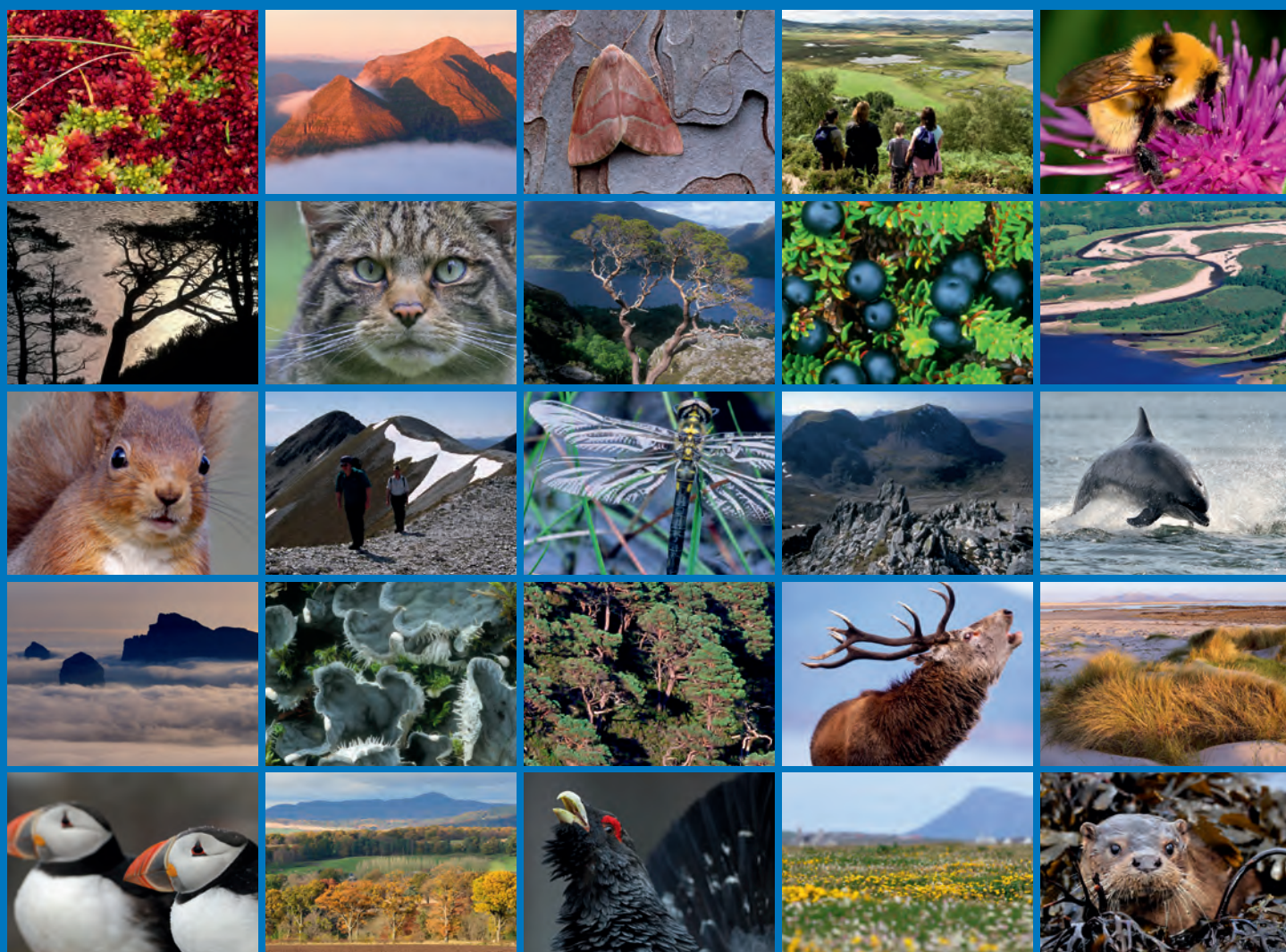


Infaunal and PSA analyses of grab samples collected from the Clyde Sea, in March and July 2013





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COMMISSIONED REPORT

Commissioned Report No. 745

Infaunal and PSA analyses of grab samples collected from the Clyde Sea, in March and July 2013

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COMMISSIONED REPORT

Summary

Infaunal and PSA analyses of grab samples collected from the Clyde Sea, in March and July 2013

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Keywords

Marine survey; MPA; South Arran; Loch Goil; protected features; seabed habitats; infauna; Clyde.

Background

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

The aim of the present investigation was to improve knowledge of the occurrence and distribution of species and habitats of recognised conservation importance (Proposed Protected Features) in the South Arran pMPA and the Loch Goil part of the Upper Loch Fyne and Loch Goil pMPA. Seabed surveys were conducted employing drop down video and grabbing equipment. This report presents the analysis of the grab samples collected during research cruises conducted by SNH on the Scottish Environment Protection Agency (SEPA) research vessel the *Sir John Murray* in March and July, 2013. Forty stations were sampled using a 0.1 m² Day grab. Three replicate grab samples were collected at seven of the stations, yielding a total of 54 grab samples were collected in total. Precision Marine Survey Ltd. were commissioned to undertake faunal analysis and particle size analysis (PSA) of the samples and produce a brief interpretative report to characterise the benthic infaunal communities.

Main findings

- PSA of the seabed samples highlighted the presence of variable sediment types ranging from sandy-muds through to mixed gravelly-sands and sandy-gravels.
- Species diversity was also highly variable (1 to 105 species per 0.1 m²) but generally moderate to high; 399 species were recorded in total during the survey. Some of the coarser sediment stations around South Arran had very high Shannon's diversity values ($H' > 4 - 5.55$ for 27 of the 40 grab samples collected within this pMPA).
- The most abundant species included the brittlestar *Amphiura filiformis*, the sludge worm *Tubificoides benedii*, Nematoda spp., the polychaetes *Owenia fusiformis* and *Lumbrineris cingulata*, the tower shell *Turritella communis* and the chiton *Leptochiton asellus* along with a wide variety of other polychaetes, bivalves and crustacea.
- A number of biotopes were recorded, including **SS.SMu.CFiMu.SpnMeg** ('Seapens and burrowing megafauna in circalittoral fine mud') and **SS.SCS.ICS.MoeVen** ('*Moerella* spp. with venerid bivalves in infralittoral gravelly sand'). Both biotopes represent PMFs / MPA search feature and are PPFs of the South Arran pMPA. The former is also a PPF within the Upper Loch Fyne and Loch Goil pMPA. **SS.SCS.CCS.MedLumVen** ('*Mediomastus fragilis*, *Lumbrineris* spp. and venerid bivalves in circalittoral coarse sand or gravel'), a closely related deeper-water variant of the **SS.SCS.ICS.MoeVen** biotope was also present at a number of locations around South Arran.
- **SS.SMu.CSaMu.AfilMysAnit** ('*Amphiura filiformis*, *Mysella bidentata* and *Abra nitida* in circalittoral sandy mud') and the related **SS.SMu.CSaMu.AfilNten** ('*Amphiura filiformis* and *Nuculoma tenuis* in circalittoral and offshore sandy mud') were present with a number of less well defined biotopes within the complex **SS.SMu.CSaMu**. These biotopes and the broader-level biotope complex form part of the '*sublittoral mud and mixed sediment communities*' PPF within the Upper Loch Fyne and Loch Goil pMPA (they are not a PPF of the South Arran pMPA).
- Specimens of maerl (a red seaweed with a hard, chalky skeleton) were collected at eight stations within the South Arran pMPA, albeit at abundances too low to qualify as records of maerl bed biotopes (maerl beds are a PPF within the pMPA).
- The ocean quahog *Arctica islandica* (a PMF and a PPF within both of the pMPAs sampled within the Clyde Sea in this study) was recorded at five stations.
- Overall this survey registered a total of 34 records of PPFs within the South Arran and the Upper Loch Fyne and Loch Goil pMPAs.

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Table of Contents	Page
1. INTRODUCTION	1
2. METHODS	1
2.1 Infaunal sample collection	1
2.2 Laboratory processing	5
2.3 Analysis of biological data	6
3. RESULTS	7
3.1 Sedimentary parameters	7
3.2 Primary and derived biological parameters	12
3.3 Species composition	20
3.4 Multivariate analysis	21
3.5 Biotope composition	29
4. DISCUSSION	40
5. REFERENCES	42
ANNEX 1: PROPOSED PROTECTED FEATURES (PPFS) OF THE TWO PMPAS	44
ANNEX 2: CHARACTERISTIC TAXA WITHIN THE SIMPROF GROUPS	45
ANNEX 3: SEDIMENT PARTICLE SIZE ANALYSES DATA	58
ANNEX 4: SPECIES DATA	65

1. INTRODUCTION

In March and July 2013 SNH undertook survey work within the Clyde Sea area from SEPA's vessel the *RV Sir John Murray* to improve knowledge of the occurrence and distribution of species and habitats of recognised conservation importance in the South Arran possible Nature Conservation Marine Protected Area (pMPA) and in the Loch Goil part of the Upper Loch Fyne and Loch Goil pMPA.

Provisions to designate new Marine Protected Areas (MPAs) within Scottish waters have been introduced through the Marine (Scotland) Act 2010 and the UK Marine and Coastal Access Act 2009. Scottish Natural Heritage (SNH) has generated a focused list of habitats and species regarded as priorities for conservation action in territorial waters - the Priority Marine Features (PMFs) (Scottish Government, 2013).

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

Precision Marine Limited were contracted by SNH to undertake the infaunal analysis of the 54 grab samples collected during the 2013 fieldwork within the Clyde sea. Analysis included infaunal identification, particle size analysis (PSA), assigning a biotope to each sample, and determining if the sample was a record of a PPF. This report presents the results from this analysis and a brief interpretation of the data. Seabed video and still photographic imagery were collected during the survey as well, and results of their analyses have been reported in Moore (2013). Both the video and grab results were used to inform the development of the network of marine protected areas.

2. METHODS

2.1 Infaunal sample collection

The survey was undertaken between 18th - 27th of March 2013 and on the 15th and 16th July 2013 on-board the SEPA vessel *RV Sir John Murray* and covered areas around the Isle of Arran and in Loch Goil in water depths ranging from 8.7 m to 111.3 m. A total of 54 infaunal samples were collected during the survey (Figures 1 and 2). No PSA sample was collected from station 9. At each station either a single grab or a set of three replicate grab samples were collected using a 0.1 m² Day grab. This approach enabled some statistical analysis of community measures while also enabling coverage of the widest possible geographical area during the survey. Improving our knowledge on the distribution and extent of benthic habitats around Arran is currently of greater importance than the ability to make statistical comparisons of community composition between all stations. Once the grab was recovered, a small sub-sample was removed from the grab with a spoon for separate particle size analysis (PSA) and stored in a plastic bag before being frozen. Each infaunal sample was then passed through a 1 mm mesh sieve and the infaunal sieve residue retained and fixed with buffered formalin. The samples were collected after the survey by Precision Marine Survey Ltd for subsequent processing. A summary of the survey sampling details is provided in Table 1. The distribution of the sampling stations is illustrated in Figures 1 and 2.

Table 1. Sampling details from the 2013 Clyde Sea survey.

Sample	Date	Location	Time (UTC)	Latitude	Longitude	Depth (m CD)
G01	26/03/2013	South Arran	16:10	55.50465	-5.440532	77.4
G02-1	26/03/2013	South Arran	16:42	55.509006	-5.36499	22.5
G02-2	26/03/2013	South Arran	16:42	55.509006	-5.36499	22.5
G02-3	26/03/2013	South Arran	16:42	55.509006	-5.36499	22.5
G03	26/03/2013	South Arran	16:54	55.503662	-5.378082	76.6
G04-1	26/03/2013	South Arran	17:05	55.495151	-5.371942	41.6
G04-2	26/03/2013	South Arran	17:05	55.495151	-5.371942	41.6
G04-3	26/03/2013	South Arran	17:05	55.495151	-5.371942	41.6
G05	26/03/2013	South Arran	17:26	55.485012	-5.349812	14.6
G06	27/03/2013	South Arran	07:36	55.455994	-5.330277	18.6
G07	27/03/2013	South Arran	07:42	55.447937	-5.325529	17.5
G08	27/03/2013	South Arran	07:18	55.44236	-5.381999	46.9
G09#	18/03/2013	South Arran	13:20	55.438366	-5.3045	14.2
G11	18/03/2013	South Arran	13:41	55.4335	-5.28509	20.1
G12	27/03/2013	South Arran	09:18	55.415954	-5.256761	33.8
G13	27/03/2013	South Arran	09:03	55.394482	-5.280297	45
G14	27/03/2013	South Arran	11:03	55.385574	-5.162936	54.3
G15	27/03/2013	South Arran	12:26	55.42366	-5.139816	19.2
G16	27/03/2013	South Arran	12:35	55.426277	-5.134428	18.2
G17	16/07/2013	South Arran	11:44	55.423367	-5.113209	24.2
G18	16/07/2013	South Arran	11:37	55.432827	-5.107451	13.2
G19-1	16/07/2013	South Arran	09:51	55.405941	-5.071066	109.1
G19-2	16/07/2013	South Arran	09:56	55.405414	-5.070492	109.1
G19-3	16/07/2013	South Arran	10:01	55.404976	-5.069868	109.2
G20	16/07/2013	South Arran	11:10	55.445667	-5.090234	12.3
G21	27/03/2013	South Arran	14:28	55.453415	-5.078517	17
G22	16/07/2013	South Arran	10:17	55.426617	-5.054307	111.3
G23	16/07/2013	South Arran	08:05	55.453114	-4.998482	84.3
G24	15/07/2013	South Arran	14:41	55.475853	-5.02526	102.5
G25-1	27/03/2013	South Arran	16:09	55.507713	-5.062569	13.4
G25-2	27/03/2013	South Arran	16:13	55.507988	-5.061965	13.4
G25-3	27/03/2013	South Arran	16:16	55.507696	-5.062169	13.4
G26	15/07/2013	South Arran	13:09	55.515594	-5.056047	29
G27	15/07/2013	South Arran	12:35	55.51688	-5.025238	74.3
G28	15/07/2013	South Arran	11:52	55.53204	-4.984378	103.7
G29	15/07/2013	South Arran	09:13	55.570919	-5.010437	86.3
G30	15/07/2013	South Arran	10:40	55.56855	-5.090405	34.3
G31-1	20/03/2013	Loch Goil	12:28	56.098515	-4.865909	53.2
G31-2	20/03/2013	Loch Goil	12:33	56.098389	-4.866933	53.2
G31-3	20/03/2013	Loch Goil	12:36	56.098205	-4.867638	53.1
G32	20/03/2013	Loch Goil	12:21	56.097515	-4.881158	13.2
G33	20/03/2013	Loch Goil	12:07	56.11175	-4.899745	32.2
G34	20/03/2013	Loch Goil	11:58	56.119862	-4.906577	32.3
G36-1	20/03/2013	Loch Goil	11:40	56.126354	-4.893195	59.3
G36-2	20/03/2013	Loch Goil	11:44	56.126553	-4.892589	59.3
G36-3	20/03/2013	Loch Goil	11:48	56.12698	-4.892617	59.3
G39	20/03/2013	Loch Goil	11:28	56.135799	-4.888649	77.3
G40-1	20/03/2013	Loch Goil	11:06	56.147606	-4.896033	70.3
G40-2	20/03/2013	Loch Goil	11:11	56.147453	-4.896754	70.3
G40-3	20/03/2013	Loch Goil	11:15	56.147648	-4.895948	70.3
G41	20/03/2013	Loch Goil	10:52	56.162231	-4.909457	43.3
G44	26/03/2013	South Arran	16:32	55.520695	-5.36944	51.5
G45	16/07/2013	South Arran	12:43	55.466507	-5.07505	8.7
G46	16/07/2013	South Arran	13:15	55.481598	-5.086024	12.4

no PSA sample taken

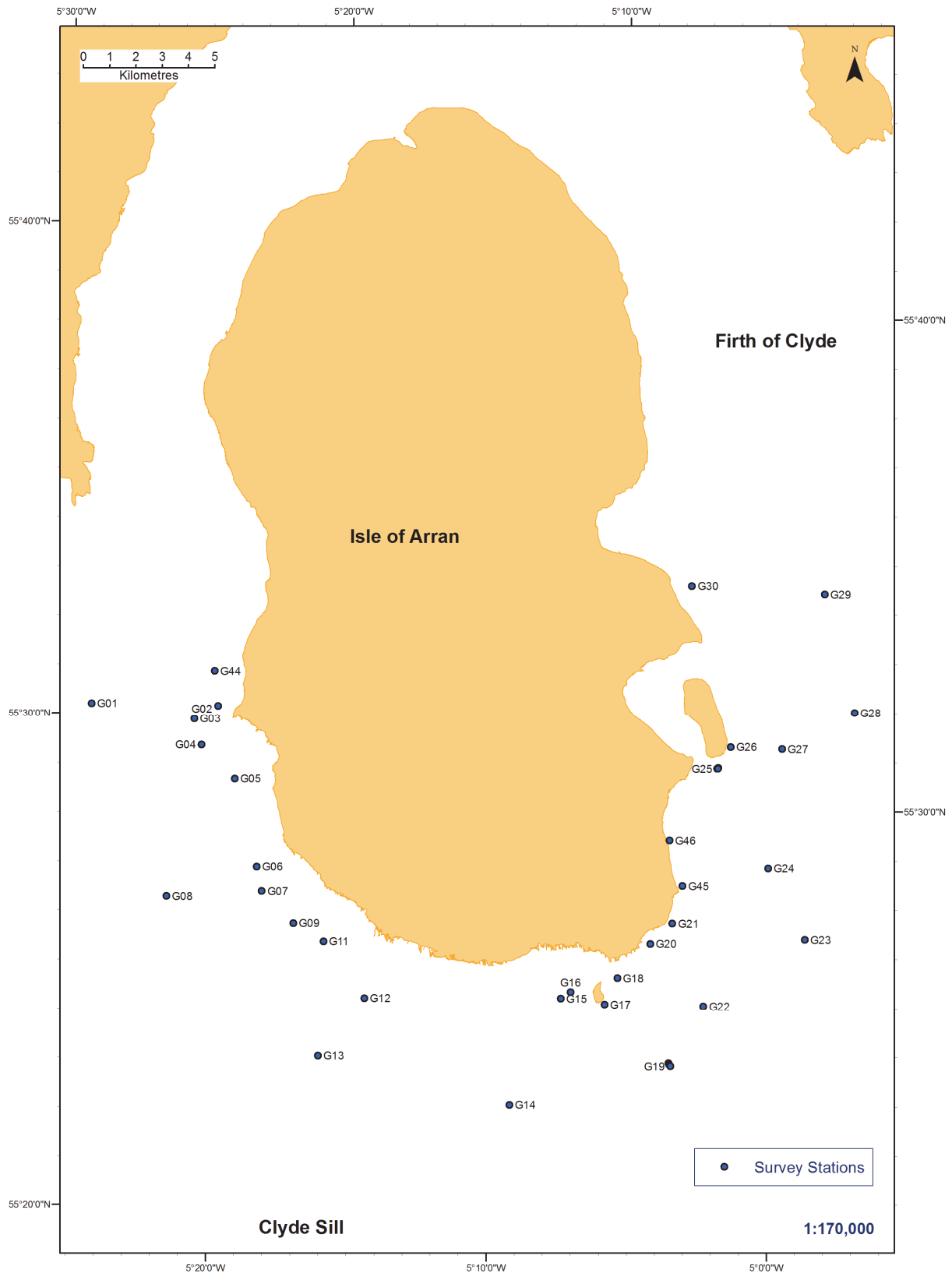


Figure 1. Map of 2013 infaunal sample stations collected around Arran. Reproduced by permission of Ordnance Survey on behalf of HMSO. © Crown copyright and database right [2014]. All rights reserved. Ordnance Survey Licence number 100017908.

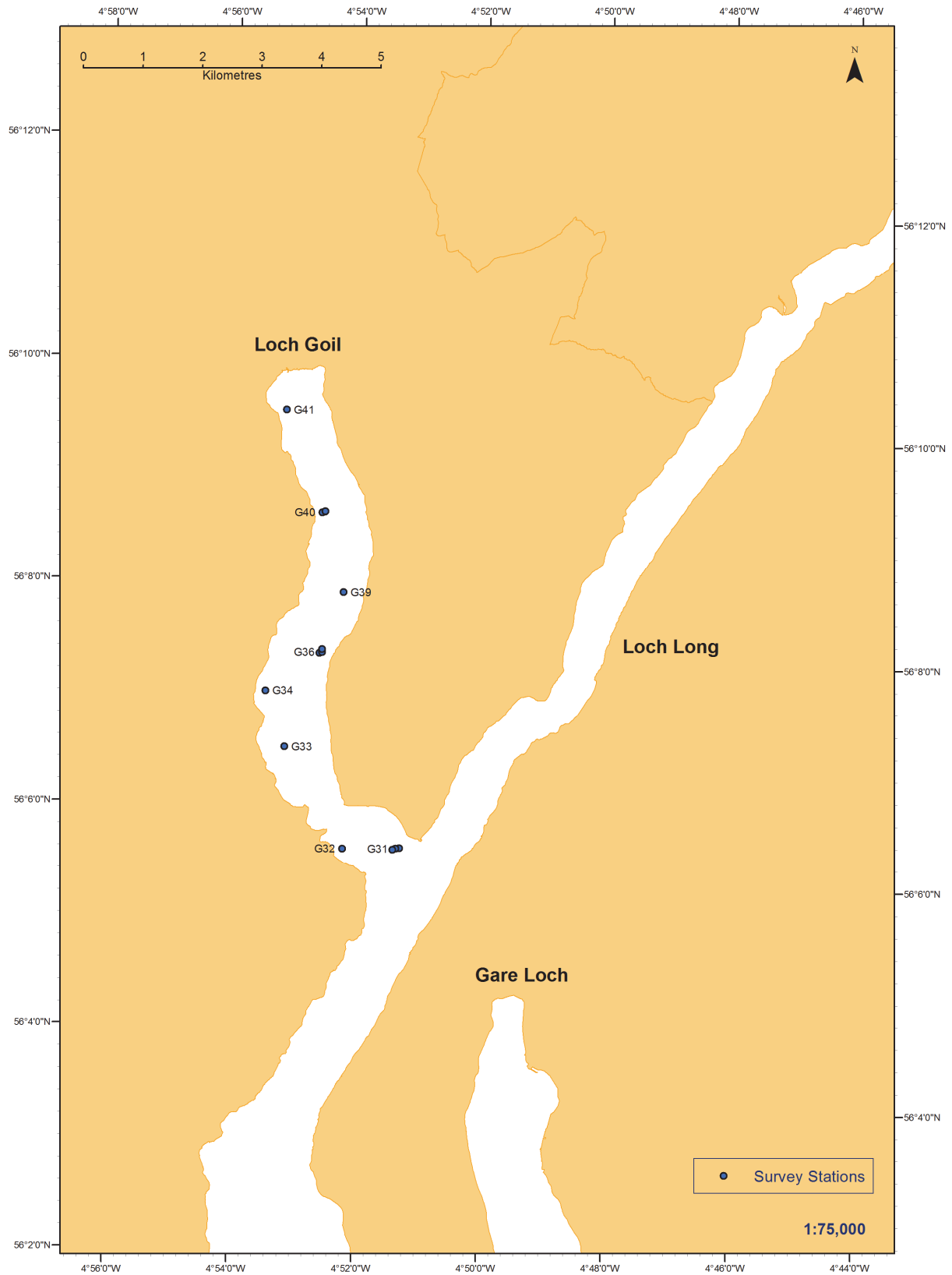


Figure 2. Map of 2013 infaunal sample stations collected in Loch Goil. Reproduced by permission of Ordnance Survey on behalf of HMSO. © Crown copyright and database right [2014]. All rights reserved. Ordnance Survey Licence number 100017908.

2.2 Laboratory processing

All laboratory methodologies were based on best practice (Marine Monitoring Handbook procedural guideline 3-9, Rees *et al.*, 1990; Rees, 1999; Cooper & Rees, 2002; Worsfold & Hall, 2010; Ware & Kenny, 2011). In addition, Precision Marine Survey Ltd is a member of the National Marine Biological and Analytical Quality Control scheme (NMBAQC). Two experienced members of staff undertook the sample sorting, conducting all the sieving, sorting work and sample description with a further member of staff carrying out standard sorting quality control. Experienced taxonomists from Precision Marine Survey Ltd. carried out the identification of the sorted fauna, with an additional member of staff carrying out quality control for faunal identification. A standard sample tracking procedure was followed throughout the analysis period.

Prior to species identification each sample was washed through a nest of sieves to remove the preservative and partition the sample for ease of sorting. The smallest mesh aperture was 1 mm and larger sieves (5 mm or 10 mm) were also used as required to separate larger animals or coarser sediment residue. The residue from each sieve was then gently washed into separate 100 mm petri dishes for subsequent identification. For larger samples the sieve residue was put into a separate bucket or white tray with water and the contents agitated. Immediately after agitation, the light fraction was decanted to another container. The light fraction was then decanted into petri dishes and the remaining residue put into a separate container.

The sample containers / petri dishes were marked with the appropriate sample code (relating to the client, date, specific station, sample and replicate no. where applicable). All fractions were then decanted into separate 100 mm petri dishes and examined under a stereoscopic microscope. The fauna derived was then split by phyla and placed in glass vials with 70% IMS and stored ready for identification. Each petri dish was then checked for a final time by another member of staff.

Identification was carried out using Olympus SZ40 zoom microscopes with 10X and 20X eyepieces, giving a maximum magnification of up to 80X. An additional 2X objective was occasionally used to increase the potential magnification to 160X. Olympus BX41 compound microscopes were used for further magnification, up to 800X. Identification of infaunal samples was to the lowest possible taxonomic level (i.e. species), and during identification, all individuals were initially separated into families, with part animals being assigned to families where possible. The macrofaunal specimens were identified to species level using standard taxonomic keys, low and high power stereoscopic microscopes and dissection, when necessary, for identification. Incomplete animals without anterior ends were not recorded as individuals to be included in the quantitative dataset. However, they were identified where possible and recorded as present. Similarly, motile and colonial sessile epibenthic taxa and meiofauna were only recorded as present and not included within the infaunal quantitative data set.

The taxonomic literature used was that as detailed in Rees *et al.* (1990) which includes the most recent updates in the scientific literature and newer keys provided by groups such as the NMBAQC. Species reporting nomenclature used WoRMS standards (WoRMS editorial board, 2014).

The particle size analysis was carried out by a combination of dry sieving and laser particle size analysis (for the fraction <1 mm) using a Malvern Mastersizer 3000. Prior to analysis, photographs were taken of all samples. The sediment samples were then split with one sub-sample being passed through a 1mm sieve to remove the larger size classes of sediment if required. The <1 mm fraction of the sample was then analysed using the Malvern Mastersizer 3000 and the >1 mm fraction discarded. The second sub-sample was passed through a nest of sieves at 0.5 phi intervals. Each fraction, including the <1 mm fraction,

was then oven dried at 100°C for 12 hours and weighed. Coarse and fine fractions were combined following NMBAQC guidelines and the data derived from PSA were then used to derive statistics including mean grain size, bulk sediment classes (% silt, sand & gravel), skewness and sorting coefficient using the program Gradistat. These methods are consistent with the procedures identified at the NMBAQC PSA workshop on laboratory methods, which was held at the Cefas Lowestoft laboratory in July 2009.

2.3 Analysis of biological data

A number of primary and derived biological parameters were calculated from the species data which were subsequently tabulated and input into GIS. Standard biological parameters utilised for benthic analysis include the following:

- The total number of species at each station (S)
- The total abundance of individuals at each station (A)
- Margalef's index of species richness (d) - this index standardizes the number of species in the sample against the total number of individuals, so reduces the effect of sample size on species richness. High values indicate a higher species richness.
- Shannon's diversity index (H') - this index is a univariate measure of diversity which incorporates both the number of species and the distribution or equitability of individuals between species. High values of H' indicate a more diverse community whilst low values indicate low diversity.
- Pielou's evenness (J) - this index is a univariate measure of evenness or equitability which describes the distribution of individuals between species. High values of J (approaching 1) indicate that the abundance of animals are evenly spread between species whilst low values of J (approaching 0) indicate that the majority of animals are comprised of a few species, a situation which often occurs in low diversity areas subject to disturbance or organic enrichment.

Multivariate analysis of the abundance data was carried out in order to describe the main patterns and assemblages within the area following standard methodologies (Warwick & Clarke, 2001). Classification (cluster analysis) of the data was undertaken using the Bray-Curtis similarity coefficient and grouped average (UPGMA) clustering technique followed by a non-metric MDS (multi-dimensional scaling) ordination both using the PRIMER package. Cluster analysis is used to display graphically the similarity between stations based upon their species composition whereby the similarity between stations is calculated (in this case using the Bray-Curtis similarity coefficient) to produce a similarity matrix showing the percent similarity of stations (0% indicating no species in common and 100% indicating an identical community). These values are then used to plot a dendrogram or tree diagram in which stations are linked at their respective similarity to other stations and consequently it is possible to define groups of stations with similar species composition at a predefined level of similarity.

Non-metric MDS graphically displays the (rank) similarity between stations as a 2 dimensional plot in which the distances between stations indicates the level of similarity between them. The stress value associated with an MDS plot indicates how faithful the plot is in representing the similarity between stations, with low values (below 0.2) generally indicating a good fit. The station groupings derived from cluster analysis have subsequently been superimposed onto the MDS plots and been input into a GIS and the dominant species and mean environmental and biological parameters for each group were calculated. Station groupings were derived using the similarity profile test (SIMPROF) within the PRIMER package. Characteristic taxa within each group were assessed using calculations of mean abundance and the percentage of stations at which the species occurred, and by using the SIMPER routine within PRIMER. Correlations between species data and sediment parameters were undertaken using the BEST routine within PRIMER which derives a non-

parametric Spearman correlation between the similarity matrices derived from the biological and environmental data. The results of this procedure give the statistic r which gives an indication of the strength of the relationships between the environmental parameters and community structure with higher values (approaching 1) indicating a strong positive correlation. This technique also derives a subset of the best combination of environmental parameters which give the highest correlation in similarity.

3. RESULTS

3.1 Sedimentary parameters

A summary of sediment parameters at each station is provided in Table 2 and the full details of particle size analysis are provided in Annex 3. A wide range of sediments were recorded during the survey, ranging from muddy-sands or slightly gravelly muddy-sands to gravelly-sands and sandy-gravels with occasional examples of muddy mixed sediments. Gravel content was variable and whilst the majority of stations had less than 10%, certain stations (G05 to G07, G15, G16, G18 and G26) had in excess of 40% gravel. Mud content was also highly variable with a wide range of values recorded from 0.06% at station G16 to 81.58% at station G01. The variability in sediment types is also reflected in the sorting of the sediments which were generally poorly or very poorly sorted with the exception of stations G6, G16 and G18 (moderately sorted). Sediment skewness was also variable although the majority of stations exhibited fine or very fine skewed sediments.

The spatial distribution of sediment types is illustrated in Figures 3 and 4. As might be expected the muddier stations were those in more sheltered locations, such as within Loch Goil but also at a few locations to the east of Arran. Stations closer inshore around Arran tended to have coarser sandy-gravels or gravelly-sands with varying mud content whilst those further offshore tended to have greater mud content and were either muddy-sands (or sandy-muds) with limited gravel content.

Table 2. Summary of sedimentary parameters.

Sample	Sediment type	Median phi	Mean phi	Sorting (phi scale)		% Gravel	% Sand	% Mud
South Arran								
G01	Sandy mud	5.76	5.66	1.80	Poorly sorted	0.00	18.42	81.58
G02-1	Gravelly sand	-0.17	0.45	1.93	Poorly sorted	16.55	77.90	5.55
G02-2	Muddy sandy gravel	-0.85	0.03	2.63	Very poorly sorted	46.01	43.38	10.61
G02-3	Gravelly sand	-0.24	0.40	1.78	Poorly sorted	10.75	83.35	5.89
G03	Muddy sand	3.87	4.39	2.08	Very poorly sorted	0.00	52.05	47.95
G04-1	Slightly gravelly muddy sand	3.01	3.91	2.04	Very poorly sorted	0.21	68.07	31.72
G04-2	Slightly gravelly muddy sand	3.11	3.85	2.40	Very poorly sorted	4.68	61.54	33.78
G04-3	Slightly gravelly muddy sand	2.97	3.78	2.08	Very poorly sorted	3.78	66.06	30.16
G05	Sandy gravel	-1.60	-2.46	1.82	Poorly sorted	77.34	22.05	0.61
G06	Gravel	-2.02	-2.13	1.12	Poorly sorted	83.62	15.74	0.65
G07	Sandy gravel	-1.04	-1.10	1.15	Poorly sorted	52.19	43.94	3.88
G08	Muddy sand	3.85	4.34	2.07	Very poorly sorted	0.00	52.73	47.27
G11	Gravelly sand	1.82	1.73	1.06	Poorly sorted	6.18	92.22	1.60
G12	Slightly gravelly	2.42	3.41	2.19	Very poorly	0.13	74.39	25.48

Sample	Sediment type	Median phi	Mean phi	Sorting (phi scale)		% Gravel	% Sand	% Mud
	muddy sand				Sorted			
G13	Muddy sand	3.31	4.05	2.08	Very poorly sorted	0.00	61.54	38.46
G14	Slightly gravelly muddy sand	2.87	3.71	2.00	Very poorly sorted	0.40	69.19	30.41
G15	Muddy sandy gravel	-0.84	-0.97	1.91	Poorly sorted	40.87	49.19	9.94
G16	Gravel	-5.71	-5.71	0.66	Moderately well sorted	97.57	2.37	0.06
G17	Gravelly muddy sand	-0.02	0.41	2.41	Very poorly sorted	23.23	68.15	8.62
G18	Sandy gravel	-1.17	-1.26	0.79	Moderately sorted	59.51	39.39	1.11
G19-1	Muddy sand	2.77	3.44	1.94	Poorly sorted	0.00	79.28	20.72
G19-2	Slightly gravelly muddy sand	2.58	3.18	1.82	Poorly sorted	0.14	81.28	18.58
G19-3	Muddy sand	3.03	3.96	2.14	Very poorly sorted	0.00	67.21	32.79
G20	Gravelly muddy sand	1.31	0.80	2.62	Very poorly sorted	22.04	69.51	8.45
G21	Gravelly sand	1.15	0.99	1.68	Poorly sorted	8.57	84.46	6.97
G22	Slightly gravelly muddy sand	3.09	3.75	2.56	Very poorly sorted	4.35	61.43	34.22
G23	Sandy mud	4.89	4.88	2.09	Very poorly sorted	0.00	36.29	63.71
G24	Sandy mud	5.36	5.06	2.25	Very poorly sorted	0.00	30.15	69.85
G25-1	Gravelly muddy sand	0.15	0.75	2.29	Very poorly sorted	13.99	73.01	13.01
G25-2	Gravelly muddy sand	-0.50	0.32	2.34	Very poorly sorted	28.88	59.96	11.15
G25-3	Gravelly sand	-0.58	-0.21	1.37	Poorly sorted	23.07	72.52	4.41
G26	Muddy sandy gravel	-0.70	0.29	3.31	Very poorly sorted	44.64	38.58	16.78
G27	Muddy sand	3.99	4.51	1.93	Poorly sorted	0.00	50.14	49.86
G28	Sandy mud	6.01	5.64	2.14	Very poorly sorted	0.00	20.55	79.45
G29	Sandy mud	5.73	5.45	2.09	Very poorly sorted	0.00	25.31	74.69
G30	Slightly gravelly muddy sand	3.00	3.71	1.95	Poorly sorted	0.57	74.55	24.88
G44	Slightly gravelly muddy sand	3.38	4.15	1.93	Poorly sorted	0.35	64.42	35.23
G45	Slightly gravelly sand	1.48	1.42	0.92	Moderately sorted	3.74	94.31	1.94
G46	Slightly gravelly muddy sand	2.55	2.58	1.41	Poorly sorted	1.21	87.25	11.54
Loch Goil								
G31-1	Sandy mud	4.76	4.85	1.93	Poorly sorted	0.00	37.84	62.16
G31-2	Gravelly mud	4.34	4.35	2.72	Very Poorly Sorted	9.93	35.13	54.94
G31-3	Slightly gravelly sandy mud	4.71	4.70	2.14	Very poorly sorted	1.63	38.12	60.25
G32	Muddy sandy	2.52	1.22	3.78	Very poorly	31.22	46.94	21.84

Sample	Sediment type	Median phi	Mean phi	Sorting (phi scale)		% Gravel	% Sand	% Mud
	gravel				sorted			
G33	Slightly gravelly sandy mud	4.33	4.58	1.78	Poorly sorted	1.58	41.17	57.24
G34	Slightly gravelly sandy mud	4.06	4.24	1.90	Poorly sorted	1.16	47.72	51.12
G36-1	Muddy sand	3.32	3.81	1.83	Poorly sorted	0.00	63.31	36.69
G36-2	Muddy sand	3.56	4.01	1.83	Poorly sorted	0.00	57.76	42.24
G36-3	Muddy sand	3.86	4.23	1.91	Poorly sorted	0.00	52.44	47.56
G39	Muddy sand	3.60	3.89	2.00	Poorly sorted	0.00	55.93	44.07
G40-1	Muddy sand	3.71	3.85	1.98	Poorly sorted	0.00	54.92	45.08
G40-2	Muddy sand	3.67	3.97	1.77	Poorly sorted	0.00	56.82	43.18
G40-3	Muddy sand	3.82	3.82	2.21	Very poorly sorted	0.00	52.59	47.41
G41	Slightly gravelly muddy sand	3.95	3.97	1.82	Poorly sorted	0.74	50.41	48.85

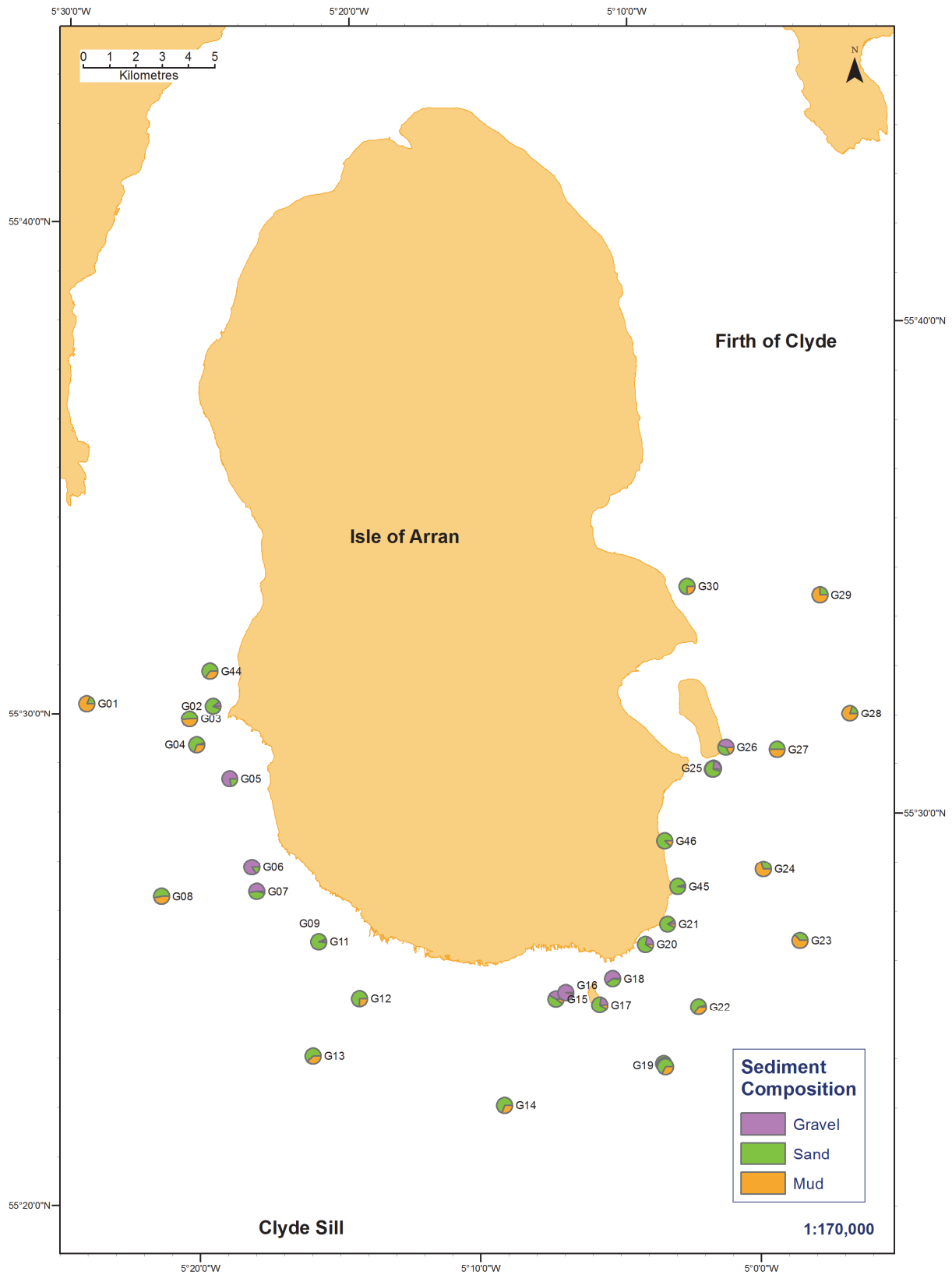


Figure 3. Sediment composition of infaunal samples collected around Arran. Reproduced by permission of Ordnance Survey on behalf of HMSO. © Crown copyright and database right [2014]. All rights reserved. Ordnance Survey Licence number 100017908.

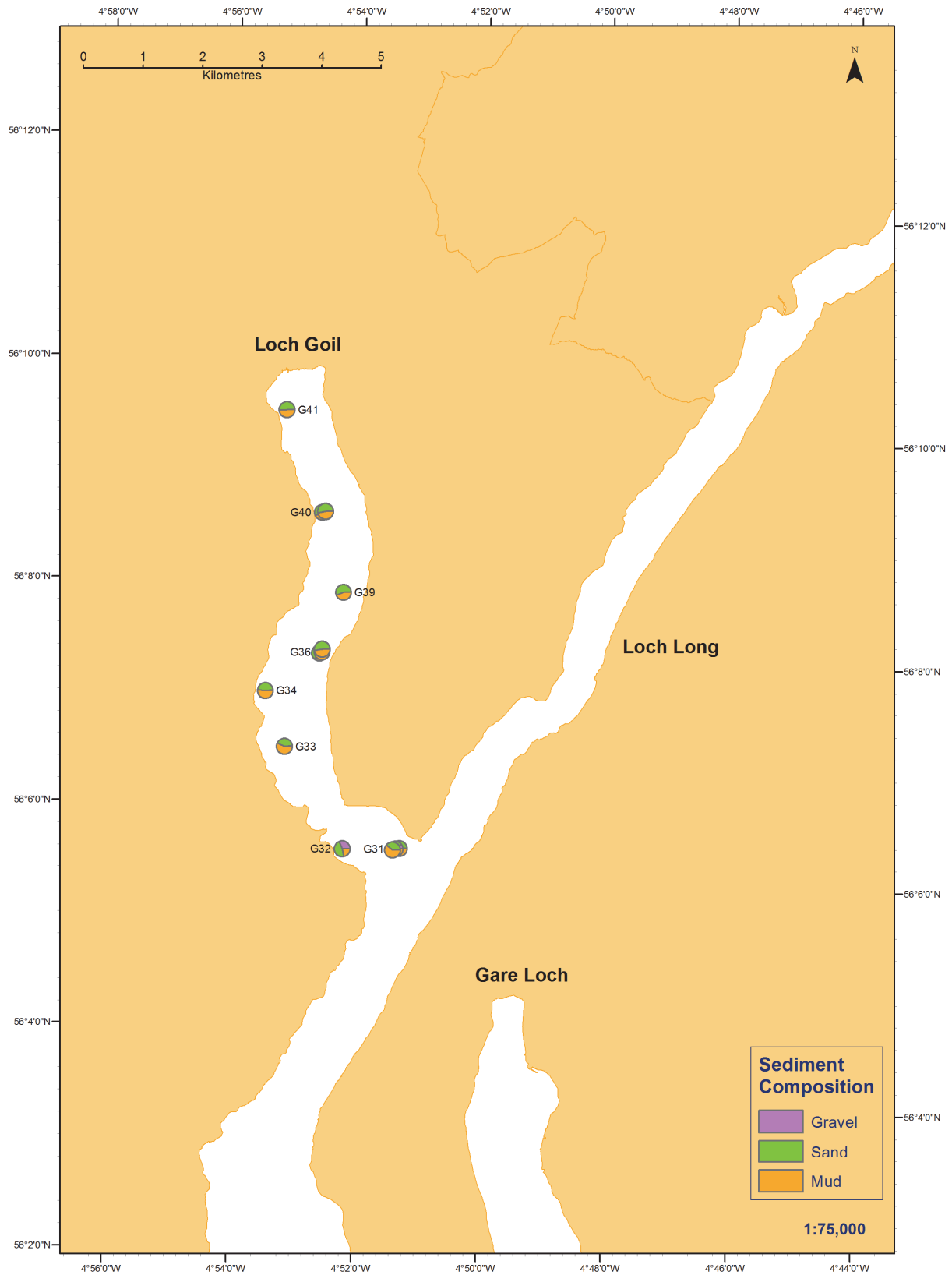


Figure 4. Sediment composition of infaunal samples collected in Loch Goil. Reproduced by permission of Ordnance Survey on behalf of HMSO. © Crown copyright and database right [2014]. All rights reserved. Ordnance Survey Licence number 100017908.

3.2 Primary and derived biological parameters

The 2013 Clyde Sea infaunal samples exhibited a high level of variability in terms of biological parameters. This is illustrated in Table 3 which provides details of parameters at each station and Figures 5 to 10 which show the spatial distribution of the total numbers of species (including taxa not included in the quantitative data set, such as incomplete animals without anterior ends and colonial taxa), total abundance and Shannon's diversity. The number of taxa per 0.1 m² sample ranged from less than 10 taxa at stations G01, G23, G24, G28, G29, G34, G39, G40 and G41 to much higher numbers of taxa (>60 per 0.1 m²) at stations G02, G06, G09, G17, G18, G25 and G30. The remaining stations had moderate numbers of taxa (10 - 60 per 0.1m²). Higher numbers of species were generally recorded in the coarser sediments just off Arran with lower to moderate numbers of taxa in the muddier stations further offshore or in Loch Goil. Abundances were also variable with numbers ranging from less than 10 individuals per 0.1 m² (at stations G01, G23, G24, G28, G39 and G40-3) to over 500 per 0.1 m² at stations G06, G18 and G41. The majority of stations had over 100 individuals. Abundances tended to be highest inshore around Arran and in Loch Goil with lower numbers further offshore around Arran. Diversity indices were also highly variable but generally showed moderate to high levels of diversity and evenness. Half the stations exhibited Shannon diversity above 4 and the majority of stations exhibited high evenness values above 0.75. In general, higher diversities were recorded inshore around Arran with slightly lower diversities further offshore or in Loch Goil (and particularly in the upper reaches of Loch Goil).

Table 3. Primary and derived biological parameters.

Sample	Number of species	Total Abundance (A)	Margalef's d	Pielou's Evenness J	Shannon's Diversity H'
South Arran					
G01	2	1	-	-	0.00
G02-1	81	254	12.28	0.86	5.24
G02-2	85	319	12.84	0.83	5.15
G02-3	60	226	9.96	0.86	4.96
G03	12	14	2.65	0.90	2.69
G04-1	41	219	7.42	0.78	4.16
G04-2	27	89	5.57	0.71	3.34
G04-3	42	148	7.80	0.72	3.81
G05	53	132	9.42	0.85	4.73
G06	95	534	12.74	0.84	5.32
G07	53	311	8.01	0.82	4.53
G08	11	16	2.89	0.93	2.95
G09	77	223	11.10	0.85	5.04
G11	44	113	7.19	0.83	4.24
G12	47	223	8.51	0.72	4.02
G13	21	42	5.35	0.89	3.93
G14	25	37	6.65	0.97	4.49
G15	45	131	7.59	0.88	4.60
G16	46	101	8.45	0.92	4.90
G17	90	230	12.87	0.90	5.55
G18	105	656	13.88	0.81	5.29
G19-1	41	111	8.07	0.85	4.52
G19-2	36	99	7.40	0.90	4.62
G19-3	46	104	9.26	0.88	4.82
G20	59	109	10.02	0.93	5.21
G21	49	109	8.31	0.91	4.86
G22	24	71	5.16	0.82	3.70

Sample	Number of species	Total Abundance (A)	Margalef's d	Pielou's Evenness J	Shannon's Diversity H'
G23	3	6	1.12	1.00	1.58
G24	5	6	2.23	0.97	2.25
G25-1	68	170	11.68	0.91	5.41
G25-2	71	240	10.95	0.92	5.44
G25-3	61	167	10.55	0.92	5.31
G26	57	124	11.00	0.92	5.32
G27	12	36	3.07	0.91	3.25
G28	3	3	1.82	1.00	1.58
G29	7	14	2.27	0.86	2.41
G30	62	274	10.33	0.75	4.40
G44	20	45	3.94	0.83	3.33
G45	41	83	7.47	0.86	4.38
G46	50	187	9.18	0.86	4.85
<i>Loch Goil</i>					
G31-1	14	125	2.69	0.51	1.95
G31-2	11	120	1.88	0.60	1.98
G31-3	15	143	2.82	0.46	1.81
G32	51	246	8.17	0.84	4.64
G33	33	219	5.57	0.82	4.05
G34	7	37	1.66	0.57	1.60
G36-1	12	102	2.16	0.59	2.05
G36-2	13	39	3.00	0.83	2.96
G36-3	19	90	4.00	0.74	3.14
G39	1	1	-	-	0.00
G40-1	6	22	1.62	0.80	2.06
G40-2	7	15	2.22	0.88	2.47
G40-3	3	3	1.82	1.00	1.58
G41	6	686	0.77	0.64	1.65

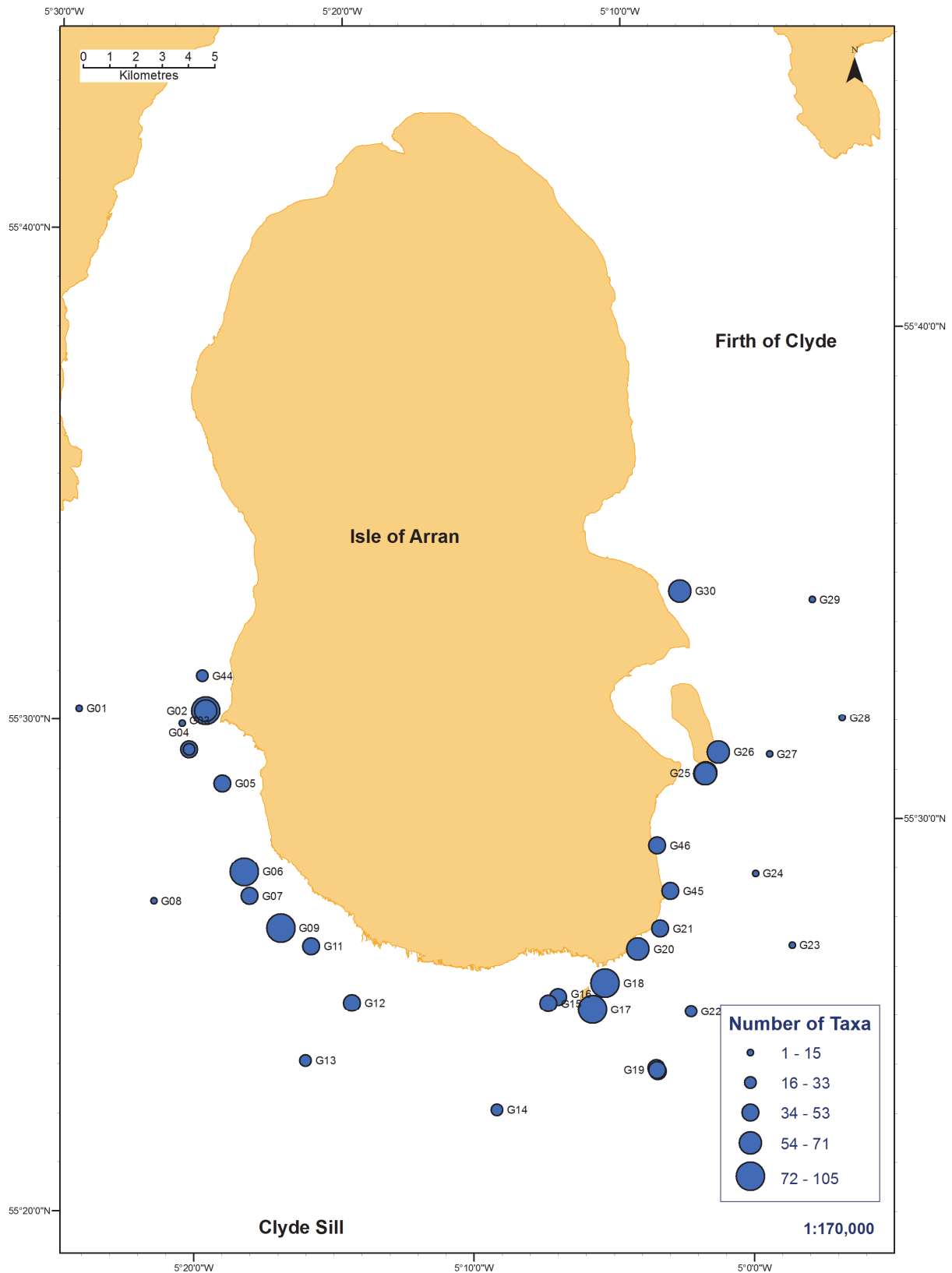


Figure 5. Total numbers of taxa (including qualitative species) collected around Arran. Reproduced by permission of Ordnance Survey on behalf of HMSO. © Crown copyright and database right [2014]. All rights reserved. Ordnance Survey Licence number 100017908.

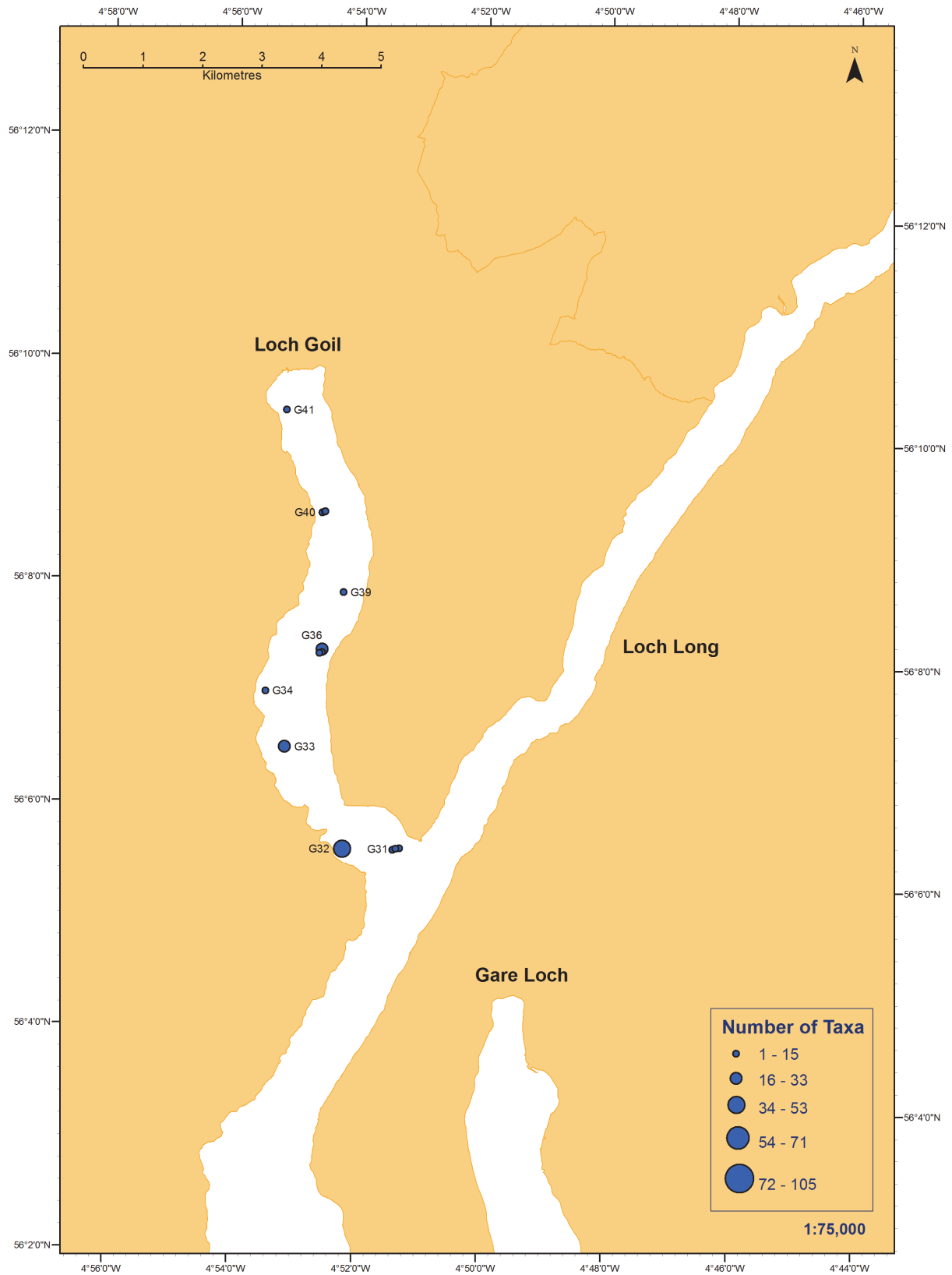


Figure 6. Total numbers of taxa (including qualitative species) collected in Loch Goil. Reproduced by permission of Ordnance Survey on behalf of HMSO. © Crown copyright and database right [2014]. All rights reserved. Ordnance Survey Licence number 100017908.

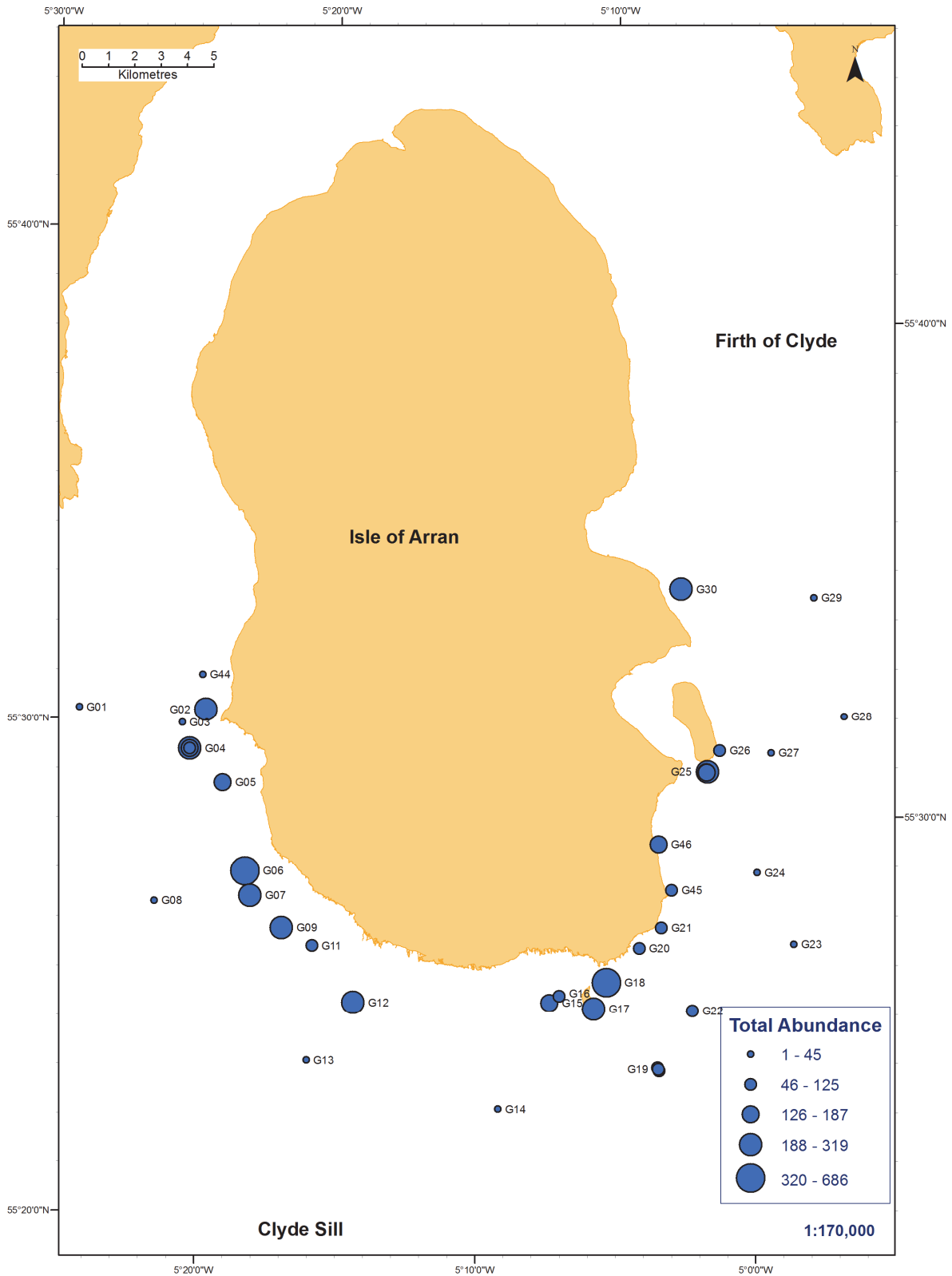


Figure 7. Total abundance (numbers of individuals) within infauna samples collected around Arran. Reproduced by permission of Ordnance Survey on behalf of HMSO. © Crown copyright and database right [2014]. All rights reserved. Ordnance Survey Licence number 100017908.

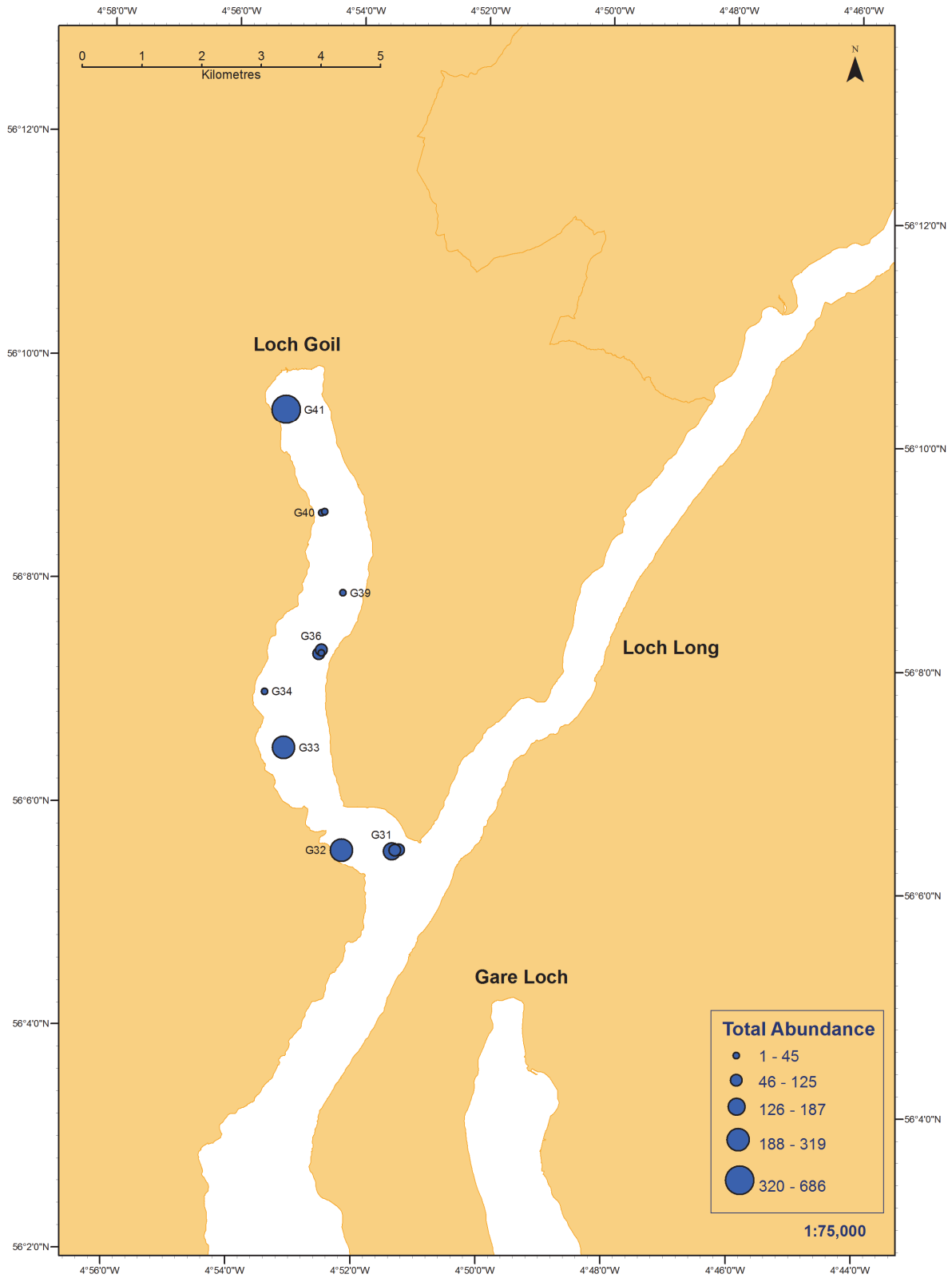


Figure 8. Total abundance (numbers of individuals) within infauna samples collected in Loch Goil. Reproduced by permission of Ordnance Survey on behalf of HMSO. © Crown copyright and database right [2014]. All rights reserved. Ordnance Survey Licence number 100017908.

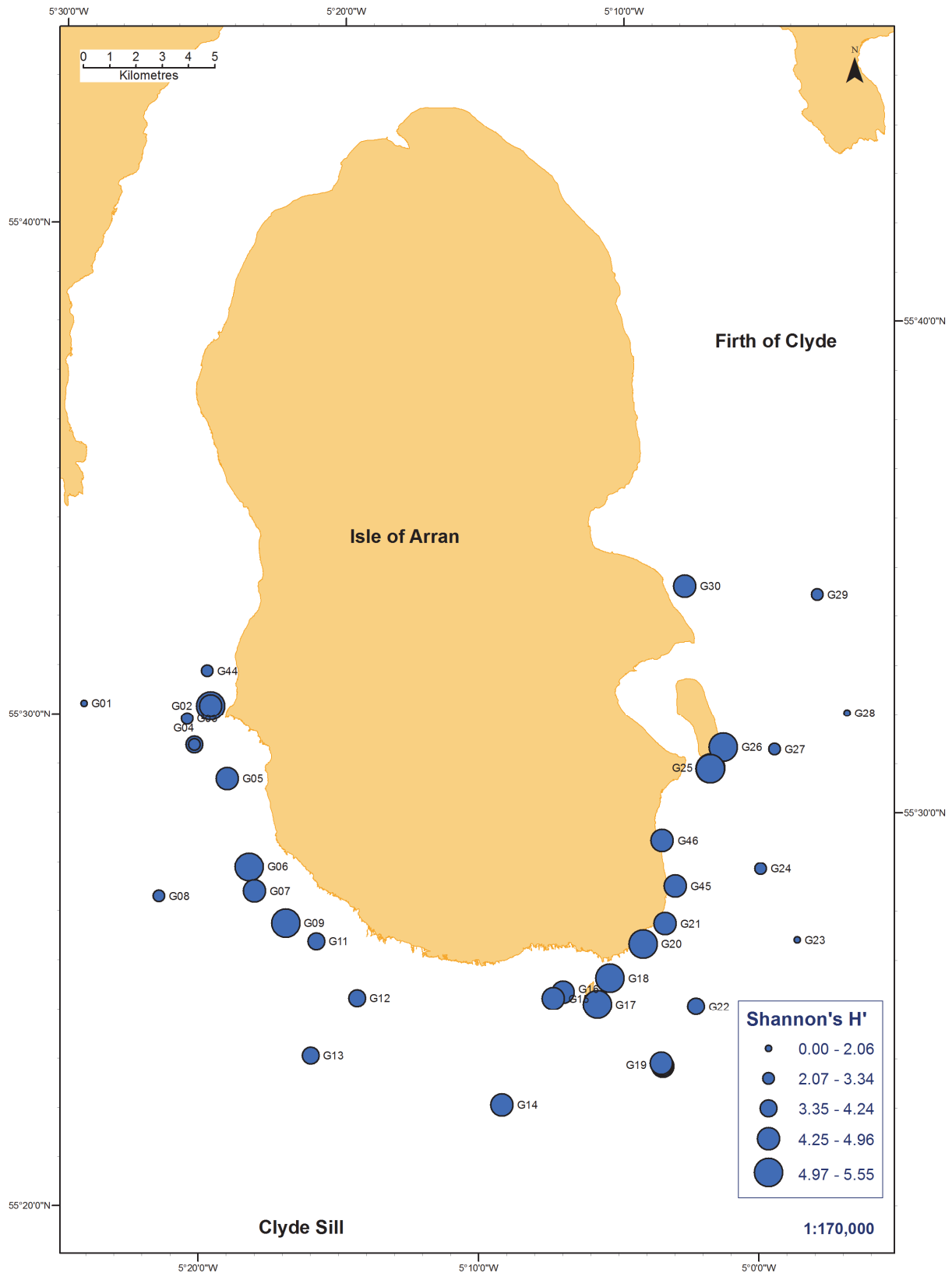


Figure 9. Shannon's diversity (H') of the infauna sample collected around Arran. Reproduced by permission of Ordnance Survey on behalf of HMSO. © Crown copyright and database right [2014]. All rights reserved. Ordnance Survey Licence number 100017908.

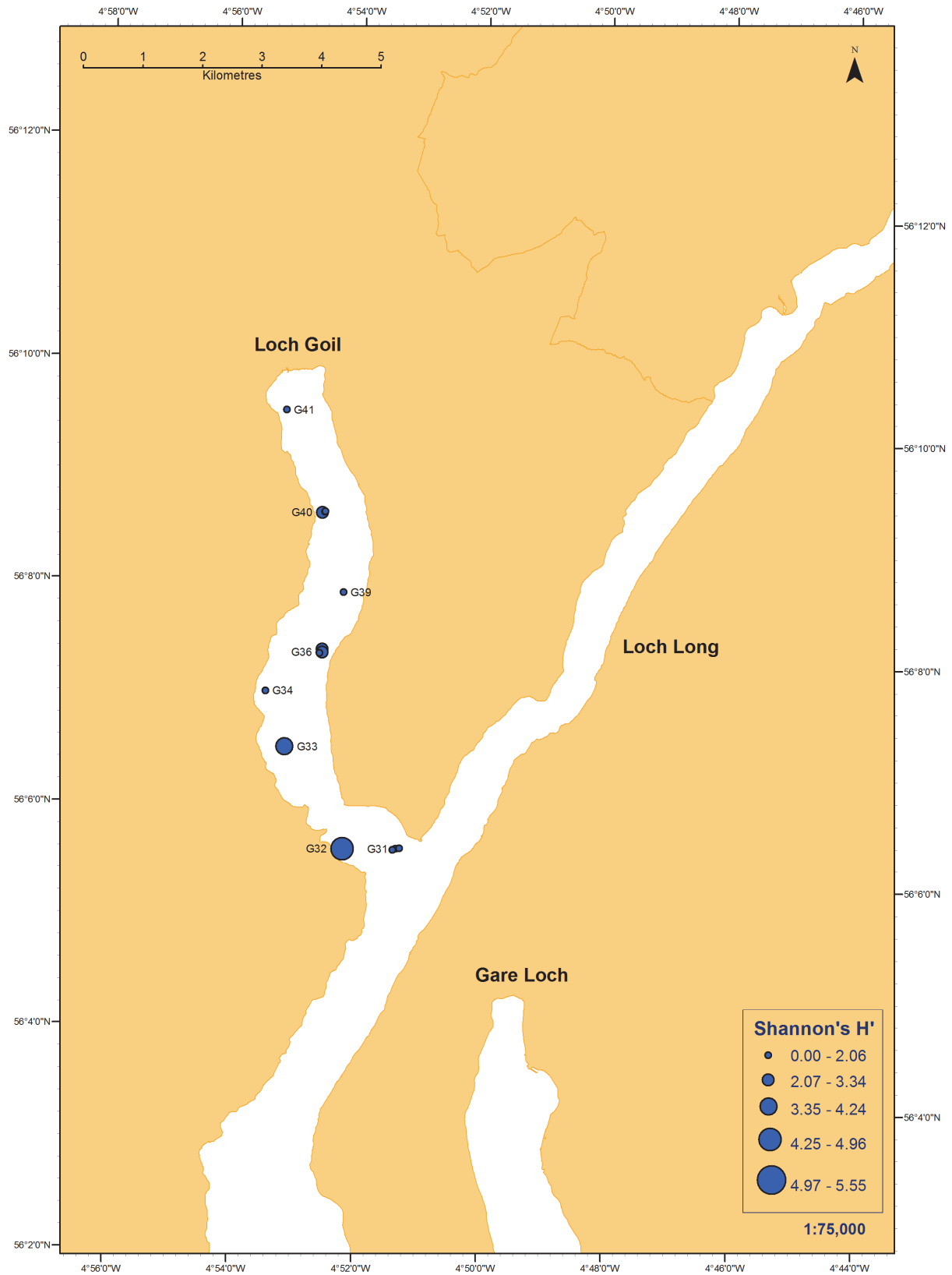


Figure 10. Shannon's diversity (H') of the infauna sample collected in Loch Goil. Reproduced by permission of Ordnance Survey on behalf of HMSO. © Crown copyright and database right [2014]. All rights reserved. Ordnance Survey Licence number 100017908.

3.3 Species composition

In total 399 species were recorded from the survey including a wide variety of polychaetes, crustaceans (notably amphipods), molluscs and echinoderms, along with a variety of epifaunal / encrusting or colonial taxa such as hydroids, bryozoans and occasional sponges, anemones or ascidians. Table 4 shows the most dominant taxa recorded over the survey area in terms of abundance whilst Table 5 highlights the most common qualitative taxa. In terms of abundance, the echinoderm *Amphiura filiformis* was the most commonly observed species along with other polychaete or mollusc taxa such as *Tubificoides benedii*, Nematoda spp., *Owenia fusiformis*, *Lumbrineris cingulata*, *Turritella communis*, *Leptochiton asellus*, Amphiuroidae sp. (juv.), *Capitella* sp., *Spiophanes kroyeri*, *Thyasira flexuosa*, *Spirobranchus triqueter*, *Modiolus* sp. (juv.) and *Kurtiella bidentata* which together accounted for over 40% of the total abundance. A number of these taxa (e.g. *Tubificoides benedii*, *Turritella communis* and *Capitella* sp.) were found at relatively few sites and in terms of PMF species the ocean quahog *Arctica islandica* was recorded at seven stations. A variety of qualitative taxa was also present, notably Corallinaceae sp. and maerl sp. Small quantities of live maerl were recorded in 12 samples from eight stations, and many of the stations around Arran included dead maerl gravel. Other qualitative taxa were often present on larger stones / shells such as *Cliona* sp., *Scrupocellaria scruposa*, *Escharella immersa*, Rhodophycota spp., Campanulariidae spp., *Microporella ciliata*, *Halecium* spp., *Hippoporina pertusa*, *Heterosiphonia plumosa*, *Tubulipora* spp., *Polysiphonia* sp., *Verruca stroemi*, *Crisia* spp., *Amphiblestrum auritum*, *Fenestrulina malusii*, *Phialella quadrata*, *Disporella hispida*, *Electra pilosa*, *Plocamium cartilagineum* and Porifera spp.

Table 4. Dominant taxa (by abundance) recorded at the Clyde Sea survey stations.

Taxa	Total Abundance	Cumulative % of total abundance	No. of samples
<i>Amphiura filiformis</i>	515	6.58	19
<i>Tubificoides benedii</i>	406	11.77	7
Nematoda spp.	321	15.87	18
<i>Owenia fusiformis</i>	281	19.46	25
<i>Lumbrineris cingulata</i>	228	22.38	22
<i>Turritella communis</i>	226	25.27	9
<i>Leptochiton asellus</i>	172	27.46	14
Amphiuridae sp. (juv.)	168	29.61	27
<i>Capitella</i> sp.	161	31.67	8
<i>Spiophanes kroyeri</i>	146	33.53	27
<i>Thyasira flexuosa</i>	141	35.34	25
<i>Spirobranchus triqueter</i>	139	37.11	13
<i>Modiolus</i> sp. (juv.)	124	38.70	11
<i>Kurtiella bidentata</i>	112	40.13	24
Nemertea spp.	109	41.52	34
<i>Sphaerosyllis taylori</i>	108	42.90	8
<i>Gouldia minima</i>	106	44.26	12
<i>Nucula nitidosa</i>	99	45.52	20
<i>Abra alba</i>	94	46.72	16
<i>Aponuphis bilineata</i>	94	47.92	14
<i>Aonides paucibranchiata</i>	94	49.12	13
<i>Clausinella fasciata</i>	94	50.33	12

Table 5. Dominant qualitative (colonial/encrusting) taxa recorded at the Clyde Sea survey stations.

Qualitative taxa	No. of samples	% of samples	Qualitative taxa	No. of samples	% of samples
Corallinaceae sp.	15	28	<i>Scypha ciliata</i>	2	4
Maerl sp.	12	22	<i>Sertularella</i> sp.	2	4
<i>Cliona</i> sp.	8	15	<i>Stolonifera</i> sp.	2	4
<i>Scrupocellaria scruposa</i>	8	15	<i>Hippothoa flagellum</i>	2	4
<i>Escharella immersa</i>	8	15	<i>Chorizopora brongniartii</i>	2	4
Rhodophycota sp.	8	15	<i>Escharella ventricosa</i>	2	4
Campanulariidae sp.	7	13	<i>Parasmittina trispinosa</i>	2	4
<i>Microporella ciliata</i>	7	13	<i>Gracilaria gracilis</i>	2	4
<i>Halecium</i> sp.	6	11	<i>Leucosolenia</i> sp.	1	2
<i>Hippoporina pertusa</i>	6	11	<i>Alcyonidium diaphanum</i>	1	2
<i>Heterosiphonia plumosa</i>	6	11	<i>Alcyonidium hirsutum</i>	1	2
<i>Tubulipora</i> sp.	5	9	<i>Scruparia ambigua</i>	1	2
<i>Polysiphonia</i> sp.	5	9	<i>Bugula flabellata</i>	1	2
<i>Verruca stroemi</i>	4	7	<i>Cellaria</i> sp.	1	2
<i>Crisia</i> spp.	4	7	<i>Escharoides coccinea</i>	1	2
<i>Amphiblestrum auritum</i>	4	7	<i>Porella concinna</i>	1	2
<i>Fenestulina malusii</i>	4	7	<i>Schizomavella</i> sp.	1	2
<i>Phialella quadrata</i>	3	6	<i>Pterothamnion plumula</i>	1	2
<i>Disporella hispida</i>	3	6	<i>Hypoglossum hypoglossoides</i>	1	2
<i>Electra pilosa</i>	3	6	<i>Membranoptera alata</i>	1	2
<i>Plocamium cartilagineum</i>	3	6	<i>Phycodrys rubens</i>	1	2
Porifera sp.	2	4	<i>Odonthalia dentata</i>	1	2

3.4 Multivariate analysis

The results of cluster analysis and MDS are given in Figure 11. A large number of groups were derived from the SIMPROF analysis, with many of groups comprising only two to three stations and a number of groups made up of only one station. Similarities between stations were highly variable and ranged from below 10% to around 70%. The relatively low similarity indicated quite a high level of variation in species composition. The results of the cluster analysis indicate that many of the discrete groups defined by SIMPROF were loosely agglomerated at a lower level of similarity into broader groups (groups b to l, groups m to r and groups s to t). To simplify interpretation the characteristic taxa summaries of sediment type and water depth for these higher level groupings are provided in Table 6 and are discussed below. The detailed information for each individual SIMPROF group is provided in Annex 2, whilst the spatial distribution of groups is provided in Figure 11.

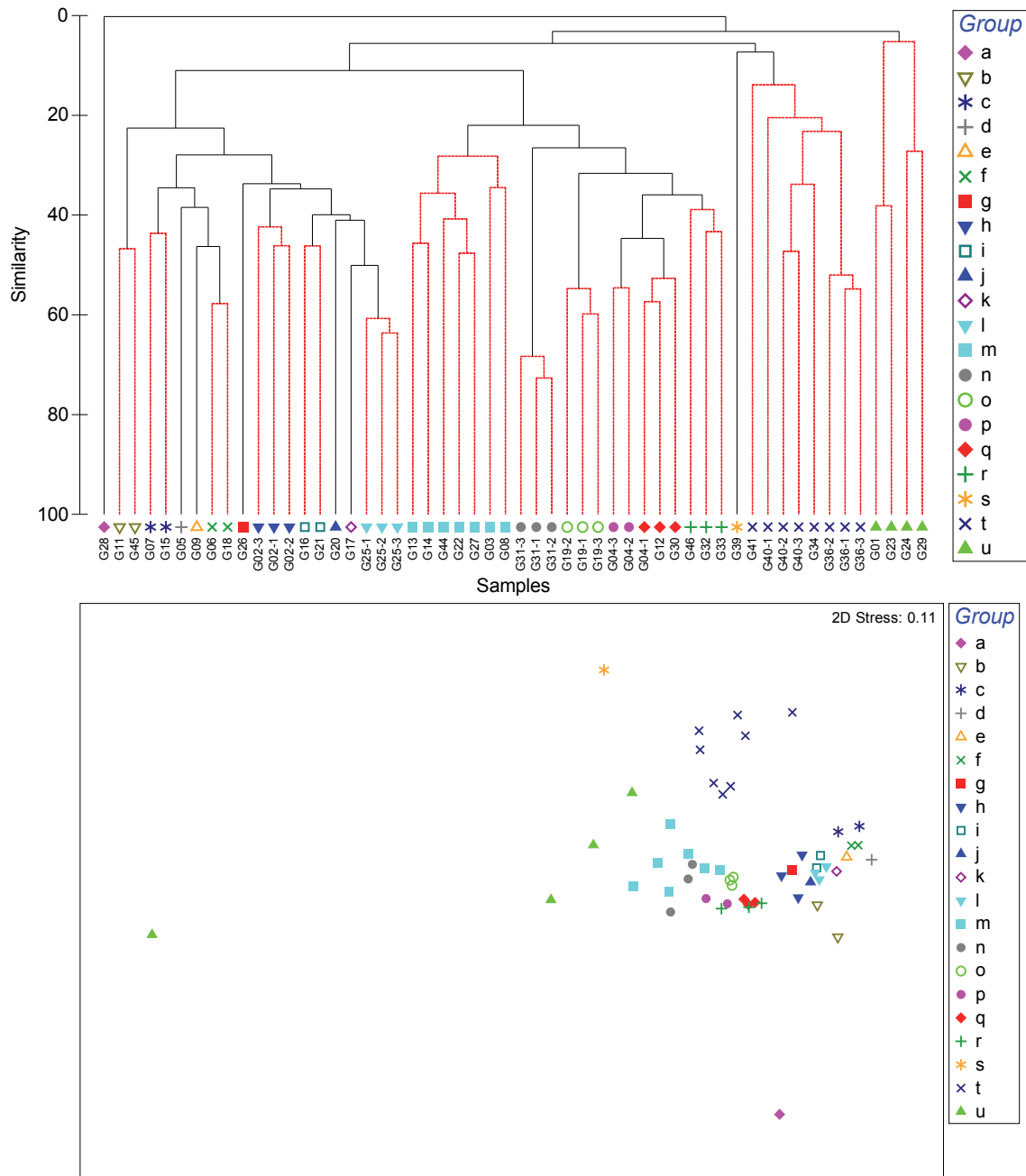


Figure 11. Results of cluster analysis and MDS.

Group A comprises a single station (G28) located to the east of Arran in deep water (105 m) and is separated from the remaining stations at less than 5% similarity. This station was characterised by sandy-mud and only three taxa (*Dasybranchus* sp., *Rhodine gracilior* and *Maera loveni*). SIMPROF groups b to l are loosely agglomerated at similarities of between 60 to 20% similarity (average similarity 31.5%) and include a variety of small groups of two to three stations. These groups are located in inshore areas around Arran in coarser mixed sediments of sandy-gravel, gravelly-sand or muddy-gravelly-sand in depths below 25 m. Characteristic taxa for these groups include *Glycera lapidum*, NEMERTEA spp., *Owenia fusiformis*, *Echinocyamus pusillus*, *Lumbrineris cingulata*, *Dosinia* sp. (juv.), Thraciacea sp. (juv.), *Aponuphis bilineata*, *Leptochiton asellus*, *Aonides paucibranchiata*, Nematoda spp., *Pholoe baltica*, Amphiuridae sp. (juv.), *Clausinella fasciata*, *Euspira pulchella*, *Gouldia minima* and *Moerella donacina* which account for over 50% of the similarity between stations. In addition to polychaetes such as *Glycera lapidum* and *Lumbrineris cingulata*

these groups are often characterised by a variety of robust bivalves such as venerids. Table 6 gives the more detailed description of taxa for these groups. Whilst there is a high level of variability between individual stations the presence of such venerids and other robust bivalve taxa such as *Moerella donacina* (notably in group b and groups h to l) are particularly characteristic of infralittoral and circalittoral gravelly sediments. These stations also tend to be characterised by dead maerl gravel, with a number of stations including some fragments of live maerl (albeit at relatively low abundances).

Groups m to r were another collection of small groups of stations that were loosely aggregated at 20% to 70% similarity (average similarity 27%) and separated from groups b to l at around 15% similarity. These stations were primarily in muddier sediments (muddy-sand, sandy-mud or slightly gravelly-muddy-sand) in deeper water off Arran or at the mouth of Loch Goil. Stations in these groups were characterised by taxa such as *Amphiura filiformis*, *Nucula nitidosa*, *Spiophanes kroyeri*, *Kurtiella bidentata*, *Thyasira flexuosa*, *Cylichna cylindracea*, *Notomastus* sp. and *Nephtys incisa* and included typical examples of circalittoral sand- mud / muddy-sand communities. Occasional individuals of larger burrowing crustaceans (megafauna) were also recorded at certain stations although grab sampling is likely to underestimate numbers of such taxa.

Groups s and t were loosely aggregated at around 10% similarity. Group s comprised a single station (G39) with only *Capitella* sp. present in deep muddy-sand in Loch Goil. The remaining stations in group t were also located in deep muddy-sand / sandy-mud in the mid to upper reaches of Loch Goil and were characterised by species such as *Capitella* sp., *Mediomastus fragilis*, *Glycera alba*, *Tubificoides benedii*, *Lagis koreni*, *Spiophanes kroyeri*, Nematoda spp. and *Polydora caulleryi*. Group u comprised four stations (G01, G23, G24 and G29) with an average similarity of 14% in deeper sandy-mud off Arran which were characterised by low numbers of species such as *Calocaris macandreae*, *Nephtys incisa*, *Abyssoninoe hibernica* and *Balanus crenatus* along with *Amphiura chiajei*, *Malmgreniella lunulata* and *Spiophanes kroyeri*.

The BEST routine within PRIMER has been used to correlate sedimentary parameters and water depth to the patterns in community structure. This indicated that mud content, mean and median grain phi size and water depth had a good correlation to community structure with correlations of 0.622, 0.429, 0.425 and 0.358 respectively. The remaining sediment parameters had correlations between 0 and 0.2. No combination of parameters gave a better correlation to community structure than mud content alone (0.622), highlighting the importance of this parameter in terms of species distribution.

Table 6. Characteristic taxa within the upper level (combined) SIMPROF groups derived from cluster analysis.

Sample	Sediment type	Group A			Depth (m)
		% Gravel	% Sand	% Mud	
G28	Sandy-mud	0.00	20.55	79.45	105
	Taxa	Abundance	Cum. %		
	<i>Dasybranchus</i> sp.	1	33.33		
	<i>Rhodine gracilior</i>	1	66.67		
	<i>Maera loveni</i>	1	100.00		

Table 6 cont.

Groups B to L (Average similarity: 31.49%)					
Sample	Sediment type	% Gravel	% Sand	% Mud	Depth (m)
G11	Gravelly-sand	6.18	92.22	1.60	22
G45	Slightly gravelly-sand	3.74	94.31	1.94	10
G07	Sandy-gravel	52.19	43.94	3.88	19
G15	Muddy-sandy-gravel	40.87	49.19	9.94	22
G05	Sandy-gravel	77.34	22.05	0.61	15
G09		-	-	-	16
G06	Gravel	83.62	15.74	0.65	20
G18	Sandy-gravel	59.51	39.39	1.11	14
G26	Muddy-sandy-gravel	44.64	38.58	16.78	31
G02-1	Gravelly-sand	16.55	77.90	5.55	23
G02-2	Muddy-sandy-gravel	46.01	43.38	10.61	23
G02-3	Gravelly-sand	10.75	83.35	5.89	23
G16	Gravel	97.57	2.37	0.06	21
G21	Gravelly-sand	8.57	84.46	6.97	19
G20	Gravelly-muddy-sand	22.04	69.51	8.45	13
G17	Gravelly-muddy-sand	23.23	68.15	8.62	25
G25-1	Gravelly-muddy-sand	13.99	73.01	13.01	15
G25-2	Gravelly-muddy-sand	28.88	59.96	11.15	15
G25-3	Gravelly-sand	23.07	72.52	4.41	15
Taxa		Av. Abund	% of Sites	Contrib%	Cum.%
	<i>Glycera lapidum</i>	4.2	95	4.99	4.99
	NEMERTEA spp.	3.2	95	4.46	9.45
	<i>Owenia fusiformis</i>	6.1	79	4.45	13.9
	<i>Echinocyamus pusillus</i>	4.0	95	4.21	18.11
	<i>Lumbrineris cingulata</i>	11.1	74	3.98	22.09
	<i>Dosinia</i> sp. (juv.)	4.2	79	3.46	25.55
	Thraciacea sp. (juv.)	4.0	79	3.36	28.91
	<i>Aponuphis bilineata</i>	4.9	74	2.98	31.89
	<i>Leptochiton asellus</i>	9.1	74	2.76	34.65
	<i>Aonides paucibranchiata</i>	4.9	68	2.75	37.4
	Nematoda spp.	8.7	68	2.69	40.1
	<i>Pholoe baltica</i>	2.4	79	2.61	42.71
	Amphiuridae sp. (juv.)	4.5	68	2.47	45.18
	<i>Clausinella fasciata</i>	4.9	63	2.26	47.43
	<i>Euspira pulchella</i>	1.7	68	2.23	49.66
	<i>Gouldia minima</i>	5.6	63	2.13	51.8
	<i>Moerella donacina</i>	2.7	63	2.1	53.89

Table 6 cont.

Groups M to R (Average similarity: 28.67%)					
Sample	Sediment type	% Gravel	% Sand	% Mud	Depth (m)
G03	Muddy-sand	0.00	52.05	47.95	77
G08	Muddy-sand	0.00	52.73	47.27	48
G13	Muddy-sand	0.00	61.54	38.46	47
G14	Slightly gravelly-muddy-sand	0.40	69.19	30.41	57
G22	Slightly gravelly-muddy-sand	4.35	61.43	34.22	112
G27	Muddy-sand	0.00	50.14	49.86	76
G44	Slightly gravelly-muddy-sand	0.35	64.42	35.23	52
G31-1	Sandy-mud	0.00	37.84	62.16	54
G31-2	Gravelly-mud	9.93	35.13	54.94	54
G31-3	Slightly gravelly-sandy-mud	1.63	38.12	60.25	54
G19-1	Muddy-sand	0.00	79.28	20.72	110
G19-2	Slightly gravelly-muddy-sand	0.14	81.28	18.58	110
G19-3	Muddy-sand	0.00	67.21	32.79	110
G04-2	Slightly gravelly-muddy-sand	4.68	61.54	33.78	42
G04-3	Slightly gravelly-muddy-sand	3.78	66.06	30.16	42
G04-1	Slightly gravelly-muddy-sand	0.21	68.07	31.72	42
G12	Slightly gravelly-muddy-sand	0.13	74.39	25.48	36
G30	Slightly gravelly-muddy-sand	0.57	74.55	24.88	35
G32	Muddy sandy-gravel	31.22	46.94	21.84	14
G33	Slightly gravelly-sandy mud	1.58	41.17	57.24	33
G46	Slightly gravelly-muddy sand	1.21	87.25	11.54	14
	Taxa	Av. Abund	% of Sites	Contrib%	Cum.%
	<i>Amphiura filiformis</i>	24.1	71	11.04	11.04
	<i>Nucula nitidosa</i>	4.6	86	9.5	20.54
	<i>Spiophanes kroyeri</i>	4.2	76	6.99	27.54
	<i>Kurtiella bidentata</i>	4.6	71	5.78	33.32
	<i>Thyasira flexuosa</i>	3.4	76	5.25	38.56
	<i>Cylichna cylindracea</i>	2.6	76	5.08	43.64
	<i>Notomastus sp.</i>	2.1	62	4.85	48.49
	<i>Nephtys incisa</i>	1.4	52	4.65	53.14
Groups S to T (Average similarity: 21.44%)					
Sample	Sediment type	% Gravel	% Sand	% Mud	Depth (m)
G39	Muddy-sand	0.00	55.93	44.07	78
G34	Slightly gravelly-sandy-mud	1.16	47.72	51.12	33
G36-1	Muddy-sand	0.00	63.31	36.69	60
G36-2	Muddy-sand	0.00	57.76	42.24	60
G36-3	Muddy-sand	0.00	52.44	47.56	60
G40-1	Muddy-sand	0.00	54.92	45.08	71
G40-2	Muddy-sand	0.00	56.82	43.18	71
G40-3	Muddy-sand	0.00	52.59	47.41	71
G41	Slightly gravelly-muddy-sand	0.74	50.41	48.85	44
	Taxa	Av. Abund	% of Sites	Contrib%	Cum.%
	<i>Capitella sp.</i>	17.8	78	22.09	22.09
	<i>Mediomastus fragilis</i>	5.1	67	17.07	39.16
	<i>Glycera alba</i>	1.1	78	16.08	55.23
	<i>Tubificoides benedii</i>	44.9	56	13.47	68.71
	<i>Lagis koreni</i>	1.8	56	8.38	77.08
	<i>Spiophanes kroyeri</i>	4.7	44	7.41	84.49
	Nematoda spp.	17.0	44	4.52	89.02
	<i>Polydora caulleryi</i>	2.4	33	3.2	92.22

Table 6 cont.

Group U (Average similarity: 14.38%)						
Sample	Sediment type	% Gravel	% Sand	% Mud	Depth (m)	
G01	Sandy-mud	0.00	18.42	81.58	78	
G23	Sandy-mud	0.00	36.29	63.71	86	
G24	Sandy-mud	0.00	30.15	69.85	105	
G29	Sandy-mud	0.00	25.31	74.69	87	
	Taxa	Av. Abund	% of Sites	Contrib%	Cum.%	
	<i>Calocaris macandreae</i>	0.75	50	44.21	44.21	
	<i>Nephtys incisa</i>	2	50	24.24	68.45	
	<i>Abyssoninoe hibernica</i>	0.75	50	15.77	84.23	
	<i>Balanus crenatus</i>	0.5	50	15.77	100	

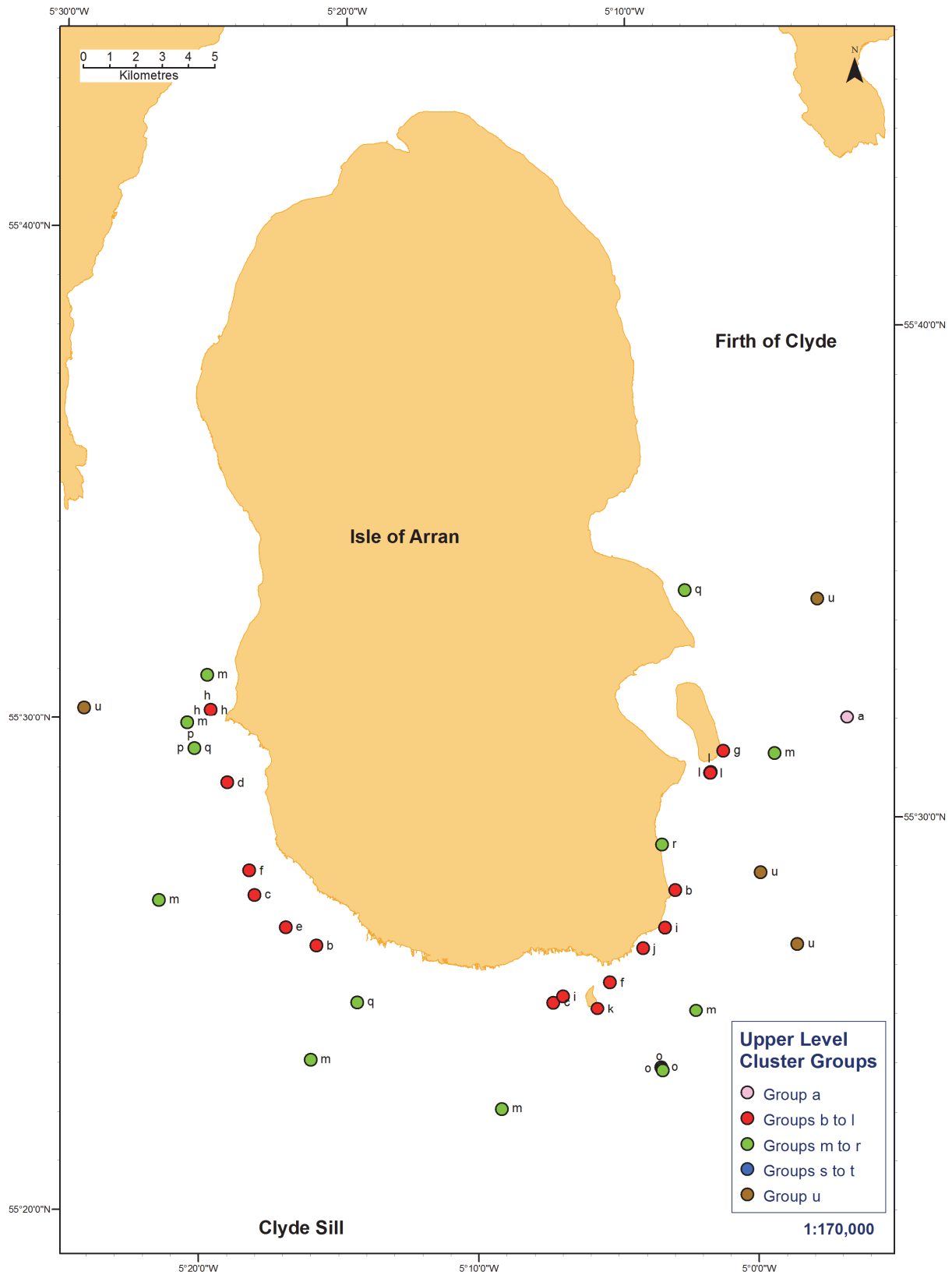


Figure 12. Groups derived from cluster analysis (Arran). Reproduced by permission of Ordnance Survey on behalf of HMSO. © Crown copyright and database right [2014]. All rights reserved. Ordnance Survey Licence number 100017908.

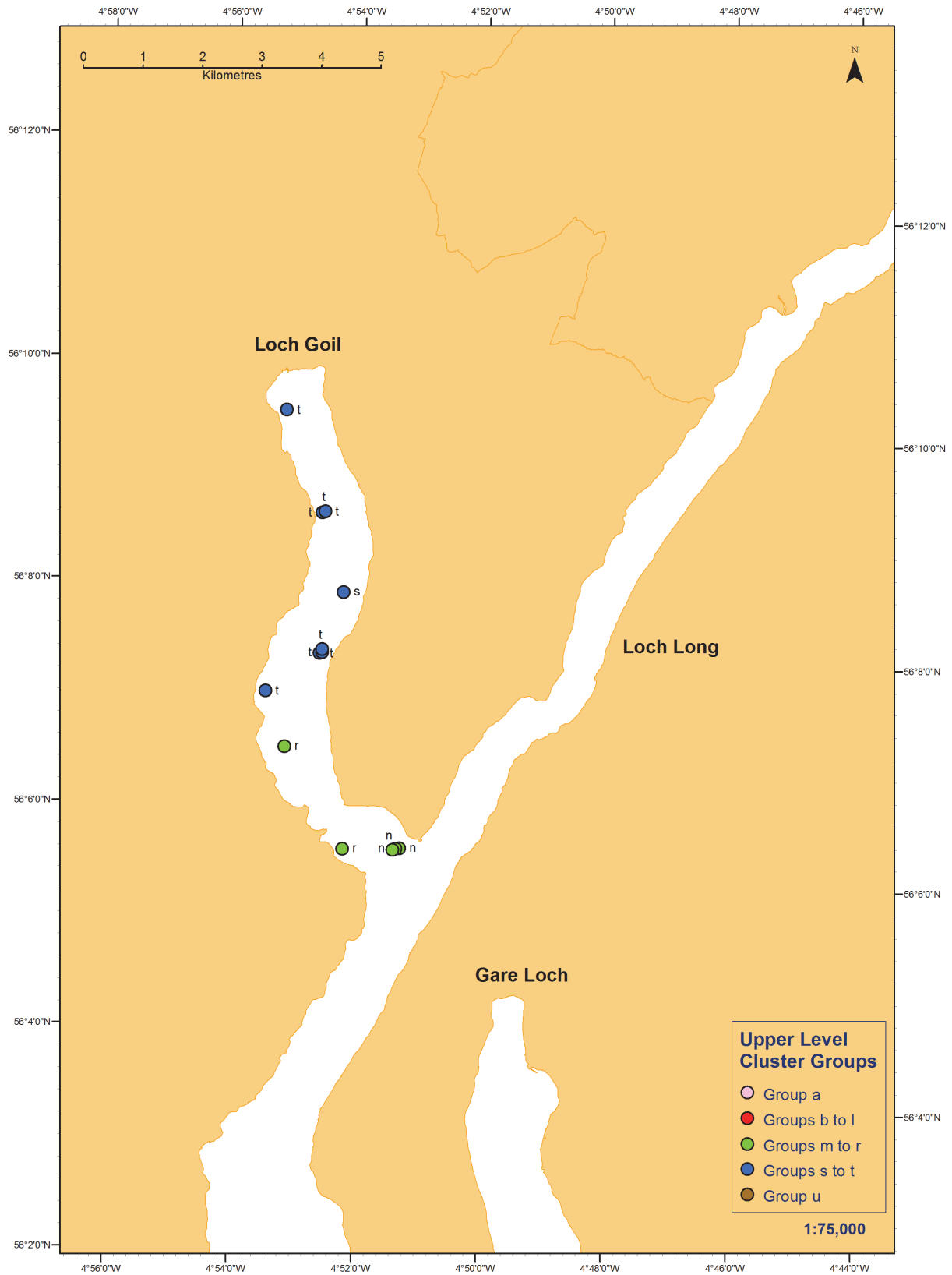


Figure 13. Groups derived from cluster analysis (Loch Goil). Reproduced by permission of Ordnance Survey on behalf of HMSO. © Crown copyright and database right [2014]. All rights reserved. Ordnance Survey Licence number 100017908.

3.5 Biotope composition

Biotores were assigned to each station on the basis of species composition, sedimentary parameters, water depth and the results of multivariate analysis. It was noted that as was the case for the 2012 Clyde Sea survey (Allen 2013) a number of the stations exhibited infaunal communities which do not correspond well to one particular biotope. A summary of biotope codes for the stations is provided in Table 7 and a breakdown of biotores for stations in each of the groups derived by cluster analysis with sediment descriptions and characteristic taxa is provided in Table 8. Biotores which are not a good fit have been listed with a qualifier (marked with ?). The spatial distribution of biotores is provided in Figures 14 and 15 and the location of stations where live maerl was recorded is also highlighted. Figures 16 and 17 shows the location of sites with Proposed Protected Features around Arran and in Loch Goil based on infaunal data. However, as discussed below there were some areas where such features may potentially be present but the infaunal data are inconclusive and video data is required to assess this further.

Table 7. Biotores at each station.

Sample	Biotope	Location	Proposed Protected Feature
G01	SS.SMu.CFiMu.SpnMeg?	S. Arran	Burrowed mud
G02-1	SS.SCS.CCS.MedLumVen?	S. Arran	
G02-2	SS.SCS.CCS.MedLumVen?	S. Arran	
G02-3	SS.SCS.CCS.MedLumVen?	S. Arran	
G03	SS.SMu.CSaMu	S. Arran	
G04-1	SS.SMu.CSaMu.AfilMysAnit?	S. Arran	Ocean quahog
G04-2	SS.SMu.CSaMu.AfilMysAnit?	S. Arran	
G04-3	SS.SMu.CSaMu.AfilMysAnit?	S. Arran	Ocean quahog
G05	SS.SCS.ICS	S. Arran	
G06	SS.SCS.ICS	S. Arran	
G07	SS.SCS.ICS.MoeVen?	S. Arran	Shallow tide-swept coarse sands with burrowing bivalves
G08	SS.SMu.CSaMu	S. Arran	
G09	SS.SCS.ICS	S. Arran	
G11	SS.SCS.ICS.MoeVen	S. Arran	Shallow tide-swept coarse sands with burrowing bivalves
G12	SS.SMu.CSaMu.AfilMysAnit	S. Arran	Ocean quahog
G13	SS.SMu.CSaMu	S. Arran	
G14	SS.SMu.CSaMu	S. Arran	Ocean quahog
G15	SS.SCS.ICS.MoeVen?	S. Arran	Shallow tide-swept coarse sands with burrowing bivalves
G16	SS.SCS.ICS.MoeVen?	S. Arran	Shallow tide-swept coarse sands with burrowing bivalves
G17	SS.SCS.CCS.MedLumVen?	S. Arran	
G18	SS.SCS.ICS	S. Arran	
G19-1	SS.SMu.CSaMu.AfilNten	S. Arran	Ocean quahog
G19-2	SS.SMu.CSaMu.AfilNten	S. Arran	Ocean quahog
G19-3	SS.SMu.CSaMu.AfilNten	S. Arran	
G20	SS.SCS.ICS?	S. Arran	
G21	SS.SCS.ICS.MoeVen?	S. Arran	Shallow tide-swept coarse sands with burrowing bivalves
G22	SS.SMu.CSaMu	S. Arran	
G23	SS.SMu.CFiMu.SpnMeg?	S. Arran	Burrowed mud
G24	SS.SMu.CFiMu.SpnMeg?	S. Arran	Burrowed mud
G25-1	SS.SCS.ICS.MoeVen?	S. Arran	Shallow tide-swept coarse sands with burrowing bivalves

Sample	Biotope	Location	Proposed Protected Feature
G25-2	SS.SCS.ICS.MoeVen?	S. Arran	Shallow tide-swept coarse sands with burrowing bivalves
G25-3	SS.SCS.ICS.MoeVen?	S. Arran	Shallow tide-swept coarse sands with burrowing bivalves
G26	SS.SCS.CCS.MedLumVen	S. Arran	
G27	SS.SMu.CSaMu	S. Arran	
G28	SS.SMu.CFiMu	S. Arran	
G29	SS.SMu.CFiMu.SpnMeg?	S. Arran	Burrowed mud
G30	SS.SMu.CSaMu.AfilMysAnit	S. Arran	Ocean quahog
G31-1	SS.SMu.CSaMu.AfilMysAnit	Loch Goil	Sublittoral mud and mixed sediment communities
G31-2	SS.SMu.CSaMu.AfilMysAnit	Loch Goil	Sublittoral mud and mixed sediment communities
G31-3	SS.SMu.CSaMu.AfilMysAnit	Loch Goil	Sublittoral mud and mixed sediment communities
G32	SS.SMu.CSaMu.AfilMysAnit?	Loch Goil	Sublittoral mud and mixed sediment communities
G33	SS.SMu.CSaMu.AfilMysAnit?	Loch Goil	Sublittoral mud and mixed sediment communities
G34	SS.SMu.CSaMu	Loch Goil	Sublittoral mud and mixed sediment communities
G36-1	SS.SMu.CSaMu	Loch Goil	Sublittoral mud and mixed sediment communities
G36-2	SS.SMu.CSaMu	Loch Goil	Sublittoral mud and mixed sediment communities
G36-3	SS.SMu.CSaMu	Loch Goil	Sublittoral mud and mixed sediment communities
G39	SS.SMu.CSaMu	Loch Goil	Sublittoral mud and mixed sediment communities
G40-1	SS.SMu.CSaMu	Loch Goil	Sublittoral mud and mixed sediment communities
G40-2	SS.SMu.CSaMu	Loch Goil	Sublittoral mud and mixed sediment communities
G40-3	SS.SMu.CSaMu	Loch Goil	Sublittoral mud and mixed sediment communities
G41	SS.SMu.CSaMu	Loch Goil	Sublittoral mud and mixed sediment communities
G44	SS.SMu.CSaMu	S. Arran	
G45	SS.SCS.ICS.MoeVen	S. Arran	Shallow tide-swept coarse sands with burrowing bivalves
G46	SS.SMu.CSaMu.AfilMysAnit?	S. Arran	

Group A included a single station (G28) in deep sandy-mud with relatively few taxa and has been assigned to the **SS.SMu.CFiMu** biotope complex. Groups b to l form a series of discrete clusters of stations in gravelly-sand or sandy-gravel with varying mud content in shallow to moderate water depths often with populations of robust bivalves such as venerids. These are likely to form infralittoral or circalittoral coarse sediment biotopes (**SS.SCS.ICS** or **SS.SCS.CCS**) and are variants of either **SS.SCS.CCS.MedLumVen** (*Mediomastus fragilis*, *Lumbrineris* spp. and venerid bivalves in circalittoral coarse sand or gravel) or where *Moerella* bivalve species are recorded in shallower water **SS.SCS.ICS.MoeVen** (*Moerella* spp. with venerid bivalves in infralittoral gravelly sand). A number of these appear to be somewhat transitional with elements of both communities. Many of the stations in these groups are also characterised by maerl gravel with some live maerl present. As quantities of live maerl in the grab samples were limited to occasional fragments it is doubtful whether

they would qualify as a maerl biotope. Video evidence has been used to assess the wider area to quantify this (Moore 2013).

Groups m to r include a series of groups in deeper water off Arran or in Loch Goil with muddy-sand or sandy-muds. Group m includes stations off Arran which have taxa which are not particularly indicative of a specific biotope and have been assigned **SS.SMu.CSaMu** although the range of infauna present and the presence of one individual of *Nephrops* at station G22 indicates that these stations could include areas of **SS.SMu.CFiMu.Spnmeg** (Seapens and burrowing megafauna in circalittoral fine mud) although video evidence would be required to confirm this (see Moore 2013). The remaining groups in this series appear to be characterised by *Amphiura filiformis* and are likely to be variants of **SS.SMu.CSaMu.AfilMysAnit** (*Amphiura filiformis*, *Mysella bidentata* and *Abra nitida* in circalittoral sandy mud) or **SS.SMu.CSaMu.AfilNten** (*Amphiura filiformis* and *Nuculoma tenuis* in circalittoral and offshore sandy mud).

Groups s and t comprise of stations in Loch Goil in deep sandy-mud and tend to have relatively low numbers of taxa including some taxa often associated with reduced salinity or organic enrichment (e.g. *Tubificoides* spp. and *Capitella* sp.) along with low numbers of other polychaetes e.g. Spionidae and *Mediomastus fragilis* or in some cases *Lagis koreni* (at G40). Given their depth these have been categorised as **SS.SMu.CSaMu** (Circalittoral sandy mud) and their relationship to shallower, reduced salinity biotopes (such as **SS.SMu.SMuVS.CapTubi**, **SS.SMu.lSaMu.Cap**) or organically enriched deep water biotopes (e.g. **SS.SMu.OMu.CapThy**) is uncertain as they are too deep for the former and nor do they have the extremely high abundances of species such as *Capitella* sp. found in areas with significant organic enrichment. Such areas may be deeper (sea loch) variants of estuarine (reduced salinity) biotopes or subject to mild organic enrichment but given their location and evidence of burrowing megafauna from adjacent habitats it is possible that these stations in Loch Goil are impoverished forms of **SS.SMu.CFiMu.Spnmeg** (Seapens and burrowing megafauna in circalittoral fine mud) although as outlined for the biotopes identified in group m video evidence was used to confirm this as grab sampling underestimates the presence of key species (Moore 2013).

Group u includes stations from deep sandy-mud to the east of Arran and whilst these stations are relatively impoverished in terms of infauna some stations include examples of burrowing megafauna such as *Calocaris macandreae* so have been tentatively designated as **SS.SMu.CFiMu.Spnmeg** (Seapens and burrowing megafauna in circalittoral fine mud).

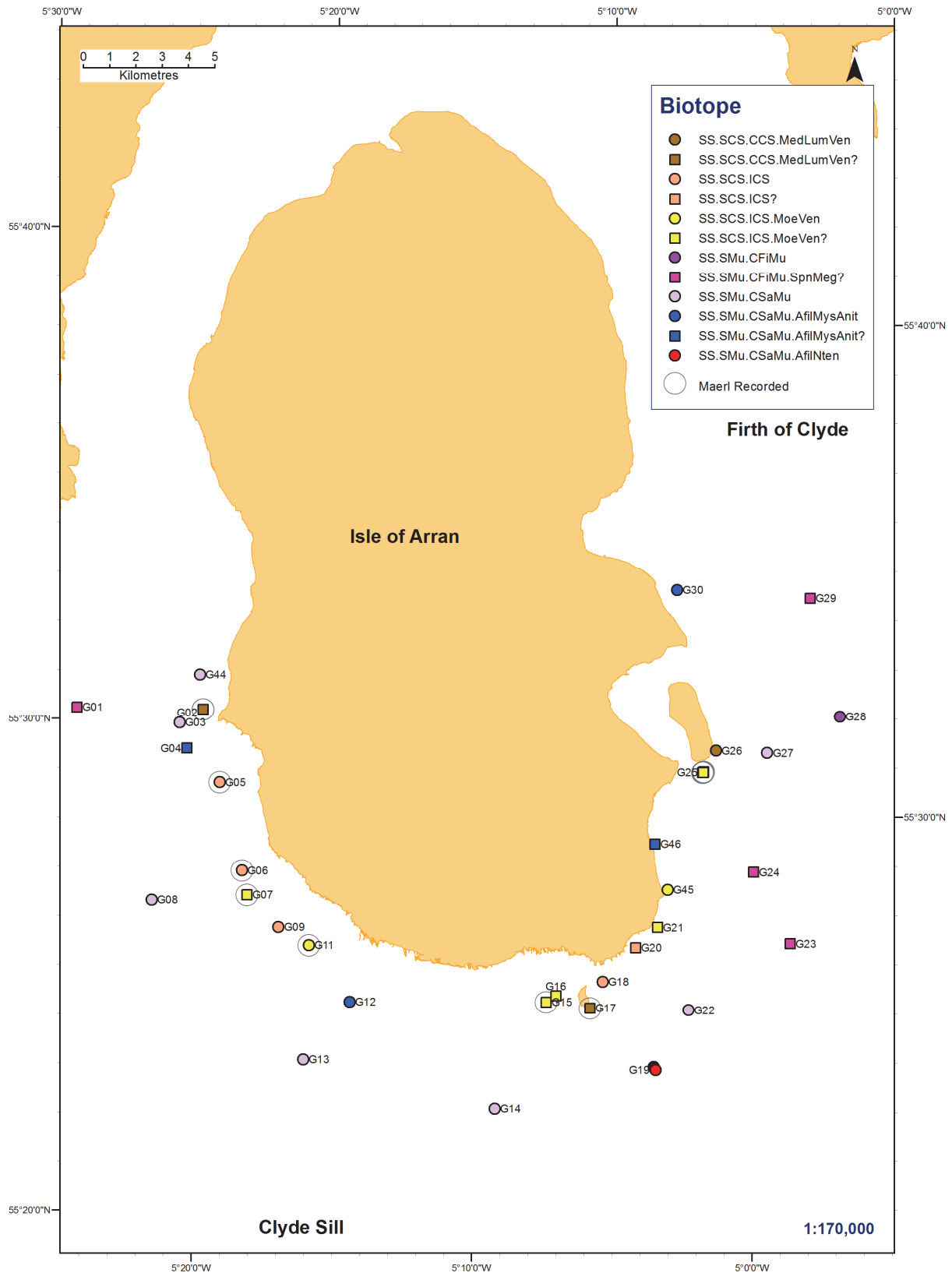


Figure 14. Biotopes at the survey stations around Arran. Reproduced by permission of Ordnance Survey on behalf of HMSO. © Crown copyright and database right [2014]. All rights reserved. Ordnance Survey Licence number 100017908.

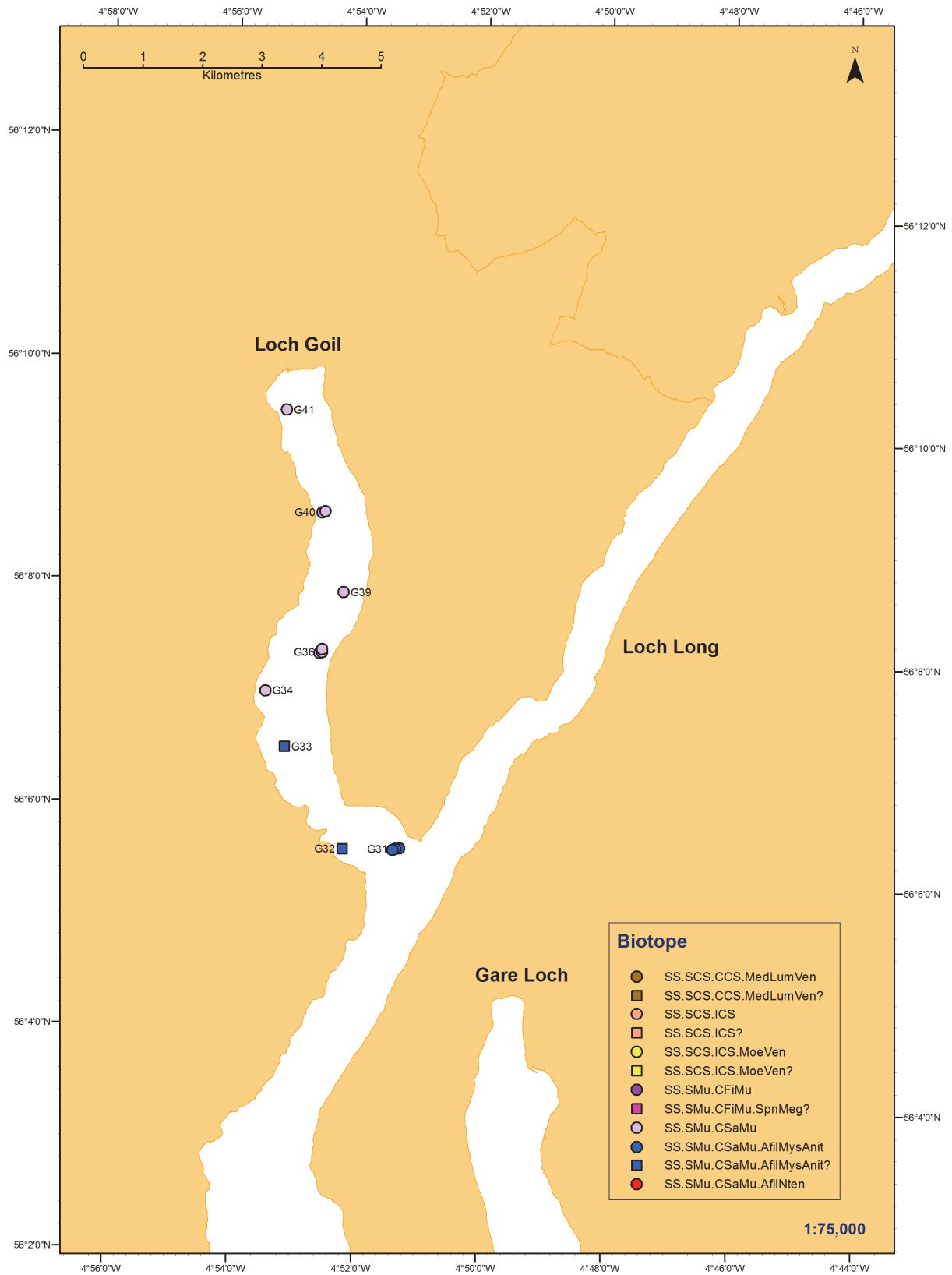


Figure 15. Biotopes at the survey stations in Loch Goil. Reproduced by permission of Ordnance Survey on behalf of HMSO. © Crown copyright and database right [2014]. All rights reserved. Ordnance Survey Licence number 100017908.

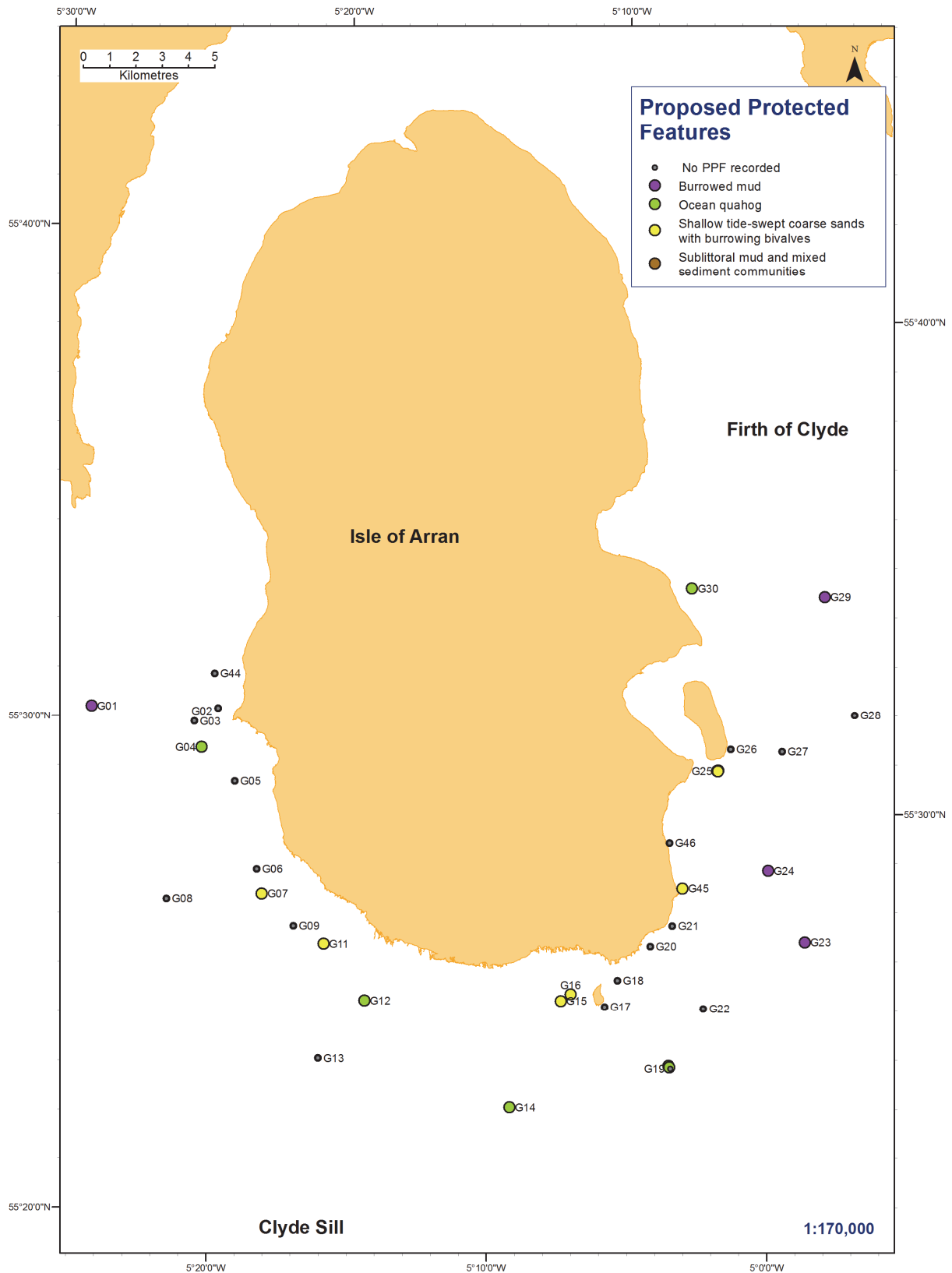


Figure 16. Proposed Protected Features at the survey stations around Arran. Reproduced by permission of Ordnance Survey on behalf of HMSO. © Crown copyright and database right [2014]. All rights reserved. Ordnance Survey Licence number 100017908.

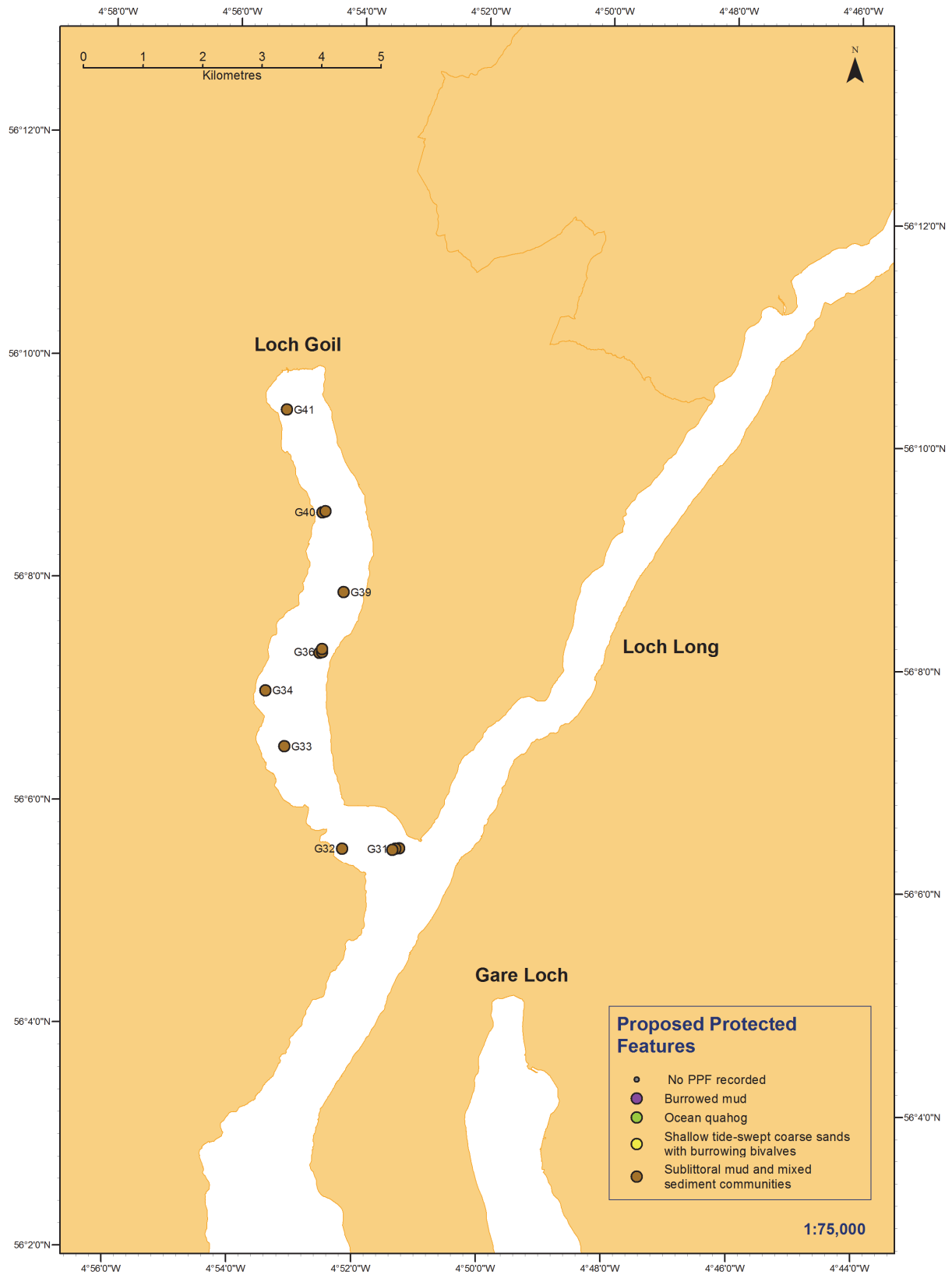


Figure 17. Proposed Protected Features at the survey stations in Loch Goil. Reproduced by permission of Ordnance Survey on behalf of HMSO. © Crown copyright and database right [2014]. All rights reserved. Ordnance Survey Licence number 100017908.

Table 8. Biotopes, sediment descriptions and dominant taxa within cluster groups.

Group	Sample	Biotope	Sediment type	Depth (mCD)	Dominant taxa
a	G28	SS.SMu.CFiMu	Sandy mud	103.7	<i>Dasybranchus</i> sp., <i>Rhodine gracilior</i> , <i>Maera loveni</i>
b	G11	SS.SCS.ICS.MoeVen	Gravelly sand	20.1	Thraciacea sp. (juv.), <i>Dosinia</i> sp. (juv.), Edwardsiidae sp., <i>Owenia fusiformis</i> , <i>Cochlodesma praetenu</i>
	G45	SS.SCS.ICS.MoeVen	Slightly gravelly sand	8.7	<i>Cochlodesma praetenu</i> , <i>Chamelea striatula</i> , <i>Glycera lapidum</i> , <i>Ensis</i> sp. (juv.), Thraciacea sp. (juv.)
c	G07	SS.SCS.ICS.MoeVen?	Sandy gravel	17.5	Nematoda spp., <i>Clausinella fasciata</i> , <i>Gari tellinella</i> , <i>Aonides paucibranchiata</i> , <i>Modiolus</i> sp. (juv.)
	G15	SS.SCS.ICS.MoeVen?	Muddy sandy gravel	19.2	Nematoda spp., <i>Clausinella fasciata</i> , <i>Modiolus</i> sp. (juv.), <i>Atylus vedlomensis</i> , Thraciacea sp. (juv.)
d	G05	SS.SCS.ICS	Sandy gravel	14.6	<i>Gouldia minima</i> , <i>Modiolus</i> sp. (juv.), OPHIURIDA sp. (juv.), <i>Leptochiton asellus</i> , <i>Amphipholis squamatus</i>
e	G09	SS.SCS.ICS	(no PSA data)	14.2	<i>Leptochiton asellus</i> , <i>Mytilus edulis</i> (juv.), <i>Spirobranchus triqueter</i> , <i>Hiatella arctica</i> , <i>Nereimyra punctata</i>
f	G06	SS.SCS.ICS	Gravel	18.6	<i>Leptochiton asellus</i> , <i>Spirobranchus triqueter</i> , <i>Leptochiton cancellatus</i> , <i>Sphaerosyllis taylori</i> , <i>Modiolus</i> sp. (juv.)
	G18	SS.SCS.ICS	Sandy gravel	13.2	<i>Alvania punctata</i> , <i>Spirobranchus triqueter</i> , <i>Leptochiton asellus</i> , <i>Sphaerosyllis taylori</i> , <i>Amphipholis squamatus</i>
g	G26	SS.SCS.CCS.MedLumVen	Muddy sandy gravel	29	<i>Lumbrineris cingulata</i> , <i>Ampharete lindstroemi</i> , <i>Amphictene auricoma</i> , <i>Ampelisca diadema</i> , <i>Goniada maculata</i>
h	G02-1	SS.SCS.CCS.MedLumVen?	Gravelly sand	22.5	<i>Lumbrineris cingulata</i> , <i>Thyasira flexuosa</i> , <i>Aponuphis bilineata</i> , <i>Dosinia</i> sp. (juv.), NEMERTEA spp.
	G02-2	SS.SCS.CCS.MedLumVen?	Muddy sandy gravel	22.5	<i>Lumbrineris cingulata</i> , <i>Owenia fusiformis</i> , <i>Thyasira flexuosa</i> , <i>Aonides oxycephala</i> , <i>Tanaopsis graciloides</i>
	G02-3	SS.SCS.CCS.MedLumVen?	Gravelly sand	22.5	<i>Lumbrineris cingulata</i> , <i>Aponuphis bilineata</i> , Nematoda spp., <i>Glycera lapidum</i> , <i>Moerella donacina</i>

Group	Sample	Biotope	Sediment type	Depth (mCD)	Dominant taxa
i	G16	SS.SCS.ICS.MoeVen?	Gravel	18.2	<i>Owenia fusiformis</i> , <i>Photis longicaudata</i> , <i>Ampelisca diadema</i> , <i>Leptochiton asellus</i> , <i>Spirobranchus triqueter</i>
	G21	SS.SCS.ICS.MoeVen?	Gravelly sand	17	<i>Aponuphis bilineata</i> , <i>Lumbrineris cingulata</i> , <i>Cerianthus lloydii</i> , <i>Mya arenaria</i> (juv.), <i>Ampelisca diadema</i>
j	G20	SS.SCS.ICS?	Gravelly muddy sand	12.3	<i>Urothoe elegans</i> , <i>Aponuphis bilineata</i> , <i>Cerianthus lloydii</i> , <i>Glycera lapidum</i> , <i>Lumbrineris cingulata</i>
k	G17	SS.SCS.CCS.MedLumVen?	Gravelly muddy sand	24.2	<i>Owenia fusiformis</i> , <i>Amphiuridae</i> sp. (juv.), <i>Modiolus</i> sp. (juv.), <i>Cerianthus lloydii</i> , <i>Lumbrineris cingulata</i>
l	G25-1	SS.SCS.ICS.MoeVen?	Gravelly muddy sand	13.4	<i>Aponuphis bilineata</i> , <i>Owenia fusiformis</i> , <i>Moerella donacina</i> , <i>Aonides paucibranchiata</i> , <i>Amphiuridae</i> sp. (juv.)
	G25-2	SS.SCS.ICS.MoeVen?	Gravelly muddy sand	13.4	<i>Lumbrineris cingulata</i> , <i>Phoronis</i> sp., <i>Aponuphis bilineata</i> , <i>Clausinella fasciata</i> , <i>Aonides paucibranchiata</i>
	G25-3	SS.SCS.ICS.MoeVen?	Gravelly sand	13.4	<i>Lumbrineris cingulata</i> , <i>Gouldia minima</i> , <i>Dosinia</i> sp. (juv.), <i>Amphiuridae</i> sp. (juv.), <i>Glycera lapidum</i>
m	G03	SS.SMu.CSaMu	Muddy sand	76.6	<i>Nephtys incisa</i> , NEMERTEA sp., <i>Glycera alba</i> , <i>Spiophanes kroyeri</i> , <i>Notomastus</i> sp.
	G08	SS.SMu.CSaMu	Muddy sand	46.9	<i>Notomastus</i> sp., <i>Nephtys incisa</i> , <i>Cirratulus cirratus</i> , <i>Amphiura chiajei</i> , <i>Thysanocardia procera</i>
	G13	SS.SMu.CSaMu	Muddy sand	45	<i>Notomastus</i> sp., <i>Nucula nitidosa</i> , <i>Kurtiella bidentata</i> , <i>Glycera alba</i> , <i>Glycera rouxii</i>
	G14	SS.SMu.CSaMu	Slightly gravelly muddy sand	54.3	<i>Amphiura filiformis</i> , <i>Amphiuridae</i> sp. (juv.), <i>Edwardsiidae</i> sp., <i>Glycera alba</i> , <i>Glycera rouxii</i>
	G22	SS.SMu.CSaMu	Slightly gravelly Muddy Sand	111.3	<i>Abra nitida</i> , <i>Abra alba</i> , <i>Spiophanes kroyeri</i> , <i>Notomastus</i> sp., <i>Amphiuridae</i> sp. (juv.)
	G27	SS.SMu.CSaMu	Muddy sand	74.3	<i>Abra alba</i> , <i>Nephtys incisa</i> , <i>Abra nitida</i> , <i>Spiophanes kroyeri</i> , <i>Notomastus</i> sp.
	G44	SS.SMu.CSaMu	Slightly gravelly muddy sand	51.5	<i>Turritella communis</i> , <i>Notomastus</i> sp., <i>Thyasira flexuosa</i> , <i>Nucula nitidosa</i> , <i>Nephtys</i> sp. (juv.)

Group	Sample	Biotope	Sediment type	Depth (mCD)	Dominant taxa
n	G31-1	SS.SMu.CSaMu.AfilMysAnit	Sandy mud	53.2	<i>Amphiura filiformis</i> , <i>Nucula nitidosa</i> , <i>Nephtys incisa</i> , <i>Kurtiella bidentata</i> , <i>Caulleriella zetlandica</i>
	G31-2	SS.SMu.CSaMu.AfilMysAnit	Gravelly mud	53.2	<i>Amphiura filiformis</i> , <i>Kurtiella bidentata</i> , <i>Nucula nitidosa</i> , <i>Cylichna cylindracea</i> , <i>Abra alba</i>
	G31-3	SS.SMu.CSaMu.AfilMysAnit	Slightly gravelly sandy mud	53.1	<i>Amphiura filiformis</i> , <i>Kurtiella bidentata</i> , <i>Nucula nitidosa</i> , <i>Pholoe baltica</i> , <i>Chaetozone zetlandica</i>
o	G19-1	SS.SMu.CSaMu.AfilNten	Muddy sand	109.1	<i>Ennucula tenuis</i> , <i>Abra alba</i> , <i>Spiophanes kroyeri</i> , <i>Nucula nitidosa</i> , <i>Ampharete lindstroemi</i>
	G19-2	SS.SMu.CSaMu.AfilNten	Slightly gravelly muddy sand	109.1	<i>Ennucula tenuis</i> , <i>Ampharete lindstroemi</i> , <i>Spiophanes kroyeri</i> , <i>Abra alba</i> , <i>Owenia fusiformis</i>
	G19-3	SS.SMu.CSaMu.AfilNten	Muddy sand	109.2	<i>Spiophanes kroyeri</i> , <i>Abra alba</i> , <i>Euclymene oerstedii</i> , <i>Ennucula tenuis</i> , <i>Abra nitida</i>
p	G04-2	SS.SMu.CSaMu.AfilMysAnit ?	Slightly gravelly muddy sand	41.6	<i>Turritella communis</i> , <i>Amphiura filiformis</i> , <i>Kurtiella bidentata</i> , <i>Diplocirrus glaucus</i> , <i>Amphictene auricoma</i>
	G04-3	SS.SMu.CSaMu.AfilMysAnit ?	Slightly gravelly muddy sand	41.6	<i>Amphiura filiformis</i> , <i>Turritella communis</i> , <i>Amphiuridae</i> sp. (juv.), <i>Owenia fusiformis</i> , <i>NEMERTEA</i> spp.
q	G04-1	SS.SMu.CSaMu.AfilMysAnit ?	Slightly gravelly muddy sand	41.6	<i>Turritella communis</i> , <i>Nucula nitidosa</i> , <i>Amphiura filiformis</i> , <i>NEMERTEA</i> spp., <i>Nephtys</i> sp. (juv.)
	G12	SS.SMu.CSaMu.AfilMysAnit	Slightly gravelly muddy sand	33.8	<i>Owenia fusiformis</i> , <i>Amphiura filiformis</i> , <i>Galathowenia oculata</i> , <i>Kurtiella bidentata</i> , <i>Turritella communis</i>
	G30	SS.SMu.CSaMu.AfilMysAnit	Slightly gravelly muddy sand	34.3	<i>Turritella communis</i> , <i>Amphiura filiformis</i> , <i>Owenia fusiformis</i> , <i>Labidoplax buski</i> , <i>Amphiuridae</i> sp. (juv.)
r	G32	SS.SMu.CSaMu.AfilMysAnit ?	Muddy sandy gravel	13.2	<i>Amphiura filiformis</i> , <i>Melinna palmata</i> , <i>Owenia fusiformis</i> , <i>Phoronis</i> sp., <i>Polydora cornuta</i>
	G33	SS.SMu.CSaMu.AfilMysAnit ?	Slightly gravelly sandy mud	32.2	<i>Amphiura filiformis</i> , <i>Nucula nitidosa</i> , <i>Thyasira flexuosa</i> , <i>Cylichna cylindracea</i> , <i>Labidoplax buski</i>
	G46	SS.SMu.CSaMu.AfilMysAnit ?	Slightly gravelly muddy sand	12.4	<i>Owenia fusiformis</i> , <i>Amphiuridae</i> sp. (juv.), <i>Jasmineira elegans</i> , <i>Thyasira flexuosa</i> , <i>Amphiura filiformis</i>
s	G39	SS.SMu.CSaMu	Muddy sand	77.3	<i>Capitella</i> sp.

Group	Sample	Biotope	Sediment type	Depth (mCD)	Dominant taxa
t	G34	SS.SMu.CSaMu	Slightly gravelly sandy mud	32.3	<i>Abra alba</i> , <i>Glycera alba</i> , <i>Polydora caulleryi</i> , <i>Tubificoides benedii</i> , <i>Capitella</i> sp. <i>Capitella</i> sp., <i>Mediomastus fragilis</i> , <i>Spiophanes kroyeri</i> , <i>Polydora caulleryi</i> , <i>Kurtiella bidentata</i>
	G36-1	SS.SMu.CSaMu	Muddy sand	59.3	<i>Spiophanes kroyeri</i> , <i>Capitella</i> sp., <i>Thyasira flexuosa</i> , Nematoda spp., <i>Ophiodromus flexuosus</i>
	G36-2	SS.SMu.CSaMu	Muddy sand	59.3	<i>Mediomastus fragilis</i> , <i>Spiophanes kroyeri</i> , <i>Polydora caulleryi</i> , <i>Capitella</i> sp., <i>Dodecaceria</i> sp.
	G36-3	SS.SMu.CSaMu	Muddy sand	59.3	<i>Lagis koreni</i> , <i>Tubificoides benedii</i> , <i>Spiophanes kroyeri</i> , <i>Tubificoides pseudogaster</i> , <i>Capitella</i> sp.
	G40-1	SS.SMu.CSaMu	Muddy sand	70.3	<i>Mediomastus fragilis</i> , Nematoda spp., <i>Lagis koreni</i> , <i>Tubificoides benedii</i> , <i>Cerianthus lloydii</i>
	G40-2	SS.SMu.CSaMu	Muddy sand	70.3	<i>Glycera alba</i> , <i>Mediomastus fragilis</i> , <i>Tubificoides benedii</i>
	G40-3	SS.SMu.CSaMu	Muddy sand	70.3	<i>Tubificoides benedii</i> , Nematoda spp., <i>Capitella</i> sp., <i>Tubificoides pseudogaster</i> , <i>Glycera alba</i>
	G41	SS.SMu.CSaMu	Slightly gravelly muddy sand	43.3	
u	G01	SS.SMu.CFiMu.SpnMeg?	Sandy mud	77.4	<i>Calocaris macandreae</i> , Amphiridae sp. (juv.)
	G23	SS.SMu.CFiMu.SpnMeg?	Sandy mud	84.3	<i>Nephtys incisa</i> , <i>Calocaris macandreae</i> , <i>Amphiura chiajei</i> , Porifera sp., <i>Leucosolenia</i> sp.
	G24	SS.SMu.CFiMu.SpnMeg?	Sandy mud	102.5	<i>Polycirrus</i> sp., <i>Abyssoninoe hibernica</i> , <i>Spiophanes kroyeri</i> , <i>Balanus crenatus</i> , <i>Corbula gibba</i>
	G29	SS.SMu.CFiMu.SpnMeg?	Sandy mud	86.3	<i>Nephtys incisa</i> , <i>Abyssoninoe hibernica</i> , <i>Chaetoderma nitidulum</i> , <i>Malmgreniella lunulata</i> , <i>Lysilla loveni</i>

4. DISCUSSION

The sampling stations surveyed in the Clyde Sea area in 2013 covered a range of habitats off Arran and in Loch Goil, including mixed gravelly-sands or sandy-gravels, muddy-sands and sandy-mud or muddy mixed gravelly sediments in water depths ranging from 13 m to 110 m. A large number of taxa were recorded from the survey with 399 taxa identified. Polychaete worms were particularly common along with amphipod crustacea, molluscs (primarily bivalves) and echinoderms. A number of colonial or encrusting taxa such as hydroids, bryozoans, sponges, anemones and ascidians were also recorded occasionally. The most abundant taxa included species such as *Amphiura filiformis*, *Tubificoides benedii*, Nematoda spp., *Owenia fusiformis*, *Lumbrineris cingulata*, *Turritella communis*, *Leptochiton asellus*, Amphiuridae sp. (juv.), *Capitella* sp., *Spiophanes kroyeri*, *Thyasira flexuosa*, *Spirobranchus triqueter*, *Modiolus* sp. (juv.) and *Kurtiella bidentata* although some of these taxa were recorded at relatively few stations. In general the abundance of individual taxa was moderate to low and no species were recorded in exceptionally high numbers. The most widespread taxa included Nemertea spp., Amphiuridae sp. (juv.), *Spiophanes kroyeri*, *Pholoe baltica*, *Owenia fusiformis*, *Thyasira flexuosa*, *Kurtiella bidentata*, *Polycirrus* sp., *Lumbrineris cingulata* and *Mediomastus fragilis*.

Multivariate analysis indicated significant variability across the survey area with a large number of discrete groups derived. However, many of these groups comprised few stations and could be loosely aggregated into broader groups with similar environmental conditions which could be correlated to biotope complexes. An assessment of the main communities in relation to the UK biotope classification (Connor *et al.*, 2004) indicated the presence of a number of biotopes, often in the infralittoral or circalittoral coarse / mixed sediment biotope complexes (**SS.SCS.ICS** or **SS.SCS.CCS**). These included **SS.SCS.CCS.MedLumVen** (*Mediomastus fragilis*, *Lumbrineris* spp. and venerid bivalves in circalittoral coarse sand or gravel) and **SS.SCS.ICS.MoeVen** (*Moerella* spp. with venerid bivalves in infralittoral gravelly sand) with some areas appearing to be intermediate between the two. **SS.SCS.ICS.MoeVen** is a Priority Marine feature (PMF) and a Proposed Protected Feature (PPF) in the South Arran pMPA. These habitats and poorly defined intermediate variants with **SS.SCS.CCS.MedLumVen** tended to include the more diverse stations. Coarse mixed sediment communities is an area of the biotope classification which (along with offshore biotopes) is currently less well defined and subject to an ongoing review by JNCC. As such, examples of these habitats within the Clyde Sea area are likely to be under-reported and would benefit from additional data to improve the knowledge-base of such communities in this region. Many of these communities also included some live maerl and the video survey was used to assess if true maerl beds are present in the area (Moore, 2013).

Other habitats recorded included circalittoral sandy-muds and muddy-sands in deeper water off Arran and in Loch Goil. Some of these included typical *Amphiura* dominated communities such as **SS.SMu.CSaMu.AfilMysAnit** (*Amphiura filiformis*, *Mysella bidentata* and *Abra nitida* in circalittoral sandy mud) or **SS.SMu.CSaMu.AfilNten** (*Amphiura filiformis* and *Nuculoma tenuis* in circalittoral and offshore sandy mud). Others had less diverse infaunal communities which were somewhat variable and difficult to directly correlate to biotope level, but were generally classified as **SS.SMu.CSaMu**. Some of these stations such as G01 and G23 from group u contained burrowing megafauna such as *Calocaris macandreae*, and station G22 (in group m) included one example of *Nephrops norvegicus*, and consequently it is likely that biotopes such as **SS.SMu.CFiMu.SpNMeg** (Seapens and burrowing megafauna in circalittoral fine mud) or **SS.SMu.CFiMu.MegMax** (Burrowing megafauna and *Maxmuelleria lankesteri* in circalittoral mud) are present in these areas. Similar habitats from the 2012 Clyde Sea survey were classified as **SS.SMu.CFiMu.SpNMeg** or in some cases **SS.SMu.CFiMu.MegMax** from video data collected at the same locations (Moore & Atkinson, 2012). Video data is available for a number of stations in this study as well, and reported on separately in Moore (2013).

Overall the stations sampled appear to be representative of deeper sea loch and coastal or offshore sandy-muds and mixed / gravelly habitats off the west coast of Scotland and the majority of species recorded were typical for circalittoral muddy-sands, sandy-muds or gravelly mixed sediments. In general terms there was good correlation between the habitats and communities recorded here and those reported for the 2012 Clyde Sea survey. Whilst examples of PMFs / PPFs such as **SS.SMu.CFiMu.SpnmMeg** and **SS.SCS.ICS.MoeVen** were recorded during the current survey it is likely that the distribution of some of these may be underestimated, particularly those which require video data to quantify (e.g. Seapen and burrowing megafauna communities). The survey area also included eight stations with live maerl (G02, G05, G06, G07, G11, G15, G17 and G25) and the wider spatial relationship between maerl beds and PMFs / PPF's such as **SS.SCS.ICS.MoeVen** would benefit from closer investigation. Other species of interest included the ocean quahog *Arctica islandica* which was present at a number of stations (stations G04-1, G12, G30, G04-03, G14, G19-1 and G19-2).

Species richness and diversity were variable and total abundances tended to be moderate to low but overall the area was relatively diverse. In fact many of the stations around the Arran coast had particularly diverse communities: stations G02, G06, G17 and G18 contained over 80 taxa each, and Shannon diversity indices were exceptionally high with many stations reaching values of H' between 4 and 5.5. As in the 2012 Clyde Sea survey the more diverse areas tended to correspond to coarser mixed sediments although the current survey concentrated more on inshore areas around Arran rather than those from the outer Clyde Sill.

Less diverse areas tended to be in muddier habitats further offshore or in Loch Goil. Stations G01, G23, G24, G28 and G29 off Arran and stations G34, G39, G40 and G41 in Loch Goil had particularly low numbers of taxa (<10 per 0.1 m²). Some of these stations may include biotopes such as **SS.SMu.CFiMu.SpnmMeg** and it is likely that grab sampling will underestimate species richness in such areas although burrowing megafaunal communities with relatively impoverished infauna have been recorded previously in the Clyde area (Allen, 2013). It is uncertain whether these relatively impoverished communities are indicative of moderate disturbance relating to factors such as physical disturbance or variation in water quality (which may be of natural or anthropogenic origin e.g. in relation to fishing activities).

Some stations in Loch Goil included taxa often present in areas subject to reduced salinity or organic enrichment (e.g. *Tubificoides* spp. and *Capitella* sp.) albeit in deep water and with other marine taxa also present. Extremely high abundances of such species have been recorded in estuaries or adjacent to offshore oil installations which have been subject to significant organic enrichment leading to the development of biotopes such as **SS.SMu.ISaMu.Cap** (*Capitella capitata* in enriched sublittoral muddy sediments) or **SS.SMu.OMu.CapThy** (*Capitella capitata* and *Thyasira* spp. in organically-enriched offshore circalittoral mud and sandy mud). Whilst the densities of such taxa were too low to indicate significant organic enrichment in Loch Goil, the reduced diversity in some areas (e.g. site G39 which contained only one *Capitella* specimen) may in part reflect water quality or other environmental factors such as sediment disturbance.

Overall this survey found 34 additional records of PPFs (at 24 survey stations including replicate samples) in the South Arran and the Upper Loch Fyne and Loch Goil possible Nature Conservation MPAs. The findings improve the resolution of data and improve our understanding regarding the extent and distribution of seabed habitats in these areas which could inform future management of these areas in the context of the Scottish MPA Project.

5. REFERENCES

- Allen, J.H. 2013. Infaunal analysis of grab samples collected from the Clyde Sea, in March 2012. *Scottish Natural Heritage Commissioned Report No. 539*. Available from <http://www.snh.org.uk/pdfs/publications/commissioned_reports/539.pdf>
- Clarke, K.R., & Warwick R.M. 2001. *Change in marine communities: an approach to statistical analysis and interpretation, 2nd edition*. PRIMER-E, Plymouth.
- Clarke, K.R. & Gorley, R.N. 2006. *PRIMER v6: User Manual/Tutorial*. PRIMER-E, Plymouth.
- Connor, D.W., Allen, J.H., Golding, N., Howell, K.L., Lieberknecht, L.M., Northen, K.O. & Reker, J.B. 2004. *The National Marine Habitat Classification for Britain and Ireland. Version 04.05*. Joint Nature Conservation Committee, Peterborough. ISBN: 1 861 07561 8 (internet version). Available from <<http://jncc.defra.gov.uk/page-1584>>
- Cooper, K. & Rees, H.L. 2002. Review of Standard Operating Procedures (SOPs). *Sci. Ser., Aquat. Environ. Prot: Analyt. Meth.*, CEFAS Lowestoft, (13) 57pp. Available from <<http://www.cefas.defra.gov.uk/publications/aquatic/aepam13.pdf>>
- Marine Scotland. 2011. Marine Protected Areas in the Seas around Scotland. Guidelines on the selection of MPAs and development of the MPA network. Available from <<http://www.scotland.gov.uk/marinescotland/mpaguidelines>>
- Moore, C.G. & Atkinson, R.J.A. 2012. Biological analyses of underwater video from research cruises in the Clyde Sea, Loch Torridon and the Inner Sound, the North Minch, Loch Eriboll and off Orkney. *Scottish Natural Heritage Commissioned Report No. 536*. Available from <http://www.snh.org.uk/pdfs/publications/commissioned_reports/536.pdf>
- Moore, C. G. 2013. Biological analyses of underwater video from research cruises in the Clyde Sea (Loch Goil and the south of Arran) and in Orkney (Rousay Sound and Stronsay Firth. *Scottish Natural Heritage Commissioned Report No. 631*. Available from <http://www.snh.org.uk/pdfs/publications/commissioned_reports/631.pdf>
- Rees, H.L., Moore, D.C., Pearson, T.H., Elliott, M., Service, M., Pomfret, J. & Johnson, D. 1990. Procedure for the monitoring of marine benthic communities at UK sewage sludge disposal sites. *Scottish Fisheries Information Pamphlet Number 18*. Department of Agriculture and Fisheries for Scotland, Aberdeen. 78 pp. Available from <<http://www.scotland.gov.uk/Uploads/Documents/No%2018.pdf>>
- Rees, H.L. 1999. Review of Standard Operating Procedures for Sampling and Analysis of Benthic Macrofauna. In: *Report of the ICES Benthos Ecology Working Group*. ICES CM 1999/E:1 41-43.
- Scottish Government. 2013. *Planning Scotland's Seas. Consultation on Priority Marine Features*. Available from <<http://www.scotland.gov.uk/Resource/0042/00428389.pdf>>
- Ware, S.J. & Kenny, A.J. 2011. *Guidelines for the Conduct of Benthic Studies at Marine Aggregate Extraction Sites (2nd Edition)*. Marine Aggregate Levy Sustainability Fund, 80 pp. Available from <<http://www.cefas.defra.gov.uk/media/477907/mepf-benthicguidelines.pdf>>
- Warwick, R.M. 1986. A new method for detecting pollution effects on marine macrobenthic communities. *Marine Biology* 92, 557-562.
- WoRMS Editorial Board. 2014. World Register of Marine Species. Available from <<http://www.marinespecies.org>>

Worsfold, T & Hall, D. 2010. *Guidelines for processing marine macrobenthic invertebrate samples: A Processing Requirements Protocol*. NMBAQC. Available from <<http://www.nmbaqcs.org/media/9732/nmbaqc%20-%20inv%20-%20prp%20-%20v1.0%20june2010.pdf>>

ANNEX 1: PROPOSED PROTECTED FEATURES (PPFS) OF THE TWO POSSIBLE NATURE CONSERVATION MPAS COVERED IN THIS REPORT

Possible MPA	Proposed Protected Features (PPF)	Component biotopes (04.05) or species
South Arran	Burrowed mud	SS.SMu.CFiMu.SpnMeg SS.SMu.CFiMu.MegMax <i>Funiculina quadrangularis</i> <i>Pachycerianthus multiplicatus</i>
	Herring spawning grounds	<i>no specific biotope</i>
	Kelp and seaweed communities	SS.SMp.KSwSS
	Maerl beds	SS.SMp.Mrl
	Maerl or coarse shell gravel with burrowing sea cucumbers	SS.SCS.CCS.Nmix
	Ocean quahog (species)	<i>Arctica islandica</i>
	Seagrass beds	LS.LMp.LSgr.Znol SS.SMp.SSgr.Zmar
	Shallow tide-swept coarse sands with burrowing bivalves	SS.SCS.ICS.MoeVen
Upper Loch Fyne and Loch Goil	Burrowed mud	SS.SMu.CFiMu.SpnMeg SS.SMu.CFiMu.MegMax <i>Funiculina quadrangularis</i> <i>Pachycerianthus multiplicatus</i>
	Flame shell beds	SS.SMx.IMx.Lim
	Horse mussel beds	SS.SBR.SMus.ModT SS.SBR.SMus.ModMx SS.SBR.SMus.ModHAs SS.SBR.SMus.ModCvar
	Ocean quahog (species)	<i>Arctica islandica</i>
	Sublittoral mud and mixed sediment communities	SS.SMu.IFiMu[.Ocn] SS.SMu.CSaMu SS.SMu.OMu[.StyPse] SS.SMx.CMx.ClloModHo

ANNEX 2: CHARACTERISTIC TAXA WITHIN THE SIMPROF GROUPS DERIVED FROM CLUSTER ANALYSIS

Group A					
Station	Sediment type	% Gravel	% Sand	% Mud	Depth (m)
G28	Sandy mud	0.00	20.55	79.45	103.7
	Taxa	Abundance	Cum. %		
	<i>Dasybranchus</i> sp.	1	33.33		
	<i>Rhodine gracilior</i>	1	66.67		
	<i>Maera loveni</i>	1	100.00		
Group B (Average similarity: 46.76%)					
Station	Sediment type	% Gravel	% Sand	% Mud	Depth (m)
G11	Gravelly sand	6.18	92.22	1.60	20.1
G45	Slightly gravelly sand	3.74	94.31	1.94	8.7
	Taxa	Av. Abund	% of Sites	Contrib%	Cum.%
	<i>Cochlodesma praetenue</i>	13	100	13.3	13.3
	Thraciacea sp. (juv.)	11.5	100	8.41	21.72
	<i>Owenia fusiformis</i>	6.5	100	7.29	29
	<i>Dosinia</i> sp. (juv.)	10	100	7.29	36.29
	<i>Chamelea striatula</i>	7	100	7.29	43.57
	<i>Glycera lapidum</i>	4	100	5.95	49.52
	<i>Nephtys cirrosa</i>	1	100	4.21	53.73
	<i>Scoloplos armiger</i>	1	100	4.21	57.93
	<i>Caulleriella alata</i>	1	100	4.21	62.14
	<i>Ampelisca brevicornis</i>	1.5	100	4.21	66.35
	<i>Ampelisca diadema</i>	1	100	4.21	70.55
	<i>Bathyporeia pilosa</i>	1.5	100	4.21	74.76
	<i>Phtisica marina</i>	1	100	4.21	78.97
	<i>Moerella donacina</i>	1.5	100	4.21	83.17
	<i>Abra nitida</i>	1	100	4.21	87.38
	<i>Thracia phaseolina</i>	2	100	4.21	91.59
Group C (Average similarity: 43.68%)					
Station	Sediment type	% Gravel	% Sand	% Mud	Depth (m)
G07	Sandy gravel	52.19	43.94	3.88	17.5
G15	Muddy sandy gravel	40.87	49.19	9.94	19.2
	Taxa	Av. Abund	% of Sites	Contrib%	Cum.%
	<i>Nematoda</i> spp.	36	100	13.72	13.72
	<i>Clausinella fasciata</i>	24	100	9.29	23.01
	<i>Modiolus</i> sp. (juv.)	13.5	100	8.4	31.41
	Thraciacea sp. (juv.)	9.5	100	6.86	38.27
	Amphiuridae sp. (juv.)	6.5	100	6.86	45.13
	<i>Aonides paucibranchiata</i>	12.5	100	6.26	51.39
	<i>Gouldia minima</i>	7.5	100	6.26	57.65
	<i>Polycirrus</i> sp.	3.5	100	4.85	62.5
	<i>Gari tellinella</i>	15.5	100	4.85	67.35
	NEMERTEA spp.	3	100	3.96	71.32
	<i>Pisione remota</i>	9	100	3.96	75.28
	<i>Glycera lapidum</i>	5.5	100	3.96	79.24
	<i>Atylus vedlomensis</i>	4	100	3.96	83.2
	Edwardsiidae sp.	1.5	100	2.8	86
	<i>Leucothoe incisa</i>	1	100	2.8	88.8
	<i>Euspira pulchella</i>	1.5	100	2.8	91.6

Group D					
Station	Sediment type	% Gravel	% Sand	% Mud	Depth (m)
G05	Sandy gravel	77.34	22.05	0.61	14.6
	Taxa	Abundance	Cum. %		
	<i>Gouldia minima</i>	31	23.48		
	<i>Modiolus</i> sp. (juv.)	8	29.55		
	OPHIURIDA sp. (juv.)	8	35.61		
	<i>Leptochiton asellus</i>	6	40.15		
	<i>Amphipholis squamatus</i>	6	44.70		
	<i>Echinocyamus pusillus</i>	5	48.48		
	<i>Lepidepecreum longicornis</i>	4	51.52		
	<i>Leptochiton cancellatus</i>	4	54.55		
	Polynoidae sp.	3	56.82		
	<i>Harmothoe impar</i>	3	59.09		
	<i>Pholoe inornata</i>	3	61.36		
	<i>Alvania punctata</i>	3	63.64		
	Thraciacea sp. (juv.)	3	65.91		
	<i>Malmgreniella mcintoshii</i>	2	67.42		
	<i>Nereimyra punctata</i>	2	68.94		
	<i>Trypanosyllis coeliaca</i>	2	70.45		
	<i>Aonides paucibranchiata</i>	2	71.97		
	<i>Spirobranchus triqueter</i>	2	73.48		
	<i>Atylus vedlomensis</i>	2	75.00		
	<i>Animoceradocus semiserratus</i>	2	76.52		
	<i>Parvicardium scabrum</i>	2	78.03		
	<i>Gari tellinella</i>	2	79.55		
	<i>Clausinella fasciata</i>	2	81.06		
	<i>Timoclea ovata</i>	2	82.58		
Group E					
Station	Sediment type	% Gravel	% Sand	% Mud	Depth (m)
G09		-	-	-	14.2
	Taxa	Abundance	Cum. %		
	<i>Leptochiton asellus</i>	42	18.83		
	<i>Mytilus edulis</i> (juv.)	18	26.91		
	<i>Spirobranchus triqueter</i>	16	34.08		
	<i>Hiatella arctica</i>	10	38.57		
	<i>Nereimyra punctata</i>	8	42.15		
	Nematoda spp.	7	45.29		
	<i>Malmgreniella mcintoshii</i>	7	48.43		
	<i>Amphipholis squamatus</i>	6	51.12		
	<i>Leptochiton cancellatus</i>	5	53.36		
	<i>Dosinia</i> sp. (juv.)	5	55.61		
	<i>Echinocyamus pusillus</i>	5	57.85		
	NEMERTEA spp.	4	59.64		
	<i>Pholoe inornata</i>	4	61.43		
	<i>Aonides paucibranchiata</i>	4	63.23		
	<i>Clausinella fasciata</i>	4	65.02		
	Thraciacea sp. (juv.)	4	66.82		
	<i>Laonice bahusiensis</i>	3	68.16		
	<i>Polycirrus</i> sp.	3	69.51		
	<i>Lumbrineris cingulata</i>	3	70.85		
	<i>Pholoe baltica</i>	3	72.20		

Group F (Average similarity: 57.75%)					
Station	Sediment type	% Gravel	% Sand	% Mud	Depth (m)
G06	Gravel	83.62	15.74	0.65	18.6
G18	Sandy gravel	59.51	39.39	1.11	13.2
Taxa		Av. Abund	% of Sites	Contrib%	Cum.%
	<i>Leptochiton asellus</i>	49	100	6.43	6.43
	<i>Spirobranchus triqueter</i>	47	100	6.01	12.44
	<i>Sphaerosyllis taylori</i>	35	100	5.47	17.91
	<i>Modiolus</i> sp. (juv.)	31	100	5.14	23.04
	<i>Nereimyra punctata</i>	25	100	4.19	27.24
	Nematoda spp.	23	100	3.98	31.22
	<i>Alvania punctata</i>	41.5	100	3.87	35.08
	<i>Amphipholis squamatus</i>	25	100	3.87	38.95
	<i>Gouldia minima</i>	15.5	100	3.63	42.58
	Polynoidae sp.	11.5	100	2.97	45.55
	<i>Echinocyamus pusillus</i>	14	100	2.81	48.36
	<i>Leptochiton cancellatus</i>	22.5	100	2.65	51.02
	<i>Malmgreniella mcintoshii</i>	10	100	2.48	53.5
	<i>Pholoe inornata</i>	8.5	100	2.3	55.8
	<i>Aonides paucibranchiata</i>	11.5	100	2.1	57.89
	<i>Lysianassa plumosa</i>	5.5	100	2.1	59.99
	<i>Glycera lapidum</i>	4.5	100	1.88	61.87
	<i>Laonice bahusiensis</i>	5	100	1.88	63.74
	<i>Clausinella fasciata</i>	4.5	100	1.88	65.62
	<i>Hesiospina similis</i>	4.5	100	1.62	67.24
	<i>Jasmineira caudata</i>	3.5	100	1.62	68.87
	<i>Pholoe baltica</i>	4	100	1.62	70.49
	<i>Callipallene brevisrostris</i>	3.5	100	1.62	72.12
	NEMERTEA spp.	3	100	1.33	73.44
	<i>Exogone dispar</i>	9	100	1.33	74.77
	<i>Trypanosyllis coeliaca</i>	4	100	1.33	76.1
	<i>Achelia echinata</i>	3	100	1.33	77.42
	<i>Galathea intermedia</i>	4.5	100	1.33	78.75
	<i>Parvicardium scabrum</i>	2.5	100	1.33	80.08
	<i>Dosinia</i> sp. (juv.)	2.5	100	1.33	81.4
	Thraciacea sp. (juv.)	5.5	100	1.33	82.73
	<i>Phoronis</i> sp.	3.5	100	1.33	84.05
	<i>Cerianthus lloydii</i>	1	100	0.94	84.99
	<i>Nereiphylla rubiginosa</i>	2.5	100	0.94	85.93
	<i>Eurysyllis tuberculata</i>	4.5	100	0.94	86.87
	<i>Nematonereis unicornis</i>	2	100	0.94	87.81
	<i>Scalibregma inflatum</i>	2.5	100	0.94	88.74
	<i>Polycirrus</i> sp.	2.5	100	0.94	89.68
	<i>Chone fauveli</i>	1	100	0.94	90.62

Station	Sediment type	Group G			Depth (m)
		% Gravel	% Sand	% Mud	
G26	Muddy sandy gravel	44.64	38.58	16.78	29
	Taxa	Abundance	Cum. %		
	<i>Lumbrineris cingulata</i>	16	12.90		
	<i>Ampharete lindstroemi</i>	6	17.74		
	<i>Amphictene auricoma</i>	5	21.77		
	<i>Ampelisca diadema</i>	5	25.81		
	<i>Goniada maculata</i>	4	29.03		
	<i>Laonice bahusiensis</i>	4	32.26		
	<i>Owenia fusiformis</i>	4	35.48		
	<i>Ophiocomina nigra</i>	4	38.71		
	NEMERTEA spp.	3	41.13		
	Polynoidae sp.	3	43.55		
	<i>Malmgreniella mcintoshi</i>	3	45.97		
	<i>Nereimyra punctata</i>	3	48.39		
	<i>Aonides oxycephala</i>	3	50.81		
	<i>Spiophanes kroyeri</i>	3	53.23		
	<i>Terebellides stroemi</i>	3	55.65		
	<i>Lepidepecreum longicornis</i>	3	58.06		
	<i>Atylus vedlomensis</i>	3	60.48		
	Amphiuridae sp. (juv.)	3	62.90		
	<i>Pholoe inornata</i>	2	64.52		
	<i>Chaetozone gibber</i>	2	66.13		
	<i>Polycirrus</i> sp.	2	67.74		
	<i>Leptochiton asellus</i>	2	69.35		
	<i>Euspira pulchella</i>	2	70.97		
	Buccinidae sp. (juv.)	2	72.58		
	<i>Timoclea ovata</i>	2	74.19		
	<i>Dosinia exoleta</i>	2	75.81		
	<i>Amphiura chiajei</i>	2	77.42		
	<i>Amphiura filiformis</i>	2	79.03		

Group H (Average similarity: 43.63%)					
Station	Sediment type	% Gravel	% Sand	% Mud	Depth (m)
G02-1	Gravelly sand	16.55	77.90	5.55	22.5
G02-2	Muddy sandy gravel	46.01	43.38	10.61	22.5
G02-3	Gravelly sand	10.75	83.35	5.89	22.5
Taxa		Av. Abund	% of Sites	Contrib%	Cum.%
	<i>Lumbrineris cingulata</i>	43.0	100	11.62	11.62
	<i>Thyasira flexuosa</i>	17.7	100	5.34	16.96
	NEMERTEA spp.	6.3	100	4.51	21.47
	Copepoda sp.	7.3	100	4.35	25.81
	<i>Moerella donacina</i>	7.7	100	4	29.81
	<i>Diplocirrus glaucus</i>	4.3	100	3.81	33.62
	<i>Aponuphis bilineata</i>	10.3	100	3.69	37.3
	<i>Dosinia</i> sp. (juv.)	7.0	100	3.58	40.88
	<i>Pholoe baltica</i>	4.7	100	3.08	43.96
	<i>Glycera alba</i>	4.0	100	3.05	47.01
	<i>Nematonereis unicornis</i>	5.0	100	3.05	50.06
	<i>Owenia fusiformis</i>	10.3	100	3.04	53.11
	<i>Aonides oxycephala</i>	7.3	100	2.64	55.74
	<i>Ampelisca diadema</i>	2.7	100	2.54	58.29
	<i>Glycera lapidum</i>	5.3	100	2.3	60.59
	<i>Atylus vedlomensis</i>	2.3	100	2.3	62.88
	<i>Echinocyamus pusillus</i>	1.7	100	2.3	65.18
	<i>Eumida sanguinea</i>	1.0	100	2.02	67.19
	<i>Goniada maculata</i>	1.7	100	2.02	69.21
	<i>Cylichna cylindracea</i>	2.0	100	2.02	71.23
	<i>Retusa obtusa</i>	1.3	100	2.02	73.24
	Nematoda spp.	8.0	67	1.78	75.02
	<i>Aonides paucibranchiata</i>	3.0	67	1.44	76.46
	<i>Sarsinebalia typhlops</i>	3.0	67	1.44	77.91
	<i>Urothoe elegans</i>	3.0	67	1.44	79.35
	<i>Exogone dispar</i>	3.7	67	1.39	80.74
	<i>Nereimyra punctata</i>	4.0	67	1.08	81.82
	<i>Terebellides stroemi</i>	2.3	67	1.08	82.9
	<i>Orchomene nana</i>	1.3	67	1.02	83.92
	<i>Cerianthus lloydii</i>	1.3	67	0.95	84.87
	<i>Sphaerosyllis taylori</i>	3.7	67	0.95	85.82
	<i>Mediomastus fragilis</i>	1.7	67	0.95	86.77
	<i>Hydroides norvegicus</i>	2.0	67	0.95	87.73
	<i>Polydora caeca</i>	1.7	67	0.88	88.61
	<i>Aphelochaeta</i> sp. A	1.3	67	0.88	89.49
	<i>Tanaopsis graciloides</i>	4.7	67	0.88	90.37

Group I (Average similarity: 46.19%)						
Station	Sediment type	% Gravel	% Sand	% Mud	Depth (m)	
G16	Gravel	97.57	2.37	0.06	18.2	
G21	Gravelly sand	8.57	84.46	6.97	17	
Taxa		Av. Abund	% of Sites	Contrib%	Cum.%	
<i>Owenia fusiformis</i>		10	100	8.05	8.05	
<i>Ampelisca diadema</i>		5.5	100	8.05	16.09	
<i>Mya arenaria</i> (juv.)		5.5	100	7.2	23.29	
<i>Glycera lapidum</i>		3	100	6.23	29.52	
<i>Lumbrineris cingulata</i>		5.5	100	6.23	35.76	
<i>Photis longicaudata</i>		5	100	6.23	41.99	
<i>Moerella donacina</i>		4.5	100	6.23	48.22	
<i>Dosinia</i> sp. (juv.)		3	100	6.23	54.45	
<i>Polycirrus</i> sp.		2	100	5.09	59.54	
<i>Urothoe elegans</i>		2	100	5.09	64.63	
<i>Leptochiton asellus</i>		3.5	100	5.09	69.72	
<i>Euspira pulchella</i>		3	100	5.09	74.81	
<i>Cerianthus lloydii</i>		4	100	3.6	78.41	
NEMERTEA spp.		2	100	3.6	82.01	
<i>Harmothoe extenuata</i>		1	100	3.6	85.61	
<i>Goniada maculata</i>		1.5	100	3.6	89.2	
<i>Mediomastus fragilis</i>		1.5	100	3.6	92.8	

Group J						
Station	Sediment type	% Gravel	% Sand	% Mud	Depth (m)	
G20	Gravelly muddy sand	22.04	69.51	8.45	12.3	
Taxa		Abundance	Cum. %			
<i>Urothoe elegans</i>		9	8.26			
<i>Aponuphis bilineata</i>		7	14.68			
<i>Cerianthus lloydii</i>		6	20.18			
<i>Glycera lapidum</i>		6	25.69			
<i>Lumbrineris cingulata</i>		5	30.28			
<i>Owenia fusiformis</i>		4	33.94			
<i>Pholoe baltica</i>		4	37.61			
<i>Photis longicaudata</i>		4	41.28			
<i>Phoronis</i> sp.		4	44.95			
<i>Mediomastus fragilis</i>		3	47.71			
<i>Praxillella affinis</i>		3	50.46			
<i>Scalibregma inflatum</i>		3	53.21			
<i>Polycirrus</i> sp.		3	55.96			
<i>Jasmineira caudata</i>		3	58.72			
<i>Amphiura chiajei</i>		3	61.47			
Ophiuridae sp. (juv.)		3	64.22			
Edwardsiidae sp.		2	66.06			
NEMERTEA spp.		2	67.89			
<i>Nereimyra punctata</i>		2	69.72			
<i>Chaetozone gibber</i>		2	71.56			
<i>Spirobranchus triqueter</i>		2	73.39			
<i>Timoclea ovata</i>		2	75.23			
<i>Echinocyamus pusillus</i>		2	77.06			

Station	Sediment type	Group K			Depth (m)
		% Gravel	% Sand	% Mud	
G17	Gravelly muddy sand	23.23	68.15	8.62	24.2
	Taxa	Abundance	Cum. %		
	<i>Owenia fusiformis</i>	16	6.96		
	Amphiuridae sp. (juv.)	16	13.91		
	<i>Modiolus</i> sp. (juv.)	13	19.57		
	<i>Cerianthus lloydii</i>	11	24.35		
	<i>Lumbrineris cingulata</i>	11	29.13		
	Ophiuridae sp. (juv.)	9	33.04		
	<i>Spirobranchus triqueter</i>	8	36.52		
	<i>Photis longicaudata</i>	8	40.00		
	Nematoda spp.	7	43.04		
	<i>Pseudoprotella phasma</i>	7	46.09		
	<i>Sphaerosyllis taylori</i>	6	48.70		
	<i>Aonides paucibranchiata</i>	6	51.30		
	NEMERTEA spp.	5	53.48		
	<i>Pholoe inornata</i>	5	55.65		
	<i>Glycera lapidum</i>	4	57.39		
	<i>Gouldia minima</i>	4	59.13		
	<i>Harmothoe extenuata</i>	3	60.43		
	<i>Nereimyra punctata</i>	3	61.74		
	<i>Exogone dispar</i>	3	63.04		
	<i>Trypanosyllis coeliaca</i>	3	64.35		
	<i>Aponuphis bilineata</i>	3	65.65		
	<i>Leodice harassii</i>	3	66.96		
	<i>Polycirrus</i> sp.	3	68.26		
	Sabellidae sp. (juv.)	3	69.57		
	<i>Callipallene brevisrostris</i>	3	70.87		
	Pectinidae sp. (juv.)	3	72.17		
	<i>Clausinella fasciata</i>	3	73.48		
	<i>Dosinia</i> sp. (juv.)	3	74.78		
	<i>Hiatella arctica</i>	3	76.09		
	Thraciacea sp. (juv.)	3	77.39		
	<i>Phoronis</i> sp.	3	78.70		

Group L (Average similarity: 61.71%)					
Station	Sediment type	% Gravel	% Sand	% Mud	Depth (m)
G25-1	Gravelly muddy sand	13.99	73.01	13.01	13.4
G25-2	Gravelly muddy sand	28.88	59.96	11.15	13.4
G25-3	Gravelly sand	23.07	72.52	4.41	13.4
Taxa		Av. Abund	% of Sites	Contrib%	Cum.%
	<i>Aponuphis bilineata</i>	11.3	100	4.78	4.78
	<i>Aonides paucibranchiata</i>	8.0	100	4.29	9.07
	<i>Owenia fusiformis</i>	8.3	100	4.14	13.21
	Amphiuridae sp. (juv.)	7.0	100	4.09	17.3
	<i>Echinocyamus pusillus</i>	6.0	100	3.85	21.15
	<i>Gouldia minima</i>	7.0	100	3.69	24.84
	<i>Clausinella fasciata</i>	7.7	100	3.69	28.53
	<i>Cerianthus lloydii</i>	6.3	100	3.68	32.22
	<i>Photis longicaudata</i>	5.3	100	3.61	35.82
	<i>Dosinia</i> sp. (juv.)	6.0	100	3.59	39.41
	<i>Glycera lapidum</i>	5.3	100	3.48	42.89
	<i>Euspira pulchella</i>	4.0	100	3.34	46.23
	<i>Pholoe baltica</i>	3.3	100	2.89	49.13
	<i>Modiolus</i> sp. (juv.)	4.0	100	2.8	51.92
	<i>Moerella donacina</i>	5.0	100	2.67	54.6
	<i>Lysianassa plumosa</i>	3.0	100	2.55	57.15
	<i>Phoronis</i> sp.	6.7	100	2.54	59.68
	Edwardsiidae sp.	2.7	100	2.36	62.05
	NEMERTEA spp.	2.7	100	2.36	64.41
	<i>Scalibregma inflatum</i>	3.7	100	2.21	66.62
	<i>Amphictene auricoma</i>	2.3	100	2.11	68.73
	<i>Mediomastus fragilis</i>	2.3	100	2.06	70.79
	<i>Thyasira flexuosa</i>	3.3	100	2.06	72.85
	<i>Leptochiton asellus</i>	2.7	100	1.9	74.74
	Ophiuridae sp. (juv.)	2.3	100	1.89	76.63
	<i>Lumbrineris cingulata</i>	9.0	67	1.88	78.51
	<i>Malmgreniella mcintoshi</i>	1.3	100	1.67	80.19
	<i>Spirobranchus triqueter</i>	2.0	100	1.67	81.86
	<i>Timoclea ovata</i>	1.3	100	1.67	83.53
	Thraciacea sp. (juv.)	1.7	100	1.67	85.2
	<i>Diplocirrus stopbowitzi</i>	4.3	67	1.33	86.53
	<i>Sphaerosyllis taylori</i>	3.3	67	1.03	87.56
	<i>Trypanosyllis coeliaca</i>	1.3	67	0.84	88.4
	Pista sp.	1.7	67	0.84	89.25
	Nematoda spp.	2.3	67	0.77	90.02

Group M (Average similarity: 33.57%)					
Station	Sediment type	% Gravel	% Sand	% Mud	Depth (m)
G03	Muddy sand	0.00	52.05	47.95	76.6
G08	Muddy sand	0.00	52.73	47.27	46.9
G13	Muddy sand	0.00	61.54	38.46	45
G14	Slightly gravelly muddy sand	0.40	69.19	30.41	54.3
G22	Slightly gravelly muddy sand	4.35	61.43	34.22	111.3
G27	Muddy sand	0.00	50.14	49.86	74.3
G44	Slightly gravelly muddy sand	0.35	64.42	35.23	51.5
	Taxa	Av. Abund	% of Sites	Contrib%	Cum.%
	<i>Notomastus</i> sp.	4.4	100	20.46	20.46
	<i>Nephtys incisa</i>	2.6	100	17.03	37.5
	<i>Spiophanes kroyeri</i>	2.7	86	11.96	49.46
	<i>Nucula nitidosa</i>	2.4	86	11.94	61.39
	<i>Thyasira flexuosa</i>	1.4	57	4.31	65.7
	<i>Abra nitida</i>	3.6	57	3.89	69.6
	<i>Polycirrus</i> sp.	0.6	57	3.19	72.79
	<i>Turritella communis</i>	2.6	57	3.17	75.96
	<i>Abra alba</i>	2.7	43	2.97	78.93
	<i>Glycera alba</i>	0.9	43	2.78	81.71
	<i>Amphiura chiajei</i>	0.6	43	2.18	83.89
	<i>Glycera rouxii</i>	0.7	43	2.11	86
	NEMERTEA spp.	0.7	43	2.04	88.04
	<i>Nephtys kersivalensis</i>	0.4	43	1.76	89.8
	Amphiuridae sp. (juv.)	1.3	43	1.71	91.5

Group N (Average similarity: 69.78%)					
Station	Sediment type	% Gravel	% Sand	% Mud	Depth (m)
G31-1	Sandy mud	0.00	37.84	62.16	53.2
G31-2	Gravelly mud	9.93	35.13	54.94	53.2
G31-3	Slightly gravelly sandy mud	1.63	38.12	60.25	53.1
	Taxa	Av. Abund	% of Sites	Contrib%	Cum.%
	<i>Amphiura filiformis</i>	86.0	100	42.1	42.1
	<i>Nucula nitidosa</i>	8.7	100	13.32	55.42
	<i>Kurtiella bidentata</i>	12.7	100	12.79	68.21
	<i>Cylichna cylindracea</i>	4.0	100	8.81	77.02
	<i>Nephtys incisa</i>	3.0	100	6.05	83.07
	<i>Abra alba</i>	2.7	100	5.5	88.57
	<i>Thyasira flexuosa</i>	2.0	100	4.83	93.4

Group O (Average similarity: 56.44%)					
Station	Sediment type	% Gravel	% Sand	% Mud	Depth (m)
G19-1	Muddy sand	0.00	79.28	20.72	109.1
G19-2	Slightly gravelly muddy sand	0.14	81.28	18.58	109.1
G19-3	Muddy sand	0.00	67.21	32.79	109.2
Taxa		Av. Abund	% of Sites	Contrib%	Cum.%
<i>Abra alba</i>		10.7	100	9.32	9.32
<i>Spiophanes kroyeri</i>		10.7	100	8.86	18.18
<i>Ennucula tenuis</i>		13.0	100	8.44	26.62
<i>Owenia fusiformis</i>		4.0	100	5.6	32.22
<i>Ampharete lindstroemi</i>		5.7	100	5.21	37.44
<i>Galathowenia oculata</i>		2.3	100	4.35	41.78
<i>Anobothrus gracilis</i>		2.0	100	4.35	46.13
<i>Chaetoderma nitidulum</i>		2.0	100	4.35	50.47
<i>Amphiura filiformis</i>		3.7	100	4.3	54.77
Amphiuridae sp. (juv.)		2.7	100	3.82	58.59
NEMERTEA spp.		2.0	100	3.51	62.1
<i>Kurtiella bidentata</i>		2.0	100	3.51	65.61
<i>Diastylis cornuta</i>		2.7	100	3.5	69.11
<i>Cylichna cylindracea</i>		1.7	100	3.48	72.59
<i>Praxillella affinis</i>		1.0	100	3.07	75.66
<i>Amphictene auricoma</i>		1.3	100	3.07	78.74
<i>Polycirrus</i> sp.		1.0	100	3.07	81.81
<i>Nuculana minuta</i>		1.0	100	3.07	84.88
<i>Abra nitida</i>		3.3	67	2.3	87.18
<i>Euclymene oerstedii</i>		3.7	67	1.72	88.89
<i>Arctica islandica</i>		0.7	67	1.05	89.95
<i>Polydora caeca</i>		0.7	67	1.03	90.98

Group P (Average similarity: 54.6%)					
Station	Sediment type	% Gravel	% Sand	% Mud	Depth (m)
G04-2	Slightly gravelly muddy sand	4.68	61.54	33.78	41.6
G04-3	Slightly gravelly muddy sand	3.78	66.06	30.16	41.6
Taxa		Av. Abund	% of Sites	Contrib%	Cum.%
<i>Turritella communis</i>		46	100	23.28	23.28
<i>Amphiura filiformis</i>		17.5	100	8.9	32.18
<i>Nucula nitidosa</i>		5	100	7.27	39.45
<i>Diplocirrus glaucus</i>		3	100	5.14	44.59
Notomastus sp.		2	100	5.14	49.73
Pholoe baltica		3	100	5.14	54.87
<i>Cylichna cylindracea</i>		2.5	100	5.14	60.01
NEMERTEA spp.		2	100	3.64	63.65
<i>Glycera rouxii</i>		1	100	3.64	67.28
<i>Goniada maculata</i>		1	100	3.64	70.92
<i>Nephtys kersivalensis</i>		1	100	3.64	74.55
<i>Praxillella affinis</i>		2	100	3.64	78.19
<i>Lumbrineris cingulata</i>		1	100	3.64	81.82
<i>Anoplodactylus petiolatus</i>		1.5	100	3.64	85.46
<i>Abludomelita obtusata</i>		1	100	3.64	89.09
<i>Ennucula tenuis</i>		1.5	100	3.64	92.73

Group Q (Average similarity: 54.26%)					
Station	Sediment type	% Gravel	% Sand	% Mud	Depth (m)
G04-1	Slightly gravelly muddy sand	0.21	68.07	31.72	41.6
G12	Slightly gravelly muddy sand	0.13	74.39	25.48	33.8
G30	Slightly gravelly muddy sand	0.57	74.55	24.88	34.3
Taxa		Av. Abund	% of Sites	Contrib%	Cum.%
<i>Amphiura filiformis</i>		36.3	100	12.33	12.33
<i>Owenia fusiformis</i>		35.3	100	9.18	21.52
<i>Turritella communis</i>		38.7	100	8.28	29.8
Amphiuridae sp. (juv.)		16.0	100	4.72	34.52
<i>Praxillella affinis</i>		5.0	100	4.47	38.99
<i>Kurtiella bidentata</i>		7.0	100	3.94	42.93
<i>Spiophanes kroyeri</i>		4.3	100	3.73	46.66
<i>Diplocirrus glaucus</i>		4.0	100	3.12	49.78
<i>Arctica islandica</i>		2.0	100	3.05	52.82
<i>Dosinia</i> sp. (juv.)		3.7	100	2.94	55.76
<i>Cylichna cylindracea</i>		3.3	100	2.84	58.6
<i>Ampelisca diadema</i>		2.7	100	2.73	61.33
NEMERTEA spp.		3.7	100	2.66	63.99
<i>Abludomelita obtusata</i>		2.7	100	2.66	66.65
<i>Thyasira flexuosa</i>		2.3	100	2.48	69.12
<i>Nephtys</i> sp. (juv.)		2.0	100	2.44	71.56
<i>Chaetoderma nitidulum</i>		1.7	100	2.44	74
<i>Ophiodromus flexuosus</i>		1.0	100	2.15	76.15
<i>Terebellides stroemi</i>		1.3	100	2.15	78.31
<i>Pholoe baltica</i>		2.0	100	2.15	80.46
<i>Anoplodactylus petiolatus</i>		2.0	100	2.15	82.61
<i>Tellimya ferruginosa</i>		1.3	100	2.15	84.77
<i>Galathowenia oculata</i>		9.3	67	1.8	86.57
<i>Lumbrineris cingulata</i>		3.0	67	1.35	87.93
<i>Phoronis</i> sp.		3.7	67	1.18	89.11
<i>Glycera rouxii</i>		1.7	67	1.1	90.21

Group R (Average similarity: 40.37%)						
Station	Sediment type	% Gravel	% Sand	% Mud	Depth (m)	
G32	Muddy sandy gravel	31.22	46.94	21.84	13.2	
G33	Slightly gravelly sandy mud	1.58	41.17	57.24	32.2	
G46	Slightly gravelly muddy sand	1.21	87.25	11.54	12.4	
Taxa		Av. Abund	% of Sites	Contrib%	Cum. %	
<i>Amphiura filiformis</i>		29.7	100	13.3	13.3	
<i>Thyasira flexuosa</i>		15.0	100	10.28	23.58	
<i>Kurtiella bidentata</i>		7.0	100	7.05	30.63	
NEMERTEA spp.		7.3	100	6.27	36.9	
<i>Pholoe baltica</i>		5.0	100	4.95	41.85	
<i>Phoronis</i> sp.		9.7	100	4.93	46.78	
<i>Nucula nitidosa</i>		11.3	100	4.75	51.53	
<i>Prionospio fallax</i>		3.7	100	4.13	55.66	
<i>Owenia fusiformis</i>		14.7	67	4.12	59.78	
<i>Praxillella affinis</i>		4.3	100	4.08	63.87	
<i>Cylichna cylindracea</i>		6.7	100	3.81	67.67	
<i>Melinna palmata</i>		11.3	100	3.75	71.42	
<i>Galathowenia oculata</i>		4.0	100	3.48	74.9	
<i>Scoloplos armiger</i>		2.3	100	3.05	77.95	
<i>Diplocirrus glaucus</i>		3.7	100	3.05	81	
<i>Spiophanes kroyeri</i>		7.0	67	2.91	83.91	
<i>Mediomastus fragilis</i>		1.3	67	1.53	85.44	
<i>Amphiura chiajei</i>		2.3	67	1.53	86.96	
<i>Eteone longa</i>		2.7	67	1.34	88.3	
<i>Notomastus</i> sp.		2.3	67	1.34	89.64	
<i>Thracia phaseolina</i>		2.3	67	1.34	90.97	

Group S						
Station	Sediment type	% Gravel	% Sand	% Mud	Depth (m)	
G39	Muddy sand	0.00	55.93	44.07	77.3	
Taxa		Abundance	Cum. %			
<i>Capitella</i> sp.		1	100			

Group T (Average similarity: 25.29%)					
Station	Sediment type	% Gravel	% Sand	% Mud	Depth (m)
G34	Slightly gravelly sandy mud	1.16	47.72	51.12	32.3
G36-1	Muddy sand	0.00	63.31	36.69	59.3
G36-2	Muddy sand	0.00	57.76	42.24	59.3
G36-3	Muddy sand	0.00	52.44	47.56	59.3
G40-1	Muddy sand	0.00	54.92	45.08	70.3
G40-2	Muddy sand	0.00	56.82	43.18	70.3
G40-3	Muddy sand	0.00	52.59	47.41	70.3
G41	Slightly gravelly muddy sand	0.74	50.41	48.85	43.3
	Taxa	Av. Abund	% of Sites	Contrib%	Cum.%
	<i>Mediomastus fragilis</i>	5.8	75	18.49	18.49
	<i>Glycera alba</i>	1.3	88	17.42	35.9
	<i>Capitella</i> sp.	19.9	75	15.6	51.5
	<i>Tubificoides benedii</i>	50.5	63	14.59	66.1
	<i>Lagis koreni</i>	2.0	63	9.08	75.18
	<i>Spiophanes kroyeri</i>	5.3	50	8.03	83.2
	Nematoda spp.	19.1	50	4.9	88.1
	<i>Polydora caulleryi</i>	2.8	38	3.46	91.57

Group U (Average similarity: 14.38%)					
Station	Sediment type	% Gravel	% Sand	% Mud	Depth (m)
G01	Sandy mud	0.00	18.42	81.58	77.4
G23	Sandy mud	0.00	36.29	63.71	84.3
G24	Sandy mud	0.00	30.15	69.85	102.5
G29	Sandy mud	0.00	25.31	74.69	86.3
	Taxa	Av. Abund	% of Sites	Contrib%	Cum.%
	<i>Calocaris macandreae</i>	0.75	50	44.21	44.21
	<i>Nephtys incisa</i>	2	50	24.24	68.45
	<i>Abyssoninoe hibernica</i>	0.75	50	15.77	84.23
	<i>Balanus crenatus</i>	0.5	50	15.77	100

ANNEX 3: SEDIMENT PARTICLE SIZE ANALYSES DATA

SAMPLE	PARAMETER	G01	G02-1	G02-2	G02-3	G03	G04-1	G04-2	G04-3
SAMPLE TYPE:		Unimodal, Poorly Sorted	Bimodal, Poorly Sorted	Bimodal, Very Poorly Sorted	Unimodal, Poorly Sorted	Bimodal, Very Poorly Sorted	Bimodal, Very Poorly Sorted	Trimodal, Very Poorly Sorted	Bimodal, Very Poorly Sorted
TEXTURAL GROUP:		Sandy Mud	Gravelly Sand	Muddy Sandy Gravel	Gravelly Sand	Muddy Sand	Slightly Gravelly Muddy Sand	Slightly Gravelly Muddy Sand	Slightly Gravelly Muddy Sand
SEDIMENT NAME:		Very Fine Sandy Coarse Silt	Very Fine Gravelly Very Coarse Sand	Medium Silty Sandy Very Fine Gravel	Very Fine Gravelly Very Coarse Sand	Medium Silty Fine Sand	Slightly Very Fine Gravelly Medium Silty Fine Sand	Slightly Medium Gravelly Medium Silty Fine Sand	Slightly Medium Gravelly Medium Silty Fine Sand
FOLK AND WARD METHOD (μm)	MEDIAN GRAIN SIZE D_{50} (μm)	18.5	126.7	1796.5	1179.1	68.2	123.77	16.9	127.87
	MEAN GRAIN SIZE (μm)	19.76	733.84	978.0	756.5	47.6	66.71	69.3	72.6
	SORTING	3.489	3.823	6.171	3.434	4.220	4.104	5.292	4.24
	SKEWNESS	0.122	-0.495	-0.572	-0.613	-0.329	-0.584	-0.311	-0.508
	KURTOSIS	0.950	1042	1006	1356	0.734	0.813	1041	0.939
FOLK AND WARD METHOD (ϕ)	MEDIAN GRAIN SIZE D_{50} (ϕ):	5.756	-0.172	-0.845	-0.238	3.873	3.014	3.109	2.967
	MEAN GRAIN SIZE (ϕ):	5.661	0.446	0.032	0.403	4.393	3.906	3.851	3.784
	SORTING	1.803	1.935	2.625	1.780	2.077	2.037	2.404	2.082
	SKEWNESS	-0.122	0.495	0.572	0.613	0.329	0.584	0.311	0.508
	KURTOSIS	0.950	1042	1006	1356	0.734	0.813	1041	0.939
FOLK AND WARD METHOD (Description)	MEAN:	Coarse Silt	Coarse Sand	Coarse Sand	Coarse Sand	Very Coarse Silt	Very Fine Sand	Very Fine Sand	Very Fine Sand
	SORTING:	Poorly Sorted	Poorly Sorted	Very Poorly Sorted	Poorly Sorted	Very Poorly Sorted	Very Poorly Sorted	Very Poorly Sorted	Very Poorly Sorted
	SKEWNESS:	Coarse Skewed	Very Fine Skewed	Very Fine Skewed	Very Fine Skewed	Very Fine Skewed	Very Fine Skewed	Very Fine Skewed	Very Fine Skewed
	KURTOSIS:	Mesokurtic	Mesokurtic	Mesokurtic	Leptokurtic	Platykurtic	Platykurtic	Mesokurtic	Mesokurtic
BULK GRAIN SIZE	% GRAVEL:	0.00	16.55	46.01	10.75	0.00	0.21	4.68	3.78
	% SAND:	18.42	77.90	43.38	83.35	52.05	68.07	61.54	66.06
	% MUD:	81.58	5.55	10.61	5.89	47.95	31.72	33.78	30.16
	% V COARSE GRAVEL:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	% COARSE GRAVEL:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	% MEDIUM GRAVEL:	0.00	0.30	2.10	1.21	0.00	0.00	2.96	1.78
	% FINE GRAVEL:	0.00	4.55	14.13	1.54	0.00	0.03	1.61	1.78
	% V FINE GRAVEL:	0.00	11.71	29.78	8.01	0.00	0.18	0.12	0.21
	% V COARSE SAND:	0.00	43.90	21.69	57.66	0.00	0.33	0.82	0.43
	% COARSE SAND:	0.33	3.40	1.67	4.42	0.05	0.03	0.79	0.10
	% MEDIUM SAND:	2.88	11.22	5.34	7.83	7.88	10.41	11.33	11.22
	% FINE SAND:	5.65	15.08	9.76	9.89	24.38	38.63	29.62	35.71
	% V FINE SAND:	9.55	4.31	4.92	3.55	19.74	18.67	18.98	18.61
	% V COARSE SILT:	16.24	0.66	1.81	0.85	10.11	3.61	5.32	4.27
	% COARSE SILT:	20.45	1.31	2.42	1.22	10.80	7.23	7.60	6.94
	% MEDIUM SILT:	20.41	1.46	2.67	1.48	11.80	8.82	9.03	8.11
	% FINE SILT:	17.55	1.50	2.58	1.60	10.86	8.57	8.42	7.77
% V FINE SILT:	6.69	0.61	1.08	0.71	4.21	3.36	3.27	2.98	
% CLAY:	0.25	0.01	0.05	0.04	0.16	0.13	0.13	0.08	

SAMPLE	PARAMETER	G05	G06	G07	G08	G11	G12	G13	G14
SAMPLE TYPE:		Bimodal, Poorly Sorted	Bimodal, Poorly Sorted	Unimodal, Poorly Sorted	Bimodal, Very Poorly Sorted	Unimodal, Poorly Sorted	Bimodal, Very Poorly Sorted	Bimodal, Very Poorly Sorted	Trimodal, Very Poorly Sorted
TEXTURAL GROUP:		Sandy Gravel	Gravel	Sandy Gravel	Muddy Sand	Gravelly Sand	Slightly Gravelly Muddy Sand	Muddy Sand	Slightly Gravelly Muddy Sand
SEDIMENT NAME:		Sandy Very Fine Gravel	Very Fine Gravel	Sandy Very Fine Gravel	Very Coarse Silty Fine Sand	Medium Gravelly Medium Sand	Slightly Very Fine Gravelly Fine Silty Fine Sand	Medium Silty Fine Sand	Slightly Very Fine Gravelly Fine Silty Fine Sand
FOLK AND WARD METHOD (μm)	MEDIAN GRAIN SIZE D_{50} (μm)	3039.3	4063.5	2055.3	69.2	282.69	187.3	100.48	136.62
	MEAN GRAIN SIZE (μm)	5515.1	4367.4	2445.7	49.4	30128	94.00	60.24	76.24
	SORTING	3.531	2.175	2.227	4.184	2.089	4.550	4.215	4.005
	SKEWNESS	0.546	0.080	-0.165	-0.316	0.324	-0.618	-0.476	-0.584
	KURTOSIS	1.727	0.774	2.563	0.781	1.662	1.114	0.793	0.924
FOLK AND WARD METHOD (ϕ)	MEDIAN GRAIN SIZE D_{50} (ϕ):	-1.604	-2.023	-1.039	3.853	1.823	2.416	3.315	2.872
	MEAN GRAIN SIZE (ϕ):	-2.463	-2.127	-1.101	4.339	1.731	3.411	4.053	3.713
	SORTING	1.820	1.121	1.155	2.065	1.063	2.186	2.075	2.002
	SKEWNESS	-0.546	-0.080	0.165	0.316	-0.324	0.618	0.476	0.584
	KURTOSIS	1.727	0.774	2.563	0.781	1.662	1.114	0.793	0.924
FOLK AND WARD METHOD (Description)	MEAN:	Fine Gravel	Fine Gravel	Very Fine Gravel	Very Coarse Silt	Medium Sand	Very Fine Sand	Very Coarse Silt	Very Fine Sand
	SORTING:	Poorly Sorted	Poorly Sorted	Poorly Sorted	Very Poorly	Poorly Sorted	Very Poorly	Very Poorly	Very Poorly
	SKEWNESS:	Very Coarse Skewed	Symmetrical	Fine Skewed	Very Fine Skewed	Very Coarse Skewed	Very Fine Skewed	Very Fine Skewed	Very Fine Skewed
	KURTOSIS:	Very Leptokurtic	Platykurtic	Very Leptokurtic	Platykurtic	Very Leptokurtic	Leptokurtic	Platykurtic	Mesokurtic
BULK GRAIN SIZE	% GRAVEL:	77.34	83.62	52.19	0.00	6.18	0.13	0.00	0.40
	% SAND:	22.05	15.74	43.94	52.73	92.22	74.39	61.54	69.19
	% MUD:	0.61	0.65	3.88	47.27	1.60	25.48	38.46	30.41
	% V COARSE GRAVEL:	16.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	% COARSE GRAVEL:	0.75	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	% MEDIUM GRAVEL:	1.13	27.91	0.68	0.00	2.69	0.00	0.00	0.00
	% FINE GRAVEL:	12.05	22.76	9.47	0.00	1.14	0.00	0.00	0.06
	% V FINE GRAVEL:	47.20	32.95	42.03	0.00	2.34	0.13	0.00	0.33
	% V COARSE SAND:	21.00	14.48	42.21	0.00	4.64	0.18	0.00	0.52
	% COARSE SAND:	0.33	0.68	0.00	0.06	6.51	2.49	0.03	0.01
	% MEDIUM SAND:	0.38	0.35	0.00	8.81	42.02	30.45	11.32	14.94
	% FINE SAND:	0.24	0.15	0.65	23.30	37.08	33.60	30.93	38.97
	% V FINE SAND:	0.10	0.08	1.07	20.56	1.97	7.67	19.26	14.75
	% V COARSE SILT:	0.11	0.10	0.84	13.17	0.00	2.76	8.09	5.61
	% COARSE SILT:	0.16	0.16	0.88	9.47	0.33	5.00	8.11	6.97
	% MEDIUM SILT:	0.17	0.19	0.72	10.41	0.59	7.04	9.24	7.23
% FINE SILT:	0.13	0.15	0.73	10.12	0.58	7.45	9.17	7.42	
% V FINE SILT:	0.04	0.05	0.54	3.94	0.09	3.09	3.70	3.05	
% CLAY:	0.00	0.00	0.16	0.16	0.00	0.15	0.16	0.14	

SAMPLE	PARAMETER	G15	G16	G17	G18	G19-1	G19-2	G19-3	G20
SAMPLE TYPE:		Bimodal, Poorly Sorted	Unimodal, Moderately Well Sorted	Trimodal, Very Poorly Sorted	Unimodal, Moderately Sorted	Bimodal, Poorly Sorted	Unimodal, Poorly Sorted	Bimodal, Very Poorly Sorted	Trimodal, Very Poorly Sorted
TEXTURAL GROUP:		Muddy Sandy Gravel	Gravel	Gravelly Muddy Sand	Sandy Gravel	Muddy Sand	Slightly Gravelly Muddy Sand	Muddy Sand	Gravelly Muddy Sand
SEDIMENT NAME:		Very Coarse Silty Sandy Very Fine Gravel	Very Coarse Gravel	Very Fine Gravelly Fine Silty Very Coarse Sand	Sandy Very Fine Gravel	Fine Silty Fine Sand	Slightly Very Fine Gravelly Fine Silty Fine Sand	Fine Silty Fine Sand	Very Fine Gravelly Fine Silty Medium Sand
FOLK AND WARD METHOD (μm)	MEDIAN GRAIN SIZE D_{50} (μm)	179103	52388.95	1015.2	2252.2	146.8	166.8	122.8	403.4
	MEAN GRAIN SIZE (μm)	1952.54	52388.95	753.242	2395.979	91844	110.499	64.121	575.584
	SORTING	3.761	1580	5.314	1727	3.843	3.530	4.419	6.150
	SKEWNESS	-0.153	-0.436	-0.360	0.205	-0.535	-0.553	-0.572	0.160
	KURTOSIS	3.614	5.791	1.330	1.127	1.748	1.907	0.786	1.313
FOLK AND WARD METHOD (ϕ)	MEDIAN GRAIN SIZE D_{50} (ϕ):	-0.841	-5.711	-0.022	-1.171	2.768	2.584	3.026	1.310
	MEAN GRAIN SIZE (ϕ):	-0.965	-5.711	0.409	-1.261	3.445	3.178	3.963	0.797
	SORTING	1911	0.660	2.410	0.788	1942	1820	2.144	2.621
	SKEWNESS	0.153	0.436	0.360	-0.205	0.535	0.553	0.572	-0.160
	KURTOSIS	3.614	5.791	1.330	1.127	1.748	1.907	0.786	1.313
FOLK AND WARD METHOD (Description)	MEAN:	Very Coarse Sand	Very Coarse Gravel	Coarse Sand	Very Fine Gravel	Very Fine Sand	Very Fine Sand	Very Fine Sand	Coarse Sand
	SORTING:	Poorly Sorted	Moderately Well Sorted	Very Poorly Sorted	Moderately Sorted	Poorly Sorted	Poorly Sorted	Very Poorly Sorted	Very Poorly Sorted
	SKEWNESS:	Fine Skewed	Very Fine Skewed	Very Fine Skewed	Coarse Skewed	Very Fine Skewed	Very Fine Skewed	Very Fine Skewed	Coarse Skewed
	KURTOSIS:	Extremely Leptokurtic	Extremely Leptokurtic	Leptokurtic	Leptokurtic	Very Leptokurtic	Very Leptokurtic	Platykurtic	Leptokurtic
BULK GRAIN SIZE	% GRAVEL:	40.87	97.57	23.23	59.51	0.00	0.14	0.00	22.04
	% SAND:	49.19	2.37	68.15	39.39	79.28	81.28	67.21	69.51
	% MUD:	9.94	0.06	8.62	1.11	20.72	18.58	32.79	8.45
	% V COARSE GRAVEL:	0.00	91.21	0.00	0.00	0.00	0.00	0.00	0.00
	% COARSE GRAVEL:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.67
	% MEDIUM GRAVEL:	8.29	1.86	3.34	3.83	0.00	0.00	0.00	5.17
	% FINE GRAVEL:	6.83	2.36	6.67	12.93	0.00	0.01	0.00	6.14
	% V FINE GRAVEL:	25.75	2.13	13.22	42.75	0.00	0.13	0.00	8.06
	% V COARSE SAND:	47.07	1.99	27.40	37.23	0.00	0.27	0.02	10.67
	% COARSE SAND:	0.00	0.06	11.32	0.81	1.44	0.65	0.27	10.96
	% MEDIUM SAND:	0.00	0.17	14.38	0.66	18.47	23.31	13.22	22.86
	% FINE SAND:	0.02	0.13	11.00	0.39	39.51	42.19	35.84	20.57
	% V FINE SAND:	2.10	0.02	4.06	4.29	19.86	14.85	17.87	4.45
	% V COARSE SILT:	2.72	0.01	10.4	0.23	2.05	1.89	3.93	0.95
	% COARSE SILT:	1.51	0.01	1.63	0.27	3.88	3.62	6.26	1.85
	% MEDIUM SILT:	1.89	0.02	2.40	0.28	5.12	4.62	8.50	2.35
	% FINE SILT:	1.86	0.02	2.54	0.23	6.28	5.65	9.56	2.38
% V FINE SILT:	1.42	0.01	0.99	0.09	3.16	2.65	4.30	0.91	
% CLAY:	0.54	0.00	0.02	0.00	0.22	0.15	0.23	0.01	

SAMPLE	PARAMETER	G21	G22	G23	G24	G25-1	G25-2	G25-3	G26
SAMPLE TYPE:		Trimodal, Poorly Sorted	Bimodal, Very Poorly Sorted	Bimodal, Very Poorly Sorted	Bimodal, Very Poorly Sorted	Bimodal, Very Poorly Sorted	Bimodal, Very Poorly Sorted	Unimodal, Poorly Sorted	Polymodal, Very Poorly Sorted
TEXTURAL GROUP:		Gravelly Sand	Slightly Gravelly Muddy Sand	Sandy Mud	Sandy Mud	Gravelly Muddy Sand	Gravelly Muddy Sand	Gravelly Sand	Muddy Sandy Gravel
SEDIMENT NAME:		Very Fine Gravelly Medium Sand	Slightly Very Fine Gravelly Fine Silty Fine Sand	Fine Sandy Very Coarse Silt	Very Fine Sandy Medium Silt	Very Fine Gravelly Fine Silty Very Coarse Sand	Very Fine Gravelly Medium Silty Very Coarse Sand	Very Fine Gravelly Very Coarse Sand	Medium Silty Sandy Very Fine Gravel
FOLK AND WARD METHOD (μm)	MEDIAN GRAIN SIZE $D_{50}(\mu\text{m})$	450.24	117.6	33.8	24.3	900.04	1411.54	1491.28	1622.5
	MEAN GRAIN SIZE (μm)	502.60	74.355	33.870	29.974	593.03	802.06	1160.41	816.668
	SORTING	3.209	5.903	4.268	4.747	4.875	5.063	2.580	9.908
	SKEWNESS	-0.023	-0.251	-0.007	0.189	-0.538	-0.620	-0.527	-0.459
	KURTOSIS	1936	1048	0.763	0.864	1336	1.195	2.237	0.928
FOLK AND WARD METHOD (ϕ)	MEDIAN GRAIN SIZE $D_{50}(\phi)$:	1.151	3.088	4.887	5.360	0.152	-0.497	-0.577	-0.698
	MEAN GRAIN SIZE (ϕ):	0.993	3.749	4.884	5.060	0.754	0.318	-0.215	0.292
	SORTING	1682	2.562	2.093	2.247	2.285	2.340	1368	3.309
	SKEWNESS	0.023	0.251	0.007	-0.189	0.538	0.620	0.527	0.459
	KURTOSIS	1936	1048	0.763	0.864	1336	1.195	2.237	0.928
FOLK AND WARD METHOD (Description)	MEAN:	Coarse Sand	Very Fine Sand	Very Coarse Silt	Coarse Silt	Coarse Sand	Coarse Sand	Very Coarse Sand	Coarse Sand
	SORTING:	Poorly Sorted	Very Poorly Sorted	Very Poorly Sorted	Very Poorly Sorted	Very Poorly Sorted	Very Poorly Sorted	Poorly Sorted	Very Poorly Sorted
	SKEWNESS:	Symmetrical	Fine Skewed	Symmetrical	Coarse Skewed	Very Fine Skewed	Very Fine Skewed	Very Fine Skewed	Very Fine Skewed
	KURTOSIS:	Very Leptokurtic	Mesokurtic	Platykurtic	Platykurtic	Leptokurtic	Leptokurtic	Very Leptokurtic	Mesokurtic
BULK GRAIN SIZE	% GRAVEL:	8.57	4.35	0.00	0.00	13.99	28.88	23.07	44.64
	% SAND:	84.46	61.43	36.29	30.15	73.01	59.96	72.52	38.58
	% MUD:	6.97	34.22	63.71	69.85	13.01	11.15	4.41	16.78
	% V COARSE GRAVEL:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	% COARSE GRAVEL:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	% MEDIUM GRAVEL:	0.36	1.63	0.00	0.00	0.00	2.82	1.02	11.52
	% FINE GRAVEL:	1.23	0.84	0.00	0.00	0.91	2.14	0.86	11.84
	% V FINE GRAVEL:	6.98	1.88	0.00	0.00	13.07	23.92	21.19	21.28
	% V COARSE SAND:	11.99	3.21	0.00	0.00	34.11	31.32	52.93	14.32
	% COARSE SAND:	23.01	2.01	0.02	2.58	14.08	5.89	6.93	4.47
	% MEDIUM SAND:	37.78	13.92	6.94	9.30	14.57	10.68	7.15	6.01
	% FINE SAND:	10.13	24.58	15.44	8.10	7.02	8.68	3.92	7.86
	% V FINE SAND:	15.5	17.71	13.89	10.17	3.21	3.40	1.59	5.93
	% V COARSE SILT:	142	6.45	15.52	13.91	2.03	1.87	0.81	3.30
	% COARSE SILT:	137	6.90	15.43	17.04	2.39	2.47	10.1	3.82
	% MEDIUM SILT:	191	8.47	14.32	17.57	3.48	3.07	12.1	4.27
	% FINE SILT:	166	8.51	12.96	15.17	3.57	2.74	10.2	3.86
% V FINE SILT:	0.61	3.70	5.25	5.90	1.48	1.00	0.36	1.48	
% CLAY:	0.00	0.19	0.23	0.25	0.06	0.02	0.00	0.05	

SAMPLE	PARAMETER	G27	G28	G29	G30	G31-1	G31-2	G31-3	G32
SAMPLE TYPE:		Bimodal, Poorly Sorted	Bimodal, Very Poorly Sorted	Unimodal, Very Poorly Sorted	Bimodal, Poorly Sorted	Bimodal, Poorly Sorted	Trimodal, Very Poorly Sorted	Bimodal, Very Poorly Sorted	Trimodal, Very Poorly Sorted
TEXTURAL GROUP:		Muddy Sand	Sandy Mud	Sandy Mud	Slightly Gravelly Muddy Sand	Sandy Mud	Gravelly Mud	Slightly Gravelly Sandy Mud	Muddy Sandy Gravel
SEDIMENT NAME:		Very Coarse Silty Very Fine Sand	Medium Sandy Medium Silt	Very Fine Sandy Medium Silt	Slightly Fine Gravelly Fine Silty Fine Sand	Very Fine Sandy Very Coarse Silt	Fine Gravelly Coarse Silt	Slightly Very Fine Gravelly Very Fine Sandy Coarse Silt	Very Coarse Silty Sandy Medium Gravel
FOLK AND WARD METHOD (μm)	MEDIAN GRAIN SIZE D ₅₀ (μm)	62.7	15.6	18.8	125.0	36.89	49.5	38.32	173.97
	MEAN GRAIN SIZE (μm)	43.745	20.070	22.833	76.380	34.61	49.1	38.54	429.34
	SORTING	3.821	4.398	4.254	3.866	3.823	6.60	4.412	13.738
	SKEWNESS	-0.354	0.297	0.199	-0.524	-0.065	0.151	0.026	0.312
	KURTOSIS	0.824	1.061	0.858	1.541	0.786	1.204	0.827	0.713
FOLK AND WARD METHOD (φ)	MEDIAN GRAIN SIZE D ₅₀ (φ):	3.995	6.006	5.732	3.000	4.761	4.337	4.706	2.523
	MEAN GRAIN SIZE (φ):	4.515	5.639	5.453	3.711	4.852	4.347	4.698	1.220
	SORTING	1.934	2.137	2.089	1.951	1.935	2.722	2.141	3.780
	SKEWNESS	0.354	-0.297	-0.199	0.524	0.065	-0.151	-0.026	-0.312
	KURTOSIS	0.824	1.061	0.858	1.541	0.786	1.204	0.827	0.713
FOLK AND WARD METHOD (Description)	MEAN:	Very Coarse Silt	Coarse Silt	Coarse Silt	Very Fine Sand	Very Coarse Silt	Very Coarse Silt	Very Coarse Silt	Medium Sand
	SORTING:	Poorly Sorted	Very Poorly Sorted	Very Poorly Sorted	Poorly Sorted	Poorly Sorted	Very Poorly Sorted	Very Poorly Sorted	Very Poorly Sorted
	SKEWNESS:	Very Fine Skewed	Coarse Skewed	Coarse Skewed	Very Fine Skewed	Symmetrical	Coarse Skewed	Symmetrical	Very Coarse Skewed
	KURTOSIS:	Platykurtic	Mesokurtic	Platykurtic	Very Leptokurtic	Platykurtic	Leptokurtic	Platykurtic	Platykurtic
BULK GRAIN SIZE	% GRAVEL:	0.00	0.00	0.00	0.57	0.00	9.93	1.63	31.22
	% SAND:	50.14	20.55	25.31	74.55	37.84	35.13	38.12	46.94
	% MUD:	49.86	79.45	74.69	24.88	62.16	54.94	60.25	21.84
	% V COARSE GRAVEL:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	% COARSE GRAVEL:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	% MEDIUM GRAVEL:	0.00	0.00	0.00	0.00	0.00	0.44	0.04	23.14
	% FINE GRAVEL:	0.00	0.00	0.00	0.33	0.00	5.92	0.56	2.58
	% V FINE GRAVEL:	0.00	0.00	0.00	0.24	0.00	3.57	1.03	5.50
	% V COARSE SAND:	0.00	0.00	0.00	0.42	0.00	1.47	1.33	7.60
	% COARSE SAND:	0.09	2.52	0.51	0.71	0.12	0.21	0.80	1.70
	% MEDIUM SAND:	4.50	7.37	5.78	12.57	4.76	4.89	7.28	3.69
	% FINE SAND:	18.16	4.55	8.77	35.74	14.21	12.66	12.98	14.55
	% V FINE SAND:	27.39	6.10	10.25	25.11	18.75	15.90	15.74	19.39
	% V COARSE SILT:	15.57	11.21	12.60	4.12	15.77	14.26	14.43	6.87
	% COARSE SILT:	9.15	18.12	16.88	4.29	15.52	14.29	15.33	4.41
	% MEDIUM SILT:	10.73	21.52	19.12	6.36	15.07	13.23	15.04	4.86
	% FINE SILT:	10.10	19.81	17.96	6.90	11.97	10.07	11.78	4.18
% V FINE SILT:	4.12	8.28	7.65	3.07	3.80	3.06	3.64	1.52	
% CLAY:	0.19	0.51	0.47	0.15	0.03	0.02	0.03	0.02	

SAMPLE	PARAMETER	G33	G34	G36-1	G36-2	G36-3	G39	G40-1	G40-2
SAMPLE TYPE:		Unimodal, Poorly Sorted	Unimodal, Poorly Sorted	Bimodal, Poorly Sorted	Bimodal, Poorly Sorted	Bimodal, Poorly Sorted	Bimodal, Poorly Sorted	Unimodal, Poorly Sorted	Unimodal, Poorly Sorted
TEXTURAL GROUP:		Slightly Gravelly Sandy Mud	Slightly Gravelly Sandy Mud	Muddy Sand	Muddy Sand	Muddy Sand	Muddy Sand	Muddy Sand	Muddy Sand
SEDIMENT NAME:		Slightly Fine Gravelly Very Fine Sandy Very Coarse Silt	Slightly Very Fine Gravelly Very Fine Sandy Very Coarse Silt	Very Coarse Silty Fine Sand	Very Coarse Silty Fine Sand	Very Coarse Silty Fine Sand	Very Coarse Silty Fine Sand	Very Coarse Silty Fine Sand	Very Coarse Silty Fine Sand
FOLK AND WARD METHOD (μm)	MEDIAN GRAIN SIZE D_{50} (μm)	49.8	60.0	99.944	84.6	68.7	82.6	76.2	78.4
	MEAN GRAIN SIZE (μm)	4.177	52.97	71229	61947	53.330	67.397	69.361	63.744
	SORTING	3.437	3.733	3.544	3.556	3.745	3.996	3.943	3.402
	SKEWNESS	-0.190	-0.146	-0.397	-0.360	-0.275	-0.226	-0.135	-0.268
	KURTOSIS	0.908	0.897	0.917	0.858	0.813	0.825	0.855	0.911
FOLK AND WARD METHOD (ϕ)	MEDIAN GRAIN SIZE D_{50} (ϕ):	4.329	4.059	3.323	3.564	3.863	3.597	3.713	3.673
	MEAN GRAIN SIZE (ϕ):	4.581	4.239	3.811	4.013	4.229	3.891	3.850	3.972
	SORTING	1.781	1.900	1.825	1.830	1.905	1.999	1.979	1.766
	SKEWNESS	0.190	0.146	0.397	0.360	0.275	0.226	0.135	0.268
	KURTOSIS	0.908	0.897	0.917	0.858	0.813	0.825	0.855	0.911
FOLK AND WARD METHOD (Description)	MEAN:	Very Coarse Silt	Very Coarse Silt	Very Fine Sand	Very Coarse Silt	Very Coarse Silt	Very Fine Sand	Very Fine Sand	Very Fine Sand
	SORTING:	Poorly Sorted	Poorly Sorted	Poorly Sorted	Poorly Sorted	Poorly Sorted	Poorly Sorted	Poorly Sorted	Poorly Sorted
	SKEWNESS:	Fine Skewed	Fine Skewed	Very Fine Skewed	Very Fine Skewed	Fine Skewed	Fine Skewed	Fine Skewed	Fine Skewed
	KURTOSIS:	Mesokurtic	Platykurtic	Mesokurtic	Platykurtic	Platykurtic	Platykurtic	Platykurtic	Mesokurtic
BULK GRAIN SIZE	% GRAVEL:	158	116	0.00	0.00	0.00	0.00	0.00	0.00
	% SAND:	41.7	47.72	63.31	57.76	52.44	55.93	54.92	56.82
	% MUD:	57.24	51.12	36.69	42.24	47.56	44.07	45.08	43.18
	% V COARSE GRAVEL:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	% COARSE GRAVEL:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	% MEDIUM GRAVEL:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	% FINE GRAVEL:	0.83	0.25	0.00	0.00	0.00	0.00	0.00	0.00
	% V FINE GRAVEL:	0.76	0.91	0.00	0.00	0.00	0.00	0.00	0.00
	% V COARSE SAND:	126	113	0.00	0.00	0.00	0.00	0.00	0.00
	% COARSE SAND:	0.01	0.23	0.30	0.02	0.10	1.93	3.00	0.20
	% MEDIUM SAND:	2.20	7.82	11.25	8.15	7.88	15.70	16.00	9.33
	% FINE SAND:	13.29	17.86	29.70	27.86	23.69	22.13	18.49	24.15
	% V FINE SAND:	24.42	20.68	22.06	21.73	20.76	16.17	17.43	23.14
	% V COARSE SILT:	19.90	17.83	10.79	12.59	13.23	13.79	16.06	15.45
	% COARSE SILT:	14.58	13.85	10.42	12.05	13.21	12.66	13.02	12.37
	% MEDIUM SILT:	11.71	10.22	7.90	9.04	10.84	9.32	8.76	8.41
	% FINE SILT:	8.69	7.27	5.82	6.62	7.98	6.57	5.84	5.60
% V FINE SILT:	2.36	1.96	1.75	1.94	2.31	1.73	1.40	1.35	
% CLAY:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	

SAMPLE	PARAMETER	G40-3	G41	G44	G45	G46
SAMPLE TYPE:		Bimodal, Very Poorly Sorted	Unimodal, Poorly Sorted	Bimodal, Poorly Sorted	Bimodal, Moderately	Unimodal, Poorly Sorted
TEXTURAL GROUP:		Muddy Sand	Slightly Gravelly Muddy Sand	Slightly Gravelly Muddy Sand	Slightly Gravelly Sand	Slightly Gravelly Muddy Sand
SEDIMENT NAME:		Very Coarse Silty Medium Sand	Slightly Very Fine Gravelly Very Coarse Silty Very Fine Sand	Slightly Very Fine Gravelly Fine Silty Fine Sand	Slightly Very Fine Gravelly Medium Sand	Slightly Very Fine Gravelly Coarse Silty Fine Sand
FOLK AND WARD METHOD (μm)	MEDIAN GRAIN SIZE D_{50} (μm)	70.8	64.8	95.9	359.5	170.9
	MEAN GRAIN SIZE (μm)	70.769	63.798	56.301	373.841	167.016
	SORTING	4.620	3.520	3.799	1888	2.658
	SKEWNESS	-0.048	-0.035	-0.543	0.206	-0.189
	KURTOSIS	0.749	0.969	0.857	1408	1912
FOLK AND WARD METHOD (ϕ)	MEDIAN GRAIN SIZE D_{50} (ϕ):	3.820	3.949	3.382	1476	2.549
	MEAN GRAIN SIZE (ϕ):	3.821	3.970	4.151	1420	2.582
	SORTING	2.208	1.815	1.926	0.917	1411
	SKEWNESS	0.048	0.035	0.543	-0.206	0.189
	KURTOSIS	0.749	0.969	0.857	1408	1912
FOLK AND WARD METHOD (Description)	MEAN:	Very Fine Sand	Very Fine Sand	Very Coarse Silt	Medium Sand	Fine Sand
	SORTING:	Very Poorly	Poorly Sorted	Poorly Sorted	Moderately	Poorly Sorted
	SKEWNESS:	Symmetrical	Symmetrical	Very Fine Skewed	Coarse Skewed	Fine Skewed
	KURTOSIS:	Platykurtic	Mesokurtic	Platykurtic	Leptokurtic	Very Leptokurtic
BULK GRAIN SIZE	% GRAVEL:	0.00	0.74	0.35	3.74	121
	% SAND:	52.59	50.41	64.42	94.31	87.25
	% MUD:	47.41	48.85	35.23	1.94	1154
	% V COARSE GRAVEL:	0.00	0.00	0.00	0.00	0.00
	% COARSE GRAVEL:	0.00	0.00	0.00	0.00	0.00
	% MEDIUM GRAVEL:	0.00	0.00	0.00	0.66	0.00
	% FINE GRAVEL:	0.00	0.00	0.02	0.37	0.31
	% V FINE GRAVEL:	0.00	0.74	0.33	2.71	0.90
	% V COARSE SAND:	0.00	0.52	0.33	6.90	172
	% COARSE SAND:	7.14	2.13	0.00	15.63	4.44
	% MEDIUM SAND:	20.62	10.86	4.26	51.58	19.72
	% FINE SAND:	11.63	15.26	31.20	20.07	42.05
	% V FINE SAND:	13.20	21.63	28.63	0.13	19.32
	% V COARSE SILT:	15.43	20.47	7.01	0.10	2.04
	% COARSE SILT:	13.50	14.52	7.05	0.67	3.01
	% MEDIUM SILT:	9.98	8.67	8.61	0.62	2.73
	% FINE SILT:	6.81	4.56	8.66	0.52	2.66
	% V FINE SILT:	1.68	0.63	3.73	0.03	1.08
	% CLAY:	0.00	0.00	0.17	0.00	0.01

ANNEX 4: SPECIES DATA

	G01	G02-1	G02-2	G02-3	G03	G04-1	G04-02	G04-03	G05	G06	G07	G08	G09	G11	G12	G13	G14	G15	G16	G17	G18	G19-1	G19-2	G19-3	G20	G21	G22	
Porifera sp.													P	P														
Leucosolenia sp.																						P						
Scypha ciliata										P			P															
Cliona sp.			P						P											P	P				P			
Phialella quadrata			P							P			P															
Halecium sp.								P					P	P				P		P	P							
Sertularella sp.																					P	P						
Campanulariidae sp.		P											P	P					P			P		P				
Stolonifera sp.																						P				P		
Pennatula phosphorea																												
Cerianthus lloydii			2	2						1								1	1	11	1				6	7		
Edwardsiidae sp.				1					1		2			12			2	1					1		2	1		
TURBELLARIA spp.										6			1						2	1		1						
NEMERTEA spp.		9	5	5	2	7	3	1	1	4	4		4		1		1	2	1	5	2	3	2	1	2	3	2	
Nematoda spp.			7	17					1	18	48		7					24	1	7	28							
Priapulid caudatus								1																				
Chaetognatha sp.											2																	
Golfingia elongata			3																			1						
Golfingia vulgaris								1		1	2		2															
Thysanocardia procera												1					1							1				
POLYCHAETA spp.							P	P		P								P		P						P	P	
Pisione remota											16							2										
Aphrodita aculeata (juv.)																						1		1			1	
Aphrodita aculeata			1																									
Polynoidae sp.		1	1						3	10	1		2	1								13	1		2			
Enipo kinbergi																	1						1					
Gattyana cirrhosa																							1					
Harmothoe antilopes							1																					
Malmgreniella castanea		1						1															1					
Harmothoe extenuata		2	1																1	3	1					1		
Harmothoe impar									3																1			
Malmgreniella lunulata																												
Malmgreniella marphysae			1			1								1								1			1			
Malmgreniella mcintoshii									2	13			7						1	1	7							
Lepidonotus squamatus																						1						
Pholoe inornata		1							3	11			4									5	6					
Sigalionidae sp. (juv.)																												
Sthenelais limicola																												
Phyllodoceidae sp.		P																				1						
Eteone longa																		2			1							
Hypereteone foliosa																												
Phyllodoce groenlandica																									1			
Phyllodoce longipes			1																									
Phyllodoce mucosa																			1									
Phyllodoce rosea																												
Eulalia mustela (juv.)									1	1		2																
Eumida bahusiensis																												

	G01	G02-1	G02-2	G02-3	G03	G04-1	G04-02	G04-03	G05	G06	G07	G08	G09	G11	G12	G13	G14	G15	G16	G17	G18	G19-1	G19-2	G19-3	G20	G21	G22
Eumida sanguinea		1	1	1						1			1														
Nereiphylla rubiginosa										4											1						
Notophyllum foliosum										1																	
Glyceridae sp.																								P			
Glycera alba		3	7	2	2		1									2	2									1	
Glycera celtica																										1	
Glycera lapidum		1	2	13					1	4	9		2	2				2	3	4	5				6	3	
Glycera rouxii		1				3	1	1				1			2	2	2						1				
Goniada maculata		3	1	1			1	1							1	1	1		2				1			1	
Sphaerodorum gracilis						1																6					
Hesionidae sp.																											
Hesiospina similis									1	6	1											3					
Nereimyra punctata		3	9						2	20			8	1					2	3	30				2		
Ophiodromus flexuosus						1		1							1									1			
Ancistrosyllis groenlandica					P			1																			
Syllis garciai			1																			1					
Syllis armillaris				1														1				1					
Exogone hebes		1		4																							
Exogone dispar		6	5							16												3					
Sphaerosyllis taylori			2	9						34	11										6	36					
Trypanosyllis coeliaca									2	2											3	6					
Syllides benedicti				1																							
Eurysyllis tuberculata										8												1					
Odontosyllis gibba									1		2																
Eunereis longissima			1																								
Platynereis dumerilii		1								2			1														
Nephtys sp. (juv.)		1				1	3		1						2	2						1					
Nephtys assimilis																											
Nephtys cirrosa														1													
Nephtys hombergii		2					1								1	1						1					
Nephtys incisa					5		2					3				1	1	1									1
Nephtys kersivalensis		2				2	1	1							1		1					1		2			
Pareurythoe borealis																							3				
Aponuphis bilineata		11	1	19						1			1	2				2			3				7	12	
Leodice harassii														1								3					
Nematonereis unicornis		3	10	2		1				1											1	3					
Lumbrineridae sp.					P							P															
Abyssoninoe hibernica																1											1
Protodorvillea kefersteini				6									2												1		
Orbinia sertulata																											
Scoloplos armiger		1												1													
Aricidea cerrutii																										1	
Levinsenia gracilis																											
Paradoneis lyra																									1		
Poecilochaetus serpens																							1				
Spionidae spp.																											
Aonides oxycephala		4	17	1															2	1	4						
Aonides paucibranchiata		5		4					2	5	20		4					5		6	18						
Laonice sp. (juv.)													2														

	G01	G02-1	G02-2	G02-3	G03	G04-1	G04-02	G04-03	G05	G06	G07	G08	G09	G11	G12	G13	G14	G15	G16	G17	G18	G19-1	G19-2	G19-3	G20	G21	G22
Laonice bahusensis			3							4	2		3						3	2	6						
Polydora caeca		2	3				1								1								1	1			2
Polydora caulleryi																											
Polydora cornuta																											
Prionospio sp.																											
Prionospio fallax																											
Pseudopolydora pulchra																								1			
Spio decorata		2																									
Spiophanes bombyx																								1			
Spiophanes kroyeri		1	7		1	3		2				1		1	3	2	2		1	1		9	8	15			9
Magelona alleni		2						2															3				
Aphelochaeta marioni																											
Cauleriella alata													1	1											1		
Cauleriella zetlandica																										1	
Chaetozone zetlandica																											
Chaetozone gibber		1																			1			1	2		
Chaetozone setosa						2									1							2					
Cirratulus sp. (juv.)			1										1							3							
Cirratulus cirratus												2														1	
Dodecaceria sp.																											
Monticellina dorsobranchialis																							1				
Tharyx killariensis																										1	
Diplocirrus glaucus		5	5	3		5	2	4				P			6		1					2					1
Capitella sp.																											
Dasybranchus sp.																											
Mediomastus fragilis			2	3						2												4		1	3	1	
Notomastus sp.			6		1	1	2	2					4			10	1	1						1	1		6
Maldanidae sp.		3			P									P													
Clymenura cincta																						1					
Clymenura sp. (juv.)																	1										
Euclymene spp.						1																	3				
Euclymene oerstedii																						3		8			
Praxillella affinis			3			4	3	1							5		2				2	1	1	1	3		1
Rhodine sp.																											
Rhodine gracilior															1										1		
Rhodine loveni																											
Ophelina acuminata																											
Scalibregma celticum				1																							
Scalibregma inflatum		1		6						1								1	3		4			1	3	1	
Polygordius sp.										1										2							
Polygordius appendiculatus											9																
Oweniidae sp.																				P							
Galathowenia oculata		1	1					2							21							2	3	2			
Owenia fusiformis		7	23	1		14		2	1				2	10	63		1		15	16		4	5	3	4	5	
Amphictene auricoma			9		1	1		4													2	1	1	2			
Lagis koreni															1	1								1			
Melinna sp. (juv.)																											
Melinna palmata															1												
Ampharete lindstroemi								2														5	10	2	1		1

	G01	G02-1	G02-2	G02-3	G03	G04-1	G04-02	G04-03	G05	G06	G07	G08	G09	G11	G12	G13	G14	G15	G16	G17	G18	G19-1	G19-2	G19-3	G20	G21	G22	
Amphicteis gunneri																												
Anobothrus gracilis			1					1														2	2	2				
Sosane sulcata																												
Terebellides stroemi		3	4			2									1						2	1		2			1	
Trichobranchus glacialis									1				2															
Trichobranchus roseus			2					1		2					1								2					
Terebellidae sp. (juv.)				1							4														1			
Amphitrite cirrata																						1						
Lanice conchilega		1																										
Pista sp.				1		1																1						
Pista cristata																										3		
Lysilla loveni																												
Polycirrus sp.			5	1						1	3		3	1			1	4	2	3	4	1	1	1	3	2	1	
Hemilamprops rosea																												
Polycirrus medusa																												
Thelepus cincinnatus													1															
Sabellidae sp. (juv.)																												
Branchiomma bombyx																												
Chone fauveli																												
Euchone sp.			2					1																				
Jasmineira caudata		1							1	3																		
Jasmineira elegans		1																										
Pseudopotamilla reniformis											1																	
Ditrupe arietina						1																						
Hydroides norvegicus			2	4					1	2								1	3			1						
Spirobranchus sp.										1								1										
Spirobranchus triqueter			4						2	41	1		16						4	8	53					2		
Serpula vermicularis			2																									
Tubificoides amplivasatus																												
Tubificoides benedii													1										1					
Tubificoides pseudogaster																												
Grania sp.				2														4										
Ampharete acutifrons			1																									
Aphelochaeta sp. A		2	2																									
Diplocirrus stoppowitzi									1																			
Harmothoe fernandi											3																	
Lumbrineris cingulata		36	61	32		6	1	1		6			3	2	3	1	1		3	11	1			1	5	8		
Malmgrenia sp.																												
Microclymene tricirrata																												
Pholoe baltica		9	2	3		4	2	4	1	5			3		1		1	2			1	3			4	1	1	
Scolecopsis squamata				1																								
Achelia echinata											2											2	4			1		
Callipallene brevisrostris			1								3											3	4					
Anoplodactylus petiolatus						4	1	2							1													
Verruca stroemi		P	P										P														P	
Balanus crenatus			P						P	P			P						P	P	P							
Sarsinebalia typhlops		5		4																							1	
Amphipoda sp.																									P			
Monoculodes carinatus																						1						

	G01	G02-1	G02-2	G02-3	G03	G04-1	G04-02	G04-03	G05	G06	G07	G08	G09	G11	G12	G13	G14	G15	G16	G17	G18	G19-1	G19-2	G19-3	G20	G21	G22
Monoculodes tuberculatus										2																	
Pontocrates arenarius										1	4																
Synchelidium maculatum											1																
Westwoodilla caecula															1												
Copepoda sp.		3	9	10																							
Amphilochoidea sp.											2										1						
Leucothoe incisa										1	1							1									
Stenothoe marina								2											1								
Urothoe elegans		4		5										1					2	1					9	2	
Harpinia antennaria							1																1	1			
Metaphoxus fultoni										4			3														
Parametaphoxus fultoni				1																							
Acidostoma obesum				1																1							
Lepidepecreum longicornis									4																		
Lysianassa plumosa			1							5										1	6						
Orchomene humilis									1				1														
Orchomene nana		2		2					1	3	1										1	1				1	
Iphimedia minuta													1								1						
Atylus swammerdami																											
Atylus vedlomensis		1	2	4					2	1	2		2		1			6		1						1	
Ampelisca sp.			1																								
Ampelisca brevicornis				1		1								2													
Ampelisca diadema		4	1	3		4								1	3				5	1				3			6
Ampelisca spinipes																				2							
Ampelisca tenuicornis					1																						
Bathyporeia pelagica																											
Bathyporeia pilosa														2													
Abludomelita obtusata						3	1	1							1												
Animoceradocus semiserratus									2	1																	
Cheirocratus sp.											1																
Cheirocratus assimilis																											
Cheirocratus sundevallii														1													1
Maera loveni																											
Othomaera othonis										1																	
Isaeidae sp.				1																							
Gammaropsis maculata										3			1								2	1					
Photis longicaudata		1																		7	8					4	3
Leptocheirus hirsutimanus										5			1						2								
Leptocheirus pectinatus																						1					
Phtistica marina													2	1								2				1	
Pseudoprotella phasma																										1	
Gnathia sp. (juv.)			3																								
Gnathia oxyuraea		1																									
Anthura gracilis			1										3														
Eurydice pulchra									1		1																
Tanaopsis graciloides		2	12																								
Vaunthompsonia cristata																											
Iphinoe serrata						2																					
Iphinoe trispinosa																											

	G01	G02-1	G02-2	G02-3	G03	G04-1	G04-02	G04-03	G05	G06	G07	G08	G09	G11	G12	G13	G14	G15	G16	G17	G18	G19-1	G19-2	G19-3	G20	G21	G22
Diastylis sp. (juv.)																											
Diastylis cornuta															1							1	5	2			1
Diastylis biplicata																											
Meganyctiphanes norvegica																							1	2			
Caridea sp.				P																							
Processa noveli holthuisi																											
Pandalina brevisrostris																											
Nephrops norvegicus																											1
Calocaris macandreae	1																										
Anapagurus chiroacanthus																						2					
Galathea intermedia		1								7		1									2						
Pisidia longicornis										2																	
Ebalia cranchii																											
Liocarcinus sp. (juv.)										2																	
Ostracoda sp.																						7					
Pseudotanaïs batei		3																									
Chaetoderma nitidulum				1		1		3							2							2	2	2			
Leptochiton asellus									6	47	5		42	1					5	2	51				1	2	
Leptochiton cancellatus									4	37	2		5								8						
Hanleyi hanleyi																		1									
Callochiton septemvalvis																			1		3						
Emarginula fissura			1								1		1							1							
Margarites striatus										1																	
Gibbula sp. (juv.)										1																	
Gibbula tumida													1														
Turritella communis						36	41	51							8	2	1										1
Rissoa parva		1								1												3					
Alvania punctata										3	17										1	66					
Onoba semicostata										1												1					
Caecum glabrum											1	7															
Crepidula fornicata													2									4					
Euspira pulchella				4							2		1	2	1			1	2		2				1	4	
Eulima bilineata															1												
Buccinidae sp. (juv.)																									1		
Turridae sp.																											
Raphitoma linearis											1																
Teretia anceps																											
Odostomia plicata											1																
Chrysallida interstincta																						1					
Partulida pellucida											2																
Acteon tornatilis (juv.)																											
Cyllichna cylindracea		1	4	1		4	2	3				1			1							2	1	2			
Retusa obtusa		1	1	2						1	1																
Retusa truncatula			1																								
Onchidorididae sp. (juv.)											1																
Bivalve sp.															1												
Nucula nitidosa			1	1		2	6	4				1			1	5	2					6		1			2
Nucula nucleus																								1			2
Ennucula tenuis		1					2	1								1						22	11	6			1

	G01	G02-1	G02-2	G02-3	G03	G04-1	G04-02	G04-03	G05	G06	G07	G08	G09	G11	G12	G13	G14	G15	G16	G17	G18	G19-1	G19-2	G19-3	G20	G21	G22	
Nuculana minuta																						1	1	1			2	
Mytilus edulis (juv.)													18						1									
Modiolus sp. (juv.)									8	30	18							9		13	32					1		
Limidae sp.										1										1								
Pectinidae sp. (juv.)																				3								
Anomia ephippium		9																		1								
Thyasira sp.																												
Thyasira flexuosa		28	22	3	1	2	1	1							4	2							1				2	
Kellia suborbicularis										2								1			1							
Semierycina nitida												1																
Tellimya ferruginosa						1									2													
Kurtiella bidentata			3	1		4		5		1		1			14	3	2					3	2	1				
Astarte sulcata (juv.)			2															1										
Parvicardium sp. (juv.)										3																		
Parvicardium minimum		1															1							4	1			
Parvicardium scabrum			1						2	2									2	1	3							
Mactridae sp. (juv.)																		1										
Spisula elliptica											1																	
Ensis sp. (juv.)					P																					P		
Phaxas pellucidus															1									1				
Arcopagia crassa											2		1									1						
Angulus fabula (juv.)																					2							
Moerella donacina		9	2	12										2					3						1	6		
Gari sp. (juv.)		1													1						3					2		
Gari tellinella				1					2	11	28		2					3		1	1							
Gari fervensis		1																										
Abra alba							2							3							1	12	8	12			10	
Abra nitida						7								1		1							5	5			18	
Arctica islandica						2		1							2		1					1	1					
Venus casina																		1										
Gouldia minima		1	1							31	15	10	2					5		4	16							
Clausinella fasciata									2	4	37	4						11		3	5				1	4		
Timoclea ovata									2	4	1		1	1				5		1	1				2			
Tapes sp. (juv.)			2																		1							
Tapes rhomboides			1																									
Dosinia sp. (juv.)		10	1	10		4		1		2			5	17	6				3	3	3					3		
Dosinia exoleta		4								1												1			1	1		
Mysia undata															5													
Mya arenaria (juv.)		1	3						1					1					4	1	2					7		
Corbula gibba															1									2				
Hiatella arctica		3	2				1	2					10						1	3	6							
Thraciacea sp. (juv.)				4					3	2	13		4	19				6		3	9	1				3		
Thracia phaseolina		7								1	1		3	3				4									3	
Thracia villosiuscula			1																			3						
Cochlodesma praetenuae														10					2							1		
Chamelea striatula		2							1						3	1										1		
Crisia spp.													P									P						
Tubulipora sp.			P							P								P		P								
Dispora hispida										P										P								

	G01	G02-1	G02-2	G02-3	G03	G04-1	G04-02	G04-03	G05	G06	G07	G08	G09	G11	G12	G13	G14	G15	G16	G17	G18	G19-1	G19-2	G19-3	G20	G21	G22
Alcyonidium diaphanum													P														
Alcyonidium hirsutum																				P							
Scruparia ambigua																				P							
Electra pilosa		P																		P						P	
Amphiblestrum auritum											P									P					P		
Bugula flabellata												P															
Scrupocellaria scruposa		P	P						P	P										P					P	P	
Cellaria sp.																				P							
Hippothoa flagellum																				P							
Chorizopora brongniartii											P															P	
Escharoides coccinea																											
Escharella immersa											P		P	P				P	P	P						P	
Escharella ventricosa																				P							
Porella concinna			P																								
Hippoporina pertusa		P									P			P								P					
Parasmittina trispinosa											P																
Schizomavella sp.																				P							
Microporella ciliata									P	P									P	P					P	P	
Fenestulina malusii																						P					P
Phoronis sp.			2					1		5			2	1	3						3	2	P		4		
Asteroidea sp. (juv.)																					1	1					
Astropecten irregularis																			1								
OPHIURIDA sp. (juv.)									8	19																	
Ophiothrix sp. (juv.)																						5					
Ophiothrix fragilis																					1						
Ophiocomina nigra																						8					
Amphiuridae sp. (juv.)	P		2	1	P	35					7			2	3	1	3	6		16	26	1	4	3		1	5
Amphiura chiajei			1			2						2					1								3		
Amphiura filiformis		4	2			41	6	29								38	4					5	1	5	1		
Amphipholis squamatus									6	17	14		6								2	33					
Ophiuridae sp. (juv.)				2							1										9	2			3		
Ophiura albida																											
Psammechinus miliaris (juv.)													1							1					1		
Echinocyamus pusillus		1	2	2					5	19	1		5	2				5	1	2	9				2	1	
Echinocardium cordatum						1																					
Brissopsis lyrifera																1											
Cucumariidae sp. (juv.)				1																							
Ocnus brunneus																											
Leptopentacta elongata								1																			
Leptosynapta bergensis						1		2							2	1											
Labidoplax buski																											
Labidoplax digitata																											
Asciidae sp.																											
Molgula sp.																											
Rhodophycota sp.		P		P							P		P									P				P	
Corallinaceae sp.			P	P					P	P	P		P	P				P	P	P					P		
Gracilaria gracilis																											
Plocamium cartilagineum													P									P				P	
Pterothamnion plumula																										P	

	G01	G02-1	G02-2	G02-3	G03	G04-1	G04-02	G04-03	G05	G06	G07	G08	G09	G11	G12	G13	G14	G15	G16	G17	G18	G19-1	G19-2	G19-3	G20	G21	G22
Heterosiphonia plumosa		P	P							P			P	P							P						
Hypoglossum hypoglossoides										P																	
Membranoptera alata		P																									
Phycodrys rubens																					P						
Odonthalia dentata		P																									
Polysiphonia sp.		P											P								P					P	
Maerl sp.		P	P	P					P	P	P			P				P		P							
Branchiostoma sp.											3																

	G23	G24	G25-1	G25-2	G25-3	G26	G27	G28	G29	G30	G31-1	G31-2	G31-3	G32	G33	G34	G36-1	G36-2	G36-3	G39	G40-1	G40-2	G40-3	G41	G44	G45	G46
Porifera sp.																											
Leucosolenia sp.																											
Scypha ciliata																											
Cliona sp.			P	P	P																						
Phialella quadrata																											
Halecium sp.																											
Sertularella sp.																											
Campanulariidae sp.										P																	
Stolonifera sp.																											
Pennatula phosphorea															1												
Cerianthus lloydii			7	8	4									5									1				
Edwardsiidae sp.			2	4	2																						
TURBELLARIA spp.																											
NEMERTEA spp.			2	4	2	3				3				3	12			1							P	2	7
Nematoda spp.				5	2	1								2				3	2				2		146		
Priapulid caudatus						1									1												1
Chaetognatha sp.																											
Golfingia elongata				2		1																					
Golfingia vulgaris				1	1																						
Thysanocardia procera																											
POLYCHAETA spp.				P						P																P	
Pisione remota																											
Aphrodita aculeata (juv.)																											
Aphrodita aculeata					1																						
Polynoidae sp.					1	3				1																	
Enipo kinbergi																											
Gattyana cirrhosa																											
Harmothoe antilopes																											
Malmgreniella castanea																											
Harmothoe extenuata			1																								
Harmothoe impar				1																							
Malmgreniella lunulata									1																		
Malmgreniella marphysae			1																								1
Malmgreniella mcintoshii			2	1	1	3																					
Lepidonotus squamatus																											
Pholoe inornata						2																					
Sigalionidae sp. (juv.)										1																	
Sthenelais limicola																											1
Phyllocoelidae sp.																											
Eteone longa			1	1										2													6
Hypereteone foliosa																											1
Phyllocoele groenlandica																											
Phyllocoele longipes																											
Phyllocoele mucosa																			1								
Phyllocoele rosea															1												
Eulalia mustela (juv.)				2	1																						
Eumida bahusensis						1																					
Eumida sanguinea																											

	G23	G24	G25-1	G25-2	G25-3	G26	G27	G28	G29	G30	G31-1	G31-2	G31-3	G32	G33	G34	G36-1	G36-2	G36-3	G39	G40-1	G40-2	G40-3	G41	G44	G45	G46
Nereiphylla rubiginosa																											
Notophyllum foliosum																											
Glyceridae sp.										P																	
Glycera alba						1							1	3		3	2	1	1			1	1	1			
Glycera celtica																											
Glycera lapidum			5	4	7																					6	
Glycera rouxii																											
Goniada maculata						4				1				4	1												
Sphaerodorum gracilis					2																						
Hesionidae sp.																	P										
Hesiospina similis				1																							
Nereimyra punctata				1	3															2							
Ophiodromus flexuosus										1				1				3	1					1			
Ancistrosyllis groenlandica											P		P	P			2		2			1		1			
Syllis garciai			1																								
Syllis armillaris			1																								
Exogone hebes																											1
Exogone dispar				1																							
Sphaerosyllis taylori			3		7																						
Trypanosyllis coeliaca			2		2																						
Syllides benedicti																											
Eurysyllis tuberculata																											
Odontosyllis gibba																											
Eunereis longissima																											
Platynereis dumerilii																											
Nephtys sp. (juv.)										3														3			
Nephtys assimilis																											1
Nephtys cirrosa																											1
Nephtys hombergii														1													2
Nephtys incisa	2						6		6		5	3	1											1			
Nephtys kersivalensis			1	1			1																	1			1
Pareurythoe borealis																								1			
Aponuphis bilineata			14	14	6	1																					
Leodice harassii																											
Nematonereis unicornis			1	5		1																					
Lumbrineridae sp.			P																								P
Abyssoninoe hibernica		1				1	1		2																		
Protodorvillea kefersteini				1																							
Orbinia sertulata																											1
Scoloplos armiger										1				1	5											1	1
Aricidea cerrutii																											
Levinsenia gracilis														5													
Paradoneis lyra			1		1					3																	
Poecilochaetus serpens																											
Spionidae spp.																			P						P		
Aonides oxycephala						3																					
Aonides paucibranchiata			8	10	6																						1
Laonice sp. (juv.)																											
Laonice bahusiensis				3	2	4				2																	

	G23	G24	G25-1	G25-2	G25-3	G26	G27	G28	G29	G30	G31-1	G31-2	G31-3	G32	G33	G34	G36-1	G36-2	G36-3	G39	G40-1	G40-2	G40-3	G41	G44	G45	G46
Polydora caeca			2							4				3												1	1
Polydora caulleryi															6	3	6			13							1
Polydora cornuta				9						2				14													
Prionospio sp.																											1
Prionospio fallax										2				1	4												6
Pseudopolydora pulchra																											
Spio decorata														1												2	5
Spiophanes bombyx																											1
Spiophanes kroyeri		1				3	4			7			2	8	13		7	11	22		2						
Magelona alleni																											
Aphelochaeta marioni						1								1													
Cauleriella alata			1																							1	
Cauleriella zetlandica											4	3															
Chaetozone zetlandica													3	3													
Chaetozone gibber			1			2				1																	
Chaetozone setosa										2			1												1		2
Cirratulus sp. (juv.)			1																								
Cirratulus cirratus															1												
Dodecaceria sp.																				3							
Monticellina dorsobranchialis			1																								
Tharyx killariensis																											
Diplocirrus glaucus										1				1	1												9
Capitella sp.											1					1	64	10	4	1	1			79			
Dasybranchus sp.								1																			
Mediomastus fragilis			3	3	1					5	1		1		2	1	9	2	27			6	1				2
Notomastus sp.							3							5											6		2
Maldanidae sp.														P													
Clymenura cincta																											
Clymenura sp. (juv.)																											
Euclymene spp.																											
Euclymene oerstedii										3																	
Praxillella affinis			1	2		1				6				4	8												1
Rhodine sp.																											
Rhodine graciliior								1						1	1												
Rhodine loveni												1															
Ophelina acuminata				1			1																			2	
Scalibregma celticum																											
Scalibregma inflatum			1	6	4	1				1							1		2								2
Polygordius sp.																											
Polygordius appendiculatus																											
Oweniidae sp.																											
Galathowenia oculata										7				9	2												1
Owenia fusiformis			11	9	5	4				29				25												3	19
Amphictene auricoma			3	1	3	5				3																	
Lagis koreni																	2	1	1		10	2					
Melinna sp. (juv.)														3													
Melinna palmata											2			30	1									1			3
Ampharete lindstroemi						6								1													
Amphicteis gunneri														1													

	G23	G24	G25-1	G25-2	G25-3	G26	G27	G28	G29	G30	G31-1	G31-2	G31-3	G32	G33	G34	G36-1	G36-2	G36-3	G39	G40-1	G40-2	G40-3	G41	G44	G45	G46
Anobothrus gracilis																									1		
Sosane sulcata			1	3										4	1												
Terebellides stroemi						3				1					1												
Trichobranchus glacialis																											
Trichobranchus roseus														1													
Terebellidae sp. (juv.)														2	P			1	2								
Amphitrite cirrata			1			1																					
Lanice conchilega																											
Pista sp.			3		2					1												1					
Pista cristata																											
Lysilla loveni									1																		
Polycirrus sp.		2				2	1						1		1										1		
Hemilamprops rosea										1																	
Polycirrus medusa														1													
Thelepus cincinnatus																											
Sabellidae sp. (juv.)														1													
Branchiomma bombyx																											
Chone fauveli																											
Euchone sp.					1									5													
Jasmineira caudata																											8
Jasmineira elegans			1																								14
Pseudopotamilla reniformis																											
Ditrupe arietina										1																	
Hydroides norvegicus				3	1																						
Spirobranchus sp.																											
Spirobranchus triqueter			1	4	1									2													
Serpula vermicularis					2																						
Tubificoides amplivasatus																				1							
Tubificoides benedii																2						6	2	1	393		
Tubificoides pseudogaster																						2			66		
Grania sp.																											
Ampharete acutifrons																											1
Aphelochaeta sp. A																											
Diplocirrus stopbowitzi				6	7																						
Harmothoe fernandi																											
Lumbrineris cingulata				15	12	16																					3
Malmgrenia sp.																											
Microclymene tricirrata										2																	
Pholoe baltica			3	4	3	1				1	2		4	2	4												9
Scolelepis squamata			1							1																	
Achelia echinata																											
Callipallene brevisrostris																											
Anoplodactylus petiolatus										1										1							
Verruca stroemi																											
Balanus crenatus		1				P			1																		
Sarsinebalia typhlops																											
Amphipoda sp.																											
Monoculodes carinatus			1	2																							
Monoculodes tuberculatus																											

	G23	G24	G25-1	G25-2	G25-3	G26	G27	G28	G29	G30	G31-1	G31-2	G31-3	G32	G33	G34	G36-1	G36-2	G36-3	G39	G40-1	G40-2	G40-3	G41	G44	G45	G46
Pontocrates arenarius																											
Synchelidium maculatum																											
Westwoodilla caecula																											
Copepoda sp.																											
Amphilocheidae sp.																											
Leucothoe incisa																											
Stenothoe marina																											
Urothoe elegans										1																	
Harpinia antennaria										1																	
Metaphoxus fultoni																											
Parametaphoxus fultoni																											
Acidostoma obesum			1																								
Lepidepcreum longicornis						3																					
Lysianassa plumosa			4	2	3	1																					
Orchomene humilis																											
Orchomene nana																											
Iphimedia minuta																											
Atylus swammerdamei																											1
Atylus vedlomensis			1			3																					1
Ampelisca sp.																											
Ampelisca brevicornis																											1
Ampelisca diadema			1	3		5				1																	1
Ampelisca spinipes				1																							2
Ampelisca tenuicornis													3														1
Bathyporeia pelagica																											2
Bathyporeia pilosa																											1
Abludomelita obtusata										4																	
Animoceradocus semiserratus																											
Cheirocratus sp.						1																					
Cheirocratus assimilis																											
Cheirocratus sundevallii																											
Maera loveni								1																			
Othomaera othonis																											
Isaeidae sp.																											
Gammaropsis maculata																											
Photis longicaudata			6	4	6																						1
Leptocheirus hirsutimanus																											
Leptocheirus pectinatus						1				1																	
Phtisica marina																											1
Pseudoprotella phasma																											
Gnathia sp. (juv.)						1																					
Gnathia oxyuraea																											
Anthura gracilis																											
Eurydice pulchra																											
Tanaopsis graciloides																											3
Vaunthompsonia cristata					1																						
Iphinoe serrata																											
Iphinoe trispinosa																											1
Diastylis sp. (juv.)																1											

	G23	G24	G25-1	G25-2	G25-3	G26	G27	G28	G29	G30	G31-1	G31-2	G31-3	G32	G33	G34	G36-1	G36-2	G36-3	G39	G40-1	G40-2	G40-3	G41	G44	G45	G46	
Diastylis cornuta																											1	
Diastylodes biplicata											1																	
Meganyctiphanes norvegica																												
Caridea sp.																												
Processa noveli holthuisi													1															
Pandalina brevisrostris			1																									
Nephrops norvegicus																												
Calocaris macandreae	2																											
Anapagurus chiroacanthus																												
Galathea intermedia					1																							
Pisidia longicornis																												
Ebalia cranchii				1																								
Liocarcinus sp. (juv.)																										1		
Ostracoda sp.					1																							
Pseudotanaïs batei																												
Chaetoderma nitidulum						1	3		2	2				1														
Leptochiton asellus			1	5	2	2																						
Leptochiton cancellatus			5	1																								
Hanleyi hanleyi																												
Callochiton septemvalvis																												
Emarginula fissura																												
Margarites striatus																												
Gibbula sp. (juv.)																												
Gibbula tumida																												
Turritella communis										72															14			
Rissoa parva																												
Alvania punctata					1																							
Onoba semicostata																												
Caecum glabrum																												
Crepidula fornicata				1	1																							
Euspira pulchella			4	4	4	2																						
Eulima bilineata																												
Buccinidae sp. (juv.)						2																						
Turridae sp.										1																		
Raphitoma linearis						1																						
Teretia anceps						1																						
Odostomia plicata																												
Chrysalida interstincta																												
Partulida pellucida																												
Acteon tornatilis (juv.)										1																		
Cylichna cylindracea			1	2						5	4	5	3	3	16										1		1	
Retusa obtusa																												
Retusa truncatula																												
Onchidorididae sp. (juv.)																												
Bivalve sp.			P	1	P									2														
Nucula nitidosa							3				10	7	9	7	26										4		1	
Nucula nucleus																												
Ennucula tenuis															7													
Nuculana minuta																												

	G23	G24	G25-1	G25-2	G25-3	G26	G27	G28	G29	G30	G31-1	G31-2	G31-3	G32	G33	G34	G36-1	G36-2	G36-3	G39	G40-1	G40-2	G40-3	G41	G44	G45	G46	
<i>Mytilus edulis</i> (juv.)														3														
<i>Modiolus</i> sp. (juv.)			5	5	2	1																						
Limidae sp.				1																								
Pectinidae sp. (juv.)																												
<i>Anomia ephippium</i>																												
<i>Thyasira</i> sp.						1																						
<i>Thyasira flexuosa</i>			3	6	1					1	4	1	1	10	21		2	4	1						5		14	
<i>Kellia suborbicularis</i>																												
<i>Semierycina nitida</i>																												
<i>Tellimya ferruginosa</i>										1																		
<i>Kurtiella bidentata</i>				1	1					3	5	21	12	10	6		6	1	1								5	
<i>Astarte sulcata</i> (juv.)																												
<i>Parvicardium</i> sp. (juv.)																												
<i>Parvicardium minimum</i>																												
<i>Parvicardium scabrum</i>						1																						
Mactridae sp. (juv.)																												
<i>Spisula elliptica</i>																												
<i>Ensis</i> sp. (juv.)																										6	1	
<i>Phaxas pellucidus</i>										1																		
<i>Arcopagia crassa</i>																												
<i>Angulus fabula</i> (juv.)																											2	
<i>Moerella donacina</i>			9	4	2	1																					1	
<i>Gari</i> sp. (juv.)																												
<i>Gari tellinella</i>																												
<i>Gari fervensis</i>																											1	
<i>Abra alba</i>							7		1		1	5	2			26			1						2		1	
<i>Abra nitida</i>							5			1				1											1	1		
<i>Arctica islandica</i>										2																		
<i>Venus casina</i>																												
<i>Gouldia minima</i>			4	7	10																							
<i>Clausinella fasciata</i>			4	12	7																							
<i>Timoclea ovata</i>			1	2	1	2																						
<i>Tapes</i> sp. (juv.)																												
<i>Tapes rhomboides</i>																												
<i>Dosinia</i> sp. (juv.)			4	6	8	1				1																	3	
<i>Dosinia exoleta</i>			1			2				1																	2	
<i>Mysia undata</i>										1																		
<i>Mya arenaria</i> (juv.)			1																									
<i>Corbula gibba</i>		1																										
<i>Hiatella arctica</i>					1																							
Thraciacea sp. (juv.)			1	1	3	1				1																	4	
<i>Thracia phaseolina</i>														2													1	5
<i>Thracia villosiuscula</i>			2	1																							3	
<i>Cochlodesma praetenu</i>																											16	
<i>Chamelea striatula</i>																											11	2
<i>Crisia</i> spp.					P									P														
<i>Tubulipora</i> sp.					P																							
<i>Disporella hispida</i>					P																							
<i>Alcyonidium diaphanum</i>																												

	G23	G24	G25-1	G25-2	G25-3	G26	G27	G28	G29	G30	G31-1	G31-2	G31-3	G32	G33	G34	G36-1	G36-2	G36-3	G39	G40-1	G40-2	G40-3	G41	G44	G45	G46
Alcyonidium hirsutum																											
Scruparia ambigua																											
Electra pilosa																											
Amphiblestrum auritum				P																							
Bugula flabellata																											
Scrupocellaria scruposa			P																								
Cellaria sp.																											
Hippothoa flagellum																										P	
Chorizopora brongniartii																											
Escharoides coccinea						P																					
Escharella immersa													P														
Escharella ventricosa				P																							
Porella concinna																											
Hippoporina pertusa				P																						P	
Parasmittina trispinosa						P																					
Schizomavella sp.																											
Microporella ciliata					P																						
Fenestrulina malusii					P																					P	
Phoronis sp.			2	15	3					8	1			20	8												1
Asteroidea sp. (juv.)																											
Astropecten irregularis																											
OPHIURIDA sp. (juv.)																											
Ophiothrix sp. (juv.)																											
Ophiothrix fragilis																											
Ophiocomina nigra						4																					
Amphiuridae sp. (juv.)			8	5	8	3				10	1														P	1	16
Amphiura chiajei	2					2	1			2					5												2
Amphiura filiformis						2				30	85	72	101	31	44												14
Amphipholis squamatus						1																					
Ophiuridae sp. (juv.)			4	2	1					1				1													2
Ophiura albida																											1
Psammechinus miliaris (juv.)					1																						
Echinocyamus pusillus			5	7	6																					1	
Echinocardium cordatum																											
Brissopsis lyrifera																											
Cucumariidae sp. (juv.)																											
Ocnus brunneus				2																							
Leptopentacta elongata										1							1										
Leptosynapta bergensis			1		1																						
Labidoplax buski										19					15												
Labidoplax digitata																											1
Asciidiidae sp.																				3							
Molgula sp.										3																	
Rhodophycota sp.			P																							P	
Corallinaceae sp.			P	P	P									P													
Gracilaria gracilis																										P	P
Plocamium cartilagineum																											
Pterothamnion plumula																											
Heterosiphonia plumosa																											

	G23	G24	G25-1	G25-2	G25-3	G26	G27	G28	G29	G30	G31-1	G31-2	G31-3	G32	G33	G34	G36-1	G36-2	G36-3	G39	G40-1	G40-2	G40-3	G41	G44	G45	G46	
Hypoglossum hypoglossoides																												
Membranoptera alata																												
Phycodrys rubens																												
Odonthalia dentata																												
Polysiphonia sp.																										P		
Maerl sp.			P	P	P																							
Branchiostoma sp.																												

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