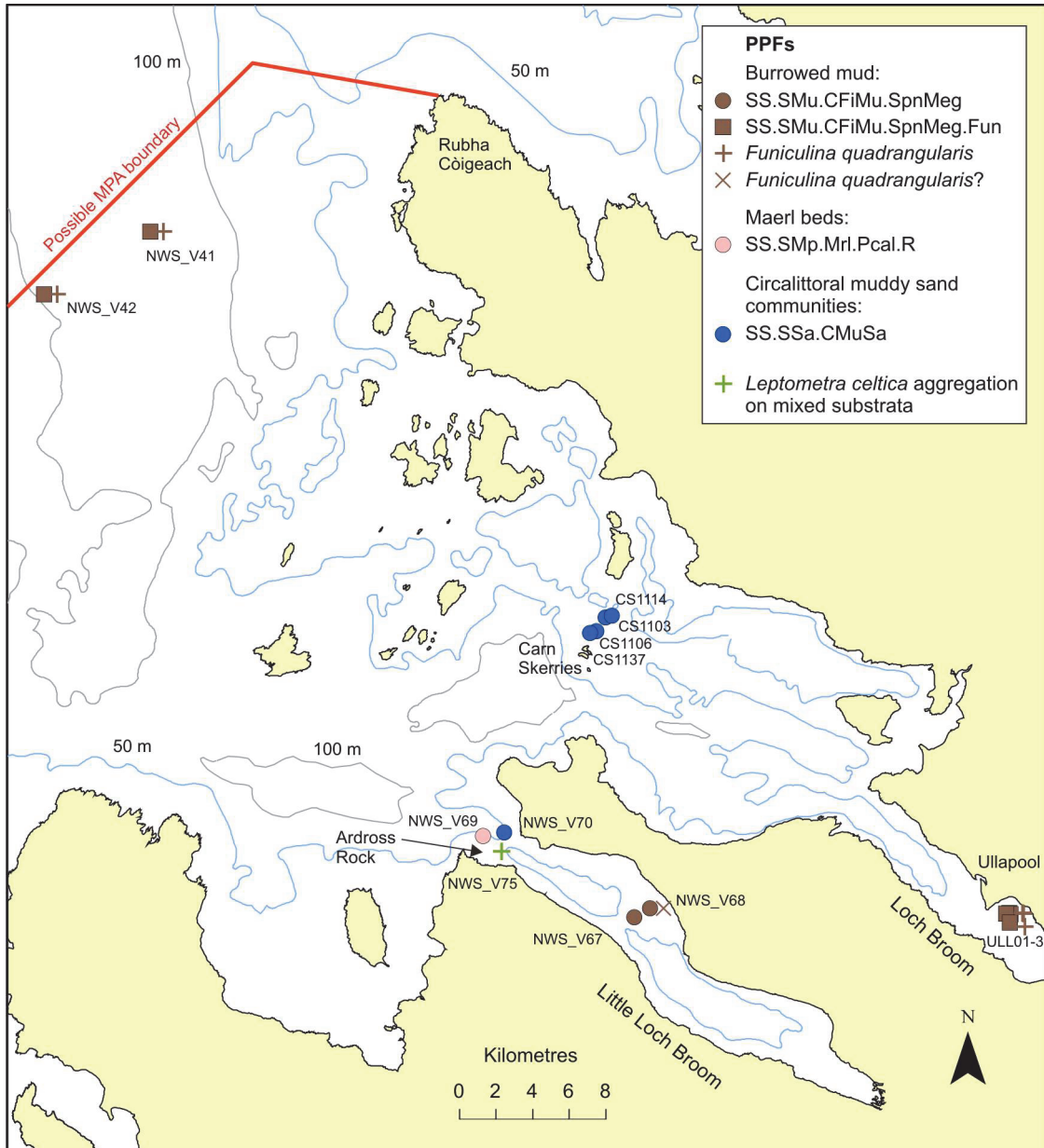


Figure 14. Distribution of records of proposed protected feature biotopes and species (PPFs) for the North-west sea lochs, Carn Skerries and Ullapool surveys. Reproduced by permission of Ordnance Survey on behalf of HMSO. © Crown copyright and database right [2014]. All rights reserved. Ordnance Survey Licence number 100017908. Bathymetry © Crown Copyright, 2014. All rights reserved. Licence No. EK001-201310001. Not to be used for navigation.

Apart from the presence of occasional refuse, no clear impact of anthropogenic activity was observed within any of the five spoil grounds surveyed. However, it was found that the Ullapool spoil ground overlaps with an area of burrowed mud supporting *Funiculina quadrangularis* (SS.SMu.CFiMu.SpMg.Fun). Activities resulting in a significant coarsening of sediment type are likely to result in the disappearance of this biotope. Although *Funiculina quadrangularis* has been assessed as being tolerant to smothering (Ager and Wilding, 2009), it is believed to be highly intolerant to substratum loss, abrasion and physical disturbance, all processes which may accompany spoil deposition.

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**ANNEX 1: PROPOSED PROTECTED FEATURES (PPFS) OF THE THREE PMPAS / MPA SEARCH LOCATIONS COVERED IN THIS REPORT**

Possible MPA / MPA search location	Proposed protected features (PPF)	Component biotopes (04.05) or species
Shiant East Bank MPA search location	Circolittoral sands and mixed sediment communities	SS.SSa.OSa SS.SMx.CMx SS.SMx.OMx
	Northern sea fan and sponge communities	CR.HCR.DpSp.PhaAxi CR.MCR.EcCr.CarSwi.LgAs <i>Swiftia pallida</i>
	Shelf banks and mounds	no specific biotopes
North-west sea lochs and Summer Isles pMPA	Burrowed mud	SS.SMu.CFiMu.SpnMeg <i>Funiculina quadrangularis</i> <i>Pachycerianthus multiplicatus</i>
	Circolittoral muddy sand communities	SS.SSa.CMuSa
	Flame shell beds	SS.SMx.IMx.Lim
	Kelp and seaweed communities on sublittoral sediment	SS.SMp.KSwSS
	Maerl beds	SS.SMp.Mrl
	Maerl or coarse shell gravel with burrowing sea cucumbers	SS.SCS.CCS.Nmix
Northern feather star aggregations on mixed substrata	<i>Leptometra celtica</i>	
Noss Head pMPA	Horse mussel beds	SS.SBR.SMus.ModT

**ANNEX 2: POSITIONAL AND TEMPORAL DETAILS OF VIDEO SEQUENCES RECORDED DURING THE SURVEYS. WHERE THERE IS MORE THAN ONE ENTRY FOR A SITE, THIS REFLECTS SPLITTING OF THE VIDEO RUN AMONGST DIFFERENT HABITAT TYPES**

Survey	Site ID	Date	Start latitude	Start longitude	End latitude	End longitude	Depth CD start (m)	Depth CD end (m)	Time start (UTC)	Time end (UTC)
West of Islay	WIS01	21/06/2013	55.760617	-6.660750	55.757717	-6.658117	69.0	69.3	15:28:40	15:38:24
West of Islay	WIS02	21/06/2013	55.798100	-6.673583	55.798450	-6.673633	35.9	37.2	16:12:58	16:15:32
West of Islay	WIS02	21/06/2013	55.798450	-6.673633	55.799983	-6.674433	37.2	38.5	16:15:32	16:23:44
West of Islay	WIS03	22/06/2013	55.785567	-6.685800	55.782350	-6.687617	36.1	28.5	11:47:59	12:05:29
West of Islay	WIS03	22/06/2013	55.782350	-6.687617	55.781567	-6.688100	28.5	30.7	12:05:29	12:09:17
West of Islay	WIS03	22/06/2013	55.781567	-6.688100	55.781467	-6.688167	30.7	30.4	12:09:17	12:09:49
West of Islay	WIS04	22/06/2013	55.860617	-6.671433	55.858383	-6.669917	53.7	53.9	13:05:13	13:19:05
West of Islay	WIS05	22/06/2013	55.916567	-6.670000	55.913917	-6.669283	55.3	55.8	13:50:17	14:01:41
West of Islay	WIS06	22/06/2013	55.948183	-6.676800	55.946117	-6.678367	58.6	59.6	14:27:01	14:39:43
West of Islay	WIS07	24/06/2013	55.801917	-6.714300	55.804917	-6.714150	45.1	45.4	11:26:53	11:39:25
West of Islay	WIS08	24/06/2013	55.833883	-6.690633	55.837967	-6.688833	48.0	49.1	12:04:49	12:17:29
West of Islay	WIS09	24/06/2013	55.857267	-6.693917	55.861017	-6.697533	54.4	54.4	12:35:53	12:48:25
West of Islay	WIS10	24/06/2013	55.879267	-6.691567	55.878383	-6.686067	61.0	59.5	13:07:13	13:17:41
West of Islay	WIS11	24/06/2013	55.893733	-6.683100	55.890700	-6.680467	57.5	59.1	13:36:29	13:48:17
West of Islay	WIS12	24/06/2013	55.916033	-6.722817	55.912283	-6.723600	66.1	66.1	14:16:07	14:28:19
West of Islay	WIS13	24/06/2013	55.958267	-6.714050	55.956100	-6.709233	65.5	67.1	15:13:35	15:25:07
West of Islay	WIS14	25/06/2013	55.847333	-6.736767	55.850217	-6.739967	56.3	59.5	11:48:33	12:00:49
West of Islay	WIS15	25/06/2013	55.817283	-6.729183	55.821017	-6.729533	45.0	45.2	12:44:59	12:56:11
West of Islay	WIS16	25/06/2013	55.783850	-6.732483	55.783933	-6.726567	39.9	43.1	13:27:05	13:39:27
West of Islay	WIS17	25/06/2013	55.768767	-6.736200	55.771133	-6.728400	41.1	32.9	14:08:55	14:26:01
West of Islay	WIS17	25/06/2013	55.771133	-6.728400	55.771417	-6.727283	32.9	33.3	14:26:01	14:27:43
West of Islay	WIS17	25/06/2013	55.771417	-6.727283	55.771450	-6.726817	33.3	32.2	14:27:43	14:28:17
West of Islay	WIS18	25/06/2013	55.760100	-6.684767	55.759950	-6.684317	64.2	64.8	14:52:35	14:53:37
West of Islay	WIS19	26/06/2013	55.965200	-6.752583	55.968483	-6.751717	55.1	55.5	12:44:07	12:56:41
West of Islay	WIS20	26/06/2013	55.943550	-6.760933	55.947700	-6.761333	45.4	46.7	13:21:19	13:35:25
West of Islay	WIS21	26/06/2013	55.935167	-6.734850	55.937817	-6.732633	58.0	59.8	13:55:49	14:06:11
West of Islay	WIS22	26/06/2013	55.906867	-6.753967	55.903300	-6.751567	59.4	59.1	14:32:29	14:44:41

Annex 2 continued

Survey	Site ID	Date	Start latitude	Start longitude	End latitude	End longitude	Depth CD start (m)	Depth CD end (m)	Time start (UTC)	Time end (UTC)
West of Islay	WIS23	29/06/2013	55.890200	-6.756533	55.892250	-6.757167	59.2	58.9	12:13:13	12:21:29
West of Islay	WIS24	29/06/2013	55.860967	-6.759117	55.863467	-6.757867	55.2	50.5	12:49:35	13:00:07
West of Islay	WIS25	29/06/2013	55.829467	-6.756617	55.831883	-6.756550	49.0	56.5	13:28:11	13:38:37
West of Islay	WIS26	29/06/2013	55.782733	-6.758433	55.785417	-6.756483	45.1	44.7	14:11:23	14:23:47
West of Islay	WIS27	29/06/2013	55.749967	-6.753233	55.753500	-6.752383	37.0	38.3	14:49:37	15:02:19
West of Islay	WIS28	29/06/2013	55.715000	-6.756317	55.718300	-6.756883	43.4	42.0	15:35:29	15:47:33
West of Islay	WIS29	01/07/2013	55.729417	-6.783733	55.730233	-6.791833	42.8	42.3	11:30:41	11:47:55
West of Islay	WIS30	01/07/2013	55.747183	-6.774183	55.744883	-6.779483	37.1	41.6	12:11:35	12:24:49
West of Islay	WIS31	01/07/2013	55.768883	-6.784817	55.767050	-6.790517	45.5	47.2	12:57:29	13:09:55
West of Islay	WIS32	01/07/2013	55.814700	-6.771233	55.817883	-6.770667	46.9	50.2	13:47:13	13:57:37
West of Islay	WIS33	01/07/2013	55.843000	-6.788483	55.845383	-6.790267	59.4	52.1	14:24:05	14:35:47
West of Islay	WIS34	03/07/2013	55.966833	-6.804517	55.964233	-6.804833	54.4	54.6	11:32:31	11:42:37
West of Islay	WIS35	03/07/2013	55.940333	-6.824850	55.937750	-6.826500	52.2	53.1	12:04:47	12:17:05
West of Islay	WIS36	03/07/2013	55.926267	-6.801017	55.923167	-6.802617	42.7	41.6	12:39:01	12:51:37
West of Islay	WIS37	03/07/2013	55.892350	-6.819133	55.889400	-6.818150	56.4	56.2	13:16:55	13:27:35
West of Islay	WIS38	03/07/2013	55.866450	-6.813717	55.863517	-6.811750	51.6	53.5	13:48:13	13:58:41
West of Islay	WIS39	03/07/2013	55.847467	-6.822633	55.844533	-6.823117	66.9	64.5	14:16:17	14:26:49
Shiant East Bank	SEB_V01	24/09/2013	58.047033	-6.151383	58.046983	-6.151383	79.1	79.1	07:34:40	07:35:48
Shiant East Bank	SEB_V01	24/09/2013	58.046983	-6.151383	58.046900	-6.151400	79.1	78.7	07:35:48	07:37:13
Shiant East Bank	SEB_V01	24/09/2013	58.046900	-6.151400	58.046767	-6.151467	78.7	77.9	07:37:13	07:39:57
Shiant East Bank	SEB_V02	21/09/2013	58.026800	-5.970817	58.027767	-5.969550	65.9	62.5	11:00:43	11:06:06
Shiant East Bank	SEB_V03	23/09/2013	57.986217	-5.973400	57.987800	-5.972400	71.6	72.5	09:18:28	09:23:52
Shiant East Bank	SEB_V04	24/09/2013	58.055117	-6.046433	58.054883	-6.045500	67.9	66.4	08:31:02	08:35:09
Shiant East Bank	SEB_V04	24/09/2013	58.054883	-6.045500	58.054833	-6.045183	66.4	66.5	08:35:09	08:36:30
Shiant East Bank	SEB_V05	24/09/2013	58.075800	-6.082983	58.075667	-6.081533	86.4	85.5	09:39:39	09:44:50
Shiant East Bank	SEB_V06	21/09/2013	58.031100	-6.026867	58.030667	-6.027367	48.9	49.8	15:20:05	15:26:33
Shiant East Bank	SEB_V07	21/09/2013	58.051300	-5.994483	58.051600	-5.994417	55.9	59.5	12:45:48	12:49:42
Shiant East Bank	SEB_V07	21/09/2013	58.051600	-5.994417	58.051783	-5.994417	59.5	60.1	12:49:42	12:51:33
Shiant East Bank	SEB_V08	23/09/2013	57.952683	-6.076533	57.952667	-6.076500	46.8	46.9	13:59:02	13:59:26

Annex 2 continued

Survey	Site ID	Date	Start latitude	Start longitude	End latitude	End longitude	Depth CD start (m)	Depth CD end (m)	Time start (UTC)	Time end (UTC)
Shiant East Bank	SEB_V08	23/09/2013	57.952667	-6.076500	57.952533	-6.076450	46.9	49.4	13:59:26	14:01:28
Shiant East Bank	SEB_V08	23/09/2013	57.952533	-6.076450	57.952317	-6.076233	49.4	51.9	14:01:28	14:04:23
Shiant East Bank	SEB_V08	23/09/2013	57.952317	-6.076233	57.951983	-6.076033	51.9	52.1	14:04:23	14:06:06
Shiant East Bank	SEB_V09	23/09/2013	57.926100	-6.150167	57.926500	-6.150100	53.6	53.5	13:15:41	13:21:53
Shiant East Bank	SEB_V11	23/09/2013	58.001500	-6.116533	58.000833	-6.116533	55.4	56.0	17:02:01	17:07:18
Shiant East Bank	SEB_V12	23/09/2013	58.017517	-6.123817	58.017383	-6.124200	68.4	64.0	17:35:16	17:37:16
Shiant East Bank	SEB_V12	23/09/2013	58.017383	-6.124200	58.017183	-6.124533	64.0	65.7	17:37:16	17:41:21
Shiant East Bank	SEB_V13	23/09/2013	58.006250	-6.126567	58.006217	-6.126567	60.6	60.6	17:17:14	17:17:31
Shiant East Bank	SEB_V13	23/09/2013	58.006217	-6.126567	58.006167	-6.126550	60.6	60.5	17:17:31	17:17:56
Shiant East Bank	SEB_V13	23/09/2013	58.006167	-6.126550	58.005567	-6.126517	60.5	60.0	17:17:56	17:22:41
Shiant East Bank	SEB_V14	21/09/2013	58.023550	-5.935933	58.023617	-5.935417	91.4	88.7	13:26:29	13:32:08
Shiant East Bank	SEB_V15	23/09/2013	58.019083	-5.921467	58.020400	-5.920867	83.6	81.6	08:36:11	08:41:51
Shiant East Bank	SEB_V18	23/09/2013	57.906417	-6.126233	57.907067	-6.126867	31.2	38.6	11:51:48	11:57:35
Shiant East Bank	SEB_V19	23/09/2013	57.978133	-6.025517	57.977700	-6.027083	43.0	33.5	14:26:55	14:33:26
Shiant East Bank	SEB_V20	23/09/2013	57.963417	-6.143433	57.963317	-6.143450	46.0	46.0	16:19:30	16:20:44
Shiant East Bank	SEB_V20	23/09/2013	57.963317	-6.143450	57.963200	-6.143483	46.0	46.3	16:20:44	16:22:21
Shiant East Bank	SEB_V20	23/09/2013	57.963200	-6.143483	57.963150	-6.143483	46.3	46.3	16:22:21	16:23:12
Shiant East Bank	SEB_V20	23/09/2013	57.963150	-6.143483	57.963000	-6.143567	46.3	46.0	16:23:12	16:24:57
Shiant East Bank	SEB_V22	23/09/2013	57.968817	-5.932300	57.970600	-5.931467	58.2	72.3	09:42:14	09:47:38
Shiant East Bank	SEB_V23	23/09/2013	57.941567	-5.974567	57.942783	-5.973700	71.7	70.6	10:12:17	10:17:21
Shiant East Bank	SEB_V24	21/09/2013	57.989233	-6.004950	57.989017	-6.004833	52.6	51.4	14:50:55	14:51:54
Shiant East Bank	SEB_V24	21/09/2013	57.989017	-6.004833	57.988533	-6.005017	51.4	58.4	14:51:54	14:55:04
Shiant East Bank	SEB_V24	21/09/2013	57.988533	-6.005017	57.988450	-6.005200	58.4	55.9	14:55:04	14:56:19
Shiant East Bank	SEB_V25	23/09/2013	57.996683	-6.036950	57.996133	-6.036983	32.2	35.4	15:12:50	15:19:04
Shiant East Bank	SEB_V25	23/09/2013	57.996133	-6.036983	57.996050	-6.037017	35.4	35.0	15:19:04	15:19:56
Shiant East Bank	SEB_V27	24/09/2013	58.039483	-6.052283	58.039167	-6.052283	69.5	68.9	08:11:16	08:16:29
Shiant East Bank	SEB_V28	24/09/2013	58.068483	-5.991700	58.068500	-5.991800	66.1	66.1	11:49:07	11:50:07
Shiant East Bank	SEB_V28	24/09/2013	58.068500	-5.991800	58.068550	-5.992100	66.1	66.2	11:50:07	11:51:53
Shiant East Bank	SEB_V28	24/09/2013	58.068550	-5.992100	58.068750	-5.992900	66.2	66.7	11:51:53	11:54:19

Annex 2 continued

Survey	Site ID	Date	Start latitude	Start longitude	End latitude	End longitude	Depth CD start (m)	Depth CD end (m)	Time start (UTC)	Time end (UTC)
Shiant East Bank	SEB_V29	21/09/2013	58.042717	-5.952117	58.043533	-5.951200	74.6	75.5	10:12:48	10:16:06
Shiant East Bank	SEB_V29	21/09/2013	58.043533	-5.951200	58.044000	-5.950683	75.5	75.7	10:16:06	10:18:06
Shiant East Bank	SEB_V30	21/09/2013	58.008100	-5.973800	58.008617	-5.973533	52.0	49.7	11:40:01	11:42:52
Shiant East Bank	SEB_V30	21/09/2013	58.008617	-5.973533	58.009200	-5.973133	49.7	50.9	11:42:52	11:45:44
Shiant East Bank	SEB_V31	21/09/2013	58.033483	-5.998650	58.033717	-5.998533	46.3	46.1	12:25:20	12:27:09
Shiant East Bank	SEB_V31	21/09/2013	58.033717	-5.998533	58.034233	-5.998283	46.1	34.7	12:27:09	12:31:09
Shiant East Bank	SEB_V33	24/09/2013	58.032300	-6.146717	58.032233	-6.146733	73.4	72.4	07:11:05	07:12:03
Shiant East Bank	SEB_V33	24/09/2013	58.032233	-6.146733	58.032183	-6.146733	72.4	72.4	07:12:03	07:13:03
Shiant East Bank	SEB_V33	24/09/2013	58.032183	-6.146733	58.031967	-6.146633	72.4	73.8	07:13:03	07:16:22
Shiant East Bank	SEB_V35	21/09/2013	58.016367	-5.997300	58.017483	-5.996667	46.4	47.4	11:21:13	11:27:42
Shiant East Bank	SEB_V36	21/09/2013	58.001567	-5.944817	58.001200	-5.944167	79.0	90.8	14:25:54	14:29:19
Shiant East Bank	SEB_V36	21/09/2013	58.001200	-5.944167	58.001083	-5.944017	90.8	92.7	14:29:19	14:30:13
Shiant East Bank	SEB_V36	21/09/2013	58.001083	-5.944017	58.000867	-5.943617	92.7	93.1	14:30:13	14:31:35
Shiant East Bank	SEB_V37	21/09/2013	58.021500	-6.007917	58.022200	-6.006617	55.1	55.1	12:10:00	12:15:04
Shiant East Bank	SEB_V63	21/09/2013	58.043417	-5.996667	58.043917	-5.995950	44.1	47.1	13:00:25	13:06:25
Shiant East Bank	SEB_V66	24/09/2013	58.103983	-6.001350	58.104367	-6.002283	80.3	81.2	11:19:29	11:21:52
Shiant East Bank	SEB_V66	24/09/2013	58.104367	-6.002283	58.104483	-6.002433	81.2	81.5	11:21:52	11:22:18
Shiant East Bank	SEB_V66	24/09/2013	58.104483	-6.002433	58.104917	-6.002983	81.5	81.9	11:22:18	11:26:35
Shiant East Bank	SEB_V71	23/09/2013	57.897300	-6.136250	57.897783	-6.136967	30.9	28.6	12:07:55	12:10:58
Shiant East Bank	SEB_V71	23/09/2013	57.897783	-6.136967	57.898300	-6.137483	28.6	32.6	12:10:58	12:14:09
Shiant East Bank	SEB_V72	23/09/2013	57.902450	-6.086100	57.902950	-6.085900	31.0	39.6	11:21:10	11:24:12
Shiant East Bank	SEB_V72	23/09/2013	57.902950	-6.085900	57.903283	-6.085567	39.6	45.5	11:24:12	11:26:48
Shiant East Bank	SEB_V73	23/09/2013	57.894083	-6.154967	57.894750	-6.155500	34.6	36.4	12:23:19	12:28:50
Shiant East Bank	SEB_V74	23/09/2013	57.905133	-6.106100	57.905833	-6.106867	31.3	33.5	11:37:24	11:43:08
North-west sea lochs	NWS_V38	24/09/2013	58.105250	-5.530183	58.105350	-5.531967	32.9	36.7	15:15:15	15:21:06
North-west sea lochs	NWS_V40	24/09/2013	58.067983	-5.511683	58.067850	-5.512717	55.8	62.2	16:04:43	16:08:48
North-west sea lochs	NWS_V40	24/09/2013	58.067850	-5.512717	58.067817	-5.513100	62.2	63.3	16:08:48	16:10:16
North-west sea lochs	NWS_V41	24/09/2013	58.070733	-5.575283	58.070233	-5.577300	144.2	149.1	14:42:57	14:49:07
North-west sea lochs	NWS_V42	24/09/2013	58.053950	-5.627383	58.054150	-5.629267	111.0	107.5	13:57:35	14:03:27

Annex 2 continued

Survey	Site ID	Date	Start latitude	Start longitude	End latitude	End longitude	Depth CD start (m)	Depth CD end (m)	Time start (UTC)	Time end (UTC)
North-west sea lochs	NWS_V67	25/09/2013	57.891850	-5.337567	57.891300	-5.339483	46.5	41.7	07:20:26	07:25:43
North-west sea lochs	NWS_V68	25/09/2013	57.894433	-5.329133	57.893367	-5.332667	31.4	34.7	07:04:23	07:13:57
North-west sea lochs	NWS_V69	25/09/2013	57.912850	-5.411550	57.912750	-5.414150	22.3	15.9	06:19:19	06:24:29
North-west sea lochs	NWS_V70	25/09/2013	57.913733	-5.401300	57.913533	-5.403400	47.0	56.9	06:33:46	06:38:52
North-west sea lochs	NWS_V75	25/09/2013	57.908817	-5.401683	57.908600	-5.405350	48.0	29.9	07:46:15	07:53:06
Carn Skerries	CS1101	14/09/2013	57.969157	-5.368065	57.969283	-5.368038			15:27:21	15:28:10
Carn Skerries	CS1102	14/09/2013	57.966617	-5.365453	57.966650	-5.365150			16:04:10	16:05:23
Carn Skerries	CS1103	14/09/2013	57.969792	-5.352833	57.969843	-5.352613			14:06:00	14:06:55
Carn Skerries	CS1104	14/09/2013	57.973705	-5.364145	57.973853	-5.364117			15:00:50	15:01:39
Carn Skerries	CS1106	14/09/2013	57.966225	-5.357373	57.966342	-5.357212			14:30:04	14:30:57
Carn Skerries	CS1107	14/09/2013	57.968818	-5.360473	57.968955	-5.360367			14:43:28	14:44:21
Carn Skerries	CS1114	14/09/2013	57.970267	-5.351385	57.970357	-5.351128			14:12:44	14:14:02
Carn Skerries	CS1117	14/09/2013	57.967860	-5.360925	57.967945	-5.360757			14:39:23	14:40:12
Carn Skerries	CS1118	14/09/2013	57.969307	-5.363857	57.969465	-5.363698			15:14:51	15:15:58
Carn Skerries	CS1120	14/09/2013	57.968295	-5.368592	57.968368	-5.368398			15:23:07	15:24:14
Carn Skerries	CS1123	14/09/2013	57.968047	-5.365355	57.968178	-5.365310			16:08:58	16:09:43
Carn Skerries	CS1124	14/09/2013	57.972660	-5.364205	57.972767	-5.364040			14:56:34	14:57:47
Carn Skerries	CS1127	14/09/2013	57.969650	-5.353498	57.969692	-5.353270			14:03:20	14:04:16
Carn Skerries	CS1131	14/09/2013	57.970132	-5.360225	57.970285	-5.360092			14:48:13	14:49:09
Carn Skerries	CS1137	14/09/2013	57.965808	-5.358630	57.965818	-5.358360			14:24:14	14:25:33
Carn Skerries	CS1140	14/09/2013	57.968745	-5.364850	57.968778	-5.364612			15:10:23	15:11:17
Ullapool	ULL01	02/10/2009	57.891750	-5.159403	57.892078	-5.156973	26.5		14:42:46	14:49:00
Ullapool	ULL01	02/10/2009	57.892078	-5.156973	57.892483	-5.155578			14:49:00	14:51:43
Ullapool	ULL01	02/10/2009	57.892483	-5.155578	57.892995	-5.153032		26.4	14:51:43	14:56:07
Ullapool	ULL02	02/10/2009	57.892433	-5.151895	57.892505	-5.155570	25.2		15:06:09	15:19:30
Ullapool	ULL02	02/10/2009	57.892505	-5.155570	57.892535	-5.155827			15:19:30	15:20:55
Ullapool	ULL02	02/10/2009	57.892535	-5.155827	57.892565	-5.155997			15:20:55	15:21:35
Ullapool	ULL02	02/10/2009	57.892565	-5.155997	57.892885	-5.157530		22.9	15:21:35	15:27:04
Ullapool	ULL03	02/10/2009	57.890702	-5.151622	57.891495	-5.155482	23.7		15:40:48	15:57:54

Annex 2 continued

Survey	Site ID	Date	Start latitude	Start longitude	End latitude	End longitude	Depth CD start (m)	Depth CD end (m)	Time start (UTC)	Time end (UTC)
Ullapool	ULL03	02/10/2009	57.891495	-5.155482	57.891610	-5.156110		22.4	15:57:54	16:00:04
West of Lewis	WOL37	05/08/2013	58.316567	-6.917567	58.318317	-6.914117	62.8	63.2	07:41:28	07:52:32
West of Lewis	WOL38	05/08/2013	58.300117	-6.983300	58.302567	-6.978033	75.8	73.8	08:29:33	08:45:07
West of Lewis	WOL39	05/08/2013	58.282617	-7.005083	58.284533	-7.003117	74.8	74.2	09:09:24	09:21:31
West of Lewis	WOL40	05/08/2013	58.274267	-7.029500	58.278317	-7.025233	80.0	80.0	09:49:49	10:06:08
West of Lewis	WOL41	05/08/2013	58.271967	-7.067333	58.276567	-7.063133	75.6	79.4	10:59:13	11:14:58
West of Lewis	WOL42	05/08/2013	58.292200	-7.097317	58.297617	-7.091017	101.4	99.7	11:35:13	11:51:03
West of Lewis	WOL43	05/08/2013	58.290450	-7.130583	58.295967	-7.123800	123.0	122.3	12:14:38	12:30:23
West of Lewis	WOL44	05/08/2013	58.306483	-7.124800	58.310133	-7.119250	121.5	122.0	12:53:38	13:08:21
West of Lewis	WOL45	05/08/2013	58.318900	-7.063167	58.322517	-7.055383	72.3	81.2	13:39:58	13:55:12
West of Lewis	WOL46	05/08/2013	58.304367	-7.075650	58.307383	-7.067100	92.5	80.5	14:17:45	14:33:21
West of Lewis	WOL47	05/08/2013	58.289433	-7.058933	58.291667	-7.051983	89.3	87.7	14:54:50	15:09:02
West of Lewis	WOL48	05/08/2013	58.286350	-7.028300	58.287900	-7.018450	81.7	80.0	15:27:58	15:38:49
West of Lewis	WOL49	05/08/2013	58.308083	-6.990933	58.309033	-6.979983	71.2	71.4	16:30:14	16:45:23
West of Lewis	WOL50	05/08/2013	58.321583	-6.958800	58.322317	-6.949483	72.0	65.8	17:01:38	17:18:08
West of Lewis	WOL51	05/08/2013	58.333217	-6.893017	58.332950	-6.885833	67.4	66.0	17:46:50	18:02:11
West of Lewis	WOL52	06/08/2013	58.341250	-6.938767	58.341883	-6.936117	68.9	71.0	07:53:20	07:59:39
West of Lewis	WOL52	06/08/2013	58.341883	-6.936117	58.341900	-6.935867	71.0	71.5	07:59:39	08:00:16
West of Lewis	WOL52	06/08/2013	58.341900	-6.935867	58.342233	-6.934467	71.5	71.4	08:00:16	08:03:34
West of Lewis	WOL52	06/08/2013	58.342233	-6.934467	58.342617	-6.932083	71.4	70.7	08:03:34	08:09:02
West of Lewis	WOL53	06/08/2013	58.329050	-6.979717	58.330117	-6.973983	71.4	69.1	08:39:56	08:55:38
West of Lewis	WOL54	06/08/2013	58.319483	-7.026867	58.321183	-7.021050	82.2	78.6	09:19:40	09:33:06
West of Lewis	WOL54	06/08/2013	58.321183	-7.021050	58.321500	-7.020083	78.6	79.2	09:33:06	09:35:26
West of Lewis	WOL55	06/08/2013	58.323167	-7.009383	58.324033	-7.006567	75.2	74.6	09:48:53	10:00:19
West of Lewis	WOL56	06/08/2013	58.337567	-6.996167	58.338133	-6.993750	75.2	74.6	10:59:40	11:09:46
West of Lewis	WOL57	06/08/2013	58.355417	-6.945017	58.355450	-6.941350	66.5	64.8	11:37:48	11:53:33
West of Lewis	WOL58	06/08/2013	58.361300	-6.909233	58.360467	-6.905700	57.3	56.9	12:08:44	12:23:41
West of Lewis	WOL59	06/08/2013	58.345183	-6.909417	58.344500	-6.907950	66.1	69.1	12:41:38	12:51:56
West of Lewis	WOL59	06/08/2013	58.344500	-6.907950	58.344267	-6.907533	69.1	67.8	12:51:56	12:54:02

Annex 2 continued

Survey	Site ID	Date	Start latitude	Start longitude	End latitude	End longitude	Depth CD start (m)	Depth CD end (m)	Time start (UTC)	Time end (UTC)
West of Lewis	WOL59	06/08/2013	58.344267	-6.907533	58.344033	-6.907133	67.8	68.6	12:54:02	12:56:24
West of Lewis	WOL59	06/08/2013	58.344033	-6.907133	58.344017	-6.907083	68.6	68.3	12:56:24	12:56:56
West of Lewis	WOL59	06/08/2013	58.344017	-6.907083	58.343917	-6.906850	68.3	67.9	12:56:56	12:58:01
West of Mainland Orkney	WMO57	29/07/2013	59.215867	-3.242083	59.212583	-3.239717	72.0	71.8	08:48:54	09:04:32
West of Mainland Orkney	WMO58	29/07/2013	59.205917	-3.245817	59.203100	-3.242483	70.9	70.0	09:17:10	09:32:43
West of Mainland Orkney	WMO59	29/07/2013	59.191400	-3.258783	59.189833	-3.255083	71.0	72.1	09:49:26	10:04:30
West of Mainland Orkney	WMO60	29/07/2013	59.198917	-3.282183	59.198533	-3.281683	72.6	73.8	10:19:09	10:23:36
West of Mainland Orkney	WMO60	29/07/2013	59.198533	-3.281683	59.198383	-3.280467	73.8	72.8	10:23:36	10:29:44
West of Mainland Orkney	WMO61	29/07/2013	59.210250	-3.264683	59.209183	-3.260583	75.0	72.9	11:06:00	11:16:42
West of Mainland Orkney	WMO61	29/07/2013	59.209183	-3.260583	59.208750	-3.258833	72.9	73.9	11:16:42	11:21:24
West of Mainland Orkney	WMO62	29/07/2013	59.229217	-3.258083	59.227800	-3.252617	73.1	76.2	11:37:57	11:53:11
West of Mainland Orkney	WMO63	29/07/2013	59.241600	-3.249950	59.240433	-3.243333	72.6	73.4	12:08:02	12:23:35
West of Mainland Orkney	WMO64	29/07/2013	59.249467	-3.270283	59.249350	-3.262300	72.5	71.5	12:39:24	12:54:42
West of Mainland Orkney	WMO65	29/07/2013	59.240917	-3.283983	59.241033	-3.276700	72.7	73.2	13:10:23	13:25:33
West of Mainland Orkney	WMO66	29/07/2013	59.223583	-3.304817	59.224400	-3.298167	73.8	75.1	13:44:05	13:59:27
West of Mainland Orkney	WMO67	29/07/2013	59.218417	-3.284150	59.218517	-3.282000	75.6	75.1	14:11:49	14:27:31
West of Mainland Orkney	WMO68	29/07/2013	59.204800	-3.299500	59.205017	-3.296300	72.7	71.8	14:43:06	14:58:12
West of Mainland Orkney	WMO69	29/07/2013	59.101017	-3.399600	59.100333	-3.394967	55.5	52.0	16:05:33	16:21:09
West of Mainland Orkney	WMO70	29/07/2013	59.084583	-3.403017	59.084633	-3.402817	57.6	57.0	16:35:54	16:39:55
West of Mainland Orkney	WMO71	29/07/2013	59.079783	-3.404450	59.078733	-3.407450	57.5	61.3	16:48:39	17:03:56
West of Mainland Orkney	WMO72	30/07/2013	59.055800	-3.361900	59.055900	-3.360183	29.6	27.7	07:13:57	07:18:14
West of Mainland Orkney	WMO72	30/07/2013	59.055900	-3.360183	59.056000	-3.359167	27.7	26.9	07:18:14	07:20:43
West of Mainland Orkney	WMO73	30/07/2013	59.054650	-3.364617	59.055233	-3.360933	32.0	28.8	07:32:50	07:41:45
West of Mainland Orkney	WMO73	30/07/2013	59.055233	-3.360933	59.055467	-3.358967	28.8	25.9	07:41:45	07:46:27
West of Mainland Orkney	WMO73	30/07/2013	59.055467	-3.358967	59.055450	-3.358583	25.9	25.2	07:46:27	07:47:19
West of Mainland Orkney	WMO74	30/07/2013	59.075700	-3.403633	59.076400	-3.398533	57.7	52.7	08:07:34	08:19:35
West of Mainland Orkney	WMO75	30/07/2013	59.072500	-3.415133	59.073233	-3.409250	62.4	57.7	08:32:34	08:47:46
West of Mainland Orkney	WMO76	30/07/2013	59.093300	-3.415100	59.094217	-3.409700	62.0	59.0	09:05:39	09:21:11
West of Mainland Orkney	WMO77	30/07/2013	59.002733	-3.431950	59.003267	-3.425367	71.3	67.8	11:02:23	11:17:31

Annex 2 continued

Survey	Site ID	Date	Start latitude	Start longitude	End latitude	End longitude	Depth CD start (m)	Depth CD end (m)	Time start (UTC)	Time end (UTC)
West of Mainland Orkney	WMO78	30/07/2013	59.008000	-3.468967	59.008083	-3.467567	71.1	70.3	11:38:02	11:40:40
West of Mainland Orkney	WMO78	30/07/2013	59.008083	-3.467567	59.008683	-3.461200	70.3	71.9	11:40:40	11:53:13
West of Mainland Orkney	WMO79	30/07/2013	59.011167	-3.487933	59.011600	-3.484600	73.3	76.2	12:11:42	12:18:38
West of Mainland Orkney	WMO79	30/07/2013	59.011600	-3.484600	59.012133	-3.480550	76.2	75.3	12:18:38	12:26:45
West of Mainland Orkney	WMO80	30/07/2013	59.015333	-3.517267	59.016750	-3.508500	63.6	78.0	12:45:44	13:00:51
West of Mainland Orkney	WMO81	30/07/2013	58.998817	-3.520633	58.999850	-3.512283	80.9	76.4	13:22:21	13:37:33
West of Mainland Orkney	WMO82	30/07/2013	58.983667	-3.528033	58.984133	-3.520000	80.6	76.7	13:58:27	14:13:51
West of Mainland Orkney	WMO83	30/07/2013	58.977000	-3.497100	58.976783	-3.493200	73.8	72.5	14:28:27	14:37:44
West of Mainland Orkney	WMO83	30/07/2013	58.976783	-3.493200	58.976700	-3.490750	72.5	72.9	14:37:44	14:43:38
West of Mainland Orkney	WMO84	30/07/2013	58.995200	-3.494800	58.995467	-3.487667	65.3	73.1	15:02:57	15:18:09
West of Mainland Orkney	WMO85	30/07/2013	58.992250	-3.468750	58.992500	-3.462967	70.3	69.9	16:06:57	16:22:12
West of Mainland Orkney	WMO86	30/07/2013	58.988217	-3.447017	58.987533	-3.443600	70.6	69.8	16:35:09	16:50:20
West of Mainland Orkney	WMO87	31/07/2013	58.972250	-3.450617	58.971083	-3.448000	66.7	66.7	07:51:58	08:07:23
West of Mainland Orkney	WMO88	31/07/2013	59.024000	-3.512517	59.023033	-3.508183	72.2	74.2	08:42:08	08:57:44
West of Mainland Orkney	WMO89	31/07/2013	59.028850	-3.486833	59.027417	-3.483633	71.6	75.7	09:11:53	09:27:10
West of Mainland Orkney	WMO90	31/07/2013	59.040750	-3.503017	59.039233	-3.500467	76.1	76.1	09:45:22	10:00:39
West of Mainland Orkney	WMO91	31/07/2013	59.043900	-3.481417	59.042750	-3.480300	74.9	74.6	10:13:58	10:24:20
West of Mainland Orkney	WMO92	31/07/2013	59.056633	-3.491900	59.056483	-3.491567	75.2	76.1	11:16:39	11:20:27
West of Mainland Orkney	WMO92	31/07/2013	59.056483	-3.491567	59.056417	-3.491517	76.1	75.4	11:20:27	11:21:11
West of Mainland Orkney	WMO92	31/07/2013	59.056417	-3.491517	59.055817	-3.490800	75.4	76.0	11:21:11	11:31:16
West of Mainland Orkney	WMO93	31/07/2013	59.051900	-3.448917	59.051900	-3.448817	71.2	71.6	11:52:03	11:53:19
West of Mainland Orkney	WMO93	31/07/2013	59.051900	-3.448817	59.053217	-3.445917	71.6	70.5	11:53:19	12:07:28
West of Mainland Orkney	WMO94	31/07/2013	59.060250	-3.407117	59.061167	-3.403467	54.2	51.4	12:24:49	12:40:03
West of Mainland Orkney	WMO95	31/07/2013	59.047267	-3.401867	59.047967	-3.398783	55.7	53.9	12:56:02	13:10:57
West of Mainland Orkney	WMO96	31/07/2013	59.040750	-3.439533	59.042167	-3.436017	70.6	69.8	13:32:13	13:47:41
West of Mainland Orkney	WMO97	31/07/2013	59.033233	-3.457600	59.033317	-3.457400	74.6	74.4	14:04:23	14:05:00
West of Mainland Orkney	WMO97	31/07/2013	59.033317	-3.457400	59.033367	-3.457250	74.4	75.0	14:05:00	14:05:32
West of Mainland Orkney	WMO97	31/07/2013	59.033367	-3.457250	59.034033	-3.455050	75.0	75.2	14:05:32	14:11:49
West of Mainland Orkney	WMO97	31/07/2013	59.034033	-3.455050	59.034050	-3.454933	75.2	74.9	14:11:49	14:12:07

Annex 2 continued

Survey	Site ID	Date	Start latitude	Start longitude	End latitude	End longitude	Depth CD start (m)	Depth CD end (m)	Time start (UTC)	Time end (UTC)
West of Mainland Orkney	WMO97	31/07/2013	59.034050	-3.454933	59.034600	-3.451533	74.9	75.2	14:12:07	14:19:54
West of Mainland Orkney	WMO98	31/07/2013	59.020800	-3.437133	59.020967	-3.436183	70.3	71.5	14:37:56	14:40:51
West of Mainland Orkney	WMO98	31/07/2013	59.020967	-3.436183	59.021700	-3.432267	71.5	70.2	14:40:51	14:53:19
West of Mainland Orkney	WMO99	31/07/2013	59.018533	-3.461767	59.018683	-3.457850	74.4	75.0	15:10:13	15:20:00
West of Mainland Orkney	WMO100	31/07/2013	59.010583	-3.422517	59.010767	-3.418367	64.8	63.2	16:05:14	16:15:58
West of Mainland Orkney	WMO101	31/07/2013	58.994467	-3.438200	58.995033	-3.435017	71.6	68.0	16:33:39	16:44:11
West of Mainland Orkney	WMO102	31/07/2013	58.967333	-3.469133	58.965067	-3.465667	70.8	70.5	17:07:16	17:17:29
Stromness spoil ground	STROM01	01/06/2013	58.963517	-3.433350	58.963967	-3.434083	68.1	67.9	11:07:00	11:09:38
Shetland	SHT01	25/07/2013	59.944983	-1.536967	59.942133	-1.539900	125.4	124.0	09:50:11	10:07:36
Shetland	SHT02	25/07/2013	59.947383	-1.476400	59.940617	-1.477333	111.8	108.2	11:08:01	11:23:11
Shetland	SHT03	25/07/2013	59.949183	-1.437467	59.941233	-1.439783	83.6	80.1	11:49:14	12:08:16
Shetland	SHT04	25/07/2013	59.966983	-1.409050	59.962017	-1.414317	77.3	77.8	12:32:42	12:49:15
Shetland	SHT05	25/07/2013	59.985317	-1.440800	59.981300	-1.443633	104.9	104.3	13:15:00	13:31:19
Shetland	SHT06	25/07/2013	59.989883	-1.438000	59.989683	-1.439183	102.9	105.0	13:48:39	13:54:38
Shetland	SHT06	25/07/2013	59.989683	-1.439183	59.989500	-1.440217	105.0	106.7	13:54:38	14:00:56
Shetland	SHT07	25/07/2013	60.019433	-1.413417	60.019800	-1.414667	81.3	80.4	14:24:14	14:29:33
Shetland	SHT07	25/07/2013	60.019800	-1.414667	60.020600	-1.417000	80.4	80.7	14:29:33	14:39:24
Shetland	SHT08	25/07/2013	60.035033	-1.442717	60.036900	-1.447133	116.6	117.7	14:59:13	15:12:30
Shetland	SHT09	26/07/2013	59.969117	-1.536100	59.970383	-1.534633	123.7	124.3	08:44:27	09:00:37
Shetland	SHT10	26/07/2013	59.981633	-1.497783	59.9792667	-1.495833	126.2	126.9	09:54:17	10:16:34
Shetland	SHT11	26/07/2013	59.974683	-1.460233	59.969300	-1.456317	107.0	106.8	11:09:04	11:25:18
Shetland	SHT12	26/07/2013	60.004817	-1.421567	60.001750	-1.424167	76.9	80.4	11:56:49	12:10:52
Shetland	SHT12	26/07/2013	60.001750	-1.424167	60.000933	-1.424900	80.4	80.5	12:10:52	12:14:43
Shetland	SHT12	26/07/2013	60.000933	-1.424900	60.000433	-1.425383	80.5	79.4	12:14:43	12:17:10
Shetland	SHT12	26/07/2013	60.000433	-1.425383	60.000200	-1.425600	79.4	80.3	12:17:10	12:18:12
Shetland	SHT12	26/07/2013	60.000200	-1.425600	59.999983	-1.425800	80.3	80.5	12:18:12	12:19:16
Shetland	SHT13	26/07/2013	60.017583	-1.383483	60.014267	-1.385383	47.4	58.2	12:43:57	12:58:10
Shetland	SHT13	26/07/2013	60.014267	-1.385383	60.013483	-1.386167	58.2	59.7	12:58:10	13:01:58
Shetland	SHT14	26/07/2013	60.021033	-1.431900	60.019650	-1.433650	106.3	108.3	13:25:37	13:40:58

Annex 2 continued

Survey	Site ID	Date	Start latitude	Start longitude	End latitude	End longitude	Depth CD start (m)	Depth CD end (m)	Time start (UTC)	Time end (UTC)
Shetland	SHT15	26/07/2013	60.012467	-1.460633	60.009400	-1.459083	124.2	123.6	14:16:06	14:31:05
Shetland	SHT16	26/07/2013	60.016900	-1.518183	60.013233	-1.515900	136.3	137.1	14:59:46	15:16:38
Shetland	SHT17	26/07/2013	60.041850	-1.398633	60.042417	-1.398933	77.2	78.0	16:12:27	16:16:33
Shetland	SHT17	26/07/2013	60.042417	-1.398933	60.044350	-1.399067	78.0	78.8	16:16:33	16:28:25
Shetland	SHT18	26/07/2013	60.067333	-1.443050	60.067700	-1.443983	97.2	106.5	16:51:23	16:54:53
Shetland	SHT18	26/07/2013	60.067700	-1.443983	60.069400	-1.446500	106.5	109.4	16:54:53	17:06:33
Shetland	SHT19	26/07/2013	60.074117	-1.453800	60.075817	-1.457633	107.0	106.4	17:19:32	17:34:46
Shetland	SHT20	27/07/2013	60.099400	-1.461883	60.101900	-1.463817	78.7	77.0	07:42:13	08:02:47
Shetland	SHT20	27/07/2013	60.101900	-1.463817	60.102750	-1.464367	77.0	76.7	08:02:47	08:08:28
Shetland	SHT21	27/07/2013	60.111367	-1.466000	60.112517	-1.469533	53.6	59.2	08:25:12	08:45:19
Shetland	SHT22	27/07/2013	60.108683	-1.501717	60.108917	-1.503833	85.8	85.6	09:01:03	09:09:15
Shetland	SHT22	27/07/2013	60.108917	-1.503833	60.108483	-1.505933	85.6	85.8	09:09:15	09:16:17
Shetland	SHT23	27/07/2013	60.070883	-1.489167	60.071933	-1.494150	122.4	122.4	09:46:40	10:01:46
Shetland	SHT24	27/07/2013	60.056917	-1.505600	60.055767	-1.506783	130.4	130.4	10:50:55	11:01:12
Shetland	SHT25	27/07/2013	60.049733	-1.487617	60.048867	-1.486867	127.3	127.0	11:19:10	11:29:23
Wick spoil ground	WICK01	05/06/2013	58.440717	-3.025500	58.446267	-3.028483	45.1	43.5	09:02:25	09:25:59
Wick spoil ground	WICK02	05/06/2013	58.439467	-3.015700	58.446250	-3.020833	49.3	47.7	09:41:11	10:11:02
Sutors spoil ground	SUT01	06/06/2013	57.685617	-3.987083	57.685867	-3.990067	37.0	47.7	16:00:50	16:06:41
Sutors spoil ground	SUT01	06/06/2013	57.685867	-3.990067	57.685933	-3.995733	37.0	53.9	16:06:41	16:18:19
Sutors spoil ground	SUT02	06/06/2013	57.684700	-3.997167	57.684633	-3.995733	47.9	49.3	16:28:54	16:33:06
Sutors spoil ground	SUT03	07/06/2013	57.684917	-3.995583	57.684833	-3.993367	52.9	55.2	07:27:04	07:34:42
Sutors spoil ground	SUT04	07/06/2013	57.686833	-3.995067	57.686833	-3.993083	52.2	47.4	07:48:19	07:54:55
Sutors spoil ground	SUT04	07/06/2013	57.686833	-3.993083	57.686900	-3.988100	47.3	17.3	07:54:55	08:07:18
Sutors spoil ground	SUT05	07/06/2013	57.684667	-3.990900	57.684583	-3.989083	53.6	52.3	08:19:16	08:25:09
Cromarty spoil ground	CROM01	07/06/2013	57.650117	-3.984800	57.648950	-3.979867	10.3	10.8	10:02:59	10:16:37
Cromarty spoil ground	CROM02	07/06/2013	57.650750	-3.983500	57.649533	-3.980333	11.2	11.1	10:59:44	11:10:36
Cromarty spoil ground	CROM03	07/06/2013	57.649733	-3.984983	57.648567	-3.981117	9.9	9.7	11:19:29	11:31:33
Buchan Deeps	BUD01	11/08/2013	57.489850	-1.384217	57.491883	-1.380800	103.4	103.8	11:10:43	11:21:51
Buchan Deeps	BUD03	11/08/2013	57.485667	-1.366383	57.486283	-1.363350	107.3	107.4	11:43:20	11:53:29

Annex 2 continued

Survey	Site ID	Date	Start latitude	Start longitude	End latitude	End longitude	Depth CD start (m)	Depth CD end (m)	Time start (UTC)	Time end (UTC)
Buchan Deeps	BUD05	11/08/2013	57.479650	-1.330533	57.479650	-1.330533	117.0	116.7	10:06:14	10:16:51
Buchan Deeps	BUD07	11/08/2013	57.467817	-1.389400	57.471983	-1.385850	103.4	104.1	09:28:33	09:38:31
Buchan Deeps	BUD08	10/08/2013	57.465400	-1.244650	57.461600	-1.246367	108.8	105.3	13:17:29	13:27:46
Buchan Deeps	BUD09	10/08/2013	57.466500	-1.276100	57.463133	-1.276383	120.6	120.3	13:54:56	14:06:26
Buchan Deeps	BUD12	10/08/2013	57.451883	-1.262317	57.448917	-1.263883	112.1	112.3	12:36:34	12:47:15
Buchan Deeps	BUD13	11/08/2013	57.450733	-1.345383	57.455183	-1.341733	118.1	118.8	08:43:37	08:54:38
Buchan Deeps	BUD14	10/08/2013	57.446250	-1.311100	57.444050	-1.310967	118.6	119.1	14:35:01	14:45:52
Buchan Deeps	BUD15	10/08/2013	57.446217	-1.282033	57.444783	-1.281650	118.0	117.9	15:04:10	15:14:38
Buchan Deeps	BUD18	10/08/2013	57.432150	-1.320267	57.430567	-1.321650	117.8	117.9	11:46:53	11:57:45
Buchan Deeps	BUD19	10/08/2013	57.430800	-1.373867	57.429800	-1.375483	114.8	114.6	11:03:06	11:13:45
Buchan Deeps	BUD20	10/08/2013	57.433733	-1.283200	57.432517	-1.286283	118.3	118.4	16:04:57	16:17:26
Buchan Deeps	BUD21	10/08/2013	57.426567	-1.400817	57.427500	-1.398050	106.4	106.8	08:41:13	08:51:42
Buchan Deeps	BUD24	10/08/2013	57.411783	-1.336200	57.412267	-1.334317	119.6	119.3	09:24:46	09:34:40
Buchan Deeps	BUD25	10/08/2013	57.412017	-1.269017	57.413450	-1.269050	106.6	107.1	10:07:24	10:18:39
East of Aberdeen	EAB01	09/08/2013	56.966100	-1.767417	56.971167	-1.765683	75.1	72.6	09:34:51	09:50:47
East of Aberdeen	EAB02	09/08/2013	56.978767	-1.837500	56.984700	-1.837183	115.6	109.6	08:42:37	08:57:37
East of Aberdeen	EAB03	09/08/2013	56.983650	-1.794067	56.986567	-1.792700	85.1	88.6	10:13:27	10:23:48
East of Aberdeen	EAB04	09/08/2013	56.992800	-1.891217	56.997733	-1.891233	65.8	64.1	08:05:46	08:15:51
East of Aberdeen	EAB05	09/08/2013	56.993967	-1.740900	56.991450	-1.742767	71.5	72.4	13:56:54	14:07:38
East of Aberdeen	EAB06	09/08/2013	57.002200	-1.815300	57.002817	-1.815917	118.6	118.9	11:02:47	11:18:35
East of Aberdeen	EAB07	09/08/2013	57.005667	-1.730067	57.003267	-1.731633	74.1	76.2	14:25:39	14:35:56
East of Aberdeen	EAB08	09/08/2013	57.010167	-1.862267	57.009167	-1.859517	67.7	71.5	11:46:24	11:57:28
East of Aberdeen	EAB09	09/08/2013	57.015617	-1.762233	57.012550	-1.763783	88.1	75.4	13:23:55	13:34:44
East of Aberdeen	EAB10	09/08/2013	57.020500	-1.826683	57.018750	-1.826933	92.3	93.7	12:14:39	12:25:02
East of Aberdeen	EAB11	09/08/2013	57.028300	-1.707550	57.025150	-1.708100	70.8	74.0	15:05:17	15:15:45
East of Aberdeen	EAB12	09/08/2013	57.028583	-1.788083	57.026167	-1.788683	133.1	127.5	12:54:43	13:05:44
East of Aberdeen	EAB13	09/08/2013	57.035700	-1.748550	57.034033	-1.748000	80.8	76.5	15:55:55	16:03:12
East of Aberdeen	EAB13	09/08/2013	57.034033	-1.748000	57.033083	-1.747250	76.5	73.9	16:03:12	16:06:51
East of Aberdeen	EAB14	08/08/2013	57.034017	-1.847267	57.036567	-1.844633	77.9	80.3	17:09:50	17:24:51

*Annex 2 continued*

<b>Survey</b>	<b>Site ID</b>	<b>Date</b>	<b>Start latitude</b>	<b>Start longitude</b>	<b>End latitude</b>	<b>End longitude</b>	<b>Depth CD start (m)</b>	<b>Depth CD end (m)</b>	<b>Time start (UTC)</b>	<b>Time end (UTC)</b>
East of Aberdeen	EAB15	09/08/2013	57.045300	-1.721933	57.042350	-1.720383	82.3	69.9	16:38:09	16:45:46
East of Aberdeen	EAB15	09/08/2013	57.042350	-1.720383	57.041300	-1.719867	69.9	68.2	16:45:46	16:48:38
East of Aberdeen	EAB16	08/08/2013	57.051600	-1.812917	57.053633	-1.812367	96.7	96.9	16:19:21	16:34:46
East of Aberdeen	EAB17	08/08/2013	57.053050	-1.767267	57.051317	-1.767017	119.1	126.7	15:13:09	15:27:49
East of Aberdeen	EAB18	08/08/2013	57.070417	-1.818650	57.067667	-1.820500	93.2	92.8	14:16:53	14:32:26

**ANNEX 3: PHYSICAL AND BIOLOGICAL DESCRIPTIONS OF THE SURVEY SITES. SITE ID CODES CORRESPOND WITH THOSE IN ANNEX 2. PPF CODES IN BLACK, OTHER PMFS IN BLUE. CODES USED ARE AS FOLLOWS: HABITATS - BM (BURROWED MUD), CMC (CIRCALITTORAL SANDS AND MIXED SEDIMENT COMMUNITIES), CMS (CIRCALITTORAL MUDDY SAND COMMUNITIES), HM (HORSE MUSSEL BEDS), MB (MAERL BEDS), NS (NORTHERN SEA FAN AND SPONGE COMMUNITIES); SPECIES - AI (*ARCTICA ISLANDICA*), FQ (*FUNICULINA QUADRANGULARIS*), LA (*LEPTOMETRA CELTICA* AGGREGATIONS ON MIXED SUBSTRATA), MM (*MOLVA MOLVA*), PM (*PACHYCERIANTHUS MULTIPLICATUS*), SP (*SWIFTIA PALLIDA*)**

Site ID	Substrate	Biota	Biotope	PPF/PMF
WIS01	Pebbles and gravel	Stones encrusted with serpulid worms (C) and supporting <i>Dendrodoa grossularia</i> (C), <i>Polymastia boletiformis?</i> (P) and clumps of hydroids (P) including <i>Nemertesia ramosa</i> , and bryozoans including <i>Flustra foliacea</i> (O). <i>Asterias rubens</i> (O), <i>Crossaster papposus</i> (O), <i>Henricia</i> sp. (P), Asteroidea spp. indet. (O), <i>Chaetopterus variopedatus</i> (P), Pectinidae sp.(P)	SS.SMx.CMx.FluHyd	
WIS02	Bedrock with some boulders	Much of rock with dense <i>Dendrodoa grossularia</i> (A) and supporting hydroids including <i>Tubularia indivisa</i> (possibly F-C) and bryozoans (F) including <i>Flustra foliacea</i> (F) and <i>Pentapora foliacea</i> (R), although a dense hydroid/bryozoan turf (S) may be present locally. Other sessile forms include <i>Urticina felina</i> (C), <i>Sagartia elegans</i> (R), <i>Alcyonium digitatum</i> (R), <i>Pachymatisma johnstonia</i> (R) and yellow (R) and red (R) encrusting sponges, and pink coralline (R) and red foliose (R) algae. <i>Echinus esculentus</i> (R), <i>Asterias rubens</i> (F), teleost sp. (P), <i>Calliostoma zizyphinum</i> (P)	CR.HCR.FaT.CTub.CuSp	
WIS02	Dense, smooth, rounded, clean pebbles, gravel and small cobbles on sand	Very sparse fauna, restricted to rare occurrence of small <i>Balanus</i> spp. and <i>Flustra foliacea</i>	SS.SCS.CCS.PomB	
WIS03	Dense, smooth, rounded, clean pebbles, gravel, cobbles and occasional boulders on sand	Very sparse fauna, restricted to rare occurrence of small <i>Balanus</i> sp. and <i>Nucella lapillus</i> . <i>Flustra foliacea</i> present but drift material	SS.SCS.CCS.PomB	

Annex 3

Site ID	Substrate	Biota	Biotope	PPF/PMF
WIS03	Sand-dusted bedrock with pockets of medium-coarse sand	Dense hydroid/bryozoan turf (S), probably mostly hydroids, with red foliose algae (F), <i>Alcyonium digitatum</i> (R) and possibly yellow sponges (P). <i>Echinus esculentus</i> (R), <i>Urticina felina</i> (P), pink coralline algae (R)	CR.HCR.XFa	
WIS03	Dense, smooth, rounded, clean pebbles, gravel, cobbles and occasional boulders on sand	Very sparse fauna. <i>Balanus</i> spp. (R)	SS.SCS.CCS.PomB	
WIS04	Slightly rippled fine sand with sand-scoured, scattered boulders and possibly low bedrock outcrops	Sand with no visible fauna apart from Pleuronectiformes sp. (P). Rock supporting patches of hydroids (P), <i>Alcyonium digitatum</i> (P) and <i>Urticina felina</i> (R)	SS.SSa.CFiSa CR.MCR.EcCr.FaAlCr	
WIS05	Rippled fine sand	No visible fauna apart from Pleuronectiformes sp. (P)	SS.SSa.CFiSa	
WIS06	Rippled fine sand	Little distinct sign of life, although visibility generally poor. <i>Corystes cassivelaunus</i> (P)	SS.SSa.CFiSa	
WIS07	Scattered gravel, pebbles, cobbles and occasional boulders on medium sand	Stones encrusted with <i>Balanus</i> spp. (P), serpulid worms (P) and a yellow sponge (R), and supporting clumps of bryozoans including <i>Flustra foliacea</i> (F), and hydroids including <i>Sertularia</i> sp. (P). Asteroidea sp. (P)	SS.SMx.CMx.FluHyd	
WIS08	Scattered gravel and pebbles on sand, with the addition of cobbles and boulders in places, and patches of rippled fine sand	Stones encrusted with <i>Balanus</i> spp. (P) and serpulid worms (P) and, particularly where larger stones are present, with bryozoans including <i>Flustra foliacea</i> (locally F but R overall), and hydroids including <i>Sertularia</i> sp. (R overall)	SS.SCS.CCS.PomB SS.SMx.CMx.FluHyd SS.SSa.CFiSa	
WIS09	Rippled fine sand with patches of scattered gravel and pebbles and isolated cobbles and boulders	Larger stones with <i>Balanus</i> spp. (P), <i>Alcyonium digitatum</i> (R) and hydroid/bryozoan turf (P)	SS.SSa.CFiSa SS.SMx.CMx	
WIS10	Rippled fine sand	No visible evidence of life, although visibility generally poor	SS.SSa.CFiSa	
WIS11	Rippled fine sand	No visible evidence of life, although visibility very poor	SS.SSa.CFiSa	

Annex 3

Site ID	Substrate	Biota	Biotope	PPF/PMF
WIS12	Rippled fine sand	Little visible evidence of life, although visibility generally poor. Paguridae spp. indet. (R), hydroid clumps (R)	SS.SSa.CFiSa	
WIS13	Rippled fine sand	No visible evidence of life, although visibility generally poor	SS.SSa.CFiSa	
WIS14	Rippled fine sand	No visible evidence of life, although visibility generally poor	SS.SSa.CFiSa	
WIS15	Dense gravel and pebbles and occasional cobbles on sand	Sparse visible life, although visibility generally poor. Larger stones with small <i>Balanus</i> spp. (R). <i>Flustra foliacea</i> (P but probably drift material)	SS.SCS.CCS.PomB	
WIS16	Fairly flat, low profile, sand-scoured and dusted bedrock and boulders, with areas of gravel, pebbles, cobbles and occasional boulders on sand and small patches of rippled fine sand	Bedrock and boulders support dense bryozoan turf (A-S), dominated by <i>Flustra foliacea</i> (A), and dense <i>Dendrodoa grossularia</i> (A), with hydroids (P), <i>Urticina felina</i> (P), <i>Alcyonium digitatum</i> (R), <i>Balanus</i> spp. (P) and a yellow encrusting sponge? (R). <i>Echinus esculentus</i> (O), <i>Asterias rubens</i> (O). Areas of scattered small stones with little fauna evident apart from <i>Balanus</i> spp. (P). Paguridae sp. (P)	CR.MCR.EcCr.FaAlCr.Flu SS.SCS.CCS.PomB SS.SMx.CMx.FluHyd SS.SSa.CFiSa	
WIS17	Scattered gravel, pebbles, cobbles and boulders on sand with patches of mainly just gravel and pebbles on sand	Larger stones encrusted with <i>Balanus</i> spp. (P), pink coralline algae (R) and a yellow encrusting sponge? (R) and supporting a bryozoan/hydroid turf (F-C), dominated by <i>Flustra foliacea</i> (F), with <i>Dendrodoa grossularia</i> (P) and <i>Urticina felina</i> (O-F). <i>Echinus esculentus</i> (O), <i>Asterias rubens</i> (P), <i>Nucella lapillus</i> (P). Areas of scattered small stones with little fauna evident apart from <i>Balanus</i> spp. (P)	SS.SMx.CMx.FluHyd SS.SCS.CCS.PomB	
WIS17	Flat sand-scoured and dusted bedrock	Dense <i>Flustra foliacea</i> (A-S) with <i>Dendrodoa grossularia</i> (A, at least locally), <i>Urticina felina</i> (P) and pink coralline algae (R)	CR.MCR.EcCr.FaAlCr.Flu	
WIS17	Scattered gravel, pebbles and cobbles on sand	Larger stones with <i>Balanus</i> spp. (P)	SS.SCS.CCS.PomB	
WIS18	Dense gravel on sand?	Visibility poor, no photos and video very short. No discernible life	SS.SMx.CMx	
WIS19	Rippled fine sand	<i>Astropecten irregularis</i> (O), <i>Cancer pagurus</i> ? (P)	SS.SSa.CFiSa	

## Annex 3

Site ID	Substrate	Biota	Biotope	PPF/PMF
WIS20	Rippled fine sand with patches of scattered gravel, pebbles and cobbles and areas of boulders on sand	Areas of scattered small stones with little fauna discernible apart from <i>Balanus</i> spp. (P). Boulders encrusted with serpulid worms (P) and support a dense sessile fauna. A bryozoan and hydroid turf (A, locally S) includes <i>Securiflustra securifrons</i> (C), <i>Flustra foliacea</i> (C), <i>Nemertesia antennina</i> (P), <i>Sertularia</i> sp.? (P) and <i>Tubularia indivisa</i> (P). <i>Alcyonium digitatum</i> (C, locally A), <i>Urticina felina</i> (P), some large patches of <i>Cliona celata</i> , <i>Caryophyllia smithii</i> (F, at least locally). The motile fauna includes <i>Echinus esculentus</i> (O), <i>Asterias rubens</i> (P), <i>Luidia ciliaris</i> (P), Nudibranchia sp. (P), <i>Ophiocomina nigra</i> (C, at least locally)	SS.SSa.CFiSa SS.SCS.CCS.PomB CR.MCR.EcCr.FaAlCr.Sec	
WIS21	Rippled fine sand	No distinct evidence of life	SS.SSa.CFiSa	
WIS22	Rippled fine sand	<i>Callionymus lyra?</i> (P)	SS.SSa.CFiSa	
WIS23	Rippled fine sand	No visible evidence of life, although visibility generally poor	SS.SSa.CFiSa	
WIS24	Rippled fine sand	No visible evidence of life, although visibility generally poor	SS.SSa.CFiSa	
WIS25	Rippled fine sand with scattered gravel in places	Little visible evidence of life, although visibility generally poor. Small teleost sp. (P)	SS.SSa.CFiSa	
WIS26	Scattered gravel and pebbles on sand with occasional cobbles and isolated boulders, and some small patches of rippled fine sand	<i>Balanus</i> spp. (O) on stones and sparse hydroids (R), although dense patches of hydroids/bryozoans on isolated boulders. <i>Callionymus lyra?</i> (P), <i>Urticina felina</i> (P), <i>Asterias rubens</i> (P)	SS.SCS.CCS.PomB SS.SSa.CFiSa	
WIS27	Sand-scoured and dusted bedrock and boulders, with areas of smaller stones on sand	Bedrock and boulders support dense bryozoan turf (A-S), dominated by <i>Flustra foliacea</i> (A) but including <i>Securiflustra securifrons</i> (P), with <i>Dendrodoa grossularia</i> (locally A), <i>Urticina felina</i> (P), <i>Alcyonium digitatum</i> (R), <i>Balanus</i> spp. (locally A), serpulid worms (P) and a sponge fauna including a yellow encrusting form? (R), <i>Cliona celata</i> (R) and <i>Haliclona cinerea?</i> (P). <i>Echinus esculentus</i> (F), <i>Asterias rubens</i> (F), <i>Crossaster papposus</i> (O), teleost sp. (P). Areas of smaller stones with <i>Balanus</i> spp. (P)	CR.MCR.EcCr.FaAlCr.Flu SS.SCS.CCS.PomB	

## Annex 3

Site ID	Substrate	Biota	Biotope	PPF/PMF
WIS28	Dense cobbles and boulders	Stones encrusted with red bryozoans (O), pink coralline algae (R), serpulid worms (C) and <i>Balanus</i> spp. (P) and supporting patches of hydroids (P) and bryozoans including <i>Flustra foliacea</i> (O). <i>Echinus esculentus</i> (F), <i>Ophiothrix fragilis</i> (C, at least locally), <i>Crossaster papposus</i> (O), <i>Asterias rubens</i> (P)	CR.MCR.EcCr.FaAlCr.Flu	
WIS29	Areas of gravel, pebbles, cobbles and occasional boulders on sand and areas of dense cobbles and boulders	Stones encrusted with <i>Parasmittina trispinosa</i> (R), red bryozoans (O) and serpulid worms (C), and supporting patches of hydroids (P) and bryozoans including <i>Flustra foliacea</i> (O), <i>Alcyonium digitatum</i> (R) and <i>Urticina felina</i> (P). <i>Echinus esculentus</i> (F), <i>Crossaster papposus</i> (O)	CR.MCR.EcCr.FaAlCr.Flu SS.SMx.CMx.FluHyd	
WIS30	Bedrock and areas of gravel, pebbles, cobbles and boulders, varying in concentration, on sand	Much of bedrock sand-scoured and encrusted with <i>Parasmittina trispinosa</i> (R), red bryozoans (O), pink coralline algae (R) and serpulid worms (C), and supporting patches of hydroids (P) including <i>Tubularia indivisa</i> (P), and bryozoans including turfs of <i>Flustra foliacea</i> (A, at least locally), and <i>Alcyonium digitatum</i> (R). <i>Echinus esculentus</i> (C), <i>Crossaster papposus</i> (O), <i>Asterias rubens</i> (O), <i>Galathea</i> sp. (P). Stony areas support an apparently similar but sparser fauna. Bedrock patches of perhaps reduced scour and/or greater current support dense <i>Balanus</i> spp. (locally A), <i>Dendrodoa grossularia</i> (P), <i>Nucella lapillus</i> (P), <i>Calliostoma zizyphinum</i> (P) and a sponge fauna including <i>Pachymatisma johnstonia</i> (R) and a yellow encrusting form? (R)	CR.MCR.EcCr.FaAlCr.Flu SS.SMx.CMx.FluHyd	
WIS31	Dense cobbles and boulders and possible sand-dusted bedrock grading to areas of smaller scattered stones (gravel and pebbles) with varying concentrations of cobbles and boulders	Areas of larger rocks and bedrock support dense bryozoan turf (A-S), dominated by <i>Flustra foliacea</i> (C-A), hydroids (P), <i>Urticina felina</i> (P), <i>Alcyonium digitatum</i> (R), serpulid worms (A locally), <i>Parasmittina trispinosa</i> (R) and red encrusting bryozoans (R), with more scattered boulders and cobbles apparently supporting a similar fauna. <i>Echinus esculentus</i> (O). Areas of smaller stones with <i>Balanus</i> spp. (P)	CR.MCR.EcCr.FaAlCr.Flu SS.SMx.CMx.FluHyd SS.SCS.CCS.PomB	

Annex 3

Site ID	Substrate	Biota	Biotope	PPF/PMF
WIS32	Coarsely rippled medium sand and more finely rippled fine sand, in places with an admixture of dense gravel and pebbles. Isolated boulders and possibly outcropping bedrock patches	Rock supports a dense turf of <i>Flustra foliacea</i> (S), as well as <i>Urticina felina</i> (P)	SS.SSa.CFiSa CR.MCR.EcCr.FaAlCr.Flu SS.SMx.CMx	
WIS33	Rippled fine sand	No visible evidence of life	SS.SSa.CFiSa	
WIS34	Rippled fine sand	Sediment with small holes and possible bivalve siphons. <i>Corystes cassivelaunus</i> (P), <i>Astropecten irregularis</i> (P)	SS.SSa.CFiSa	
WIS35	Rippled fine sand interrupted by waves of silty coarse sand with fine sand or silt in troughs, often accompanied by gravel, pebbles and cobbles	Larger stones with sparse hydroid/bryozoan clumps (R) and serpulid worms (R). <i>Munida rugosa</i> (R), <i>Callionymus lyra</i> (R), <i>Astropecten irregularis?</i> (R)	SS.SSa.CFiSa SS.SCS.CCS	
WIS36	Varying densities of cobbles and boulders from dense to thinly scattered on sand with gravel and pebbles	Stones encrusted with pink coralline algae (R) and serpulid worms (C, locally A) including <i>Spirobranchus</i> spp. (P), and supporting dense <i>Alcyonium digitatum</i> (A), <i>Urticina felina</i> (O) and patches of hydroids and bryozoans (F-C combined) including <i>Flustra foliacea</i> (O-F) and <i>Nemertesia antennina</i> (P). <i>Echinus esculentus</i> (F), <i>Crossaster papposus</i> (F), <i>Asterias rubens</i> (P), <i>Luidia ciliaris</i> (O). <i>Ophiocolina nigra</i> appears to be abundant for much of the run, with <i>Ophiothrix fragilis</i> (locally A), although ophiuroid density appears reduced in some areas of sparser stones	CR.MCR.EcCr.FaAlCr.Bri SS.SMx.CMx.OphMx SS.SMx.CMx.FluHyd	
WIS37	Rippled fine sand locally with surface scatter of coarse sand and gravel and apparently a patch of silty coarse sand and gravel possibly formed into low waves	<i>Asterias rubens</i> (P)	SS.SSa.CFiSa SS.SCS.CCS	
WIS38	Rippled fine sand	No visible evidence of life	SS.SSa.CFiSa	

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Site ID	Substrate	Biota	Biotope	PPF/PMF
WIS39	Rippled fine sand	No visible evidence of life	SS.SSa.CFiSa	
SEB_V01	Silty sand with scatter of gravel and shells	Sparse epibiota. <i>Porella compressa?</i> (R), <i>Caryophyllia smithii?</i> (R)	SS.SSa.OSa	CMC
SEB_V01	Silty sand with scatter of gravel, shells, pebbles and cobbles	Stones with <i>lophon nigricans?</i> (O), <i>Hymedesmia paupertas</i> (R), hydroid/bryozoan clumps (O), <i>Porella compressa</i> (F). <i>Munida rugosa</i> (F)	SS.SMx.OMx	CMC
SEB_V01	Silty sand with scatter of gravel and shells	<i>Porania pulvillus</i> (P), <i>Porella compressa</i> (P), <i>lophon nigricans?</i> (R), <i>Asterias rubens</i> (P), <i>Pennatula phosphorea</i> (P)	SS.SSa.OSa	CMC
SEB_V02	Silty gravelly sand with increasing quantities of pebbles and cobbles	Stones encrusted with orange bryozoans (O, probably <i>Parasmittina trispinosa</i> ) and supporting sparse sponges including <i>Polymastia boletiformis</i> (O, locally F) and <i>Axinella infundibuliformis/Phakellia ventilabrum</i> (R), and <i>Porella compressa</i> (P). <i>Pachycerianthus multiplicatus</i> (F), <i>Asterias rubens</i> (F), <i>Luidia ciliaris</i> (P), <i>Porania pulvillus</i> (P), teleosts (P)	SS.SMx.OMx	CMC PM
SEB_V03	Apparently silty gravelly sand with sparsely scattered pebbles and cobbles in places	Stones encrusted with orange bryozoans (R) and supporting sparse <i>Porella compressa?</i> (R) and sponges (R). <i>Echinus esculentus</i> (P), teleosts (P), <i>Porania pulvillus</i> (O), <i>Asterias rubens</i> (P), <i>Cancer pagurus</i> (P)	SS.SSa.OSa	
SEB_V04	Silty sand with increasing quantities of gravel and shell material	Sparse epibiota. <i>Paguridae</i> sp. (P), teleost (P)	SS.SSa.OSa	CMC
SEB_V04	Silty sand with scatter of gravel, shells, pebbles, cobbles and boulders	Stones supporting orange bryozoans (R), hydroid/bryozoan tufts (R), <i>Porella compressa</i> (P) and sparse sponges including <i>Hymedesmia paupertas</i> (R), yellow encrusting sponge (R) and <i>Polymastia boletiformis?</i> (R). Teleosts (P) including <i>Aspitrigla cuculus?</i> (P), <i>Munida rugosa</i> (O), <i>Echinus esculentus</i> (P)	SS.SMx.OMx	CMC
SEB_V05	Soft mud	Mud densely burrowed by <i>Calocaris macandreae</i> (C), with <i>Nephrops norvegicus</i> also present. Teleosts (P)	SS.SMu.CFiMu.SpnMeg	BM

Annex 3

Site ID	Substrate	Biota	Biotope	PPF/PMF
SEB_V06	Largely bedrock with some boulders and cobbles	Rock encrusted with orange bryozoans (R) and supporting a dense sponge fauna dominated by <i>Axinella infundibuliformis/Phakellia ventilabrum</i> (A for much of run), with <i>Iophon nigricans?</i> (P), a yellow encrusting form (O) and <i>Tetilla zetlandica</i> (P). <i>Swiftia pallida</i> is common for much of the run. <i>Porella compressa</i> (F), clumps of bryozoans/hydroids (O), <i>Echinus esculentus</i> (P), <i>Porania pulvillus</i> (P), <i>Luidia ciliaris</i> (P), teleosts (P) including <i>Labrus mixtus</i> (P)	CR.MCR.EcCr.CarSwi.LgAs	NSSP
SEB_V07	Scattered cobbles and pebbles on silty gravelly sand	Stones encrusted with orange bryozoans (O) and serpulid worms (P) and supporting <i>Axinella infundibuliformis/Phakellia ventilabrum</i> (F), with the latter certainly present and <i>Porella compressa</i> (F). <i>Echinus esculentus</i> (F), <i>Asterias rubens</i> (P), <i>Stichastrella rosea?</i> (P)	CR.HCR.DpSp.PhaAxi	NS
SEB_V07	Waves of coarse sand	Little evidence of life. Sparse stones encrusted with orange bryozoans	SS.SCS.CCS	
SEB_V08	Bedrock	<i>Axinella infundibuliformis/Phakellia ventilabrum</i> (C)	CR.HCR.DpSp.PhaAxi	NS
SEB_V08	Gravel, pebbles and cobbles with scattered boulders	Stones encrusted with orange bryozoans (O) and serpulid worms (P) and supporting <i>Porella compressa</i> (P), hydroid/bryozoan tufts (F) and a sponge fauna including <i>Iophon nigricans?</i> (F) and <i>Axinella infundibuliformis/Phakellia ventilabrum</i> (R). <i>Echinus esculentus</i> (F), <i>Asterias rubens</i> (F), <i>Stichastrella rosea?</i> (P), <i>Molva molva?</i> (P), <i>Swiftia pallida?</i> (R)	SS.SMx.OMx	SP? CMC MM?
SEB_V08	Largely bedrock	Bedrock encrusted with orange bryozoans (R) and serpulid worms (P) and supporting sponge fauna dominated by <i>Axinella infundibuliformis/Phakellia ventilabrum</i> (F), with hydroid/bryozoan clumps (O) and <i>Swiftia pallida</i> (C over large areas). <i>Echinus esculentus</i> (C), <i>Asterias rubens</i> (F), Labridae sp. (P), other teleosts (P), <i>Stichastrella rosea?</i> (P)	CR.HCR.DpSp.PhaAxi CR.MCR.EcCr.CarSwi.LgAs	NS SP
SEB_V08	Waves of medium-coarse sand, in places with varying admixture of gravel, pebbles and cobbles	Stones encrusted with orange bryozoans (O) and supporting <i>Porella compressa</i> (O), hydroid/bryozoan tufts (O) and <i>Iophon nigricans?</i> (R). <i>Echinus esculentus</i> (F), <i>Asterias rubens</i> (P), <i>Porania pulvillus</i> (P), <i>Cancer pagurus</i> (P), teleosts (P)	SS.SCS.CCS SS.SMx.OMx	CMC

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Site ID	Substrate	Biota	Biotope	PPF/PMF
SEB_V09	Waves of gravelly sand with areas of more mixed substrate including cobbles, boulders and pebbles	Stones encrusted with orange bryozoans (O) and serpulid worms (P) and supporting <i>Porella compressa</i> (F), hydroid/bryozoan tufts (O) and a sponge fauna including <i>Lophon nigricans?</i> (O) and <i>Axinella infundibuliformis/Phakellia ventilabrum</i> (O). <i>Munida rugosa</i> (F), <i>Asterias rubens</i> (O), <i>Stichastrella rosea?</i> (P), <i>Porania pulvillus</i> (O), teleosts (P), <i>Filograna implexa/Salmacina dysteri</i> (R), <i>Eledone cirrhosa</i> (P)	SS.SCS.CCS SS.SMx.OMx	CMC
SEB_V11	Pebbles, cobbles and boulders on gravelly sand and areas of bedrock and boulders	Rock encrusted with orange bryozoans (R) and serpulid worms (P) and supporting a dense sponge fauna dominated by <i>Axinella infundibuliformis/Phakellia ventilabrum</i> (C) and <i>Lophon nigricans?</i> (F), with <i>Polymastia boletiformis</i> (P) and <i>Tetilla zetlandica</i> (P), and <i>Swiftia pallida</i> (F, locally C). Other sessile forms include <i>Porella compressa</i> (P), <i>Filograna implexa/Salmacina dysteri</i> (O), <i>Bolocera tuediae?</i> (P) and Ascidiacea spp. (P). <i>Echinus esculentus</i> (F), <i>Asterias rubens</i> (O)	CR.MCR.EcCr.CarSwi.LgAs	NS SP
SEB_V12	Silty sand with surface scatter of gravel and shells	Stones encrusted with orange bryozoans (R) and supporting hydroid? clumps (R). <i>Porania pulvillus?</i> (P), teleosts (P), <i>Luidia ciliaris</i> (P), Paguridae sp.? (P)	SS.SSa.OSa	CMC
SEB_V12	Bedrock with some boulders and cobbles	Rock encrusted with orange bryozoans (R) and supporting a dense sponge fauna dominated by <i>Axinella infundibuliformis/Phakellia ventilabrum</i> (C) with <i>Polymastia boletiformis</i> (P), <i>Tetilla zetlandica</i> (P), <i>Hymedesmia paupertas</i> (R) and a yellow encrusting form (R), <i>Swiftia pallida</i> (locally C), <i>Porella compressa</i> (C), bryozoan/hydroid clumps (O) and <i>Filograna implexa/Salmacina dysteri</i> (O). <i>Echinus esculentus</i> (F), <i>Asterias rubens</i> (F), <i>Labrus mixtus</i> (P),	CR.HCR.DpSp.PhaAxi CR.MCR.EcCr.CarSwi.LgAs	NS SP
SEB_V13	Scattered pebbles on gravelly sand	Stones support <i>Lophon nigricans?</i> (O), <i>Polymastia boletiformis?</i> (P) and <i>Filograna implexa/Salmacina dysteri</i> (O)	SS.SMx.OMx	CMC
SEB_V13	Silted bedrock outcrop	Rock encrusted with orange bryozoans (R) and supporting <i>Porella compressa?</i> (P) and <i>Axinella infundibuliformis/Phakellia ventilabrum</i> (C). <i>Echinus esculentus</i> (P), <i>Asterias rubens</i> (P), <i>Stichastrella rosea?</i> (P), <i>Porania pulvillus</i> (P)	CR.HCR.DpSp.PhaAxi	NS

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Site ID	Substrate	Biota	Biotope	PPF/PMF
SEB_V13	Scattered pebbles, cobbles and boulders on gravelly sand	Stones encrusted with orange bryozoans (R) and supporting <i>Porella compressa</i> (F), <i>Iophon nigricans?</i> (O), <i>Polymastia boletiformis</i> (O), <i>Axinella infundibuliformis/Phakellia ventilabrum</i> (O), <i>Hymedesmia paupertas</i> (R), hydroid/bryozoan clumps (R) and <i>Filograna implexa/Salmacina dysteri</i> (O). <i>Echinus esculentus</i> (P), <i>Asterias rubens</i> (P), <i>Stichastrella rosea?</i> (P), <i>Porania pulvillus</i> (O), teleosts (P), <i>Munida rugosa</i> (F), <i>Pagurus prideaux</i> with <i>Adamsia carciniopados</i> (P), <i>Pecten maximus?</i> (P)	SS.SMx.OMx	CMC
SEB_V14	Apparently silty sand	Infauna represented by small holes and sparse polychaete casts. <i>Pagurus prideaux</i> with <i>Adamsia carciniopados</i> (O), <i>Porania pulvillus</i> (P)	SS.SSa.OSa	CMC
SEB_V15	Apparently silty sand accompanied in places by a scatter of gravel, pebbles, cobbles and occasional boulders	Stones encrusted with orange bryozoans (R) and supporting sparse <i>Porella compressa?</i> (R), <i>Swiftia pallida</i> (R), hydroid/bryozoan tufts (R) and sponges including <i>Axinella infundibuliformis/Phakellia ventilabrum</i> (R) and <i>Polymastia boletiformis</i> (R). <i>Echinus esculentus</i> (O), teleosts (P), <i>Porania pulvillus</i> (P), <i>Asterias rubens</i> (P), <i>Stichastrella rosea?</i> (F), <i>Munida rugosa</i> (P), <i>Pagurus prideaux</i> with <i>Adamsia carciniopados</i> (P)	SS.SSa.OSa SS.SMx.OMx	SP CMC
SEB_V18	Sand-dusted bedrock and areas of cobbles and boulders	Rock encrusted with orange bryozoans (O, locally F), red bryozoans (R) and pink coralline algae (C) and supporting hydroid/bryozoan patches (O, locally C) including <i>Nemertesia antennina?</i> (P) and bryozoans (P) including <i>Alcyonidium diaphanum?</i> (R). Extensive areas also densely encrusted with <i>Spirobranchus</i> spp. (locally C) and some areas also apparently with <i>Caryophyllia smithii</i> (locally F). The sponge fauna is generally sparse but is richer in deeper areas and includes <i>Axinella infundibuliformis/Phakellia ventilabrum</i> (O, locally F), <i>Iophon nigricans?</i> (O, locally F) and <i>Cliona celata?</i> (R). <i>Echinus esculentus</i> (C), <i>Asterias rubens</i> (F), <i>Porania pulvillus</i> (O), <i>Marthasterias glacialis</i> (P), teleosts (P)	CR.MCR.EcCr.FaAICr CR.MCR.EcCr.FaAICr.Pom CR.MCR.EcCr.FaAICr.Car	

## Annex 3

Site ID	Substrate	Biota	Biotope	PPF/PMF
SEB_V19	Mostly bedrock with some patches of pebbles, cobbles and boulders on gravelly sand	Rock encrusted with <i>Spirobranchus</i> spp. (C, locally A), orange bryozoans (R) and pink coralline algae (F) and apparently with patches of <i>Caryophyllia smithii</i> (where A) and possibly small patches of <i>Corynactis viridis</i> (locally C). <i>Porella compressa</i> (R), clumps of hydroids/bryozoans (R), <i>Axinella infundibuliformis/Phakellia ventilabrum</i> (O), <i>lophon nigricans?</i> (R), yellow cushion sponge (R), <i>Echinus esculentus</i> (C), <i>Asterias rubens</i> (P), <i>Porania pulvillus</i> (O), <i>Luidia ciliaris</i> (P), teleosts (P) including <i>Labrus mixtus</i> (P) and <i>Molva molva?</i> (P), <i>Stichastrella rosea</i> (P). Mixed substrate patches with similar fauna	CR.MCR.EcCr.FaAlCr.Pom SS.SMx.CMx	CMC MM?
SEB_V20	Scattered pebbles, cobbles and boulders on gravelly sand	Stones encrusted with orange bryozoans (R) and serpulid worms (P) and supporting <i>Porella compressa</i> (F), hydroid/bryozoan tufts (O) and <i>lophon nigricans?</i> (R). <i>Echinus esculentus</i> (P), <i>Munida rugosa</i> (F), Ascidiacea spp. (P)	SS.SMx.OMx	CMC
SEB_V20	Silted bedrock	Rock encrusted with orange bryozoans (R) and serpulid worms (P) and supporting a sponge fauna dominated by <i>Axinella infundibuliformis/Phakellia ventilabrum</i> (F), with <i>Polymastia boletiformis</i> (O) and <i>lophon nigricans?</i> (R), and <i>Swiftia pallida</i> (F, locally C). <i>Porella compressa</i> (O), clumps of bryozoans/hydroids (F), <i>Porania pulvillus</i> (O), <i>Munida rugosa</i> (O), <i>Filograna implexa/Salmacina dysteri</i> (R)	CR.MCR.EcCr.CarSwi.LgAs	NS SP
SEB_V20	Largely silted bedrock with small boulder patch	Rock encrusted with orange bryozoans (R) and serpulid worms (P) and supporting a sponge fauna dominated by <i>Axinella infundibuliformis/Phakellia ventilabrum</i> (F), with <i>Polymastia boletiformis</i> (P) and <i>lophon nigricans?</i> (R). <i>Porella compressa</i> (P), clumps of bryozoans/hydroids (F, locally A) including <i>Alcyonidium diaphanum?</i> (R), <i>Echinus esculentus</i> (P), <i>Munida rugosa</i> (P)	CR.HCR.DpSp.PhaAxi	NS
SEB_V20	Scattered pebbles, cobbles and boulders on gravelly sand	Stones encrusted with orange bryozoans (O) and serpulid worms (P) and supporting <i>Porella compressa</i> (F), hydroid/bryozoan tufts (F), <i>Axinella infundibuliformis/Phakellia ventilabrum</i> (O) and <i>Filograna implexa/Salmacina dysteri</i> (R). <i>Echinus esculentus</i> (P), <i>Munida rugosa</i> (F), Gadidae spp. (P)	SS.SMx.OMx	CMC

## Annex 3

Site ID	Substrate	Biota	Biotope	PPF/PMF
SEB_V22	Areas of predominantly silted bedrock with some boulders and cobbles interspersed with silty gravelly sand with scattered pebbles and cobbles	Bedrock encrusted with orange bryozoans (R) and serpulid worms (P) and supporting fairly dense sponge fauna dominated by <i>Axinella infundibuliformis/Phakellia ventilabrum</i> (C), with a yellow encrusting form (P), <i>Porella compressa</i> (F locally), hydroid/bryozoan clumps (R) and <i>Swiftia pallida</i> (C locally). Stones in the sediment patches support a similar but sparser fauna, as well as <i>Polymastia boletiformis</i> (O); sparse <i>Pachyercianthus multiplicatus</i> is also possibly present here (P). <i>Echinus esculentus</i> (F), Asteroidea spp. (P) including <i>Porania pulvillus</i> (O) and <i>Asterias rubens</i> (P), <i>Labrus mixtus</i> (P)	CR.HCR.DpSp.PhaAxi CR.MCR.EcCr.CarSwi.LgAs SS.SMx.OMx	NS SP CMC PM?
SEB_V23	Silty sand with sparsely scattered boulders	Asteroidea spp. (P) including <i>Porania pulvillus</i> (O), <i>Munida rugosa</i> (O), Stones support orange encrusting bryozoans (R), <i>Porella compressa?</i> (R), <i>Axinella infundibuliformis/Phakellia ventilabrum</i> (R) and <i>Polymastia boletiformis</i> (P)	SS.SSa.OSa	CMC
SEB_V24	Silty sand with scattered gravel, pebbles and cobbles	Stones encrusted with orange bryozoans (O) and supporting <i>Porella compressa?</i> (P), hydroid/bryozoan tufts (R) and sparse sponge fauna including <i>Axinella infundibuliformis/Phakellia ventilabrum</i> (R) and <i>Polymastia boletiformis</i> (O). <i>Echinus esculentus</i> (F), <i>Labrus mixtus</i> (P)	SS.SMx.OMx	CMC
SEB_V24	Silted bedrock with boulders and cobbles	Rock encrusted with serpulid worms (F), orange bryozoans (O) and pink coralline algae (P) and supporting <i>Porella compressa</i> (F), clumps of bryozoans/hydroids (O) and a sponge fauna including <i>Axinella infundibuliformis/Phakellia ventilabrum</i> (F locally C) and <i>lophon nigricans?</i> (O). <i>Echinus esculentus</i> (C), <i>Asterias rubens</i> (F), <i>Porania pulvillus</i> (F), <i>Luidia ciliaris</i> (P), <i>Cancer pagurus</i> (P), <i>Labrus mixtus</i> (P)	CR.HCR.DpSp.PhaAxi	NS
SEB_V24	Silty sand with scattered gravel, pebbles and cobbles	Stones encrusted with orange bryozoans (O) and supporting <i>Porella compressa?</i> (P), hydroid/bryozoan tufts (P) and sparse <i>lophon nigricans?</i>	SS.SMx.OMx	CMC
SEB_V25	Mostly smooth, sand-dusted bedrock with patch of dense cobbles and boulders	Rock encrusted with <i>Spirobranchus</i> spp. (A), orange bryozoans (R) and pink coralline algae (C) and supporting hydroid/bryozoan clumps (O) including <i>Nemertesia antennina?</i> (R), <i>Axinella infundibuliformis/Phakellia ventilabrum</i> (R) and a yellow cushion sponge (R). <i>Echinus esculentus</i> (C), <i>Asterias rubens</i> (F), <i>Porania pulvillus</i> (O), <i>Stichastrella rosea</i> (P), <i>Munida rugosa</i> (P), teleosts including Gadidae spp. (P)	CR.MCR.EcCr.FaAICr.Pom	

## Annex 3

Site ID	Substrate	Biota	Biotope	PPF/PMF
SEB_V25	Waves of coarse sand	Pectinidae sp. (P)	SS.SCS.CCS	
SEB_V27	Silty sand with scatter of shells and shell material	<i>Pagurus prideaux</i> with <i>Adamsia carciniopados</i> (F)	SS.SSa.OSa	CMC
SEB_V28	Gravel, pebbles and cobbles on silty sand with isolated boulder	Stones support orange bryozoan crust (R), hydroids (R), <i>Axinella infundibuliformis/Phakellia ventilabrum</i> (O), <i>Porella compressa</i> (P) and Ascidiacea sp. (P). <i>Echinus esculentus</i> (P), <i>Munida rugosa</i> (P)	SS.SMx.OMx	CMC
SEB_V28	Waves of coarse sand with gravel, pebbles and shells in troughs	No distinct epibiota visible	SS.SCS.CCS	
SEB_V28	Scattered gravel, pebbles and cobbles on silty sand	Stones support orange bryozoan crust (R), hydroids (R), <i>Axinella infundibuliformis/Phakellia ventilabrum</i> (F) and <i>Porella compressa</i> (P). <i>Echinus esculentus</i> (C), <i>Stichastrella rosea?</i> (P), teleosts (P)	SS.SMx.OMx	CMC
SEB_V29	Dense cobbles with pebbles on silty sand with small bedrock outcrop at start	Stones encrusted with serpulid worms (C) and orange bryozoans (O) and supporting a sponge fauna including <i>Axinella infundibuliformis/Phakellia ventilabrum</i> (F) and <i>Hymedesmia paupertas</i> (R), and <i>Porella compressa</i> (F). Motile forms include <i>Echinus esculentus</i> (C), Asteroidea spp. (P) including <i>Porania pulvillus?</i> (P) and small teleosts (F)	CR.HCR.DpSp.PhaAxi	NS
SEB_V29	Silty gravelly sand with scattered pebbles	Poor visibility but apparently sparse epibiota including possibly sponges (R) and <i>Porania pulvillus?</i> (P)	SS.SMx.OMx	CMC
SEB_V30	Bedrock with pockets of boulders and cobbles	Rock encrusted with serpulid worms (C), orange bryozoans (R) and pink coralline algae (R) and supporting <i>Porella compressa</i> (F), clumps of bryozoans/hydroids (R) and a sponge fauna including <i>Axinella infundibuliformis/Phakellia ventilabrum</i> (F). <i>Swiftia pallida</i> (R), <i>Echinus esculentus</i> (C), <i>Asterias rubens</i> (F), <i>Porania pulvillus</i> (O), <i>Labrus mixtus</i> (P)	CR.HCR.DpSp.PhaAxi	NS SP
SEB_V30	Dense pebbles and cobbles on silty gravelly sand	Stones encrusted with orange bryozoans (O) and serpulid worms (C) and supporting sparse sponges including <i>Polymastia boletiformis</i> (O, locally F) and <i>Axinella infundibuliformis/Phakellia ventilabrum</i> (R), hydroid/bryozoan tufts (O) and <i>Porella compressa</i> (F). <i>Echinus esculentus</i> (F), Asteroidea spp. (F) including <i>Asterias rubens</i> (P), <i>Labrus mixtus</i> (P)	SS.SMx.OMx	CMC

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Site ID	Substrate	Biota	Biotope	PPF/PMF
SEB_V31	Bedrock with pockets of boulders and cobbles	Rock encrusted with serpulid worms (C), orange bryozoans (R) and supporting <i>Porella compressa</i> ? (P), clumps of bryozoans/hydroids (R) and a sponge fauna including <i>Axinella infundibuliformis/Phakellia ventilabrum</i> (F, locally C) and <i>lophon nigricans</i> ? (O). <i>Echinus esculentus</i> (C), <i>Asterias rubens</i> (F), <i>Porania pulvillus</i> (P), <i>Crossaster papposus</i> (P), teleosts (P)	CR.HCR.DpSp.PhaAxi	NS
SEB_V31	Dense cobbles	Stones encrusted with orange (F) and red (R) bryozoans, pink coralline algae (O) and serpulid worms (C) including <i>Spirobranchus</i> spp. (P). Other sessile forms include <i>lophon nigricans</i> ? (O, locally F) and <i>Porella compressa</i> (R). <i>Echinus esculentus</i> (C), <i>Porania pulvillus</i> (P), <i>Asterias rubens</i> (F), <i>Stichastrella rosea</i> ? (P), <i>Munida rugosa</i> (P), teleosts (P)	CR.MCR.EcCr.FaAICr	
SEB_V33	Cobbles and pebbles on silty gravelly sand	Stones with <i>Porella compressa</i> (F) and sparse <i>Axinella infundibuliformis/Phakellia ventilabrum</i> (P). <i>Porania pulvillus</i> (P), teleosts (P) including juvenile gadoids	SS.SMx.OMx	CMC
SEB_V33	Silty gravelly sand	Juvenile gadoids (P)	SS.SSa.OSa	CMC
SEB_V33	Mud	Fairly densely burrowed by <i>Calocaris macandreae</i> (C), with <i>Nephrops norvegicus</i> also present. <i>Pachycerianthus multiplicatus</i> (P - 1 specimen seen). <i>Callionymus lyra</i> ? (P), teleosts (P). Isolated boulder with <i>Porella compressa</i> ? (R), hydroid/bryozoan clump (R), <i>Munida rugosa</i> (P)	SS.SMu.CFiMu.SpnMeg	BM PM
SEB_V35	Dense cobbles and boulders with bedrock outcrops	Rock encrusted with serpulid worms (C), orange bryozoans (O) and pink coralline algae (P) and supporting <i>Porella compressa</i> (F), erect bryozoans (P, including possibly <i>Securiflustra securifrons</i> ), and a sponge fauna including <i>Axinella infundibuliformis/Phakellia ventilabrum</i> (F) and <i>lophon nigricans</i> ? (P). <i>Swiftia pallida</i> is rare overall but common in patches on bedrock. <i>Echinus esculentus</i> (C), <i>Asterias rubens</i> (F), <i>Luidia ciliaris</i> ? (P), <i>Labrus bergylta</i> (P), <i>Labrus mixtus</i> (P)	CR.HCR.DpSp.PhaAxi CR.MCR.EcCr.CarSwi.LgAs	NS SP
SEB_V36	Silted bedrock including steep slope	Rock encrusted with orange bryozoans (R) and supporting <i>Axinella infundibuliformis/Phakellia ventilabrum</i> (C) and patches of <i>Swiftia pallida</i> (C in patches). <i>Echinus esculentus</i> (P), <i>Munida rugosa</i> (P), <i>Porania pulvillus</i> (P), <i>Asterias rubens</i> (P), small teleosts (P)	CR.HCR.DpSp.PhaAxi CR.MCR.EcCr.CarSwi.LgAs	NS SP

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Site ID	Substrate	Biota	Biotope	PPF/PMF
SEB_V36	Silty, sandy sediment with gravel, pebbles and cobbles	Stones encrusted with orange bryozoans (R) and supporting <i>Porella compressa?</i> (F) and sparse sponge fauna including <i>Axinella infundibuliformis/Phakellia ventilabrum</i> (R) and a yellow form (R). <i>Echinus esculentus</i> (F)	SS.SMx.OMx	CMC
SEB_V36	Sandy mud	Sparse megafaunal burrows including <i>Nephrops norvegicus</i> (P). <i>Porella compressa?</i> (R), <i>Porania pulvillus?</i> (P), <i>Munida rugosa</i> (P)	SS.SMu.OMu	
SEB_V37	Waves of medium-coarse sand	<i>Asterias rubens</i> (F), <i>Callionymus lyra</i> (P)	SS.SCS.CCS	
SEB_V63	Bedrock and dense cobbles	Rock encrusted with serpulid worms (C), orange bryozoans (O) and pink coralline algae (O) and supporting <i>Porella compressa</i> (F), clumps of bryozoans/hydroids (R) and a sponge fauna including <i>Axinella infundibuliformis/Phakellia ventilabrum</i> (F, but C on bedrock), <i>Iophon nigricans?</i> (F) and <i>Tetilla zetlandica</i> (R). <i>Echinus esculentus</i> (C), <i>Asterias rubens</i> (P), teleosts (P)	CR.HCR.DpSp.PhaAxi	NS
SEB_V66	Muddy sand	Sparse small burrows. <i>Porania pulvillus</i> (P), <i>Munida rugosa</i> (P), <i>Pagurus prideaux</i> with <i>Adamsia carciniopados</i> (P)	SS.SSa.OSa	CMC
SEB_V66	Muddy sand? with scattered gravel, pebbles and cobbles	Visibility very poor but stones apparently supporting <i>Porella compressa</i> (P) and <i>Iophon nigricans?</i> (P). <i>Porania pulvillus</i> (P)	SS.SMx.OMx	CMC
SEB_V66	Probably sandy mud	Sparse megafaunal burrows, probably including <i>Calocaris macandreae</i> (F) and <i>Nephrops norvegicus</i> (P). <i>Pennatula phosphorea</i> (O), polychaete casts (O), hydroid/bryozoan clumps (R), teleosts (P), <i>Munida rugosa</i> (O), <i>Asterias rubens</i> (P)	SS.SMu.CFiMu.SpnMeg	BM
SEB_V71	Flat, creviced bedrock	Rock encrusted with <i>Spirobranchus</i> spp. (C), orange bryozoans (R, locally O), pink coralline algae (F) and a yellow encrusting sponge (R), with an otherwise sparse sessile community. Red foliose algae (R), <i>Echinus esculentus</i> (C), <i>Asterias rubens</i> (A for most of run), <i>Porania pulvillus</i> (O), teleosts (P), <i>Crossaster papposus</i> (F)	CR.MCR.EcCr.FaAICr.Pom	

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Site ID	Substrate	Biota	Biotope	PPF/PMF
SEB_V71	Mostly fairly flat bedrock with some boulders	Rock encrusted with <i>Spirobranchus</i> spp. (F), orange bryozoans (R, locally F), pink coralline algae (F) and supporting a generally light sward of foliose and filamentous red algae (C, locally A) and scattered small (juvenile?) <i>Laminaria hyperborea</i> (O). <i>Nemertesia antennina</i> ? (R), <i>Echinus esculentus</i> (C), <i>Marthasterias glacialis</i> (P), teleosts (P), <i>Scyliorhinus</i> sp. (P)	IR.HIR.KFaR.FoR	
SEB_V72	Flat bedrock	Rock encrusted with serpulid worms (F, locally C) including <i>Spirobranchus</i> spp. (P), orange bryozoans (R) and pink coralline algae (F) and supporting dense hydroid patches (S locally but overall R) and very sparse <i>Axinella infundibuliformis/Phakellia ventilabrum</i> (R). <i>Echinus esculentus</i> (P), <i>Asterias rubens</i> (O), <i>Porania pulvillus</i> (O), <i>Marthasterias glacialis</i> ? (P), teleosts (P)	CR.MCR.EcCr.FaAICr	
SEB_V72	Dense boulders and cobbles becoming cobbles and pebbles on silty sand	Stones encrusted with orange bryozoans (O) and supporting <i>Porella compressa</i> (P), hydroid/bryozoan tufts (O) and a sponge fauna including <i>lophon nigricans</i> ? (O, locally F). <i>Echinus esculentus</i> (F), teleosts including <i>Labrus mixtus</i> (P)	CR.MCR.EcCr.FaAICr	
SEB_V73	Mostly fairly flat sand-dusted bedrock with some boulders	Rock encrusted with serpulid worms (F) including <i>Spirobranchus</i> spp. (F), orange bryozoans (R, locally F), pink coralline algae (F) and <i>Cliona celata</i> ? (R), apparently extensive areas with dense <i>Caryophyllia smithii</i> (where C) and possibly small patches of <i>Corynactis viridis</i> (locally C). Clumps of hydroids/bryozoans (O) including <i>Nemertesia antennina</i> (R), <i>Axinella infundibuliformis/Phakellia ventilabrum</i> (R). <i>Echinus esculentus</i> (F), <i>Asterias rubens</i> (F, locally A), <i>Porania pulvillus</i> (O), teleosts (P), <i>Crossaster papposus</i> (P), <i>Stichastrella rosea</i> (O)	CR.MCR.EcCr.FaAICr CR.MCR.EcCr.FaAICr.Car	
SEB_V74	Bedrock and areas of boulders and cobbles, sometimes with pebbles, on gravelly sand	Rock encrusted with serpulid worms (C), predominantly <i>Spirobranchus</i> spp. (C), orange bryozoans (O, locally F), red bryozoans (R) and pink coralline algae (C) and supporting hydroid/bryozoan patches (O) <i>Echinus esculentus</i> (F), <i>Asterias rubens</i> (P), <i>Porania pulvillus</i> (F), <i>Crossaster papposus</i> (F), <i>Stichastrella rosea</i> ? (F), <i>Munida rugosa</i> (O), teleosts (P)	CR.MCR.EcCr.FaAICr.Pom	

## Annex 3

Site ID	Substrate	Biota	Biotope	PPF/PMF
NWS_V38	Dense cobbles and boulders	Stones encrusted with <i>Spirobranchus</i> spp. (A), <i>Parasmittina trispinosa</i> (O, locally F) and pink coralline algae (C) and supporting hydroid clumps and <i>Actiniaria</i> sp. (P). <i>Echinus esculentus</i> (C), <i>Asterias rubens?</i> (P), <i>Porania pulvillus</i> (O), <i>Luidia ciliaris</i> (F), <i>Marthasterias glacialis?</i> (P), <i>Munida rugosa</i> (P), small teleosts (P)	CR.MCR.EcCr.FaAlCr.Pom	
NWS_V40	Dense cobbles and boulders with pebbles, especially towards end	Stones encrusted with serpulid worms (P) and <i>Parasmittina trispinosa</i> (O) and supporting <i>Iophon nigricans?</i> (O). <i>Echinus esculentus</i> (C), <i>Asterias rubens</i> (O), Asteroidea sp. (P), teleosts including <i>Labrus mixtus</i> (P)	CR.MCR.EcCr.FaAlCr	
NWS_V40	Waves of coarse sand	No biota discernible	SS.SCS.CCS	
NWS_V41	Soft mud	Mud densely burrowed by <i>Calocaris macandreae</i> (A) and <i>Nephrops norvegicus</i> (C) and supporting <i>Funiculina quadrangularis</i> (F). Shoal of <i>Trachurus trachurus</i> (P), <i>Scylliorhinus</i> sp. (P)	SS.SMu.CFiMu.SpnMeg.Fun	BM FQ
NWS_V42	Soft mud	Good example of the biotope with mud densely burrowed by <i>Calocaris macandreae</i> (A) and <i>Nephrops norvegicus</i> (C) and supporting dense <i>Funiculina quadrangularis</i> (C). <i>Pennatula phosphorea</i> (P), <i>Munida rugosa</i> (O), Asteroidea sp. (P)	SS.SMu.CFiMu.SpnMeg.Fun	BM FQ
NWS_V67	Sandy mud with areas of scattered gravel, pebbles and cobbles	<i>Munida rugosa</i> (F), teleosts (P), <i>Cancer pagurus</i> (P), <i>Liocarcinus</i> sp. (O). More homogeneous substrate areas with megafaunal burrows including <i>Nephrops norvegicus</i> (C); <i>Mesothuria intestinalis</i> (F)	SS.SMu.CFiMu.SpnMeg SS.SMx.CMx	BM
NWS_V68	Sandy mud or muddy sand with patches of scattered gravel, pebbles, cobbles and boulders	<i>Munida rugosa</i> (F), <i>Porania pulvillus</i> (R), teleosts (P). Mixed substrate areas with stones supporting orange bryozoan crusts (R), serpulid worms (R), pink coralline algae (R) and hydroids (R); also <i>Cancer pagurus</i> (P), <i>Liocarcinus</i> sp. (P). More homogeneous substrate areas with megafaunal burrows including <i>Nephrops norvegicus</i> (C) and possible sparse juvenile <i>Funiculina quadrangularis</i> (F)	SS.SMu.CFiMu.SpnMeg SS.SMx.CMx	BM FQ?
NWS_V69	Coarse sand with scattered shells	Patchy maerl bed with <i>Phymatolithon calcareum</i> (C, locally A) supporting a red algal turf (A) and sparse <i>Saccharina latissima</i> (R). <i>Marthasterias glacialis</i> (F), <i>Luidia ciliaris</i> (F), <i>Porania pulvillus</i> (O), small teleosts (P)	SS.SMp.Mrl.Pcal.R	MB

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Site ID	Substrate	Biota	Biotope	PPF/PMF
NWS_V70	Muddy sand with scattered shells	<i>Munida rugosa</i> (F), <i>Cancer pagurus</i> (P), small teleosts (P), sparse burrows, particularly towards the end when habitat becomes transitional	SS.SSa.CMuSa	CMS
NWS_V75	Muddy sand with scatter of gravel, pebbles and cobbles with occasional boulders	<i>Munida rugosa</i> (F), <i>Cancer pagurus</i> (P), <i>Luidia ciliaris</i> (O), Asteroidea spp. (O), <i>Porania pulvillus</i> (O), teleosts (P), <i>Echinus esculentus</i> (O). Stones encrusted with pink coralline algae (P) and possibly support sparse <i>Saccharina latissima</i> (R) and red algae (P). Dense aggregation of <i>Leptometra celtica</i> (A) from 57.908750 deg N -5.402683 deg W (at 07:48:14) to 57.908683 deg N -5.403433 deg W (at 07:49:43) at depths of 40.1 - 36.4 m	SS.SMx.CMx	LA
CS1101	Shelly fine sand with scattered gravel, pebbles and cobbles	Stones encrusted with serpulid worms (P) including <i>Spirobranchus</i> spp. (P), pink coralline algae (R), red algae (R) and <i>Parasmittina trispinosa</i> (R). <i>Munida rugosa</i> (C), <i>Cerianthus lloydii</i> (C), hydroids (R), <i>Turritella communis</i> shells (P, probably unoccupied), <i>Stichastrella rosea?</i> (P), <i>Liocarcinus depurator</i> (P)	SS.SSa	
CS1102	Shelly fine sand with surface scatter of gravel, shells and boulder	<i>Cerianthus lloydii</i> (C), <i>Munida rugosa</i> (F), <i>Cancer pagurus</i> (P), <i>Liocarcinus depurator</i> (P), <i>Ascidia mentula</i> (P), hydroids (R), serpulid worms (P), pink coralline algae (R), <i>Turritella communis</i> shells (P, probably unoccupied), filamentous red algae (R)	SS.SSa	
CS1103	Muddy sand with scattered gravel, pebbles and cobbles	Sediment with small burrows. <i>Turritella communis</i> shells (probably empty), <i>Munida rugosa</i> (C), hydroids (R), Crinoidea sp. (P)	SS.SSa.CMuSa	CMS
CS1104	Shelly, possibly silty, sand with scattered shells, pebbles and cobbles	Sediment with small holes, <i>Cerianthus lloydii</i> (C) and <i>Lanice conchilega</i> (P). Stones supporting serpulid worms (P) and pink coralline algae (R). <i>Turritella communis</i> shells (P, probably unoccupied), <i>Munida rugosa</i> (C)	SS.SSa	
CS1106	Muddy sand with scattered gravel, pebbles, cobbles and boulders	Sediment with small holes and <i>Cerianthus lloydii</i> (F). Stones supporting serpulid worms (P) and <i>Metridium senile?</i> (P). <i>Turritella communis</i> shells, some of which occupied by pagurids (O), <i>Munida rugosa</i> (C), <i>Stichastrella rosea?</i> (P), <i>Porania pulvillus</i> (F), <i>Asterias rubens</i> (P)	SS.SSa.CMuSa	CMS

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Site ID	Substrate	Biota	Biotope	PPF/PMF
CS1107	Silty shelly sand with scattered gravel, pebbles and cobbles	<i>Munida rugosa</i> (C), <i>Turritella communis</i> shells (P, probably unoccupied), <i>Echinus esculentus</i> (P), serpulid worms (P), <i>Liocarcinus depurator</i> (P), hydroids (R), <i>Porella compressa</i> (P)	SS.SSa	
CS1114	Muddy sand with scattered pebbles and cobbles	Sediment with small burrows. <i>Turritella communis</i> shells (probably empty), <i>Munida rugosa</i> (F), serpulid worms (P), <i>Porania pulvillus</i> (F), <i>Pecten maximus?</i> (P)	SS.SSa.CMuSa	CMS
CS1117	Fine, possibly silty, sand with scattered shells and pebbles	<i>Munida rugosa</i> (C), <i>Turritella communis</i> shells (P, probably unoccupied), <i>Echinus esculentus</i> (P), serpulid worms (P)	SS.SSa	
CS1118	Shelly fine sand with scattered pebbles and cobbles	Stones encrusted with <i>Spirobranchus</i> spp. (locally A), pink coralline algae (R) and <i>Parasmittina trispinosa</i> (R). <i>Munida rugosa</i> (C), <i>Porania pulvillus</i> (F), <i>Cerianthus lloydii</i> (C), <i>Turritella communis</i> shells, some of which occupied by pagurids (P)	SS.SSa	
CS1120	Shelly fine sand with scattered gravel, pebbles and cobbles	Stones encrusted with serpulid worms (P) including <i>Spirobranchus</i> spp. (locally A), pink coralline algae (R), red algae (R) and <i>Parasmittina trispinosa</i> (R). <i>Munida rugosa</i> (C), <i>Cerianthus lloydii</i> (C), <i>Lanice conchilega</i> (P), hydroids (R), <i>Turritella communis</i> shells (P, probably unoccupied),	SS.SSa	
CS1123	Shelly fine sand with surface scatter of pebbles	Pebbles encrusted with serpulid worms (P), pink coralline algae (R), red algae (R) and <i>Parasmittina trispinosa</i> (R). <i>Munida rugosa</i> (C), <i>Cerianthus lloydii</i> (C), hydroids (R), <i>Turritella communis</i> shells (P, probably unoccupied), <i>Pecten maximus</i> (F)	SS.SSa	
CS1124	Shelly fine sand	<i>Cerianthus lloydii</i> (C), <i>Munida rugosa</i> (C), <i>Turritella communis</i> shells (P, probably unoccupied)	SS.SSa	
CS1127	Shelly fine sand with scattered gravel, pebbles and cobbles	Sediment supports <i>Cerianthus lloydii</i> (C) and <i>Lanice conchilega</i> (O). Stones encrusted with serpulid worms (P), <i>Balanus balanus</i> (R) and pink coralline algae (R). <i>Turritella communis</i> shells (P, probably all unoccupied), <i>Stichastrella rosea?</i> (P), <i>Liocarcinus depurator</i> (P), <i>Munida rugosa</i> (F)	SS.SSa	

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Site ID	Substrate	Biota	Biotope	PPF/PMF
CS1131	Silty shelly sand with scattered pebbles, cobbles and boulders	Sediment with small holes, <i>Cerianthus lloydii</i> (P) and <i>Lanice conchilega</i> (P). Stones supporting serpulid worms (P), pink coralline algae (R) and orange bryozoans (R). <i>Turritella communis</i> shells (P, probably unoccupied), <i>Munida rugosa</i> (C)	SS.SSa	
CS1137	Shelly muddy sand with scattered gravel, pebbles and cobbles	Sediment with small holes and burrows including <i>Nephrops norvegicus</i> (P, 2 animals seen). <i>Munida rugosa</i> (C), Paguridae sp. (P), serpulid worms (P)	SS.SSa.CMuSa	CMS
CS1140	Dense boulders and cobbles on sand	Stones encrusted with <i>Spirobranchus</i> spp. (A), pink coralline algae (C) and <i>Parasmittina trispinosa</i> (O) and supporting hydroids (O), Acitniaria sp. (P), foliose red algae (O) and clumps of <i>Antedon</i> sp. (C, locally A). <i>Echinus esculentus</i> (C), <i>Munida rugosa</i> (F), <i>Porania pulvillus</i> (F), <i>Asterias rubens</i> (P), <i>Cerianthus lloydii</i> (C)	CR.MCR.EcCr.FaAlCr.Pom	
ULL01	Sand with much broken shell material and whole shells; very sparse cobbles	Sand supporting frequent <i>Pennatula phosphorea</i> , with <i>Asterias rubens</i> (F), <i>Echinus esculentus</i> (F) and small teleosts (P). Cobbles encrusted with pink coralline algae (R) and serpulid worms (R). Some evidence of human refuse including a can and boot	SS.SSa	
ULL01	Scattered cobbles and small boulders and possibly pebbles on muddy sand	Stones encrusted with serpulid worms (C). <i>Echinus esculentus</i> (F), small teleosts (P). Other fauna present but visibility too poor for them to be identified	SS.SMx.CMx	
ULL01	Sandy mud with sparse cobbles and small boulders	Sediment burrowed by <i>Nephrops norvegicus</i> (C) and supporting <i>Funiculina quadrangularis</i> (F) and <i>Pennatula phosphorea</i> (F). Small teleosts (F), <i>Munida rugosa</i> ? (P). Sparse evidence of human refuse including tin can and tyre?	SS.SMu.CFiMu.SpnMeg.Fun	BM FQ
ULL02	Sandy mud with sparse cobbles and boulders	Sediment burrowed by <i>Nephrops norvegicus</i> (C) and supporting <i>Funiculina quadrangularis</i> (F, locally C) and <i>Pennatula phosphorea</i> (F, locally C). Teleosts (F), <i>Munida rugosa</i> (O), Brachyura spp. (O). Stones encrusted with serpulid worms (P) and supporting <i>Echinus esculentus</i> (O). Sparse evidence of human refuse including occasional tyres	SS.SMu.CFiMu.SpnMeg.Fun	BM FQ
ULL02	Sandy mud with gravel, pebbles, cobbles and boulders	Sediment with <i>Pennatula phosphorea</i> (O). Stones with serpulid worms (P) and apparently Crinoidea sp. (P). <i>Munida rugosa</i> (F), Brachyura sp. (P)	SS.SMx.CMx	

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Site ID	Substrate	Biota	Biotope	PPF/PMF
ULL02	Sandy mud with occasional cobbles	Sediment burrowed by <i>Nephtys norvegicus</i> (P) and supporting <i>Funiculina quadrangularis</i> (P) and <i>Pennatula phosphorea</i> (F). <i>Munida rugosa</i> (F). Stones support sparse hydroid clumps (R)	SS.SMu.CFiMu.SpMmeg.Fun	BM FQ
ULL02	Mixed muddy sediment with scattered gravel, pebbles, cobbles and boulders	Stones encrusted with serpulid worms and support <i>Echinus esculentus</i> (F) and Crinoidea sp.? (R). <i>Pennatula phosphorea</i> (O), <i>Asterias rubens</i> ? (O), <i>Munida rugosa</i> (F), <i>Brachyura</i> sp. (P), <i>Porania pulvillus</i> (P). Some apparently jettisoned ironwork.	SS.SMx.CMx	
ULL03	Shelly sandy mud with occasional cobbles and shells	Lightly burrowed sediment including burrows of <i>Nephtys norvegicus</i> (F, 1 animal seen). <i>Pennatula phosphorea</i> (F), <i>Funiculina quadrangularis</i> (O), <i>Echinus esculentus</i> (O), teleosts (O), <i>Munida rugosa</i> (F), <i>Brachyura</i> spp. (O) including <i>Liocarcinus</i> sp. (P), <i>Aequipecten opercularis</i> (R). Stones encrusted with pink coralline algae (R) and serpulid worms (R). One tyre observed.	SS.SMu.CFiMu.SpMmeg.Fun	BM FQ
ULL03	Muddy sediment with fairly dense cover of gravel, pebbles and cobbles	Stones encrusted with serpulid worms (C). <i>Echinus esculentus</i> (F), <i>Munida rugosa</i> (F), small teleosts (O), <i>Porania pulvillus</i> (P), <i>Aequipecten opercularis</i> ? (P), <i>Crossaster papposus</i> ? (P)	SS.SMx.CMx	
WOL37	Rippled fine-medium sand	Asteroidea sp. (R)	SS.SSa.CFiSa	
WOL38	Patchwork of habitats including waves of coarse sand, areas of rippled fine sand, and patches of gravel, pebbles, cobbles and boulders on sand with some dense patches of cobbles and boulders	Rock supports encrusting fauna of serpulid worms (P) and <i>Parasmittina trispinosa</i> (R), with <i>Echinus esculentus</i> (C), <i>Alcyonium digitatum</i> (R), <i>Caryophyllia smithii</i> (locally F), hydroids (P), <i>Urticina felina</i> (O), <i>Stichastrella rosacea</i> ? (R), <i>Polymastia boletiformis</i> ? (P) and <i>Porania pulvillus</i> ? (P). <i>Flustra foliacea</i> clumps (P) in mixed areas of stones and sand. Teleost sp. (R). <i>Pecten maximus</i> (R) on rippled sand. <i>Luidia ciliaris</i> (O)	CR.MCR.EcCr.FaAICr SS.SMx.CMx.FluHyd SS.SSa.CFiSa SS.SCS.CCS	
WOL39	Slightly rippled silty fine sand	No life discernible	SS.SSa.CFiSa	
WOL40	Medium sand with very sparse cobbles and boulders	Sediment with <i>Luidia ciliaris</i> (P), <i>Astropecten irregularis</i> ? (R) and Ophiuroidea sp.? (R). Stones with serpulid worms (R), <i>Parasmittina trispinosa</i> (R), <i>Alcyonium digitatum</i> (R), <i>Polymastia boletiformis</i> (R) and <i>Urticina felina</i> (R)	SS.SSa.CFiSa	

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Site ID	Substrate	Biota	Biotope	PPF/PMF
WOL41	Gravel, pebbles, cobbles and boulders on sand with patches of dense cobbles and boulders	Stones with serpulid worms (C) including <i>Spirobranchus</i> spp. (P), <i>Parasmittina trispinosa</i> (R, locally O), hydroids (P), <i>Flustra foliacea</i> (P), <i>Porella compressa</i> (P) and <i>Polymastia boletiformis?</i> (P). <i>Echinus esculentus</i> (F), <i>Luidia ciliaris</i> (O), <i>Stichastrella rosea?</i> (R), <i>Porania pulvillus</i> (P), <i>Chelidonichthys cuculus</i> (O), teleost spp. indet. (R), <i>Scyliorhinus</i> sp. (P)	SS.SMx.CMx.FluHyd CR.MCR.EcCr.FaAlCr	
WOL42	Slightly silty fine-medium sand with scattered gravel, pebbles, cobbles and boulders in places	Stones with serpulid worms (O), <i>Parasmittina trispinosa</i> (R), <i>Urticina felina?</i> (O), hydroids (R), <i>Polymastia boletiformis?</i> (P), <i>Salmacina dysteri/Filograna implexa?</i> (R) and yellow sponge? (R). Pleuronectiformes sp. (R), <i>Raja naevus</i> (P), <i>Echinus esculentus</i> (R), Asteroidea spp. indet. (R), <i>Asterias rubens</i> (R), <i>Luidia ciliaris</i> (P), <i>Porania pulvillus</i> (P)	SS.SSa.OSa SS.SMx.CMx	
WOL43	Silty fine sand with very sparse pebbles, cobbles and boulders	Sediment with small holes. <i>Luidia ciliaris</i> (P), <i>Astropecten irregularis</i> (R), Asteroidea spp. indet. (R), teleosts (R)	SS.SSa.OSa	
WOL44	Silty fine sand with occasional cobbles and boulders	Sediment with small holes and infaunal tubes. <i>Luidia ciliaris</i> (P), <i>Astropecten irregularis</i> (R), Asteroidea spp. indet. (R), <i>Cancer pagurus</i> (P), <i>Porania pulvillus</i> (R). Hydroid/bryozoan patches on stones (R)	SS.SSa.OSa	
WOL45	Mostly dense cobbles and boulders but patches of more mixed sand with pebbles and cobbles	Stones encrusted with serpulid worms (C) including <i>Spirobranchus</i> spp. (C, locally A), <i>Parasmittina trispinosa</i> (O), red bryozoans (R) and <i>Hymedesmia paupertas</i> (R), with other sessile forms including hydroids (R) including <i>Nemertesia antennina</i> , and <i>Porella compressa</i> (C, at least locally). <i>Echinus esculentus</i> (F), <i>Luidia ciliaris</i> (F), <i>Stichastrella rosea</i> (R), <i>Porania pulvillus</i> (P), <i>Asterias rubens</i> (P), Asteroidea spp. indet. (R)	CR.MCR.EcCr.FaAlCr.Pom SS.SMx.CMx	

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Site ID	Substrate	Biota	Biotope	PPF/PMF
WOL46	Patchwork of largely mixed substrata with areas of mixed sediment waves (silty sand with gravel and pebbles, with boulders, cobbles, pebbles and shells in troughs), fine-medium sand patches, and sand with varying concentrations of scattered pebbles, cobbles and boulders including areas of dense cobbles and boulders	Stones encrusted with serpulid worms (P), <i>Parasmittina trispinosa</i> (R), red bryozoans (R) and <i>Hymedesmia paupertas</i> (R), with other sessile forms including <i>Flustra foliacea</i> (P), <i>Polymastia boletiformis</i> (O, locally F) and <i>Porella compressa</i> (C, at least locally). <i>Echinus esculentus</i> (F), <i>Luidia ciliaris</i> (O), <i>Stichastrella rosea</i> (O), <i>Porania pulvillus</i> (P), Asteroidea spp. indet. (P), <i>Cancer pagurus</i> (P), <i>Calliostoma zizyphinum?</i> (P), Buccinidae sp.? (P)	SS.SMx.CMx SS.SMx.CMx.FluHyd CR.MCR.EcCr.FaAICr SS.SSa.CFiSa	
WOL47	Silty mixed sediment, apparently in waves locally, with scattered shells, cobbles and boulders	Stones with hydroid/bryozoan turf (R). <i>Marthasterias glacialis</i> (P), <i>Asterias rubens?</i> (P), Pleuronectidae sp. (P), infaunal tubes (P)	SS.SMx.CMx	
WOL48	Medium sand with very sparse cobbles and boulders	Stones with <i>Alcyonium digitatum</i> (R). Pleuronectiformes spp. (O), <i>Scyliorhinus</i> sp.? (P)	SS.SSa.CFiSa	
WOL49	Slightly silty rippled fine sand with patches of scattered gravel, pebbles, cobbles and boulders, dense in places	Stones encrusted with serpulid worms (C), <i>Parasmittina trispinosa</i> (R), red bryozoans (R), with other sessile forms including <i>Flustra foliacea</i> (P), <i>Securiflustra securifrons?</i> (P), hydroids (P), <i>Polymastia boletiformis?</i> (P), <i>Salmacina dysteri/Filograna implexa</i> (R), Porifera sp. (P) and <i>Urticina felina?</i> (P). <i>Echinus esculentus</i> (F), <i>Luidia ciliaris</i> (O), <i>Porania pulvillus</i> (O), <i>Asterias rubens</i> (O), <i>Calliostoma zizyphinum?</i> (P)	SS.SSa.CFiSa SS.SMx.CMx.FluHyd CR.MCR.EcCr.FaAICr	

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Site ID	Substrate	Biota	Biotope	PPF/PMF
WOL50	Fine-medium sand, rippled in places, with patches of scattered gravel, pebbles, cobbles and boulders, dense in places	Stones encrusted with serpulid worms (C), <i>Parasmittina trispinosa</i> (R, locally O), red bryozoans (R), with other sessile forms including <i>Flustra foliacea</i> (P), <i>Securiflustra securifrons</i> (P), <i>Porella compressa</i> (P), hydroids (P), <i>Polymastia boletiformis?</i> (P), <i>Caryophyllia smithii</i> (locally C) and <i>Urticina felina?</i> (P). <i>Echinus esculentus</i> (F), <i>Luidia ciliaris</i> (O), <i>Porania pulvillus</i> (P), Asteroidea spp. (P), patches of <i>Ophiocomina nigra</i> (locally A), <i>Pecten maximus</i> (P)	SS.SSa.CFiSa SS.SMx.CMx.FluHyd CR.MCR.EcCr.FaAlCr SS.SMx.CMx.OphMx	
WOL51	Fine-medium sand, apparently faintly rippled at least in places	Sparse visible life. Asteroidea sp. (R), Pleuronectiformes sp. (P)	SS.SSa.CFiSa	
WOL52	Scattered gravel, pebbles, cobbles and boulders, dense in places, on sand	Sparse ophiuroid bed with still photos indicating abundant <i>Ophiocomina nigra</i> . Stones encrusted with serpulid worms (C) and <i>Parasmittina trispinosa</i> (R, locally O), and with hydroid/bryozoan clumps (R) and <i>Porella compressa</i> (P). <i>Echinus esculentus</i> (F), <i>Luidia ciliaris</i> (F), <i>Porania pulvillus</i> (P), Asteroidea spp. (P), <i>Cancer pagurus</i> (O), <i>Trigla lucerna?</i> (P)	SS.SMx.CMx.OphMx	
WOL52	Rippled fine sand	No life visible	SS.SSa.CFiSa	
WOL52	Waves of medium-coarse sand with gravel in troughs and scattered pebbles and cobbles	<i>Trigla lucerna?</i> (P)	SS.SCS.CCS	
WOL52	Fine-medium sand	<i>Pecten maximus</i> (O)	SS.SSa.CFiSa	
WOL53	Scattered gravel, pebbles, cobbles and boulders, dense in places, on sand	Stones encrusted with serpulid worms (C), <i>Parasmittina trispinosa</i> (R), red bryozoans (R) and <i>Hymedesmia paupertas</i> (R), with other sessile forms including <i>Flustra foliacea</i> (P), <i>Securiflustra securifrons</i> (P), <i>Porella compressa</i> (locally C), hydroids (P), <i>Polymastia boletiformis</i> (P), cream digitiform sponge (P), <i>Caryophyllia smithii</i> (locally F) and <i>Urticina felina?</i> (P). <i>Echinus esculentus</i> (F), <i>Stichastrella rosea</i> (O), <i>Luidia ciliaris</i> (F), <i>Porania pulvillus</i> (P), <i>Asterias rubens</i> (P), <i>Crossaster papposus</i> (P), <i>Ophiocomina nigra</i> (P), teleost sp. (P)	SS.SMx.CMx.FluHyd CR.MCR.EcCr.FaAlCr	
WOL54	Faintly rippled fine-medium sand	Asteroidea sp. (R)	SS.SSa.CFiSa	

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Site ID	Substrate	Biota	Biotope	PPF/PMF
WOL54	Scattered gravel, pebbles, cobbles and boulders on sand with patch of rippled fine-medium sand	Stones encrusted with serpulid worms (C) and <i>Parasmittina trispinosa</i> (R) and with <i>Porella compressa</i> (P) and patches of <i>Flustra foliacea</i> (P). <i>Echinus esculentus</i> (F), Asteroidea sp. (P), <i>Crossaster papposus</i> (P), teleost sp. (P), <i>Scyliorhinus</i> sp. (P)	SS.SMx.CMx.FluHyd SS.SSa.CFiSa	
WOL55	Rippled fine sand with patches of scattered gravel, pebbles, cobbles and sparse boulders on sand	Stones encrusted with serpulid worms (F) and supporting <i>Polymastia boletiformis</i> (O, locally F), <i>Flustra foliacea</i> (P) and <i>Urticina felina?</i> (P). <i>Echinus esculentus</i> (O), <i>Porania pulvillus</i> (O), <i>Pecten maximus</i> (P)	SS.SSa.CFiSa SS.SMx.CMx.FluHyd	
WOL56	Medium sand	No sediment biota observed	SS.SSa.CFiSa	
WOL57	Scattered gravel, pebbles, cobbles and occasional boulders on medium sand	Stones encrusted with serpulid worms (P) and <i>Parasmittina trispinosa</i> (R) and with <i>Polymastia boletiformis</i> (O) and bryozoan clumps (O) including <i>Flustra foliacea</i> (P) and <i>Securiflustra securifrons?</i> (P). <i>Echinus esculentus</i> (O), <i>Porania pulvillus</i> (R), <i>Solaster endeca?</i> (R), <i>Stichastrella rosea</i> (R), <i>Cancer pagurus</i> (O), <i>Trigla lucerna?</i> (R), <i>Pecten maximus</i> (O)	SS.SMx.CMx.FluHyd	
WOL58	Cobbles and boulders on sand with pebbles and gravel	Sparse ophiuroid bed with still photos indicating abundant <i>Ophiocomina nigra</i> . Stones encrusted with serpulid worms (C), <i>Parasmittina trispinosa</i> (O) and red bryozoans (R), and with <i>Polymastia boletiformis</i> (R) and <i>Urticina felina?</i> (P). <i>Echinus esculentus</i> (F), <i>Luidia ciliaris</i> (O), <i>Asterias rubens</i> (P), <i>Stichastrella rosea</i> (P), Asteroidea sp. (P), <i>Chaetopterus variopedatus</i> (P), teleost sp. (R)	SS.SMx.CMx.OphMx	
WOL59	Cobbles, pebbles and gravel on sand	Stones encrusted with serpulid worms (C), <i>Parasmittina trispinosa</i> (O) and red bryozoans (R) and with <i>Polymastia boletiformis</i> (P) and bryozoan clumps (P) including <i>Flustra foliacea</i> . <i>Echinus esculentus</i> (F), <i>Porania pulvillus</i> (P), <i>Crossaster papposus</i> (O). <i>Ophiocomina nigra</i> abundant in patches	SS.SMx.CMx.FluHyd SS.SMx.CMx.OphMx	
WOL59	Waves of coarse sand with gravel, pebbles and occasional cobbles in troughs	Sparse bryozoan clumps (R) including <i>Flustra foliacea</i>	SS.SCS.CCS	

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Site ID	Substrate	Biota	Biotope	PPF/PMF
WOL59	Scattered gravel, pebbles and cobbles on sand	Bryozoan clumps (O) including <i>Flustra foliacea</i> (P), serpulid worms (P), <i>Urticina</i> sp. (R), <i>Echinus esculentus</i> (P), <i>Pecten maximus</i> (P), Rajidae sp. (P), <i>Ophiocomina nigra</i> (P)	SS.SMx.CMx.FluHyd	
WOL59	Rippled fine sand	<i>Urticina felina?</i> (R)	SS.SSa.CFiSa	
WOL59	Cobbles, pebbles and gravel on sand	Stones encrusted with serpulid worms (A), <i>Parasmittina trispinosa</i> (O) and red bryozoans (R) and with <i>Urticina felina?</i> (P). <i>Echinus esculentus</i> (F), <i>Ophiocomina nigra</i> (A), <i>Luidia ciliaris</i> (P)	SS.SMx.CMx.OphMx	
WMO57	Highly patchy substrate with varying concentrations of gravel, pebbles, cobbles and boulders on medium sand, areas of denser cobbles and boulders and scoured bedrock and patches of coarse sand and gravel waves	Rock surfaces encrusted with serpulid worms including <i>Spirobranchus</i> spp. (locally A), <i>Parasmittina trispinosa</i> (R) and red bryozoans (R) and supporting patches of hydroids (P) and bryozoans including <i>Flustra foliacea</i> (locally O) and <i>Securiflustra securifrons?</i> (P), <i>Polymastia boletiformis</i> (locally O), <i>Urticina</i> sp. (P), <i>Alcyonium digitatum</i> (R) and <i>Porella compressa</i> (P). <i>Echinus esculentus</i> (F), <i>Luidia ciliaris</i> (O), <i>Stichastrella rosea</i> (O), <i>Asterias rubens</i> (P), <i>Scyliorhinus</i> sp. (P), <i>Callionymus</i> sp.? (P), teleost sp. indet. (R), <i>Mundida rugosa</i> (P)	SS.SMx.CMx.FluHyd CR.MCR.EcCr.FaAlCr.Flu SS.SSa.CFiSa SS.SCS.CCS	
WMO58	Patchy substrate with varying concentrations of gravel, pebbles, cobbles and boulders on medium sand and areas of medium and medium-coarse sand in waves with stones and shell material in troughs	Stones encrusted with serpulid worms (P) and bryozoans (R) and supporting patches of hydroids (P) including <i>Nemertesia ramosa</i> (P) and bryozoans including <i>Flustra foliacea</i> (locally F) and <i>Securiflustra securifrons</i> (P), <i>Polymastia boletiformis</i> (locally F), <i>Caryophyllia smithii</i> (locally F), <i>Urticina felina</i> (P) and <i>Alcyonium digitatum</i> (R). <i>Echinus esculentus</i> (F), <i>Luidia ciliaris</i> (P), <i>Stichastrella rosea</i> (R), <i>Crossaster papposus?</i> (R), <i>Pecten maximus?</i> (P), Asteroidea sp. indet. (P), teleost sp. indet. (R)	SS.SMx.CMx.FluHyd SS.SSa.CFiSa SS.SCS.CCS	
WMO59	Waves of medium-coarse sand with shell material and pebbles in troughs	Sparse visible biota associated with sediment. <i>Asterias rubens</i> (R). Dense salp strings in water column during camera descent	SS.SCS.CCS	

## Annex 3

Site ID	Substrate	Biota	Biotope	PPF/PMF
WMO60	Dense boulders and cobbles	Stones encrusted with serpulid worms (C, locally A) including <i>Spirobranchus</i> spp. (P), <i>Parasmittina trispinosa</i> (O), red bryozoans (R) and <i>Hymedesmia paupertas</i> (R) and supporting patches of hydroids (P) and bryozoans (F) including <i>Flustra foliacea</i> (locally F) and <i>Securiflustra securifrons</i> (locally F), <i>Caryophyllia smithii</i> (locally F) and <i>Porella compressa</i> (P). <i>Echinus esculentus</i> (C), <i>Luidia ciliaris</i> (P), <i>Stichastrella rosea</i> (O), teleost spp. indet. (O), <i>Calliostoma zizyphinum</i> (P). Salps in water column	CR.MCR.EcCr.FaAlCr.Flu	
WMO60	Scattered gravel, pebbles, cobbles and boulders on sand	Stones encrusted with serpulid worms (locally A) including <i>Spirobranchus</i> spp. (P), <i>Parasmittina trispinosa</i> (R) and red bryozoans (R) and supporting patches of hydroids (P) and bryozoans (F) including <i>Flustra foliacea</i> and <i>Securiflustra securifrons</i> , <i>Polymastia boletiformis</i> (P), <i>Caryophyllia smithii</i> (P), <i>Urticina</i> sp. (P) and <i>Alcyonium digitatum</i> (R). <i>Echinus esculentus</i> (F), <i>Stichastrella rosea</i> (R), <i>Porania pulvillus</i> (P), <i>Pecten maximus?</i> (P), <i>Asteroidea</i> sp. indet. (P), teleost sp. indet. (R), <i>Callionymus lyra?</i> (P), <i>Palliolum</i> sp.? (P), <i>Lanice conchilega</i> (P)	SS.SMx.CMx.FluHyd	
WMO61	Waves of medium sand with gravel, pebbles and occasional cobbles in troughs and patches of gravel	Larger stones encrusted with serpulid worms (R), <i>Parasmittina trispinosa</i> (R) and red bryozoans (R) and supporting sparse <i>Flustra foliacea</i> (R), <i>Polymastia boletiformis</i> (R), <i>Urticina</i> sp. (R) and <i>Alcyonium digitatum</i> (R). <i>Echinus esculentus</i> (P), <i>Luidia ciliaris</i> (F), <i>Porania pulvillus</i> (R), Paguridae sp.(R), <i>Trigla lucerna?</i> (R)	SS.SCS.CCS	
WMO61	Waves of medium sand with gravel, pebbles in troughs interrupted by patches of scattered gravel, pebbles, cobbles and boulders on sand, with dense cobbles and boulders in places	Stones encrusted with serpulid worms (locally A) including <i>Spirobranchus</i> spp. (P), <i>Parasmittina trispinosa</i> (R) and red bryozoans (R) and supporting patches of bryozoans (locally C) including <i>Flustra foliacea</i> (P) and <i>Securiflustra securifrons</i> (P), <i>Polymastia boletiformis</i> (P), <i>Caryophyllia smithii</i> (P) and <i>Urticina</i> sp. (P). <i>Echinus esculentus</i> (C), <i>Stichastrella rosea</i> (P), <i>Porania pulvillus</i> (R), <i>Asteroidea</i> spp. indet. (P), <i>Munida rugosa</i> (R)	SS.SCS.CCS SS.SMx.CMx.FluHyd CR.MCR.EcCr.FaAlCr.Flu	

## Annex 3

Site ID	Substrate	Biota	Biotope	PPF/PMF
WMO62	Waves of medium sand with gravel, pebbles in troughs interrupted by patches of scattered gravel, pebbles, cobbles and boulders on sand	Stones encrusted with serpulid worms (P) including <i>Spirobranchus</i> spp., <i>Parasmittina trispinosa</i> (R) and red bryozoans (R) and supporting patches of hydroids (P) and bryozoans (F) including <i>Flustra foliacea</i> (P) and <i>Securiflustra securifrons</i> (P), <i>Polymastia boletiformis</i> (O), <i>Caryophyllia smithii</i> (P), <i>Metridium senile</i> (R) and <i>Urticina</i> sp. (O). <i>Echinus esculentus</i> (F), <i>Stichastrella rosea</i> (R), <i>Luidia ciliaris</i> (O), <i>Chaetopterus variopedatus?</i> (P)	SS.SCS.CCS SS.SMx.CMx.FluHyd	
WMO63	Waves of medium-coarse sand with gravel and pebbles in troughs interrupted by patches of scattered gravel, pebbles, cobbles and boulders on sand	Stones encrusted with serpulid worms (P) including <i>Spirobranchus</i> spp., <i>Parasmittina trispinosa</i> (R) and red bryozoans (R) and supporting patches of hydroids (P) and bryozoans (F) including <i>Flustra foliacea</i> (P) and <i>Securiflustra securifrons</i> (P), <i>Alcyonium digitatum</i> (R, locally O), <i>Axinella infundibuliformis</i> (R), <i>Polymastia boletiformis</i> (O), <i>Caryophyllia smithii</i> (P) and <i>Urticina</i> sp. (O). <i>Echinus esculentus</i> (F), <i>Stichastrella rosea</i> (O), <i>Luidia ciliaris</i> (F), <i>Porania pulvillus</i> (P), <i>Crossaster papposus?</i> (P), <i>Munida rugosa</i> (P), teleost sp. (R), <i>Calliostoma zizyphinum?</i> (P), <i>Labrus mixtus</i> (P)	SS.SCS.CCS SS.SMx.CMx.FluHyd	
WMO64	Scattered gravel, pebbles, cobbles and boulders on sand, with areas of dense cobbles and boulders and flat bedrock	Rock surfaces encrusted with serpulid worms (locally A) including <i>Spirobranchus</i> spp., <i>Parasmittina trispinosa</i> (R) and red bryozoans (R) and supporting patches of hydroids (P) including <i>Nemertesia antennina</i> and bryozoans including <i>Flustra foliacea</i> (locally F), <i>Polymastia boletiformis</i> (locally O), <i>Urticina</i> sp. (O) and <i>Alcyonium digitatum</i> (R). <i>Echinus esculentus</i> (F), <i>Luidia ciliaris</i> (O), <i>Stichastrella rosea</i> (O), <i>Crossaster papposus</i> (R), <i>Asterias rubens</i> (O), <i>Porania pulvillus</i> (P), <i>Asteroidea</i> spp. indet. (O), <i>Trigla lucerna?</i> (P), <i>Mundida rugosa</i> (P)	SS.SMx.CMx.FluHyd CR.MCR.EcCr.FaAICr.Flu	
WMO65	Scattered gravel, pebbles, cobbles and boulders on sand, with areas of dense cobbles and boulders and waves of medium sand with cobbles in troughs towards end of run	Stones encrusted with serpulid worms (locally A) including <i>Spirobranchus</i> spp., <i>Parasmittina trispinosa</i> (R), red bryozoans (R) and <i>Hymedesmia paupertas</i> (R), and supporting patches of hydroids and bryozoans (O) including <i>Flustra foliacea</i> (P) and <i>Securiflustra securifrons</i> (P), <i>Polymastia boletiformis</i> (locally O), <i>Urticina</i> sp. (O), <i>Axinella infundibuliformis</i> (R) and <i>Caryophyllia smithii</i> (locally C). <i>Echinus esculentus</i> (F, locally C), <i>Luidia ciliaris</i> (O), <i>Stichastrella rosea</i> (O), <i>Porania pulvillus</i> (O), <i>Asteroidea</i> spp. indet. (O), <i>Mundida rugosa</i> (P), teleost spp. indet. (R), <i>Labrus mixtus</i> (P), <i>Calliostoma zizyphinum</i> (P)	SS.SMx.CMx.FluHyd CR.MCR.EcCr.FaAICr.Flu SS.SCS.CCS	

## Annex 3

Site ID	Substrate	Biota	Biotope	PPF/PMF
WMO66	Waves of medium sand and possibly coarse sand and gravel locally, with gravel, pebbles, cobbles and occasional boulders in troughs and scattered over areas of flat sand, with small patches of slightly rippled fine-medium sand	Stones encrusted with serpulid worms (locally A) including <i>Spirobranchus</i> spp., <i>Parasmittina trispinosa</i> (R) and red bryozoans (R), and supporting patches of hydroids and bryozoans (P) including <i>Flustra foliacea</i> and <i>Securiflustra securifrons</i> , <i>Polymastia boletiformis</i> (P) and <i>Urticina</i> sp. (O). <i>Echinus esculentus</i> (F), <i>Luidia ciliaris</i> (O), <i>Stichastrella rosea</i> (R), <i>Porania pulvillus</i> (P), <i>Marthasterias glacialis</i> (P), Asteroidea spp. indet. (P), <i>Munida rugosa</i> (P)	SS.SCS.CCS SS.SMx.CMx.FluHyd SS.SSa.CFiSa	
WMO67	Waves of medium sand with gravel, pebbles and occasional cobbles in troughs and scattered over areas of flat sand	Stones encrusted with serpulid worms (P), <i>Parasmittina trispinosa</i> (R) and red bryozoans (R), and supporting patches of hydroids and bryozoans (O) including <i>Flustra foliacea</i> , <i>Polymastia boletiformis</i> (R) and <i>Urticina</i> sp. (O). <i>Echinus esculentus</i> (P), <i>Asterias rubens</i> (P), <i>Pecten maximus</i> (P), infaunal tubes (P)	SS.SCS.CCS SS.SMx.CMx.FluHyd	
WMO68	Gravel, pebbles, cobbles and occasional boulders on medium sand	Stones encrusted with serpulid worms (P) including <i>Spirobranchus</i> spp., <i>Parasmittina trispinosa</i> (R) and red bryozoans (R), and supporting patches of hydroids (P) including <i>Nemertesia antennina</i> , and bryozoans (O) including <i>Flustra foliacea</i> , <i>Polymastia boletiformis</i> (P) and <i>Urticina</i> sp. (O). <i>Echinus esculentus</i> (F), <i>Luidia ciliaris</i> (O), <i>Stichastrella rosea</i> (O), <i>Porania pulvillus</i> (O), <i>Crossaster papposus</i> (P), <i>Munida rugosa</i> (P), <i>Pecten maximus</i> (O), <i>Aequipecten opercularis</i> ? (R), Paguridae spp. indet. (R), infaunal tubes (P) including <i>Chaetopterus variopedatus</i>	SS.SMx.CMx.FluHyd	
WMO69	Dense boulders and cobbles	Stones encrusted with serpulid worms (C, locally A) including <i>Spirobranchus</i> spp., <i>Parasmittina trispinosa</i> (R), red bryozoans (R), pink coralline algae (R) and <i>Hymedesmia paupertas</i> (R), and supporting sparse hydroids (R) and <i>Urticina</i> sp. (R). <i>Echinus esculentus</i> (F), <i>Luidia ciliaris</i> (O), <i>Stichastrella rosea</i> (O), <i>Porania pulvillus</i> (O), <i>Crossaster papposus</i> (P), <i>Asterias rubens</i> (P), <i>Munida rugosa</i> (P), <i>Calliostoma zizyphinum</i> (P). <i>Caryophyllia smithii</i> is common in some areas	CR.MCR.EcCr.FaAICr CR.MCR.EcCr.FaAICr.Car	

## Annex 3

Site ID	Substrate	Biota	Biotope	PPF/PMF
WMO70	Mixed stony substrate of dense cobbles and boulders with gravel and pebbles and small patches of coarse sand	Stones encrusted with serpulid worms (C) including <i>Spirobranchus</i> spp., <i>Parasmittina trispinosa</i> (R) and red bryozoans (R) and supporting sparse hydroids (P). <i>Echinus esculentus</i> (C), <i>Munida rugosa</i> (P). <i>Caryophyllia smithii</i> is frequent locally	CR.MCR.EcCr.FaAlCr	
WMO71	Mostly dense boulders and cobbles with sand infill and small sand patches	Stones encrusted with serpulid worms (A) including <i>Spirobranchus</i> spp., <i>Parasmittina trispinosa</i> (O) and red bryozoans (O) and supporting sparse hydroids (R), Ascidiacea spp. (P), <i>Axinella infundibuliformis</i> (R) and <i>Urticina</i> sp.? (R). <i>Echinus esculentus</i> (C), <i>Luidia ciliaris</i> (P), <i>Stichastrella rosea</i> (O), <i>Porania pulvillus</i> (O), <i>Crossaster papposus</i> (P), <i>Asterias rubens</i> (P), Asteroidea spp. indet. (O), <i>Munida rugosa</i> (P), <i>Chaetopterus variopedatus</i> (P), <i>Callionymus lyra</i> and <i>Labrus mixtus</i> (P)	CR.MCR.EcCr.FaAlCr.Pom	
WMO72	Rippled fine sand	No photos. Only visible life teleost sp. (P)	SS.SSa.CFiSa	
WMO72	Smooth bedrock, partially sand-dusted, and with stepped platforms in places and boulder areas	Rock encrusted with pink coralline algae (F) and supporting foliose red algae (R) and <i>Alcyonium digitatum</i> , generally rare but very dense (S) on some verticals. <i>Echinus esculentus</i> (C), Labridae sp. (P)	CR.MCR.EcCr.FaAlCr CR.MCR.EcCr.FaAlCr.Adig	
WMO73	Rippled fine sand	No photos. No visible life	SS.SSa.CFiSa	
WMO73	Flat, smooth, creviced, stepped bedrock, partially sand-dusted with some boulder patches	Rock encrusted with pink coralline algae (F) and supporting foliose red algae (R), orange encrusting sponge? (R) and <i>Alcyonium digitatum</i> , generally rare but some small dense patches. <i>Echinus esculentus</i> (C), shoal of small teleosts	CR.MCR.EcCr.FaAlCr	
WMO73	Flat, smooth, stepped bedrock	Rock encrusted with pink coralline algae (F) and <i>Parasmittina trispinosa</i> ? (R) and supporting small <i>Laminaria hyperborea</i> (F), foliose red algae (C), <i>Cliona celata</i> (R) and patchy <i>Alcyonium digitatum</i> (R overall). <i>Echinus esculentus</i> (O)	IR.MIR.KR.Lhyp.Pk	

## Annex 3

Site ID	Substrate	Biota	Biotope	PPF/PMF
WMO74	Mostly dense cobbles and boulders with sand infill, but also patches of scattered gravel, pebbles and cobbles on medium sand	Stones encrusted with serpulid worms (C, locally A) including <i>Spirobranchus</i> spp., <i>Parasmittina trispinosa</i> (O), red bryozoans (R), an orange sponge? (R) and pink coralline algae (R), and supporting sparse hydroids (R), <i>Porella compressa</i> ? (R), Ascidiacea spp. (P), a yellow digitiform sponge (R), <i>Axinella infundibuliformis</i> (R), <i>Urticina</i> sp.? (R) and patches of <i>Caryophyllia smithii</i> (locally F-A). <i>Echinus esculentus</i> (C), <i>Luidia ciliaris</i> (O), <i>Stichastrella rosea</i> (F), <i>Porania pulvillus</i> (O), <i>Crossaster papposus</i> (P), <i>Labrus mixtus</i> (P) and teleost sp. indet. (R)	CR.MCR.EcCr.FaAICr CR.MCR.EcCr.FaAICr.Pom CR.MCR.EcCr.FaAICr.Car SS.SMx.CMx	
WMO75	Dense cobbles and boulders, areas of scattered gravel, pebbles, cobbles and boulders on sand and patches of coarse sand and slightly rippled fine sand	Stones encrusted with serpulid worms (C, locally A) including <i>Spirobranchus</i> spp., <i>Parasmittina trispinosa</i> (R), red bryozoans (R) and pink coralline algae (R), and supporting sparse hydroids (R), <i>Flustra foliacea</i> (R), <i>Balanus balanus</i> (R), <i>Polymastia boletiformis</i> (R), <i>Axinella infundibuliformis</i> ? (R), <i>Urticina</i> sp. (O) and patches of <i>Caryophyllia smithii</i> (locally C). <i>Echinus esculentus</i> (C), <i>Luidia ciliaris</i> (O), <i>Stichastrella rosea</i> (O), <i>Porania pulvillus</i> (R), <i>Crossaster papposus</i> (R), <i>Munida rugosa</i> (P), Paguridae sp. (P), <i>Calliostoma zizyphinum</i> (P), infaunal tubes (P), teleost spp. indet. (R)	CR.MCR.EcCr.FaAICr.Pom CR.MCR.EcCr.FaAICr.Car SS.SMx.CMx.FluHyd SS.SSa.CFiSa SS.SCS.CCS	
WMO76	Dense cobbles and boulders and areas of more scattered gravel, pebbles, cobbles and boulders on sand	Stones encrusted with serpulid worms (C, locally A) including <i>Spirobranchus</i> spp., <i>Parasmittina trispinosa</i> (R), red bryozoans (O), <i>Hymedesmia paupertas</i> (R) and pink coralline algae (R), and supporting sparse hydroids (R), <i>Flustra foliacea</i> (R), <i>Porella compressa</i> (R), <i>Axinella infundibuliformis</i> ? (R), <i>Urticina</i> sp. (R) and patches of <i>Caryophyllia smithii</i> (locally C). <i>Echinus esculentus</i> (C), <i>Luidia ciliaris</i> (P), <i>Stichastrella rosea</i> (O), <i>Porania pulvillus</i> (R), <i>Crossaster papposus</i> (R), <i>Asterias rubens</i> (O), <i>Munida rugosa</i> (P), <i>Calliostoma zizyphinum</i> (P), <i>Chaetopterus variopedatus</i> (P)	CR.MCR.EcCr.FaAICr.Pom CR.MCR.EcCr.FaAICr.Car SS.SMx.CMx.FluHyd	
WMO77	Waves of medium? sand with shell gravel and scattered stone gravel, pebbles, cobbles and boulders in places	Stones support serpulid worms (P) and hydroids (P). <i>Luidia ciliaris</i> (P), <i>Echinus esculentus</i> (P). Much drift weed in places	SS.SCS.CCS	

## Annex 3

Site ID	Substrate	Biota	Biotope	PPF/PMF
WMO78	Slightly silty fine sand with patches of dense cobbles and boulders	Stones encrusted with serpulid worms (C-A) including <i>Spirobranchus</i> spp. and red bryozoans (R) and supporting sparse hydroids (R), <i>Urticina</i> sp. (P), <i>Alcyonium digitatum</i> ? (R) and <i>Caryophyllia smithii</i> (F, at least locally). In stone patches <i>Echinus esculentus</i> (C), Asteroidea sp. indet. (P), <i>Stichastrella rosea</i> (P), <i>Porania pulvillus</i> (P), <i>Crossaster papposus</i> (P). Sand areas with no visible fauna	SS.SSa.CFiSa CR.MCR.EcCr.FaAlCr.Car	
WMO78	Slightly silty fine sand	No clearly discernible biota	SS.SSa.CFiSa	
WMO79	Gravel, pebbles, cobbles and occasional boulders on sand with areas of dense cobbles and boulders	Stones encrusted with serpulid worms (C-A) including <i>Spirobranchus</i> spp., <i>Parasmittina trispinosa</i> (R), red bryozoans (R) and <i>Hymedesmia paupertas</i> (R), and supporting sparse hydroids (R-O), <i>Flustra foliacea</i> (R), <i>Porella compressa</i> (P), <i>Axinella infundibuliformis</i> ? (R) and a cream branching sponge (R). <i>Echinus esculentus</i> (F), <i>Luidia ciliaris</i> (O), <i>Porania pulvillus</i> (O), Asteroidea spp. indet. (P)	CR.MCR.EcCr.FaAlCr.Pom SS.SMx.CMx.FluHyd	
WMO79	Slightly silty fine sand	Asteroidea spp. indet. (R), <i>Crossaster papposus</i> (R)	SS.SSa.CFiSa	
WMO80	Gravel, pebbles, cobbles and occasional boulders on sand with areas of dense cobbles and boulders	Stones encrusted with serpulid worms (C) including <i>Spirobranchus</i> spp., <i>Parasmittina trispinosa</i> (R), red bryozoans (R) and sponges (R) including <i>Hymedesmia paupertas</i> (R), and supporting <i>Caryophyllia smithii</i> (C, locally A), sparse hydroids (P) and bryozoan tufts? (R), <i>Porella compressa</i> ? (P), <i>Axinella infundibuliformis</i> (O) <i>Polymastia boletiformis</i> ? (R) and a cream cushion sponge (R). <i>Echinus esculentus</i> (F), <i>Luidia ciliaris</i> (P), <i>Stichastrella rosea</i> (O), <i>Porania pulvillus</i> (R), Asteroidea spp. indet. (P), <i>Cancer pagurus</i> (O), <i>Calliostoma zizyphinum</i> (P), <i>Trigla lucerna</i> ? (P), teleost spp. indet. (O),	CR.MCR.EcCr.FaAlCr.Car SS.SMx.CMx	
WMO81	Gravel, pebbles, cobbles and occasional boulders on sand with areas of dense cobbles and boulders and patches of slightly silty fine sand	Stones encrusted with serpulid worms (C) including <i>Spirobranchus</i> spp., <i>Parasmittina trispinosa</i> (R), red bryozoans (R) and a cream sponge (R), and supporting sparse hydroids (P), <i>Flustra foliacea</i> (R), <i>Porella compressa</i> ? (P), <i>Polymastia boletiformis</i> (R) and <i>Axinella infundibuliformis</i> (R). <i>Echinus esculentus</i> (F), <i>Stichastrella rosea</i> (O), <i>Luidia ciliaris</i> (P), <i>Porania pulvillus</i> (O), <i>Munida rugosa</i> (P), Paguridae sp. (P), <i>Calliostoma zizyphinum</i> (P), Buccinidae sp.? (P), teleost sp. (R)	CR.MCR.EcCr.FaAlCr.Pom SS.SMx.CMx.FluHyd SS.SSa.CFiSa	

## Annex 3

Site ID	Substrate	Biota	Biotope	PPF/PMF
WMO82	Mostly slightly silty fine sand but with patches of scattered gravel, pebbles, cobbles and occasional boulders on sand and areas of dense cobbles and boulders	Stony areas with stones encrusted with serpulid worms (F-C) including <i>Spirobranchus</i> spp., <i>Parasmittina trispinosa</i> (R), red bryozoans (R), <i>Hymedesmia paupertas</i> (R) and a cream sponge (R), and supporting sparse hydroids (P), <i>Flustra foliacea</i> (R), <i>Urticina</i> sp. (R), <i>Caryophyllia smithii</i> (locally F), <i>Porella compressa?</i> (P) and <i>Axinella infundibuliformis</i> (R). <i>Echinus esculentus</i> (F), <i>Stichastrella rosea</i> (P), <i>Porania pulvillus</i> (O), teleost sp. indet. (R), <i>Pleuronectes platessa</i> (P), Rajidae sp. (P)	SS.SSa.CFiSa CR.MCR.EcCr.FaAlCr SS.SMx.CMx	
WMO83	Gravel, pebbles, cobbles and occasional boulders on sand with patches of slightly silty fine sand	Stones encrusted with serpulid worms (F-C) including <i>Spirobranchus</i> spp., <i>Parasmittina trispinosa</i> (R) and red bryozoans (R), and supporting sparse hydroids (R), <i>Flustra foliacea</i> (R) and <i>Axinella infundibuliformis</i> (R). <i>Echinus esculentus</i> (F), <i>Asterias rubens</i> (O), <i>Stichastrella rosea</i> (O), <i>Porania pulvillus</i> (O), Asteroidea sp. indet. (P), <i>Pecten maximus?</i> (P)	SS.SMx.CMx SS.SSa.CFiSa	
WMO83	Slightly silty fine sand	<i>Pagurus bernhardus</i> (R), <i>Pecten maximus?</i> (R)	SS.SSa.CFiSa	
WMO84	Mostly dense cobbles and boulders, but also patches of scattered gravel, pebbles, cobbles and occasional boulders on sand	Stones encrusted with serpulid worms (C) including <i>Spirobranchus</i> spp., <i>Parasmittina trispinosa</i> (R), red bryozoans (O), <i>Hymedesmia paupertas</i> (R) and a cream sponge (R), and supporting sparse hydroids (P) including <i>Nemertesia antennina</i> , <i>Flustra foliacea</i> (R), <i>Urticina</i> sp. (R), <i>Caryophyllia smithii</i> (locally C), <i>Porella compressa?</i> (P), <i>Polymastia boletiformis</i> (R) and <i>Axinella infundibuliformis</i> (R). <i>Echinus esculentus</i> (C), <i>Stichastrella rosea</i> (O), <i>Luidia ciliaris</i> (P), <i>Porania pulvillus</i> (O), <i>Asterias rubens</i> (P), <i>Crossaster papposus</i> (P), <i>Munida rugosa</i> (P), Paguridae sp. (P), <i>Chaetopterus variopedatus</i> (P), teleost spp. indet. (O)	CR.MCR.EcCr.FaAlCr.Pom CR.MCR.EcCr.FaAlCr.Car SS.SMx.CMx	
WMO85	Slightly silty fine sand	Asteroidea sp. (R - possibly <i>Astropecten irregularis</i> ), <i>Luidia ciliaris</i> (P), <i>Cancer pagurus</i> (P), infaunal tubes (P)	SS.SSa.CFiSa	
WMO86	Flat plain of slightly silty fine sand interrupted by patches of medium sand waves with shell material in the troughs	<i>Astropecten irregularis</i> (R)	SS.SSa.CFiSa SS.SCS.CCS	
WMO87	Fine sand	<i>Astropecten irregularis</i> (R), Pleuronectidae sp. (R), <i>Sepia officinalis</i> (R)	SS.SSa.CFiSa	

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Site ID	Substrate	Biota	Biotope	PPF/PMF
WMO88	Gravel, pebbles, cobbles and boulders on sand with areas of dense cobbles and boulders and patches of mostly fine sand	Stones encrusted with serpulid worms (C, locally F) including <i>Spirobranchus</i> spp., <i>Parasmittina trispinosa</i> (R), red bryozoans (O), <i>Hymedesmia paupertas</i> (R) and a cream sponge (R), and supporting sparse hydroids (P), <i>Caryophyllia smithii</i> (locally C), <i>Porella compressa?</i> (locally C), <i>Polymastia boletiformis</i> (R) and <i>Axinella infundibuliformis</i> (O). <i>Echinus esculentus</i> (F), <i>Stichastrella rosea</i> (O), <i>Luidia ciliaris</i> (O), <i>Asteroidea</i> sp. indet. (P), <i>Porania pulvillus</i> (O), <i>Munida rugosa</i> (P), teleost spp. indet. (P), <i>Pecten maximus</i> (R)	CR.MCR.EcCr.FaAlCr.Pom CR.MCR.EcCr.FaAlCr.Car SS.SMx.CMx SS.SSa.CFiSa	
WMO89	Gravel, pebbles, cobbles and boulders on sand with areas of dense cobbles and boulders and patches of fine sand. Cable	Stones encrusted with serpulid worms (C) including <i>Spirobranchus</i> spp., <i>Parasmittina trispinosa</i> (R), red bryozoans (O), <i>Hymedesmia paupertas</i> (R), and supporting sparse hydroids (P), <i>Flustra foliacea</i> (R), <i>Caryophyllia smithii</i> (locally C), <i>Porella compressa?</i> (locally C), <i>Urticina</i> sp. (P), <i>Polymastia boletiformis?</i> (R) and <i>Axinella infundibuliformis</i> (O). <i>Echinus esculentus</i> (F), <i>Stichastrella rosea</i> (O), <i>Luidia ciliaris</i> (P), <i>Porania pulvillus</i> (O), <i>Crossaster papposus</i> (P), <i>Munida rugosa</i> (P), teleost spp. indet. (R), Pleuronectidae sp. (P), <i>Raja naevus</i> (P)	CR.MCR.EcCr.FaAlCr.Pom CR.MCR.EcCr.FaAlCr.Car SS.SMx.CMx SS.SSa.CFiSa	
WMO90	Gravel, pebbles, cobbles and boulders on sand with areas of denser cobbles and boulders and patches of fine sand	Stones encrusted with serpulid worms (F, locally C) including <i>Spirobranchus</i> spp., <i>Parasmittina trispinosa</i> (R), red bryozoans (O), and supporting sparse hydroids (P), <i>Securiflustra securifrons?</i> (R), <i>Caryophyllia smithii</i> (locally C), <i>Porella compressa?</i> (P), <i>Urticina</i> sp. (P), <i>Polymastia boletiformis</i> (R) and <i>Axinella infundibuliformis</i> (R). <i>Echinus esculentus</i> (F), <i>Stichastrella rosea</i> (R), <i>Luidia ciliaris</i> (O), <i>Porania pulvillus</i> (O), <i>Crossaster papposus</i> (O), <i>Munida rugosa</i> (P), teleost sp. indet. (R), Buccinidae sp.? (P)	CR.MCR.EcCr.FaAlCr.Pom SS.SMx.CMx SS.SSa.CFiSa	
WMO91	Mostly scattered gravel, pebbles, cobbles and boulders on sand with areas of denser cobbles and boulders and patches of silty fine sand	Stones encrusted with serpulid worms (C) including <i>Spirobranchus</i> spp., <i>Parasmittina trispinosa</i> (R), red bryozoans (O), and supporting sparse hydroids (P), <i>Porella compressa?</i> (P), <i>Urticina</i> sp. (P) and <i>Axinella infundibuliformis</i> (R). <i>Echinus esculentus</i> (F), <i>Stichastrella rosea</i> (R), <i>Luidia ciliaris</i> (P), <i>Porania pulvillus</i> (O), <i>Munida rugosa</i> (P)	CR.MCR.EcCr.FaAlCr.Pom SS.SMx.CMx SS.SSa.CFiSa	

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Site ID	Substrate	Biota	Biotope	PPF/PMF
WMO92	Gravel, pebbles, cobbles and boulders on sand with areas of denser cobbles and boulders	Stones encrusted with serpulid worms (C) including <i>Spirobranchus</i> spp., <i>Parasmittina trispinosa</i> (R), red bryozoans (O) and <i>Hymedesmia paupertas</i> (R), and supporting <i>Caryophyllia smithii</i> (F locally), hydroids (P), <i>Flustra foliacea</i> (P), <i>Porella compressa?</i> (P), <i>Urticina</i> sp. (P) and <i>Axinella infundibuliformis</i> (R). <i>Echinus esculentus</i> (F), <i>Stichastrella rosea</i> (O), <i>Munida rugosa</i> (P), <i>Pecten maximus?</i> (R), Prosobranchia sp. (P)	CR.MCR.EcCr.FaAlCr.Car SS.SMx.CMx.FluHyd	
WMO92	Slightly silty fine sand	No life discernible	SS.SSa.CFiSa	
WMO92	Scattered gravel, pebbles and cobbles on slightly silty medium sand, with the stones mostly located in the troughs of sand waves	Stones encrusted with serpulid worms (C) including <i>Spirobranchus</i> spp., and supporting <i>Caryophyllia smithii</i> (R), hydroids (P), <i>Flustra foliacea</i> (R) and <i>Urticina</i> sp. (P). <i>Echinus esculentus</i> (P), <i>Porania pulvillus</i> (R), <i>Munida rugosa</i> (P), Prosobranchia sp. (P), bivalve siphons (P)	SS.SCS.CCS SS.SMx.CMx	
WMO93	Silty fine-medium sand with very sparsely scattered gravel, pebbles and cobbles	Sparse serpulid worms on stones (P)	SS.SSa.CFiSa	
WMO93	Gravel, pebbles, cobbles and boulders on sand with areas of denser cobbles and boulders and patch of slightly silty fine sand	Stones encrusted with serpulid worms (locally C) including <i>Spirobranchus</i> spp., red bryozoans (O), a yellow sponge (R) and <i>Hymedesmia paupertas</i> (R), and supporting <i>Caryophyllia smithii</i> (F locally), hydroids (P), <i>Flustra foliacea</i> (R), <i>Porella compressa?</i> (P), <i>Urticina</i> sp. (P) and <i>Axinella infundibuliformis</i> (R). <i>Echinus esculentus</i> (C), <i>Stichastrella rosea</i> (O), <i>Crossaster papposus</i> (P), <i>Porania pulvillus</i> (O), <i>Marthasterias glacialis?</i> (P), <i>Munida rugosa</i> (P), Prosobranchia sp. (P), Labridae sp. (P), teleost sp. indet. (P), <i>Lanice conchilega</i> (P)	CR.MCR.EcCr.FaAlCr.Pom CR.MCR.EcCr.FaAlCr.Car SS.SMx.CMx SS.SSa.CFiSa	
WMO94	Scattered gravel, pebbles, cobbles and boulders on medium sand with areas of dense cobbles and boulders	Stones encrusted with serpulid worms (C, locally A) including <i>Spirobranchus</i> spp., <i>Parasmittina trispinosa</i> (O), red bryozoans (R) and pink coralline (O) and red, non-coralline (R) algae, and supporting sparse hydroids (P), <i>Caryophyllia smithii</i> (locally F), Ascidiacea sp. (P), <i>Urticina</i> sp. (P) and <i>Axinella infundibuliformis</i> (R). <i>Echinus esculentus</i> (C), <i>Stichastrella rosea</i> (O), <i>Luidia ciliaris</i> (O), <i>Porania pulvillus</i> (O), <i>Crossaster papposus</i> (O), <i>Asterias rubens</i> (P), <i>Munida rugosa</i> (P), teleost spp. indet. (P)	CR.MCR.EcCr.FaAlCr.Car SS.SMx.CMx	

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Site ID	Substrate	Biota	Biotope	PPF/PMF
WMO95	Scattered gravel, pebbles, cobbles and boulders on medium sand with areas of dense cobbles and boulders	Stones encrusted with serpulid worms (F, locally C) including <i>Spirobranchus</i> spp., <i>Parasmittina trispinosa</i> (R), red bryozoans (R) and pink coralline algae (R), and supporting sparse hydroids (R), <i>Caryophyllia smithii</i> (C), Ascidiacea sp. (P), <i>Urticina</i> sp. (R) and <i>Axinella infundibuliformis</i> (R). <i>Echinus esculentus</i> (C), <i>Stichastrella rosea</i> (O), <i>Luidia ciliaris</i> (O), <i>Porania pulvillus</i> (R), <i>Crossaster papposus</i> (P), <i>Labrus mixtus</i> (O), teleost sp. indet. (R), Caridea sp.? (P)	CR.MCR.EcCr.FaAlCr.Car SS.SMx.CMx	
WMO96	Scattered gravel, pebbles, cobbles and boulders on medium sand with areas of dense cobbles and boulders and patches of slightly silty fine sand and medium-coarse sand waves	Stones encrusted with serpulid worms (C, locally A) including <i>Spirobranchus</i> spp., <i>Parasmittina trispinosa</i> (R), and supporting sparse hydroids (P), <i>Securiflustra securifrons?</i> (R), <i>Porella compressa?</i> (P), <i>Caryophyllia smithii</i> (P), <i>Urticina</i> sp. (R) and <i>Axinella infundibuliformis</i> (R). <i>Echinus esculentus</i> (F, locally C), <i>Stichastrella rosea</i> (O), <i>Luidia ciliaris</i> (O), <i>Porania pulvillus</i> (O), <i>Asterias rubens</i> (P), Asteroidea sp. indet. (P) teleost sp. indet. (P), <i>Munida rugosa</i> (P)	CR.MCR.EcCr.FaAlCr.Pom SS.SMx.CMx SS.SSa.CFiSa SS.SCS.CCS	
WMO97	Silty fine sand	No life discernible	SS.SSa.CFiSa	
WMO97	Dense cobbles and boulders	Stones encrusted with serpulid worms (A) including <i>Spirobranchus</i> spp. and bryozoan crusts (R). <i>Echinus esculentus</i> (C)	CR.MCR.EcCr.FaAlCr.Pom	
WMO97	Silty fine sand	<i>Luidia ciliaris</i> (P), <i>Astropecten irregularis</i> (R)	SS.SSa.CFiSa	
WMO97	Dense cobbles and boulders	Stones encrusted with serpulid worms (A). <i>Echinus esculentus</i> (C)	CR.MCR.EcCr.FaAlCr.Pom	
WMO97	Silty fine sand	<i>Astropecten irregularis</i> (R)	SS.SSa.CFiSa	
WMO98	Faintly rippled silty fine sand	No life discernible	SS.SSa.CFiSa	
WMO98	Waves of medium sand	<i>Luidia ciliaris</i> (O), Asteroidea sp. indet. (P), <i>Ophiura ophiura</i> (P), <i>Scyliorhinus canicula</i> (P)	SS.SCS.CCS	
WMO99	Slightly silty fine sand	No life discernible	SS.SSa.CFiSa	
WMO100	Faintly rippled fine sand	<i>Luidia ciliaris</i> (P), <i>Astropecten irregularis</i> (R), <i>Pecten maximus?</i> (R)	SS.SSa.CFiSa	
WMO101	Alternating bands of slightly silty fine sand and medium-coarse sand waves	<i>Astropecten irregularis</i> (R in both sediment types), <i>Callionymus lyra</i> (R on coarser sand)	SS.SSa.CFiSa SS.SCS.CCS	
WMO102	Silty fine sand	<i>Astropecten irregularis</i> (O), teleost sp. (R)	SS.SSa.CFiSa	

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Site ID	Substrate	Biota	Biotope	PPF/PMF
STROM01	Medium sand with surface scatter of gravel and clean, unencrusted angular pebbles, cobbles and boulders	Video poor quality. No life discernible apart from dead algal material	SS.SSa.CFiSa	
SHT01	Fine sand	No photographs. Clumps of hydroids (F) including <i>Nemertesia ramosa</i> (P), although proportion attached uncertain. Also some drift algae. Paguridae (P) including <i>Pagurus bernhardus</i> , teleosts (R), Pectinidae sp. (P)	SS.SSa.OSa	
SHT02	Rippled fine sand with patches of coarser sediment including waves of medium-coarse sand with gravel and shell material in troughs	Fine sand with sparse scatter of hydroids (R) and bryozoans (R) (some possibly drift material) including <i>Flustra foliacea</i> , infaunal tubes (possibly <i>Chaetopterus variopedatus</i> (P), <i>Porania pulvillus</i> (R) and teleosts (O). Coarse sediment with hydroids (R) and bryozoans (R) including <i>Sertularia</i> sp. and <i>F. foliacea</i> and teleosts (O)	SS.SSa.CFiSa SS.SCS.CCS	
SHT03	Areas of bedrock, boulders and cobbles, mixed sediment of sand with gravel and scattered pebbles and cobbles, and patches of homogeneous medium sand	Bedrock and stones supporting dense <i>Spirobranchus</i> spp. (A) and sparse encrusting bryozoans (R) and hydroids (R). <i>Echinus esculentus</i> (C), <i>Porania pulvillus</i> (F), <i>Luidia ciliaris</i> (O), Labridae sp. (P), Areas of bedrock and boulders with dense <i>Ophiocomina nigra</i>	CR.MCR.EcCr.FaAlCr.Pom CR.MCR.EcCr.FaAlCr.Bri SS.SMx.CMx SS.SSa	
SHT04	Mostly rippled fine sand with patches of low-profile sand-scoured bedrock and large patch of dense boulders and cobbles	Dense stones encrusted with <i>Spirobranchus</i> spp. (A) and bryozoans (O) and supporting <i>Echinus esculentus</i> (C), <i>Stichastrella rosea</i> ? (P), <i>Munida rugosa</i> (P) and <i>Hippasteria phrygiana</i> ? (P). Scoured bedrock with bryozoan turf (F) including <i>Flustra foliacea</i> (P), <i>Urticina felina</i> (F), <i>Axinella infundibuliformis</i> (F locally). Teleosts (P) including shoal of juveniles, Asteroidea sp. (P)	SS.SSa.CFiSa CR.MCR.EcCr.FaAlCr.Pom CR.MCR.EcCr.FaAlCr.Flu	
SHT05	Fine sand, slightly rippled in places, with scatter of gravel and shell material	<i>Callionymus lyra</i> (P), <i>Chaetopterus variopedatus</i> ? (P)	SS.SSa.CFiSa	
SHT06	Fine sand with gravel and pebbles	Paguridae spp. (O) including <i>Pagurus prideaux</i> with <i>Adamsia carcinopados</i> (O), <i>Luidia ciliaris</i> (F), <i>Porania pulvillus</i> (P), <i>Cancer pagurus</i> (P), teleosts (O) including <i>Callionymus lyra</i> (P)	SS.SMx.CMx	

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Site ID	Substrate	Biota	Biotope	PPF/PMF
SHT06	Rippled fine sand	Paguridae spp. (O) including <i>Pagurus bernhardus</i> (P), <i>Luidia ciliaris</i> (P), teleosts (O) including <i>Callionymus lyra</i> (O), <i>Chaetopterus variopedatus?</i> (P), Asteroidea sp. (P)	SS.SSa.CFiSa	
SHT07	Rippled fine sand	Paguridae spp. (O) including <i>Pagurus prideaux</i> with <i>Adamsia carcinopados</i> (P), <i>Pecten maximus</i> (O), bivalve siphons (possibly <i>Arctica islandica</i> ) (P), teleosts (P)	SS.SSa.CFiSa	AI?
SHT07	Bedrock and dense cobbles and boulders, with some areas of scattered gravel, pebbles and cobbles on sand	Rock surfaces encrusted with <i>Spirobranchus</i> spp. (A) and bryozoans (O) and supporting <i>Alcyonium digitatum</i> (R), <i>Axinella infundibuliformis</i> (R), <i>Metridium senile?</i> (R) and possibly <i>Porella compressa</i> (P). <i>Echinus esculentus</i> (C), <i>Stichastrella rosea?</i> (O), <i>Munida rugosa</i> (O) teleosts (O) including <i>Callionymus lyra</i> (P), <i>Luidia ciliaris</i> (P), <i>Crossaster papposus</i> (P), Asteroidea sp. (R), <i>Pecten maximus</i> (O), <i>Pagurus prideaux</i> with <i>Adamsia carcinopados</i> (P), <i>Cancer pagurus</i> (P), <i>Ophiothrix fragilis?</i> (P)	CR.MCR.EcCr.FaAlCr.Pom SS.SMx.CMx	
SHT08	Slightly rippled silty fine sand with shell patches	Sediment with bivalve siphons (P) possibly including <i>Arctica islandica</i> , infaunal tubes (P) and polychaete casts (P). <i>Asterias rubens</i> (O), <i>Porania pulvillus</i> (R), Paguridae spp. (R) including <i>Pagurus bernhardus</i> , teleosts (R) including <i>Callionymus lyra</i> and <i>Glyptocephalus cynoglossus?</i> , <i>Pecten maximus</i> (R), <i>Urticina felina?</i> (R)	SS.SSa.CFiSa	AI?
SHT09	Rippled fine sand	Sediment with bivalve siphons (P) possibly including <i>Arctica islandica</i> and infaunal tubes (P), in places scattered with hydroid and bryozoan clumps, mostly drift but apparently some live <i>Nemertesia ramosa</i> (P). Paguridae spp. (R) including <i>Pagurus prideaux</i> with <i>Adamsia carcinopados</i> and probably <i>Pagurus bernhardus</i> , <i>Aequipecten opercularis</i> (R)	SS.SSa.CFiSa	AI?
SHT10	Silty fine sand with sparsely scattered shells, pebbles and cobbles	Clumps of hydroids (F) including <i>Nemertesia ramosa</i> (R) and bryozoans (R) including <i>Securiflustra securifrons?</i> (R). Sediment with sparse infaunal tubes (R). Paguridae spp (O) including <i>Pagurus bernhardus</i> (P), <i>Henricia</i> sp. (R), <i>Asterias rubens</i> (R), <i>Porania pulvillus?</i> (R), Ophiuroidea sp.? (R), <i>Macropodia</i> sp.? (R), <i>Urticina</i> sp. (R), <i>Aequipecten opercularis</i> (R), small teleosts (O) including <i>Trisopterus luscus?</i> (P), serpulid worms (R), <i>Brachyura</i> sp. (R)	SS.SSa.OSa	

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SHT11	Sand with gravel and pebbles, scattered cobbles and occasional boulders, with patches of rippled fine sand	Stones support serpulid worms (locally C), <i>Urticina felina</i> (R) and <i>Polymastia boletiformis?</i> (O) and sparse hydroid and bryozoan clumps (R). <i>Porania pulvillus</i> (O), <i>Luidia ciliaris</i> (O), Asteroidea spp. (R), <i>Echinus esculentus</i> (O), <i>Pecten maximus</i> (R), <i>Cancer pagurus</i> (P), <i>Pagurus prideaux</i> with <i>Adamsia carciniopados</i> (P), teleosts (R), infaunal tubes (P)	SS.SMx.CMx SS.SSa.CFiSa	
SHT12	Bedrock and areas of cobbles and boulders	Rock surfaces encrusted with <i>Spirobranchus</i> spp. (A) and bryozoans (R) and supporting <i>Axinella infundibuliformis</i> (R), hydroid patches (R), <i>Ascidia mentula</i> (P) and possibly <i>Porella compressa</i> (P). <i>Echinus esculentus</i> (C), <i>Stichastrella rosea?</i> (O), <i>Munida rugosa</i> (O, locally F), teleosts (R), <i>Luidia ciliaris</i> (O), <i>Crossaster papposus</i> (O), <i>Asterias rubens</i> (R), <i>Porania pulvillus</i> (R), Asteroidea spp. (R), <i>Pecten maximus</i> (R), <i>Ophiothrix fragilis?</i> (P)	CR.MCR.EcCr.FaAlCr.Pom	
SHT12	Fine-medium sand, faintly rippled in places, and with patchy scatter of coarser sand and shell material and gravel	<i>Munida rugosa</i> (R), Paguridae spp. (P)	SS.SSa.CFiSa	
SHT12	Gravel and pebbles on sand	Stones support serpulid worms (locally C) and hydroids (R). <i>Porania pulvillus</i> (O), <i>Echinus esculentus</i> (F), <i>Pecten maximus</i> (P)	SS.SMx.CMx	
SHT12	Bedrock and dense cobbles, boulders and pebbles	Rock surfaces encrusted with <i>Spirobranchus</i> spp. (A) and bryozoans (P). <i>Echinus esculentus</i> (F), <i>Porania pulvillus</i> (O), Asteroidea spp. (O), <i>Alcyonium digitatum?</i> (R)	CR.MCR.EcCr.FaAlCr.Pom	
SHT12	Gravel and pebbles on sand	Stones support serpulid worms (C). <i>Echinus esculentus</i> (F)	SS.SMx.CMx	
SHT13	Mostly bedrock but with some boulders and small sand patches	Rock surfaces encrusted with <i>Spirobranchus</i> spp. (A), <i>Parasmittina trispinosa</i> (O, locally C), red bryozoans (O) and pink coralline algae (F) and supporting hydroid patches (P), and dense patches of <i>Antedon</i> sp. (locally A). Lower, more scoured areas also support <i>Flustra foliacea</i> (locally C) and <i>Urticina felina</i> (locally C). <i>Echinus esculentus</i> (C), teleosts (P), <i>Luidia ciliaris</i> (O), <i>Crossaster papposus</i> (O), <i>Asterias rubens</i> (R), <i>Porania pulvillus</i> (O), <i>Henricia</i> sp.? (R), <i>Hippasteria phrygiana?</i> (R), <i>Solaster endeca?</i> (P), <i>Cancer pagurus</i> (P)	CR.MCR.EcCr.FaAlCr.Pom CR.MCR.EcCr.FaAlCr.Flu	

## Annex 3

Site ID	Substrate	Biota	Biotope	PPF/PMF
SHT13	Waves of medium-coarse sand with gravel in troughs	Sparse visible fauna. Hydroid/bryozoan clumps (R) including <i>Flustra foliacea</i> , teleosts (O), <i>Stichastrella rosacea?</i> (P), Asteroidea spp. (O)	SS.SCS.CCS	
SHT14	Very faintly rippled silty fine sand interrupted by waves of coarser sand and patches of sand and gravel	Sediment with infaunal tubes and possibly bivalve siphons. Paguridae spp. (O), <i>Luidia ciliaris</i> (P), <i>Porania pulvillus</i> (R), Asteroidea spp. (R), teleosts (O) including <i>Callionymus lyra</i> (R) and Pleuronectiformes spp. (R) including <i>Glyptocephalus cynoglossus?</i> , hydroids (R), serpulid worms (locally C), <i>Caridea</i> sp.? (P), <i>Macropodia</i> sp.? (P)	SS.SSa.CFiSa SS.SMx.CMx SS.SCS.CCS	
SHT15	Silty sand with scattered shell material and gravel	Sediment with Scleractinia sp. (F), <i>Cerianthus lloydii</i> (P) and scaphopod shells. Teleosts (O) including <i>Merluccius merluccius?</i> (P) and <i>Glyptocephalus cynoglossus?</i> (R), <i>Luidia ciliaris</i> (O), <i>Porania pulvillus</i> (R), <i>Hippasteria phrygiana?</i> (R), Paguridae spp. (R), Brachyura sp. (R), <i>Pecten maximus</i> (R)	SS.SSa.OSa	
SHT16	Silty fine sand	Sediment surface scattered with fine faunal tubes. One megafaunal burrow. Paguridae spp. (R) including <i>Pagurus bernhardus</i> , <i>Urticina felina</i> (R), <i>Buccinum undatum</i> (R) with egg mass, teleosts (R) including Pleuronectiformes spp., Asteroidea sp. (R), <i>Stichastrella rosea?</i> (R), <i>Pennatula phosphorea?</i> (O)	SS.SSa.OSa	
SHT17	Rippled fine sand	Sparse visible fauna. <i>Pagurus bernhardus</i> (R), infaunal tubes (P)	SS.SSa.CFiSa	
SHT17	Waves of medium-coarse sand with shells and gravel in troughs	Small teleosts (F), <i>Callionymus lyra</i> (R), <i>Luidia ciliaris</i> (O), <i>Asterias rubens</i> (O), <i>Pecten maximus</i> (R), <i>Cancer pagurus</i> (P)	SS.SCS.CCS	
SHT18	Gravel, pebbles and cobbles on fine sand	Serpulid worms (locally C), Paguridae spp. (O), hydroids (R), teleosts (O), <i>Porania pulvillus</i> (O), <i>Munida rugosa</i> (P), <i>Pecten maximus</i> (O)	SS.SMx.CMx	
SHT18	Faintly rippled silty fine sand	Sediment with infaunal tubes, small holes, <i>Arctica islandica?</i> siphons (P) and one burrow containing <i>Munida rugosa</i> (R). Small teleosts (F), Pleuronectiformes spp. (O) including <i>Glyptocephalus cynoglossus?</i> (O), <i>Trisopterus</i> sp.? (R), <i>Pecten maximus</i> (R), <i>Aphrodita aculeata</i> (R), Paguridae spp. (O) including <i>Pagurus bernhardus</i> (O) and <i>P. prideaux</i> with <i>Adamsia carciniopados</i> (P), <i>Asterias rubens?</i> (R), <i>Luidia ciliaris</i> (O)	SS.SSa.CFiSa	AI?

## Annex 3

Site ID	Substrate	Biota	Biotope	PPF/PMF
SHT19	Very faintly rippled silty fine sand interrupted by waves of medium sand with shells in troughs	Sediment with infaunal tubes and possibly <i>Arctica islandica</i> siphons (P). Paguridae spp. (R), <i>Luidia ciliaris</i> (O), <i>Porania pulvillus</i> (R), <i>Asterias rubens</i> ? (R), <i>Stichastrella rosea</i> ? (R), <i>Hippasteria phrygiana</i> (R), small teleosts (A), <i>Callionymus lyra</i> (R), Pleuronectiformes spp. (R), <i>Glyptocephalus cynoglossus</i> ? (R), <i>Trisopterus</i> sp.? (R), <i>Pecten maximus</i> (O)	SS.SSa.CFiSa SS.SCS.CCS	AI?
SHT20	Waves of medium-coarse sand with shells and gravel in troughs	Small teleosts (O), <i>Callionymus lyra</i> (O), <i>Asterias rubens</i> (O), <i>Porania pulvillus</i> (R), Paguridae spp. (R), <i>Pagurus bernhardus</i> (R), <i>P. prideaux</i> with <i>Adamsia carciniopados</i> (R)	SS.SCS.CCS	
SHT20	Areas of bedrock and boulders interrupted by rippled fine sand and mixed patches of sand with gravel, pebbles and cobbles	Rock encrusted with <i>Spirobranchus</i> spp. (A) and bryozoans (O). <i>Munida rugosa</i> (C in boulder areas), <i>Echinus esculentus</i> (C in boulder and bedrock areas), <i>Alcyonium digitatum</i> ? (R), <i>Urticina felina</i> (R), small teleosts (O), <i>Callionymus lyra</i> (P), <i>Porania pulvillus</i> (O), <i>Luidia ciliaris</i> (P), <i>Axinella infundibuliformis/Phakellia ventilabrum</i> (R), <i>Stichastrella rosea</i> ? (P), <i>Pecten maximus</i> (O), <i>Pagurus prideaux</i> with <i>Adamsia carciniopados</i> (R), <i>Ophiothrix fragilis</i> ? (R), <i>Crossaster papposus</i> (O)	CR.MCR.EcCr.FaAICr.Pom SS.SSa.CFiSa SS.SMx.CMx	
SHT21	Largely bedrock and boulders with sand pockets and a small area of medium-coarse sand waves	Rock encrusted with <i>Spirobranchus</i> spp. (A), pink coralline algae (F), red algae (R) and bryozoans (R) and supporting <i>Caryophyllia smithii</i> (C locally, possibly F overall), <i>Axinella infundibuliformis</i> (R, F locally) and hydroids (R) including <i>Nemertesia ramosa</i> . <i>Munida rugosa</i> (F locally), <i>Echinus esculentus</i> (C), teleosts (P) including <i>Labrus mixtus</i> (O), <i>Porania pulvillus</i> (R), <i>Luidia ciliaris</i> (F), <i>Stichastrella rosea</i> ? (O), <i>Asterias rubens</i> (R), Asteroidea spp. indet. (R), <i>Crossaster papposus</i> (R), <i>Metridium senile</i> (R). Patches of dense ophiuroids (S) including one extensive where superabundant aggregations of <i>Ophiothrix fragilis</i> and <i>Ophiocolina nigra</i> form a mosaic	CR.MCR.EcCr.FaAICr.Car CR.MCR.EcCr.FaAICr.Bri SS.SCS.CCS	
SHT22	Waves of medium-coarse sand with shells in troughs	Paguridae spp. (O), small teleosts (P), Asteroidea sp. (P)	SS.SCS.CCS	

## Annex 3

Site ID	Substrate	Biota	Biotope	PPF/PMF
SHT22	Mostly bedrock and boulders but areas of scattered gravel, pebbles and cobbles on sand	Rock encrusted with <i>Spirobranchus</i> spp. (A), and bryozoans (R) and supporting hydroids (R), <i>Alcyonium digitatum</i> (R) and <i>Metridium senile</i> (R). <i>Munida rugosa</i> (F), <i>Echinus esculentus</i> (F), teleosts (P), <i>Porania pulvillus</i> (O), <i>Luidia ciliaris</i> (F), <i>Stichastrella rosea</i> (O), <i>Asterias rubens</i> (R), <i>Asteroidea</i> spp. indet. (R), <i>Ophiothrix fragilis</i> (P), Paguridae spp. indet. (O), <i>Pagurus prideaux</i> with <i>Adamsia carciniopados</i> (P), <i>Cancer pagurus</i> (P), <i>Calliostoma zizyphinum</i> (P)	CR.MCR.EcCr.FaAlCr.Pom SS.SMx.CMx	
SHT23	Cohesive muddy sand	Megafaunal burrows including <i>Nephrops norvegicus</i> (F, 2 animals seen) and smaller burrows and infaunal tubes. <i>Pennatula phosphorea?</i> (R), Paguridae spp. indet. (O), <i>Pagurus prideaux</i> with <i>Adamsia carciniopados</i> (P), small teleosts (O), <i>Glyptocephalus cynoglossus?</i> (R), <i>Callionymus lyra</i> (R), <i>Munida rugosa?</i> (R), <i>Liocarcinus</i> sp.? (R), scaphopod shells	SS.SMu.OMu	
SHT24	Cohesive muddy sand	Megafaunal burrows including <i>Nephrops norvegicus</i> (F, 1 animal seen) and smaller burrows, with thin faunal tubes on surface. Paguridae spp. indet. (O), teleost spp. indet. (O), <i>Glyptocephalus cynoglossus?</i> (R), <i>Trisopterus</i> sp.? (O), <i>Callionymus lyra</i> (R), <i>Asterias rubens?</i> (P), <i>Pecten maximus?</i> (P)	SS.SMu.OMu	
SHT25	Cohesive muddy sand	Megafaunal burrows including <i>Nephrops norvegicus</i> (F, 2 animals seen) and smaller burrows; also infaunal tubes. Paguridae spp. indet. (O), teleost spp. indet. (O), <i>Brachyura</i> sp. (R), <i>Cerianthus lloydii</i> (O). Dense scaphopod shells on sediment surface and dense <i>Meganyctiphanes norvegica?</i> in water column	SS.SMu.OMu	
WICK01	Predominantly mixed coarse sediment with shells and scattered cobbles and boulders, dense in places, and bedrock outcrops	Video poor quality. Rock surfaces encrusted with pink coralline algae (O) and serpulid worms and supporting a patchy hydroid/bryozoan turf fauna (F) including possibly <i>Flustra foliacea</i> (P) and <i>Urticina</i> spp. (P). <i>Echinus esculentus</i> (C), <i>Asterias rubens</i> (O), <i>Crossaster papposus</i> (O). Extensive area with dense patches of ophiuroids, probably <i>Ophiothrix fragilis</i> (S in this area). <i>Modiolus modiolus</i> shells are present but visibility too poor to determine whether living	SS.SMx.CMx SS.SMx.CMx.OphMx CR.MCR.EcCr.FaAlCr	
WICK02	Mixed coarse sediment with <i>Modiolus</i> shells, dense in places	Video poor quality. <i>Echinus esculentus</i> (C), <i>Asterias rubens</i> (F, locally C), Paguridae sp. (P), <i>Crossaster papposus?</i> (P), <i>Alcyonium digitatum?</i> (R). Patches of dense ophiuroids, probably <i>Ophiothrix fragilis</i> (where S). Visibility too poor to determine the proportion of live <i>Modiolus modiolus</i>	SS.SMx.CMx SS.SMx.CMx.OphMx SS.SBR.SMus.ModT	HM

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Site ID	Substrate	Biota	Biotope	PPF/PMF
SUT01	Silty sand with pebbles, shells including <i>Modiolus</i> , and scattered cobbles	Poor visibility. <i>Asterias rubens</i> (C). Stones support <i>Alcyonium digitatum</i> (R), <i>Metridium senile</i> (O), <i>Urticina</i> spp. (R) and hydroids (R)	SS.SMx.CMx	
SUT01	Rippled fine sand with scattered boulders and cobbles	Poor visibility. <i>Asterias rubens</i> (F). Stones support <i>Alcyonium digitatum</i> (R), <i>Metridium senile</i> (O) and hydroids (R). <i>Echinus esculentus</i> (O). <i>Ammodytes</i> spp. fairly numerous in latter part of run	SS.SSa.CFiSa	SE
SUT02	Silty fine sand with sparsely scattered <i>Modiolus</i> shells and stones	Poor visibility. <i>Asterias rubens</i> (C). Stones support <i>Alcyonium digitatum</i> (R)	SS.SSa.CFiSa	
SUT03	Rippled fine sand with sparsely scattered cobbles	Poor visibility. <i>Asterias rubens</i> (F). Stones with <i>Alcyonium digitatum</i> (R) and <i>Metridium senile</i> (R)	SS.SSa.CFiSa	
SUT04	Rippled fine sand with sparsely scattered cobbles and increasing quantities of pebbles and shell towards end of run	Poor visibility. <i>Asterias rubens</i> (F). Stones with <i>Alcyonium digitatum</i> (R), <i>Metridium senile</i> (R) and <i>Urticina</i> spp (R). Hydroids (R), Paguridae sp. (R), <i>Pagurus bernhardus</i> (R), Pleuronectiformes sp. (P)	SS.SSa.CFiSa	
SUT04	Mixed silty gravelly pebbly sediment with scattered cobbles	Poor visibility. <i>Asterias rubens</i> (C). Stones with <i>Alcyonium digitatum</i> (R), <i>Metridium senile</i> (O, locally F) and <i>Urticina</i> spp (O). Hydroids (R), <i>Brachyura</i> sp. (R)	SS.SMx.CMx	
SUT05	Rippled fine sand with sparsely scattered pebbles, cobbles and boulders	Poor visibility. <i>Asterias rubens</i> (F). Stones with <i>Alcyonium digitatum</i> (R), <i>Metridium senile</i> (O) and <i>Urticina</i> spp (O). Hydroids (R), <i>Brachyura</i> sp. (R)	SS.SSa.CFiSa	
CROM01	Rippled fine sand	Little visible life apart from <i>Asterias rubens</i> (F) and <i>Liocarcinus</i> sp. (R). No evidence of spoil dumping	SS.SSa.IFiSa	
CROM02	Rippled fine sand	Little visible life apart from <i>Asterias rubens</i> (F, locally C) and <i>Saccharina latissima</i> (R, probably drift). No evidence of spoil dumping	SS.SSa.IFiSa	
CROM03	Rippled fine sand	Little visible life apart from <i>Asterias rubens</i> (F). No evidence of spoil dumping	SS.SSa.IFiSa	

## Annex 3

Site ID	Substrate	Biota	Biotope	PPF/PMF
BUD01	Slightly silty rippled fine sand with sparsely scattered cobbles	Poor visibility. Teleost spp. indet. (O), Pleuronectiformes spp. (O), Actiniaria sp.? (O), <i>Alcyonium digitatum</i> (R), Asteroidea sp. (R)	SS.SSa.CFiSa	
BUD03	Slightly silty rippled fine sand	Teleost spp. indet. (R), <i>Trisopterus luscus</i> ? (R), Actiniaria sp.? (R), <i>Asterias rubens</i> ? (R), Paguridae spp. indet. (R)	SS.SSa.CFiSa	
BUD05	Slightly silty rippled fine sand	Poor visibility. Teleost spp. indet. (O), Pleuronectiformes spp. (F), Actiniaria sp.? (O), Paguridae sp. (R), Asteroidea sp. (R), several dead fish (discards?)	SS.SSa.CFiSa	
BUD07	Slightly silty rippled fine sand with sparsely scattered cobbles	Poor visibility. Teleost spp. indet. (R), Pleuronectiformes sp. (P), Actiniaria sp.? (R), hydroids (R), Paguridae sp. (R)	SS.SSa.CFiSa	
BUD08	Rippled fine sand	Sparse visible fauna. Teleost spp. indet. (O), <i>Trisopterus luscus</i> ? (P)	SS.SSa.CFiSa	
BUD09	Silty slightly rippled fine sand with sparsely scattered pebbles and cobbles	Poor visibility. Hydroid clumps (P) on stones including <i>Nemertesia antennina</i> (R), teleost spp. indet. (F), Pleuronectiformes spp. (R)	SS.SSa.CFiSa	
BUD12	Slightly silty rippled fine sand with scattered cobbles and boulders in places	Poor visibility. Hydroid clumps (P) on stones, <i>Atelecyclus rotundatus</i> ? (R), Paguridae spp. (R), teleosts (F)	SS.SSa.CFiSa	
BUD13	Slightly silty rippled fine sand	Poor visibility. Teleost spp. indet. (F), <i>Trisopterus luscus</i> ? (P), Pleuronectiformes sp. (R), Actiniaria sp.? (R), <i>Ophiura</i> sp. (P). <i>Meganyctiphanes norvegica</i> ? in water column	SS.SSa.CFiSa	
BUD14	Slightly silty rippled fine sand with scattered cobbles and boulders in places	Poor visibility. Hydroid clumps (P) on stones, <i>Metridium senile</i> ? (R), teleost spp. indet. (P), Pleuronectiformes spp. (O), Paguridae spp. indet. (R), <i>Pagurus bernhardus</i> (R), <i>Ophiura</i> sp. (R)	SS.SSa.CFiSa	
BUD15	Slightly silty rippled fine sand with sparsely scattered cobbles	Hydroid clumps (P) on stones, Actiniaria sp. (R), teleost spp. indet. (R), <i>Glyptocephalus cynoglossus</i> ? (R), Paguridae spp. indet. (R), infaunal tubes (P), <i>Atelecyclus rotundatus</i> ? (R)	SS.SSa.CFiSa	

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Site ID	Substrate	Biota	Biotope	PPF/PMF
BUD18	Silty slightly rippled fine sand with scattered cobbles and boulders	Poor visibility. Hydroid clumps (P) on stones including <i>Nemertesia antennina</i> (R). <i>Urticina</i> sp.? (R), <i>Metridium senile</i> ? (R), <i>Ophiura</i> sp. (R), <i>Trisopterus luscus</i> ? (O). Dense <i>Meganyctiphanes norvegica</i> ? in water column	SS.SSa.CFiSa	
BUD19	Slightly silty rippled fine sand	Sparse visible fauna. Teleost spp. indet. (O), Pleuronectiformes spp. (O), <i>Asterias rubens</i> (R). <i>Meganyctiphanes norvegica</i> ? in water column	SS.SSa.CFiSa	
BUD20	Silty rippled fine sand with ripples not evident in more mixed patch with scattered gravel, pebbles and cobbles	Hydroid clumps (P) on stones, Actiniaria sp. (R), teleost spp. indet. (O), <i>Trisopterus luscus</i> ? (P), Pleuronectiformes spp. (O), Paguridae spp. indet. (R), infaunal tubes (P), small holes (P), <i>Buccinum undatum</i> ? (R). Dense <i>Meganyctiphanes norvegica</i> ? in water column	SS.SSa.CFiSa	
BUD21	Rippled fine sand	Sparse visible fauna. Teleost spp. indet. (O), Pleuronectiformes sp. (R)	SS.SSa.CFiSa	
BUD24	Slightly silty rippled fine sand with sparsely scattered cobbles	Sparse visible fauna. Hydroid clumps (O), <i>Ophiura</i> sp. (R), teleost spp. indet. (O), Pleuronectiformes sp. (R), <i>Trisopterus luscus</i> ? (R)	SS.SSa.CFiSa	
BUD25	Rippled fine sand with scattered cobbles	Hydroid clumps (locally O), teleost spp. indet. (O), <i>Callionymus lyra</i> ? (R), Pleuronectiformes spp. (O), <i>Trisopterus luscus</i> ? (R)	SS.SSa.CFiSa	
EAB01	Slightly silty rippled fine sand with sparsely scattered pebbles and possibly cobbles	Stones support sparse <i>Flustra foliacea</i> (R), hydroids (R), <i>Alcyonium digitatum</i> (R) and <i>Urticina</i> sp. (R). Pleuronectiformes spp. (O), Pleuronectidae sp. (P), <i>Pleuronectes</i> sp. (P), <i>Cancer pagurus</i> ? (P)	SS.SSa.CFiSa	
EAB02	Slightly silty rippled fine sand	Sparse hydroids (R), <i>Flustra foliacea</i> (R), <i>Alcyonium digitatum</i> (R) and <i>Urticina</i> sp. (R). <i>Astropecten irregularis</i> (R), teleost spp. indet. (O), <i>Luidia ciliaris</i> (P), <i>Ophiura</i> sp. (P)	SS.SSa.CFiSa	
EAB03	Slightly silty rippled fine sand	Sparse <i>Flustra foliacea</i> (R) and <i>Alcyonium digitatum</i> (R). <i>Astropecten irregularis</i> ? (R)	SS.SSa.CFiSa	
EAB04	Slightly silty fine sand, slightly rippled at least in places	Poor visibility. Sparse hydroids (R), <i>Flustra foliacea</i> (R) and <i>Alcyonium digitatum</i> (R). Teleost spp. indet. (R)	SS.SSa.CFiSa	




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Site ID	Substrate	Biota	Biotope	PPF/PMF
EAB05	Slightly silty rippled fine sand with sparsely scattered pebbles, cobbles and boulders	Poor visibility. Stones support sparse <i>Flustra foliacea</i> (R), hydroids (R) and <i>Alcyonium digitatum</i> (R). Pleuronectiformes spp. (P), teleost spp. indet. (P), Paguridae spp. (R)	SS.SSa.CFiSa	
EAB06	Slightly silty rippled fine sand	Sparse hydroids (R), <i>Flustra foliacea</i> (R), <i>Alcyonium digitatum</i> (R) and <i>Urticina</i> sp. (R). Paguridae spp. (R), <i>Astropecten irregularis</i> (R), infaunal tubes (R)	SS.SSa.CFiSa	
EAB07	Slightly silty rippled fine sand with sparsely scattered pebbles, cobbles and boulders	Poor visibility. Stones support sparse hydroids (R) including <i>Hydrallmania falcata?</i> , <i>Alcyonium digitatum</i> (R, locally O) and <i>Urticina</i> sp. (R). Paguridae spp. (R), teleost spp. indet. (R)	SS.SSa.CFiSa	
EAB08	Slightly silty rippled fine sand, with sparsely scattered cobbles and pebbles	Poor visibility. Sparse hydroids (R), <i>Flustra foliacea</i> (R), <i>Alcyonium digitatum</i> (R) and <i>Urticina</i> sp. (R). <i>Astropecten irregularis?</i> (R), Asteroidea spp. indet. (R), <i>Munida rugosa</i> (R)	SS.SSa.CFiSa	
EAB09	Slightly silty fine sand, rippled for much of the run, with sparsely scattered gravel, pebbles, cobbles and boulders in siltier unrippled patches	Poor visibility. Sparse <i>Urticina</i> sp. (R), <i>Flustra foliacea</i> (R), hydroids (R) and <i>Alcyonium digitatum</i> (R). Teleost spp. indet. (R). Small infaunal tubes in siltier areas	SS.SSa.CFiSa SS.SSa.OSa	
EAB10	Slightly silty rippled fine sand with sparse boulders	Poor visibility. Sparse <i>Flustra foliacea</i> (R), <i>Alcyonium digitatum</i> (R) and <i>Urticina</i> sp. (R). <i>Luidia ciliaris</i> (P)	SS.SSa.CFiSa	
EAB11	Slightly silty faintly rippled fine sand with sparsely scattered pebbles, cobbles and boulders	Poor visibility. Stones support sparse hydroids (R), <i>Flustra foliacea</i> (R), <i>Alcyonium digitatum</i> (R) and <i>Urticina</i> sp. (R). Paguridae spp. (R), Asteroidea sp. (R)	SS.SSa.CFiSa	
EAB12	Muddy sand with scattered gravel, pebbles and cobbles	Poor visibility. <i>Urticina</i> sp. (F) and sparse <i>Flustra foliacea</i> (R), hydroids (R) including <i>Nemertesia ramosa</i> , and <i>Alcyonium digitatum</i> (R). Pleuronectiformes spp. indet. (O), teleost spp. indet. (O), <i>Asterias rubens</i> (R), Asteroidea spp. indet. (R). No megafaunal burrows but sparse small holes visible	SS.SSa.OSa	

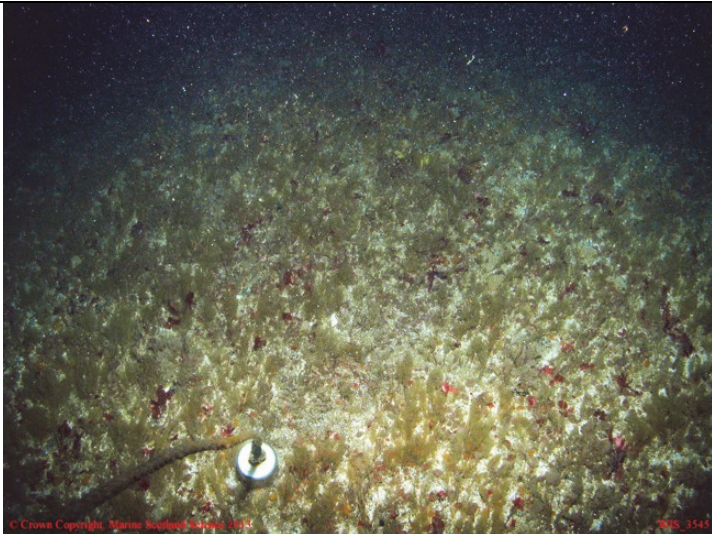


## Annex 3

Site ID	Substrate	Biota	Biotope	PPF/PMF
EAB13	Slightly silty rippled fine sand	Poor visibility. Sparse hydroids (R) and <i>Alcyonium digitatum</i> (R). Teleost spp. indet. (R), <i>Brachyura</i> sp. (P)	SS.SSa.CFiSa	
EAB13	Muddy sand with sparsely scattered pebbles and cobbles	Poor visibility. Sparse hydroids (R) and <i>Alcyonium digitatum</i> (R). Asteroidea sp. indet. (R), teleost spp. indet. (P)	SS.SSa.OSa	
EAB14	Silty slightly rippled sand with sparse cobbles	Sparse hydroids (R), <i>Alcyonium digitatum</i> (R), <i>Flustra foliacea</i> (R) and <i>Urticina</i> sp. (O). Pleuronectiformes sp. (O), teleost spp. indet. (O)	SS.SSa.CFiSa	
EAB15	Muddy sand with sparsely scattered cobbles and pebbles	Poor visibility. Sparse hydroids (R), <i>Alcyonium digitatum</i> (R) and <i>Urticina</i> sp. (R). Pleuronectiformes sp. (P), <i>Ophiura</i> sp. (P), polychaete casts (P)	SS.SSa.OSa	
EAB15	Slightly silty rippled fine sand	Poor visibility. Sparse hydroids (R), <i>Alcyonium digitatum</i> (R) and <i>Urticina</i> sp. (R). <i>Atelecyclus rotundatus?</i> (R)	SS.SSa.CFiSa	
EAB16	Silty slightly rippled sand	Sparse hydroids (R), <i>Alcyonium digitatum</i> (R), <i>Flustra foliacea</i> (R) and <i>Urticina</i> sp. (O). <i>Asterias rubens</i> (F), Pleuronectiformes sp. (P), teleost spp. indet. (P), <i>Callionymus lyra</i> (R), <i>Liocarcinus</i> sp.? (R), <i>Actiniaria</i> sp. indet. (R). Sediment with polychaete casts, small holes and infaunal tubes	SS.SSa.CFiSa	
EAB17	Apparently firm muddy sand	Poor visibility. Sparse megafaunal burrows including <i>Nephrops norvegicus</i> (F, 2 animals seen) and small holes and infaunal tubes. Hydroids (R), <i>Flustra foliacea</i> (R), <i>Urticina</i> sp. (O), <i>Alcyonium digitatum?</i> (R), Paguridae spp. (R), Pleuronectiformes spp. (O), teleost spp. indet. (P). <i>Meganyctiphanes norvegica?</i> in water column	SS.SMu.OMu	
EAB18	Muddy sand with sparsely scattered cobbles and pebbles	Very poor visibility. Sparse <i>Flustra foliacea</i> (R but mostly drift), hydroids (R), <i>Urticina</i> sp. (O) and <i>Alcyonium digitatum</i> (R). Pleuronectiformes spp. indet. (O), teleost spp. indet. (O), <i>Asterias rubens</i> (O). Very sparse megafaunal burrows and small holes visible. 2 <i>Nephrops norvegicus</i> seen	SS.SMu.OMu	



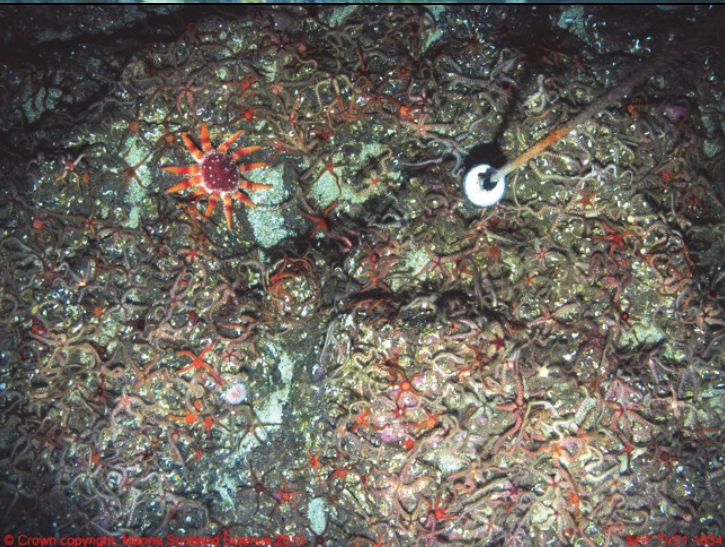
**ANNEX 4: BIOTOPES AND PPF SPECIES RECORDED WITH SITES OF OCCURRENCE AND ILLUSTRATIVE PHOTOGRAPH OR VIDEO FRAME GRAB. BIOTOPE CODES AND SPECIES IN RED ARE PPFs. ITALICISED SITES INDICATE PROVENANCE OF IMAGE. SEE CONNOR *ET AL.* (2004) FOR FULL BIOTOPE DESCRIPTION**

<p><b>IR.HIR.KFaR.FoR</b></p> <p>Foliose red seaweeds on exposed lower infralittoral rock</p> <p><i>SEB_V71</i></p>	
<p><b>CR.HCR.FaT.CTub.CuSp</b></p> <p><i>Tubularia indivisa</i> and cushion sponges on tide-swept turbid circalittoral bedrock</p> <p><i>WIS02</i></p>	
<p><b>CR.HCR.DpSp.PhaAxi</b></p> <p><i>Phakellia ventilabrum</i> and axinellid sponges on deep, wave-exposed circalittoral rock</p> <p>SEB_V07, SEB_V08, SEB_V12, SEB_V13, SEB_V20, SEB_V22, SEB_V24, SEB_V29, SEB_V30, SEB_V31, SEB_V35, SEB_V36, <i>SEB_V63</i></p>	

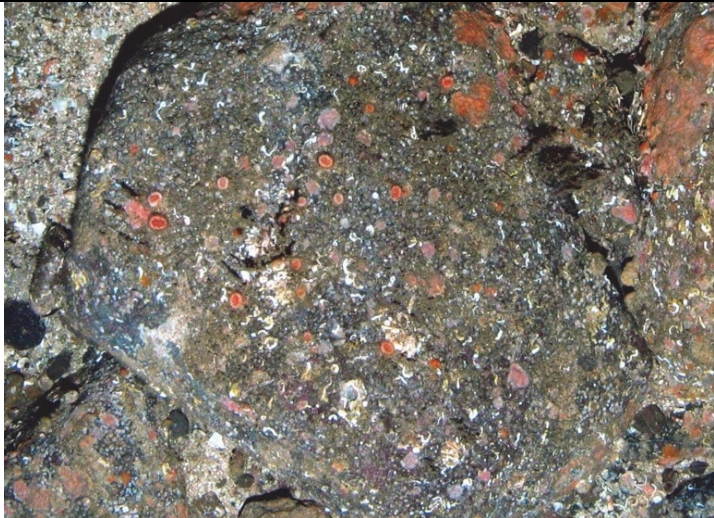


Annex 4 continued

<p><b>CR.HCR.XFa</b></p> <p>Mixed faunal turf communities</p> <p>WIS03</p>	
<p><b>IR.MIR.KR.Lhyp.Pk</b></p> <p><i>Laminaria hyperborea</i> park and foliose red seaweeds on moderately exposed lower infralittoral rock</p> <p>WMO73</p>	
<p><b>CR.MCR.EcCr.CarSwi.LgAs</b></p> <p><i>Caryophyllia smithii</i>, <i>Swiftia pallida</i> and large solitary ascidians on exposed or moderately exposed circalittoral rock</p> <p>SEB_V06, SEB_V08, SEB_V11, SEB_V12, SEB_V20, SEB_V22, SEB_V35, SEB_V36</p>	

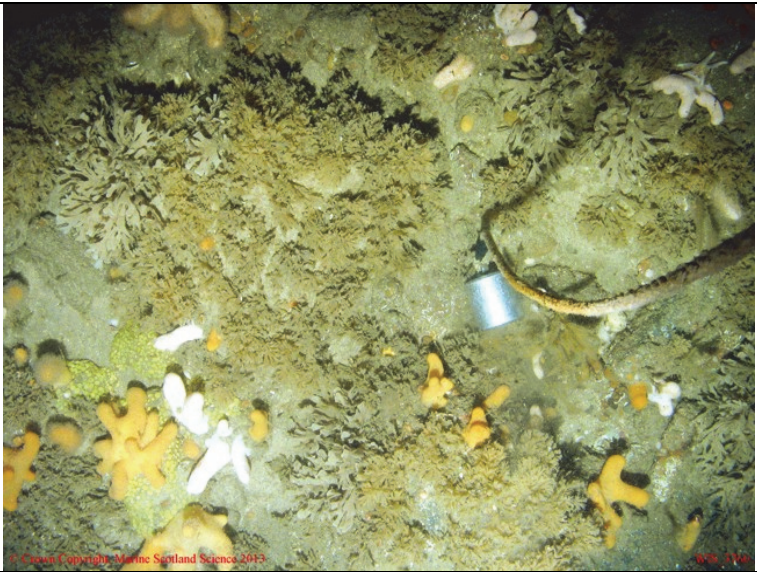


Annex 4 continued

<p><b>CR.MCR.EcCr.FaAICr</b></p> <p>Faunal and algal crusts on exposed to moderately wave-exposed circalittoral rock</p> <p>NWS_V40, SEB_V18, SEB_V31, SEB_V72, SEB_V73, WICK01, WIS04, WMO69, WMO70, WMO72, WMO73, WMO74, WMO82, WOL38, WOL41, WOL46, WOL49, WOL50, WOL53</p>	 <p>© Crown copyright, Marine Scotland Natural 2013 WCL TV46 2672</p>
<p><b>CR.MCR.EcCr.FaAICr.Adig</b></p> <p><i>Alcyonium digitatum</i>, <i>Pomatoceros triqueter</i>, algal and bryozoan crusts on wave-exposed circalittoral rock</p> <p>WMO72</p>	 <p>07:19:18 30/07/2013 59'03.358N 03'21.584W 24.0m</p>
<p><b>CR.MCR.EcCr.FaAICr.Bri</b></p> <p>Brittlestar bed on faunal and algal encrusted, exposed to moderately wave-exposed circalittoral rock</p> <p>SHT03, SHT21, WIS36</p>	 <p>© Crown copyright, Marine Scotland Natural 2013 WCL TV46 2672</p>




Annex 4 continued

<p><b>CR.MCR.EcCr.FaAlCr.Car</b></p> <p><i>Caryophyllia smithii</i> with faunal and algal crusts on moderately wave-exposed circalittoral rock</p> <p>SEB_V18, SEB_V73, SHT21, WMO69, WMO74, WMO75, WMO76, WMO78, WMO80, WMO84, WMO88, WMO89, WMO92, WMO93, WMO94, WMO95</p>	
<p><b>CR.MCR.EcCr.FaAlCr.Flu</b></p> <p><i>Flustra foliacea</i> on slightly scoured silty circalittoral rock</p> <p>SHT04, SHT13, WIS16, WIS17, WIS27, WIS28, WIS29, WIS30, WIS31, WIS32, WMO57, WMO60, WMO61, WMO64, WMO65</p>	
<p><b>CR.MCR.EcCr.FaAlCr.Pom</b></p> <p>Faunal and algal crusts with <i>Pomatoceros triqueter</i> and sparse <i>Alcyonium digitatum</i> on exposed to moderately wave-exposed circalittoral rock</p> <p>CS1140, NWS_V38, SEB_V18, SEB_V19, SEB_V25, SEB_V71, SEB_V74, SHT03, SHT04, SHT07, SHT12, SHT13, SHT20, SHT22, WMO71, WMO74, WMO75, WMO76, WMO79, WMO81, WMO84, WMO88, WMO89, WMO90, WMO91, WMO93, WMO96, WMO97, WMO97, WOL45</p>	

Annex 4 continued

<p><b>CR.MCR.EcCr.FaAICr.Sec</b></p> <p><i>Alcyonium digitatum</i> with <i>Securiflustra securifrons</i> on tide-swept moderately wave-exposed circalittoral rock</p> <p>WIS20</p>	
<p><b>SS.SCS.CCS</b></p> <p>Circalittoral coarse sediment</p> <p>NWS_V40, SEB_V07, SEB_V08, SEB_V09, SEB_V25, SEB_V28, SEB_V37, SHT02, SHT13, SHT14, SHT17, SHT19, SHT20, SHT21, SHT22, WIS35, WIS37, WMO57, WMO58, WMO59, WMO61, WMO62, WMO63, WMO65, WMO66, WMO67, WMO75, WMO77, WMO86, WMO92, WMO96, WMO98, WMO101, WOL38, WOL52, WOL59</p>	
<p><b>SS.SCS.CCS.PomB</b></p> <p><i>Pomatoceros triqueter</i> with barnacles and bryozoan crusts on unstable circalittoral cobbles and pebbles</p> <p>WIS02, WIS03, WIS08, WIS15, WIS16, WIS17, WIS20, WIS26, WIS27, WIS31</p>	


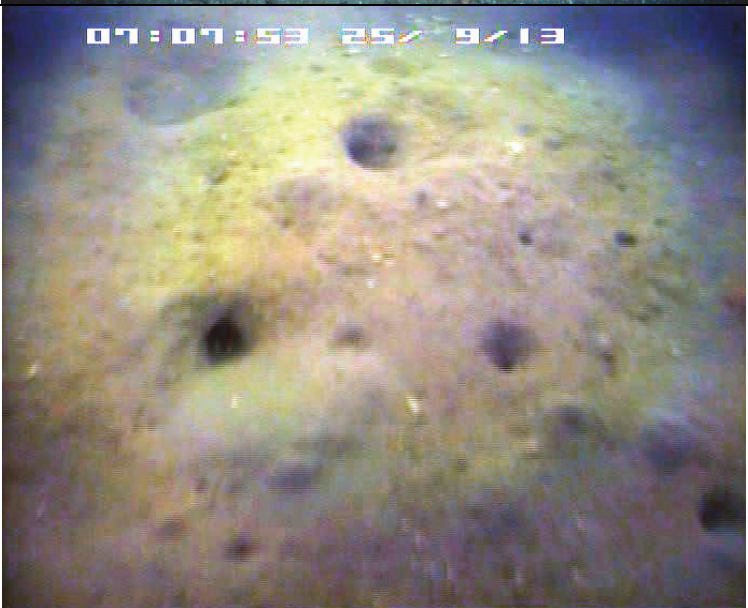
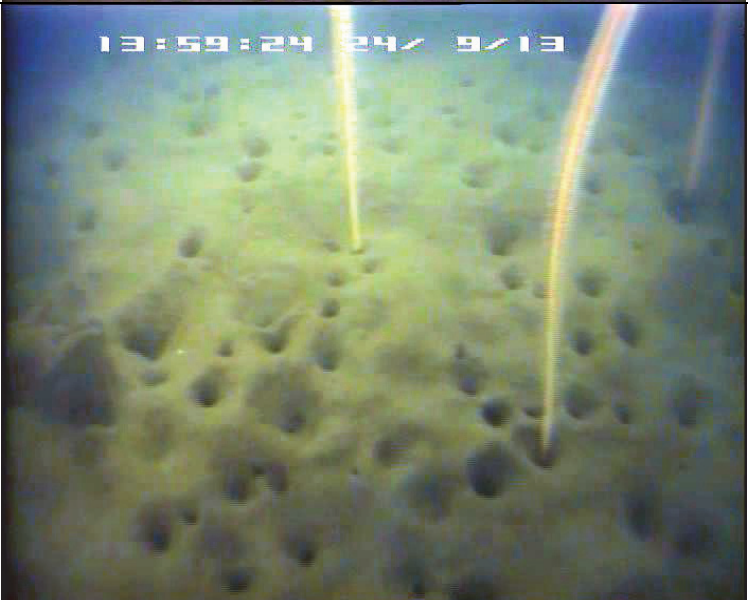
Annex 4 continued

<p><b>SS.SSa</b></p> <p>Sublittoral sands and muddy sands</p> <p>CS1101, CS1102, CS1104, CS1107, CS1117, CS1118, CS1120, CS1123, CS1124, CS1127, CS1131, SHT03, ULL01</p>	
<p><b>SS.SSa.IFiSa</b></p> <p>Infralittoral fine sand</p> <p>CROM01, CROM02, CROM03</p>	
<p><b>SS.SSa.CFiSa</b></p> <p>Circalittoral fine sand</p> <p>BUD01, BUD03, BUD05, BUD07, BUD08, BUD09, BUD12, BUD13, BUD14, BUD15, BUD18, BUD19, BUD20, BUD21, BUD24, BUD25, EAB01, EAB02, EAB03, EAB04, EAB05, EAB06, EAB07, EAB08, EAB09, EAB10, EAB11, EAB13, EAB14, EAB15, EAB16, SHT02, SHT04, SHT05, SHT06, SHT07, SHT08, SHT09, SHT11, SHT12, SHT14, SHT17, SHT18, SHT19, SHT20,</p>	


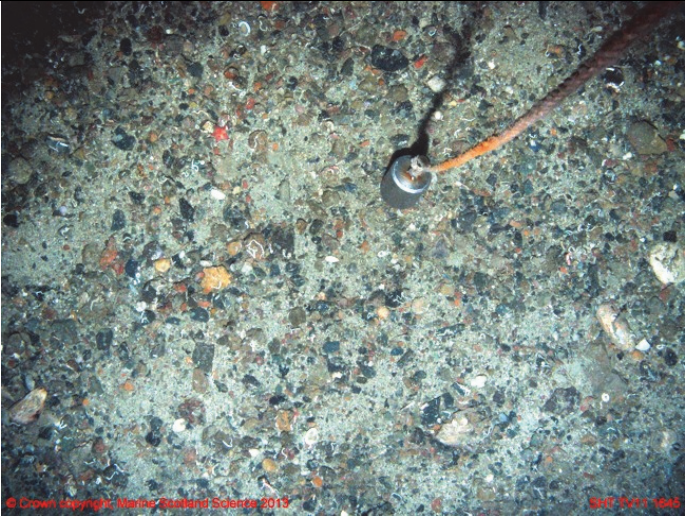
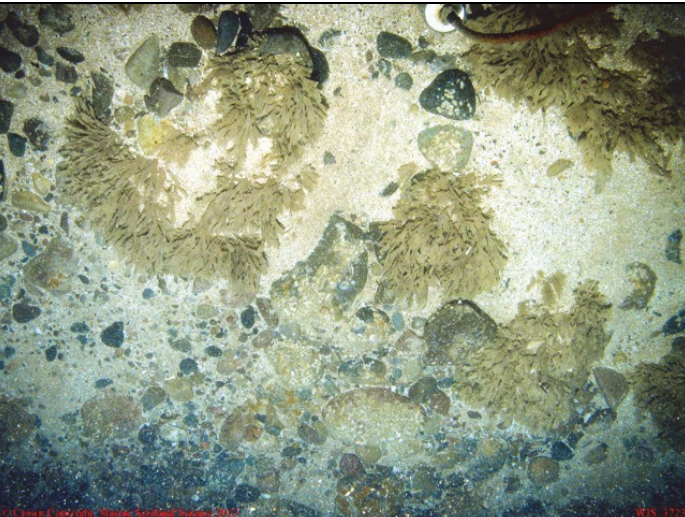
*Annex 4 continued*

<p>STROM01, SUT01, SUT02, SUT03, SUT04, SUT05, WIS04, WIS05, WIS06, WIS08, WIS09, WIS10, WIS11, WIS12, WIS13, WIS14, WIS16, WIS19, WIS20, WIS21, WIS22, WIS23, WIS24, WIS25, WIS26, WIS32, WIS33, WIS34, WIS35, WIS37, WIS38, WIS39, WMO57, WMO58, WMO66, WMO72, WMO73, WMO75, WMO78, WMO79, WMO81, WMO82, WMO83, WMO85, WMO86, WMO87, WMO88, WMO89, WMO90, WMO91, WMO92, WMO93, WMO96, WMO97, WMO98, WMO99, WMO100, WMO101, WMO102, WOL37, WOL38, WOL39, WOL40, WOL46, WOL48, WOL49, WOL50, WOL51, WOL52, WOL54, WOL55, WOL56, WOL59</p>	
<p><b>SS.SSa.CMuSa</b></p> <p>Circalittoral muddy sand</p> <p>CS1103, CS1106, CS1114, CS1137, NWS_V70</p>	 An underwater photograph showing a dark, muddy sand seabed. Three small, reddish-brown crabs are visible on the sand. The lighting is somewhat dim, and the sand has a fine, granular texture.




Annex 4 continued

<p><b>SS.SSa.OSa</b></p> <p>Offshore circalittoral sand</p> <p>EAB09, EAB12, EAB13, EAB15, SEB_V01, SEB_V03, SEB_V04, SEB_V12, SEB_V14, SEB_V15, SEB_V23, SEB_V27, SEB_V33, SEB_V66, SHT01, SHT10, SHT15, SHT16, WOL42, WOL43, WOL44</p>	 <p>© Crown copyright, Marine Scotland Science 2013 SHT TV15 1712</p>
<p><b>SS.SMu.CFiMu.SpnMeg</b></p> <p>Seapens and burrowing megafauna in circalittoral fine mud</p> <p>NWS_V67, NWS_V68, SEB_V05, SEB_V33, SEB_V66</p>	
<p><b>SS.SMu.CFiMu.SpnMeg.Fun</b></p> <p>Seapens, including <i>Funiculina quadrangularis</i>, and burrowing megafauna in undisturbed circalittoral fine mud</p> <p>NWS_V41, NWS_V42, ULL01, ULL02, ULL03</p>	



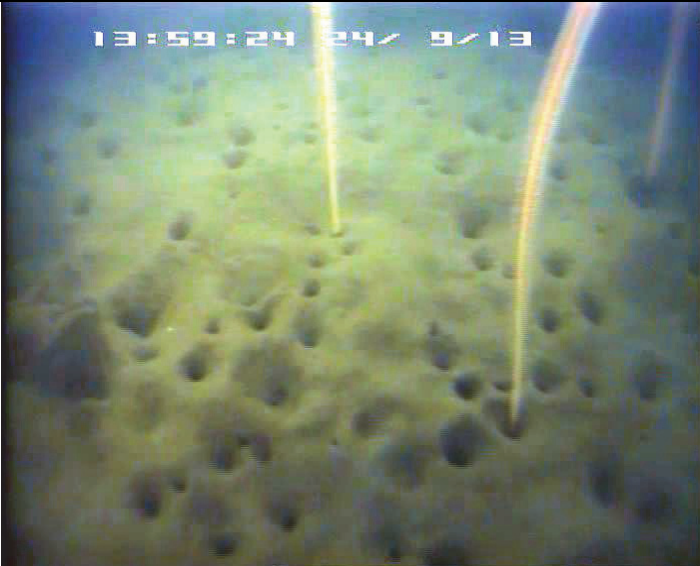
Annex 4 continued

<p><b>SS.SMu.OMu</b></p> <p>Offshore circalittoral mud</p> <p>EAB17, EAB18, SEB_V36, SHT23, SHT24, SHT25</p>	 <p>© Crown Copyright, Marine Scotland Science 2013 SHT 234-075</p>
<p><b>SS.SMx.CMx</b></p> <p>Circalittoral mixed sediment</p> <p>NWS_V67, NWS_V68, NWS_V75, SEB_V19, SHT03, SHT06, SHT07, SHT11, SHT12, SHT14, SHT18, SHT20, SHT22, SUT01, SUT04, ULL01, ULL02, ULL03, WICK01, WICK02, WIS09, WIS18, WIS32, WMO74, WMO80, WMO82, WMO83, WMO84, WMO88, WMO89, WMO90, WMO91, WMO92, WMO93, WMO94, WMO95, WMO96, WOL42, WOL45, WOL46, WOL47</p>	 <p>© Crown Copyright, Marine Scotland Science 2013 SHT 231-068</p>
<p><b>SS.SMx.CMx.FluHyd</b></p> <p><i>Flustra foliacea</i> and <i>Hydrallmania falcata</i> on tide- swept circalittoral mixed sediment</p> <p>WIS01, WIS07, WIS08, WIS16, WIS17, WIS29, WIS30, WIS31, WIS36, WMO57, WMO58, WMO60, WMO61, WMO62, WMO63, WMO64, WMO65, WMO66, WMO67, WMO68, WMO75, WMO76, WMO79, WMO81, WMO92, WOL38, WOL41, WOL46, WOL49, WOL50, WOL53, WOL54, WOL55, WOL57, WOL59</p>	 <p>© Crown Copyright, Marine Scotland Science 2013 WIS 2723</p>

Annex 4 continued

<p><b>SS.SMx.CMx.OphMx</b></p> <p><i>Ophiothrix fragilis</i> and/or <i>Ophiocomina nigra</i> brittlestar beds on sublittoral mixed sediment</p> <p>WICK01, WICK02, WIS36, WOL50, WOL52, WOL58, WOL59</p>	
<p><b>SS.SMx.OMx</b></p> <p>Offshore circalittoral mixed sediment</p> <p>SEB_V01, SEB_V02, SEB_V04, SEB_V08, SEB_V09, SEB_V13, SEB_V15, SEB_V20, SEB_V22, SEB_V24, SEB_V28, SEB_V29, SEB_V30, SEB_V33, SEB_V36, SEB_V66</p>	
<p><b>SS.SMp.Mrl.Pcal.R</b></p> <p><i>Phymatolithon calcareum</i> maerl beds with red seaweeds in shallow infralittoral clean gravel or coarse sand</p> <p>NWS_V69</p>	

Annex 4 continued

<p><b>SS.SBR.SMus.ModT</b></p> <p><i>Modiolus modiolus</i> beds with hydroids and red seaweeds on tide-swept circalittoral mixed substrata</p> <p>WICK02</p>	 <p>09:51:50 05/06/2013 58°26.495N 03°01.052W 46.7m</p>
<p><b>Northern sea fan</b></p> <p>(<i>Swiftia pallida</i>)</p> <p>SEB_V06, SEB_V08, SEB_V11, SEB_V12, SEB_V15, SEB_V20, SEB_V22, SEB_V30, SEB_V35, SEB_V36</p>	 <p>15:23:49 21/09/2013 58°01.851N 06°01.641W 46.0m</p>
<p><b>Tall seapen</b></p> <p>(<i>Funiculina quadrangularis</i>)</p> <p>NWS_V41, NWS_V42, NWS_V68, ULL01, ULL02, ULL03</p>	 <p>13:59:24 24/ 9/13</p>

*Annex 4 continued*

Northern feather star  
aggregations on mixed  
substrata

(*Leptometra celtica*)

NWS\_V75



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