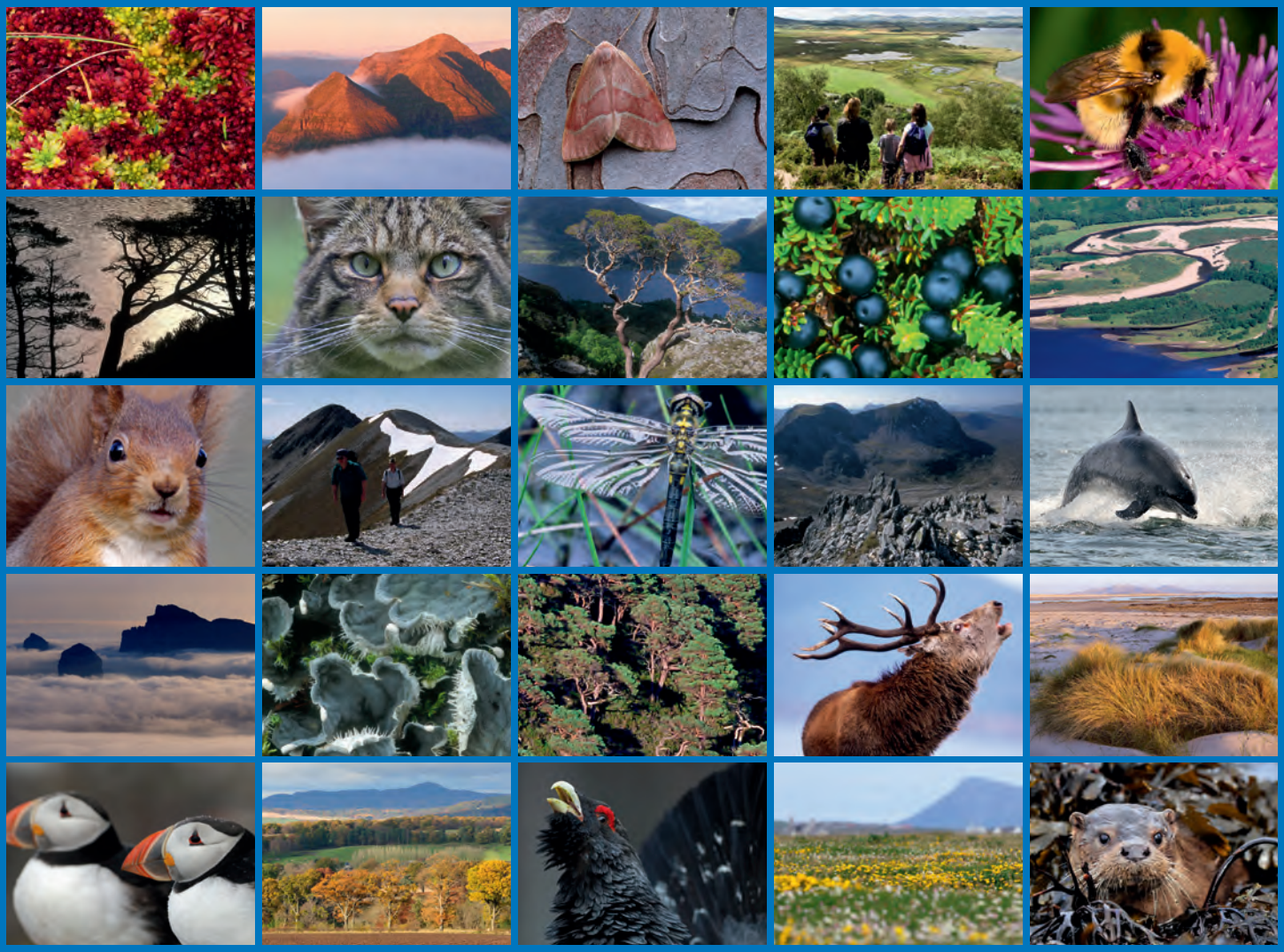
Scottish Natural Heritage
Commissioned Report No. 574

Biological analyses of underwater video from research cruises in Lochs Kishorn and Sunart, off the Mull of Kintyre and islands of Rum, Tiree and Islay, and in the Firth of Lorn and Sound of Mull approaches



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COMMISSIONED REPORT

Summary

Biological analyses of underwater video from research cruises in Lochs Kishorn and Sunart, off the Mull of Kintyre and islands of Rum, Tiree and Islay, and in the Firth of Lorn and Sound of Mull approaches

Commissioned Report No.: 574
Project no: 13879
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Background

To help target marine nature conservation in Scotland, SNH and JNCC have generated a focused list of habitats and species of importance in Scottish waters - the Priority Marine Features (PMFs). A subset of these features (termed MPA search features) will drive the identification of Nature Conservation MPAs. The principal 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 including sites of interest to the development of marine renewables, including off Islay and the Mull of Kintyre, at Kishorn Port, off Tiree and also along a possible subsea cable route from Tiree via the Sound of Mull and Firth of Lorn. The species and habitats of interest are especially PMFs, but also taking into consideration other importance measures. This was to be achieved through the analysis of seabed video and still photographic imagery collected during research cruises around Scotland in 2012.

Imagery was analysed from surveys at seven locations: Loch Kishorn, Loch Sunart, the northern part of the Firth of Lorn including the approaches to the Sound of Mull, off the Mull of Kintyre and off the islands of Rum, Tiree and Islay.

Main findings

- Much of the seabed in Loch Kishorn and its approaches was populated by burrrowed mud communities (**SS.SMu.CFiMu.SpnMeg.Fun** and **SpnMeg**), with most sites displaying moderate densities of *Funiculina quadrangularis* and one site sparse *Pachycerianthus multiplicatus*. *Leptometra celtica* was widely distributed in the approaches, mostly as dense fields associated with muddy mixed substrata.

- All survey sites off Rum and in Loch Sunart displayed burrowed mud communities (**SS.SMu.CFiMu.SpnMeg.Fun** and **SpnMeg**), with most supporting moderate to high densities of *Funiculina quadrangularis*. Sparse *Pachycerianthus multiplicatus* was found at most sites in Loch Sunart and possibly at one site off Rum. Fields of dense

Leptometra celtica were recorded on muddy mixed sediments at three sites in Loch Sunart and associated with a rocky reef habitat at one site off Rum.

- Burrowed mud was found to be extensively distributed in the northern region of the Firth of Lorn, with *Funiculina quadrangularis* present in high numbers at most sites (**SS.SMu.CFiMu.SpnMeg.Fun**). The northern sea fan community (**CR.MCR.EcCr.CarSwi.LgAs**) was recorded on outcropping bedrock at one of these mud sites, with its component species, *Swiftia pallida,* common. Fields of *Leptometra celtica* were observed on silty mixed substrata at two sites in the Sound of Mull approaches and possibly at a third site in the Firth of Lorn.

- No PMFs were observed off Tiree or off the Mull of Kintyre.

- The only PMF habitat recorded off Islay was impoverished examples of **SS.SMp.KSwSS.LsacR**. A single specimen of *Palinurus elephas* was observed in the strongly tide-swept waters off the Rhinns of Islay where a rich sponge and anemone dominated community was also widely recorded.

- The conservation features likely to be most at risk from renewable energy developments, were these to be deployed at these sites, were considered to be the burrowed mud habitats and component species, as well as the *Leptometra celtica* aggregations, with the likelihood of localised damage from cable laying operations in the Mull area and from any ancillary activities causing seabed disturbance in Loch Kishorn.

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1. INTRODUCTION

The Marine (Scotland) Act 2010 provides a framework which will help balance competing demands on the maritime environment, integrating the economic growth of industry with the need to protect Scotland's seas. Where necessary, suitable conservation measures may be implemented at the wider seas level (e.g. through marine planning), targeted at specific species (e.g. improved protection for seals), or delivered within key locations (e.g. through the identification of new Marine Protected Areas - MPAs). Further details are provided in the Strategy for Marine Nature Conservation in Scotland (Marine Scotland, 2011a).

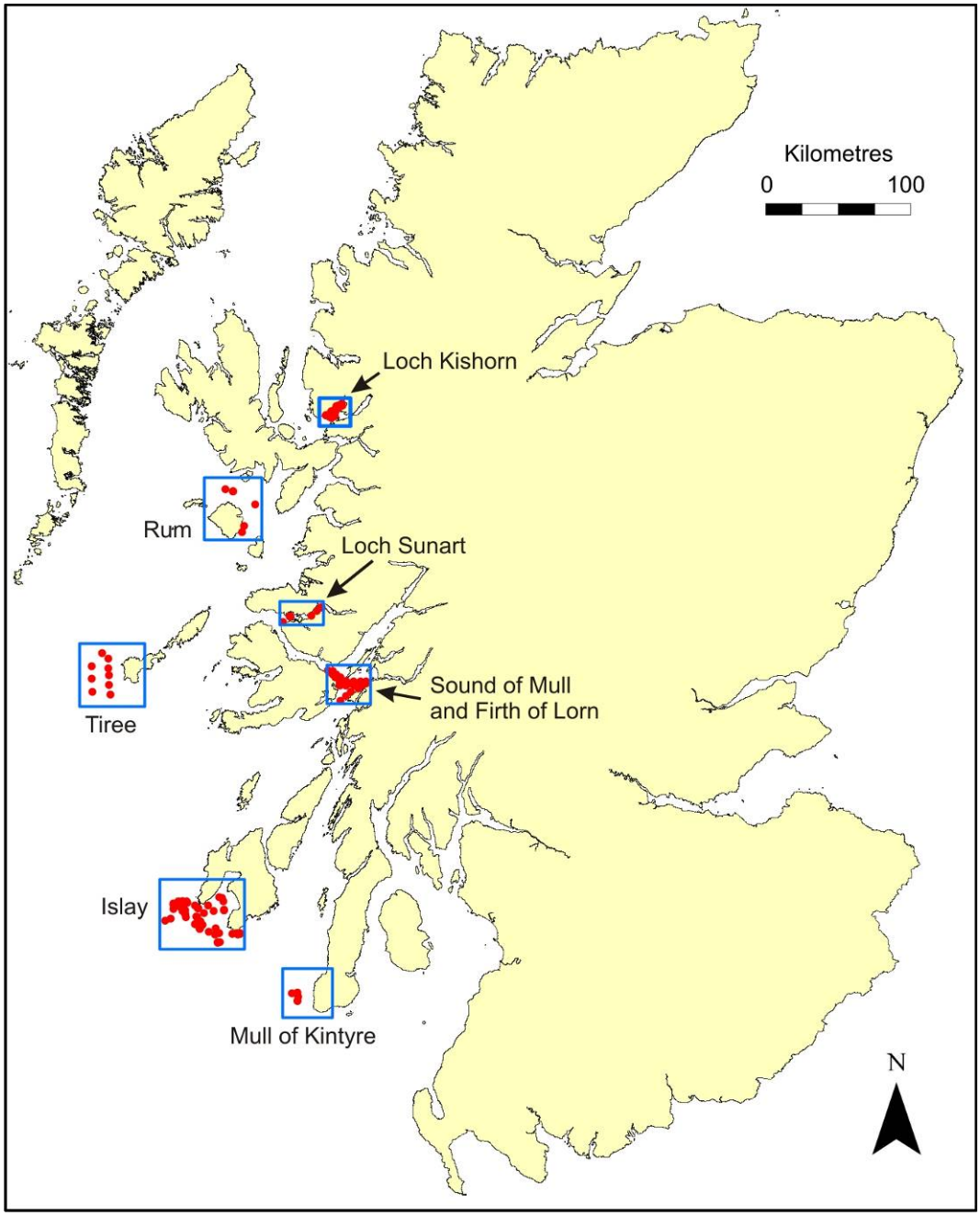

Figure 1. Distribution of survey locations (blue boxes) and sites (red circles). Reproduced by permission of Ordnance Survey on behalf of HMSO. © Crown copyright and database right [2013]. All rights reserved. Ordnance Survey Licence number 100017908.

To help target action under each of these three pillars, 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, 2011). A subset of these biological features (termed MPA search features) will drive the identification of Nature Conservation MPAs (Marine Scotland, 2011b).

The principal aim of the present investigation was to improve knowledge of the occurrence and distribution of species and habitats of recognised conservation importance in sites of interest to the development of marine renewables and in wider Scottish waters, especially PMFs, but also taking cognisance of other importance measures. This was to be achieved through the analysis of seabed video and still photographic imagery collected during research cruises around Scotland in 2012. A further aim was to assess the implications of renewable energy developments on the features of importance, where they occurred in areas likely to experience such developments. Imagery was analysed from seven surveys carried out by Marine Scotland Science (MSS) and the Centre for Environment, Fisheries and Aquaculture Science (CEFAS). Survey regions included Loch Kishorn, Loch Sunart, the northern part of the Firth of Lorn including the approaches to the Sound of Mull, off the Mull of Kintyre and off the islands of Rum, Tiree and Islay (Figure 1).

Planned activities with the potential to influence the marine environment within the surveyed areas include the installation of tidal energy devices off Islay and the Mull of Kintyre, the fabrication of wind turbines at Kishorn Port and their establishment off Tiree, and the possible routing of subsea cables from Tiree via the Sound of Mull and Firth of Lorn.

2. METHODS

Survey details are given in Table 1. Video and photographic imagery was obtained from a dropframe video and camera drifts. Video was taken continuously while vertically-oritentated digital images with laser scaling were taken at approximately 1 minute intervals. Continuous positional data were available via a video overlay system on cruises 1012S and Pole Star 1/12, supplemented by depth data for 1012S. Only start and end depths were available for Pole Star 1/12 and 1612A cruises, with corresponding positional information for the latter cruise. All depths were converted to depth below chart datum, employing TotalTide software (Admiralty, Taunton) to determine tidal rise at the most appropriate secondary port.

Table 1. Survey details.

Survey	Organisation	Vessel	Cruise	Date	No. sites
Loch Kishorn	MSS	*FRV Alba na Mara*	1612A	25-27/09/2012	29
Rum	JNCC	*NLV Pole Star*	Pole Star 1/12	01/09/2012	5
Loch Sunart	JNCC	*NLV Pole Star*	Pole Star 1/12	30-31/08/2012	5
Tiree	MSS	*FRV Alba na Mara*	1612A	22/09/2012	9
Sound of Mull and Firth of Lorn	MSS	*FRV Alba na Mara*	1612A	29-30/09/2012	36
Islay	MSS	*FRV Scotia*	1012S	18-31/08/2012	40
Mull of Kintyre	MSS	*FRV Alba na Mara*	1612A	02/10/2012	4

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). Biotopes were assigned on the basis of physical and biological attributes as described in Connor *et al.* (2004). Runs traversing a sequence of biotopes were split into corresponding segments, with the transition points recorded using the time and, where available, 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 PMFs, as well as for the presence of species and habitats of recognised conservation importance according to a number of additional criteria. This includes citation on the following lists: the IUCN Red List of Threatened Species (lower risk category) (IUCN, 2012), the OSPAR List of Threatened and/or Declining Species and Habitats (OSPAR, 2008) and the Scottish Biodiversity List (Scottish Government, 2012).

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 2, with site location data in Annex 1. In this section PMF biotopes and species are highlighted using red text. Annex 3 provides an inventory of the biotopes recorded, together with illustrative photographs and lists of their occurrence.

3.1 Loch Kishorn and approaches (Figure 2)

Burrowed mud is clearly the predominant sublittoral habitat in the approaches to Loch Kishorn (outer Loch Carron). Most of the seabed below the 50 m depth contour is floored with soft mud worked by a megafaunal burrowing community dominated by *Nephrops norvegicus* and *Calocaris macandreae* and supporting a sea pen fauna dominated by moderately high numbers of *Funiculina quadrangularis* (generally frequent throughout the area) (**SS.SMu.CFiMu.SpnMeg.Fun**).

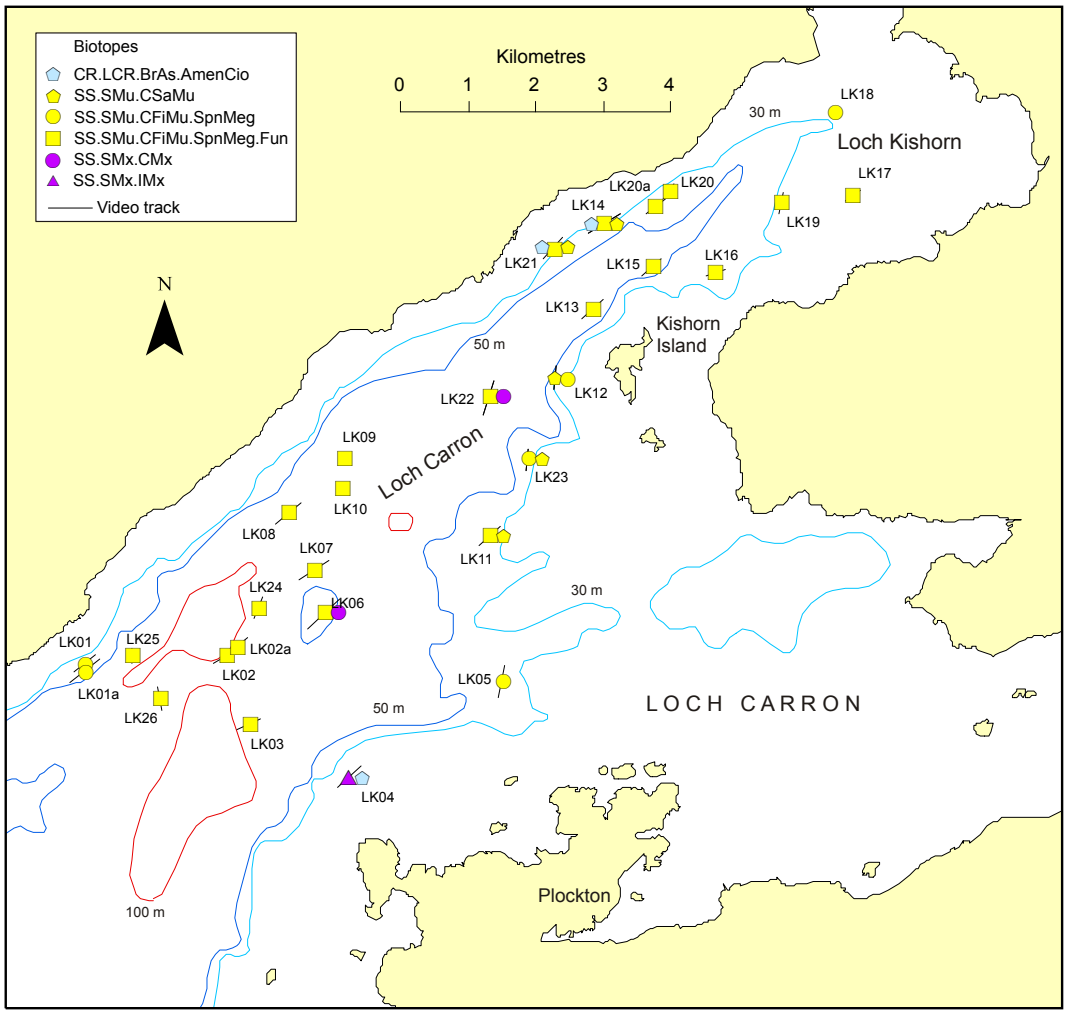

Figure 2. Distribution of biotope records in Loch Kishorn and approaches. Reproduced by permission of Ordnance Survey on behalf of HMSO. © Crown copyright and database right [2013]. All rights reserved. Ordnance Survey Licence number 100017908.

Sparse *Pachycerianthus multiplicatus* was recorded at one site. At the most exposed western limit of the survey area at a depth of around 60 m this community gives way to a lightly burrowed habitat where *Funiculina* is replaced by *Pennatula phosphorea* (**SS.SMu.CFiMu.SpnMeg**). However, *Funiculina* extends into much shallower waters

elsewhere in Loch Carron. Southwest of Kishorn Island in the approaches to the loch, sandy muds were recorded at depths of 35 - 44 m including burrowed habitats characterised by fairly sparse *F. quadrangularis* (**SpnMeg.Fun**) or by *P. phosphorea* (**SpnMeg**), and non-burrowed sediment (**SS.SMu.CSaMu**). The mud was supplemented in places by varying proportions of gravel, pebbles, cobbles and boulders at some of these sites, and at several of the deeper Loch Carron sites, with this mixed substrate supporting fields of *Leptometra celtica*.

In Loch Kishorn burrowed soft muds and sandy muds were also the predominant substrates recorded, with most sites supporting frequent *Funiculina quadrangularis* (**SS.SMu.CFiMu.SpnMeg.Fun**). This biotope extended into very shallow waters (19 m) at the head of the loch. There was a general trend of lower densities of megafaunal burrowers (especially *Calocaris macandreae*) in Loch Kishorn, but much higher densities of *Pennatula phosphorea*, which was abundant in places. In the most exposed western region of the loch burrowed mud gives way to non-burrowed sandy mud (**SS.SMu.CSaMu**) at a depth of around 25 - 30 m. Scattered boulders and cobbles here were encrusted with pink coralline algae, serpulid worms and barnacles and supported dense patches of *Ciona intestinalis* (**CR.LCR.BrAs.AmenCio**).

3.2 Rum (Figure 3)

Burrowed mud communities were recorded at all five sites around Rum at depths of 66 - 248 m, reflecting the widespread occurrence of such communities off the northern and eastern coastline of the island, as revealed by more detailed survey work carried out in 2011 (Moore, 2012). In general the mud was densely burrowed by *Calocaris macandreae* and *Nephrops norvegicus* and supported fairly high densities of *Funiculina quadrangularis* (frequent - common) (**SS.SMu.CFiMu.SpnMeg.Fun**), with a possible sighting of *Pachycerianthus multiplicatus* at one of the sites. Scattered cobbles and boulders supported a low diversity epifauna including hydroids, anemones (such as *Metridium senile* and *Urticina* sp.), as well as *Leptometra celtica*, which attained a high density at one site on a field of cobbles and boulders (**CR.LCR**). The southernmost site (RM05) appeared similar to the other sites; however, it has been ascribed to **SS.SMu.CFiMu.SpnMeg** as the only sea pen observed was *Pennatula phosphorea*. The recorded absence of *Funiculina* may merely be a consequence of the very poor visibility experienced.

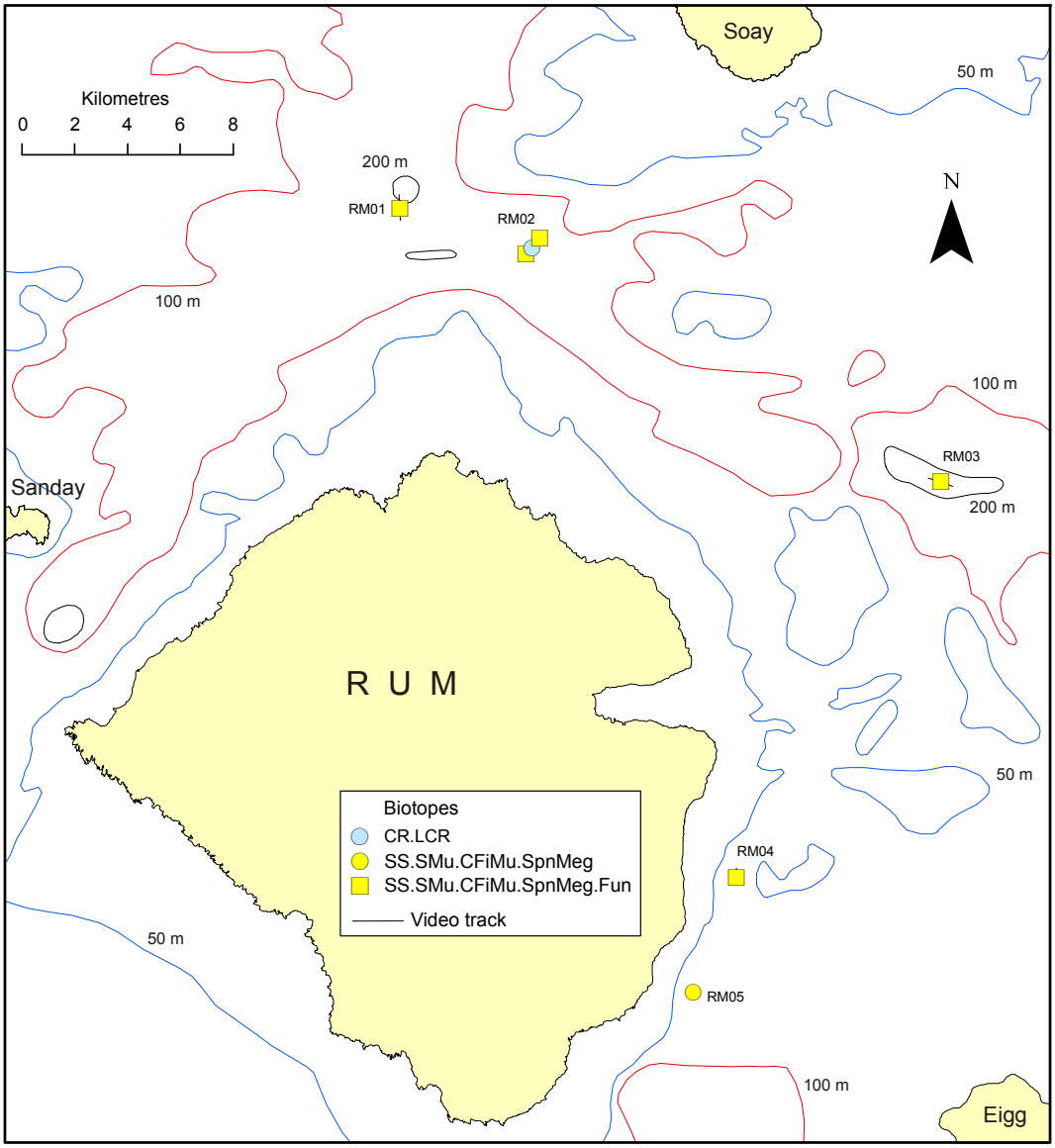

Figure 3. Distribution of biotope records off Rum. Reproduced by permission of Ordnance Survey on behalf of HMSO. © Crown copyright and database right [2013]. All rights reserved. Ordnance Survey Licence number 100017908.

3.3 Loch Sunart (Figure 4)

Burrowed mud was present at all five sites examined, being recorded at depths of 39 - 98 m. This is consistent with the results of the 2001 broadscale survey of the loch (Bates *et al*., 2004), which found this to be the dominant sublittoral habitat. At four of the sites, soft mud supported rich populations of *Funiculina quadrangularis* (common - abundant), with a megafaunal burrowing fauna including *Nephrops norvegicus*, *Calocaris macandreae*, *Goneplax rhomboides* and probably *Jaxea nocturna* and *Callianassa subterranea* (**SS.SMu.CFiMu.SpnMeg.Fun**). Low densities of *Pachycerianthus multiplicatus* were present at three of the sites. Only a small area of lightly burrowed mud was observed at site LS04, where *F. quadrangularis* was not recorded (**SS.SMu.CFiMu.SpnMeg**). Also present at three of the sites were patches of mixed substrates consisting of muddy sediments with varying additions of shell material, gravel, pebbles, cobbles and boulders. The shell and stones and the adjacent sediment supported fields of *Leptometra celtica*. At site LS02 the presence of bedrock and concentrations of boulders led to the recognition of the reef

biotope, **CR.LCR.BrAs**. The rock supported large numbers of *L. celtica* and *Neocrania anomala*, as well as fairly sparse *Protanthea simplex*, *Caryophyllia smithii* and ascidians.

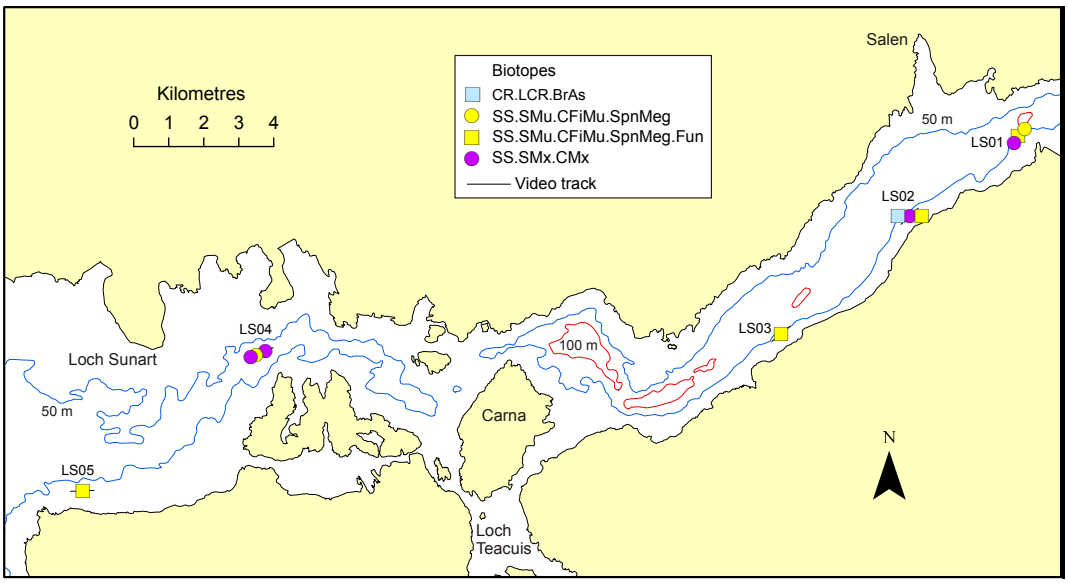

Figure 4. Distribution of biotope records in Loch Sunart. Reproduced by permission of Ordnance Survey on behalf of HMSO. © Crown copyright and database right [2013]. All rights reserved. Ordnance Survey Licence number 100017908.

3.4 Tiree (Figure 5)

Parks of *Laminaria hyperborea* were generally recorded between depths of 19 and ca. 30 m on the uneven rocky seabed to the west of Tiree. Some sites supported species indicative of strong wave exposure, such as *Actinothoe sphyrodeta/Sagartia elegans* (possibly both of these similar looking species were present), *Corynactis viridis*, *Holothuria forskali* and *Cliona celata*. These sites have been referred to **IR.HIR.KFaR.LhypR.Pk**, despite the lack of profuse red algal turfs, which may have been due to an autumnal dieback. Rich algal turfs have been recorded here earlier in the year (Moore and Roberts, 2011). Sites close to a charted area of tidal overfalls off northwest Tiree displayed evidence of current exposure in the sponge fauna, with one kelp park site supporting patches of *Pachymatisma johnstonia* (**IR.MIR.KR.LhypT.Pk**) at 20 - 27 m depth, while in deeper water (33 - 35 m) the community was dominated by encrusting and cushion sponges coating boulders and cobbles (tentatively assigned to **CR.HCR.FaT**). Below 42 m the seabed was found to be composed largely of boulders and cobbles with outcrops of bedrock, which supported an encrusting community of pink coralline algae, *Parasmittina trispinosa*, sparse sponges and generally dense *Spirobranchus* spp. (**CR.MCR.EcCr.FaAlCr.Pom**), accompanied locally, and possibly in deeper water, by frequent *Caryophyllia smithii* (**CR.MCR.EcCr.FaAlCr.Car**).

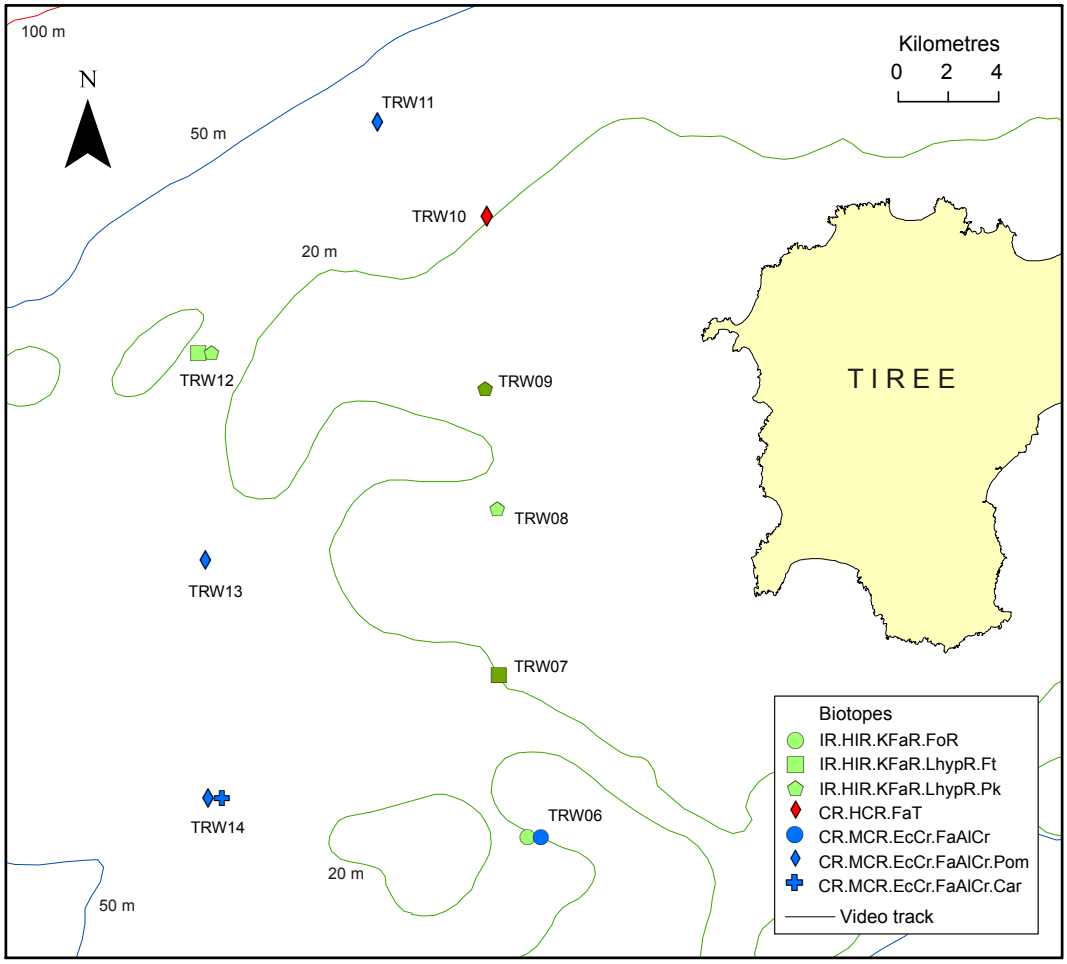

Figure 5. Distribution of biotope records off Tiree. Reproduced by permission of Ordnance Survey on behalf of HMSO. © Crown copyright and database right [2013]. All rights reserved. Ordnance Survey Licence number 100017908.

3.5 Sound of Mull and Firth of Lorn (Figure 6)

The burrowed mud habitat was found to be extensively distributed in the northern part of the Firth of Lorn between the islands of Lismore and Kerrera at depths of 21 - 125 m. At most sites the mud was inhabited by moderate densities of *Nephrops norvegicus* and *Calocaris macandreae*, with other megafaunal burrowers including *Goneplax rhomboides*. The area supports large numbers of *Funiculina quadrangularis*, which was common at most sites, locally abundant at several sites, and superabundant in patches at site SOM10. Occasional *Pennatula phosphorea* were also generally present (**SS.SMu.CFiMu.SpnMeg.Fun**). *Funiculina* was replaced by *Virgularia mirabilis* above a depth of around 22 m at the shallowest site examined (SOM02) and was also not recorded at the deepest site (FOL22), possibly due to poor visibility. Both these sites have been ascribed to **SS.SMu.CFiMu.SpnMeg**. Silted outcropping bedrock at one site off Kerrera (FOL21) was colonised by *Swiftia pallida* (common) and *Caryophyllia smithii* (**CR.MCR.EcCr.CarSwi.LgAs**).

Much of the western region of the surveyed area lying between the islands of Lismore and Mull and the eastern approach to the Sound of Mull experiences accelerated tidal currents and the seabed here was found to consist of a mixture of sand, shell material, gravel, pebbles, cobbles and scattered boulders in varying proportions. In general the associated community did not appear to be of high diversity. Stones were lightly encrusted with serpulid worms, bryozoans and, in shallower waters, pink coralline algae, and supported occasional

hydroid clumps including *Tubularia indivisa*, particularly on the upper surfaces of boulders. Other sessile fauna included sparse encrusting/cushion sponges, *Alcyonium digitatum* and *Urticina* spp. (**SS.SMx.CMx**). At two sites in the tidal race east of Duart Point, dense stands of *T. indivisa* were observed (**CR.HCR.FaT**). Areas of dense brittlestars were recorded at most sites, with *Ophiothrix fragilis* generally dominant, sometimes accompanied by *Ophiocomina nigra* (**SS.SMx.CMx.OphMx**). At site SOM11 south-east of the southern tip of Lismore, the video camera traversed an uncharted wreck, which appeared to support a fairly sparse fouling community, with just patches of *Alcyonium digitatum*, *Sabella pavonina*, hydroids and ascidians observed (**CR.FCR.FouFa**). A field of abundant *Leptometra celtica* was also recorded on the mixed substrata at this site. Small fields of crinoids were also observed at site SOM7 east of Craignure (probably *L. celtica*) and site FOL23 in the Firth of Lorn (possibly *L. celtica*).

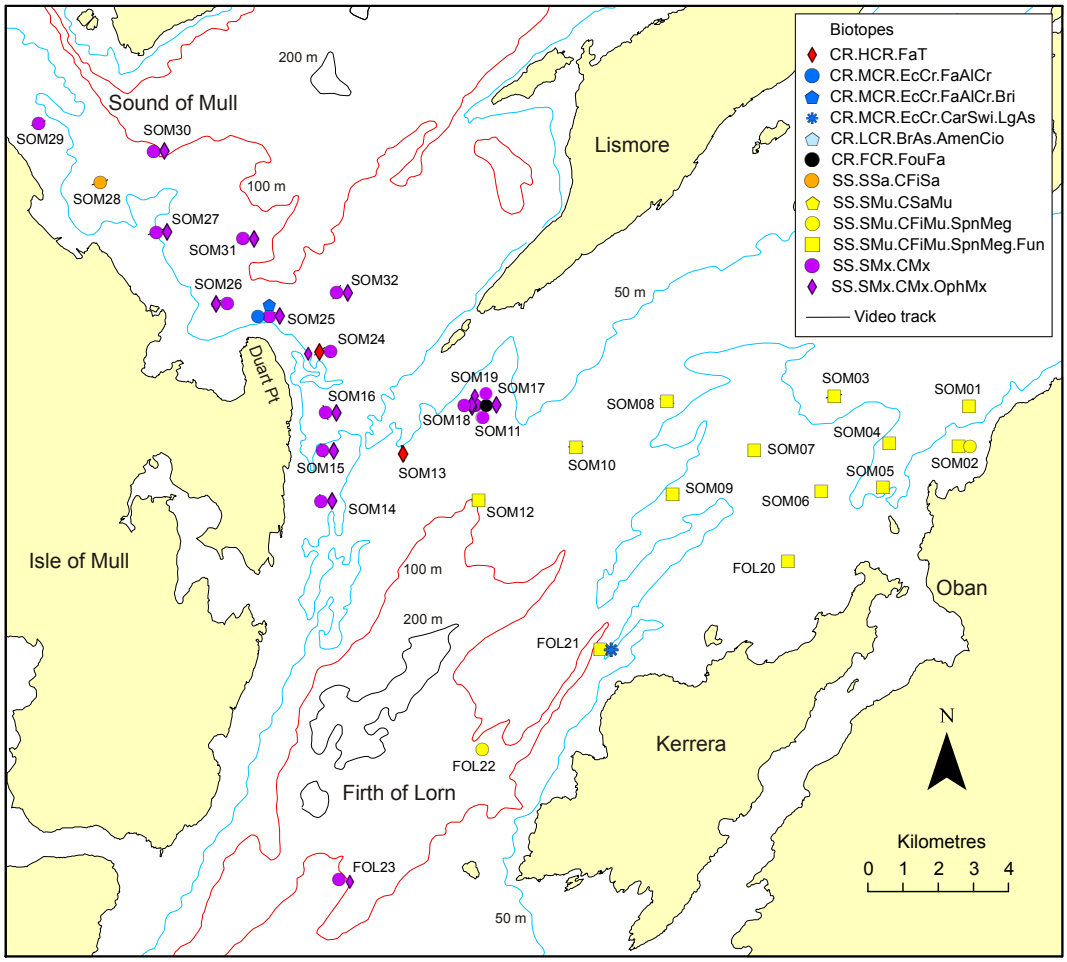

Figure 6. Distribution of biotope records in the eastern entrance to the Sound of Mull and in the Firth of Lorn. Reproduced by permission of Ordnance Survey on behalf of HMSO. © Crown copyright and database right [2013]. All rights reserved. Ordnance Survey Licence number 100017908.

3.6 Islay (Figure 7)

The Rhinns of Islay peninsula continues sublittorally as a shallow tongue of strongly tide-swept rugged bedrock and dense boulders and cobbles. Charted current speeds reach 8 knots close inshore. The dominant biotope recorded here from 30 m to around a depth of 40 m was **CR.HCR.FaT.CTub.CuSp**. The rock supported a sponge fauna dominated by yellow, cream and orange encrusting and cushion forms, possibly including *Myxilla incrustans*, *Halichondria panicea* and *Amphilectus fucorum*, with *Pachymatisma johnstonia*

widely distributed and locally common. Other dominant species included dense patches of *Tubularia indivisa* and *Sagartia elegans* var. *venusta/Actinothoe sphyrodeta* (both species being represented), with patches of *Corynactis viridis*. *Alcyonium digitatum* was generally sparse, apart from at a single site (ISL18), where it became profuse (**CR.HCR.FaT.CTub.Adig**). A very low diversity habitat was recorded in bedrock areas probably experiencing the strongest tidal conditions, where the rock supported little else apart from dense sheets of *Balanus* spp. and clumps of *T. indivisa* (**CR.HCR.FaT.BalTub**).

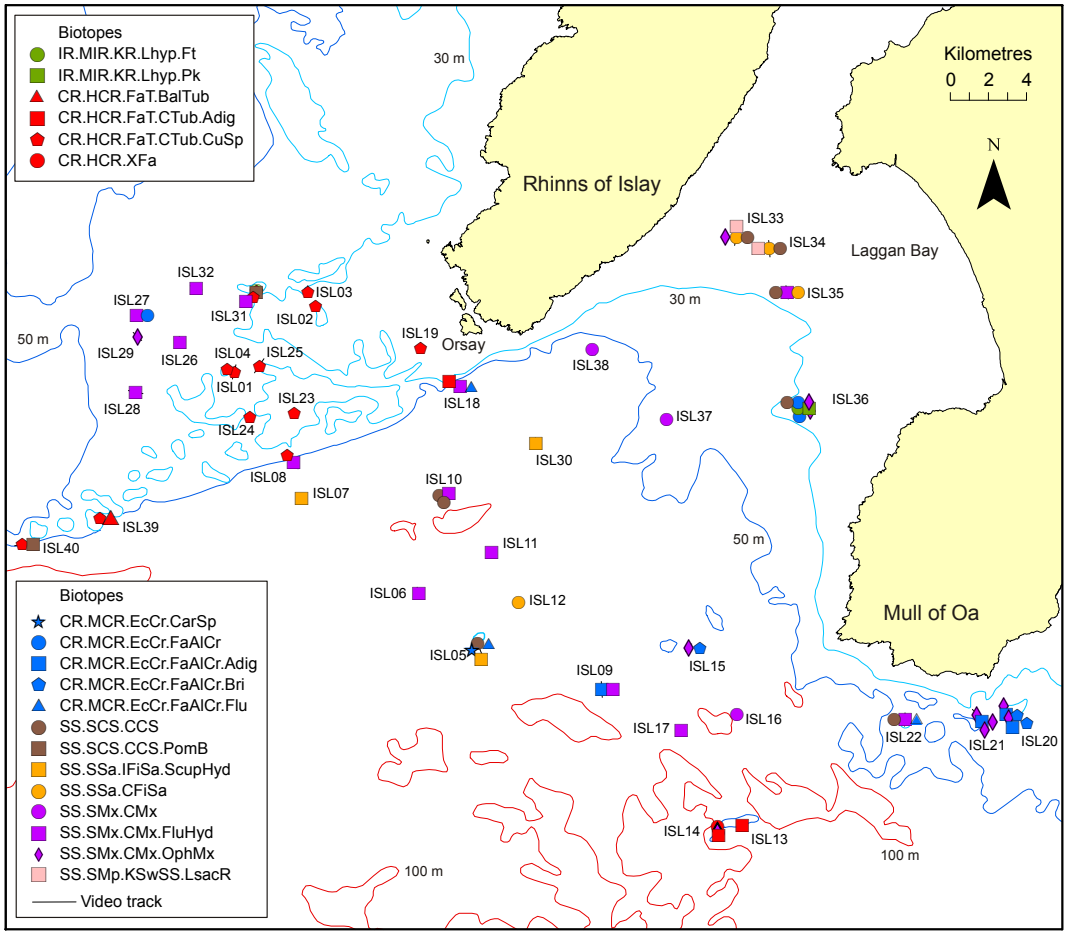

Figure 7. Distribution of biotope records off the south-west of Islay. Reproduced by permission of Ordnance Survey on behalf of HMSO. © Crown copyright and database right [2013]. All rights reserved. Ordnance Survey Licence number 100017908.

CR.HCR.FaT.CTub.CuSp was also recorded at one much deeper site (ISL40 at 77 - 79 m). This was located at the southwestern tip of the shallow tongue, where accelerated currents might be expected. Sparse axinellid sponges were recorded here, perhaps reflecting the depth-related reduction in wave action.

To either side of the shallow tongue, extending from a depth of around 40 m to 85 m in conditions of decreasing wave action and probably current speed, the predominant habitat recorded was cobbles, boulders and pebbles underlain by, or with an infill of, sand or shell gravel. Stones were encrusted with serpulid worms, *Parasmittina trispinosa* and sparse sponges and supported *Urticina felina* and a patchy hydroid and bryozoan turf dominated by *Flustra foliacea* and probably *Sertularia* sp. (**SS.SMx.CMx.FluHyd**), accompanied at one site by a thin bed of *Ophiocomina nigra* (**SS.SMx.CMx.OphMx**). Bedrock outcrops recorded at these deeper sites were found to support a similar encrusting community

(**CR.MCR.EcCr.FaAlCr**), together with dense *F. foliacea* at one site (**CR.MCR.EcCr.FaAlCr.Flu**).

An area of strong currents is also charted off the Mull of Oa. Close inshore where tidal rates reach 5 knots, bedrock, boulders and cobbles at depths of 35 - 72 m were found to support an encrusting community of serpulid worms, *Parasmittina trispinosa* and in shallower water pink coralline algae, with dense *Alcyonium digitatum* (**CR.MCR.EcCr.FaAlCr.Adig**), *Flustra foliacea* (**CR.MCR.EcCr.FaAlCr.Flu**) or *Ophiocomina nigra* (**CR.MCR.EcCr.FaAlCr.Bri**). Brittlestar beds (both *O. nigra* and *Ophiothrix fragilis*) were also recorded here on more mixed substrates of stones and shell material on sand (**SS.SMx.CMx.OphMx**). Dense *A. digitatum* was also recorded farther offshore in an area of charted tidal overfalls at 66 - 82 m, but here the rugged bedrock, boulders and cobbles also supported a similar community of sponges, anemones and *Tubularia* to that observed off the Rhinns of Islay (**CR.HCR.FaT.CTub.Adig**). In deeper water here (86 - 97 m) cobbles supported a turf of bryozoans and hydroids with sparse axinellid sponges (**CR.HCR.XFa**).

In less tide-swept conditions between the Mull of Oa and Orsay the seabed was found to be largely sandy, but with varying densities of scattered gravel, pebbles and cobbles. Rippled fine-medium sand with little visible life was recorded from 24 - 102 m depth (**SS.SSa.CFiSa**), interrupted by waves of coarse sand in Laggan Bay (**SS.SCS.CCS**). In places a light scatter of pebbles and cobbles on the sand provided substrates for the attachment of sparse hydroid clumps and *Flustra foliacea* (**SS.SSa.IFiSa.ScupHyd**). More heterogeneous sediments with a significant component of gravel, pebbles and cobbles displayed largely encrusting communities (**SS.SMx.CMx**), supplemented in places by a light turf of hydroids and *F. foliacea* (**SS.SMx.CMx.FluHyd**). At the shallowest sediment sites examined in Laggan Bay (24 - 27 m depth), scattered gravel, pebbles and cobbles on sand supported a low diversity fauna and scattered clumps of foliose and filamentous algae. Although no kelp was present, the habitat is considered an impoverished example of **SS.SMp.KSwSS.LsacR**.

The only occurrence of kelp was at the shallowest site examined in the south of Laggan Bay, where a forest (**IR.MIR.KR.Lhyp.Ft**) and narrow fringing park (**IR.MIR.KR.Lhyp.Pk**) of *Laminaria hyperborea* was recorded mainly on bedrock at 21 - 27 m depth. The understorey community was poorly developed, with a light and patchy red algal component.

3.7 Mull of Kintyre (Figure 8)

The four survey sites were located in tide-swept conditions at depths of 106 - 116 m. The seabed was generally composed of mixed substrata consisting of broken shell, with pebbles, cobbles and scattered boulders which supported a low diversity fauna dominated by small *Alcyonium digitatum*, with patches of hydroids, *Urticina felina* and sparse encrusting and cushion sponges (**SS.SMx.CMx.FluHyd**). Extensive bedrock and boulders supporting a similar fauna were present at one of the sites (**CR.MCR.EcCr.FaAlCr.Adig**). Thin beds of *Ophiothrix fragilis* were widely distributed over the area (**SS.SMx.CMx.OphMx**).

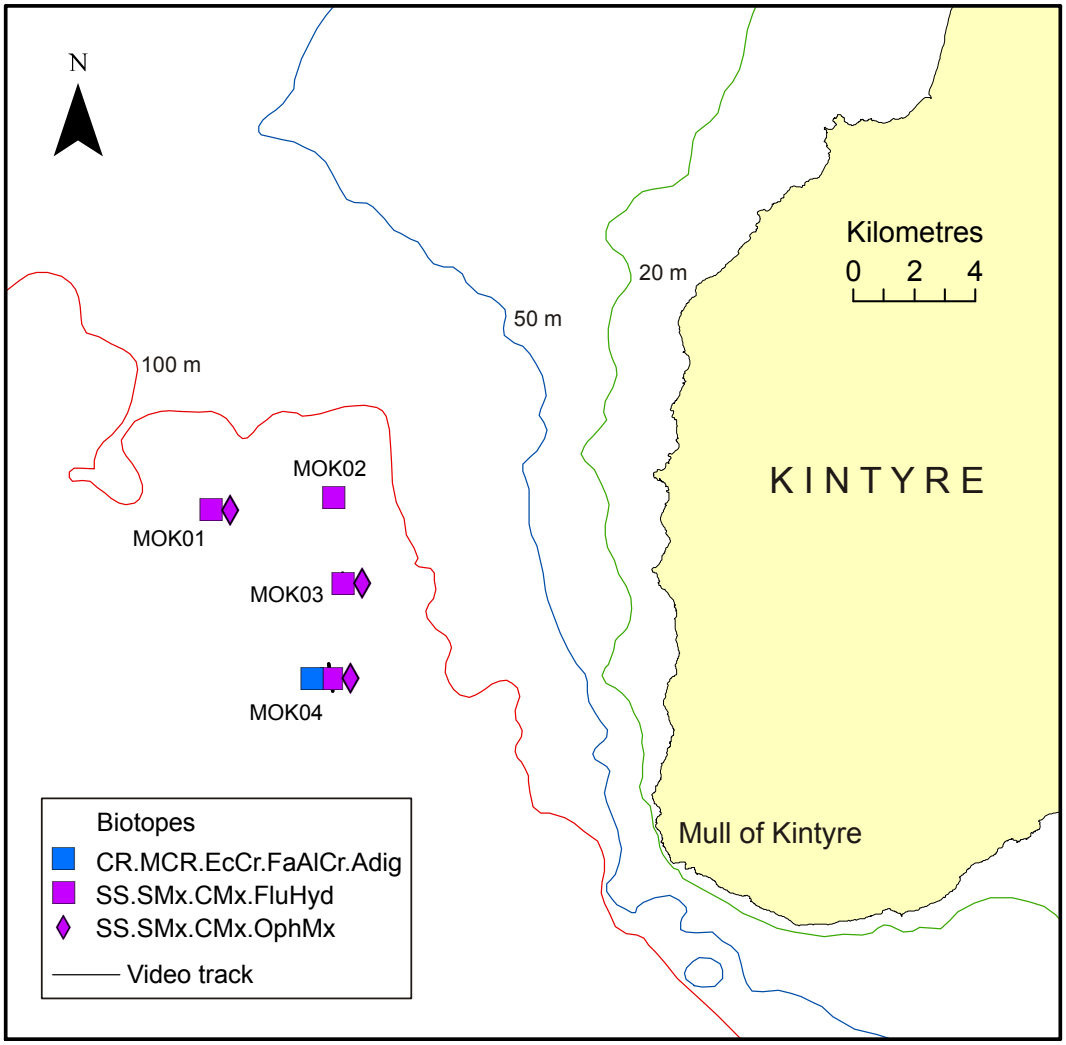

Figure 8. Distribution of biotope records off the Mull of Kintyre. Reproduced by permission of Ordnance Survey on behalf of HMSO. © Crown copyright and database right [2013]. All rights reserved. Ordnance Survey Licence number 100017908.

4. DISCUSSION

This section considers the conservation importance of the species and habitats encountered during the surveys and also serves to summarise the distribution of 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, 2012) but are generally of wide occurrence. Only one non-PMF species, *Echinus esculentus*, has been afforded any formal conservation status, being included on the IUCN Red List of Threatened Species (IUCN, 2012). However, *Echinus esculentus* was widely recorded, often in high abundance, reflecting its common status in Scottish waters.

A total of four PMF biotopes and five PMF species were encountered during the surveys, all of which represent MPA search features.

Table 2. Species and biotopes recorded during the surveys of recognised conservation importance and their frequency of occurrence in each survey location. Locations are LK (Loch Kishorn), RM (Rum), LS (Loch Sunart), TI (Tiree), SM (Sound of Mull and Firth of Lorn), IS (Islay) and MK (Mull of Kintyre). Importance indicators are SBL = Scottish Biodiversity List 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.

Biotopes/species	LK	RM	LS	TI	SM	IS	MK	SBL	Osp	IUCN	PMF	SF
CR.MCR.EcCr.CarSp					1			●			●	●
SS.SMp.KSwSS.LsacR						2		●			●	●
SS.SMu.CFiMu.SpnMeg	6	1	2		2			●	●		●	●
SS.SMu.CFiMu.SpnMeg.Fun	22	4	4		13			●	●		●	●
Funiculina quadrangularis	23	4	4		15			●			●	●
Swiftia pallida					1			●			●	●
Pachycerianthus multiplicatus	1	1	3								●	●
Leptometra celtica	2	1	2		1						●	
Leptometra celtica aggregation	8		3		3						●	●
Palinurus elephas						1		●			●	●
Echinus esculentus	5	1	1	9	16	30	4			●		
CR.HCR.FaT				1	2			●				
CR.HCR.FaT.BalTub						1		●				
CR.HCR.FaT.CTub.Adig						3		●				
CR.HCR.FaT.CTub.CuSp						12		●				
SS.SCS.CCS						7		●				
SS.SCS.CCS.PomB						2		●				
SS.SSa.IFiSa.ScupHyd						3		●				
SS.SSa.CFiSa					1	4		●				
SS.SMu.CSaMu	5							●				
SS.SMx.IMx	1							●				
SS.SMx.CMx	2		3		16	3		●				
SS.SMx.CMx.FluHyd						14	4	●				
SS.SMx.CMx.OphMx					15	7	3	●				

Three PMF biotopes and three PMF species were recorded in Loch Kishorn and Loch Carron (Figure 9). Much of the seabed in both lochs is populated by burrrowed mud communities (**SS.SMu.CFiMu.SpnMeg.Fun** and **SpnMeg**), with most sites displaying moderate densities of *Funiculina quadrangularis* and one site sparse *Pachycerianthus*

multiplicatus. *Leptometra celtica* was widely distributed in Loch Carron, being recorded along ten of the 18 video runs, mostly as dense fields associated with mixed substrata of mud and stones.

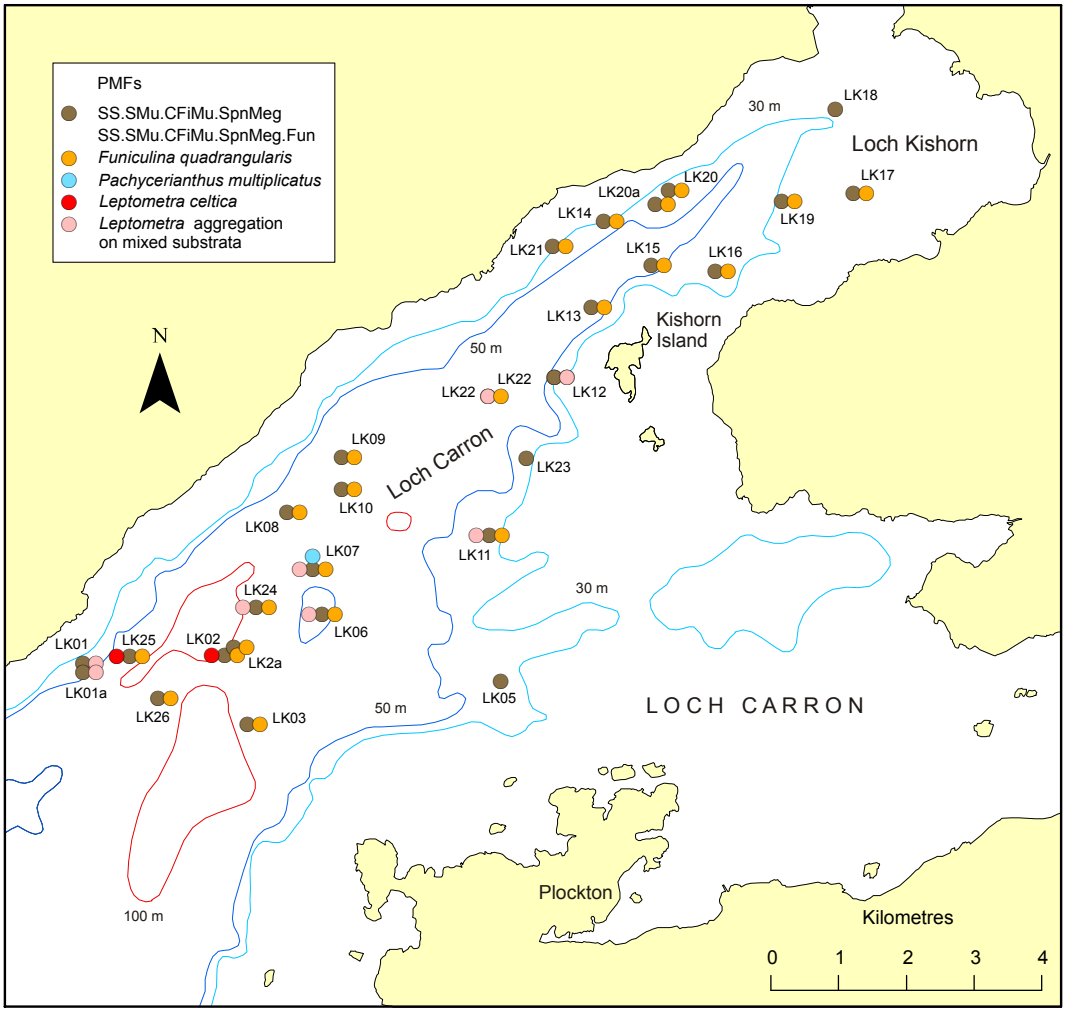

Figure 9. Distribution of PMF records in Loch Kishorn and approaches. Reproduced by permission of Ordnance Survey on behalf of HMSO. © Crown copyright and database right [2013]. All rights reserved. Ordnance Survey Licence number 100017908.

All survey sites off Rum (Figure 10) and in Loch Sunart (Figure 11) displayed burrowed mud communities (**SS.SMu.CFiMu.SpnMeg.Fun** and **SpnMeg**), with most supporting fairly high (Rum) or high (Sunart) numbers of *Funiculina quadrangularis*. Sparse *Pachycerianthus multiplicatus* was found at three of the five sites in Loch Sunart and possibly at one site off Rum. Fields of dense *Leptometra celtica* were recorded on muddy mixed sediments along three video runs in Loch Sunart and in associaton with a rocky reef habitat at one site off Rum. No PMFs were observed off Tiree or off the Mull of Kintyre.

Three PMF biotopes and three PMF species were recorded in the eastern approaches to the Sound of Mull and in the Firth of Lorn (Figure 12). Burrowed mud was found to be extensively distributed in the northern region of the Firth of Lorn. *Funiculina quadrangularis* was present in high numbers at most of these sites (**SS.SMu.CFiMu.SpnMeg.Fun**), only being recorded as absent at two sites (**SS.SMu.CFiMu.SpnMeg**). The northern sea fan community, **CR.MCR.EcCr.CarSwi.LgAs**, was recorded on outcropping bedrock at one of these mud sites, with its component species, *Swiftia pallida* observed to be common. Fields of *Leptometra celtica* were observed on silty mixed substrata at two sites (SOM11, SOM27).

The species was recorded at a third muddy mixed sediment site (FOL23), where a crinoid field, possibly composed of *L. celtica*, was also observed.

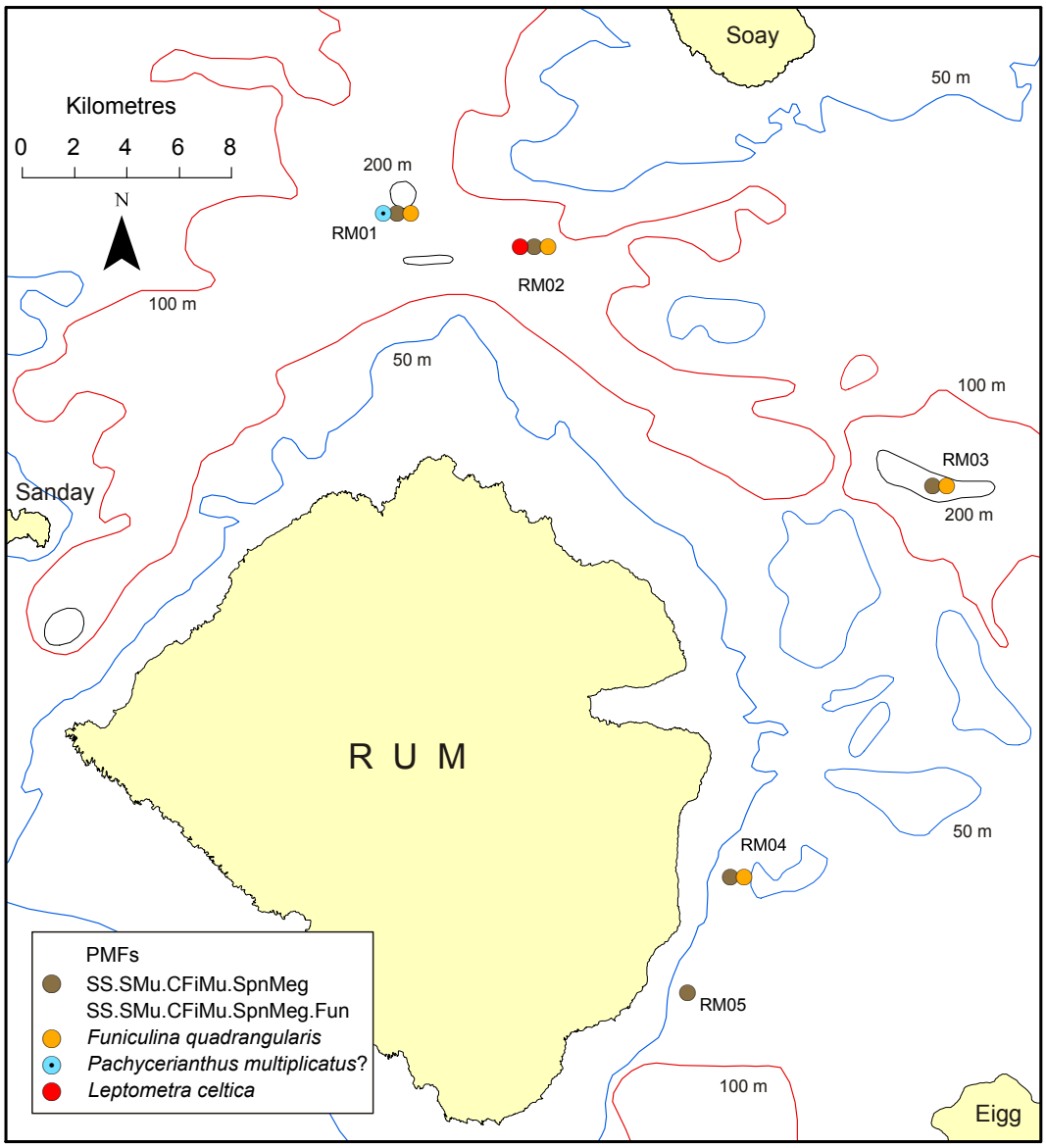

Figure 10. Distribution of PMF records off Rum. Reproduced by permission of Ordnance Survey on behalf of HMSO. © Crown copyright and database right [2013]. All rights reserved. Ordnance Survey Licence number 100017908.

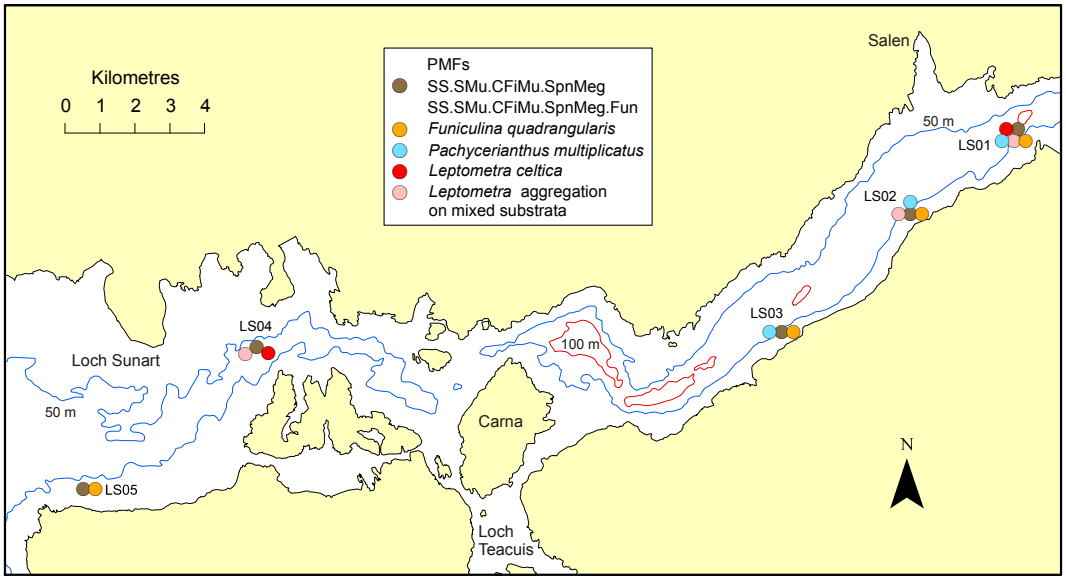

Figure 11. Distribution of PMF records in Loch Sunart. Reproduced by permission of Ordnance Survey on behalf of HMSO. © Crown copyright and database right [2013]. All rights reserved. Ordnance Survey Licence number 100017908.

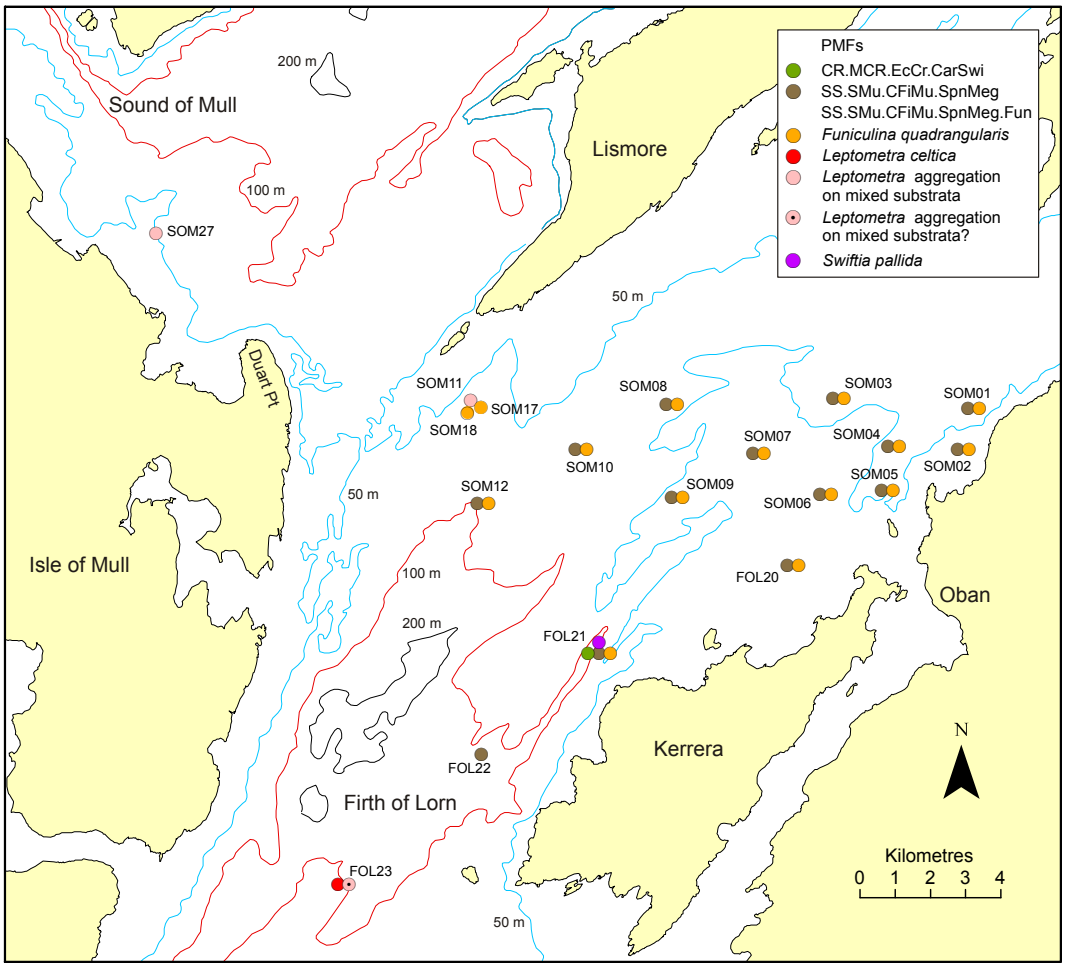

Figure 12. Distribution of PMF records in in the eastern entrance to the Sound of Mull and in the Firth of Lorn. Reproduced by permission of Ordnance Survey on behalf of HMSO. ©

The only PMF habitat recorded off Islay was the impoverished examples of **SS.SMp.KSwSS.LsacR** at two sites in Laggan Bay (ISL33 and ISL34). A single specimen of *Palinurus elephas* was observed at site ISL40 at the western limit of the survey.

Planned activities with the potential to influence the marine environment within the surveyed areas include the installation of tidal energy devices off Islay and the Mull of Kintyre, the fabrication of wind turbines at Kishorn Port and their establishment off Tiree, and the possible routing of subsea cables from Tiree via the Sound of Mull and Firth of Lorn. A degree of localised damage to the burrowed mud habitats and component species, as well as the *Leptometra celtica* aggregations, is to be expected from cable laying operations in the Mull area and possibly from any ancillary activities that might cause seabed disturbance in Loch Kishorn. However, the scale of the effect is unlikely to represent a significant threat to the conservation of the features in Scottish waters.

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ANNEX 1: 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. N/A = not available

Survey	Site ID	Date	Start latitude	Start longitude	End latitude	End longitude	Depth start (m)	Depth end (m)	Time start	Time end	Media ref. code
Loch Kishorn	LK01	25/09/2012	57.35406	-5.72376	57.35522	-5.72095	51.8	44.1	11:21:08	11:32:02	N/A
Loch Kishorn	LK02	25/09/2012	57.35468	-5.70518	57.35576	-5.70207	83.5	84.3	11:57:00	12:07:53	N/A
Loch Kishorn	LK03	25/09/2012	57.34993	-5.70211	57.35059	-5.69908	111.2	79.7	12:28:54	12:40:07	Loch Kishorn disc 5
Loch Kishorn	LK04	25/09/2012	57.34563	-5.68887	57.34726	-5.68564	26.6	25.8	12:55:27	13:07:25	Loch Kishorn disc 5
Loch Kishorn	LK05	25/09/2012	57.35223	-5.66736	57.35449	-5.66657	39.8	43.8	13:19:37	13:21:34	Loch Kishorn disc 5
Loch Kishorn	LK06	25/09/2012	57.35716	-5.69279	57.35924	-5.68853	47.5	58.5	13:46:36	13:57:45	Loch Kishorn disc 5
Loch Kishorn	LK07	25/09/2012	57.36064	-5.69386	57.36210	-5.68999	64.4	60.3	14:07:54	14:18:58	Loch Kishorn disc 5
Loch Kishorn	LK08	25/09/2012	57.36467	-5.69702	57.36628	-5.69368	76.3	75.3	14:33:07	14:44:19	Loch Kishorn disc 5
Loch Kishorn	LK09	25/09/2012	57.36938	-5.68830	57.36945	-5.68783	72.2	71.1	14:56:30	15:06:43	Loch Kishorn disc 6
Loch Kishorn	LK10	25/09/2012	57.36674	-5.68890	57.36757	-5.68730	78.1	78.0	15:20:30	15:30:34	Loch Kishorn disc 6
Loch Kishorn	LK11	25/09/2012	57.36306	-5.66995	57.36458	-5.66705	36.1	35.1	16:16:18	16:27:44	Loch Kishorn disc 6
Loch Kishorn	LK12	25/09/2012	57.37433	-5.65999	57.37599	-5.65978	44.2	N/A	16:54:24	17:03:43	Loch Kishorn disc 6
Loch Kishorn	LK12	25/09/2012	57.37433	-5.65999	57.37599	-5.65978	N/A	49.3	17:03:43	17:04:31	Loch Kishorn disc 6
Loch Kishorn	LK13	26/09/2012	57.37944	-5.65641	57.38091	-5.65350	59.0	67.2	08:25:16	08:36:06	Loch Kishorn disc 7
Loch Kishorn	LK14	26/09/2012	57.38568	-5.65552	57.38700	-5.65108	27.3	N/A	08:46:06	08:55:46	Loch Kishorn disc 7
Loch Kishorn	LK14	26/09/2012	57.38568	-5.65552	57.38700	-5.65108	N/A	27.4	08:55:46	09:00:24	Loch Kishorn disc 7
Loch Kishorn	LK15	26/09/2012	57.38258	-5.64819	57.38377	-5.64579	65.5	65.6	09:11:27	09:21:32	Loch Kishorn disc 7
Loch Kishorn	LK16	26/09/2012	57.38252	-5.63982	57.38294	-5.63714	32.7	32.8	09:33:33	09:43:50	Loch Kishorn disc 7
Loch Kishorn	LK17	26/09/2012	57.38799	-5.62110	57.38866	-5.61930	19.8	18.8	09:56:13	10:07:10	Loch Kishorn disc 7
Loch Kishorn	LK18	26/09/2012	57.39405	-5.62215	57.39468	-5.62301	25.8	25.8	10:16:27	10:26:35	Loch Kishorn disc 8
Loch Kishorn	LK19	26/09/2012	57.38696	-5.62998	57.38859	-5.62935	26.7	25.6	11:01:21	11:11:24	Loch Kishorn disc 8
Loch Kishorn	LK20	26/09/2012	57.38802	-5.64529	57.38914	-5.64403	40.5	33.4	11:24:00	11:34:00	Loch Kishorn disc 8
Loch Kishorn	LK21	26/09/2012	57.38374	-5.66143	57.38531	-5.65876	27.3	24.0	11:52:06	12:02:43	Loch Kishorn disc 8
Loch Kishorn	LK22	26/09/2012	57.37259	-5.66942	57.37499	-5.66782	67.0	N/A	12:21:17	12:26:09	Loch Kishorn disc 8
Loch Kishorn	LK22	26/09/2012	57.37259	-5.66942	57.37499	-5.66782	N/A	62.8	12:26:09	12:33:25	Loch Kishorn disc 8
Loch Kishorn	LK23	26/09/2012	57.36849	-5.66371	57.37011	-5.66340	38.7	N/A	12:47:02	12:55:08	Loch Kishorn disc 9
Loch Kishorn	LK23	26/09/2012	57.36849	-5.66371	57.37011	-5.66340	N/A	38.6	12:55:08	12:57:15	Loch Kishorn disc 9

Annex 1 continued

Survey	Site ID	Date	Start latitude	Start longitude	End latitude	End longitude	Depth start (m)	Depth end (m)	Time start	Time end	Media ref. code
Loch Kishorn	LK24	26/09/2012	57.35794	-5.69998	57.35937	-5.69881	100.2	87.2	13:26:42	13:36:48	Loch Kishorn disc 9
Loch Kishorn	LK25	26/09/2012	57.35459	-5.71631	57.35568	-5.71609	86.9	59.8	13:51:17	14:03:16	Loch Kishorn disc 9
Loch Kishorn	LK26	26/09/2012	57.35131	-5.71220	57.35291	-5.71265	70.0	70.0	14:16:42	14:27:13	Loch Kishorn disc 9
Loch Kishorn	LK20a	27/09/2012	57.38804	-5.64521	57.38706	-5.64773	39.5	47.7	09:36:04	09:46:21	Loch Kishorn disc 10
Loch Kishorn	LK02a	27/09/2012	57.35643	-5.70078	57.35511	-5.70394	83.2	100.2	11:03:04	11:14:08	Loch Kishorn disc 10
Loch Kishorn	LK01a	27/09/2012	57.35487	-5.72031	57.35322	-5.72438	53.1	68.1	11:26:57	11:40:07	Loch Kishorn disc 10
Rum	RM01	31/08/2012	57.10310	-6.34614	57.10802	-6.34677	187.7	212.1	14:56:09	15:26:21	Isle of Rum Video Files
Rum	RM02	31/08/2012	57.09702	-6.30353	57.09805	-6.30176	203.0	N/A	16:25:13	16:33:55	Isle of Rum Video Files
Rum	RM02	31/08/2012	57.09805	-6.30176	57.09817	-6.30153	N/A	N/A	16:33:55	16:35:00	Isle of Rum Video Files
Rum	RM02	31/08/2012	57.09817	-6.30153	57.10059	-6.29740	N/A	150.6	16:35:00	16:55:19	Isle of Rum Video Files
Rum	RM03	31/08/2012	57.05543	-6.16663	57.05382	-6.15821	243.2	243.1	17:51:57	18:22:02	Isle of Rum Video Files
Rum	RM04	31/08/2012	56.98290	-6.23185	56.97967	-6.23235	61.4	50.7	19:22:11	19:52:22	Isle of Rum Video Files
Rum	RM05	31/08/2012	56.96015	-6.24810	56.95923	-6.24525	112.1	77.5	20:22:45	20:47:47	Isle of Rum Video Files
Loch Sunart	LS01	01/09/2012	56.70379	-5.75044	56.70283	-5.75157	93.8	N/A	07:04:29	07:15:12	Loch Sunart Video Files
Loch Sunart	LS01	01/09/2012	56.70283	-5.75157	56.70228	-5.75227	N/A	N/A	07:15:12	07:21:21	Loch Sunart Video Files
Loch Sunart	LS01	01/09/2012	56.70228	-5.75227	56.70102	-5.75383	N/A	41.0	07:21:21	07:35:37	Loch Sunart Video Files
Loch Sunart	LS02	01/09/2012	56.69238	-5.77756	56.69011	-5.78196	37.3	31.6	07:58:21	08:29:25	Loch Sunart Video Files
Loch Sunart	LS03	01/09/2012	56.67572	-5.81052	56.67356	-5.81519	42.0	37.5	08:55:01	09:26:07	Loch Sunart Video Files
Loch Sunart	LS04	01/09/2012	56.67273	-5.94332	56.67180	-5.94742	53.2	N/A	10:09:03	10:31:31	Loch Sunart Video Files
Loch Sunart	LS04	01/09/2012	56.67180	-5.94742	56.67160	-5.94837	N/A	N/A	10:31:31	10:36:50	Loch Sunart Video Files
Loch Sunart	LS04	01/09/2012	56.67160	-5.94837	56.67145	-5.94897	N/A	63.7	10:36:50	10:40:11	Loch Sunart Video Files
Loch Sunart	LS05	01/09/2012	56.65242	-5.99542	56.65251	-5.98938	39.1	38.4	11:11:08	11:42:21	Loch Sunart Video Files
Tiree	TRW06	22/09/2012	56.40498	-7.06161	56.40310	-7.06151	28.3	29.8	11:20:19	11:30:13	Tiree video tows - Disc 2
Tiree	TRW07	22/09/2012	56.43676	-7.07290	56.43575	-7.07052	24.5	24.7	12:00:23	12:10:07	Tiree video tows - Disc 2
Tiree	TRW08	22/09/2012	56.47006	-7.07128	56.46827	-7.07356	18.9	18.9	12:33:24	12:43:35	Tiree video tows - Disc 2
Tiree	TRW09	22/09/2012	56.49388	-7.07539	56.49227	-7.07795	27.1	20.4	13:04:07	13:14:19	Tiree video tows - Disc 2
Tiree	TRW10	22/09/2012	56.52826	-7.07590	56.52616	-7.07600	35.3	33.0	13:39:59	13:50:08	Tiree video tows - Disc 2
Tiree	TRW11	22/09/2012	56.54666	-7.11559	56.54500	-7.11468	43.9	41.9	14:10:42	14:21:13	Tiree video tows - Disc 2
Tiree	TRW12	22/09/2012	56.50109	-7.17911	56.49898	-7.17952	28.9	42.2	14:52:32	15:03:09	Tiree video tows - Disc 3

Annex 1 continued

Survey	Site ID	Date	Start latitude	Start longitude	End latitude	End longitude	Depth start (m)	Depth end (m)	Time start	Time end	Media ref. code
Tiree	TRW13	22/09/2012	56.45983	-7.17694	56.45816	-7.17638	49.4	48.7	15:59:57	16:10:58	Tiree video tows - Disc 3
Tiree	TRW14	22/09/2012	56.41284	-7.17607	56.41089	-7.17541	46.0	48.7	16:40:25	16:51:13	Tiree video tows - Disc 3
Sound of Mull	SOM01	29/09/2012	56.44756	-5.47254	56.44760	-5.47437	41.8	41.9	09:51:39	10:02:23	SOM Disc 11
Sound of Mull	SOM02	29/09/2012	56.44178	-5.47494	56.44193	-5.47727	20.7	24.0	10:13:21	10:21:09	SOM Disc 11
Sound of Mull	SOM03	29/09/2012	56.44921	-5.50596	56.44872	-5.50986	36.2	45.2	10:59:11	11:10:01	SOM Disc 11
Sound of Mull	SOM04	29/09/2012	56.44275	-5.49268	56.44177	-5.49497	38.2	37.2	11:25:08	11:36:02	SOM Disc 11
Sound of Mull	SOM05	29/09/2012	56.43691	-5.49412	56.43513	-5.49672	39.1	41.1	11:53:53	12:04:04	SOM Disc 11
Sound of Mull	SOM06	29/09/2012	56.43563	-5.51004	56.43530	-5.51234	24.0	24.0	12:15:55	12:26:06	SOM Disc 11
Sound of Mull	SOM07	29/09/2012	56.44118	-5.52699	56.44143	-5.52959	26.8	26.7	12:38:18	12:49:05	SOM Disc 12
Sound of Mull	SOM08	29/09/2012	56.44792	-5.54871	56.44860	-5.55228	25.6	N/A	13:02:49	13:13:06	SOM Disc 12
Sound of Mull	SOM09	29/09/2012	56.43522	-5.54743	56.43487	-5.55069	28.6	29.4	13:29:19	13:40:03	SOM Disc 12
Sound of Mull	SOM10	29/09/2012	56.44182	-5.57184	56.44175	-5.57546	37.9	29.8	13:53:31	14:04:07	SOM Disc 12
Sound of Mull	SOM11	29/09/2012	56.44797	-5.59710	56.44734	-5.60153	27.6	N/A	14:19:04	14:25:54	SOM Disc 12
Sound of Mull	SOM11	29/09/2012	56.44797	-5.59710	56.44734	-5.60153	N/A	N/A	14:25:54	14:26:22	SOM Disc 12
Sound of Mull	SOM11	29/09/2012	56.44797	-5.59710	56.44734	-5.60153	N/A	N/A	14:26:22	14:27:48	SOM Disc 12
Sound of Mull	SOM11	29/09/2012	56.44797	-5.59710	56.44734	-5.60153	N/A	31.3	14:27:48	14:34:09	SOM Disc 12
Sound of Mull	SOM12	29/09/2012	56.43423	-5.59694	56.43413	-5.60025	85.1	98.0	14:52:01	15:02:07	SOM Disc 12
Sound of Mull	SOM13	29/09/2012	56.44202	-5.61814	56.43976	-5.61738	27.7	44.6	15:18:47	15:29:08	SOM Disc 13
Sound of Mull	SOM14	29/09/2012	56.43506	-5.63893	56.43315	-5.63844	23.2	27.1	16:10:44	16:21:17	SOM Disc 13
Sound of Mull	SOM15	29/09/2012	56.44220	-5.63870	56.44030	-5.63770	31.0	24.0	16:32:27	16:43:06	SOM Disc 13
Sound of Mull	SOM16	29/09/2012	56.44771	-5.63816	56.44562	-5.63692	26.9	27.9	16:55:23	17:06:18	SOM Disc 13
Sound of Mull	SOM17	30/09/2012	56.44753	-5.60031	56.44813	-5.59885	36.2	36.3	08:16:25	08:24:18	SOM Disc 14
Sound of Mull	SOM18	30/09/2012	56.44694	-5.60069	56.44794	-5.59955	36.3	N/A	08:32:50	08:37:42	SOM Disc 14
Sound of Mull	SOM18	30/09/2012	56.44694	-5.60069	56.44794	-5.59955	N/A	36.6	08:37:42	08:47:21	SOM Disc 14
Sound of Mull	SOM19	30/09/2012	56.44754	-5.60139	56.44789	-5.59905	36.7	N/A	08:54:30	09:00:33	SOM Disc 14
Sound of Mull	SOM19	30/09/2012	56.44754	-5.60139	56.44789	-5.59905	N/A	36.9	09:00:33	09:09:24	SOM Disc 14
Sound of Mull	SOM24	30/09/2012	56.45477	-5.64033	56.45585	-5.63768	35.9	33.8	13:24:37	13:35:44	SOM Disc 15
Sound of Mull	SOM25	30/09/2012	56.46082	-5.65033	56.45978	-5.65348	52.6	54.5	13:50:17	14:01:26	SOM Disc 16
Sound of Mull	SOM26	30/09/2012	56.46252	-5.66428	56.46172	-5.66647	77.3	N/A	14:17:22	14:24:16	SOM Disc 16

Annex 1 continued

Survey	Site ID	Date	Start latitude	Start longitude	End latitude	End longitude	Depth start (m)	Depth end (m)	Time start	Time end	Media ref. code
Sound of Mull	SOM26	30/09/2012	56.46252	-5.66428	56.46172	-5.66647	N/A	70.1	14:24:16	14:28:07	SOM Disc 16
Sound of Mull	SOM27	30/09/2012	56.47263	-5.67859	56.47181	-5.68271	41.9	27.7	14:43:40	14:57:08	SOM Disc 16
Sound of Mull	SOM28	30/09/2012	56.47959	-5.69297	56.47890	-5.69696	47.4	45.3	15:08:56	15:20:03	SOM Disc 16
Sound of Mull	SOM29	30/09/2012	56.48789	-5.70899	56.48728	-5.71239	26.6	26.4	16:04:05	16:15:04	SOM Disc 16
Sound of Mull	SOM30	30/09/2012	56.48390	-5.67986	56.48342	-5.68280	103.2	92.1	16:36:38	16:46:50	SOM Disc 16
Sound of Mull	SOM31	30/09/2012	56.47173	-5.65728	56.47072	-5.65976	78.0	71.9	17:04:14	17:14:18	SOM Disc 17
Sound of Mull	SOM32	30/09/2012	56.46465	-5.63367	56.46275	-5.63568	65.9	62.9	17:29:02	17:40:03	SOM Disc 17
Firth of Lorn	FOL20	30/09/2012	56.42609	-5.51901	56.42503	-5.52009	37.3	37.4	09:42:50	09:52:10	SOM Disc 14
Firth of Lorn	FOL21	30/09/2012	56.41368	-5.56744	56.41241	-5.56765	92.1	N/A	10:58:00	11:08:00	SOM Disc 14
Firth of Lorn	FOL22	30/09/2012	56.39954	-5.59790	56.39824	-5.59736	125.2	124.2	11:28:57	11:39:10	SOM Disc 15
Firth of Lorn	FOL23	30/09/2012	56.38101	-5.63410	56.37977	-5.63421	99.3	66.2	12:04:21	12:14:27	SOM Disc 15
Islay	ISL01	18/08/2012	55.66298	-6.62275	55.65923	-6.62448	42.5	40.5	17:32:08	17:46:59	Disc 1 180812 Islay
Islay	ISL02	18/08/2012	55.67897	-6.58503	55.67863	-6.58585	32.2	31.0	18:13:23	18:14:50	Disc 1 180812 Islay
Islay	ISL03	19/08/2012	55.68413	-6.58885	55.68102	-6.58902	32.8	30.8	17:40:29	17:58:44	Disc 1 190812 Islay
Islay	ISL04	19/08/2012	55.66192	-6.62633	55.66188	-6.62777	35.2	35.8	18:10:32	18:18:27	Disc 1 190812 Islay
Islay	ISL05	20/08/2012	55.58908	-6.50927	55.58792	-6.50840	49.8	70.8	12:14:20	12:19:35	Disc 2 200812 Islay
Islay	ISL05	20/08/2012	55.58792	-6.50840	55.58742	-6.50805	70.8	70.8	12:19:35	12:22:11	Disc 2 200812 Islay
Islay	ISL05	20/08/2012	55.58742	-6.50805	55.58480	-6.50600	70.8	78.9	12:22:11	12:35:23	Disc 2 200812 Islay
Islay	ISL06	20/08/2012	55.60345	-6.53727	55.60045	-6.53560	73.8	74.0	18:19:55	18:35:00	Disc 2 200812 Islay
Islay	ISL07	20/08/2012	55.62620	-6.59200	55.62812	-6.59160	91.4	90.3	19:11:29	19:25:38	Disc 2 200812 Islay
Islay	ISL08	20/08/2012	55.63527	-6.59345	55.63848	-6.59770	72.2	42.5	19:43:26	20:00:54	Disc 3 200812 Islay
Islay	ISL08	20/08/2012	55.63848	-6.59770	55.63945	-6.59967	42.5	39.0	20:00:54	20:08:33	Disc 3 200812 Islay
Islay	ISL09	21/08/2012	55.57827	-6.45023	55.57397	-6.44972	60.1	74.3	13:03:50	13:25:02	Disc 3 210812 Islay
Islay	ISL10	21/08/2012	55.62808	-6.52832	55.62807	-6.52523	85.3	93.9	19:10:23	19:16:44	Disc 3 210812 Islay
Islay	ISL10	21/08/2012	55.62807	-6.52523	55.62800	-6.52482	93.9	98.0	19:16:44	19:17:38	Disc 3 210812 Islay
Islay	ISL10	21/08/2012	55.62800	-6.52482	55.62475	-6.52467	98.0	88.0	19:17:38	19:33:59	Disc 3 210812 Islay
Islay	ISL11	21/08/2012	55.61275	-6.50187	55.61315	-6.50218	80.7	79.5	19:53:56	20:04:05	Disc 4 210812 Islay
Islay	ISL12	21/08/2012	55.59998	-6.48792	55.59893	-6.49058	97.0	101.5	20:35:43	20:47:56	Disc 4 210812 Islay
Islay	ISL13	22/08/2012	55.54108	-6.38550	55.53850	-6.38207	66.1	81.8	13:56:53	14:11:59	Disc 4 210812 Islay

Annex 1 continued

Survey	Site ID	Date	Start latitude	Start longitude	End latitude	End longitude	Depth start (m)	Depth end (m)	Time start	Time end	Media ref. code
Islay	ISL14	22/08/2012	55.54045	-6.39550	55.53868	-6.39553	96.5	85.5	14:34:20	14:42:47	Disc 4 210812 Islay
Islay	ISL14	22/08/2012	55.53868	-6.39553	55.53797	-6.39522	85.5	67.3	14:42:47	14:45:50	Disc 4 210812 Islay
Islay	ISL14	22/08/2012	55.53797	-6.39522	55.53603	-6.39470	67.3	77.7	14:45:50	14:54:35	Disc 4 210812 Islay
Islay	ISL15	22/08/2012	55.58830	-6.40763	55.58632	-6.41048	75.7	75.0	20:05:32	20:15:37	Disc 5 220812 Islay
Islay	ISL16	22/08/2012	55.57022	-6.38543	55.56848	-6.38698	93.0	99.6	20:34:54	20:45:02	Disc 5 220812 Islay
Islay	ISL17	22/08/2012	55.56512	-6.41070	55.56522	-6.41432	81.2	82.2	21:04:50	21:15:01	Disc 5 260812 Islay
Islay	ISL18	25/08/2012	55.65592	-6.51303	55.65862	-6.52107	85.0	32.1	11:00:41	11:20:02	Disc 5 260812 Islay
Islay	ISL18	25/08/2012	55.65862	-6.52107	55.65842	-6.52308	32.1	33.9	11:20:02	11:24:15	Disc 5 260812 Islay
Islay	ISL19	25/08/2012	55.66645	-6.53595	55.66888	-6.53558	31.1	29.8	11:51:05	11:59:14	Disc 5 220812 Islay
Islay	ISL20	26/08/2012	55.57050	-6.26040	55.56987	-6.25972	45.1	37.1	12:13:08	12:16:05	Disc 6 260812 Islay
Islay	ISL20	26/08/2012	55.56987	-6.25972	55.56883	-6.25840	37.1	38.7	12:16:05	12:20:50	Disc 6 260812 Islay
Islay	ISL20	26/08/2012	55.56883	-6.25840	55.56798	-6.25717	38.7	35.3	12:20:50	12:24:41	Disc 6 260812 Islay
Islay	ISL20	26/08/2012	55.56798	-6.25717	55.56677	-6.25520	35.3	37.7	12:24:41	12:30:11	Disc 6 260812 Islay
Islay	ISL21	26/08/2012	55.57085	-6.27490	55.56803	-6.27065	35.0	40.5	12:50:56	13:06:38	Disc 6 260812 Islay
Islay	ISL21	26/08/2012	55.56803	-6.27065	55.56710	-6.27042	40.5	72.0	13:06:38	13:10:29	Disc 6 260812 Islay
Islay	ISL21	26/08/2012	55.56710	-6.27042	55.56643	-6.27025	72.0	65.9	13:10:29	13:12:59	Disc 6 260812 Islay
Islay	ISL22	26/08/2012	55.56988	-6.30668	55.56625	-6.30697	39.4	38.1	13:45:38	14:02:43	Disc 6 260812 Islay
Islay	ISL23	26/08/2012	55.65035	-6.59732	55.65018	-6.59365	34.3	31.0	18:30:13	18:43:44	Disc 6 260812 Islay
Islay	ISL24	26/08/2012	55.64917	-6.61843	55.64930	-6.61420	38.8	32.4	19:02:32	19:14:26	Disc 6 260812 Islay
Islay	ISL25	27/08/2012	55.66470	-6.60965	55.66090	-6.61395	40.4	40.8	12:31:56	12:50:02	Disc 7 270812 Islay
Islay	ISL26	27/08/2012	55.67053	-6.64953	55.66738	-6.64918	42.4	41.3	13:13:00	13:26:09	Disc 7 270812 Islay
Islay	ISL27	27/08/2012	55.67720	-6.67060	55.67510	-6.66890	44.6	44.4	13:45:45	13:54:53	Disc 7 270812 Islay
Islay	ISL28	27/08/2012	55.65528	-6.66667	55.65613	-6.67365	41.6	42.5	18:36:44	18:52:08	Disc 7 270812 Islay
Islay	ISL29	27/08/2012	55.66947	-6.66735	55.67165	-6.67122	46.0	44.6	19:14:26	19:25:42	Disc 7 270812 Islay
Islay	ISL30	29/08/2012	55.64345	-6.48147	55.64057	-6.48071	77.1	75.2	15:08:00	15:20:00	N/A
Islay	ISL31	29/08/2012	55.68300	-6.61313	55.68283	-6.61318	29.2	N/A	16:16:49	16:17:18	Disc 8 29-300812 Islay
Islay	ISL31	29/08/2012	55.68283	-6.61318	55.68270	-6.61322	N/A	N/A	16:17:18	16:18:13	Disc 8 29-300812 Islay
Islay	ISL31	29/08/2012	55.68270	-6.61322	55.68204	-6.61370	N/A	N/A	16:18:13	16:19:03	Disc 8 29-300812 Islay
Islay	ISL31	29/08/2012	55.68204	-6.61370	55.68043	-6.61588	N/A	N/A	16:19:03	16:21:46	Disc 8 29-300812 Islay

Annex 1 continued

Survey	Site ID	Date	Start latitude	Start longitude	End latitude	End longitude	Depth start (m)	Depth end (m)	Time start	Time end	Media ref. code
Islay	ISL31	29/08/2012	55.68043	-6.61588	55.67960	-6.62055	N/A	39.8	16:21:46	16:27:56	Disc 8 29-300812 Islay
Islay	ISL32	29/08/2012	55.68300	-6.63887	55.68414	-6.64438	43.5	44.2	16:47:29	17:00:32	Disc 8 29-300812 Islay
Islay	ISL33	30/08/2012	55.69492	-6.38722	55.69933	-6.38555	25.5	23.5	10:39:38	10:57:59	Disc 8 29-300812 Islay
Islay	ISL34	30/08/2012	55.69188	-6.37053	55.69625	-6.37128	26.5	25.1	11:37:32	11:54:07	Disc 8 29-300812 Islay
Islay	ISL35	30/08/2012	55.68068	-6.36193	55.68412	-6.36312	30.3	28.8	12:18:56	12:34:13	Disc 8 29-300812 Islay
Islay	ISL36	30/08/2012	55.65077	-6.35650	55.65090	-6.35703	27.4	21.0	17:57:26	17:59:26	Disc 9 30 & 310812 Islay
Islay	ISL36	30/08/2012	55.65090	-6.35703	55.65182	-6.35755	21.0	26.5	17:59:26	18:03:44	Disc 9 30 & 310812 Islay
Islay	ISL36	30/08/2012	55.65182	-6.35755	55.65430	-6.35737	26.5	30.7	18:03:44	18:15:20	Disc 9 30 & 310812 Islay
Islay	ISL37	30/08/2012	55.64715	-6.41943	55.64982	-6.41938	48.9	47.6	18:50:35	19:01:11	Disc 9 30 & 310812 Islay
Islay	ISL38	30/08/2012	55.66565	-6.45325	55.66835	-6.45597	57.4	54.2	19:25:35	19:35:35	Disc 9 30 & 310812 Islay
Islay	ISL39	31/08/2012	55.62308	-6.68583	55.62112	-6.68838	33.6	41.5	10:16:25	10:27:26	Disc 9 30 & 310812 Islay
Islay	ISL40	31/08/2012	55.61557	-6.72008	55.61462	-6.72733	78.6	77.3	10:49:17	11:05:05	Disc 9 30 & 310812 Islay
Mull of Kintyre	MOK01	02/10/2012	55.35971	-5.93600	55.35782	-5.93279	106.4	108.4	11:25:28	11:35:32	MOK Disc 18
Mull of Kintyre	MOK02	02/10/2012	55.36049	-5.89915	55.36113	-5.89718	100.3	100.3	11:55:50	12:06:01	MOK Disc 18
Mull of Kintyre	MOK03	02/10/2012	55.34475	-5.89548	55.34801	-5.89556	114.3	116.2	12:23:43	12:33:50	MOK Disc 18
Mull of Kintyre	MOK04	02/10/2012	55.32827	-5.89841	55.33287	-5.89965	109.2	N/A	12:57:49	12:59:22	MOK Disc 18
Mull of Kintyre	MOK04	02/10/2012	55.32827	-5.89841	55.33287	-5.89965	N/A	111.2	12:59:22	13:07:52	MOK Disc 18

ANNEX 2: PHYSICAL AND BIOLOGICAL DESCRIPTIONS OF THE SURVEY SITES

*Site ID codes correspond with those in Annex 1. PMF codes used are as follows: habitats - BM (burrowed mud), KS (kelp and seaweed community on sublittoral sediment), NS (northern sea fan community); species - FQ (*Funiculina quadrangularis*), LA (*Leptometra celtica *aggregation on mixed substrata), LC (*Leptometra celtica*), PM (*Pachycerianthus multiplicatus*), SP (*Swiftia pallida, *PE* (Palinurus elephas*). ? denotes uncertainty.*

Site ID	Substrate	Biota	Biotope	PMF
LK01	Sandy mud with scattered cobbles and pebbles	No video available. Mud lightly burrowed by megafaunal crustaceans and supporting a population of small *Pennatula phosphorea* (P). A field of *Leptometra celtica* (C) is present on stones and the mud surface along part of the run. *Munida rugosa* (P), *Asterias rubens* (P), teleosts (P)	SS.SMu.CFiMu.SpnMeg	BM LA
LK02	Soft mud	No video available. Mud burrowed by *Nephrops norvegicus* (P) and *Calocaris macandreae* (P) and supporting *Funiculina quadrangularis* (P). Teleosts (P), Caridea sp. (P) and several *Leptometra celtica* on mud surface	SS.SMu.CFiMu.SpnMeg.Fun	BM FQ LC
LK03	Soft mud with possible creel scars	Mud supporting moderate density of burrows by *Calocaris macandreae* (C) and *Nephrops norvegicus* (F, 1 animal seen), as well as *Funiculina quadrangularis* (F) and *Pennatula phosphorea* (R). Teleosts (O), *Liocarcinus* sp. (R), *Asterias rubens* (O), *Munida rugosa* (R), sabellid tube (P)	SS.SMu.CFiMu.SpnMeg.Fun	BM FQ
LK04	Predominantly mixed sediment of sand with much gravel and shell material and scattered, often dense, pebbles, cobbles and boulders, with bedrock outcrops	Rock encrusted with pink coralline algae (O), serpulid worms (P) including *Spirobranchus* spp. and *Balanus* spp. (P) and supporting sparse foliose red algae (O) and hydroids (R), with larger stones, and probably bedrock, with ascidians including *Ciona intestinalis* (P) and *Diazona violacea* (P). *Echinus esculentus* (F), *Porania pulvillus* (O), *Asterias rubens* (O), *Munida rugosa* (O), teleosts (R), *Liocarcinus depurator*? (R), *Aequipecten opercularis* (R), *Cancer pagurus* (P)	SS.SMx.IMx CR.LCR.BrAs.AmenCio	
LK05	Sandy mud	Sediment lightly burrowed by *Nephrops norvegicus* (C), with *Pennatula phosphorea* (F), *Munida rugosa* (O), teleosts (O), *Turritella communis* shells (P, some possibly occupied), *Asterias rubens* (O)	SS.SMu.CFiMu.SpnMeg	BM

Annex 2 continued

Site ID	Substrate	Biota	Biotope	PMF
LK06	Soft mud and mixed substrate areas of mud with cobbles, pebbles and boulders	Soft mud with megafaunal burrows including *Nephrops norvegicus* (C) and smaller burrows including *Calocaris macandreae* (P), as well as *Funiculina quadrangularis* (O) and *Pennatula phosphorea* (R). In mixed substrate areas stones support hydroid patches (R), *Neocrania anomala* (P), serpulid worms (R) and *Leptometra celtica* (C for part of run), with *Munida rugosa* (O), *Asterias rubens* (O), *Porania pulvillus* (R), *Liocarcinus depurator* (R), *Callionymus* sp. and *Luidia cilairis* (P) also present	SS.SMu.CFiMu.SpnMeg.Fun SS.SMx.CMx	BM FQ LA
LK07	Mud with scattered cobbles and boulders	Mud lightly burrowed by *Nephrops norvegicus* (P) and smaller megafauna including *Calocaris macandreae* (P) and supporting *Funiculina quadrangularis* (F), sparse *Pachycerianthus multiplicatus* (P) and possibly *Pennatula phosphorea* (R). *Munida rugosa* (O), teleosts (O), *Porania pulvillus* (R), *Asterias rubens* (R), *Cancer pagurus* (P). Stones support patchy field of *Leptometra celtica* (C) for much of the run	SS.SMu.CFiMu.SpnMeg.Fun	BM FQ LA PM
LK08	Soft mud	Poor visibility but mud supporting moderate density of burrows by *Nephrops norvegicus* (C, 1 animal seen) and *Calocaris macandreae* (F-C), as well as *Funiculina quadrangularis* (F) and possibly *Pennatula phosphorea* (R). Teleosts (O), *Porania pulvillus* (R)	SS.SMu.CFiMu.SpnMeg.Fun	BM FQ
LK09	Soft mud	Mud supporting moderate density of burrows by *Nephrops norvegicus* (C) and smaller burrowers including *Calocaris macandreae* (F-C), as well as *Funiculina quadrangularis* (F). Teleosts (F), *Scyliorhinus* sp. (P)	SS.SMu.CFiMu.SpnMeg.Fun	BM FQ
LK10	Soft mud	Mud supporting moderate density of burrows by *Nephrops norvegicus* (C, 4 animals seen) and smaller burrowers including *Calocaris macandreae* (F), as well as *Funiculina quadrangularis* (F). Teleosts (O)	SS.SMu.CFiMu.SpnMeg.Fun	BM FQ
LK11	Sandy mud with areas including scattered gravel, pebbles, cobbles and occasional boulders	Run probably straddles burrowed and non-burrowed sandy mud biotopes. Areas of burrowed mud include fairly dense *Pennatula phosphorea* (F-C), *Funiculina quadrangularis* (O) and *Nephrops norvegicus burrows* (C), with *Goneplax rhomboides* (P), *Liocarcinus depurator* (R), *Munida rugosa* (R), *Asterias rubens* (O) and small teleosts (R). Non-burrowed areas have sparse *P. phosphorea* (R), *Asterias rubens* (F), *Munida rugosa* (O), *Porania pulvillus* (R), *Callionymus lyra* (R), pink coralline algae (R), *Echinus esculentus* (P). Scattered stones support a patchy field of *Leptometra celtica* (C, locally A)	SS.SMu.CFiMu.SpnMeg.Fun SS.SMu.CSaMu	BM FQ LA

Annex 2 continued

Site ID	Substrate	Biota	Biotope	PMF
LK12	Sandy mud with gravel and scattered pebbles, cobbles and boulders	Stones sparsely encrusted with pink coralline algae (R) and serpulid worms (R) and support sparse fauna of hydroid patches (R), *Ciona intestinalis* (R) and *Metridium senile*? (R). *Funiculina quadrangularis* (O), teleosts (O), *Munida rugosa* (O), *Asterias rubens* (O), *Echinus esculentus* (O), *Liocarcinus depurator* (R), *Cancer pagurus* (P), *Porania pulvillus* (R). Field of *Leptometra celtica* (C, locally A) on stones and sediment for much of run	SS.SMu.CSaMu	FQ LA
LK12	Soft mud	Mud with moderate density of burrows of *Calocaris macandreae* (C) and possibly *Nephrops norvegicus* (P). *Leptometra celtica* (C) on mud surface	SS.SMu.CFiMu.SpnMeg	BM LA
LK13	Soft mud	Mud supporting moderate density of burrows by *Nephrops norvegicus* (C, 2 animals seen) and *Calocaris macandreae* (F), as well as *Funiculina quadrangularis* (C) and *Pennatula phosphorea* (F). Teleosts (O), *Liocarcinus* depurator (R), *Asterias rubens* (P), *Munida rugosa* (R)	SS.SMu.CFiMu.SpnMeg.Fun	BM FQ
LK14	Soft mud with sparsely scattered cobbles and boulders	Mud supporting moderate density of burrows by *Nephrops norvegicus* (C) and smaller burrowers including *Calocaris macandreae* (F), as well as *Funiculina quadrangularis* (F) and *Pennatula phosphorea* (C). Teleosts (O), *Asterias rubens* (C), *Munida rugosa* (O), *Porania pulvillus* (R). Stones support hydroids (R), *Ciona intestinalis* (R) and *Protanthea simplex* (R)	SS.SMu.CFiMu.SpnMeg.Fun	BM FQ
LK14	Sandy mud with scattered pebbles cobbles and boulders, some large	Larger stones support dense stands of *Ciona intestinalis* (A), as well as hydroids (R), serpulid worms (P), *Balanus balanus* (P, possibly all dead), pink coralline algae (O), *Echinus esculentus* (F), crinoids (R) and foliose red algae (R). On mud surface are *Munida rugosa* (O), *Asterias rubens* (C), *Porania pulvillus* (O), *Crossaster papposus* (P), *Solaster endeca*? (P), Nudibranchia sp. (P) and *Inachus* sp. (P)	SS.SMu.CSaMu CR.LCR.BrAs.AmenCio	
LK15	Soft mud	Mud supporting moderate density of burrows by *Nephrops norvegicus* (C, 3 animals seen) and smaller burrowers including *Calocaris macandreae* (P), as well as *Funiculina quadrangularis* (F) and *Pennatula phosphorea* (F). Teleosts (O), *Asterias rubens* (O), *Munida rugosa* (R), *Porania pulvillus* (R), *Cerianthus lloydii* (P)	SS.SMu.CFiMu.SpnMeg.Fun	BM FQ
LK16	Soft mud	Mud supporting moderate density of burrows by *Nephrops norvegicus* (C) and smaller burrowers including *Calocaris macandreae* (P), as well as *Funiculina quadrangularis* (F) and dense *Pennatula phosphorea* (C, locally A). Teleosts (R), *Asterias rubens* (O), *Porania pulvillus* (R), *Liocarcinus depurator* (R)	SS.SMu.CFiMu.SpnMeg.Fun	BM FQ

Annex 2 continued

Site ID	Substrate	Biota	Biotope	PMF
LK17	Soft mud	Poor visibility but mud apparently supporting moderate density of burrows including *Nephrops norvegicus* (P), as well as *Funiculina quadrangularis* (C) and dense *Pennatula phosphorea* (C). Teleosts (R), *Asterias rubens* (O), *Turritella communis* shells (P)	SS.SMu.CFiMu.SpnMeg.Fun	BM FQ
LK18	Soft mud	Poor visibility but mud apparently supporting fairly light density of burrows including *Nephrops norvegicus* (P), as well as dense *Pennatula phosphorea* (C). *Asterias rubens* (O)	SS.SMu.CFiMu.SpnMeg	BM
LK19	Sandy mud	Mud supporting moderate density of burrows of *Nephrops norvegicus* (C), as well as *Funiculina quadrangularis* (F) and dense *Pennatula phosphorea* (C). Teleosts (R), *Asterias rubens* (F), *Paguridae sp. (R)*	SS.SMu.CFiMu.SpnMeg.Fun	BM FQ
LK20	Mud	Mud supporting burrows of *Nephrops norvegicus* (P) and smaller burrowers (P), as well as *Funiculina quadrangularis* (P) and dense *Pennatula phosphorea* (C, locally A). *Asterias rubens* (P), *Munida rugosa* (P), Brachyura sp. (P)	SS.SMu.CFiMu.SpnMeg.Fun	BM FQ
LK21	Sandy mud with scattered cobbles and boulders	Run probably straddles burrowed and non-burrowed sandy mud biotopes. Areas of burrowed mud include fairly dense *Pennatula phosphorea* (F), *Funiculina quadrangularis* (F) and fairly sparse megafaunal burrows, including *Nephrops norvegicus* (P). Non-burrowed areas lack *Pennatula* and largely lack *Funiculina*. *Asterias rubens* (C), *Munida rugosa* (O), teleosts (R), *Porania pulvillus* (R), *Necora puber* (P), *Cancer pagurus* (P), *Liocarcinus depurator* (R), *Inachus* sp. (P). Scattered boulders support *Ciona intestinalis* (C), pink coralline algae (P), *Balanus balanus* (P), hydroids (P) and crinoids (R)	SS.SMu.CFiMu.SpnMeg.Fun SS.SMu.CSaMu CR.LCR.BrAs.AmenCio	BM FQ
LK22	Soft mud	Mud supporting moderate density of burrows by *Nephrops norvegicus* (C) and *Calocaris macandreae* (P), as well as *Funiculina quadrangularis* (F). Small teleosts (F), *Munida rugosa* (O), *Porania pulvillus* (R)	SS.SMu.CFiMu.SpnMeg.Fun	BM FQ
LK22	Mud with varying densities of scattered boulders, cobbles, pebbles and gravel	Sediment with fairly sparse megafaunal burrowers including *Calocaris macandreae* (P). For most of run stones are colonised by *Leptometra celtica* (C, locally A) but otherwise support an impoverished fauna including hydroids (P) and possibly *Hymedesmia paupertas* (R). *Munida rugosa* (O), *Liocarcinus depurator* (O), small teleosts (F), *Porania pulvillus* (R), *Asterias rubens*? (P)	SS.SMx.CMx	LA
LK23	Sandy mud with some shell material	Mud with low density of burrows including *Nephrops norvegicus* (C), as well as *Pennatula phosphorea* (F), *Munida rugosa* (F), *Aequipecten opercularis* (F), *Asterias rubens* (P), *Porania pulvillus* (R), Brachyura sp. (R), *Turritella communis* (P) and small teleosts (O)	SS.SMu.CFiMu.SpnMeg	BM

Annex 2 continued

Site ID	Substrate	Biota	Biotope	PMF
LK23	Sandy mud with scattered gravel, pebbles, cobbles and occasional boulders	No burrows evident, although *Goneplax rhomboides* present (P). Stones support sparse serpulid worms (P) and hydroids (P). *Munida rugosa* (F)	SS.SMu.CSaMu	
LK24	Soft mud with sparsely scattered cobbles and boulders	Mud supporting moderate density of burrows by *Nephrops norvegicus* (C, 1 animal seen) and *Calocaris macandreae* (C), as well as *Funiculina quadrangularis* (F). Teleosts (O) including *Callionymus* sp. (R) and Gadidae sp. (P), *Munida rugosa* (O), *Porania pulvillus* (R), Caridea sp. (P), *Liocarcinus depurator* (R). Field of *Leptometra celtica* (C) on stones and on mud surface at beginning of run	SS.SMu.CFiMu.SpnMeg.Fun	BM FQ LA
LK25	Soft mud with isolated boulders and cobbles and possible creel scars	Mud supporting moderate density of burrows by *Nephrops norvegicus* (C, 1 animal seen) and *Calocaris macandreae* (C), as well as *Funiculina quadrangularis* (F). Teleosts (O), *Munida rugosa* (O), Pleuronectiformes sp. juvenile (R), *Porania pulvillus* (R), Caridea sp. (P), *Liocarcinus depurator* (R). Sparse *Leptometra celtica* on stones in second half of run (O)	SS.SMu.CFiMu.SpnMeg.Fun	BM FQ LC
LK26	Soft mud	Mud supporting moderate density of burrows by *Nephrops norvegicus* (C) and *Calocaris macandreae* (C), as well as *Funiculina quadrangularis* (F). Teleosts (O). Possible *Cepola rubescens* burrow (vertical, c. 12 cm diameter)	SS.SMu.CFiMu.SpnMeg.Fun	BM FQ
LK20a	Soft mud	Mud supporting moderate density of burrows by *Nephrops norvegicus* (C) and smaller burrowers including *Calocaris macandreae* (P), as well as *Funiculina quadrangularis* (F) and dense *Pennatula phosphorea* (C). Teleosts (O), *Asterias rubens* (F), Paguridae sp. (R)	SS.SMu.CFiMu.SpnMeg.Fun	BM FQ
LK02a	Soft mud	Mud supporting moderate density of burrows by *Nephrops norvegicus* (C, 1 animal seen) and *Calocaris macandreae* (C), as well as *Funiculina quadrangularis* (F) and *Pennatula phosphorea* (O). Teleosts (O), Caridea sp. (P), Asteroidea sp. (R)	SS.SMu.CFiMu.SpnMeg.Fun	BM FQ
LK01a	Mud with scattered cobbles and boulders	Mud lightly burrowed by *Nephrops norvegicus* (F, locally C) and *Calocaris macandreae* (F) and supports a population of small and partially withdrawn *Pennatula phosphorea* (probably F, locally C). A field of *Leptometra celtica* (C) is present on stones and the mud surface in the second half of the run. *Munida rugosa* (F), *Asterias rubens* (F), *Porania pulvillus* (O), teleosts (O), serpulid worms (R), sabellid tubes (R), *Turritella* shells (P), *Echinus esculentus* (P)	SS.SMu.CFiMu.SpnMeg	BM LA

Annex 2 continued

Site ID	Substrate	Biota	Biotope	PMF
RM01	Soft mud with a small patch of scattered cobbles; one creel present	Mud densely burrowed by *Calocaris macandreae* (C, locally A) and *Nephrops norvegicus* (C, 8 animals seen) and punctuated by many small holes (<5 mm) and with emergent polychaete tubes. *Funiculina quadrangularis* (C), *Pennatula phosphorea*? (R), *Sagartiogeton laceratus* (O), *Pachycerianthus multiplicatus*? (R), teleosts (R) including *Glyptocephalus cynoglossus*?. Cobbles support *Bolocera tuediae*? (R)	SS.SMu.CFiMu.SpnMeg.Fun	BM FQ PM?
RM02	Soft mud with isolated boulders	Visibility poor but mud clearly densely burrowed by *Calocaris macandreae* (C) and with *Nephrops norvegicus* (P, 1 animal seen) and punctuated by many small holes (<5 mm). *Funiculina quadrangularis* (F), teleosts (R), Caridea sp. (R). Boulders support a small patch of *Leptometra celtic*a (locally C)	SS.SMu.CFiMu.SpnMeg.Fun	BM FQ LC
RM02	Silted cobbles, boulders and possibly bedrock	Rock supports field of *Leptometra celtica* (C) and possibly patchy hydroid turf (F). *Echinus esculentus* (P)	CR.LCR	LC
RM02	Soft mud with isolated boulders	Mud densely burrowed by *Calocaris macandreae* (C) and *Nephrops norvegicus* (C, 5 animals seen) and punctuated by many small holes (<5 mm). *Funiculina quadrangularis* (F), teleosts (R), Rock supports sparse *Leptometra celtic*a (R) and *Urticina* sp.? (R)	SS.SMu.CFiMu.SpnMeg.Fun	BM FQ LC
RM03	Sandy mud with sparsely scattered boulders and cobbles grading into soft mud	Mud densely burrowed by *Calocaris macandreae* (C, locally A) and *Nephrops norvegicus* (C, 7 animals seen) and punctuated by many small holes (<5 mm). *Funiculina quadrangularis* (F, but locally C in second half of run), *Pennatula phosphorea*? (R), *Sabella pavonina* (O), *Goneplax rhomboides* (R), *Munida rugosa* (R), *Urticina* sp. (R), other anemones (R) possibly including *Sagartiogeton* sp. and *Cerianthus lloydii*. Teleosts (R), *Inachus* sp. (R), Paguridae sp.? (R), Rock also supports hydroids (R) and *Suberites* sp.? (R)	SS.SMu.CFiMu.SpnMeg.Fun	BM FQ
RM04	Soft mud with scattered cobbles and boulders in places	Visibility generally poor but mud fairly densely burrowed by *Calocaris macandreae* (C) and *Nephrops norvegicus* (C, 8 animals seen) and punctuated by many small holes (<5 mm). *Funiculina quadrangularis* (F), *Pennatula phosphorea* (O), *Munida rugosa* (R), *Sagartiogeton* sp.? (R), *Cerianthus lloydii*? (R), teleosts (O), Brachyura sp. (R), Rock supports hydroids (R), *Metridium senile* (O), *Urticina* sp./*Bolocera tuediae* (R) and crinoids (R)	SS.SMu.CFiMu.SpnMeg.Fun	BM FQ

Annex 2 continued

Site ID	Substrate	Biota	Biotope	PMF
RM05	Soft mud	Visibility very poor permitting only brief glimpses of the seabed. Mud densely burrowed by *Calocaris macandreae* (C), with *Nephrops norvegicus* burrows probably also present. Little else visible apart from *Pennatula phosphorea*? (R) and *Asterias rubens*? (P)	SS.SMu.CFiMu.SpnMeg	BM
LS01	Mud with sparsely scattered boulders, cobbles and pebbles	Fairly flat sediment containing small *Nephrops norvegicus* burrows (F) and smaller burrows including *Calocaris macandreae*. A single juvenile *Funiculina quadrangularis*, a possible *Pennatula phosphorea*, and a large *Pachycerianthus multiplicatus* observed. Dense *Leptometra celtica* present on mud surface and attached to stones (C, locally A). Teleosts (O), *Ophiocomina nigra* (R), *Munida rugosa* (O), Paguridae spp. (O), *Myxicola infundibulum*? (P)	SS.SMu.CFiMu.SpnMeg	BM FQ PM LA
LS01	Soft mud	Mud burrowed by large *Nephrops norvegicus* (C, 2 animals seen) and smaller crustaceans including *Calocaris macandreae* and probably *Callianassa subterranea* and *Jaxea nocturna*. *Funiculina quadrangularis* (C), *Leptometra celtica* (R), teleosts (O), *Munida rugosa* (P)	SS.SMu.CFiMu.SpnMeg.Fun	BM FQ LC
LS01	Largely sandy mud with scatter of boulders, cobbles, pebbles and gravel	Transitional area where mud initially burrowed by *Nephrops norvegicus* and other forms including *Calocaris macandreae*, but as sediment becomes more mixed, burrows become sparse, with stones supporting abundant *Leptometra celtica*, as well as *Protanthea simplex* (R), *Neocrania anomala* (R), *Ascidia mentula*? (R), *Ascidia virginea* (R) and *Ciona intestinalis*? (R). *Munida rugosa* (F), teleosts (O), *Solaster endeca* (O), *Crossaster papposus* (P), Paguridae spp. (O), Brachyura sp. (R), *Toxisarcon alba* (P), *Funiculina quadrangularis* (O), *Pachycerianthus multiplicatus (*P)	SS.SMx.CMx	LA FQ PM
LS02	Muddy sediment with scatter of pebbles and cobbles, with patches of soft mud and areas of dense boulders and bedrock	Soft mud areas burrowed by small *Nephrops norvegicus* (C) and smaller forms and supporting *Funiculina quadrangularis* (C), *Pennatula phosphorea* (R) and *Amphiura* spp. (P). *Leptometra celtica* is common throughout much of the mixed stony sediment areas and on boulders and bedrock, with rock surfaces also supporting dense *Neocrania anomala* (C), *Protanthea simplex* (O), *Caryophyllia smithii* (P), ascidians (O) including *Ascidia mentula*, *Suberites carnosus* (R), *Ophiothrix fragilis* (P), *Metridium senile* (R), *Echinus esculentus* (F) and hydroids (R). *Pachycerianthus multiplicatus* (O), *Munida rugosa* (F), teleosts (O), pagurids (O), Brachyura sp. (R), *Cancer pagurus* (P), *Callianassa subterranea*? (P), *Cerianthus lloydii*? (R)	SS.SMx.CMx SS.SMu.CFiMu.SpnMeg.Fun CR.LCR.BrAs	BM FQ LA PM

Annex 2 continued

Site ID	Substrate	Biota	Biotope	PMF
LS03	Soft mud	Rich example of the biotope with abundant *Funiculina quadrangularis*, as well as occasional *Pachycerianthus multiplicatus* and *Pennatula phosphorea*. The mud is fairly densely burrowed by *Nephrops norvegicus* (C) and smaller forms including numerous *Goneplax rhomboides* (20 emergent) and probably *Jaxea nocturna* (P). *Munida rugosa* (R), teleosts (O) including *Callionymus lyra* (R), *Scyliorhinus* sp. (P), pagurids (R), crinoids (R)	SS.SMu.CFiMu.SpnMeg.Fun	BM FQ PM
LS04	Flat, muddy sediment, generally with surface scatter of shell material, and scattered cobbles and boulders in places	Sparse, small, megafaunal burrows but fairly dense field of *Leptometrica celtica* (C) throughout most of run. Stones also support *Alcyonium glomeratum* (R), *Metridium senile* (R), *Sabella pavonina* tubes (R), *Suberites carnosus*? (R) and *Caryophyllia smithii* (P). Fauna on mud surface includes small teleosts (O) including *Callionymus lyra* (R), *Solaster endeca* (R), *Munida rugosa* (F), Brachyura sp. (R), *Asterias rubens*? (R), *Myxicola infundibulum* (P), *Ophiothrix fragilis* (R), *Ophiocomina nigra* (R, locally C), *Pagurus prideaux* with *Adamsia carciniopados* (O), *Ophiura albida* (locally C), *Ophiua ophiura* (R), *Pecten maximus* (R), small pectinids (P) and Buccinidae sp. (R)	SS.SMx.CMx	LA
LS04	Soft mud	Fairly lightly burrowed mud with megafauna including *Nephrops norvegicus* (1 animal seen) and probably *Calocaris macandreae* and *Callianassa subterranea*. Vagile epifauna includes *Ophiura ophiura* (F), *Pagurus prideaux* with *Adamsia carciniopados* (O), small teleosts (O) including *Callionymus lyra* (R), *Ophiocomina nigra* (R), small pectinids (P), *Leptometra celtica* (R) and *Aequipecten opercularis*? (R)	SS.SMu.CFiMu.SpnMeg	BM LC
LS04	Muddy sediment with much shell material and gravel	Epifauna dominated initially by *Ophiocomina nigra* (F) but for most of the run by *Leptometra celtica* (C), with other forms including *Pagurus prideaux* with *Adamsia carciniopados* (O), *Pagurus* sp. (P), *Ophiura albida* (P), *Anseropoda placenta* (P) and *Callionymus lyra* (P)	SS.SMx.CMx	LA
LS05	Soft mud	Rich example of the biotope with abundant *Funiculina quadrangularis*, as well as occasional *Pennatula phosphorea*. The mud is fairly densely burrowed by megafaunal crustaceans including *Nephrops norvegicus* (P, 2 animals seen) and smaller forms including *Goneplax rhomboides* (P, 2 emergent) and probably *Callianassa subterranea* (C), *Jaxea nocturna* (P) and *Calocaris macandreae* (P). *Munida rugosa* (R), teleosts (O) including *Callionymus lyra* (R). Isolated boulders and cobbles support hydroid clumps (R), *Alcyonium glomeratum* (R) and *Caryophyllia smithii* (R)	SS.SMu.CFiMu.SpnMeg.Fun	BM FQ

Annex 2 continued

Site ID	Substrate	Biota	Biotope	PMF
TRW06	Uneven bedrock with extensive areas of boulders and cobbles and small patch of waved coarse? sediment	Rock surfaces support a light turf of foliose red algae (C), which may be more profuse before this autumn survey and an encrusting community of pink coralline algae (C), *Parasmittina trispinosa* (R) and *Spirobranchus* spp. (R). The sponge fauna includes *Haliclona cinerea?* (O) *Cliona celata* (R) and a red encrusting form (P). *Alcyonium digitatum* (O, locally C), *Actinothoe sphyrodeta*/*Sagartia elegans* (F), *Echinus esculentus* (F), *Crossaster papposus* (O), *Marthasterias glacialis*? (O), *Henricia* sp. (P), Asteroidea sp. (P), teleots (R) including *Labrus mixtus*? Deeper areas lack foliose algal cover and are dominated by pink coralline algae	IR.HIR.KFaR.FoR CR.MCR.EcCr.FaAlCr	
TRW07	Largely bedrock but with patches of mixed boulders, cobbles and pebbles	A park of small *Laminaria hyperborea* (C) colonised by much *Membranipora membranacea* with rock supporting a sparse red algal flora of pink coralline algae (O) and foliose forms (F) including *Odonthalia dentata* and *Callophyllis laciniata,* and *Parasmittina trispinosa* (R). Other sessile species include *Haliclona cinerea?* (R), *Cliona celata*? (R), a light yellow encrusting sponge (R), *Urticina felina* (O), *Spirobranchus* spp. (P) and *Alcyonium digitatum* (R). The motile fauna includes *Echinus esculentus* (C), *Asterias rubens*? (O), *Luidia ciliaris* (P), *Necora puber* (P) and *Cancer pagurus* (P)	IR.MIR.KR.Lhyp.Pk	
TRW08	Mostly bedrock but with patches of cobbles and pebbles	A fairly dense park of small *Laminaria hyperborea* (C) colonised by *Membranipora membranacea* with rock supporting a red algal flora of pink coralline algae (F) and foliose forms (C) including *Callophyllis laciniata*, *Odonthalia dentata* and *Parasmittina trispinosa* (R). *Actinothoe sphyrodeta/Sagartia elegans* (C, at least locally), *Urticina felina* (P), *Echinus esculentus* (F), *Asterias rubens* (C), *Necora puber* (P)	IR.HIR.KFaR.LhypR.Pk	
TRW09	Uneven bedrock with fields of boulders and cobbles with coarse sediment infill in gulleys	A fairly dense park of small *Laminaria hyperborea* (C) colonised by *Membranipora membranacea* with rock supporting a red algal flora of pink coralline algae (C) and foliose forms (F) including *Callophyllis laciniata* (P), *Odonthalia dentata* (P) and *Delesseria sanguinea* (P), and *Parasmittina trispinosa* (R). *Pachymatisma johnstonia* (R), red encrusting sponge (P), *Actinothoe sphyrodeta*/*Sagartia elegans* (C, at least over a large area), *Alcyonium digitatum* (O, locally C), *Echinus esculentus* (C), *Asterias rubens* (F), *Luidia ciliaris* (P), *Crossaster papposus* (P), *Henricia* sp. (P), teleosts (R, including Labridae sp.), *Cancer pagurus* (P), *Calliostoma zizyphinum* (P)	IR.MIR.KR.LhypT.Pk	

Annex 2 continued

Site ID	Substrate	Biota	Biotope	PMF
TRW10	Cobbles and boulders with patches of waved coarse sand	Encrusting community dominated by encrusting and cushion sponges (C) which include yellow, red and beige forms (with possibly *Amphilectus fucorum* and *Halichondria panicea*); other encrusters include pink coralline algae (O), *Parasmittina trispinosa* (O), *Spirobranchus* spp. (F) and *Balanus* spp. (P). *Aplidium punctum*? (P), *Actinothoe sphyrodeta*? (P), *Alcyonium digitatum* (R), *Echinus esculentus* (F), *Asterias rubens* (F), teleosts (O)	CR.HCR.FaT	
TRW11	Mostly cobbles and boulders but with varying quantities of pebbles, gravel and coarse sand	Rock encrusted with *Parasmittina trispinosa* (O), pink coralline algae (R), profuse *Spirobranchus* spp. (A) and sparse sponges (R), including *Cliona celata?*. Motile species include *Echinus esculentus* (F), *Porania pulvillus* (F), *Asterias rubens*? (P), *Luidia ciliaris* (P), teleosts (O), *Scyliorhinus* sp. (P), *Cancer pagurus* (P) and *Munida rugosa* (P)	CR.MCR.EcCr.FaAlCr.Pom	
TRW12	Highly uneven bedrock with some cobble and boulder patches. Run probably traverses shallower depths than recorded values	Rock encrusted with pink coralline algae (C) and an orange sponge (P) and supports a sparse turf of foliose red algae (O-F) and a forest of *Laminaria hyperborea* (A) in shallower waters and a park (C) in deeper waters. The conspicuous sessile fauna includes *Alcyonium digitatum* (O), *Corynactis viridis* (P) and large patches of *Cliona celata* (R), as well as *Sagartia elegans/Actinothoe sphyrodeta* (P), bryozoan and hydroid clumps (P), *Spirobranchus* spp. (C locally), *Filograna implexa*? (P) and *Polymastia boletiformis*? (R). Kelp supports extensive mats of *Membranacea membranipora* (P), *Gibbula cineraria* and *Calliostoma zizyphinum*. Motile forms include *Holothuria forskali* (P, 2 seen), *Henricia* sp. (P), *Echinus esculentus* (F), *Asterias rubens* (P), *Marthasterias glacialis*? (P) and teleosts (P)	IR.HIR.KFaR.LhypR.Ft IR.HIR.KFaR.LhypR.Pk	
TRW13	Low profile bedrock with extensive areas of boulders and cobbles with varying amounts of pebbles and gravel	Rock encrusted with *Parasmittina trispinosa* (O), pink coralline algae (R), profuse *Spirobranchus* spp. (A) and sparse encrusting sponges (R), including *Hymedesmia paupertas*? and a yellow form. Otherwise a sparse sessile fauna including *Ascidia mentula* (P), *Caryophyllia smithii* (R) and *Urticina felina* (R). Motile species include *Echinus esculentus* (F), *Porania pulvillus* (O), *Marthasterias glacialis* (P), *Asterias rubens*? (O), *Luidia ciliaris* (O), small teleosts (R), *Cancer pagurus* (P) and *Munida rugosa* (P), with a small patch of *Ophiocomina nigra* (locally C)	CR.MCR.EcCr.FaAlCr.Pom	

Annex 2 continued

Site ID	Substrate	Biota	Biotope	PMF
TRW14	Largely boulders and cobbles but small bedrock outcrops and areas of cobbles and pebbles with coarse sand and gravel infill	Rock encrusted with *Parasmittina trispinosa* (O), pink coralline algae (R), profuse *Spirobranchus* spp. (A) and other serpulids (P), and sparse sponges (R), including *Cliona celata*?, *Haliclona cinerea*? and a yellow encrusting form. Other sessile forms include *Alcyonium digitatum* (R), *Ascidia mentula* (P), hydroids (R) and *Botryllus schlosseri* (R). *Caryophyllia smithii* becomes frequent in the latter half of the run. Motile species include *Holothuria forskali* (F, 6 seen), *Echinus esculentus* (F), *Porania pulvillus* (O), *Asterias rubens*? (O), *Luidia ciliaris* (P), small teleosts (R), *Cancer pagurus* (O), *Crossaster papposus* (P), *Calliostoma zizyphinum* (P) and *Aequipecten opercularis*? (R)	CR.MCR.EcCr.FaAlCr.Pom CR.MCR.EcCr.FaAlCr.Car	
SOM01	Soft mud	Mud fairly lightly burowed by *Nephrops norvegicus* (C) and smaller megafauna including *Calocaris macandreae*. *Funiculina quadrangularis* (C), *Pennatula phosphorea* (O), *Liocarcinus* sp. (R)	SS.SMu.CFiMu.SpnMeg.Fun	BM FQ
SOM02	Sandy mud gradually changing to mud	Sediment lightly burrowed by *Nephrops norvegicus* (P) and smaller megafauna (P) including *Goneplax rhomboides* (1 animal seen). *Pennatula phosphorea* (O), *Asterias rubens* (O), small teleosts (O). *Virgularia mirabilis* is present for first half of run (O) and *Funiculina quadrangularis* for second half (F)	SS.SMu.CFiMu.SpnMeg.Fun SS.SMu.CFiMu.SpnMeg	BM FQ
SOM03	Soft mud	Sediment moderately densely burrowed by *Nephrops norvegicus* (C) and smaller megafauna including *Calocaris macandreae* (F). *Funiculina quadrangularis* (C), *Pennatula phosphorea* (O), small teleosts (R)	SS.SMu.CFiMu.SpnMeg.Fun	BM FQ
SOM04	Soft mud	Sediment moderately densely burrowed by *Nephrops norvegicus* (C) and smaller megafauna including *Calocaris macandreae* (F). *Funiculina quadrangularis* (C), *Pennatula phosphorea* (O), small teleosts (R). Scattered dead *F. quadrangularis* and a small patch of dense skeletons, possibly fishing discards	SS.SMu.CFiMu.SpnMeg.Fun	BM FQ
SOM05	Soft mud	Mud lightly burowed by *Nephrops norvegicus* (P, 2 animals seen) and smaller megafauna including *Calocaris macandreae (P)*. *Funiculina quadrangularis* (O), *Pennatula phosphorea* (R), *Liocarcinus* sp. (R), *Munida rugosa* (O), small teleosts (O)	SS.SMu.CFiMu.SpnMeg.Fun	BM FQ
SOM06	Mud	Sediment moderately densely burrowed by *Nephrops norvegicus* (C) and smaller megafauna including *Calocaris macandreae* (F). *Funiculina quadrangularis* (C, locally A), *Pennatula phosphorea* (O), small teleosts (R), *Turritella communis* (C locally)	SS.SMu.CFiMu.SpnMeg.Fun	BM FQ
SOM07	Mud	Sediment moderately densely burrowed by *Nephrops norvegicus* (C) and smaller megafauna including *Calocaris macandreae* (F). *Funiculina quadrangularis* (C, locally A), *Pennatula phosphorea* (O), small teleosts (R), *Liocarcinus* sp.? (R)	SS.SMu.CFiMu.SpnMeg.Fun	BM FQ

Annex 2 continued

Site ID	Substrate	Biota	Biotope	PMF
SOM08	Soft mud	Sediment fairly densely burrowed by *Nephrops norvegicus* (C) and smaller megafauna including *Calocaris macandreae* (C). Dense *Funiculina quadrangularis* (A) and possible *Maxmuelleria lankesteri* mounds (poor visibility). *S*mall teleosts (O), *Munida rugosa* (R)	SS.SMu.CFiMu.SpnMeg.Fun	BM FQ
SOM09	Soft mud	Sediment moderately densely burrowed by *Nephrops norvegicus* (C) and smaller megafauna including *Calocaris macandreae* (F). Dense *Funiculina quadrangularis* (A), *Pennatula phosphorea* (R) and possible *Maxmuelleria lankesteri* mounds (poor visibility). *S*mall teleosts (R), *Munida rugosa* (R)	SS.SMu.CFiMu.SpnMeg.Fun	BM FQ
SOM10	Soft mud	Sediment fairly densely burrowed by *Nephrops norvegicus* (C) and smaller megafauna including *Calocaris macandreae* (F, locally C). Very dense *Funiculina quadrangularis* (A, S in small patches), *Pennatula phosphorea* (O) and possible *Maxmuelleria lankesteri* mounds (poor visibility). *S*mall teleosts (R), *Munida rugosa* (R)	SS.SMu.CFiMu.SpnMeg.Fun	BM FQ
SOM11	Muddy sand with scattered gravel, pebbles and cobbles and occasional boulders	Stones encrusted with serpulid worms (F) and pink coralline algae (R) and supporting occasional hydroid clumps and *Alcyonium digitatum* (R). *Munida rugosa* (F), *Echinus esculentus* (O), *Asterias rubens* (P). Patchy field of *Leptometra celtica* (A) for much of the run	SS.SMx.CMx	LA
SOM11	Shipwreck	Fairly sparse fouling community visible: *Alcyonium digitatum* (P), *Ascidia mentula*? (P), *Sabella pavonina* (P) and hydroids (P). Teleosts (P)	CR.FCR.FouFa	
SOM11	Muddy sand with scattered gravel, pebbles and cobbles and occasional boulders	Stones encrusted with serpulid worms (P) and pink coralline algae (R) and supporting sparse *Leptometra celtica*? (R). *Echinus esculentus* (P)	SS.SMx.CMx	
SOM11	Silty sand with scattered gravel and pebbles	Patchy brittlestar bed with *Ophiocomina nigra* (A) and *Ophiothrix fragilis* (A, locally S). Small teleosts (R)	SS.SMx.CMx.OphMx	
SOM12	Soft mud	Sediment moderately densely burrowed by *Nephrops norvegicus* (C, 4 animals seen) and smaller megafauna including *Calocaris macandreae* (F). *Funiculina quadrangularis* (C), *Pennatula phosphorea* (R), teleosts (O), *Scyliorhinus* spp. (O), *Asterias rubens*? (P)	SS.SMu.CFiMu.SpnMeg.Fun	BM FQ

Annex 2 continued

Site ID	Substrate	Biota	Biotope	PMF
SOM13	Dense cobbles with boulders and shell gravel infill	Rock encrusted with *Spirobranchus* spp. (A) and supporting abundant *Tubularia indivisa*, at least for much of run. Other sessile forms include *Alcyonium digitatum* (R) and sparse encrusting/cushion sponges (R). The motile component includes *Echinus esculentus* (C), *Asterias rubens* (C), *Munida rugosa* (F), teleosts (O), *Crossaster papposus* (F) and *Cancer pagurus* (P)	CR.HCR.FaT	
SOM14	Mixed substrate of sand, gravel, pebbles, cobbles and boulders with dense shell (especially *Modiolus*) in places	Stones encrusted with *Spirobranchus* spp. (C), pink coralline algae (O) and *Balanus* spp. (P, though appearing dead) and supporting hydroid patches (O) including *Tubularia indivisa*? (R), *Alcyonium digitatum* (R), yellow encrusting/cushion sponges (R) and *Urticina* spp. (O). The motile fauna includes *Echinus esculentus* (C), *Asterias rubens* (F), *Crossaster papposus* (O), *Calliostoma zizyphinum* (P), *Munida rugosa* (P) and small teleosts (O). *Ophiothrix fragilis* is locally superabundant	SS.SMx.CMx SS.SMx.CMx.OphMx	
SOM15	Mixed substrate of sand, gravel, pebbles, cobbles and scattered boulders	Stones encrusted with *Spirobranchus* spp. (C), pink coralline algae (O) and *orange bryozoans* (O), with boulders supporting hydroid patches (O) including *Tubularia indivisa*? (R), *Alcyonium digitatum* (R), yellow encrusting/cushion sponges (R) and one instance of *Pachymatisma johnstonia* (R). The motile fauna includes *Echinus esculentus* (C), *Asterias rubens* (C), *Crossaster papposus* (F), *Calliostoma zizyphinum* (P), *Munida rugosa* (C), *Cancer pagurus* (P) and small teleosts (R). *Ophiothrix fragilis* occurs in patches (locally A and S)	SS.SMx.CMx SS.SMx.CMx.OphMx	
SOM16	Mixed substrate of sand, gravel, pebbles, cobbles and scattered boulders	Stones encrusted with *Spirobranchus* spp. (C), pink coralline algae (R) and *orange bryozoans* (O), and supporting hydroid patches (O) including *Hydrallmania falcata* (P) and *Tubularia indivisa*? (P), *Alcyonium digitatum* (R) and yellow encrusting/cushion sponges (R). The motile fauna includes *Echinus esculentus* (F), *Asterias rubens* (F), *Crossaster papposus* (F), *Antedon* sp.? (R), *Calliostoma zizyphinum* (P), *Munida rugosa* (F), *Cancer pagurus* (O) and small teleosts (O) including *Pholis gunnellus* (P). *Ophiothrix fragilis* is locally abundant	SS.SMx.CMx SS.SMx.CMx.OphMx	
SOM17	Silty sand with scattered gravel, pebbles, shells and cobbles with occasional boulders	Stones with sparse pink coralline algae (R), hydroid clumps (R) and *Alcyonium digitatum* (R). Patchy, thin brittlestar bed with brittlestar areas supporting *Ophiocomina nigra* (C) and *Ophiothrix fragilis* (A, S in small patches). Small teleosts (O), *Echinus esculentus* (F), small *Funiculina quadrangularis* (R)	SS.SMx.CMx SS.SMx.CMx.OphMx	FQ

Annex 2 continued

Site ID	Substrate	Biota	Biotope	PMF
SOM18	Silty sand with scattered gravel, pebbles, shells and occasional cobbles	Stones appear bare. Thin brittlestar bed with *Ophiocomina nigra* (A) and patches of *Ophiothrix fragilis* (locally S). *Munida rugosa* (P)	SS.SMx.CMx.OphMx	
SOM18	Silty sand with scattered gravel, pebbles, shells and occasional cobbles	Stones with sparse serpulid worms (P), hydroid clumps (O) and *Suberites carnosus* (R). Small teleosts (R), *Echinus esculentus* (O), small *Funiculina quadrangularis* (O), *Inachus* sp. (R)	SS.SMx.CMx	FQ
SOM19	Silty sand with scattered gravel, pebbles, shells and occasional boulders. Fishing refuse (coil of rope)	Thin brittlestar bed with *Ophiocomina nigra* (A) and patches of *Ophiothrix fragilis* (locally S). *Munida rugosa* (R), *Goneplax rhomboides* (R), small teleosts (O), *Echinus esculentus* (F), *Alcyonium digitatum* (R), *Suberites carnosus* (R), *Crossaster papposus* (P)	SS.SMx.CMx.OphMx	
SOM19	Muddy sand with scattered gravel, pebbles, shells and occasional cobbles and boulders	Stones with hydroid clumps (O), sparse pink coralline algae (R) and *Ascidia virginea* (P). Small teleosts (O), *Echinus esculentus* (F), *Ophiura albida* (locally A)	SS.SMx.CMx	
SOM24	Mixed substrate of sand, gravel, pebbles, cobbles, shell and boulders	Mixed stoney areas with *Spirobranchus* spp. (C) and *Urticina* spp. (O) and a motile fauna of *Echinus esculentus* (F), *Asterias rubens* (F), *Crossaster papposus* (F), *Calliostoma zizyphinum* (P), *Munida rugosa* (C), *Cancer pagurus* (P) and teleosts (R), with patches of dense *Ophiothrix fragilis* (S in patches). Boulders in particular support a hydroid fauna including *Tubularia indivisa* (C) and others such as *Sertularia* sp.?, patches of yellow encrusting/cushion sponges (R, locally F) and *Alcyonium digitatum* (R).	CR.HCR.FaT SS.SMx.CMx SS.SMx.CMx.OphMx	

Annex 2 continued

Site ID	Substrate	Biota	Biotope	PMF
SOM25	Mixed substrate of sand, gravel, pebbles, cobbles and occasional boulders, with patches of silted bedrock and boulders	Mixed substrate and bedrock areas with similar fauna. Rock encrusted with sparse serpulid worms (F) and orange bryozoans (R) and supporting hydroid clumps (O, locally F), *Alcyonium digitatum* (R, locally F on bedrock) and *Axinella infundibuliformis/Phakellia ventilabrum* (R on bedrock). Motile forms include *Echinus esculentus* (F), *Asterias rubens* (F), *Munida rugosa* (F), *Crossaster papposus* (O), *Cancer pagurus* (P), teleosts (O), *Scyliorhinus* sp. (P) and *Antedon* sp.? (R). Patches of dense brittlestars present in both mixed and bedrock areas (where *Ophiothrix fragilis* S, *Ophiocomina nigra* A).	SS.SMx.CMx SS.SMx.CMx.OphMx CR.MCR.EcCr.FaAlCr CR.MCR.EcCr.FaAlCr.Bri	
SOM26	Silty sand with scattered pebbles, gravel and shells	A thin brittlestar bed with *Ophiothrix fragilis* (A) and *Ophiocomina nigra* (C). Other fauna fairly sparse, with *Crossaster papposus* (F), Paguridae spp. (F), small teleosts (O), *Liocarcinus* sp. (R) and *Munida rugosa* (R)	SS.SMx.CMx.OphMx	
SOM26	Silty sand with scattered pebbles, gravel and shells	Sparse visible fauna. *Crossaster papposus* (F), *Munida rugosa* (O), small teleosts (O), Paguridae sp. (R), *Ophiura* sp.? (P), *Echinus esculentus* (P), *Ophiocomina nigra* (R), *Ophiothrix fragilis* (R), *Inachus* sp. (R), *Cancer pagurus* (P)	SS.SMx.CMx	
SOM27	Silty sand with densely scattered pebbles, gravel and shells and occasional boulders	Stones with sparse serpulid worms, pink coralline algae (R), hydroid clumps (R), *Metridium senile*? (R) and *Alcyonium digitatum* (R). Motile forms include *Echinus esculentus* (F), *Asterias rubens* (F), *Munida rugosa* (F), *Crossaster papposus* (O), small teleosts (O) and *Liocarcinus* sp. (R). A small field of probably *Leptometra celtica* present (C) and areas of dense *Ophiothrix fragilis* (S) and *Ophiocomina nigra* (A)	SS.SMx.CMx SS.SMx.CMx.OphMx	LA
SOM28	Silty fine sand with very sparsely scattered shells, pebbles and cobbles	Brittlestars thinly scattered over much of run (*Ophiothrix fragilis* and *Ophiocomina nigra*, both C overall) with small aggregations but not forming a bed. Other motile forms include *Asterias rubens* (F, C initially), *Scyliorhinus* spp. (F), teleosts (O), *Liocarcinus* sp. (R), *Munida rugosa* (R) and *Cancer pagurus*. Little evidence of infauna apart from sparse infaunal tubes	SS.SSa.CFiSa	
SOM29	Silty fine sand with gravel, pebbles and shells	Sparse visible life. *Echinus esculentus* (F), *Crossaster papposus* (O), *Munida rugosa* (R), teleosts (R), *Asterias rubens* (P), *Urticina* sp. (R)	SS.SMx.CMx	

Annex 2 continued

Site ID	Substrate	Biota	Biotope	PMF
SOM30	Silty fine sand with much gravel and pebbles and sparsely scattered cobbles and boulders	Sparse sessile fauna includes hydroid clumps (R) on larger stones, *Alcyonium digitatum* (R), *Suberites carnosus*? (R) and *Cerianthus lloydii* (R). Motile forms include *Munida rugosa* (O), *Pagurus prideaux* with *Adamsia carciniopados* (O), teleosts (O), *Crossaster papposus* (O), *Echinus esculentus* (F), *Asterias rubens* (P), *Inachus* sp.? (P), Caridea sp. (P), Rajidae sp. (P) and *Aequipecten opercularis* (R). *Ophiocomina nigra* is locally abundant.	SS.SMx.CMx SS.SMx.CMx.OphMx	
SOM31	Silty fine sand with gravel, pebbles and cobbles and occasional boulders	Sparse sessile fauna includes hydroid clumps (R) on larger stones, *Alcyonium digitatum* (R), *Suberites carnosus*? (R) and *Urticina* sp.? (R). Motile forms include *Munida rugosa* (F), *Pagurus prideaux* with *Adamsia carciniopados* (O), *Pagurus bernhardus*? (R), teleosts (O), *Crossaster papposus* (F), *Echinus esculentus* (F), *Liocarcinus* sp. (R), Patchy brittlestar bed, where *Ophiocomina nigra* is abundant and *Ophiothrix fragilis* superabundant	SS.SMx.CMx SS.SMx.CMx.OphMx	
SOM32	Dense flat cobbles, pebbles, gravel and shell with coarse sand and widely scattered boulders	Stones support sparse serpulid worms (F), with *Urticina felina* (F, locally C), *Tubularia indivisa* (F), patches of other hydroids on boulder tops (R) and *Alcyonium digitatum* (R). Motile forms include *Munida rugosa* (F), *Asterias rubens* (F), *Crossaster papposus* (F), teleosts (R), Paguridae spp. (R) and patches of superabundant *Ophiothrix fragilis*	SS.SMx.CMx SS.SMx.CMx.OphMx	
FOL20	Mud	Mud lightly burrowed by *Nephrops norvegicus* (F) and smaller megafauna including *Calocaris macandreae* (P). *Funiculina quadrangularis* (C), *Pennatula phosphorea* (O), *Asterias rubens* (C), *Liocarcinus* spp. (O)	SS.SMu.CFiMu.SpnMeg.Fun	BM FQ
FOL21	Soft mud	No video supplied but photos indicate mud burrowed by *Nephrops norvegicus* and smaller megafauna including *Calocaris macandreae*, with *Funiculina quadrangularis*. One photo shows area of silted flat bedrock with *Swiftia pallida* (C) and *Caryophyllia smithii* (F)	SS.SMu.CFiMu.SpnMeg.Fun CR.MCR.EcCr.CarSwi.LgAs	BM FQ NS SP
FOL22	Mud	Mud moderately densely burrowed for most of run by *Nephrops norvegicus* (C, 2 animals seen) and smaller megafauna including *Calocaris macandreae*. No sea pens seen, although visibility not very good. Mud becomes stiffer at the end of the run and burrows appear to die out and sparse brittlestars appear (*Ophiothrix fragilis* and *Ophiura albida*). *Conger conger* (P), *Amphiura* spp. (P), *Pagurus prideaux* with *Adamsia carciniopados* (R)	SS.SMu.CFiMu.SpnMeg	BM

Annex 2 continued

Site ID	Substrate	Biota	Biotope	PMF
FOL23	Muddy sand with gravel, pebbles and scattered cobbles and boulders	Visibility poor. Stones support hydroid clumps (O) including *Halecium halecinum*?, sponges (O) including a yellow cushion form (*Myxilla incrustans*?), *Amphilectus fucorum*? and *Suberites carnosus*?, *Alcyonium digitatum* (R), *Filigrana implexa/Salmacina dysteri* (R) and *Sabella pavonina* (R). Motile forms include *Munida rugosa* (F), Paguridae spp. (R), teleosts (R), *Echinus esculentus* (P), *Henricia* sp.? (R), *Asterias rubens* (P), *Crossaster papposus* (P), *Cancer pagurus*? (P) and Caridea sp. (P) and a patch of brittlestars containing *Ophiothrix fragilis* (A) and *Ophiocomina nigra* (C). Sparse *Leptometra celtica* is present in the first part of the run (R) and a small patch of crinoids (possibly *L. celtica*) was recorded at the end of the run (C)	SS.SMx.CMx SS.SMx.CMx.OphMx	LC LA?
ISL01	Dense boulders and cobbles with infill of shell gravel and pebbles, with outcropping bedrock	Rock surfaces support encrusting sponges (locally C) and cushion sponges, including a yellow form (*Myxilla incrustans*?) (O, locally C) and *Pachymatisma johnstonia* (R). Other sessile species include colonial ascidians (P), *Sagartia elegans/Actinothoe sphyrodeta* (C, locally A - probably both species present), *Dendrodoa grossularia*? (P), serpulid worms (C) including *Spirobranchus* spp. (P), *Flustra foliacea* (O), *Alcyonium digitatum* (R), orange encrusting bryozoan (R) and hydroid patches including *Tubularia indivisa* (F) and *Abietinaria abietina*? (P). Motile forms include *Crossaster papposus* (F), *Asterias rubens* (F), *Echinus esculentus* (O), *Calliostoma zizyphinum* (P) and *Henricia* sp. (P)	CR.HCR.FaT.CTub.CuSp	
ISL02	Dense boulders and cobbles with infill of shell gravel, and uneven bedrock	Poor visibility of biota as no photographs. Rock supports *Sagartia elegans/Actinothoe sphyrodeta* (A, at least locally), hydroids including *Tubularia indivisa* (C, at least locally) and cushion sponges including a yellow form (O, locally C) and *Pachymatisma johnstonia* (F, at least locally). *Alcyonium digitatum* (F), serpulid worms (P), pink coralline algae (R), *Asterias rubens* (P)	CR.HCR.FaT.CTub.CuSp	

Annex 2 continued

Site ID	Substrate	Biota	Biotope	PMF
ISL03	Dense boulders and cobbles with infill of shell gravel in places, and areas of bedrock	Rock at least in places with high density of *Sagartia elegans/Actinothoe sphyrodeta* (C - both species present) and dense hydroids including *Sertularia* sp. (F), *Tubularia indivisa* (A locally) and *Nemertesia antennina* (P). Sponge cover patchy with yellow encrusting/cushion forms (possibly R overall but F locally), also *Pachymatisma johnstonia* (R) and *Halichondria panicea*? (P). Areas of smaller stones with dense *Balanus* spp. (locally A) supporting *Nucella lapillus* (P). *Alcyonium digitatum* (O), colonial ascidians (P) and patches of bryozoans including *Flustra foliacea* (O) and *Securiflustra securifrons* (R), *Urticina felina* (P), orange bryozoans (R), pink coralline algae (R) and patches of foliose red algae (R overall but C locally). Motile forms include *Crossaster papposus* (O), *Asterias rubens* (O), *Henricia* sp. (P), *Calliostoma zizyphinum* (P), *Echinus esculentus* (P), *Necora puber*? (P), teleosts (P) including *Pholis gunnellus* (P) and *Cancer pagurus* (O)	CR.HCR.FaT.CTub.CuSp	
ISL04	Boulders and uneven bedrock	Poor visibility of biota as few photographs. Rock surface strongly dominated by *Sagartia elegans/Actinothoe sphyrodeta* (C, locally A) and hydroids including *Tubularia indivisa* (A, at least locally) and patches of *Sertularia* sp.? (P). Sponge cover patchy and dominated by yellow and orange encrusting/cushion forms (possibly R overall but F locally) including *Myxilla incrustans*? (R); also *Pachymatisma johnstonia* (O). *Alcyonium digitatum* (O), colonial ascidians (P), orange bryozoans? (R). Motile forms include *Crossaster papposus* (P), *Asterias rubens* (P), *Echinus esculentus* (P) and *Cancer pagurus* (O)	CR.HCR.FaT.CTub.CuSp	
ISL05	Waves of coarse sand with sparsely scattered cobbles and boulders and low-profile bedrock outcrops	Scoured rock supporting low diversity fauna of *Flustra foliacea* (C), *Tubularia indivisa* (P), *Alcyonium digitatum* (R) and *Urticina felina* (R). *Crossaster papposus* (P), *Asterias rubens* (O), *Echinus esculentus* (P), teleosts (P)	SS.SCS.CCS CR.MCR.EcCr.FaAlCr.Flu	
ISL05	Dense cobbles and boulders	Stones encrusted with *Spirobranchus* spp. (C, locally A) and *Parasmittina trispinosa* (R) and supporting yellow encrusting/cushion sponges (F) including *Myxilla incrustans*? (P), *Halichondria panicea*? (P), *Caryophyllia smithii* (F), *Alcyonium digitatum* (F), hydroid patches including *Tubularia indivisa* (P) and *Sertularia* sp.? (P), and *Flustra foliacea* (P). Motile species include *Echinus esculentus* (F), *Asterias rubens* (P), *Henricia* sp. (P) and *Calliostoma zizyphinum* (P)	CR.MCR.EcCr.CarSp	

Annex 2 continued

Site ID	Substrate	Biota	Biotope	PMF
ISL05	Medium sand with scattered pebbles, cobbles and very sparse boulders	Visible fauna dominated by *Flustra foliacea* (F, A locally) and hydroids (F), principally *Sertularia* sp.?. Other fauna sparse, with *Alcyonium digitatum* (R), *Urticina* spp. (R), *Ophiocomina nigra* (R) and larger stones encrusted with *Spirobranchus* spp. (R) and *Parasmittina trispinosa* (R). *Asterias rubens* (O), *Echinus esculentus* (F), *Cancer pagurus* (P), teleosts (R)	SS.SSa.IFiSa.ScupHyd	
ISL06	Gravel, pebbles, cobbles and sand	Stones encusted with serpulid worms (C) and *Parasmittina trispinosa* (R) and support a bryozoan/hydroid turf (C) including *Flustra foliacea* (F), *Cellaria* sp. (P), hydroids (P), as well as *Iophon nigricans*? (O) and *Caryophyllia smithii* (P). *Echinus esculentus* (F), *Asterias rubens* (O), *Crossaster papposus* (P), teleosts (R), *Chaetopterus variopedatus* (P), *Pecten maximus* (P)	SS.SMx.CMx.FluHyd	
ISL07	Medium sand with thin veneer of shell gravel and scattered pebbles and sparse cobbles	Stones sparsely encusted with serpulid worms (F) and supporting a low diversity fauna of frequent *Flustra foliacea, Urticina* spp. (F) and patchy hydroids (P). *Asterias rubens* (P), *Calliostoma zizyphinum* (P)	SS.SSa.IFiSa.ScupHyd	
ISL08	Dense cobbles and pebbles with occasional boulders on sand	Stones encrusted with serpulid worms (C) including *Spirobranchus* spp. (P) and *Parasmittina trispinosa* (R) but fauna dominated by *Flustra foliacea* (C). Other sessile fauna include hydroid patches (P) and *Urticina felina* (F), with yellow encrusting/cushion sponges (R) and *Alcyonium digitatum* (R) appearing in transitional area near shallow limit of zone. *Echinus esculentus* (F), *Ophiocomina nigra* (R), *Asterias rubens* (O), *Crossaster papposus* (O), *Calliostoma zizyphinum* (P)	SS.SMx.CMx.FluHyd	
ISL08	Bedrock and areas of dense boulders and cobbles	Areas dominated by *Actinothoe sphyrodeta/Sagartia elegans* (C, chiefly the former) and smooth bedrock areas dominated by patchy hydroid turf *(Sertularia* sp.? (F locally). Dense patches of *Tubularia indivisa* (C locally) and yellow encrusting/cushion sponges (F, locally C) including *Myxilla incrustans*? (P). Other sessile forms include *Halichondria panicea*? (P), *Flustra foliacea* (O), *Alcyonium digitatum* (R), serpulid worms (P), *Parasmittina trispinosa* (R), pink coralline algae (R), colonial ascidians (P), *Abietinaria abietina*? (P) and a large patch of *Corynactis viridis*? (locally S). Motile species include *Echinus esculentus* (C), *Asterias rubens* (F), *Crossaster papposus* (O) and *Calliostoma zizyphinum* (P)	CR.HCR.FaT.CTub.CuSp	

Annex 2 continued

Site ID	Substrate	Biota	Biotope	PMF
ISL09	Areas with varying proportions of sand, gravel, pebbles and cobbles interrupted by fairly smooth bedrock with boulders	Bedrock fauna dominated by *Alcyonium digitatum* (C) and otherwise fairly bare apart from scattered tufts of hydroids and bryozoans (O) including *Nemertesia antennina* (R), *Flustra foliacea* (R) and *Securiflustra securifrons* (R), and sparse sponges including a cream/yellow digitiform species (P). *Parasmittina trispinosa* (R), serpulid worms (locally C) including *Spirobranchus* spp. (P), *Caryophyllia smithii* (F locally), *Echinus esculentus* (C), *Asterias rubens* (O), *Crossaster papposus* (O), teleosts (O), *Ascidia mentula*? (R), *Munida rugosa* (R). Mixed substrate areas with a hydroid/bryozoan turf (C) including *N. antennina* (C locally), *Flustra foliacea* (O) and *S. securifrons* (P), a cream/yellow digitiform sponge species (P), *C. smithii* (locally F), *A.digitata* (R). Stones encrusted with serpulid worms (C) and *P. trispinosa*. The motile fauna includes *E. esculentus* (C), *A. rubens* (O) and teleosts (O) including Triglidae sp. (P)	CR.MCR.EcCr.FaAlCr.Adig SS.SMx.CMx.FluHyd	
ISL10	Waves of coarse sand	No life visible apart from small teleost (R)	SS.SCS.CCS	
ISL10	Fairly dense pebbles and cobbles on sand	Stones encrusted with serpulid worms (C) and *Parasmittina trispinosa* (R) and supporting patchy turf of *Flustra foliacea* (F). *Urticina* spp. (F), *Echinus esculentus* (O)	SS.SMx.CMx.FluHyd	
ISL10	Waves of coarse sand with shell gravel	Sparse visible fauna of Paguridae spp. (R), *Asterias rubens* (R) and teleosts (R)	SS.SCS.CCS	
ISL11	Fairly dense gravel and pebbles on sand	Fauna dominated by patchy turf of hydroids (F) and *Flustra foliacea* (O). Stones also support *Urticina* spp. (P) and serpulid worms (F). *Asterias rubens* (O), *Echinus esculentus* (O), *Atelecyclus rotundatus*? (P)	SS.SMx.CMx.FluHyd	
ISL12	Medium sand, slightly rippled in places, with some gravel and much shell material	Sparse hydroids (R) and *Flustra foliacea* (R), including some drift material. *Urticina* spp. (R), teleosts (R)	SS.SSa.CFiSa	

Annex 2 continued

Site ID	Substrate	Biota	Biotope	PMF
ISL13	Dense cobbles and boulders and areas of uneven bedrock	Rock encrusted with serpulid worms (C) and *Parasmittina trispinosa* (O) and supporting dense *Alcyonium digitatum* (C) and dense patches of hydroids, especially *Tubularia indivisa* (locally A) and dense *Actinothoe sphyrodeta/Sagartia elegans* (A locally). Other sessile species are yellow encrusting/cushion sponges (O), *Halichondria panicea*? (P), *Caryophyllia smithii* (R, but locally F) and *Flustra foliacea* (R). The motile fauna includes *Echinus esculentus* (C), *Asterias rubens* (O), *Crossaster papposus* (O) and teleosts (O)	CR.HCR.FaT.CTub.Adig	
ISL14	Cobbles, pebbles and gravel with small amount of slightly silty sand	Stones support a patchy bryozoan/hydroid turf (C) including *Securiflustra securifrons* (locally C) and *Nemertesia antennina* (P), *Caryophyllia smithii* (F, locally A), *Alcyonium digitatum* (O), *Actinothoe sphyrodeta* (R), colonial ascidians (Didemnidae sp.?), *Urticina* spp. (P) and *Alcyonidium diaphanum*? (R). The sponge fauna includes sparse *Axinella infundibuliformis* (R), *Hymedesmia paupertas*? (R) and yellow/cream encrusting and digitiform species (R). Stones are lightly encrusted with serpulid worms (P) and *Parasmittina trispinosa* (R). Motile forms include *Echinus esculentus* (C), *Asterias rubens* (O), teleosts (O), *Munida rugosa* (P), Cephalopoda sp. (R) and sparse *Ophiocomina nigra* (R) at the end of the run	CR.HCR.XFa	
ISL14	Cobbles, pebbles and gravel with small amount of slightly silty sand	Stones support patches of bryozoans and hydroids including F*lustra foliacea* (R) and *Rhizocaulus verticillatus*? (P), *Alcyonium digitatum* (O), *Urticina* spp. (F), *Polymastia boletiformis*? (R), serpulid worms (C) and *Parasmittina trispinosa* (R). Motile forms are dominated by *Ophiocomina nigra* (A), with *Crossaster papposus* (F), *Echinus esculentus* (P), and *Asterias rubens* (F)	SS.SMx.CMx.OphMx	
ISL14	Largely boulders and rugged bedrock	Fauna dominated by dense *Alcyonium digitatum* (C) with dense patches of hydroids, especially *Tubularia indivisa*; *Nemertesia antennina* also present. Rock is encrusted with serpulid worms (C) and *Parasmittina trispinosa* (R) and supports a sponge fauna including yellow encrusting/cushion forms (O) and yellow/cream digitiform species (O). Other members of the sessile community include *Sagartia elegans/Actinothoe sphyrodeta* (locally C), *Caryophyllia smithii* (F) and *Ascidia* sp. (P). Motile species are *Echinus esculentus* (C), *Asterias rubens* (O), *Crossaster papposus* (P), *Henricia* sp. (P) and teleosts (O) including *Labrus mixtus* (O)	CR.HCR.FaT.CTub.Adig	

Annex 2 continued

Site ID	Substrate	Biota	Biotope	PMF
ISL15	Mixed substrate of dense pebbles, gravel and shells with a little sand and scattered boulders and a small low-profile outcrop of smooth rock	Dense brittlestars for most of run, with *Ophiothrix fragilis* (S) and *Ophiocomina nigra* (locally A). Stones support sparse serpulid worms (P), hydroid clumps including *Nemertesia antennina*, *Urticina* spp. (F) and *Alcyonium digitatum* (R). Motile forms include *Asterias rubens* (F), *Echinus esculentus* (O), *Crossaster papposus* (P) and teleosts (R). Rock outcrop with abundant *O. fragilis* and *O. nigra*, as well as *E. esculentus* (C), *Urticina* spp. (P) and *C. papposus* (P)	SS.SMx.CMx.OphMx CR.MCR.EcCr.FaAlCr.Bri	
ISL16	Mixed substrate of dense pebbles, gravel, shells with sand	Sparse fauna of serpulid worms (F), hydroids (R), *Flustra foliacea* (R), *Alcyonium digitatum* (R), *Urticina* spp. (P), cream digitiform sponge (R) and *Chaetopterus variopedatus*? (P). Motile forms include *Crossaster papposus* (O), *Asterias rubens* (P), *Echinus esculentus* (O) and Pisces sp. (P)	SS.SMx.CMx	
ISL17	Dense pebbles, gravel and some cobbles on sand	Fairly rich clumps of hydroids (C) including *Nemertesia antennina* (F) and bryozoans including *Flustra foliacea* (P) and *Securiflustra securifrons* (P). Stones encrusted with serpulid worms (C) and *Parasmittina trispinosa* (R), with other sessile forms including *Urticina* spp. (P), *Caryophyllia smithii* (R), *Corynactis viridis* (R) and *Chaetopterus variopedatus*? (P). *Echinus esculentus* (C), *Asterias rubens* (F), *Crossaster papposus* (O), Paguridae sp. (R), Pisces sp. (P)	SS.SMx.CMx.FluHyd	
ISL18	Slope of scattered pebbles, gravel and cobbles on sand with boulders and bedrock outcrops	Fauna dominated by *Flustra foliacea* (F, but A on bedrock outcrops). Stones also support serpulid worms (F), *Balanus* spp. (R), *Urticina* spp. (R), hydroid clumps including *Sertularia* sp.? (P), *Polymastia boletiformis* (F) and *Alcyonium digitatum* (R), Motile forms include *Asterias rubens* (O), *Echinus esculentus* (O), *Crossaster papposus* (P) and *Cancer pagurus* (O)	SS.SMx.CMx.FluHyd CR.MCR.EcCr.FaAlCr.Flu	
ISL18	Rugged bedrock with boulders in places	Fauna strongly dominated by *Alcyonium digitatum* (A), with areas of dense *Sagartia elegans/Actinothoe sphyrodeta* (locally A) and clumps of *Tubularia indivisa* (P), other hydroids and *Securiflustra securifrons* (P). Sponges include *Pachymatisma johnstonia* (locally F), a yellow encrusting/cushion form (O) and *Halichondria panicea*? (P). Motile forms include *Homarus gammarus* (P), *Crossaster papposus* (O), *Henricia* spp. (P) and *Echinus esculentus* (O)	CR.HCR.FaT.CTub.Adig	

Annex 2 continued

Site ID	Substrate	Biota	Biotope	PMF
ISL19	Very rugged bedrock	Rock carpeted by *Sagartia elegans/Actinothoe sphyrodeta* (A) with *Alcyonium digitatum* (F, locally A) and extensive areas with carpet of *Corynactis viridis* (locally A). Patches of foliose red algae (R overall, but C locally). Sponge fauna includes *Pachymatisma johnstonia* (R, locally O), a yellow encrusting form (O) and a yellow digitiform species (R). Pink coralline algae (R). Visibility poor and few good photographs, but possibly dense dead barnacles. Highly current swept - no sign of any motile species	CR.HCR.FaT.CTub.CuSp	
ISL20	Dense shell material on coarse sand	Dense blanket of *Ophiothrix fragilis* (S) with *Ophiocomina nigra* (A). *Asterias rubens* (F), *Echinus esculentus* (F), *Crossaster papposus* (P), *Urticina* spp. O)	SS.SMx.CMx.OphMx	
ISL20	Bedrock and boulders	Fauna dominated by *Alcyonium digitatum* (C) with rock encrusted with *Spirobranchus* spp. (C), pink coralline algae (C) and *Parasmittina trispinosa* (O). Small patches of hydroids (R) including *Nemertesia antennina* (locally C) and *Flustra foliacea* (R, though C in sand-scoured areas). *Echinus esculentus* (C), *Asterias rubens* (F), *Crossaster papposus* (F), *Calliostoma zizyphinum* (P), *Gibbula cineraria* (P), *Urticina* spp. (O), teleosts (P). Large patches of dense brittlestars, where *Ophiocomina nigra* is abundant (locally S)	CR.MCR.EcCr.FaAlCr.Adig CR.MCR.EcCr.FaAlCr.Bri	
ISL20	Dense pebbles, cobbles, shells and occasional boulders on sand	*Ophiocomina nigra* (A), *Ophiothrix fragilis* (A, but S for first part of run). *Asterias rubens* (F), *Echinus esculentus* (C), *Urticina felina* (F), *Alcyonium digitatum* (R)	SS.SMx.CMx.OphMx	
ISL20	Bedrock with areas of boulders and cobbles and small sand patches	Fauna dominated by *Alcyonium digitatum* (C) with rock encrusted with *Spirobranchus* spp. (C), pink coralline algae (C) and *Parasmittina trispinosa* (O). Small patches of hydroids (R) and *Flustra foliacea* (R, though C in sand-scoured areas), *Sagartia elegans* (R). *Echinus esculentus* (C), *Asterias rubens* (F), *Crossaster papposus* (F), *Urticina* spp. (P). Large patches of dense brittlestars, where *Ophiocomina nigra* is abundant	CR.MCR.EcCr.FaAlCr.Adig CR.MCR.EcCr.FaAlCr.Bri	

Annex 2 continued

Site ID	Substrate	Biota	Biotope	PMF
ISL21	Mixed substrate of varying proportions of shells, sand, pebbles, cobbles and boulders	Fauna dominated by *Ophiothrix fragilis* for much of run, forming a dense blanket (S), with *Ophiocomina nigra* dominant (A) in cobble and boulder areas. Scattered hydroid clumps (O) include *Nemertesia antennina* (P) and *Sertularia* sp.? (R). *Urticina* spp. (F), *Alcyonium digitatum* (R, C locally), *Sagartia elegans/Actinothoe sphyrodeta* (R), *Flustra foliacea* (R), pink coralline algae (R), *Parasmittina trispinosa* (R), *Spirobranchus* spp. (P). The motile fauna includes *Echinus esculentus* (C), *Asterias rubens* (F), *Crossaster papposus* (O) and *Calliostoma zizyphinum* (P)	SS.SMx.CMx.OphMx	
ISL21	Largely boulders and cobbles	Rock encrusted with *Spirobranchus* spp. (C), and *Parasmittina trispinosa* (O) and supporting *Alcyonium digitatum* (C) and occasional hydroid clumps including *Nemertesia antennina* (P) and *Tubularia indivisa* (R). Sessile fauna otherwise fairly sparse, with *Cliona celata* (R), cream cushion sponge (R) and *Urticina* spp. (P). Low numbers of *Ophiocomina nigra* and *Ophiothrix fragilis* are present, with the former becoming locally abundant in more mixed substrate areas. *Echinus esculentus* (A), *Cancer pagurus* (P), *Labrus mixtus*? (P)	CR.MCR.EcCr.FaAlCr.Adig SS.SMx.CMx.OphMx	
ISL21	Mixed substrate of dense pebbles, gravel, cobbles and, in places, shells on sand	Abundant *Ophiocomina nigra* (locally S), with sparse hydroids (R), *Spirobranchus* spp. (F), *Urticina* spp. (F), *Echinus esculentus* (C), *Asterias rubens* (F) and *Luidia ciliaris* (P)	SS.SMx.CMx.OphMx	
ISL22	Pebbles and cobbles, dense in places, on coarse sand and shell gravel, with areas of predominantly sediment and areas of scoured low-profile bedrock and boulders	Patchy colonisation of rock with areas exhibiting virtually bare, heavily-scoured stones and others with fairly rich turf of hydroids (C) including *Sertularia* sp.? (P), *Nemertesia antennina* (P) and *Tubularia indivisa* (R), and *Flustra foliacea* (F, locally A). Sponges include *Polymastia boletiformis* (P) and a yellow digitiform species (R); a yelllow encrusting form is possibly *Botryllus schlosseri* (R, locally O). Other sessile species include dense *Urticina felina* (C, locally A), *Alcyonium digitatum* (O), *Alcyonidium diaphanum* (R), *Sagartia elegans/Actinothoe sphyrodeta* (R), pink coralline algae (R), *Spirobranchus* spp. (P) and dense patches of *Balanus* spp. (locally A) on bedrock. The motile fauna includes *Echinus esculentus* (C), *Asterias rubens* (F, locally A on bedrock) and teleosts (R). Coarse sand patches are devoid of visible life	SS.SMx.CMx.FluHyd CR.MCR.EcCr.FaAlCr.Flu SS.SCS.CCS	

Annex 2 continued

Site ID	Substrate	Biota	Biotope	PMF
ISL23	Dense cobbles and boulders and areas of bedrock	Rock with fairly rich sponge fauna of yellow encrusting and digitiform species (locally C, possibly the same species), an orange form (R), *Halichondria panicea*? (P) and *Pachymatisma johnstonia* (R), and dense anemones, with *Sagartia elegans/Actinothoe sphyrodeta* (C, locally A) and *Urticina felina* (F, locally C). Extensive patches of dense *Corynactis viridis* are present (locally A), as well as *Botryllus schlosseri*? (R), *Alcyonidium diaphanum* (R), *Alcyonium digitatum* (O), foliose red algae (R), pink coralline algae (R) and hydroids (O, but C on bedrock) including clumps of *Tubularia indivisa* (P). Motile species include *Asterias rubens* (F), *Crossaster papposus* (F), *Cancer pagurus* (O), *Ophiocomina nigra* (R), *Necora puber* (P) and teleosts (P)	CR.HCR.FaT.CTub.CuSp	
ISL24	Rugged bedrock with dense cobbles and boulders on shell gravel in gulleys and lows	Rock with sponge fauna of yellow encrusting and digitiform species (O, possibly the same species), an orange form (R) and *Pachymatisma johnstonia* (R), and dense anemones, with *Sagartia elegans/Actinothoe sphyrodeta* (C, locally A) and *Urticina felina* (A). Extensive patches of dense *Corynactis viridis* are present (locally A), as well as *Alcyonidium diaphanum* (R), *Alcyonium digitatum* (O) and hydroids (F) forming a thin turf on bedrock and including clumps of *Tubularia indivisa* (P). Motile species include *Asterias rubens* (F), *Crossaster papposus* (F), *Calliostoma zizyphinum* (P) and teleosts (P)	CR.HCR.FaT.CTub.CuSp	
ISL25	Dense cobbles and boulders and areas of bedrock	Rock with sponge fauna of yellow encrusting and digitiform species (O, possibly the same species), an orange form (R), *Halichondria panicea*? (P) and *Pachymatisma johnstonia* (R), and dense areas of anemones, with *Sagartia elegans/Actinothoe sphyrodeta* (locally A) and *Urticina felina* (F, locally C). Extensive patches of dense *Corynactis viridis* are present (locally A), as well as *Alcyonidium diaphanum* (R), *Alcyonium digitatum* (R), pink coralline algae (R), serpulid worms (F) including *Spirobranchus* spp. (P), *Parasmittina trispinosa* (R), *Balanus* spp. (O), colonial ascidians *(Botryllus schlosseri*?, R), *Flustra foliacea* (R), *Pentapora fascialis* (R) and hydroids (F) including *Nemertesia antennina* and clumps of *Tubularia indivisa* (P). Motile species include *Echinus esculentus* (F), *Asterias rubens* (F), *Crossaster papposus* (F), *Calliostoma zizyphinum* (P) and teleosts (P)	CR.HCR.FaT.CTub.CuSp	

Annex 2 continued

Site ID	Substrate	Biota	Biotope	PMF
ISL26	Dense cobbles with pebbles and occasional boulders on shell gravel	Stones encrusted with serpulid worms (C), *Parasmittina trispinosa* (R), pink coralline algae (R) and *Balanus* spp. (O) and supporting a fairly sparse sponge fauna including encrusting yellow and cream forms, and a patchy hydroid turf (F) including *Sertularia* sp. (P) and *Tubularis indivisa* (probably R). Other members of the sessile fauna include *Flustra foliacea* (R), a colonial ascidian (*Botryllus schlosseri*? - R), *Corynactis viridis*? (O) and *Urticina felina* (F). Motile species are *Echinus esculentus* (F), *Asterias rubens* (F), *Crossaster papposus* (F), *Ophiothrix fragilis* (locally C), *Calliostoma zizyphinum* (P), *Gibbula* sp. (P), *Macropodia* sp. (P), Cephalopoda sp. (P) and *Pholis gunnellus* (P)	SS.SMx.CMx.FluHyd	
ISL27	Dense cobbles and pebbles and occasional boulders on shell gravel with small bedrock outcrop	Stones support sparse epibiota of encrusting bryozoans (O), pink coralline algae (R), serpulid worms (F), *Balanus* spp. (R) and a yellow sponge (R). Other sessile forms are hydroid clumps (R) including *Hydrallmania falcata*?, *Urticina felina* (F) and *Polymastia boletiformis*? (R). *Echinus esculentus* (F), *Asterias rubens* (O), *Crossaster papposus* (O), *Ophiothrix fragilis* (locally C), *Calliostoma zizyphinum* (P), Rock outcrop encrusted with *Spirobranchus* spp. (C), pink coralline algae (O), *Balanus* spp. (R) and yellow sponge (C), with *U. felina* (F), *E. esculentus* (C), *A. rubens* (C) and Prosobranchia sp. (P)	SS.SMx.CMx.FluHyd CR.MCR.EcCr.FaAlCr	
ISL28	Dense cobbles with shell gravel infill and occasional boulders	Stones encrusted with *Spirobranchus* spp. (C), *Parasmittina trispinosa* (R) and pink coralline algae (O) and supporting a fairly sparse sponge fauna including an encrusting yellow/cream form, and a yellow cushion species. A patchy hydroid turf (F) includes *Sertularia* sp. (probably F) and *Tubularia indivisa* (R). Other members of the sessile fauna include *Flustra foliacea* (R), *Cellaria* sp.? (R), *Botryllus schlosseri* (R), *Corynactis viridis*? (R) and *Urticina felina* (F). Motile species are *Echinus esculentus* (C), *Asterias rubens* (O), *Crossaster papposus* (F), *Ophiocomina nigra* (R), *Calliostoma zizyphinum* (P), Caridea sp. (P) and *Cancer pagurus* (O)	SS.SMx.CMx.FluHyd	
ISL29	Dense cobbles and pebbles and occasional boulders on shell gravel	A thin brittlestar bed, with *Ophiothrix fragilis* (A). Stones encrusted with bryozoans (P), *Spirobranchus* spp. (F) and pink coralline algae (R) and support *Urticina felina* (C) and sparse hydroids (O) including *Sertularia* sp.? (P), and *Flustra foliacea* (R). Motile species are *Echinus esculentus* (C), *Asterias rubens* (F), *Crossaster papposus* (O) and *Henricia* sp. (R)	SS.SMx.CMx.OphMx	
ISL30	Shell material and gravel, with sparse pebbles on sand	No video. Scattered tufts of hydroids including *Sertularia* sp.? (probably O), *Flustra foliacea* (probably R) and *Alcyonium digitatum* (probably R). *Chaetopterus variopedatus* (P)	SS.SSa.IFiSa.ScupHyd	

Annex 2 continued

Site ID	Substrate	Biota	Biotope	PMF
ISL31	Bedrock	Video out of focus and no photos. Abundant red algae	IR.HIR.KFaR.FoR	
ISL31	Rugged bedrock	Video out of focus and no photos. *Alcyonium digitatum* (F), *Pachymatisma johnstonia* (P), yellow cushion sponge (P), *Sagartia elegans/Actinothoe sphyrodeta*? (P), *Echinus esculentus* (P)	CR.HCR.FaT.CTub.CuSp	
ISL31	Dense cobbles and pebbles	Video out of focus and one photo. Unstable stones with fauna dominated by encrusting species: *Balanus* spp. (C), *Spirobranchus* spp. (F) and bryozoans. Sparse *Sagartia elegans/Actinothoe sphyrodeta* present	SS.SCS.CCS.PomB	
ISL31	Rugged bedrock with patches of boulders and cobbles	Video out of focus. Rock supporting dense field of *Sagartia elegans/Actinothoe sphyrodeta* (C-A), with a sponge fauna including *Pachymatisma johnstonia* (R) and yellow and orange encrusting/cushion species (O), and dense patches of *Tubularia indivisa*. *Alcyonium digitatum* (O-F), *Flustra foliacea* (R), *Balanus* spp. (P), *Echinus esculentus* (P)	CR.HCR.FaT.CTub.CuSp	
ISL31	Dense cobbles and pebbles on coarse sand	Video out of focus. Stones encrusted with *Spirobranchus* spp. (C) and *Parasmittina trispinosa* (R) and supporting a patchy hydroid turf (F) including *Sertularia* sp.? (P), *Flustra foliacea* (F), *Urticina felina* (P) and a yellow encrusting/cushion sponge (R). The motile fauna includes *Echinus esculentus* (C), *Henricia* sp. (P), *Crossaster papposus* (P) and *Cancer pagurus* (P)	SS.SMx.CMx.FluHyd	
ISL32	Dense cobbles and pebbles with coarse sand infill	Video out of focus. Stones encrusted with *Spirobranchus* spp. (C), pink coralline algae (R) and *Parasmittina trispinosa* (R) and supporting a patchy hydroid turf (F) including *Sertularia* sp.? (P), *Flustra foliacea* (O), *Urticina felina* (P), *Alcyonidium diaphanum* (R) and a yellow encrusting/cushion sponge (R). The motile fauna includes *Ophiothrix fragilis* (C), *Ophiocomina nigra* (C), *Echinus esculentus* (F), *Crossaster papposus* (P), *Asterias rubens* (P) and *Gibbula* sp. (P)	SS.SMx.CMx.FluHyd	

Annex 2 continued

Site ID	Substrate	Biota	Biotope	PMF
ISL33	Rippled fine sand interrupted by patches of coarser sand (or at least a veneer) with scattered gravel, pebbles and cobbles, and a patch of coarse sand waves with gravel, shell and pebbles in troughs	Stoney areas support serpulid worms (R), *Balanus* spp. (R), pink coralline algae (R) and foliose and filamentous red algae (locally F), *Lanice conchilega*? (P), with patches of *Ophiocomina nigra* (A, locally S) and a motile component of *Asterias rubens* (F), *Crossaster papposus* (O), small teleosts (R), *Liocarcinus depurator* (P) and *Luidia ciliaris* (P). Rippled areas with *A. rubens* (O), *C. papposus* (P) and *Ophiura* sp. (R)	SS.SSa.CFiSa SS.SCS.CCS SS.SMx.CMx.OphMx SS.SMp.KSwSS.LsacR	KS
ISL34	Rippled fine sand interrupted by patches of coarser sand (or at least a veneer) with scattered gravel, pebbles and cobbles, and small patches of coarse sand waves with gravel, pebbles and cobbles in troughs	Stoney areas support serpulid worms (F), pink coralline algae (R), *Urticina* sp. (P) and foliose and filamentous red algae (O, locally F) and a motile component of *Asterias rubens* (F), *Liocarcinus depurator* (O) and *Cancer pagurus*? (P). Rippled areas with *A. rubens* (O), Pectinidae sp. (R), *L. depurator* (R) and Triglidae sp.? (R)	SS.SSa.CFiSa SS.SCS.CCS SS.SMp.KSwSS.LsacR	KS
ISL35	Scattered gravel, pebbles and cobbles on sand, with areas of rippled fine sand and waves of coarse sand with gravel, shell, pebbles and occasional cobbles in troughs	Stoney areas support serpulid worms, including *Spirobranchus* spp. (locally C), *Balanus* spp. (P), *Parasmittina trispinosa* (R) and pink coralline algae (R), with hydroid clumps (O), *Flustra foliacea* (R) and *Urticina* sp. (R). Also, patches of *Ophiocomina nigra* present (locally A). The motile component includes *Asterias rubens* (F), *Luidia ciliaris* (P), *Echinus esculentus* (P), *Pecten maximus* (R, but shells possibly empty) and *Callionymus* sp. (R). Sand waves with sparse fauna including *A. rubens* (P), *Pecten maximus* (possibly empty shells) and Paguridae sp. (R)	SS.SMx.CMx.FluHyd SS.SSa.CFiSa SS.SCS.CCS	

Annex 2 continued

Site ID	Substrate	Biota	Biotope	PMF
ISL36	Cobbles and boulders with coarse sand, pebbles and gravel	Rock encrusted with pink coralline algae (C), red algae (R), *Parasmittina trispinosa* (O) and *Spirobranchus* spp. (F) and supporting sparse foliose and filamentous red algae (O), hydroids (R) and small *Laminaria hyperborea* (R). *Echinus esculentus* (C), *Asterias rubens* (F), *Crossaster paposus* (P), *Ophiocomina nigra* (locally A on more mixed substrata)	CR.MCR.EcCr.FaAlCr SS.SMx.CMx.OphMx	
ISL36	Mostly bedrock with areas of boulders and cobbles	Rock encrusted with pink coralline algae (A) and supporting a patchy red algal turf (F, locally C) and a forest of *Laminaria hyperborea* (A, but C in narrow marginal areas). *Echinus esculentus* (C), *Asterias rubens* (O), *Alcyonium digitatum* (R). Kelp stipes support *Palmaria palmata* and fronds *Membranipora membranacea* and *Obelia geniculata*	IR.MIR.KR.Lhyp.Ft IR.MIR.KR.Lhyp.Pk	
ISL36	Cobbles and boulders with coarse sand, pebbles and gravel and small patches of coarse sand	Rock encrusted with pink coralline algae (C), red algae (R), *Parasmittina trispinosa* (O) and *Spirobranchus* spp. (C) and supporting sparse foliose and filamentous red algae (O), hydroids (R), *Alcyonium digitatum* (R) and small *Laminaria hyperborea* (R). *Echinus esculentus* (C), *Asterias rubens* (F), *Crossaster paposus* (O), *Ophiocomina nigra* (locally A on more mixed substrata), *Calliostoma zizyphinum* (P), *Labrus mixtus* (P), *Scyliorhinus* sp. (P)	CR.MCR.EcCr.FaAlCr SS.SMx.CMx.OphMx SS.SCS.CCS	
ISL37	Gravel and sand with varying amounts of scattered pebbles, cobbles and boulders	Fairly sparse fauna. Some stones encrusted with serpulid worms (F) including *Spirobranchus* spp. (P) and *Parasmittina trispinosa* (R) and supporting very sparse *Flustra foliacea* (R) and hydroids (R) including *Tubularia indivisa*?. *Asterias rubens* (O), *Crossaster papposus* (P), *Urticina* spp. (R), *Polymastia boletiformis*? (R), *Chaetopterus variopedatus*? (P), *Munida rugosa* (R), *Caryophylia smithii* (R), *Ophiura albida* (P), small teleosts (R)	SS.SMx.CMx	
ISL38	Shelly sand with scattered gravel, pebbles and cobbles	Fairly sparse fauna. Some stones encrusted with serpulid worms (P), *Parasmittina trispinosa* (R) and *Balanus* spp. (R) and supporting sparse *Flustra foliacea* (R) and hydroids (R). *Asterias rubens* (O), *Crossaster papposus* (O), *Urticina* spp. (R), *Munida rugosa* (R), *Sagartia elegans* (R), *Cerianthus lloydii*? (P), *Echinus esculentus* (P), *Cancer pagurus* (P), Paguridae sp. (R), *Macropodia* sp. (P), *Inachus* spp.? (P)	SS.SMx.CMx	

Annex 2 continued

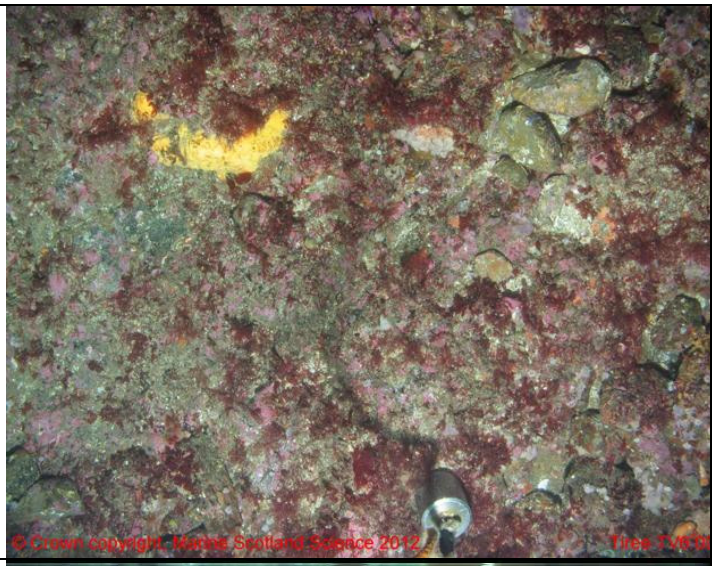
Site ID	Substrate	Biota	Biotope	PMF
ISL39	Rugged bedrock with boulders, cobbles and pebbles in lows	Rock supports dense *Tubularia indivisa* (C) and a sponge fauna including *Pachymatisma johnstonia* (R overall but locally A), *Myxilla incrustans*? (P), *Halichondria panicea*? (P), an orange encrusting species (R, *Amphilectus fucorum*?) and yellow encrusting/cushion/digitiform species (O, locally A). Other sessile forms include dense patches of *Corynactis viridis* (locally C), *Sagartia elegans/Actinothoe sphyrodeta* (C), *Alcyonium digitatum* (O), pink coralline algae (R) and foliose red algae (R). Motile species include *Echinus esculentus* (F), *Asterias rubens* (P), *Calliostoma zizyphinum* (P) and teleosts including *Labrus mixtus* (O) and Cottidae sp. (P). Some of the more exposed areas only support a sparse fauna dominated by a dense crust of *Balanus* spp. (S) with *T. indivisa* (C)	CR.HCR.FaT.CTub.CuSp CR.HCR.FaT.BalTub	
ISL40	Bedrock with areas of boulders and cobbles	Rock encrusted with *Balanus* spp. (F), *Spirobranchus* spp. (F) and *Parasmittina trispinosa* (R) and supporting a sponge fauna (O, locally C) including yellow and cream encrusting/cushion forms and a yellow digitiform species (possibly *Myxilla incrustans*), *Pachymatisma johnstonia* (R, locally C) and *Axinella infundibuliformis*? (R). Other sessile forms include *Tubularia indivisa* (F), *Sagartia elegans/Actinothoe sphyrodeta* (locally F), *Corynactis viridis* (P), *Urticina* spp. (R), *Flustra foliacea* (R) and *Botryllus schlosseri*? (R). The motile fauna includes *Palinurus elephas* (1 specimen observed), *Echinus esculentus* (C), *Asterias rubens* (O), *Calliostoma zizyphinum* (P), *Cancer pagurus* (O) and Gadidae sp. (P, possibly *Molva molva*). There are some small patches of presumably mobile pebbles and cobbles with a very sparse encrusting fauna of *Spirobranchus* (F) and *P. trispinosa* (R)	CR.HCR.FaT.CTub.CuSp SS.SCS.CCS.PomB	
MOK01	Broken shell material with patches of pebbles and cobbles and sparsely scattered boulders	Fairly sparse sessile fauna apart from scattered hydroid clumps (O), *Urticina felina* (O) and serpulid worms (F, but probably largely dead). *Echinus esculentus* (O), *Asterias rubens* (F), *Crossaster papposus* (P), Caridea sp. (P), teleosts (P). Patches of dense *Ophiothix fragilis* (A in patches)	SS.SMx.CMx.FluHyd SS.SMx.CMx.OphMx	
MOK02	Largely dense pebbles and cobbles on shelly gravel, with scattered boulders in places	Stones support a turf of small *Alcyonium digitatum* (C), with yellow and cream forms of encrusting/cushion sponges (O), *Botryllus schlosseri*? (R), *Urticina felina* (P), *Caryophyllia smithii* (P) and hydroid patches (F). *Asterias rubens* (F), *Henricia* sp. (R), *Crossaster papposus* (P), *Echinus esculentus* (P), Caridea sp. (P), *Inachus* sp. (P)	SS.SMx.CMx.FluHyd	

Annex 2 continued

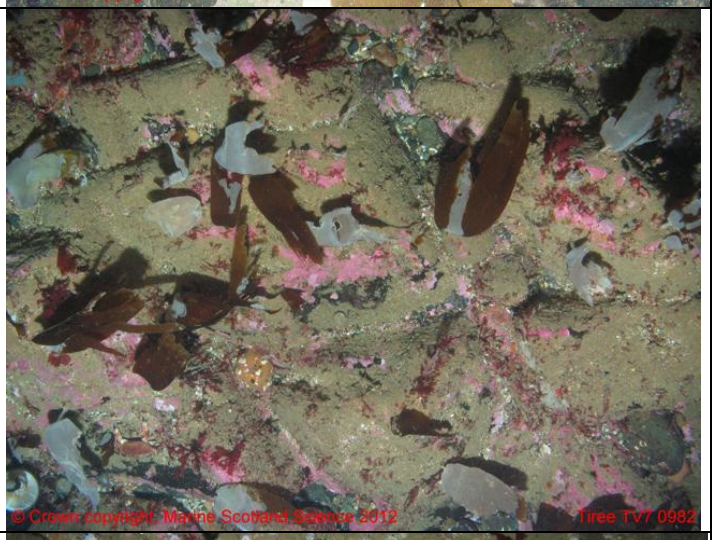
Site ID	Substrate	Biota	Biotope	PMF
MOK03	Varying proportions but generally dense pebbles and cobbles in a matrix of sandy broken shell with scattered boulders	Stones support small *Alcyonium digitatum* (C), with yellow encrusting sponges (P), *Botryllus schlosseri*? (R), *Urticina felina* (P), *hydroids* (O) and serpulid worms (C but probably largely dead). *Asterias rubens* (C), *Crossaster papposus* (P), *Echinus esculentus* (F). *Ophiothrix fragilis* is present for much of the run, becoming abundant in places	SS.SMx.CMx.FluHyd SS.SMx.CMx.OphMx	
MOK04	Sand and broken shell with scattered pebbles, cobbles and boulders	Visibility poor but apparently stones support small *Alcyonium digitatum* (O-F). *Echinus esculentus* (P), *Asterias rubens* (P) Caridea sp. (P) Patch of abundant *Ophiothrix fragilis*	SS.SMx.CMx.FluHyd SS.SMx.CMx.OphMx	
MOK04	Largely boulders and cobbles with extensive bedrock outcrops	Rock supports *Alcyonium digitatum* (C), hydroid clumps (O), *Botryllus schlosseri*? R), serpulid worms (P) and sparse yellow encrusting (R) and cushion (R) sponges. *Echinus esculentus* (F), *Asterias rubens* (O), large teleost (P)	CR.MCR.EcCr.FaAlCr.Adig	

ANNEX 3: BIOTOPES RECORDED WITH SITES OF OCCURRENCE AND ILLUSTRATIVE PHOTOGRAPH OR VIDEO FRAME GRAB

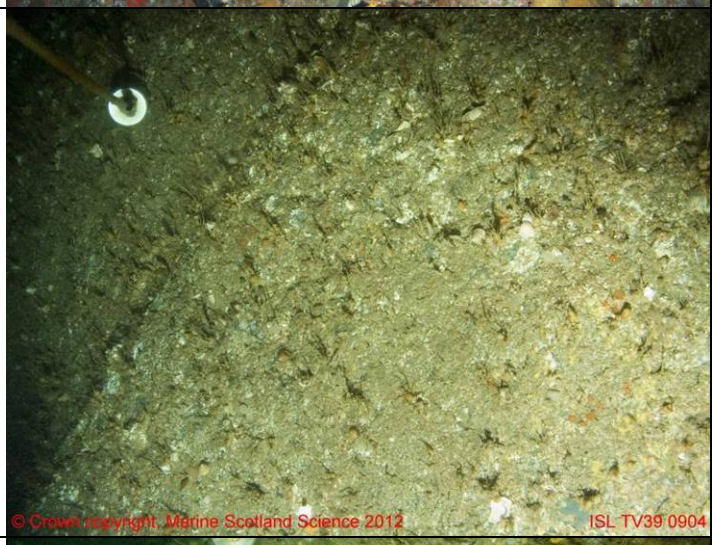
Biotope codes in red are PMFs. Italicised sites indicate provenance of image. See Connor et al. *(2004) for full biotope description.*

IR.HIR.KFaR.FoR Foliose red seaweeds on exposed lower infralittoral rock ISL31, *TRW06*	
IR.HIR.KFaR.LhypR.Ft *TRW12*	
IR.HIR.KFaR.LhypR.Pk *TRW08*, TRW12	

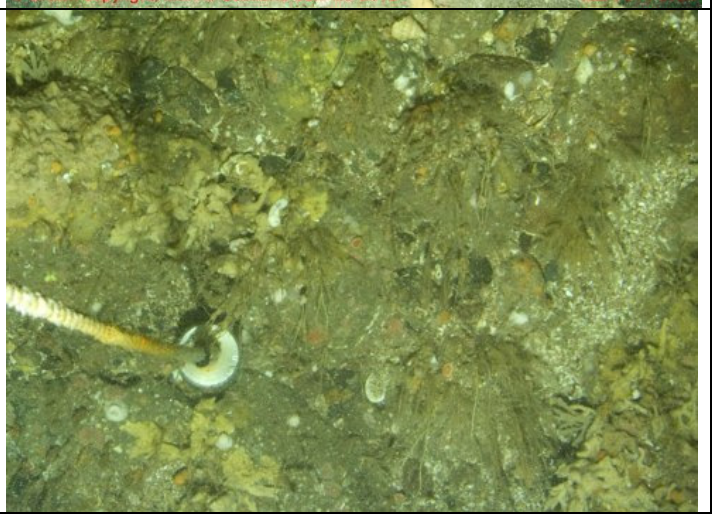
Annex 3 continued

IR.MIR.KR.Lhyp.Ft *Laminaria hyperborea* forest and foliose red seaweeds on moderately exposed upper infralittoral rock *ISL36*	
IR.MIR.KR.Lhyp.Pk *Laminaria hyperborea* park and foliose red seaweeds on moderately exposed lower infralittoral rock ISL36, *TRW07*	
IR.MIR.KR.LhypT.Pk *Laminaria hyperborea* park with hydroids, bryozoans and sponges on tide-swept lower infralittoral rock TRW09	

Annex 3 continued

CR.HCR.FaT Very tide-swept faunal communities SOM13, SOM24, *TRW10*	
CR.HCR.FaT.BalTub *Balanus crenatus* and *Tubularia indivisa* on extremely tide-swept circalittoral rock *ISL39*	
CR.HCR.FaT.CTub.Adig *Alcyonium digitatum* with dense *Tubularia indivisa* and anemones on strongly tide-swept circalittoral rock *ISL13*, ISL14, ISL18	

Annex 3 continued

CR.HCR.FaT.CTub.CuSp *Tubularia indivisa* and cushion sponges on tide-swept turbid circalittoral rock ISL01, ISL02, ISL03, ISL04, ISL08, ISL19, ISL23, ISL24, ISL25, ISL31, *ISL39*, ISL40	
CR.HCR.XFa Mixed faunal turf communities *ISL14*	
CR.MCR.EcCr.CarSp *Caryophyllia smithii*, sponges and crustose communities on wave-exposed circalittoral rock *ISL05*	

Annex 3 continued

CR.MCR.EcCr.CarSwi.LgAs *Caryophyllia smithii* and *Swiftia pallida* on circalittoral rock *FOL21*	
CR.MCR.EcCr.FaAlCr Faunal and algal crusts on exposed to moderately wave-exposed circalittoral rock ISL27, *ISL36*, SOM25, TRW06	
CR.MCR.EcCr.FaAlCr.Adig *Alcyonium digitatum*, *Pomatoceros triqueter*, algal and bryozoan crusts on wave-exposed circalittoral rock ISL09, ISL20, ISL21, MOK04	

Annex 3 continued

CR.MCR.EcCr.FaAlCr.Bri Brittlestar bed on faunal and algal encrusted, exposed to moderately wave-exposed circalittoral rock ISL15, *ISL20*, SOM25	
CR.MCR.EcCr.FaAlCr.Car *Caryophyllia smithii* with faunal and algal crusts on moderately wave-exposed circalittoral rock *TRW14*	
CR.MCR.EcCr.FaAlCr.Flu *Flustra foliacea* on slightly scoured silty circalittoral rock ISL05, *ISL18*, ISL22	

Annex 3 continued

CR.MCR.EcCr.FaAlCr.Pom Faunal and algal crusts with *Pomatoceros triqueter* and sparse *Alcyonium digitatum* on exposed to moderately wave-exposed circalittoral rock TRW11, *TRW13*, TRW14	
CR.LCR Low energy circalittoral rock *RM02*	
CR.LCR.BrAs Brachiopods and ascidians *LS02*	

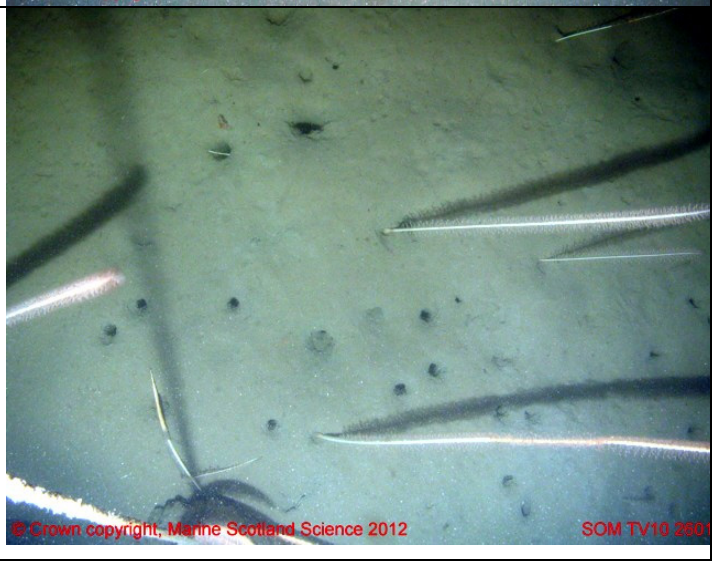
Annex 3 continued

CR.LCR.BrAs.AmenCio Solitary ascidians, including *Ascidia mentula* and *Ciona intestinalis*, on wave-sheltered circalittoral rock LK04, LK14, *LK21*	
CR.FCR.FouFa Fouling faunal communities *SOM11*	
SS.SCS.CCS Circalittoral coarse sediment ISL05, *ISL10*, ISL22, ISL33, ISL34, ISL35, ISL36	

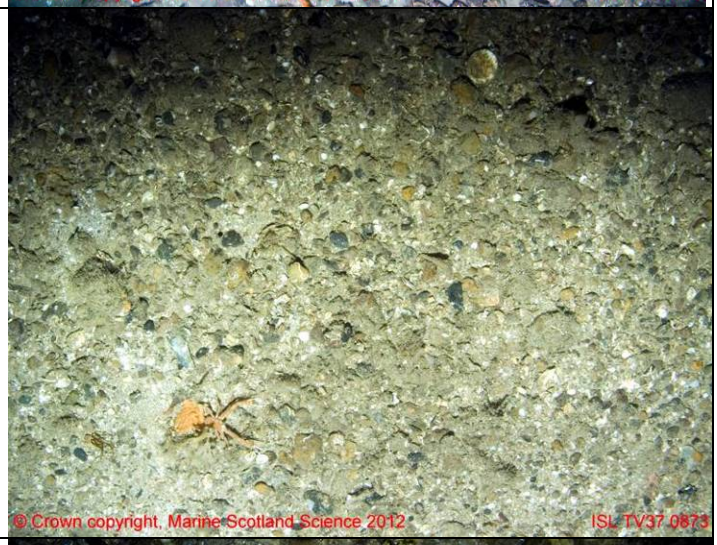
Annex 3 continued

SS.SCS.CCS.PomB *Pomatoceros triqueter* with barnacles and bryozoan crusts on unstable circalittoral cobbles and pebbles ISL31, *ISL40*	
SS.SSa.IFiSa.ScupHyd *Sertularia cupressina* and *Hydrallmania falcata* on tide-swept sublittoral sand with cobbles or pebbles ISL05, *ISL07*, ISL30	
SS.SSa.CFiSa Circalittoral fine sand ISL12, *ISL33*, ISL34, ISL35, SOM28	

Annex 3 continued

SS.SMu.CSaMu Circalittoral sandy mud LK11, LK12, *LK14*, LK21, LK23	
SS.SMu.CFiMu.SpnMeg Seapens and burrowing megafauna in circalittoral fine mud FOL22, LK01, LK01a, LK05, LK12, *LK18*, LK23, LS01, LS04, RM05, SOM02	
SS.SMu.CFiMu.SpnMeg.Fun Seapens, including *Funiculina quadrangularis*, and burrowing megafauna in undisturbed circalittoral fine mud FOL20, FOL21, LK02, LK02a, LK03, LK06, LK07, LK08, LK09, LK10, LK11, LK13, LK14, LK15, LK16, LK17, LK19, LK20, LK20a, LK21, LK22, LK24, LK25, LK26, LS01, LS02, LS03, LS05, RM01, RM02, RM03, RM04, SOM01, SOM02, SOM03, SOM04, SOM05, SOM06, SOM07, SOM08, SOM09, *SOM10*, SOM12	

Annex 3 continued

SS.SMx.IMx Infralittoral mixed sediment *LK04*	
SS.SMx.CMx Circalittoral mixed sediment FOL23, ISL16, *ISL37*, ISL38, LK06, LK22, LS01, LS02, LS04, SOM11, SOM14, SOM15, SOM16, SOM17, SOM18, SOM19, SOM24, SOM25, SOM26, SOM27, SOM29, SOM30, SOM31, SOM32	
SS.SMx.CMx.FluHyd *Flustra foliacea* and *Hydrallmania falcata* on tide-swept circalittoral mixed sediment *ISL06*, ISL08, ISL09, ISL10, ISL11, ISL17, ISL18, ISL22, ISL26, ISL27, ISL28, ISL31, ISL32, ISL35, MOK01, MOK02, MOK03, MOK04	

Annex 3 continued

SS.SMx.CMx.OphMx *Ophiothrix fragilis* and/or *Ophiocomina nigra* brittlestar beds on sublittoral mixed sediment FOL23, ISL14, ISL15, ISL20, ISL21, ISL29, ISL33, ISL36, MOK01, MOK03, MOK04, SOM11, SOM14, SOM15, SOM16, SOM17, SOM18, SOM19, SOM24, SOM25, SOM26, SOM27, SOM30, SOM31, SOM32	
SS.SMp.KSwSS.LsacR *Laminara saccharina* and filamentous red algae on infralittoral sediments *ISL33*, ISL34	

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