

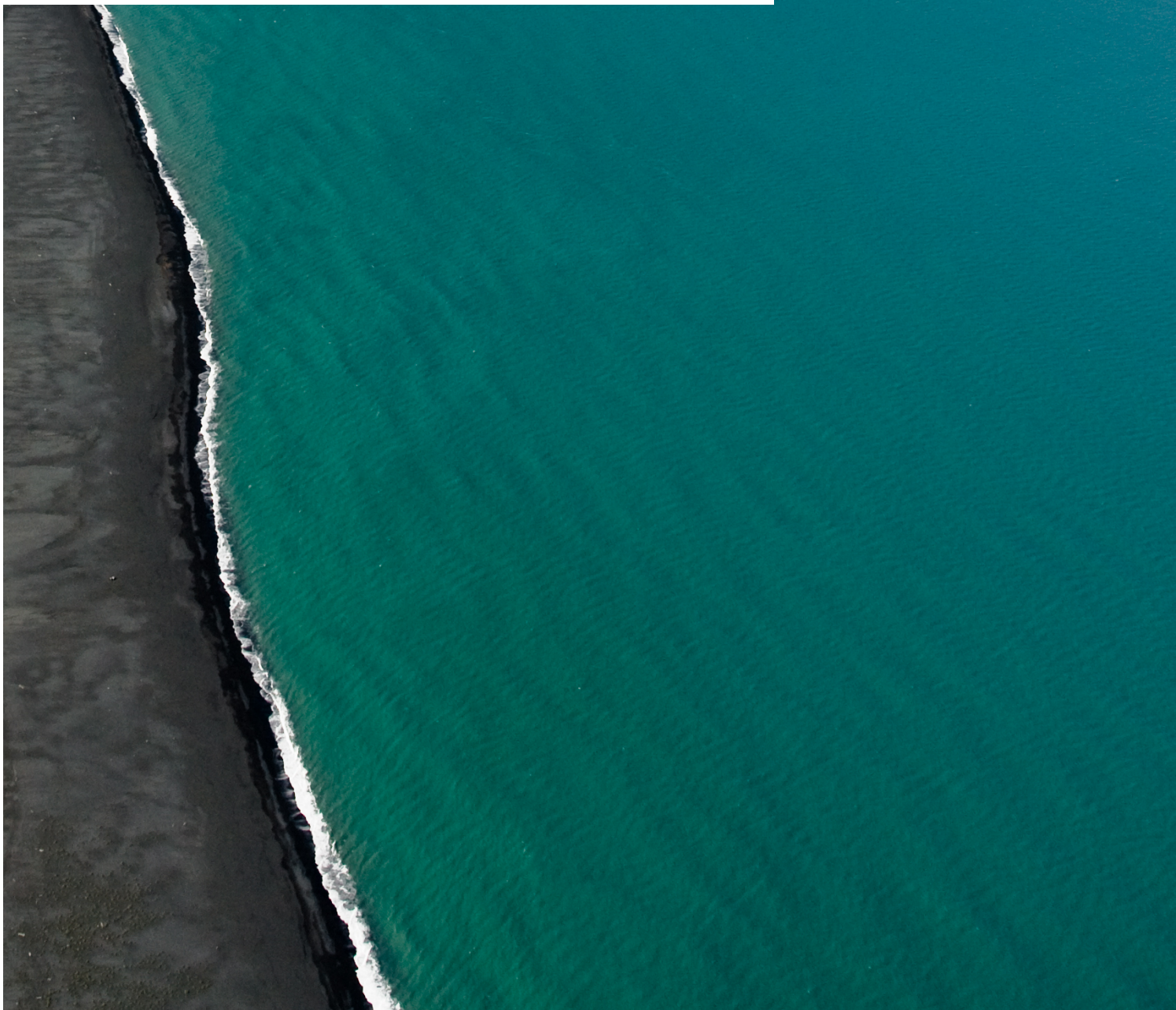


Landsvirkjun

LV-2021-009

Rannsókn á botndýralífi í Héraðsflóa, Borgarfirði Eystri og Vopnafirði 2019

Monitoring benthic fauna and organic content in
sediment in Héraðsflói, Borgarfjörður and
Vopnafjörður, East Iceland 2019



Lykilsíða



Skýrsla LV nr: LV-2021-009

Dags: 3.2.2021

Fjöldi síðna: 72

Upplag:

Dreifing:

- Birt á vef LV
 Opin
 Takmörkuð til

Titill: Rannsókn á botndýralífi í Héraðsflóa, Borgarfirði Eystri og Vopnafirði 2019 - Monitoring benthic fauna and organic content in sediment in Héraðsflói, Borgarfjörður and Vopnafjörður, East Iceland 2019

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Verkefnisstjóri: Sveinn Kári Valdimarsson

Unnið fyrir: Landsvirkjun

Samvinnuaðilar:

Útdráttur: Eitt af skilyrðum Umhverfisstofnunar fyrir leyfum til byggingar Kárahnjúkavirkjunar var að vakta dæmigerð botndýrasamfélög í Héraðsflóa. Árið 2006 (LV-2007/074) var þetta skoðað og í ljós kom að ekki var mikill munur á botndýrasamfélögum í Héraðsflóa og tveimur viðmiðunar stöðum (Vopnafjörður og Borgarfjörður eystri) en greinilegt samband var á milli botnngerðar og botndýrasamfélaga. Þessi rannsókn er endurtekning á þeirri athugun sem gerð var þá og er gerð til að meta hvort breytingar hafi orðið með tilkomu virkjunar. Niðurstöður eru á svipuðum nótum 2006, þó komu fram smávægilegar breytingar milli ára á stöð 1 sem liggur næst ósum í Héraðsflóa hvað snertir botnngerð, færri tegundir botndýra og breytingar á tegundasamsetningu. Þessar breytingar gætu tengst breytingum á framburði sem berst í Héraðsflóa en gætu einnig verið árstíðabundinn breytileiki.

Lykilorð: Kárahnjúkar, Fljótsdalsstöð, Héraðsflói, Sjávarrannsóknir, Framburður

ISBN nr:

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**Report title**

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Monitoring benthic fauna and organic content in sediment in Héraðsflói, Borgarfjörður and Vopnafjörður, East Iceland 2019**Author(s):**

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Akvaplan-niva report: APN 60935-01**Date:** 16.12.2020**Pages:** 24 + appendix**Distribution:**

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Client:

Landsvirkjun

Client's reference

This report presents the results from a survey of bottom sediment and benthic fauna in Héraðsflói, Borgarfjörður and Vopnafjörður in East Iceland, carried out in 2019.

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Summary and conclusions

The survey conducted in 2006 did not show large variation in faunal communities between Héraðsflói and the other two reference locations but showed rather similar communities based on sediment type. Two separate groupings were observed, where faunal communities in sandy sediments at the stations were considered as one group and communities in mixed and clayish sediments, were the other group. The results from the survey conducted in 2019 showed the same trend, where the faunal communities were grouped by sediment type, and not a distinct separation of Héraðsflói and the reference sites. However, it was observed that station 1 closest to the river input in Héraðsflói showed some changes in sediment composition, reduction in abundance and number of taxa and changes in taxa composition between 2006 and 2019 that could be related to river sediment discharges, but also annual changes. The overall taxonomical composition at the different study sites from 2019 is comparable to the case study in 2006 and no major changes related to the changed river outflow were apparent, but it is important to emphasise that any fluctuations in the years between the two surveys, were not covered.

Ágrip

Í fyrri rannsókn sem gerð var árið 2006 kom ekki fram mikill munur á botndýrasamfélögum í Héraðsflóa og tveimur viðmiðunar stöðum (Vopnafjörður og Borgarfjörður eystri) en greinilegt samband var á milli botnngerðar og botndýrasamfélaga. Tvær megin gerðir botndýrasamfélaga voru á öllu rannsóknarsvæðinu, samfélög botndýra á stöðvum með sandbotni var einn hópur og samfélög botndýra á stöðvum þar sem botnngerð var blanda af sand- og leirbotni var annar hópur. Niðurstöður rannsóknar sem gerð var 2019 voru á svipuðum nótum þar sem skilgreina má botndýrasamfélög út frá botnngerð og ekki kom fram afgerandi munur á milli botndýrasamfélaga í Héraðsflóa og viðmiðunarstaða (Vopnafjörður og Borgarfjörður eystri). Hins vegar komu fram smávægilegar breytingar milli ára á stöð 1 sem liggur næst ósum í Héraðsflóa hvað snertir botnngerð, færri tegundir botndýra og breytingar á tegundasamsetningu. Þessar breytingar gætu tengst breytingum á framburði sem berst í Héraðsflóa en gætu einnig verið árstíðabundinn breytileiki. Heilt yfir er tegundasamsetning þeirra þriggja fjarða sem rannsakaðir voru sambærileg þegar bornar eru saman niðurstöður á milli árunna 2006 og 2019 og ekki komu í ljós neinar breytingar sem tengja má með beinum hætti við hugsanlegar breytingar í árframburði til Héraðsflóa. Mikilvægt er þó að hafa í huga að þessi rannsókn varpar ekki ljósi á breytingar eða sveiflur sem gætu hafa átt sér stað á árunum á milli þessar tveggja rannsókna.

1 Preface

Landsvirkjun, the National Power Company of Iceland, is operating several hydroelectric, geothermic and wind power plants, including the Kárahnjúkar hydropower plant in North East Iceland. Kárahnjúkar was started in 2007 and this has led to changes in the supplies of freshwater and sediment to the inlet Héraðsflóa.

Landsvirkjun has engaged Akvaplan-niva to carry out an environmental monitoring survey of the coast of Héraðsflóa, Borgarfirði eystri and Vopnafirði. The study is a follow up of the baseline study in 2006 (Ólafsdóttir *et al.*, 2007) performed prior to start-up of the Kárahnjúkar hydropower plant. Samples were collected during 26. June – 9. July 2019, and the results are compared to the 2006 results, to describe any changes in the bottom fauna and sediment conditions, ascribed to the operations at Kárahnjúkavirkun.


The following personnel at Akvaplan-niva have contributed to the project:

Lars-Henrik Larsen	Project leader, field work, report writing.
Snorri Gunnarsson	Field work, report writing, coordination with client.
Rosalyn Fredriksen	Report writing, data analyses.
Roger Velvin	Identifying benthos (Varia).
Hans-Petter Mannvik	Identifying benthos (echinoderms and caudofoveates). QA report.
Rune Palerud	Identifying benthos (crustaceans), statistics.
Jesper Hansen	Identifying benthos (polychaeta and molluscs).
Charlotte P Ugelstad	Identifying benthos (polychaeta).
Thomas Heggem	Oceanographic data (CTDO-profiles).
Kristine H Sperre	Coordination of sorting of benthic samples.
Ingar H. Wasbotten	Coordination of geo-chemical sediment analyses.

Tromsø, December 2020

Lars-Henrik Larsen
Project leader

The project is carried out by Akvaplan-niva AS according to accredited procedures.

	Akvaplan-niva Ltd is accredited by Norwegian Accreditation, and according to NS-EN ISO/IEC 17025 for: Collection of sediment and fauna samples, sediment analyses of TOC (Total Organic Carbon), TOM (Total Organic Matter), TN (Total Nitrogen), grain size distribution and macrofauna identification, data interpretation and scientific evaluations. Accreditation number is TEST 079.
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1 Introduction

1.1 Background information

The Kárahnjúkar dam located in east Iceland was installed in 2007, and is the tallest concrete-faced rockfill dam in Europe, with a maximum height of 198 m. The dam was constructed as a reservoir to a hydropower plant with a capacity of 690 MW and a volume of 8.5 million m³ (Landsvirkjun, 2020). Kárahnjúkar dam is connected to the large river Jökulsá á Fljótsdal and is a major source for freshwater- and riverine particulate supplies to the bay Héraðsflóa.

Installing a dam in the river system has changed the riverine intensity of freshwater, sedimentation and particles that reaches the sea, which again may affect the distribution and abundance of benthic marine fauna. Before the start-up of the power plant, a baseline survey of Héraðsflói was performed in May – June in 2006, including the neighbouring inlets Borgarfjörður and Vopnafjörður as reference sites. The present study collected samples in 2019 at the same stations as in 2006, and the surveys jointly enables comparison of the marine seafloor environment before- and after installation and operation of the hydroelectric power plant.

1.2 Study sites

1.2.1 Héraðsflói

Héraðsflói is a short (approx. 10 km) but broad (25 km) bay (Figure 1). The depth of the bay increases gradually towards the open sea and reaches 150 m at the outermost parts. There are no local sills. Héraðsflói gets direct freshwater input from two major rivers called Jökulsá í Fljótsdal and Jökulsá á Dal. Continuous sedimentation from the rivers shapes a delta at the inlet, which also slowly reduces the water depth of the bay. Before the installation of the hydroelectric power plant, the two rivers contributed around 8,5 million tonnes of sediment load to the bay per year (Hartman *et al.* 2017).

1.2.2 Reference sites Borgarfjörður eystri and Vopnafjörður

Borgarfjörður Eystri and Vopnafjörður are reference sites to Héraðsflói. Both reference sites are assumed not to be influenced by the large river effluents reaching Héraðsflói. Borgarfjörður eystri is the southernmost sampling area in this survey, 3 km in width and 5 km long. Depth in Borgarfjörður eystri is only about 50 m at the mouth of the fjord and depths of 100 and 150 m are subsequently about 5 and 13 km further out from the fjords mouth. Vopnafjörður is about 17 km in width and 25 km long. Maximum depth is in the middle of the fjord (around 140 m) and up to 150 at the mouth of the fjord (Figure 1).

2 Materials and methods

2.1 Sampling method

The 2019 sampling stations were located along six transects (two in each fjord area), at 50-, 100- and 150 m water depth. These were the same stations that were used in 2006 (Ólafsdóttir *et al.* 2007). Each transect consisted of three stations, and at each station three replicates of benthic bottom fauna were collected using a 0.1 m² van Veen grab, and one replicate at each station was taken for sediment analyses. In total eighteen stations were covered in Héraðsflói, Borgarfjörður and Vopnafjörður (Figure 1; Table 1).

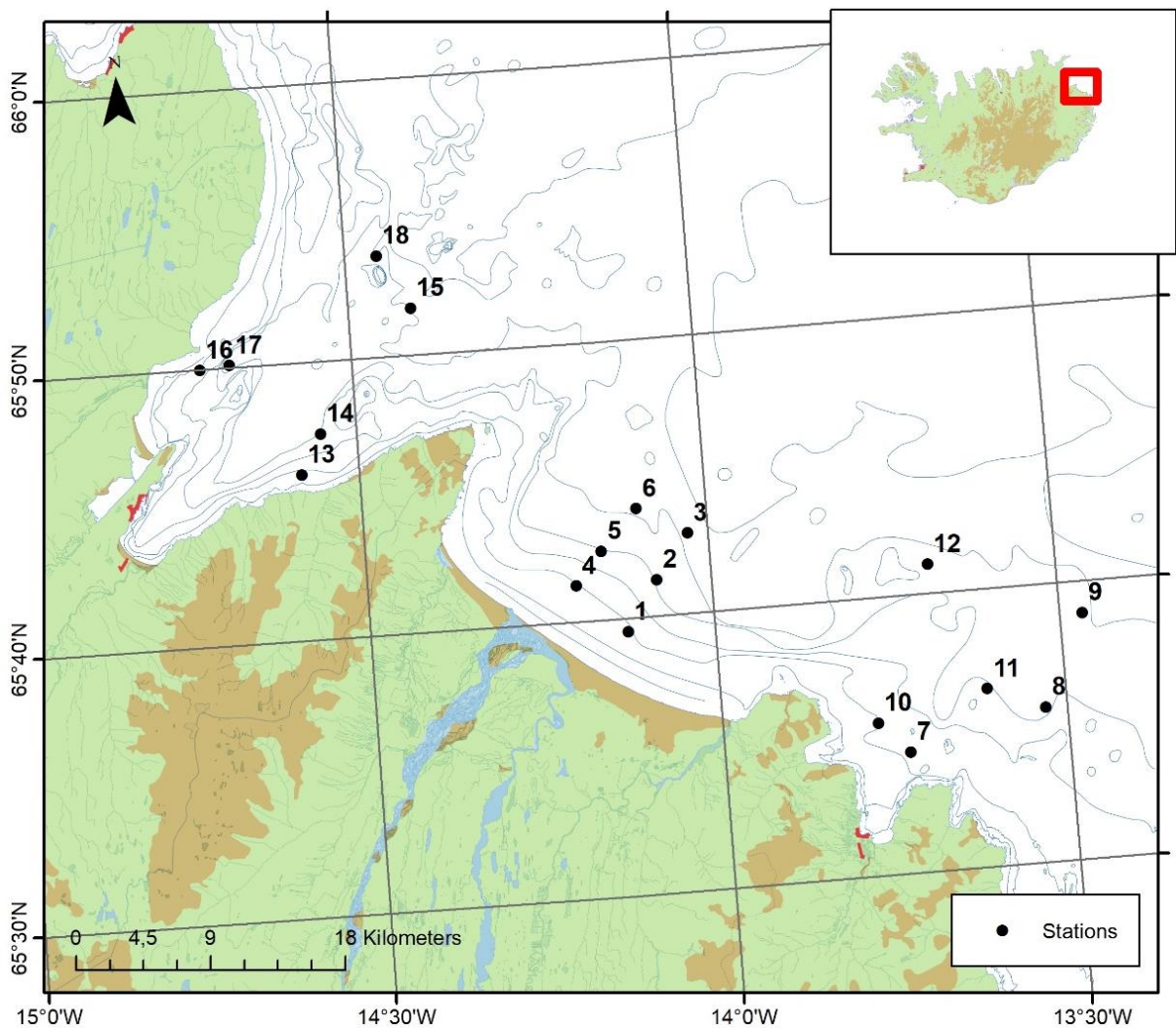


Figure 1 Location of 18 sampling stations in Héraðsflói (stations 1-6), Borgarfjörður eystri (stations 7-12) and Vopnafjörður (stations 13-18) in 2006 and 2019.

Mynd 1 Staðsetning 18 sýnatökustöðva í Héraðsflóa (stöðvar 1-6), Borgarfirði eystri (stöðvar 7-12) og Vopnafirði (stöðvar 13-18) í rannsóknum 2006 og 2019.

Samples for biological analyses was sieved through a 1 mm mesh size, round holes sieve, and stored in 4 % seawater-formaldehyde solution with borax to buffer the pH-level and rose-bengal for staining of animals for easier sorting. In the lab, the samples were washed free of formalin, sorted and identified to lowest possible taxonomic unit.

The upper 5 cm of undisturbed sediment layer were taken with a tube for analyses of Total Organic Content (TOC) and sediment grain size. At all stations, hydrographic measurements of salinity, temperature, density and oxygen saturation, were carried out for vertical profiles from surface to bottom. These measurements were made by a Sensor data CTDO 204 probe.

Table 1 Location of stations for biological and sediment sampling in East Iceland, June – July 2019.

Tafla 1 Staðsetning sýnatökustöðva á Austurlandi í júní og júlí 2019

Date	Location	Station	Transect	Latitude	Longitude	Depth (m)	Number of taxa	Number of individuals
28/06/2019	Héraðsflói	1	2	65.6588	-14.1265	49	33	598
28/06/2019	Héraðsflói	2	2	65.6888	-14.0792	97	83	5829
28/06/2019	Héraðsflói	3	2	65.7153	-14.0295	150	67	2611
28/06/2019	Héraðsflói	4	1	65.6887	-14.1968	49	47	1084
28/06/2019	Héraðsflói	5	1	65.7083	-14.1567	99	67	2741
29/06/2019	Héraðsflói	6	1	65.7322	-14.1013	146	68	2815
09/07/2019	Borgarfjörður	7	3	65.5735	-13.7315	49	41	1062
09/07/2019	Borgarfjörður	8	3	65.5935	-13.5313	99	144	1708
09/07/2019	Borgarfjörður	9	3	65.6480	-13.4668	150	97	2004
09/07/2019	Borgarfjörður	10	4	65.5922	-13.7750	51	66	1747
09/07/2019	Borgarfjörður	11	4	65.6075	-13.6135	104	145	2135
09/06/2019	Borgarfjörður	12	4	65.6848	-13.6850	155	112	1968
29/06/2019	Vopnafjörður	13	5	65.7670	-14.5842	53	107	608
29/06/2019	Vopnafjörður	14	5	65.7907	-14.5527	97	98	2851
29/06/2019	Vopnafjörður	15	5	65.8622	-14.4083	148	68	2334
29/06/2019	Vopnafjörður	16	6	65.8337	-14.7222	53	124	2291
29/06/2019	Vopnafjörður	17	6	65.8355	-14.6792	99	57	699
29/06/2019	Vopnafjörður	18	6	65.8948	-14.4530	148	81	3529

2.2 Statistical analyses of data

Multivariate analyses of community composition between the sediment types were performed in det statistical software program PRIMER. v. 7.0.13. Abundance data were treated with fourth-root transformation. Bray-Curtis similarity coefficient (Bray and Curtis, 1957) were used to compute the similarities in the communities. Non-Metric Multidimensional Scaling (nMDS) (Kruskal and Wish, 1978) and Hierarchical Cluster Analysis were used to visualise the patterns in the communities. Analysis of Similarities (ANOSIM) was used to test if communities were statistically significant different (Clarke *et al.* 2014).

Three sediment types (sand, mixed and clay) were used as a factor to distinguish or observe patterns in the communities. Stations that contained > ~70 % sand (>0.063mm) were grouped as stations with sediment type *sand*. Stations that contained ~ 70 % silt and clay (<0.063mm) were grouped as stations with sediment type *clay* and stations with sediment type *mix* had comparable amounts of sand and clay.

3 Results

3.1 Héraðsflói (stations 1 – 6)

3.1.1 Hydrographical profiles

The hydrographical profiles for the two transects in Héraðsflói, which consisted of three stations each, can be seen in Figure 2. An overall trend was observed at all stations where the upper water masses had a weak stratification layer with higher temperature, lower salinity and higher oxygen concentration. Stratification layer was even stronger at st.1 and st.4 closest to the shore. Oxygen concentration was highest in the upper water masses and slightly declined below the stratification layer but were above 80 % in the bottom water.

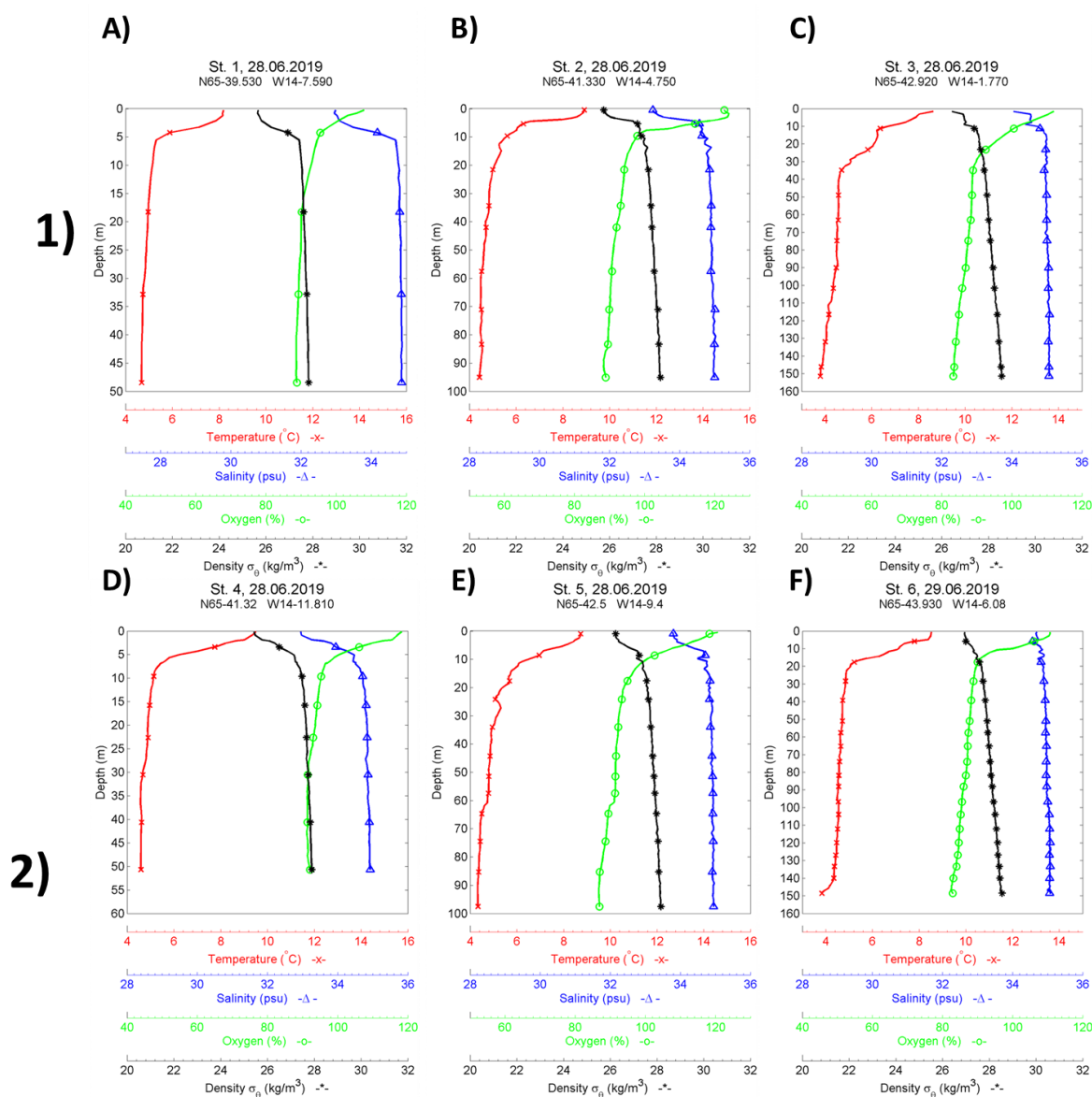


Figure 2 Hydrographical profiles for the two transects (1 and 2) in Héraðsflói, which consisted of three stations each. **A)** Station 1, **B)** Station 2, **C)** Station 3, **D)** Station 4, **E)** Station 5 and **F)** Station 6, June 2019.

Mynd 2 Prófilar með niðurstöðum sjómælinga fyrir sniðin tvö í Héraðsflóa sem hvort um sig samanstendur af þremur sýnatökustöðvum. **A)** Stöð 1, **B)** Stöð 2, **C)** Stöð 3, **D)** Stöð 4, **E)** Stöð 5 og **F)** stöð 6, í júní 2019.

3.1.2 Geochemical analyses and sediment description

The sediment composition and Total Organic Carbon (TOC) in Héraðsflói varied from the shallowest to the deepest station and can be seen in Table 2. Station 1 and station 4 were the shallowest stations and had highest percentage of sand (>0.063 mm) in the samples (95.6 and 80.4 %, respectively). The amount of clay (pelite) increased at the deeper stations. TOC in the sediment were lowest at the shallowest stations near shore and increased with depth. The Carbon-Nitrogen ratio (C/N) were higher at the shallowest stations and decreased with depth and was highest at station 1 (C/N: 13.8).

Table 2 Overview of the sediment content of Total Organic Carbon (TOC mg/g), Total nitrogen (TN mg/g), Carbon to Nitrogen ratio (C/N), sediment grain size in percentage pelite and sand (>0.063 mm) from the stations in Héraðsflóa, June – July 2019.

Tafla 2 Yfirlit yfir magn í botnseti af Heildar lífrænt kolefni (TOC mg/g), Heildar köfnunarefni (TN mg/g), hlutfall kolefna og köfnunarefnis (C/N), kornstærð botnsets sem hlutfall leirkenns efnis og sands (>0.063 mm) fyrir sýnatökustöðvar í Héraðsflóa, júní – júlí 2019.

St.	Transect	Depth (m)	Sediment description	TOC	nTOC	TN	C/N	Pelite	>0.063mm
1	2	49	Black sand, no smell.	0.7	17.9	<0.05	13.8	4.4	95.6
2		97	Dense mud, no smell.	5.8	7.3	0.95	6.1	91.2	8.8
3		150	Dense mud, no smell.	6.7	9.3	1.0	6.9	85.5	14.5
4	1	49	Black sand, no smell.	1.6	16.1	0.2	8.9	19.6	80.4
5		99	Dense mud, no smell.	6.4	8.2	1.2	5.4	90.1	9.9
6		146	Dense mud, no smell.	6.0	6.7	1.1	5.3	95.8	4.2

3.1.3 Species composition

Among the six stations at the two transects in Héraðsflói, the number of taxa that were present varied from 33 at station 1 to 83 taxa at station 2 (Table 3). Number of individuals varied from 2990 ind./m² at station 1 to 29145 ind./m² at station 2. Station 2 had the highest number of taxa and abundance. The shallowest stations (station 1 and station 4) had the lowest number of taxa and abundance. The Shannon-Wiener diversity index (H') were highest at the shallowest stations near shore and had a varying decrease with increasing depth. Lowest SW index (H'=1.36) was seen at station 2 which had the highest number of taxa and abundance. Pielou evenness index (J) varied across the stations and were high at the shallowest station near shore and had a slightly and varying decrease with depth (Table 3).

Table 3 Number of species and individuals per m². H' = Shannon-Wieners diversity index. ES₁₀₀= Hurlberts diversity index. NQI1 = overall index (diversity and sensitivity). ISI2012= sensitivity index. NSI = sensitivity index. J = Pielous evenness index. AMBI = AZTI marine biotic index (part of NQI1). nEQR = normalized EQR.

Tafla 3 Fjöldi tegunda og einstaklinga per m². H' = Shannon-Wieners stuðull. ES₁₀₀= Hurlberts fjölbreytileika stuðull. NQI1 = heildar stuðull (fjölbreytileiki og næmni). ISI2012= næmnistuðull. NSI = næmnistuðull. J = Pielous einsleitnustuðull. AMBI = AZTI marine biotic index (hluti af NQI1). nEQR = normalized EQR.

Station	No of taxa	no. ind. per m ²	Shannon-Wiener:	ES100	NQI1	ISI-2012	NSI	nEQR	AMBI	Pielou
1	33	2990	2.50	12.82	0.64	9.89	22.82	0.63	2.51	0.63
2	83	29145	1.36	8.07	0.67	9.78	20.15	0.53	2.56	0.25
3	67	13055	1.39	10.34	0.66	9.91	20.61	0.56	2.65	0.26
4	47	5420	2.59	17.28	0.66	9.22	21.54	0.64	2.70	0.53
5	67	13705	1.93	14.21	0.67	9.17	20.71	0.59	2.63	0.36
6	68	14075	2.00	12.19	0.68	9.62	20.18	0.59	2.46	0.38

The main features of the species composition across the six stations in Héraðsflói are shown in the form of a top ten species list from each station in Table 4. The species are also divided into five ecological groups (EG) based on the value of the sensitivity index. These groups run from sensitive species (group I) to pollution indicator species (group V). The tolerant polychaeta *Galathowenia oculata* (group III) were the most dominant species across all stations followed by the sensitive polychaeta *Maldane sarsi* (group I) or the tolerant bivalve *Arctica islandica* (ecological group III). *Galathowenia oculata* contributed between 51 – 80 % of the total number of individuals at the stations.

Table 4 Number of individuals per m², cumulative percentage and AMBI ecological groups* for the ten most dominant species on the stations from East Iceland in 2019.

Tafla 4 Fjöldi einstaklinga pr. m², uppsöfnuð prósentu og vistfræðilegir hópar* fyrir tíu algengustu tegundir á sýnatökustöðvum á Austurlandi 2019.

1	Numb.	Cum.	EG	2	Numb.	Cum.	EG
<i>Galathowenia oculata</i>	1950	65%	III	<i>Galathowenia oculata</i>	19530	67%	III
<i>Arctica islandica</i>	335	76%	III	<i>Maldane sarsi</i>	8075	95%	I
<i>Eudorellopsis deformis</i>	200	83%	n.a.	<i>Glyphanostomum pallescens</i>	130	95%	n.a.
<i>Spio limicola</i>	135	87%	n.a.	<i>Heteromastus filiformis</i>	105	95%	IV
<i>Eteone flava/longa</i>	45	89%	n.a.	<i>Prionospio steenstrupi</i>	80	96%	IV
<i>Heteromastus filiformis</i>	35	90%	IV	<i>Ennucula tenuis</i>	75	96%	II
<i>Scoloplos armiger</i>	35	91%	III	<i>Laphania boeckii</i>	75	96%	n.a.
<i>Maldane sarsi</i>	25	92%	I	<i>Chaetozone setosa</i>	60	96%	IV
<i>Harpinia sp.</i>	20	93%	I	<i>Owenia sp.</i>	60	97%	II
Lysianassidae indet.	20	93%	I	<i>Diastylis scorpioides</i>	55	97%	n.a.
3	Numb.	Cum.	EG	4	Numb.	Cum.	EG
<i>Galathowenia oculata</i>	10505	80%	III	<i>Galathowenia oculata</i>	2750	51%	III
<i>Maldane sarsi</i>	1160	89%	I	<i>Arctica islandica</i>	1140	72%	III
<i>Owenia sp.</i>	235	91%	II	<i>Ampharete petersenae</i>	200	75%	n.a.
<i>Mendicula pygmaea</i>	140	92%	n.a.	<i>Scoloplos armiger</i>	145	78%	III
<i>Edwardsia sp.</i>	130	93%	II	<i>Abra prismatica</i>	120	80%	III
<i>Yoldiella solidula</i>	95	94%	n.a.	<i>Harpinia sp.</i>	110	82%	I
<i>Diastylis rathkei</i>	50	94%	III	<i>Spio limicola</i>	110	84%	n.a.
<i>Ceratocephale loveni</i>	40	94%	II	<i>Heteromastus filiformis</i>	100	86%	IV
<i>Diastylis scorpioides</i>	40	95%	n.a.	<i>Eudorellopsis deformis</i>	80	88%	n.a.
<i>Diastylis goodsiri</i>	35	95%	n.a.	<i>Lagis koreni</i>	70	89%	IV
5	Numb.	Cum.	EG	6	Numb.	Cum.	EG
<i>Galathowenia oculata</i>	10140	74%	III	<i>Galathowenia oculata</i>	8420	60%	III
<i>Maldane sarsi</i>	895	80%	I	<i>Maldane sarsi</i>	3575	85%	I
<i>Owenia sp.</i>	360	83%	II	<i>Owenia sp.</i>	325	87%	II
<i>Prionospio steenstrupi</i>	295	85%	IV	<i>Chaetozone setosa</i>	190	89%	IV
<i>Glyphanostomum pallescens</i>	265	87%	n.a.	<i>Lumbrineris mixochaeta</i>	190	90%	II
<i>Ampharete borealis</i>	180	88%	II	<i>Laphania boeckii</i>	140	91%	n.a.
<i>Laphania boeckii</i>	145	89%	n.a.	<i>Prionospio steenstrupi</i>	115	92%	IV
<i>Lumbrineris mixochaeta</i>	145	91%	II	Euclymeninae indet.	110	93%	III
<i>Ennucula tenuis</i>	135	92%	II	<i>Dipolydora sp.</i>	90	93%	n.a.
<i>Chaetozone setosa</i>	125	92%	IV	<i>Heteromastus filiformis</i>	75	94%	IV

*Ecological groups: EG I = sensitive species. EG II = neutral species. EG III = tolerant species. EG IV = opportunistic species. EG V = pollution indicator species, n.a. =, Not available, unidentified group. From Rygg and Norling, (2013). n.a. = not available.

3.2 Borgarfjörður eystri (stations 7 – 12)

3.2.1 Hydrographical profiles

The hydrographical profiles for the two transects in Borgarfjörður eystri, which consisted of three stations each, can be seen in Figure 3. An overall trend was observed at all stations where the upper water masses had a weak stratification layer with higher temperature, lower salinity and higher oxygen concentration, except station 12, which had homogenous water masses. Oxygen concentration was highest in the upper water masses and slightly declined below the stratification layer but were above 80 % in the bottom water.

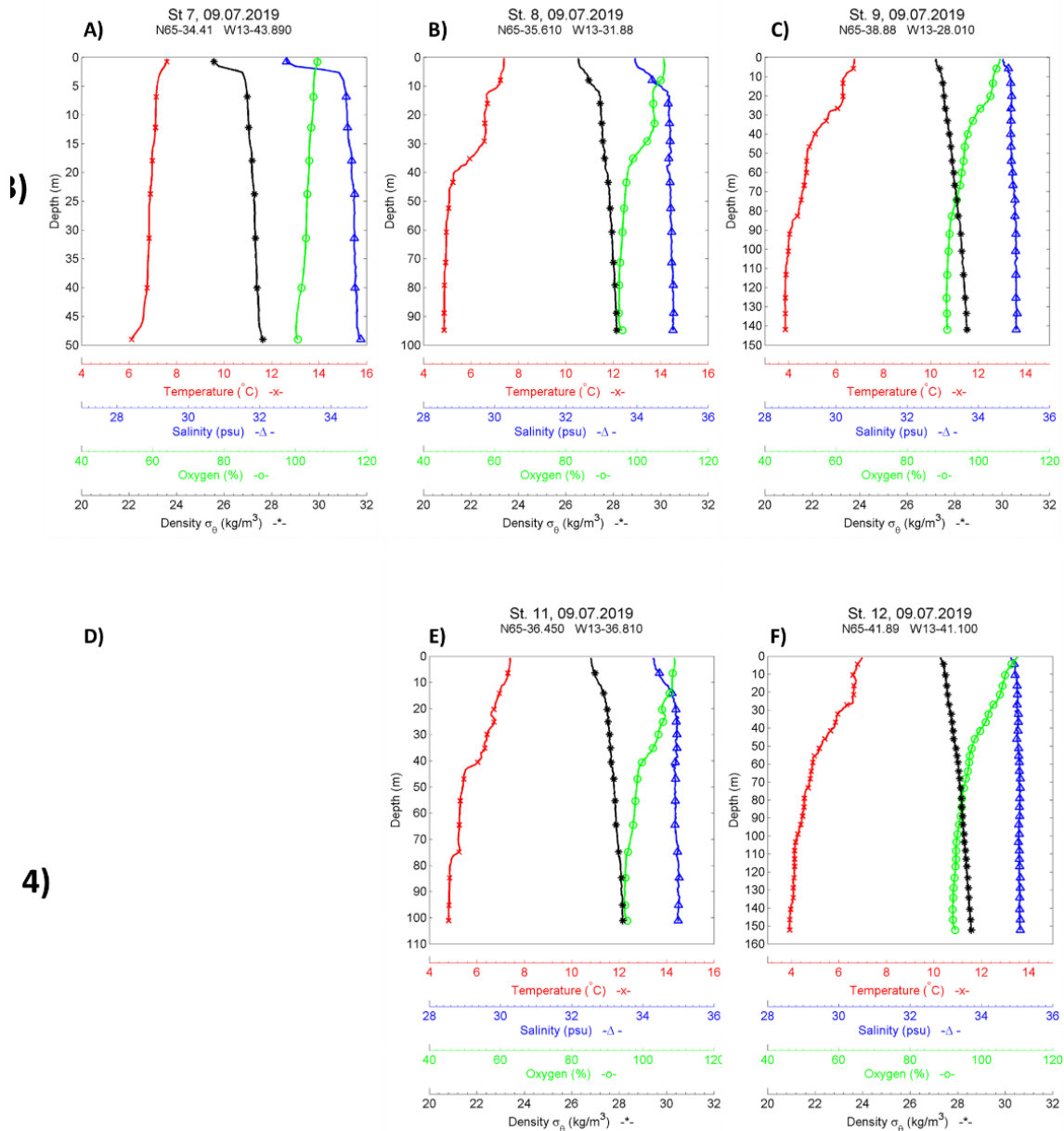


Figure 3 Hydrographical profiles for the two transects (1 and 2) in Borgarfjörður eystri, which consisted of three stations each. **A)** Station 7, **B)** Station 8, **C)** Station 9, **D)** Station 10 (error in dataset), **E)** Station 11 and **F)** Station 12 that were taken in June 2019.

Mynd 3 Prófilar með niðurstöðum sjómælinga fyrir sniðin tvö (1 og 2) á Borgarfirði eystri sem hvort um sig samanstendur af þremur sýnatökstöðvum. A) Stöð 7, B) Stöð 8, C) Stöð 9, D) Stöð 10, E) Stöð 11 og F) stöð 12 sem tekin voru í júní 2019.

3.2.2 Geochemical analyses and sediment description

The sediment composition and Total Organic Carbon (TOC) in Borgarfjörður varied from the shallowest station to the deepest and can be seen in Table 5. Station 7 and 10 were the shallowest stations and had highest percentage of sand (>0.063 mm) in the samples (81.8 and 85.9 %, respectively). Percentage of clay (pelite) increased at the deeper stations. TOC in the sediment were lowest at the shallowest stations near shore and increased with depth. The Carbon-Nitrogen ratio (C/N) were higher at the shallowest stations and decreased with depth.

Table 5 Overview of the sediment content of Total Organic Carbon (TOC in mg/g), Total nitrogen (TN in mg/g), Carbon to Nitrogen ratio (C/N), sediment grain size in percentage pelite and sand (>0.063 m) from the stations in Borgarfirði taken in June – July 2019 by Akvaplan-niva.

Tafla 5 Yfirlit yfir magn í botnseti af Heildar lífrænt kolefni (TOC mg/g), Heildar köfnunarefni (TN mg/g), hlutfall kolefna og köfnunarefnis (C/N), kornstærð botnsets sem hlutfall leirkennds efnis og sands (>0.063 mm) fyrir sýnatökustöðvar í Héraðsflóa, júní – júlí 2019.

St.	Transect	Depth	Sediment description	TOC	nTOC*	TN	C/N	Pelite	>0.063mm
7	3	49	Fine sand, no smell	1.0	15.7	0.1	9.6	18.2	81.8
8		99	Mud/sand/gravel, no smell	5.4	16.8	0.83	6.5	36.8	63.2
9		150	Mud/gravel, no smell	4.3	13.1	0.8	5.4	51.1	48.9
10	4	51	Fine sand, no smell	1.5	17.0	0.14	10.9	14.1	85.9
11		104	Mud/sand, no smell	5.1	14.0	0.7	6.9	50.6	49.4
12		155	Mud/gravel, no smell	7.4	14.2	1.1	6.6	62.1	37.9

3.2.3 Species composition

Among the six stations distributed over the two transects in Borgarfjörður eystri (Figure 3), the number of taxa varied from 41 at station 7 to 145 taxa at station 11 (Table 6). Number of individuals varied from 5 310 ind./m² at station 7 to 10 675 ind./m² at station 11. Station 11 had both the highest number of taxa and abundance. The two shallowest stations (station 7 and 10) had the lowest number of taxa and abundance. The Shannon-Weiner diversity index (H') was highest at station 8 (4.82) and lowest at station 7 (2.15). Pielou evenness index (J') varied across the stations in Borgarfjörður and was high at station 8 (0.76) and low at station 7 (0.45). There was no clear pattern in either H' or J' with increasing depth.

Table 6 Number of species and individuals per m². H' = Shannon-Wieners diversity index. ES₁₀₀= Hurlberts diversity index. NQ11 = overall index (diversity and sensitivity). ISI2012= sensitivity index. NSI = sensitivity index. J = Pielous evenness index. AMBI = AZTI marine biotic index (part of NQ11). nEQR = normalized EQR.

Tafla 6 Fjöldi tegunda og einstaklinga per m². H' = Shannon-Wieners stuðull. ES₁₀₀= Hurlberts fjölbreytileika stuðull. NQ11 = heildar stuðull (fjölbreytileiki og næmni). ISI2012= næmnistuðull. NSI = næmnistuðull. J = Pielous einsleitistuðull. AMBI = AZTI marine biotic index (hluti af NQ11) nEQR = normalized EQR.

Station	No of taxa	no. ind. per m ²	Shannon-Wiener:	ES100	NQ11	ISI-2012	NSI	nEQR	AMBI	Pielou
7	41	5310	2.15	16.13	0.65	9.47	21.30	0.62	2.69	0.45
8	144	8540	4.82	36.03	0.80	11.17	24.70	0.82	1.88	0.76
9	97	10020	2.66	18.24	0.74	10.84	20.52	0.67	2.15	0.46
10	66	8735	2.89	19.78	0.69	9.49	21.30	0.66	2.57	0.53
11	145	10675	4.45	34.29	0.79	11.25	23.91	0.80	2.03	0.69
12	112	9840	3.29	24.67	0.77	10.89	21.83	0.72	1.92	0.55

The main features of the species composition across the six stations in Héraðsflói are shown in the form of a top ten species list from each station in Table 7. The species are also divided into five ecological groups (EG) based on the value of the sensitivity index. These groups run from sensitive species (group I) to pollution indicator species (group V). The tolerant polychaeta *Galathowenia oculata* (group III) were the most dominant species across all stations and mainly followed by the sensitive polychaeta *Maldane sarsi* (group I). *Galathowenia oculata* contributed between 19 – 69 % of the total number of individuals at the stations.

Table 7 Number of individuals per m², cumulative percentage and AMBI ecological groups* for the ten most dominant species on the stations from East Iceland in 2019.

Tafla 7 Fjöldi einstaklinga pr. m², uppsöfnuð prósentu og vistfræðilegir hópar* fyrir tíu algengustu tegundir á sýnatökustöðvum á Austurlandi 2019.

7	Numb.	Cum.	EG	8	Numb.	Cum.	EG
<i>Galathowenia oculata</i>	3645	69%	III	<i>Galathowenia oculata</i>	1670	19%	III
<i>Arctica islandica</i>	400	76%	III	<i>Chone</i> sp.	745	27%	II
<i>Eudorellopsis deformis</i>	130	79%	n.a.	<i>Chirimia biceps</i>	705	35%	II
<i>Spio limicola</i>	120	81%	n.a.	<i>Rhodine gracilior</i>	705	44%	I
<i>Photis</i> sp.	105	83%	n.a. n.a.	<i>Maldane sarsi</i>	395	48%	I
<i>Ampharete petersenae</i>	95	85%	n.a.	<i>Spio limicola</i>	235	51%	n.a.
<i>Pygospio elegans</i>	90	86%	n.a.	<i>Praxillura longissima</i>	200	53%	III
<i>Owenia</i> sp.	80	88%	II	<i>Chaetozone</i> sp.	195	55%	IV
<i>Abra prismatica</i>	75	89%	III	<i>Melinna elisabethae</i>	170	57%	III
<i>Mediomastus fragilis</i>	55	90%	III	<i>Aphelochaeta</i> sp.	150	59%	IV
9	Numb.	Cum.	EG	10	Numb.	Cum.	EG
<i>Galathowenia oculata</i>	5025	50%	III	<i>Galathowenia oculata</i>	4860	55%	III
<i>Maldane sarsi</i>	2685	77%	I	<i>Spio limicola</i>	520	61%	n.a.
<i>Mendicula pygmaea</i>	295	80%	n.a.	<i>Ampharete petersenae</i>	515	67%	n.a.
<i>Chirimia biceps</i>	245	82%	II	<i>Arctica islandica</i>	435	72%	III
<i>Glyphanostomum pallescens</i>	145	83%	n.a.	<i>Eudorellopsis deformis</i>	360	76%	n.a.
<i>Edwardsia</i> sp.	120	85%	II	<i>Protomedeia fasciata</i>	340	80%	II
<i>Yoldiella solidula</i>	100	86%	n.a.	<i>Owenia</i> sp.	150	82%	II
<i>Spio limicola</i>	90	87%	n.a.	<i>Lagis koreni</i>	145	84%	IV
<i>Melinna cristata</i>	60	87%	III	<i>Photis</i> sp.	120	85%	n.a.
<i>Owenia</i> sp.	60	88%	II	<i>Harpinia</i> sp.	95	86%	I
11	Numb.	Cum.	EG	12	Numb.	Cum.	EG
<i>Galathowenia oculata</i>	3490	32%	III	<i>Galathowenia oculata</i>	4835	49%	III
<i>Chirimia biceps</i>	1210	43%	II	<i>Maldane sarsi</i>	2385	73%	I
<i>Maldane sarsi</i>	650	49%	I	<i>Mendicula pygmaea</i>	390	77%	n.a.
<i>Chone</i> sp.	585	54%	II	<i>Glyphanostomum pallescens</i>	205	79%	n.a.
<i>Chaetozone</i> sp.	445	59%	IV	<i>Edwardsia</i> sp.	165	80%	II
<i>Rhodine gracilior</i>	310	61%	I	<i>Yoldiella solidula</i>	140	82%	n.a.
<i>Notomastus latericeus</i>	175	63%	III	<i>Owenia</i> sp.	135	83%	II
<i>Terebellides</i> sp.	150	64%	n.a.	<i>Chone</i> sp.	110	84%	II
<i>Nothria conchylega</i>	145	66%	II	<i>Galathowenia fragilis</i>	80	85%	III
<i>Melinna elisabethae</i>	140	67%	III	<i>Chaetozone</i> sp.	60	86%	IV

*Ecological groups: EG I = sensitive species, EG II = neutral species, EG III = tolerant species, EG IV = opportunistic species, EG V = pollution indicator species, n.a. =, Not available, unidentified group. FromRygg and Norling, (2013).

3.3 Vopnafjörður (stations 13 – 18)

3.3.1 Hydrographical profiles

The hydrographical profiles for the two transects in Vopnafjörður are presented in Figure 4. Station 13 showed the strongest stratification layer compared to the other stations. An overall trend was observed at all stations were temperature was higher and salinity lower in the upper water masses. Oxygen concentrations were highest in the upper water masses and slightly declined below the stratification layer but were above 80 % in the bottom water.

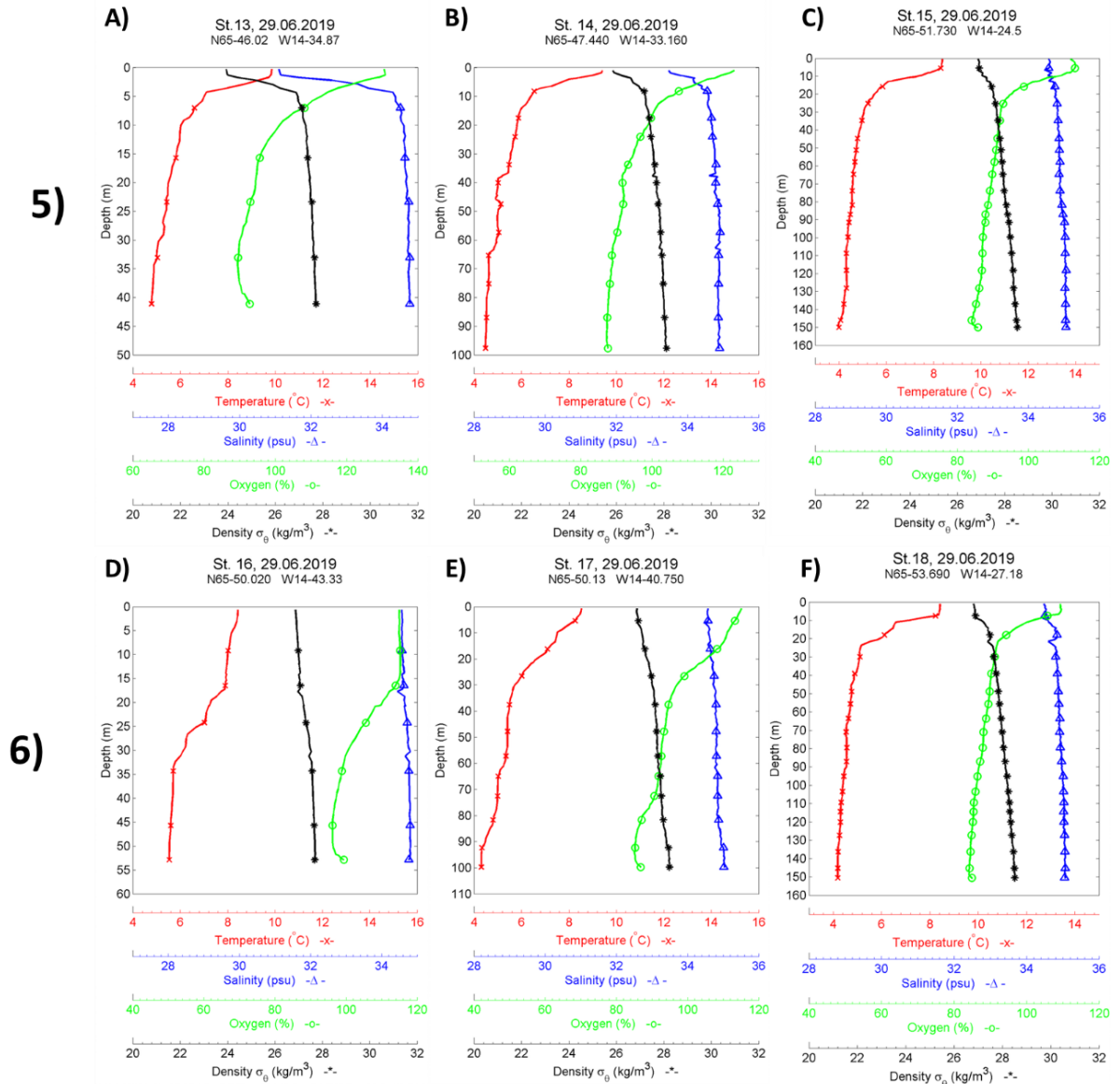


Figure 4 Hydrographical profiles for the two transects (5 and 6) in Vopnafjörður, which consisted of three stations each. **A)** Station 13, **B)** Station 14, **C)** Station 15, **D)** Station 16, **E)** Station 17 and **F)** Station 18, June 2019.

Mynd 4 Prófilar með niðurstöðum sjómælinga fyrir sniðin tvö (1 og 2) á Vopnafirði sem hvort um sig samanstendur af þremur sýnatökustöðvum. A) Stöð 13, B) Stöð 14, C) Stöð 15, D) Stöð 16, E) Stöð 17 og F) stöð 18 sem tekin voru í júní 2019.

3.3.2 Geochemical analyses and sediment description

The sediment composition and Total Organic Carbon (TOC) in Vopnafjörður varied from the shallowest station to the deepest and can be seen in Table 8. Stations 13 and 18 were the

shallowest stations and had highest percentage of sand (>0.063 mm) in the samples (80.7 and 70.2 %, respectively). Percentage of clay (pelite) increased from the shallowest station to approximately 100 m, and decreased to equal amount of sand and clay at the deepest stations 15 and 18. TOC in the sediment were lowest at the shallowest stations near shore and increased to the deeper stations at ca. 100 m, and subsequently decreased a little to the deepest station at 150 m depth. The Carbon-Nitrogen ratio (C/N) varied across the depths but did not show explainable pattern with depth.

Table 8 Overview of the sediment content of Total Organic Carbon (TOC in mg/g), Total nitrogen (TN in mg/g), Carbon to Nitrogen ratio (C/N), sediment grain size in percentage pelite and sand (>0.063 m) from the stations in Vopnafjörður taken in June – July 2019 by Akvaplan-niva.

Tafla 8 Yfirlit yfir magn í botnseti af Heildar lífrænt kolefni (TOC mg/g), Heildar köfnunarefni (TN mg/g), hlutfall kolefna og köfnunarefnis (C/N), kornstærð botnsets sem hlutfall leirkenns efnis og sands (>0.063 mm) fyrir sýnatökustöðvar í Héraðsflóa, júní – júlí 2019.

St.	Transect	Depth	Sediment description	TOC	nTOC*	TN	C/N	Pelite	>0.063mm
13	5	53	Sand, no smell	3.1	17.6	0.6	5.4	19.3	80.7
14		97	Dense mud, no smell	9.7	16.6	2.0	4.9	61.8	38.2
15		148	Dense mud, no smell	8.3	15.6	1.6	5.1	59.4	40.6
16	6	53	Sand/mud, no smell	5.6	18.2	1.31	4.3	29.8	70.2
17		99	Dense mud, no smell	9.9	13.4	2.05	4.8	80.5	19.5
18		148	Dense mud, no smell	9.1	16.1	2.02	4.5	61.1	38.9

3.3.3 Species composition

Among the six stations distributed over the two transects in Vopnafjörður (Figure 1), the number of taxa varied from 57 at station 17 to 124 taxa at station 16. Number of individuals varied from 3040 ind./m² at station 13 to 17 645 ind./m² at station 18 (Table 9). The two shallowest stations had the highest number of taxa. The Shannon-Weiner diversity index (H') were highest at station 13 (5.42) and lowest at station 15 (1.74). Pielou evenness index (J') varied across the stations in Vopnafjörður and was high at station 13 (0.90) and low at station 15 and 18 (0.33). H' decreased with increasing depth and J' had no clear pattern with changing depths.

Table 9 Number of species and individuals per m². H' = Shannon-Wieners diversity index. ES₁₀₀= Hurlberts diversity index. NQI1 = overall index (diversity and sensitivity). ISI2012= sensitivity index. NSI = sensitivity index. J = Pielous evenness index. AMBI = AZTI marine biotic index (part of NQI1). nEQR = normalized EQR.

Tafla 9 Fjöldi tegunda og einstaklinga per m². H' = Shannon-Wieners stuðull. ES₁₀₀= Hurlberts fjölbreytileika stuðull. NQI1 = heildar stuðull (fjölbreytileiki og næmni). ISI2012= næmnistuðull. NSI = næmnistuðull. J = Pielous einsleitnistuðull. AMBI = AZTI marine biotic index (hluti af NQI1). nEQR = normalized EQR.

Station	No of taxa	no. ind. per m ²	Shannon-Wiener:	ES100	NQI1	ISI-2012	NSI	nEQR	AMBI	Pielou
13	107	3040	5.42	46.22	0.86	10.55	25.78	0.89	1.35	0.90
14	98	14255	2.52	16.07	0.72	9.53	20.11	0.64	2.33	0.43
15	68	11670	1.74	11.83	0.67	9.96	20.68	0.58	2.55	0.33
16	124	11455	4.18	29.31	0.74	10.05	22.84	0.75	2.60	0.66
17	57	3495	3.56	22.90	0.71	9.30	21.45	0.69	2.41	0.69
18	81	17645	1.81	11.62	0.69	10.51	20.58	0.59	2.48	0.33

The main features of the species composition across the six stations in Vopnafjörður are shown in the form of a top ten species list from each station in Table 10. The species are also divided

into five ecological groups (EG) based on the value of the sensitivity index. These groups run from sensitive species (group I) to pollution indicator species (group V). The tolerant polychaeta *Galathowenia oculata* (group III) were the most dominant species at five of the six stations. *Galathowenia oculata* contributed between 26 – 72 % of the total number of individuals at the stations. The sensitive polychaeta *Maldane sarsi* (ecological group I) was the second most dominant species at four of the stations.

Table 10 Number of individuals per m², cumulative percentage and AMBI ecological groups* for the ten most dominant species on the stations from East Iceland in 2019.

Tafla 10 Fjöldi einstaklinga pr. m², uppsöfnuð prósentu og vistfræðilegir hópar* fyrir tíu algengustu tegundir á sýnatökustöðvum á Austurlandi 2019.

13	Numb.	Cum.	EG	14	Numb.	Cum.	EG
<i>Crenella decussata</i>	165	5%	I	<i>Galathowenia oculata</i>	6440	45%	III
<i>Parvicardium pinnulatum</i>	165	10%	n.a.	<i>Maldane sarsi</i>	4995	80%	I
<i>Edwardsia</i> sp.	120	14%	II	<i>Prionospio steenstrupi</i>	520	83%	IV
<i>Pista maculata</i>	115	18%	n.a.	<i>Rhodine gracilior</i>	200	85%	I
<i>Stenosemus albus</i>	115	21%	n.a.	<i>Chaetozone</i> sp.	195	86%	IV
<i>Amphicteis gunneri</i>	110	25%	III	<i>Chaetozone setosa</i>	155	87%	IV
<i>Galathowenia oculata</i>	105	28%	III	<i>Myriochele malmgreni/olgae</i>	120	88%	n.a.
<i>Ampharete petersenae</i>	95	31%	n.a.	<i>Glyphanostomum pallescens</i>	110	89%	n.a.
<i>Astarte elliptica</i>	95	34%	I	<i>Lumbrineris mixochaeta</i>	95	90%	II
<i>Melinna elisabethae</i>	95	37%	III	<i>Owenia</i> sp.	95	90%	III
15	Numb.	Cum.	EG	16	Numb.	Cum.	EG
<i>Galathowenia oculata</i>	8430	72%	III	<i>Galathowenia oculata</i>	3095	26%	III
<i>Maldane sarsi</i>	1690	86%	I	<i>Spio limicola</i>	1580	39%	n.a.
<i>Owenia</i> sp.	260	89%	II	<i>Dipolydora</i> sp.	1450	52%	n.a.
<i>Galathowenia fragilis</i>	170	90%	III	<i>Ampharete petersenae</i>	825	59%	n.a.
<i>Yoldiella solidula</i>	120	91%	n.a.	<i>Rhodine gracilior</i>	545	63%	I
<i>Mendicula pygmaea</i>	115	92%	n.a.	<i>Nothria conchylega</i>	230	65%	II
<i>Myriochele malmgreni/olgae</i>	100	93%	n.a.	<i>Macoma calcarea</i>	220	67%	II
<i>Glyphanostomum pallescens</i>	55	93%	n.a.	<i>Goniada maculata</i>	175	68%	II
<i>Yoldiella lucida</i>	55	94%	I	<i>Spio armata</i>	170	70%	n.a.
<i>Diastylis rathkei</i>	50	94%	III	<i>Maldane sarsi</i>	165	71%	I
17	Numb.	Cum.	EG	18	Numb.	Cum.	EG
<i>Galathowenia oculata</i>	1070	30%	III	<i>Galathowenia oculata</i>	12280	69%	III
<i>Prionospio steenstrupi</i>	525	45%	IV	<i>Maldane sarsi</i>	3135	87%	I
<i>Maldane sarsi</i>	460	58%	I	<i>Owenia</i> sp.	300	89%	II
<i>Ennucula tenuis</i>	345	68%	II	<i>Yoldiella solidula</i>	210	90%	n.a.
<i>Owenia</i> sp.	150	72%	II	<i>Mendicula pygmaea</i>	185	91%	n.a.
<i>Ampharete borealis</i>	85	75%	II	<i>Galathowenia fragilis</i>	145	92%	III
<i>Thyasira gouldi</i>	80	77%	I	<i>Lumbrineris mixochaeta</i>	115	93%	II
<i>Myriochele malmgreni/olgae</i>	75	79%	n.a.	<i>Glyphanostomum pallescens</i>	85	93%	n.a.
<i>Chaetozone setosa</i>	60	81%	IV	<i>Rhodine gracilior</i>	75	93%	I
<i>Macoma calcarea</i>	50	82%	II	<i>Chaetozone</i> sp.	70	94%	III

*Ecological groups: EG I = sensitive species. EG II = neutral species. EG III = tolerant species. EG IV = opportunistic species. EG V = pollution indicator species, n.a. =, Not available, unidentified group. From Rygg and Norling, (2013).

3.4 Seafloor communities

3.4.1 Taxa composition at all sites

During the sampling in June – July 2019, a total of 317 taxa were collected from all stations. The taxa distribution across the phyla can be seen in Figure 5. The taxonomical group Polychaeta were the superior dominant in the species list with 91 % of the total taxa. Mollusca was the following taxonomical group that contributed to 71 taxa of the total taxonomical list with 5 % and Crustacea with 56 taxa (3 %). The station with most taxa was station 11 with 145 taxa and the station with the least taxa was station 1 with 33 taxa.

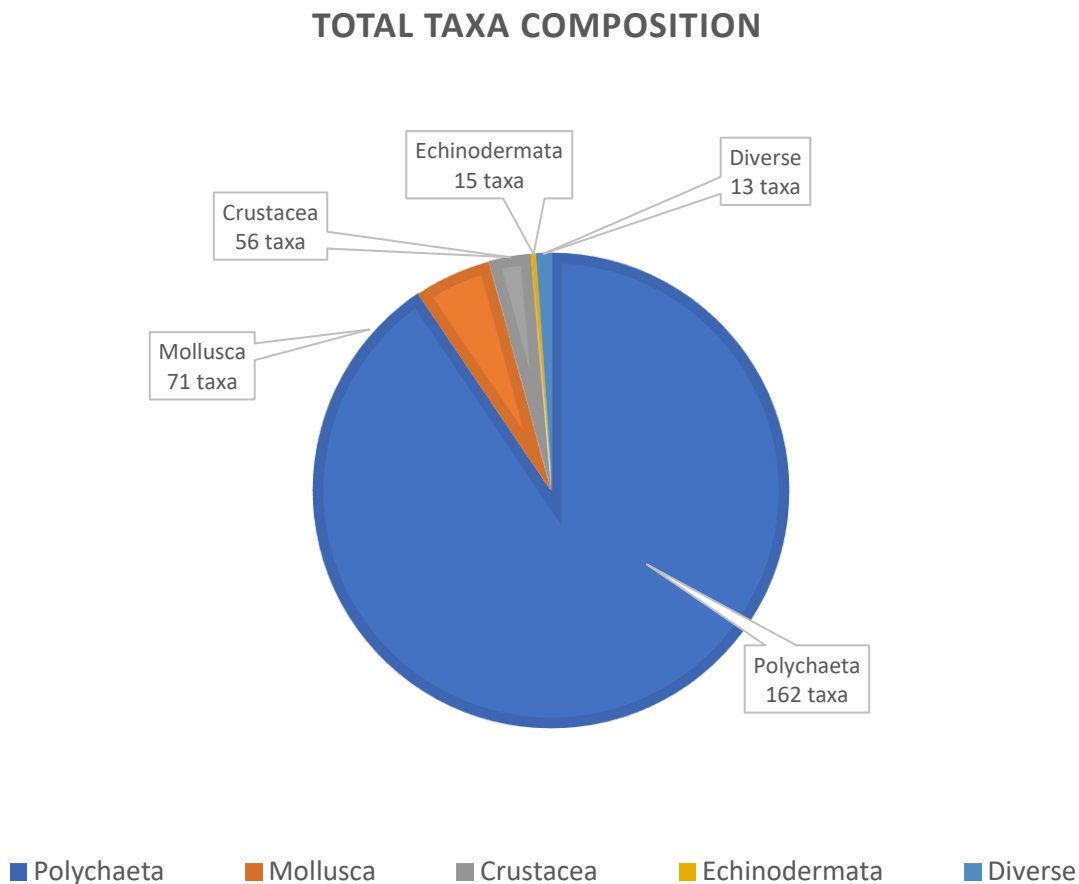


Figure 5 The proportion of invertebrate taxonomic composition by phyla that was collected in East Iceland in June – July 2019 by Van veen Grab.

Mynd 5 Hlutfall hryggleysingja eftir fylkingum í sýnum sem safnað var á Austurlandi í júní – júlí 2019 með Van veen greip.

3.4.2 Seafloor communities in comparison

Hierarchical cluster analysis and nMDS plot are shown as Figure 6 A B to visualise if any stations had any distinctive taxa. It was possible to see that most of the stations containing factor sandy sediment were somewhat ordinated closely together, whereas the stations with factors clay and mixed sediment did not show a distinct separation.

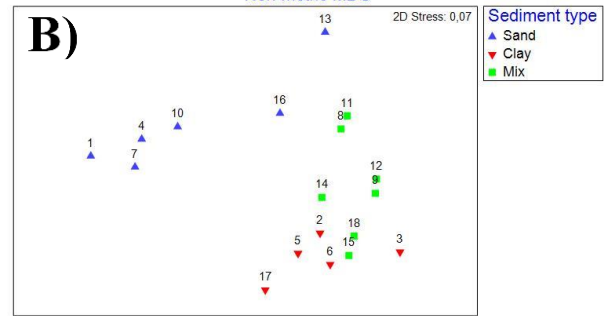
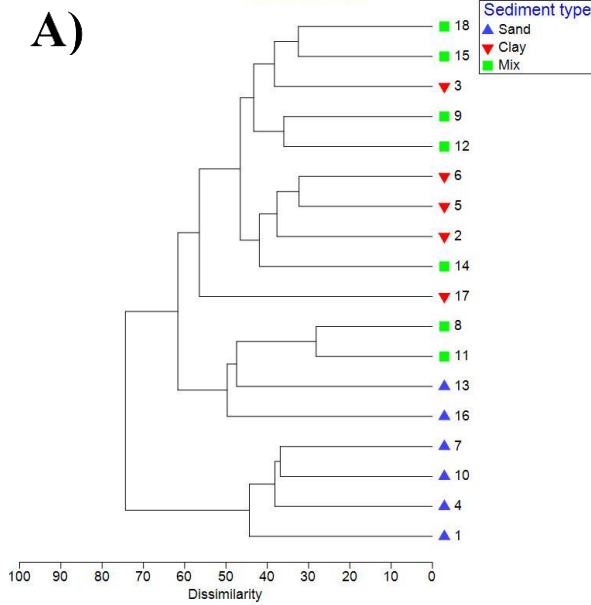


Figure 6 Grouping of the stations based on factor sediment type in East Iceland 2019 by **A)** Hierarchical Cluster Analysis, group average and **B)** non-Metric Multidimensional Scaling (nMDS).

Mynd 6 Flokkun sýnatökustöðva eftir tegund botngerðar á Austurlandi 2019 skv. A) Klasagreiningu, meðaltal hópa og B) nMDS greiningu.

Analysis of Similarities (ANOSIM) was conducted on the factor sediment type to see if there were any statistically significant differences in taxa composition at the different stations due to sediment composition (Table 11). ANOSIM suggested that there was a statistically significant difference ($p = 0.001$, $R = 0.58$) in taxonomical composition between the different sediment types Sand, clay and mix. R statistic suggested a strong separation between the factors sand and mix as well as sand and clay.

Table 11 Results from one-way ANOSIM test. Test was conducted to see if there were any statistically significant difference in the seafloor communities due to the sediment types sand, mix and clay. Showing groups, R statistic, significance level, possible permutations, actual permutations and number observed. "

Tafla 11 Niðurstöður úr fjölpáttagreiningu (ANOSIM). Próf voru gerð til þess að kanna hvort tölfræðilega marktækur munur væri á milli botndýrasamfélaga tengt botngerða sands, blöndu sands og leirs og leirs. Í töflu eru tilgreindir hópar, R fylgnistuðull, marktæknikrafa, hugsanleg umröðun, raun umröðun, fjöldi athugana.

Groups	R statistic	Significance level %	Possible permutations	Actual permutations	Number >= observed
Sand, Mix	0.73	0.1	1716	999	0
Sand, Clay	0.744	0.4	462	462	2
Mix, Clay	0.285	3.7	792	792	29

ANOSIM test was also performed for the different locations Héraðsflói, Borgarfjörður and Vopnafjörður and did not show statistically significant difference between the bays ($p = 0.26$, $R = 0.047$) (Table 12).

Table 12 Results from one-way ANOSIM test. Test was conducted to see if there were any statistically significant difference in the seafloor communities between the different locations (Héraðslói, Borgarfjörður and Vopnafjörður) in East Iceland, June – July 2019.

Tafla 12 Niðurstöður úr fjölþáttagreiningu (ANOSIM). Próf voru gerð til þess að kanna hvort tölfærðilega marktækur munur væri á milli botndýrasamfélaga á þremur svæðum (Héraðslóa, Borgarfjarðar og Vopnafjarðar).

Groups	R statistic	Significance level %	Possible permutations	Actual permutations	Number >= observed
Héraðslói, Borgarfjörður	0.096	14.1	462	462	65
Héraðslói, Vopnafjörður	0.002	45.7	462	462	211
Borgarfjörður, Vopnafjörður	0.03	32.5	462	462	150

4 Discussion

4.1 Comparison between Héraðsflóa and reference sites

The sediment grain size across the stations seem not to show a big difference from Héraðsflói to the reference sites. All transects and stations within the sites had similar trend, where the shallowest stations had higher proportion of sand in sediment and there was a general higher clay content with increasing depth. The same trends could also be seen in TOC-levels. C/N-ratio at station 1 were recorded as the highest and above values that are common for marine sediments, which can also indicate that this station is more influenced by terrestrial input than the others.

In addition to the sandy stations in Héraðsflói, there were also found sandy stations at the reference sites and were ordinated in the Hierarchical Cluster Analysis and nMDS (Figure 6 A and B) as more similar in taxonomic composition than the stations belonging to the same bay system, indicating no differences in the seafloor communities between Héraðsflói and the reference sites. This was also proven when ANOSIM test was conducted (Table 12). The list of the top ten most frequent taxa showed that there were some recurring species across the stations (e.g. *Galathowenia oculata* were found at all stations).

4.2 Comparison to previous survey in 2006

The survey conducted in 2006 did not show large variation in faunal communities between Héraðsflói and the other two reference locations but showed rather similar communities based on sediment type (sand, mixed and clay; Ólafsdóttir *et al.* 2007). Two separate groupings were observed, where faunal communities in sandy sediment at the stations were considered as one group and communities with mixed and clay sediment as the other group. The results from the survey conducted in 2019 showed the same general trend, where the faunal communities were grouped by sediment type. Sandy sediment type was mostly found in the shallow areas at ca. 50 m, whereas mixed and clay sediment were found at deeper depths of 100 – 150 m in both surveys.

The sediment composition in Héraðsflói showed small changes since the first survey was carried out and there has been a slight increase in the proportion of sand at station 1, which can explain the changes in the number of taxa from 63 in 2006 to 33 in 2019. It is also interesting to note that the lowest abundance recorded in the 2019 survey was at station 1, which was not the case for station 1 in 2006 (Table 13). A decrease in Shannon Wiener diversity index was also recorded at station 1 from 2006 to 2019. Even if the number of taxa decreased at station 1 in Héraðsflóa between the two surveys, it is possible to see that the number of taxa is either comparable or trending higher at the other stations between the surveys (Table 13). In addition to a decrease in number of taxa, there was also observed a shift in taxonomical composition at station 1 (closest to the river discharge area) between the two surveys after the start-up of the Kárahnjúkar dam. The polychaeta *Sabellides borealis* was the dominant species in terms of abundance at station 1 in 2006 but was not observed at the same station in the 2019 survey. Instead, the polychaeta *Galathowenia oculata* was observed to dominate the fauna at station 1 in 2019. The changes in taxonomical composition can be linked to the high C/N-ratio at station 1, which is an indication of terrestrial input to the marine system. It was suspected that after starting of the powerplant there would be higher ratio of less coarse material entering the Héraðsflói. The slightly higher proportion of sand at station 1 could seem contradictory to this but it could indicate that there has also been a reduction in clay and finer sediments entering the Héraðsflói. Further studies might give more information about these changes if they are

merely the results of annual fluctuations or can be linked to long term changes in the amount of sand and clay in the river effluent.

Consequently, one would have assumed that finding only 174 taxa in 2006 compared to 317 taxa in 2019 is somewhat contradictory when it is known that the first survey used a mesh size of 500µm (possibility to catch smaller organisms), whereas the recent survey used a larger mesh size of 1 mm. However, these two surveys have been conducted with span of thirteen years, with no recordings in annual fluctuations, which is important to keep in mind that natural fluctuations within a year can occur and has not been observed for this case study.

The survey conducted in 2006 mentioned some challenges in counting the polychaeta *Galathowenia oculata* due to its slimy polychaeta tube and suggested that the counting could have been unprecise. Even though the uncertainty is mentioned, the number of *Galathowenia oculata* did not show a clear trend with depth and sites and between the years, and can be due to inconsistent use of mesh size between the surveys, where they in 2006 could have managed to sample smaller *G. oculata* than the recent year.

Table 13 Summary of the percentage clay and sand for 2016 and 2019, Total Organic Matter (TOM) in % for 2006 and Total Organic Carbon in mg/g for 2019, number of taxa, number of individuals per m² and Shannon Wiener diversity index (H') at the stations in Héraðsflói, Borgarfjörður, and Vopnafjörður in East Iceland. Numbers in grey cells are from the survey in 2006 and white cells are numbers from survey in 2019. Bold numbers in the cells are showing the minimum value and the maximum value.

Tafla 13 Samantekt á hlutfalli leirs og sands árin 2006 og 2019, heildar lífrænu efni (TOM) í % árið 2006, heildar lífrænu kolefni (TOC) árið 2019, fjölda tegunda og einstaklinga bæði árin og SW fjölbreytileikastuðull (H') árin 2006 og 2019 fyrir rannsóknarsvæðin Héraðsflói, Borgarfjörður og Vopnafjörður. Tölur á gráskyggðum dálkum eru fyrir árið 2006 og hvítum dálkum fyrir árið 2019. Feitletraðar tölur sýna lægstu og hæstu gildi.

Station	Clay %		Sand %		TOM % (2006) TOC mg/g TS (2019)		No. of taxa		No. of ind. per m ²		H'	
	2006	2019	2006	2019	2006	2019	2006	2019	2006	2019	2006	2019
Héraðsflói												
1	27.4	4.4	72.6	95.6	1.6	0.7	63	33	20437	2990	3	2.5
2	98.5	91.2	1.5	8.8	2.9	5.8	64	83	18192	29145	3.1	1.36
3	96	85.5	3.7	14.5	3.4	6.7	73	67	29633	13055	1.8	1.39
4	15.6	19.6	84.1	80.4	2.7	1.6	47	47	2810	5420	4	2.59
5	96.6	90.1	3.3	9.9	3.5	6.4	58	67	13734	13705	3.5	1.93
6	64.7	95.8	16.4	4.2	3.1	6	68	68	25881	14075	2.8	2
Borgarfjörður												
7	22.7	18.2	77.3	81.8	1.4	1	49	41	6384	5310	3.2	2.15
8	42.4	36.8	49.2	63.2	3.4	5.4	86	144	17400	8540	3.2	4.82
9	45.5	51.1	48.6	48.9	4.1	4.3	67	97	17797	10020	2.9	2.66
10	21.8	14.1	78.2	85.9	1.6	1.5	47	66	5014	8735	3.7	2.89
11	89.4	50.6	10.4	49.4	3.8	5.1	63	145	20364	10675	2.9	4.45
12	64.6	62.1	29.5	37.9	4.6	7.4	71	112	17375	9840	3	3.29
Vopnafjörður												
13	1.4	19.3	98.4	80.7	2.3	3.1	53	107	5040	3040	3.1	5.42
14	51.1	61.8	48.6	38.2	4.2	9.7	80	98	24348	14255	3.1	2.52
15	75.5	59.4	24.2	40.6	4.4	8.3	63	68	19371	11670	2.6	1.74
16	40.4	29.8	59.3	70.2	4.2	5.6	68	124	32114	11455	3.3	4.18
17	83.5	80.5	14.9	19.5	5.7	9.9	52	57	31724	3495	2.9	3.56
18	58.4	61.1	41.4	38.9	4.6	9.1	71	81	17962	17645	2.8	1.81

5 Conclusion

The survey carried out in 2006 did not show large variation in faunal communities between Héraðsflói and the other two reference locations but showed rather similar communities based on sediment type. Two separate groupings were observed, where faunal communities that contained sandy sediment at the stations were considered as one group and communities with mixed and clay sediment were the other group. The results from the present survey in 2019 showed the same trend, where the faunal communities were grouped by sediment type, and not a distinct separation of Héraðsflóa and the reference sites. However, it was observed that station 1 closest to the river input in Héraðsflóa experienced some changes in sediment composition, reduction in abundance and number of taxa and changes in taxa composition between the two surveys which could be related to river discharges, but also annual changes. The overall taxonomical composition at the different study sites in 2019 looks similar to the case study in 2006, and no major changes related to the possible changes in the river outflow were apparent.

- Result in the 2019 survey are in general comparable with results from the 2006 survey in terms no distinctive difference in the faunal communities between Héraðsflói and the reference sites.
- Distinctive faunal communities related to sediment type (sand and mix of sand/clay).
- Some changes in sediment composition at station 1 (Héraðsflói) and reduction in taxa composition between years could be related to changes in river discharges or merely reflect annual changes.
- Overall, no major changes in the taxonomical composition observed related to the possible changes in the rive outflow.

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Appendices

6.1 Appendix 1. Statistic methods applied to the soft bottom fauna

Diversity indices

Diversity indices describe the diversity of an animal or plant community in an area or at a specific site. Several diversity indices exist and are widely applied in monitoring studies. Some indices focus mainly on number of species (species richness), while other address the distribution of individuals between species (measures of evenness or dominance). Different indices thus highlight different aspects of the faunal community

Diversity indices are "classical" in surveys of contamination and discharges as environmental disturbance often is expressed in changes of the species and individuals distribution of the community. A weakness, however, related to diversity indices is that changes are not always discovered, as one species may replace another in the same number of individuals, and thus not trigger any changes of the calculated indices.

Shannon-Wieners index (Shannon & Weaver, 1949) is calculated by the formula:

$$H' = - \sum_{i=1}^s \frac{n_i}{N} \log_2 \left(\frac{n_i}{N} \right)$$

Where n_i = number of individuals of species i found in the sample

N = total number of individuals

s = number of species

This index includes both number of species and the distribution among species, and this index is more sensitive for changes in the distribution of individuals. A low index value characterises a species poor community and dominance of a limited number of species. A high index value describes a community rich in species (and presumably without major human disturbance)

Pielous evenness index (Pielou, 1966)

Is calculated according to the below formula

$$J = \frac{H'}{\log_2 s}$$

Where n_i = number of individuals of species i found in the sample

N = total number of individuals

s = number of species

Hurlberts diversity curves

A graphic expression of diversity often applied is the plot of number of species versus number of individuals. Based on total number of species and individuals in a sample, an expected number of species to be found in a subsample consisting of fewer individuals is calculated. The measure of diversity thus becomes independent of the size of the sample and opens for comparison among sites with varying numbers of individuals. Hurlbert (1971) has developed a procedure to calculate such diversity curves based on probability calculations:

ES_n is expected number of species in a subsample consisting of n randomly chosen individuals from a sample containing a total of N individuals belonging to s number of species, and is expressed as:

$$ES_n = \sum_{i=1}^s \left[1 - \frac{\binom{N-N_i}{n}}{\binom{N}{n}} \right]$$

der N = total number of individuals in the sample

N_i = number of individuals of species i

n = number of individuals in a given subsample (of N)

s = total number of species in the sample

Plot of number of species versus number of individuals

The species are divided in groups/classes according to number of individuals occurring in a sample. Usually class I = 1 individual pr. species, class II = 2-3 individuals, class III = 4-7 individuals, class IV = 8-15 individuals, etc.

The lower class limit will make up a chain of segments defined by the formula 2^x , $x=0,1,2, \dots$. This is referred as a chain of geometrical classes. If the number of species in each class is plotted against the class on a linear scale, a curve illustrating the distribution of individuals among species in the community will appear. Experience shows that samples from undisturbed soft bottom faunal communities contains many species with few individuals, and few species with high numbers of individuals. This gives rise to a unimodal, asymmetric curve with a long tail of high class numbers (with few individuals). In most cases this type of curve is fitted well to a log-normal distribution.

In cases of moderate organic load, or contamination, some of the individual-poor species will disappear, while species being able to cope with the changed conditions will increase in numbers. This will make the curve flatten (lower starting point at the y-axis), it will tend to extent towards the higher geometric classes (as more species increase in numbers), or the curve may become bi- or trimodal. Under such circumstances, the curve loses any resemblance with the statistic log-normal distribution. Any deviations from the log-normal distribution may then be interpreted as an indication of disturbance. The changes of the curve is triggered at an early stage of environmental disturbance. By increasing disturbance only a few, but generally very numerous species will survive. The Log-normal resemblance may in this instance reappear, but with a lower starting point (top) and distributed over more classes compared to the originally undisturbed community.

Distribution patterns of the fauna

Variations in the distribution patterns of the fauna across a sampling area are assessed by comparing the density (number) of species per station. For this purpose, multivariate classification and ordination analyses (Cluster and/or MDS) are applied. The analyses in the current project were performed using the software package PRIMER v5. Input data are numbers of individuals per species per sample. The samples can be replicates (single grabs) or aggregated at station level (0.4 square meter). Only figures count, and it does not matter what species an individual belongs to. Prior to the MDS and cluster analyses, the species lists were double square root transformed to reduce the interval (spread) between high and low densities and reduce the influence of numerous species in the material.

Cluster analysis

This analysis examines the faunal resemblance among samples. To compare two samples, the Bray-Curtis index was calculated (Bray & Curtis, 1957):

$$d_{ij} = \frac{\sum_{k=1}^n |X_{ki} - X_{kj}|}{\sum_{k=1}^n (X_{ki} + X_{kj})}$$

Where n = number of species compared

X_{ki} = number of individuals of species k in sample no. i

X_{kj} = number of individuals of species k in sample no. j

The value of this index will decrease with increasing resemblance. The index value equals 1 if the samples are completely different (no common species). Identical species and numbers of individuals will yield an index value of 0. Samples are grouped pairwise, dependent on their degree of difference by "group-average linkage". Similar samples are presented in groups (clusters), and the final result is summarised in a three (dendrogram).

Sensitivity (AMBI, ISI and NSI)

Sensitivity is expressed by the indices ISI and AMBI. Calculation of ISI is described by Rygg (2002). The sensitivity index AMBI (Azti Marin Biotic Index) ascribes a sensitivity class (ecological group, EG) to each species: EG-I: sensitive species, EG-II: indifferent species, EG-III: tolerant species, EG-IV: opportunistic species, EG-V: indicators of contamination. The composition of the macro-invertebrate fauna and the share of the individual EG is an indicator for the extent of the disturbance/contamination.

NSI is a sensitivity index comparable to AMBI, but is developed based on Norwegian fauna data combined with a objective statistic method. The NSI of a sample is calculated as the average of the sensitivity scores of all individuals found in the sample.

Combined indices (NQI1 and NQI2)

NQI1 and NQI2 are calculated based on species diversity and sensitivity. NQI1 is applied in NEAGIG (The North East Atlantic Intercalibration Group). Most countries now apply combined indices like NQI1 og NQI2.

The NQI1 index is calculated as:

$$\text{NQI1 (Norwegian quality status, version 1)} = [0.5 * (1 - \text{AMBI}/7) + 0.5 * (\text{SN}/2.7) * (N/(N+5))]$$

The diversity index $\text{SN} = \ln S / \ln(\ln N)$, where S is number of species and N is number of individuals in the sample.

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6.2 Number of species and individuals at each station

	1	2	3	4	5	6
no. spe.	35	85	70	47	71	70
no. ind.	600	5840	2617	1084	2745	2824

	7	8	9	10	11	12
no. spe.	41	151	103	69	151	118
no. ind.	1062	1758	2011	1754	2178	1988

	13	14	15	16	17	18
no. spe.	113	104	72	130	60	85
no. ind.	636	2865	2345	2375	706	3538

Bottom fauna indexes for each replicat

st.nr.	tot.	1_01	1_02	1_03	2_01	2_02	2_03
no. ind.	36610	502	70	26	2009	1703	2117
no. spe.	317	24	12	15	39	46	52
Shannon-Wiener:		1.67	2.13	3.69	1.17	1.48	1.48
Pielou		0.36	0.59	0.94	0.22	0.27	0.26
ES100		11.47	12.00	15.00	5.82	7.13	7.43
SN		1.74	1.72	2.29	1.81	1.91	1.94
ISI-2012		9.71	10.38	9.57	8.60	9.23	9.91
AMBI		2.75	2.59	2.19	2.62	2.44	2.48
NQI1		0.62	0.61	0.70	0.65	0.68	0.68
NSI		21.40	22.79	24.29	20.20	19.82	19.97
DI		0.65	0.20	0.64	1.25	1.18	1.28

st.nr.	tot.	3_01	3_02	3_03	4_01	4_02	4_03
no. ind.	36610	894	996	721	294	428	362
no. spe.	317	39	41	38	31	30	30
Shannon-Wiener:		1.12	1.42	1.62	2.72	2.45	2.60
Pielou		0.21	0.27	0.31	0.55	0.50	0.53
ES100		9.65	9.55	11.82	18.26	16.94	16.65
SN		1.91	1.92	1.93	1.98	1.89	1.92
ISI-2012		10.21	9.68	9.85	8.73	9.94	8.98
AMBI		2.76	2.61	2.56	2.62	2.70	2.80
NQI1		0.65	0.67	0.67	0.67	0.65	0.65
NSI		20.68	20.50	20.65	21.89	21.33	21.40
DI		0.90	0.95	0.81	0.42	0.58	0.51

st.nr.	tot.	5_01	5_02	5_03	6_01	6_02	6_03
no. ind.	36610	935	1096	710	992	760	1063
no. spe.	317	41	43	41	38	37	44
Shannon-Wiener:		2.01	1.54	2.25	1.63	2.06	2.31

Pielou		0.38	0.28	0.42	0.31	0.39	0.42
ES100		14.31	12.81	15.51	9.68	12.53	14.36
SN		1.93	1.93	1.97	1.88	1.91	1.95
ISI-2012		9.29	9.68	8.53	10.08	9.11	9.67
AMBI		2.61	2.76	2.53	2.50	2.44	2.44
NQI1		0.67	0.66	0.68	0.67	0.68	0.69
NSI		20.67	20.75	20.71	20.24	20.20	20.11
DI		0.92	0.99	0.80	0.95	0.83	0.98

st.nr.	tot.	7_01	7_02	7_03	8_01	8_02	8_03
no. ind.	36610	405	348	309	384	694	630
no. spe.	317	28	31	24	76	75	95
Shannon-Wiener:		2.07	2.29	2.08	4.97	4.69	4.81
Pielou		0.43	0.46	0.45	0.79	0.75	0.73
ES100		16.33	16.72	15.34	39.06	33.48	35.57
SN		1.86	1.94	1.82	2.43	2.30	2.44
ISI-2012		9.32	9.52	9.57	11.41	11.35	10.75
AMBI		2.77	2.61	2.68	1.95	1.86	1.84
NQI1		0.64	0.67	0.64	0.80	0.79	0.82
NSI		21.03	21.51	21.35	25.10	24.51	24.50
DI		0.56	0.49	0.44	0.53	0.79	0.75

st.nr.	tot.	9_01	9_02	9_03	10_01	10_02	10_03
no. ind.	36610	646	518	840	550	805	392
no. spe.	317	51	54	62	43	44	42
Shannon-Wiener:		2.32	2.97	2.69	2.75	2.83	3.10
Pielou		0.41	0.52	0.45	0.51	0.52	0.57
ES100		15.59	20.49	18.63	18.96	18.48	21.90
SN		2.11	2.18	2.16	2.04	1.99	2.09
ISI-2012		10.26	11.24	11.03	9.11	9.79	9.57
AMBI		2.28	2.04	2.15	2.57	2.60	2.55
NQI1		0.72	0.75	0.74	0.69	0.68	0.70
NSI		20.45	20.66	20.46	21.28	21.30	21.33
DI		0.76	0.66	0.87	0.69	0.86	0.54

st.nr.	tot.	11_01	11_02	11_03	12_01	12_02	12_03
no. ind.	36610	1051	406	678	955	785	228
no. spe.	317	93	96	66	51	57	72
Shannon-Wiener:		4.02	5.68	3.67	2.16	2.56	5.13
Pielou		0.61	0.86	0.61	0.38	0.44	0.83
ES100		30.56	48.99	23.33	13.56	16.22	44.23
SN		2.34	2.55	2.23	2.04	2.13	2.53
ISI-2012		10.56	11.57	11.61	10.56	10.47	11.65

AMBI		2.38	1.78	1.92	2.30	2.04	1.42
NQI1		0.76	0.84	0.77	0.71	0.75	0.86
NSI		22.85	25.18	23.70	20.42	20.13	24.94
DI		0.97	0.56	0.78	0.93	0.84	0.31

st.nr.	tot.	13_01	13_02	13_03	14_01	14_02	14_03
no. ind.	36610	272	176	160	733	1301	817
no. spe.	317	78	60	58	53	52	68
Shannon-Wiener:		5.61	5.25	5.40	2.53	2.04	2.99
Pielou		0.89	0.89	0.92	0.44	0.36	0.49
ES100		47.38	44.90	46.38	16.60	11.40	20.19
SN		2.53	2.49	2.50	2.10	2.01	2.22
ISI-2012		9.99	10.89	10.78	9.65	9.84	9.11
AMBI		1.41	1.11	1.52	2.41	2.43	2.15
NQI1		0.86	0.87	0.84	0.71	0.70	0.75
NSI		25.24	26.58	25.51	20.39	19.85	20.08
DI		0.38	0.20	0.15	0.82	1.06	0.86

st.nr.	tot.	15_01	15_02	15_03	16_01	16_02	16_03
no. ind.	36610	823	934	577	662	799	830
no. spe.	317	45	38	35	80	80	79
Shannon-Wiener:		1.71	1.66	1.84	4.05	4.51	3.98
Pielou		0.31	0.32	0.36	0.64	0.71	0.63
ES100		12.50	10.76	12.24	29.36	32.21	26.36
SN		2.00	1.89	1.92	2.34	2.31	2.29
ISI-2012		10.22	9.70	9.97	10.26	10.03	9.86
AMBI		2.59	2.56	2.49	2.60	2.41	2.80
NQI1		0.68	0.67	0.67	0.74	0.75	0.72
NSI		20.77	20.65	20.63	22.44	23.12	22.95
DI		0.87	0.92	0.71	0.77	0.85	0.87

st.nr.	tot.	17_01	17_02	17_03	18_01	18_02	18_03
no. ind.	36610	249	216	234	1321	1391	817
no. spe.	317	37	39	33	46	57	39
Shannon-Wiener:		3.59	3.45	3.63	1.66	1.68	2.09
Pielou		0.69	0.65	0.72	0.30	0.29	0.39
ES100		22.32	23.78	22.60	11.16	10.71	12.99
SN		2.11	2.18	2.06	1.94	2.04	1.93
ISI-2012		9.31	8.97	9.63	10.36	9.99	11.17
AMBI		2.27	2.44	2.52	2.52	2.55	2.38
NQI1		0.72	0.72	0.69	0.68	0.70	0.68
NSI		21.46	21.59	21.28	20.54	20.32	20.87
DI		0.35	0.28	0.32	1.07	1.09	0.86

Bottom fauna indexes, averages for each station

st.nr.		1	2	3	4	5	6
Shannon-Wiener:		2.50	1.36	1.39	2.59	1.93	2.00
Pielou		0.63	0.25	0.26	0.53	0.36	0.38
ES100		12.82	8.07	10.34	17.28	14.21	12.19
SN		1.92	1.92	1.92	1.93	1.95	1.91
ISI-2012		9.89	9.78	9.91	9.22	9.17	9.62
AMBI		2.51	2.56	2.65	2.70	2.63	2.46
NQI1		0.64	0.67	0.66	0.66	0.67	0.68
NSI		22.82	20.15	20.61	21.54	20.71	20.18
Tilstandsklasse nEQR *)		0.63	0.53	0.56	0.64	0.59	0.59

st.nr.		7	8	9	10	11	12
Shannon-Wiener:		2.15	4.82	2.66	2.89	4.45	3.29
Pielou		0.45	0.76	0.46	0.53	0.69	0.55
ES100		16.13	36.03	18.24	19.78	34.29	24.67
SN		1.87	2.39	2.15	2.04	2.37	2.23
ISI-2012		9.47	11.17	10.84	9.49	11.25	10.89
AMBI		2.69	1.88	2.15	2.57	2.03	1.92
NQI1		0.65	0.80	0.74	0.69	0.79	0.77
NSI		21.30	24.70	20.52	21.30	23.91	21.83
Tilstandsklasse nEQR *)		0.62	0.82	0.67	0.66	0.80	0.72

st.nr.		13	14	15	16	17	18
Shannon-Wiener:		5.42	2.52	1.74	4.18	3.56	1.81
Pielou		0.90	0.43	0.33	0.66	0.69	0.33
ES100		46.22	16.07	11.83	29.31	22.90	11.62
SN		2.51	2.11	1.94	2.31	2.12	1.97
ISI-2012		10.55	9.53	9.96	10.05	9.30	10.51
AMBI		1.35	2.33	2.55	2.60	2.41	2.48
NQI1		0.86	0.72	0.67	0.74	0.71	0.69
NSI		25.78	20.11	20.68	22.84	21.45	20.58
Tilstandsklasse nEQR *)		0.89	0.64	0.58	0.75	0.69	0.59

Geometrical classes

int.	Stations					
	1	2	3	4	5	6
1	11	30	26	13	22	26
2,3	11	27	22	8	20	15
4- 7	6	15	10	13	8	12
8- 15	1	6	3	4	4	6
16- 31	1	3	3	6	7	4
32- 63	1	0	1	1	3	2
64-127	1	0	0	0	1	1

128-255	0	0	1	1	1	0
256-511	1	0	0	0	0	0
512-1023	0	0	0	1	0	1
1024-2047	0	1	0	0	1	1
2048-	0	1	1	0	0	0
Stations						
int.	7	8	9	10	11	12
1	12	43	37	19	47	49
2,3	8	38	27	16	33	29
4- 7	8	23	19	10	26	17
8- 15	5	19	6	8	22	8
16- 31	6	12	4	7	10	4
32- 63	0	4	2	0	2	2
64-127	1	1	0	5	2	1
128-255	0	3	0	0	2	0
256-511	0	1	0	0	0	1
512-1023	1	0	2	1	1	1
1024-2047	0	0	0	0	0	0
2048-	0	0	0	0	0	0
Stations						
int.	13	14	15	16	17	18
1	38	35	28	44	24	32
2,3	26	31	19	21	14	19
4- 7	16	14	10	23	6	14
8- 15	17	7	4	17	6	8
16- 31	8	6	3	9	3	3
32- 63	2	2	2	5	0	3
64-127	0	1	0	1	3	0
128-255	0	0	0	1	1	0
256-511	0	0	1	2	0	0
512-1023	0	1	0	1	0	1
1024-2047	0	1	1	0	0	0
2048-	0	0	0	0	0	1

List of species

Benthic fauna East Iceland

<i>Phylum</i>	<i>Class</i>	<i>Order</i>	<i>Species/Taxa</i>	<i>01</i>	<i>02</i>	<i>03</i>	<i>Total</i>
Station.nr.: 1							
CNIDARIA							
	Anthozoa						
		NEMERTINI	Actiniaria indet.			2	2
			Nemertea indet.	1		1	2
ANNELIDA							
	Polychaeta						
		Orbiniida	Scoloplos armiger	4	1	2	7
			Aricidea sp.	2			2
		Spionida	Dipolydora sp.			2	2
			Spio limicola	24	1	2	27
		Capitellida	Heteromastus filiformis	6	1		7
			Mediomastus fragilis	1			1
			Maldane sarsi	4		1	5
		Opheliida	Ophelina acuminata	2	2		4
		Phyllodocida	Eteone flava/longa	9			9
		Oweniida	Galathowenia oculata	377	11	2	390
		Terebellida	Lagis koreni	2			2
			Ampharete finmarchica	1			1
			Laphania boeckii	2			2
		Sabelliida	Chone sp.			1	1
CRUSTACEA							
	Malacostraca						
		Cumacea	Eudorellopsis deformis	31	6	3	40
			Cumacea indet.	1			1
		Tanaidacea	Tanaidacea indet.			1	1
		Amphipoda	Photis sp.	1			1
			Protomeдея fasciata	2			2
			Hippomedon sp.		1		1
			Lysianassidae indet.	4			4
			Pontocrates sp.			1	1
			Oedicerotidae indet.	1			1
			Harpinia sp.	2	1	1	4
			Crustacea indet. juv.	1			1
MOLLUSCA							
	Bivalvia						
		Veneroida	Axinopsida orbiculata		3		3
			Spisula elliptica		1	1	2
			Macoma calcarea	2			2
			Abra prismatica	1	1		2
			Arctica islandica	21	41	5	67
ECHINODERMATA							
	Asterozoa						
		Asterozoa					
		Forcipulatida	Asterias rubens			1	1
	Ophiurozoa						
		Ophiurozoa	Ophiurozoa indet. juv.	1			1

<i>Phylum</i>	<i>Class</i>	<i>Order</i>	<i>Species/Taxa</i>	<i>01</i>	<i>02</i>	<i>03</i>	<i>Total</i>
TUNICATA	Asciacea		Asciacea indet. (solit)	1			1
				Max: 377	41	5	390
				Number: 26	12	15	35
				Total:			600
Station.nr	Station.nr.:		10				
CNIDARIA	Anthozoa		Edwardsia sp.	3			3
PLATYHELMINTHES			Platyhelminthes indet.		1	1	2
NEMERTINI			Nemertea indet.	1			1
ANNELIDA	Polychaeta						
	Orbiniida		Scoloplos armiger	4	7	7	18
			Aricidea sp.		3	1	4
	Spionida		Dipolydora coeca		3		3
			Dipolydora sp.	1		1	2
			Laonice cirrata	1			1
			Dipolydora flava		4		4
			Pygospio elegans	3	14		17
			Spio armata	3	1	2	6
			Spio limicola	9	72	23	104
			Chaetozone sp.	1	10	4	15
	Capitellida		Heteromastus filiformis	2	3		5
			Mediomastus fragilis	9	3	4	16
			Notomastus latericeus			3	3
			Praxillella praetermissa	1	3		4
	Opheliida		Ophelina acuminata	1	1	6	8
	Phyllodocida		Eteone flava/longa	1	4	1	6
			Harmothoe mariannae			1	1
			Polynoidae indet.		1		1
			Pholoe assimilis		1		1
			Pholoe inornata			1	1
			Nereimyra punctata			1	1
			Glycera lapidum		1		1
			Goniada maculata		1	1	2
			Nephtys pente	1			1
	Oweniida		Galathowenia oculata	313	451	208	972
			Owenia sp.	6	15	9	30
	Terebellida		Cistenides hyperborea	3		1	4
			Lagis koreni	2	19	8	29
			Ampharete borealis		2		2
			Anobothrus gracilis	1	1		2
			Ampharete baltica	5	6	3	14
			Ampharete petersenae	45	34	24	103
			Lanassa nOrderskioldi	1			1
			Laphania boeckii		1	1	2
			Thelepus cincinnatus		1	1	2
	Sabellida		Chone sp.	2		1	3

<i>Phylum</i>	<i>Class</i>	<i>Order</i>	<i>Species/Taxa</i>	<i>01</i>	<i>02</i>	<i>03</i>	<i>Total</i>	
		Hirudinea	Euchone papillosa	1			1	
			Hirudinea indet.			1	1	
CRUSTACEA	Malacostraca	Cumacea	Eudorellopsis deformis	13	42	17	72	
			Petalosarsia declivis	1		1	2	
		Tanaidacea	Tanaidacea indet.	1	1		2	
		Amphipoda	Byblis gaimardii	4	5		9	
			Photis sp.	8	12	4	24	
			Protomeдея fasciata	13	39	16	68	
			Hippomedon sp.		2	6	8	
			Lysianassidae indet.	5	4	1	10	
			Harpinia sp.	13	5	1	19	
			Dulichidae indet.	2	2	1	5	
			Stenothoidae indet.	1		1	2	
		Isopoda	Asellota indet.		1		1	
MOLLUSCA	Opisthobranchia	Cephalaspidea	Philine denticulata			1	1	
		Nudibranchia	Nudibranchia indet.	1			1	
	Bivalvia	Nuculoida	Ennucula tenuis	1	1	2	4	
			Nuculana minuta	1			1	
			Nuculana sp. juv.	1	2		3	
		Veneroida	Mendicula pygmaea	1			1	
			Axinopsida orbiculata		1	3	4	
			Thyasira gouldi		1		1	
			Astarte sp. juv.	1			1	
			Macoma calcarea	1	2	5	8	
			Abra prismatica	6	5	4	15	
			Arctica islandica	56	18	13	87	
		Myoida	Hiatella arctica		1	1	2	
			Bivalvia indet.			1	1	
ECHINODERMATA	Ophiuroidea		Ophiuroidea indet. juv.	3			3	
TUNICATA	Ascidiacea		Ascidiacea indet. (solit)	2			2	
				Max:	313	451	208	972
				Number:	46	45	42	69
				Total:				1754
Station.nr.: 11								
CNIDARIA	Anthozoa		Edwardsia sp.			1	1	
			Actinaria indet.	1	1		2	
PLATYHELMINTHES			Platyhelminthes indet.		1		1	
NEMERTINI								

<i>Phylum</i>	<i>Class</i>	<i>Order</i>	<i>Species/Taxa</i>	<i>01</i>	<i>02</i>	<i>03</i>	<i>Total</i>	
SIPUNCULIDA			Nemertea indet.	10	3	2	15	
			Golfingiidae indet.			2	2	
			Phascolion strombus	3	4		7	
ANNELIDA	Polychaeta		Sipuncula indet.			2	2	
		Orbiniida	Leitoscoloplos mammosus			1	1	
			Scoloplos armiger	1			1	
			Levinsenia gracilis	1	1	1	3	
			Aricidea sp.	3		4	7	
		Spionida	Dipolydora sp.		1		1	
			Spio armata		1		1	
			Spio limicola	3		1	4	
			Aphelochaeta sp.	7	4	4	15	
			Chaetozone setosa	3		1	4	
			Chaetozone sp.	49	18	22	89	
		Capitellida	Heteromastus filiformis	7	3	2	12	
			Mediomastus fragilis	2			2	
			Notomastus latericeus	16	8	11	35	
			Rhodine gracillior	10	4	48	62	
			Rhodine sp.	10			10	
			Praxillura longissima	8	2	17	27	
			Nicomache lumbricalis		3		3	
			Petaloproctus tenuis	7	4	2	13	
			Chirimia biceps	79	7	156	242	
			Maldane sarsi	49	3	78	130	
			Praxillella praetermissa	1	2		3	
			Euclymeninae indet.			1	1	
			Maldanidae indet.	4			4	
			Opheliida	Scalibregma inflatum		1		1
			Phyllodocida	Eteone barbata	1	1		2
		Eteone flava/longa		1			1	
		Eumida arctica				1	1	
		Phyllodoce groenlandica		1			1	
		Polynoidae indet.		3		1	4	
		Nereimyra punctata		4			4	
		Syllis armillaris		1	2		3	
		Syllis hyalina		4	3		7	
		Eusyllis blomstrandii		1			1	
		Exogone verugera			1	1	2	
		Syllides sp.		1			1	
		Syllis cornuta		4	3	4	11	
		Nereis zonata		1			1	
		Glycera lapidum		1	2	3	6	
		Nephtys pente		1	1		2	
		Amphinomida		Euphrosine borealis		1		1
		Eunicida		Nothria conchylega	12	14	3	29
				Lumbrineris mixochaeta	5	3	2	10
				Scoletoma fragilis		1	3	4
				Lumbrineridae indet.			1	1
		Oweniida	Galathowenia fragilis	2	1	2	5	
			Galathowenia oculata	444	58	196	698	
			Myriochele malmgreni/olgae	8	1	2	11	

<i>Phylum</i>	<i>Class</i>	<i>Order</i>	<i>Species/Taxa</i>	<i>01</i>	<i>02</i>	<i>03</i>	<i>Total</i>
			Owenia sp.	2	4	6	12
		Flabelligerida	Diplocirrus hirsutus	2		1	3
			Flabelligera infundibularis		1		1
		Terebellida	Lagis koreni		1		1
			Anobothrus gracilis	10	5		15
			Ampharete baltica			1	1
			Ampharete finmarchica	6	5		11
			Ampharete petersenae	6		5	11
			Ampharete sp.	3			3
			Amphicteis gunneri	8	12		20
			Glyphanostomum pallescens	3	3	11	17
			Melinna cristata	21		1	22
			Melinna elisabethae	11	16	1	28
			Ampharetidae indet.	3			3
			Amphitrite cirrata	1	5		6
			Pista maculata	1	2		3
			Lanassa venusta	1	5	1	7
			Laphania boeckii	8	5	2	15
			Leaena ebranchiata	1	6	1	8
			Neoamphitrite groenlandica		1	1	2
			Polycirrus medusa	2	5	1	8
			Polycirrus sp.	7			7
			Proclea graffii	2	1		3
			Thelepus cincinnatus	1	7		8
			Terebellidae indet.	4		1	5
			Terebellides sp.	13	7	10	30
		Sabellida	Bispira crassicornis		2		2
			Chone sp.	74	22	21	117
			Euchone elegans		2	1	3
			Euchone papillosa	4		1	5
			Euchone sp.	2	1		3
			Chitinopoma serrula			2	2
CRUSTACEA							
	Ostracoda		Ostracoda indet.	5	7		12
	Malacostraca						
		Cumacea	Leucon sp.		1		1
			Diastylis goodsiri			1	1
			Diastylis scorpioides			4	4
			Leptostylis sp.	1	2	1	4
		Tanaidacea	Tanaidacea indet.	1			1
		Amphipoda	Ampelisca eschrichtii	1			1
			Ampelisca macrocephala			3	3
			Ampelisca sp.		1		1
			Byblis gaimardii	3	1	2	6
			Haploops setosa		2		2
			Haploops sp.	3	4	1	8
			Unciola leucopis	7	1	2	10
			Paramphithoe hystrix		1		1
			Protomeдея fasciata	1			1
			Lysianassidae indet.	1			1
			Odius carinatus		1		1
			Paroediceros lynceus		2		2
			Oedicerotidae indet.		1		1
			Tiron spiniferus	2	2	3	7
			Gammaridea indet.	8	8	2	18
		Isopoda	Gnathia sp.			3	3
			Asellota indet.		1		1

<i>Phylum</i>	<i>Class</i>	<i>Order</i>	<i>Species/Taxa</i>	<i>01</i>	<i>02</i>	<i>03</i>	<i>Total</i>
		Decapoda					
			Paguridae indet.		1		1
			Hyas coarctatus		1		1
MOLLUSCA		Caudofoveata					
			Caudofoveata indet.	1			1
		Polyplacophora					
		Lepidopleurida					
			Leptochiton arcticus	5	7		12
		Ischnochitonidae					
			Stenosemus albus		3		3
		Prosobranchia					
		Archaeogastropoda					
			Anatoma crispata		1		1
			Lepeta caeca	4	1		5
		Mesogastropoda					
			Ariadnaria borealis		1		1
			Cryptonatica affinis		1		1
		Neogastropoda					
			Admete viridula	1	1		2
			Oenopota sp.		1		1
		Opisthobranchia					
		Pyramidellomorpha					
			Ondina divisa		1		1
		Cephalaspidea					
			Philine sp.	1			1
		Bivalvia					
		Nuculoida					
			Ennucula corticata	1	2		3
			Ennucula tenuis	2	1		3
			Nuculana minuta	3	10		13
			Nuculana pernula	1		1	2
			Nuculana sp. juv.	7	5	1	13
			Yoldiella lucida			1	1
		Mytiloida					
			Crenella decussata	8	18		26
			Musculus sp. juv.	2	1		3
		Ostreoidea					
			Heteranomia squamula		7		7
		Veneroidea					
			Mendicula pygmaea	13	4	7	24
			Thyasira gouldi	1			1
			Montacutidae indet.		2		2
			Astarte crenata	3			3
			Astarte elliptica		3	1	4
			Astarte sp. juv.	3	3		6
			Parvicardium pinnulatum	1			1
			Abra prismatica			1	1
		Myoidea					
			Hiatella arctica	1	2		3
		Pholadomyoidea					
			Thracia myopsis		6		6
ECHINODERMATA		Ophiuroidea					
		Ophiurida					
			Ophiopholis aculeata		1		1
			Amphipholis squamata	2	2		4
			Ophiacantha bidentata		1		1
			Ophiura robusta		5		5
			Ophiuroidea indet. juv.	1	15	1	17
		Holothuroidea					
		Dendrochirotida					
			Psolus sp. juv.	3			3
			Panningia hyndmani			1	1
			Holothuroidea indet.	1			1
			Holothuroidea indet. juv.			1	1

<i>Phylum</i>	<i>Class</i>	<i>Order</i>	<i>Species/Taxa</i>	<i>01</i>	<i>02</i>	<i>03</i>	<i>Total</i>
TUNICATA	Ascidiacea		Ascidiacea indet. (solit)	4	7	1	12
			Max:	444	58	196	698
			Number:	98	100	69	151
			Total:				2178
Station.nr.: 12							
CNIDARIA	Anthozoa		Edwardsia sp.	18	15		33
			Actiniaria indet.			1	1
			Actiniaria indet. juv.			1	1
NEMERTINI			Nemertea indet.	3	2	1	6
SIPUNCULIDA			Golfingiidae indet.	1	2	1	4
			Phascolion strombus	1	1		2
			Sipuncula indet.		2		2
ANNELIDA	Polychaeta						
		Orbiniida	Scoloplos armiger	1			1
			Levinsenia gracilis			1	1
			Aricidea sp.	1			1
		Spionida	Laonice cirrata			1	1
			Aphelochaeta sp.			1	1
			Chaetozone sp.	1	3	8	12
		Capitellida	Heteromastus filiformis		1	1	2
			Notomastus latericeus		2		2
			Rhodine gracilior		2	5	7
			Praxillura longissima			3	3
			Microclymene acirrata		1		1
			Petaloproctus tenuis	1		2	3
			Chirimia biceps	2	3	5	10
			Maldane sarsi	226	250	1	477
			Praxillella gracilis			1	1
			Praxillella praetermissa			1	1
			Maldanidae indet.	1			1
		Phyllodocida	Phyllodoce groenlandica		1	1	2
			Bylgides sarsi		1		1
			Harmothoe mariannae	1			1
			Polynoidae indet.			1	1
			Pholoe baltica	1			1
			Syllis cornuta		1		1
			Ceratocephale loveni		2		2
			Glycera lapidum			1	1
			Nephtys ciliata	1			1
			Nephtys paradoxa		1		1
			Nephtys pente			3	3
		Eunicida	Nothria conchylega	2	1		3
			Abyssoninoe abyssorum		1	2	3
			Lumbrineris mixochaeta	2	1	1	4
			Scoletoma fragilis			4	4
		Oweniida					

<i>Phylum</i>	<i>Class</i>	<i>Order</i>	<i>Species/Taxa</i>	<i>01</i>	<i>02</i>	<i>03</i>	<i>Total</i>
			Galathowenia fragilis	9	3	4	16
			Galathowenia oculata	568	362	37	967
			Myriochele malmgreni/olgae	2	4	5	11
			Owenia sp.	14	12	1	27
		Flabelligerida	Diplocirrus hirsutus	3	1	1	5
			Diplocirrus longisetosus		1	1	2
		Terebellida	Ampharete borealis		1		1
			Ampharete finmarchica	1		1	2
			Ampharete petersenae			2	2
			Amphicteis gunneri	1		2	3
			Glyphanostomum pallescens	6	11	24	41
			Melinna cristata	1	1	3	5
			Melinna elisabethae	4	1	1	6
			Amaeana trilobata		1		1
			Amphitrite cirrata			1	1
			Lanassa venusta			1	1
			Laphania boeckii		1		1
			Leaena ebranchiata			1	1
			Neoamphitrite groenlandica			1	1
			Thelepus cincinnatus			2	2
			Terebellidae indet.		1	2	3
			Terebellides sp.		1	8	9
		Sabellida	Chone sp.		1	21	22
			Euchone elegans			2	2
			Euchone sp.	1	1	1	3
			Potamilla neglecta		1		1
			Chitinopoma serrula			2	2
CHELICERATA							
		Pycnogonida					
			Pycnogonida indet.			1	1
CRUSTACEA							
		Ostracoda					
			Ostracoda indet.			2	2
		Malacostraca					
		Cumacea					
			Diastylis goodsirii	2	2		4
			Diastylis rathkei	4	6		10
			Diastylis scorpioides	5	1	1	7
			Leptostylis sp.		1		1
		Amphipoda					
			Ampelisca macrocephala	1	3	2	6
			Byblis gaimardii		4	2	6
			Haploops sp.	1		1	2
			Unciola leucopis	1	6	1	8
			Argissa hamatipes	1			1
			Neohela monstrosa		1		1
			Photis sp.		1		1
			Lysianassidae indet.	1			1
			Megamoera dentata	1	2	1	4
			Harpinia sp.	1		2	3
			Paraphoxus oculatus	1			1
			Syrrhoe crenulata	2			2
			Tiron spiniferus		2	2	4
			Gammaridea indet.	3			3
		Isopoda					
			Gnathia sp.	3		6	9
		Decapoda					
			Brachyura indet.			1	1
MOLLUSCA							
		Polyplacophora					
		Lepidopleurida					
			Leptochiton arcticus			4	4

<i>Phylum</i>	<i>Class</i>	<i>Order</i>	<i>Species/Taxa</i>	<i>01</i>	<i>02</i>	<i>03</i>	<i>Total</i>	
	Prosobranchia							
		Archaeogastropoda						
			Lepeta caeca			1	1	
		Mesogastropoda						
			Ariadnaria borealis			1	1	
		Neogastropoda						
			Oenopota sp.		1		1	
	Opisthobranchia							
		Pyramidellomorpha						
			Ondina divisa	2			2	
		Cephalaspidea						
			Cylichna alba			1	1	
	Bivalvia							
		Nuculoidea						
			Ennucula corticata			2	2	
			Ennucula tenuis		1		1	
			Nuculana pernula		1	3	4	
			Nuculana sp. juv.	1		2	3	
			Yoldiella lucida	3	2	3	8	
			Yoldiella solidula	13	11	4	28	
		Mytiloidea						
			Crenella decussata			1	1	
			Musculus sp. juv.	1		1	2	
			Dacrydium vitreum		2		2	
		Arcoidea						
			Bathyarca glacialis			1	1	
		Veneroidea						
			Mendicula pygmaea	29	38	11	78	
			Parathyasira dunbari	2	2		4	
			Astarte sp. juv.		1	5	6	
			Parvicardium minimum	1			1	
			Acanthocardia echinata			1	1	
		Pholadomyoidea						
			Thracia myopsis	1			1	
			Cuspidaria subtorta	1			1	
	Scaphopoda							
		Gadilida						
			Siphonodentalium lobatum	1			1	
ECHINODERMATA								
	Ophiuroidea							
		Ophiurida						
			Amphipholis squamata			1	1	
			Ophiocten affinis	2	1		3	
			Ophiura robusta			1	1	
			Ophiuroidea indet. juv.	1	2	4	7	
	Echinoidea							
		Echinoida						
			Echinidea indet. juv.		1		1	
	Holothuroidea							
		Apodida						
			Labidoplax buskii			1	1	
				Max:	568	362	37	967
				Number:	54	60	77	118
				Total:				1988
Station.nr.:	13							
CNIDARIA								
		Anthozoa						
			Edwardsia sp.	17	1	6	24	
			Actiniaria indet.			1	1	
PLATYHELMINTHES								
			Platyhelminthes indet.	3	2		5	
NEMERTINI								

<i>Phylum</i>	<i>Class</i>	<i>Order</i>	<i>Species/Taxa</i>	<i>01</i>	<i>02</i>	<i>03</i>	<i>Total</i>
			Nemertea indet.	1		3	4
SIPUNCULIDA							
			Golfingiidae indet.		1		1
			Phascolion strombus		1		1
ANNELIDA							
	Polychaeta						
		Orbiniida					
			Scoloplos armiger	2	1		3
			Levinsenia gracilis			1	1
		Spionida					
			Dipolydora coeca		1		1
			Dipolydora sp.	3			3
			Spio armata	7	3	1	11
			Spio limicola	3	2		5
			Spio sp.	1			1
			Aphelochaeta sp.	2		1	3
			Chaetozone setosa	1		1	2
			Chaetozone sp.	2	3	7	12
		Capitellida					
			Mediomastus fragilis		1		1
			Notomastus latericeus	1	1	3	5
			Rhodine gracilior	13	1		14
			Nicomache lumbricalis	7	3	1	11
			Petaloproctus tenuis	1	1	1	3
			Praxillella gracilis			1	1
			Praxillella praetermissa		1	2	3
			Maldanidae indet.	4			4
		Opheliida					
			Ophelina sp.	1			1
		Phyllodocida					
			Eteone barbata	2			2
			Eteone flava/longa	2			2
			Eulalia viridis	1			1
			Eumida bahusiensis			1	1
			Eumida sanguinea		1		1
			Harmothoe mariannae	1	1		2
			Lepidonotus squamatus			2	2
			Polynoidae indet.	2	4	5	11
			Pholoe assimilis	1			1
			Pholoe baltica	2			2
			Nereimyra punctata	5	3	6	14
			Syllis armillaris			1	1
			Syllis hyalina		2	3	5
			Syllis cornuta		1	1	2
			Nereis zonata	1			1
			Glycera lapidum	3	3	2	8
			Goniada maculata	1		1	2
			Nephtys pente	2	1	3	6
		Eunicida					
			Nothria conchylega	7	2	1	10
			Scoletoma fragilis	1		2	3
		Oweniida					
			Galathowenia oculata	19	2		21
			Owenia sp.	8	1		9
		Flabelligerida					
			Pherusa plumosa	1	3		4
		Terebellida					
			Anobothrus gracilis	3	6	2	11
			Ampharete finmarchica		2		2
			Ampharete petersenae	11	4	4	19
			Ampharete sp.	1			1
			Amphicteis gunneri	9	7	6	22
			Melinna elisabethae	14	2	3	19
			Amphitrite cirrata	4	1		5
			Pista maculata	2	7	14	23

<i>Phylum</i>	<i>Class</i>	<i>Order</i>	<i>Species/Taxa</i>	<i>01</i>	<i>02</i>	<i>03</i>	<i>Total</i>
			Lanassa venusta	1			1
			Laphania boeckii	1			1
			Leaena ebranchiata	1	2	2	5
			Polycirrus medusa		1	3	4
			Proclea graffii		1		1
			Thelepus cincinnatus	2	2	9	13
		Sabellida					
			Bispira crassicornis		1		1
			Chone sp.	4		3	7
			Euchone elegans		1		1
			Sabella pavonina			1	1
			Sabellidae indet.	1			1
			Chitinopoma serrula			1	1
			Hydroides norvegica	1		1	2
CRUSTACEA							
	Ostracoda						
			Ostracoda indet.	1	1	1	3
	Malacostraca						
		Cumacea					
			Leucon sp.	1	1		2
		Amphipoda					
			Haploops sp.			1	1
			Harpinia sp.	1		1	2
			Gammaridea indet.	2			2
		Isopoda					
			Asellota indet.	1			1
		Decapoda					
			Paguridae indet.	2			2
			Hyas coarctatus	1	1	2	4
MOLLUSCA							
	Polyplacophora						
		Ischnochitonidae					
			Tonicella marmorea	2			2
			Stenosemus albus	12	6	5	23
	Prosobranchia						
		Archaeogastropoda					
			Puncturella noachina	1			1
			Iothia fulva	1			1
			Lepeta caeca	2	5		7
			Margarites costalis		1		1
			Moelleria costulata	1			1
		Mesogastropoda					
			Onoba semicostata	2	7	2	11
			Velutina velutina	1			1
			Cryptonatica affinis			2	2
			Euspira pallida			1	1
		Neogastropoda					
			Propebela sp.		1		1
	Bivalvia						
		Nuculoida					
			Nuculana minuta	2	1	1	4
			Nuculana sp. juv.	5	5		10
		Mytiloida					
			Crenella decussata	9	21	3	33
			Modiolula phaseolina			1	1
		Ostreoidea					
			Heteranomia squamula	2	2	8	12
		Veneroidea					
			Thyasira gouldi	1		1	2
			Astarte elliptica	4	10	5	19
			Astarte montagui	1	2		3
			Astarte sp. juv.			1	1
			Parvicardium pinnulatum	12	15	6	33
			Macoma calcarea	1	2		3
			Abra prismatica		1		1
		Myoidea					
			Mya sp. juv.	1	1		2

<i>Phylum</i>	<i>Class</i>	<i>Order</i>	<i>Species/Taxa</i>	<i>01</i>	<i>02</i>	<i>03</i>	<i>Total</i>
		Pholadomyoidea	Hiatella arctica	4		1	5
			Thracia myopsis	6	1	1	8
			Bivalvia indet.	1			1
ECHINODERMATA	Asteroidea		Asteroidea indet. juv.	2	2		4
	Ophiuroidea	Ophiurida	Amphipholis squamata	4	4	2	10
			Ophiura robusta	8	2	4	14
	Holothuroidea		Ophiuroidea indet. juv.	2	3	4	9
		Dendrochirotida	Psolus sp. juv.		1	1	2
			Panningia hyndmani			1	1
TUNICATA	Asciacea		Holothuroidea indet.	1			1
			Asciacea indet. (solit)	2	8	5	15
			Max:	19	21	14	33
			Number:	82	65	61	113
			Total:				636

Station.nr.: 14

CNIDARIA

Anthozoa

Edwardsia sp.	4	4	2	10
Edwardsiidae indet.			1	1
Actiniaria indet.		3		3

NEMERTINI

Cerianthus lloydii			2	2
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SIPUNCULIDA

Nemertea indet.	3	1	3	7
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Phascolion strombus	3			3
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ANNELIDA

Polychaeta

Sipuncula indet.			1	1
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Orbiniida

Leitoscoloplos mammosus		1	4	5
Scoloplos armiger	4	3	3	10
Levinsenia gracilis		2	2	4
Aricidea hartmani		1		1
Aricidea sp.			1	1

Spionida

Dipolydora sp.			2	2
Dipolydora flava		1		1
Prionospio steenstrupi	32	50	22	104
Aphelochaeta sp.	2			2
Chaetozone setosa	4	19	8	31
Chaetozone sp.	13	9	17	39

Capitellida

Heteromastus filiformis	1	5	10	16
Notomastus latericeus	7		4	11
Rhodine gracilior	9	7	24	40
Microclymene acirrata		2		2

<i>Phylum</i>	<i>Class</i>	<i>Order</i>	<i>Species/Taxa</i>	<i>01</i>	<i>02</i>	<i>03</i>	<i>Total</i>
			Nicomache lumbricalis	1	1	1	3
			Petaloproctus tenuis	2		5	7
			Chirimia biceps	2	1	2	5
			Maldane sarsi	207	465	327	999
			Euclymeninae indet.		1	9	10
		Opheliida					
			Ophelina acuminata			1	1
			Polyphysia crassa	1			1
			Scalibregma inflatum	1		1	2
		Phyllodocida					
			Paranaitis sp.			1	1
			Phyllodoce groenlandica		2	1	3
			Harmothoe mariannae		1		1
			Polynoidae indet.	1		1	2
			Pholoe baltica	2	1	1	4
			Nereimyra punctata	1		1	2
			Syllis cornuta			1	1
			Ceratocephale loveni	1			1
			Glycera lapidum			1	1
			Nephtys ciliata			2	2
		Amphinomida					
			Paramphinome jeffreysii		1		1
		Eunicida					
			Lumbrineris mixochaeta	4	9	6	19
			Scoletoma fragilis			3	3
		Oweniida					
			Galathowenia oculata	368	656	264	1288
			Myriochele malmgreni/olgae	1	4	19	24
			Owenia sp.	7	4	8	19
		Flabelligerida					
			Diplocirrus longisetosus			1	1
		Terebellida					
			Ampharete petersenae			1	1
			Amphicteis gunneri	1	1		2
			Amphicteis ninonae		1		1
			Glyphanostomum pallescens	9	5	8	22
			Melinna cristata	1	1		2
			Melinna elisabethae			1	1
			Amphitrite cirrata			1	1
			Laphania boeckii			1	1
			Leaena ebranchiata		1	1	2
			Terebellides sp.	4	1	3	8
		Sabellida					
			Chone sp.	2		2	4
			Euchone papillosa	1			1
CRUSTACEA							
	Ostracoda						
			Ostracoda indet.		1	2	3
	Malacostraca						
		Cumacea					
			Diastylis goodsiri		3	1	4
			Diastylis rathkei		1	1	2
			Diastylis scorpioides	3	5	2	10
			Leptostylis sp.			1	1
		Amphipoda					
			Ampelisca macrocephala	1	2	2	5
			Byblis gaimardii			1	1
			Haploops sp.	1		1	2
			Unciola leucopis	1	4	9	14
			Protomeдея fasciata			2	2
			Lysianassidae indet.		1	1	2
			Bathymedon longimanus		1		1
			Oedicerotidae indet.		2		2
			Dulichidae indet.		2	1	3
			Caprellidae indet.		1		1
		Isopoda					

<i>Phylum</i>	<i>Class</i>	<i>Order</i>	<i>Species/Taxa</i>	<i>01</i>	<i>02</i>	<i>03</i>	<i>Total</i>
			Asellota indet.	1		1	2
MOLLUSCA			Crustacea indet. juv.			1	1
	Caudofoveata		Caudofoveata indet.	1		1	2
	Prosobranchia	Neogastropoda	Admete viridula	1			1
			Oenopota sp.			1	1
	Opisthobranchia	Cephalaspidea	Scaphander punctostriatus	1			1
	Bivalvia	Nuculoida	Ennucula tenuis	1	1	1	3
			Nuculana pernula	3	1	1	5
			Nuculana sp. juv.		2	2	4
			Yoldiella lucida	2			2
		Mytiloida	Crenella decussata	1	1		2
			Musculus sp. juv.	1	1		2
		Veneroida	Mendicula pygmaea	1		2	3
			Thyasira gouldi	2	3		5
			Thyasiridae indet.			1	1
			Astarte crenata	1		1	2
			Parvicardium pinnulatum		1	1	2
			Acanthocardia echinata	1			1
			Macoma calcarea	4		2	6
	Scaphopoda	Gadilida	Siphonodentalium lobatum	1			1
ECHINODERMATA							
	Asteroidea		Asteroidea indet. juv.	2			2
	Ophiuroidea	Ophiurida	Amphipholis squamata	1			1
			Ophiocten affinis	1			1
			Ophiura albida			1	1
			Ophiura sarsii	4	1		5
			Ophiuroidea indet. juv.	1	3		4
	Holothuroidea	Dendrochirotida	Thyone sp.		1		1
			Holothuroidea indet.		1		1
			Holothuroidea indet. juv.			1	1
TUNICATA							
	Ascidacea		Ascidacea indet. (solit)	1	4		5
			Max:	368	656	327	1288
			Number:	56	55	71	104
			Total:				2865
Station.nr.:	15						
CNIDARIA							
	Anthozoa						
			Edwardsia sp.		1	1	2
NEMERTINI							

<i>Phylum</i>	<i>Class</i>	<i>Order</i>	<i>Species/Taxa</i>	<i>01</i>	<i>02</i>	<i>03</i>	<i>Total</i>
			Nemertea indet.	1			1
ANNELIDA							
	Polychaeta						
		Orbiniida					
			Leitoscoloplos mammosus		3	1	4
			Scoloplos armiger	2	1		3
			Levinsenia gracilis		1		1
		Spionida					
			Dipolydora sp.	1			1
			Prionospio steenstrupi	1			1
			Spio limicola	1			1
			Chaetozone setosa			1	1
			Chaetozone sp.		3	2	5
		Capitellida					
			Notomastus latericeus	1	3		4
			Microclymene acirrata		1		1
			Chirimia biceps			1	1
			Maldane sarsi	94	154	90	338
			Praxillella praetermissa	2			2
			Euclymeninae indet.			1	1
		Opheliida					
			Polyphysia crassa	1		1	2
		Phyllodocida					
			Eteone sp.		1		1
			Phyllodoce groenlandica		1	1	2
			Polynoidae indet.	2			2
			Ceratocephale loveni	1	2	1	4
			Aglaophamus malmgreni		1	1	2
			Nephtys ciliata		1		1
			Nephtys hystricis			1	1
			Sphaerodoropsis philippi	2			2
			Sphaerodoropsis sp.		1		1
		Eunicida					
			Abyssoninoe abyssorum			1	1
			Abyssoninoe sp.	2			2
			Lumbrineris mixochaeta	1	2	5	8
			Scoletoma fragilis			1	1
		Oweniida					
			Galathowenia fragilis	12	13	9	34
			Galathowenia oculata	617	669	400	1686
			Myriochele malmgreni/olgae	3	10	7	20
			Owenia sp.	13	21	18	52
		Flabelligerida					
			Diplocirrus hirsutus	2	1	1	4
			Diplocirrus longisetosus			1	1
		Terebellida					
			Ampharete finmarchica	2			2
			Amphicteis gunneri	1			1
			Glyphanostomum pallescens	6		5	11
			Melinna cristata	1	1		2
			Melinna elisabethae	1			1
			Artacama proboscidea	2	3	1	6
			Laphania boeckii	1			1
			Terebellides sp.	2	2	1	5
		Sabellida					
			Chone sp.	1	2		3
			Euchone papillosa			2	2
			Laonome kroyeri			1	1
CRUSTACEA							
	Malacostraca						
		Cumacea					
			Eudorella sp.	1			1
			Leucon sp.	1			1
			Brachydiastylis resima			1	1
			Diastylis goodsiri	2	1		3
			Diastylis rathkei	4	4	2	10
		Amphipoda					

<i>Phylum</i>	<i>Class</i>	<i>Order</i>	<i>Species/Taxa</i>	<i>01</i>	<i>02</i>	<i>03</i>	<i>Total</i>	
			Byblis gaimardii	3			3	
			Haploops sp.	1			1	
			Lepidepecreum umbo	1	1		2	
		Isopoda	Lysianassidae indet.		1		1	
MOLLUSCA			Gnathia sp.	2	1	1	4	
	Caudofoveata							
			Caudofoveata indet.		1		1	
	Bivalvia							
		Nuculoida						
			Ennucula tenuis	1	2	2	5	
			Nuculana pernula	1	2		3	
			Nuculana sp. juv.	2			2	
			Yoldiella lucida	4	6	1	11	
			Yoldiella solidula	12	7	5	24	
		Mytiloida						
			Dacrydium vitreum		1		1	
		Veneroida						
			Mendicula pygmaea	9	6	8	23	
			Parathyasira dunbari	1	2	1	4	
			Thyasira gouldi	1		1	2	
			Astarte sp. juv.		1		1	
	Scaphopoda							
		Gadilida						
			Siphonodentalium lobatum	1			1	
ECHINODERMATA								
	Asteroidea							
			Asteroidea indet. juv.	2		1	3	
	Ophiuroidea							
			Ophiuroidea indet. juv.	4	1		5	
TUNICATA								
	Asciacea							
			Asciacea indet. (solit)	2	1		3	
				Max:	617	669	400	1686
				Number:	48	40	36	72
				Total:				2345

Station.nr.: 16

CNIDARIA

Anthozoa

NEMERTINI

Edwardsia sp. 3 2 2 7

SIPUNCULIDA

Nemertea indet. 3 6 3 12

Phascolion strombus 4 6 1 11

Sipuncula indet. 1 2 2

Sipuncula indet. juv. 1 1 1

ANNELIDA

Polychaeta

Orbiniida

Leitoscoloplos mammosus 10 4 1 5

Scoloplos armiger 3 13 8 31

Levinsenia gracilis 3 14 1 18

Spionida

Dipolydora coeca 55 9 9

Dipolydora sp. 55 55 180 290

Dipolydora flava 15 15

<i>Phylum</i>	<i>Class</i>	<i>Order</i>	<i>Species/Taxa</i>	<i>01</i>	<i>02</i>	<i>03</i>	<i>Total</i>
			Prionospio steenstrupi	3	2	1	6
			Pygospio elegans			1	1
			Spio armata	17	6	11	34
			Spio limicola	90	102	124	316
			Tharyx killariensis			1	1
			Aphelochaeta sp.	1			1
			Chaetozone sp.	4	8	6	18
			Cirratulus cirratus	1		1	2
		Capitellida	Heteromastus filiformis		2	1	3
			Mediomastus fragilis	1	2		3
			Notomastus latericeus	1	5		6
			Rhodine gracilior	16	63	30	109
			Rhodine loveni		1		1
			Microclymene acirrata			1	1
			Nicomache lumbricalis	5	3	1	9
			Petaloproctus tenuis	11	5	5	21
			Maldane sarsi	9	23	1	33
			Praxillella gracilis	2			2
			Praxillella praetermissa	6	9	3	18
			Euclymeninae indet.		3	6	9
		Opheliida	Ophelia limacina		1		1
			Travisia forbesii	1			1
			Polyphysia crassa			1	1
			Scalibregma inflatum	1	1		2
		Phyllococida	Eteone flava/longa	2	2	2	6
			Phyllococe maculata	3	3	9	15
			Harmothoe mariannae	1	2	1	4
			Polynoidae indet.	1	3		4
			Pholoe assimilis	3	2	2	7
			Pholoe baltica	8	9	5	22
			Pholoe inornata			2	2
			Syllis fasciata		1		1
			Syllis hyalina	2	4	1	7
			Syllis cornuta	2	2		4
			Syllidae indet.			1	1
			Glycera lapidum	2	1	3	6
			Goniada maculata	13	9	13	35
			Nephtys paradoxa		1		1
			Nephtys pente			2	2
		Eunicida	Nothria conchylega	15	11	20	46
			Lumbrineris mixochaeta		4		4
			Scoletoma fragilis		1		1
			Lumbrineridae indet.			1	1
			Parougia eliasoni		1		1
		Oweniida	Galathowenia oculata	236	195	188	619
			Myriochele malmgreni/olgae	1	4	4	9
			Owenia sp.	7	9	13	29
		Flabelligerida	Pherusa plumosa			1	1
		Terebellida	Cistenides hyperborea			1	1
			Lagis koreni	3	2	3	8
			Ampharete borealis	2	2		4
			Ampharete baltica			2	2
			Ampharete finmarchica			1	1
			Ampharete petersenae	34	64	67	165
			Ampharete sp.	1			1
			Glyphanostomum pallescens	1			1
			Melinna elisabethae	1	2	1	4
			Laphania boeckii	1	3		4

<i>Phylum</i>	<i>Class</i>	<i>Order</i>	<i>Species/Taxa</i>	<i>01</i>	<i>02</i>	<i>03</i>	<i>Total</i>
			Leaena ebranchiata	2	4		6
			Nicolea zostericola		1		1
			Terebellidae indet.	1			1
			Terebellides sp.	1			1
		Sabellida					
			Chone sp.	2		5	7
			Euchone elegans			2	2
			Euchone papillosa		8	3	11
			Euchone sp.	2	2	2	6
	Hirudinea						
			Hirudinea indet.		1		1
CHELICERATA							
	Pycnogonida						
			Pycnogonida indet.		1		1
CRUSTACEA							
	Ostracoda						
			Ostracoda indet.	1			1
	Malacostraca						
		Cumacea					
			Brachydiastylis resima	1	1		2
			Diastylis scorpioides	1		1	2
		Amphipoda					
			Ampelisca macrocephala	1			1
			Byblis gaimardii		1		1
			Hippomedon sp.			2	2
			Oediceropsis brevicornis	1			1
			Oedicerotidae indet.	3	1	1	5
			Harpinia sp.	1			1
			Tiron spiniferus			1	1
		Isopoda					
			Gnathia sp.	1			1
			Asellota indet.	1	5	2	8
		Decapoda					
			Paguridae indet.			1	1
MOLLUSCA							
	Caudofoveata						
			Caudofoveata indet.	1	1		2
	Polyplacophora						
		Ischnochitonidae					
			Stenosemus albus	1		1	2
	Prosobranchia						
		Archaeogastropoda					
			Lepeta caeca			1	1
		Mesogastropoda					
			Lacuna vincta			1	1
			Euspira pallida	1			1
		Neogastropoda					
			Retifusus latericeus			1	1
			Neptunea despecta	1			1
			Oenopota sp.		1		1
	Opisthobranchia						
		Cephalaspidea					
			Diaphana minuta			1	1
			Retusa obtusa		1		1
			Cylichna alba	1		1	2
	Bivalvia						
			Gastropoda indet.	1			1
		Nuculoida					
			Ennucula tenuis		1	2	3
			Nuculana minuta	1	1	1	3
			Nuculana pernula	3	4	4	11
			Nuculana sp. juv.	16	6	7	29
		Mytiloida					
			Crenella decussata	2	2	2	6

<i>Phylum</i>	<i>Class</i>	<i>Order</i>	<i>Species/Taxa</i>	<i>01</i>	<i>02</i>	<i>03</i>	<i>Total</i>
		Veneroidea	Modiolula phaseolina		1		1
			Mendicula pygmaea			1	1
			Thyasira gouldi	3	13	6	22
			Thyasiridae indet.	1	2		3
			Astarte elliptica	4	4	6	14
			Astarte sp. juv.	4	10		14
			Parvicardium pinnulatum	2	1	2	5
			Macoma calcarea	13	17	14	44
			Abra prismatica	4	6	4	14
			Arctica islandica	5	6	7	18
		Myoidea	Mya sp. juv.		3	4	7
			Hiatella arctica	1		1	2
		Pholadomyoidea	Thracia myopsis	2	4	7	13
			Bivalvia indet.	6	2		8
ECHINODERMATA							
	Ophiuroidea						
		Ophiurida	Ophiocten affinis	1		2	3
			Ophiura albida		1	5	6
			Ophiura robusta	1	6	5	12
			Ophiura sarsii	1			1
			Ophiuroidea indet. juv.	6	14	9	29
	Holothuroidea						
		Dendrochirotida	Psolus sp. juv.			4	4
TUNICATA							
	Ascidacea						
			Ascidacea indet. (solit)	1	1	2	4
			Max:	236	195	188	619
			Number:	84	84	83	130
			Total:				2375

Station.nr.: 17

CNIDARIA

Anthozoa

Edwardsia sp. 1 1

NEMERTINI

Cerianthus lloydii 1 1

ANNELIDA

Polychaeta

Nemertea indet. 5 2 7

Orbiniida

Leitoscoloplos mammosus 1 1 2

Levinsenia gracilis 1 1 2

Spionida

Dipolydora sp. 1 1 2

Prionospio steenstrupi 34 28 43 105

Spio limicola 1 1 1 3

Chaetozone setosa 1 4 7 12

Capitellida

Heteromastus filiformis 1 1

Rhodine gracilior 1 1

Nicomache lumbricalis 2 1 3

Maldane sarsi 41 17 34 92

Praxillella gracilis 3 1 2 6

Praxillella praetermissa 1 1 1

Euclymeninae indet. 1 1 5 6

Maldanidae indet. 1 1

<i>Phylum</i>	<i>Class</i>	<i>Order</i>	<i>Species/Taxa</i>	<i>01</i>	<i>02</i>	<i>03</i>	<i>Total</i>
		Opheliida					
			Polyphysia crassa		1		1
		Phyllodocida					
			Phyllodoce groenlandica	1		1	2
			Nephtys ciliata	1	1	4	6
			Nephtys paradoxa		1	1	2
		Eunicida					
			Lumbrineris mixochaeta	3	3	3	9
		Oweniida					
			Galathowenia oculata	71	80	63	214
			Myriochele malmgreni/olgae	9	4	2	15
			Owenia sp.	13	7	10	30
		Flabelligerida					
			Bradabysa villosa		1		1
		Terebellida					
			Ampharete borealis	7	6	4	17
			Ampharete octocirrata	1			1
			Anobothrus gracilis		1		1
			Glyphanostomum pallescens		1		1
			Melinna cristata	1	1	1	3
			Artacama proboscidea	1	2		3
			Laphania boeckii	4	2	2	8
			Leaena ebranchiata	1	1	1	3
			Neoamphitrite groenlandica			1	1
			Terebellides sp.	1	1	3	5
		Sabellida					
			Euchone papillosa	1	1	6	8
CRUSTACEA							
	Malacostraca						
		Cumacea					
			Eudorella sp.			2	2
			Leucon sp.	1	1	1	3
			Brachydiastylis resima	1	1		2
			Diastylis sp.		1		1
		Amphipoda					
			Lepidepecreum umbo	1			1
			Lysianassidae indet.	1			1
			Westwoodilla caecula	1			1
		Isopoda					
			Gnathia sp.	1			1
			Asellota indet.			1	1
			Crustacea indet. juv.	1			1
MOLLUSCA							
	Caudofoveata						
			Caudofoveata indet.	1			1
	Opisthobranchia						
		Cephalaspidea					
			Retusa obtusa	1			1
			Gastropoda indet.			1	1
	Bivalvia						
		Nuculoida					
			Ennucula tenuis	24	30	15	69
			Nuculana pernula	3	1	1	5
			Nuculana sp. juv.		1	3	4
			Yoldia hyperborea	3			3
		Mytiloida					
			Modiolula phaseolina			1	1
		Veneroida					
			Axinopsida orbiculata		1		1
			Thyasira gouldi	5	5	6	16
			Macoma calcarea	2	1	7	10
		Myoida					
			Hiatella arctica		1		1
ECHINODERMATA							

<i>Phylum</i>	<i>Class</i>	<i>Order</i>	<i>Species/Taxa</i>	<i>01</i>	<i>02</i>	<i>03</i>	<i>Total</i>
	Ophiuroidea		Ophiuroidea indet. juv.		1	1	2
			Max:	71	80	63	214
			Number:	38	41	35	60
			Total:				706
Station.nr.: 18							
	CNIDARIA						
		Anthozoa					
			Edwardsia sp.	3		3	6
	NEMERTINI						
			Nemertea indet.		2	1	3
	SIPUNCULIDA						
			Phascolion strombus		1		1
	ANNELIDA						
		Polychaeta					
		Orbiniida					
			Leitoscoloplos mammosus		3		3
			Scoloplos armiger	2		1	3
			Levinsenia gracilis		1		1
			Aricidea laubieri		1		1
		Spionida					
			Dipolydora sp.	1	1	5	7
			Laonice cirrata	1			1
			Prionospio steenstrupi		2	1	3
			Scolecopsis korsuni		1		1
			Aphelochaeta sp.		1		1
			Chaetozone setosa		4		4
			Chaetozone sp.	5	5	4	14
		Capitellida					
			Heteromastus filiformis		1		1
			Notomastus latericeus	1			1
			Rhodine gracilior	6	6	3	15
			Lumbriclymene cylindricauda		1		1
			Praxillura longissima			2	2
			Microclymene acirrata		2		2
			Nicomache lumbricalis	1			1
			Chirimia biceps	5	1	3	9
			Maldane sarsi	194	268	165	627
			Praxillella gracilis			1	1
			Praxillella praetermissa		1		1
			Euclymeninae indet.		9	5	14
			Maldanidae indet.	5			5
		Phyllodocida					
			Eteone sp.		1		1
			Phyllodoce groenlandica	1	1		2
			Pholoe baltica	1	3		4
			Syllis cornuta	2			2
			Ceratocephale loveni	1	1	2	4
			Aglaophamus malmgreni		2		2
			Nephtys ciliata	1	1	4	6
			Nephtys paradoxa		2		2
		Eunicida					
			Lumbrineris mixochaeta	11	9	3	23
			Lumbrineris sp.	1			1
		Oweniida					
			Galathowenia fragilis	10	1	18	29
			Galathowenia oculata	968	981	507	2456
			Myriochele malmgreni/olgae	3	2	7	12
			Owenia sp.	6	18	36	60
		Flabelligerida					

<i>Phylum</i>	<i>Class</i>	<i>Order</i>	<i>Species/Taxa</i>	<i>01</i>	<i>02</i>	<i>03</i>	<i>Total</i>
			Diplocirrus hirsutus	8	2	1	11
			Diplocirrus longisetosus		1		1
		Terebellida	Ampharete finmarchica	1			1
			Amphicteis gunneri		1		1
			Glyphanostomum pallescens	5	7	5	17
			Melinna cristata			1	1
			Artacama proboscidea		1		1
			Laphania boeckii	3	1	2	6
			Neoamphitrite sp.	1			1
			Terebellides sp.	1			1
		Sabellida	Chone sp.		1	1	2
			Euchone papillosa	1	1		2
CRUSTACEA							
	Malacostraca						
		Cumacea	Eudorella sp.			1	1
			Diastylis goodsiri	2	1	1	4
			Diastylis rathkei	2	2		4
			Diastylis scorpioides	3	4	3	10
		Amphipoda	Ampelisca macrocephala	2	1		3
			Byblis gaimardii	1	1	1	3
			Haploops sp.		3	1	4
			Neohela monstrosa	3			3
			Photis sp.			1	1
			Lysianassidae indet.		1		1
			Bathymedon longimanus		1		1
			Paroediceros sp.		1		1
			Oedicerotidae indet.	1			1
			Phoxocephalus holbolli	1	1		2
			Gammaridea indet.		3	1	4
		Isopoda	Gnathia sp.			3	3
			Crustacea indet. juv.		1		1
MOLLUSCA							
	Prosobranchia						
		Neogastropoda	Oenopota sp.		1		1
	Opisthobranchia						
		Cephalaspidea	Laona finmarchica	1			1
	Bivalvia						
		Nuculoida	Ennucula tenuis	1		1	2
			Nuculana sp. juv.			3	3
			Yoldiella lucida	5	2	1	8
			Yoldiella solidula	23	7	12	42
		Veneroida	Mendicula pygmaea	22	8	7	37
			Parathyasira dunbari	1			1
			Thyasira gouldi	2	1	1	4
	Scaphopoda						
		Gadilida	Siphonodentalium lobatum			1	1
ECHINODERMATA							
	Asteroidea						
		Paxillosida	Ctenodiscus crispatus	1		1	2
			Asteroidea indet. juv.		1	1	2
	Ophiuroidea						
		Ophiurida	Ophiocten affinis		1		1
			Ophiura sarsii	1	4		5

<i>Phylum</i>	<i>Class</i>	<i>Order</i>	<i>Species/Taxa</i>	<i>01</i>	<i>02</i>	<i>03</i>	<i>Total</i>
			Ophiuroidea indet. juv.		2	1	3
			Max:	968	981	507	2456
			Number:	46	60	42	85
			Total:				3538

Station.nr.: 2

CNIDARIA

Anthozoa

NEMERTINI

ANNELIDA

Polychaeta

Orbiniida

Spionida

Capitellida

Opheliida

Phyllodocida

Eunicida

Oweniida

Flabelligerida

Terebellida

Cerianthus lloydii

Nemertea indet.

Levinsenia gracilis

Apistobranchus tullbergi

Dipolydora sp.

Prionospio steenstrupi

Aphelochaeta sp.

Chaetozone setosa

Chaetozone sp.

Heteromastus filiformis

Notomastus latericeus

Rhodine gracilior

Maldane sarsi

Maldanidae indet.

Polyphysia crassa

Phyllococe groenlandica

Gattyana amondseni

Polynoidae indet.

Syllis cornuta

Nephtys ciliata

Nephtys sp.

Nothria conchylega

Lumbrineris mixochaeta

Scoletoma fragilis

Parougia eliasoni

Protodorvillea kefersteini

Galathowenia oculata

Owenia sp.

Diplocirrus longisetosus

Ampharete finmarchica

Ampharete petersenae

Amphicteis gunneri

Glyphanostomum pallescens

Melinna cristata

Melinna elisabethae

Lanassa nordenskioldi

Lanassa venusta

Laphania boeckii

Leaena ebranchiata

Neoamphitrite groenlandica

Polycirrus arcticus

Proclea graffii

Terebellidae indet.

<i>Phylum</i>	<i>Class</i>	<i>Order</i>	<i>Species/Taxa</i>	<i>01</i>	<i>02</i>	<i>03</i>	<i>Total</i>
		Sabellida	Terebellides sp.		1	6	7
			Chone sp.		1	1	2
	Hirudinea		Euchone papillosa	1		1	2
			Hirudinea indet.	1			1
CRUSTACEA	Ostracoda		Ostracoda indet.		1	1	2
	Malacostraca	Cumacea	Eudorella sp.			1	1
			Leucon sp.	1		5	6
			Diastylis goodsiri		5		5
			Diastylis rathkei	1	2	1	4
			Diastylis scorpioides	5	2	4	11
			Leptostylis sp.			5	5
		Amphipoda	Ampelisca macrocephala			1	1
			Byblis gaimardii			1	1
			Haploops sp.		1	3	4
			Phoxocephalus holbolli			1	1
			Dulichidae indet.			1	1
			Gammaridea indet.			1	1
		Isopoda	Gnathia sp.		3	1	4
			Asellota indet.	1			1
MOLLUSCA	Prosobranchia	Mesogastropoda	Euspira pallida			2	2
		Neogastropoda	Oenopota sp.	2	1		3
	Opisthobranchia	Cephalaspidea	Laona quadrata			1	1
			Cylichna alba			1	1
	Bivalvia	Nuculoida	Ennucula tenuis	10	2	3	15
			Nuculana pernula	8		3	11
			Nuculana sp. juv.	2		3	5
			Yoldia hyperborea	2	1		3
			Yoldiella lucida		1	3	4
			Yoldiella solidula	1		1	2
		Veneroida	Mendicula pygmaea	3	2		5
			Parathyasira dunbari	1	2		3
			Thyasira gouldi	3	2	1	6
			Parvicardium minimum			1	1
			Parvicardium pinnulatum		2	3	5
			Ciliatocardium ciliatum	1			1
			Macoma calcarea	1	2	3	6
			Arctica islandica	2			2
	Scaphopoda	Gadilida	Siphonodentalium lobatum		1		1
ECHINODERMATA	Asterozoa	Paxillozoa	Ctenodiscus crispatus	1	2		3
	Ophiurozoa	Ophiurida	Ophiocten affinis	1	1		2
			Ophiura sarsii	2	2		4
			Ophiuroidea indet. juv.	2	1	3	6

<i>Phylum</i>	<i>Class</i>	<i>Order</i>	<i>Species/Taxa</i>	<i>01</i>	<i>02</i>	<i>03</i>	<i>Total</i>
				Max: 1507	1029	1370	3906
				Number: 41	47	54	85
				Total:			5840
			Station.nr.: 3				
	CNIDARIA						
		Anthozoa					
			Edwardsia sp.	6	3	17	26
			Actiniaria indet.	1			1
	NEMERTINI						
			Nemertea indet.	1		1	2
	SIPUNCULIDA						
			Golfingiidae indet.	1			1
			Sipuncula indet.	1	3		4
	ANNELIDA						
		Polychaeta					
		Spionida					
			Dipolydora sp.		1		1
			Spiophanes kroyeri		3		3
			Aphelochaeta sp.		1		1
			Chaetozone sp.	1			1
		Capitellida					
			Notomastus latericeus			1	1
			Lumbriclymene cylindricauda			3	3
			Nicomache lumbricalis		1		1
			Chirimia biceps	1		1	2
			Maldane sarsi	36	127	69	232
			Praxillella gracilis	1	2	1	4
			Praxillella praetermissa			1	1
			Euclymeninae indet.		2		2
		Phyllodocida					
			Gattyana amondseni		1		1
			Pholoe assimilis	1			1
			Ceratocephale loveni	2	3	3	8
			Aglaophamus malmgreni	1		1	2
			Nephtys ciliata	1	1	2	4
		Amphinomida					
			Paramphinome jeffreysii	1			1
		Eunicida					
			Abyssoninoe abyssorum		2		2
			Lumbrineris mixochaeta	1	2		3
			Scoletoma fragilis		1		1
		Sternaspida					
			Sternaspis scutata	1			1
		Oweniida					
			Galathowenia oculata	774	774	553	2101
			Myriochele malmgreni/olgae	4	2	1	7
			Owenia sp.	15	19	13	47
		Flabelligerida					
			Diplocirrus hirsutus		1	2	3
			Diplocirrus longisetosus			2	2
		Terebellida					
			Ampharete finmarchica	1	1	1	3
			Amphicteis gunneri	2		1	3
			Glyphanostomum pallescens		2	3	5
			Melinna cristata	2	1		3
			Melinna elisabethae		2		2
			Artacama proboscidea			1	1
			Terebellides sp.			1	1
		Sabellida					

<i>Phylum</i>	<i>Class</i>	<i>Order</i>	<i>Species/Taxa</i>	<i>01</i>	<i>02</i>	<i>03</i>	<i>Total</i>
			Chone sp.			1	1
CRUSTACEA							
	Malacostraca						
		Cumacea					
			Leucon sp.	1			1
			Diastylis goodsiri	4	2	1	7
			Diastylis rathkei	7	1	2	10
			Diastylis scorpioides	3	3	2	8
		Amphipoda					
			Ampelisca macrocephala	1		1	2
			Byblis gaimardii		2		2
			Haploops sp.	1	1	2	4
			Unciola leucopis	1		5	6
			Neohela monstrosa	2			2
			Protomeдея fasciata	1			1
			Megamoera dentata		1		2
			Paroediceros sp.			1	1
			Tiron spiniferus	1			1
			Gammaridea indet.		2	2	4
MOLLUSCA							
	Caudofoveata						
			Caudofoveata indet.		1		1
	Prosobranchia						
		Mesogastropoda					
			Euspira pallida			1	1
		Neogastropoda					
			Oenopota sp.			1	1
	Bivalvia						
		Nuculoida					
			Nuculana pernula		1		1
			Yoldiella lucida	1	2	3	6
			Yoldiella solidula	6	4	9	19
		Arcoida					
			Bathyarca pectunculoides		1		1
		Veneroida					
			Mendicula pygmaea	5	14	9	28
			Parathyasira dunbari	1	2		3
			Astarte sp. juv.			1	1
		Pholadomyoida					
			Cuspidaria subtorta		1		1
	Scaphopoda						
		Gadilida					
			Siphonodentalium lobatum	2	1		3
ECHINODERMATA							
	Asteroidea						
		Paxillosida					
			Ctenodiscus crispatus	1	1	1	3
			Asteroidea indet. juv.			3	3
	Ophiuroidea						
		Ophiurida					
			Ophiocten affinis	1	1	1	3
			Ophiuroidea indet. juv.	1	1		2
			Max:	774	774	553	2101
			Number:	40	42	40	70
			Total:				2617

Station.nr.: 4

PLATYHELMINTHES

NEMERTINI			Platyhelminthes indet.		1		1
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ANNELIDA			Nemertea indet.	2	2		4
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<i>Phylum</i>	<i>Class</i>	<i>Order</i>	<i>Species/Taxa</i>	<i>01</i>	<i>02</i>	<i>03</i>	<i>Total</i>
	Polychaeta	Orbiniida					
			Scoloplos armiger	16	3	10	29
		Spionida					
			Dipolydora sp.		5	1	6
			Spio armata		3	1	4
			Spio limicola	2	10	10	22
			Chaetozone setosa	1		1	2
		Capitellida					
			Heteromastus filiformis	2	12	6	20
			Mediomastus fragilis	2	3		5
			Praxillella praetermissa		1		1
		Opheliida					
			Ophelina acuminata	2		3	5
		Phyllodocida					
			Eteone flava/longa		1		1
			Pholoe assimilis		3	2	5
			Pholoe baltica	4	1		5
			Glycera lapidum	1		1	2
			Goniada maculata	1	1	2	4
		Eunicida					
			Scoletoma fragilis			1	1
			Scoletoma sp.	1			1
		Oweniida					
			Galathowenia oculata	89	269	192	550
			Owenia sp.	1		1	2
		Terebellida					
			Cistenides hyperborea	1		3	4
			Lagis koreni	1	9	4	14
			Ampharete baltica	4		2	6
			Ampharete petersenae		12	28	40
			Glyphanostomum pallescens	1			1
			Laphania boeckii		1		1
			Phisidia aurea		1		1
CRUSTACEA							
	Malacostraca						
		Cumacea					
			Eudorellopsis deformis	4	9	3	16
			Brachydiastylis resima	3		5	8
			Leptostylis sp.		1		1
		Amphipoda					
			Photis sp.		4		4
			Protomedeia fasciata	3	5	2	10
			Hippomedon sp.	1	2		3
			Lysianassidae indet.	3	2	3	8
			Oedicerotidae indet.	1		1	2
			Harpinia sp.	3	16	3	22
			Dulichidae indet.		2	2	4
			Gammaridea indet.	3			3
MOLLUSCA							
	Bivalvia						
		Nuculoidea					
			Ennucula tenuis			1	1
			Nuculana pernula			1	1
		Veneroidea					
			Axinopsida orbiculata	2	1		3
			Thyasira gouldi	1			1
			Thyasiridae indet.			1	1
			Spisula elliptica	1	1		2
			Macoma calcarea	4		1	5
			Abra prismatica	8	11	5	24
			Arctica islandica	126	36	66	228
			Max:	126	269	192	550
			Number:	31	30	30	47
			Total:				1084

<i>Phylum</i>	<i>Class</i>	<i>Order</i>	<i>Species/Taxa</i>	<i>01</i>	<i>02</i>	<i>03</i>	<i>Total</i>
Station.nr.: 5							
CNIDARIA							
	Anthozoa						
			Edwardsia sp.			1	1
NEMERTINI							
			Nemertea indet.		2	3	5
ANNELIDA							
	Polychaeta						
		Orbiniida					
			Leitoscoloplos mammosus			1	1
			Levinsenia gracilis	3	3	1	7
		Spionida					
			Apistobranchus tullbergi		2	2	4
			Dipolydora sp.	7	2		9
			Laonice cirrata	1			1
			Prionospio steenstrupi	18	21	20	59
			Aphelochaeta sp.		1		1
			Chaetozone setosa	5	10	10	25
			Chaetozone sp.	5			5
		Capitellida					
			Heteromastus filiformis	4	3	2	9
			Mediomastus fragilis	1			1
			Rhodine gracilior		1	1	2
			Maldane sarsi	81	46	52	179
			Praxillella gracilis	1			1
			Maldanidae indet.	4			4
		Opheliida					
			Polyphysia crassa			1	1
		Phyllodocida					
			Eteone flava/longa	1			1
			Phyllodoce groenlandica			1	1
			Polynoidae indet.	1		1	2
			Pholoe inornata		1	1	2
			Exogone verugera	1	1		2
			Syllis cornuta		1		1
			Aglaophamus malmgreni		1		1
			Nephtys ciliata	1	1	1	3
			Sphaerodoropsis philippi			1	1
		Amphinomida					
			Paramphinome jeffreysii			1	1
		Eunicida					
			Lumbrineris mixochaeta	20	6	3	29
			Scoletoma fragilis			1	1
		Oweniida					
			Galathowenia oculata	664	887	477	2028
			Myriochele malmgreni/olgae	9	3	6	18
			Owenia sp.	28	13	31	72
		Terebellida					
			Cistenides hyperborea			1	1
			Ampharete borealis	12	6	18	36
			Ampharete octocirrata	1	1		2
			Ampharete petersenae	1	1		2
			Amphicteis gunneri	1			1
			Glyphanostomum pallescens	20	14	19	53
			Melinna cristata			1	1
			Artacama proboscidea	1		1	2
			Laphania boeckii	14	14	1	29
			Terebellides sp.	1	1	1	3
		Sabelliida					
			Euchone papillosa	3	5	3	11
CRUSTACEA							
	Ostracoda						
			Ostracoda indet.		1	1	2
	Malacostraca						

<i>Phylum</i>	<i>Class</i>	<i>Order</i>	<i>Species/Taxa</i>	<i>01</i>	<i>02</i>	<i>03</i>	<i>Total</i>
		Cumacea	Eudorella sp.		2		2
			Leucon sp.	1	3	6	10
			Diastylis goodsiri	2			2
			Diastylis rathkei	1		2	3
			Diastylis scorpioides		4	1	5
			Leptostylis sp.		1		1
		Amphipoda	Byblis gaimardii			1	1
			Lysianassidae indet.	1	1		2
			Oedicerotidae indet.	2			2
			Dulichidae indet.	2	1		3
		Isopoda	Gnathia sp.	2			2
			Crustacea indet. juv.			1	1
MOLLUSCA							
	Bivalvia						
		Nuculoidea	Ennucula tenuis	7	7	13	27
			Nuculana pernula	2	7	7	16
			Nuculana sp. juv.			1	1
			Yoldia hyperborea	1	2	1	4
			Yoldiella lucida		1		1
			Yoldiella solidula			2	2
		Veneroidea	Mendicula pygmaea	2	1		3
			Thyasira gouldi	1	3	2	6
			Ciliatocardium ciliatum		1		1
			Macoma calcarea	2	11	11	24
ECHINODERMATA							
	Asteroidea						
		Paxillosida	Ctenodiscus crispatus		2		2
			Asteroidea indet. juv.	1			1
	Ophiuroidea						
		Ophiurida	Ophiura sarsii		1		1
			Ophiuroidea indet. juv.			1	1
			Max:	664	887	477	2028
			Number:	42	43	44	71
			Total:				2745
Station.nr.: 6							
CNIDARIA							
	Anthozoa						
			Edwardsia sp.	1			1
			Edwardsiidae indet.		1		1
NEMERTINI							
			Nemertea indet.	3	2	2	7
SIPUNCULIDA							
			Golfingiidae indet.	2			2
			Sipuncula indet.	1			1
ANNELIDA							
	Polychaeta						
		Orbiniida	Leitoscoloplos mammosus		1	3	4
			Levinsenia gracilis			1	1
		Spionida					

<i>Phylum</i>	<i>Class</i>	<i>Order</i>	<i>Species/Taxa</i>	<i>01</i>	<i>02</i>	<i>03</i>	<i>Total</i>
			Apistobanchus sp.	1			1
			Apistobanchus tullbergi			1	1
			Dipolydora sp.	5		13	18
			Dipolydora flava		6		6
			Prionospio steenstrupi	3	8	12	23
			Scoleclepis korsuni		1		1
			Spiophanes kroyeri		1	1	2
			Chaetozone setosa	6	13	19	38
			Chaetozone sp.	1		5	6
		Capitellida	Heteromastus filiformis	1	3	11	15
			Rhodine gracilior		2	2	4
			Microclymene acirrata			1	1
			Maldane sarsi	230	202	283	715
			Praxillella gracilis			1	1
			Euclymeninae indet.		8	14	22
			Maldanidae indet.	4			4
		Phyllodocida	Eteone flava/longa		1		1
			Nereimyra punctata		1		1
			Exogone verugera			2	2
			Ceratocephale loveni			2	2
			Aglaophamus malmgreni	1		1	2
			Nephtys ciliata	1			1
		Eunicida	Lumbrineris mixochaeta	9	6	23	38
		Oweniida	Galathowenia oculata	667	440	577	1684
			Myriochele malmgreni/olgae		2	3	5
			Owenia sp.	14	23	28	65
		Terebellida	Ampharete octocirrata	1			1
			Amphicteis gunneri		2		2
			Amphicteis ninonae			1	1
			Glyphanostomum pallescens	3	5	3	11
			Melinna cristata		1	4	5
			Laphania boeckii	11	8	9	28
			Proclea graffii		2		2
			Terebellides sp.	1	1	4	6
		Sabellida	Chone sp.	1			1
CRUSTACEA							
	Malacostraca						
		Cumacea	Diastylis goodsiri		1	1	2
			Diastylis rathkei		2	1	3
			Diastylis scorpioides	1			1
			Leptostylis sp.	1			1
		Amphipoda	Byblis gaimardii	1	1		2
			Haploops sp.		1		1
			Lysianassidae indet.	1	1	1	3
			Dulichidae indet.	1			1
		Isopoda	Gnathia sp.	2	1	1	4
MOLLUSCA							
	Caudofoveata		Caudofoveata indet.	1		1	2
	Bivalvia						
		Nuculoida	Ennucula tenuis		3	4	7
			Nuculana pernula		5	3	8
			Yoldia hyperborea			1	1
			Yoldiella lucida	6	1	3	10
			Yoldiella solidula	2	1	7	10
		Mytiloida					

<i>Phylum Class Order Species/Taxa</i>	<i>01</i>	<i>02</i>	<i>03</i>	<i>Total</i>
	1			1
			1	1
Veneroidea				
Mendicula pygmaea	2	1	7	10
Parathyasira dunbari	1	1	2	4
Thyasira gouldi	1		1	2
Ciliatocardium ciliatum			1	1
Scaphopoda				
Gadilida				
Siphonodentalium lobatum	1			1
ECHINODERMATA				
Asteroidea				
Paxillosida				
Ctenodiscus crispatus		1		1
Ophiuroidea				
Asteroidea indet. juv.	1	1	1	3
Ophiurida				
Ophiocten affinis	2			2
Ophiura sarsii			1	1
HEMICHORDATA				
Ophiuroidea indet. juv.	1	1	4	6
Enteropneusta indet.	1		1	2
Max:	667	440	577	1684
Number:	40	39	46	70
Total:				2824

Station.nr.: 7

ANNELIDA

Polychaeta				
Orbiniida				
Scoloplos armiger	3	3	4	10
Aricidea sp.	5	1		6
Spionida				
Pygospio elegans	7	1	10	18
Spio armata	1			1
Spio limicola	9	5	10	24
Spiophanes kroyeri	1			1
Chaetozone setosa	1	2		3
Capitellida				
Heteromastus filiformis	2	1	2	5
Mediomastus fragilis	8	2	1	11
Chirimia biceps		1		1
Praxillella praetermissa		1		1
Phyllodocida				
Eteone flava/longa	3	2		5
Nephtys sp.			1	1
Oweniida				
Galathowenia oculata	288	225	216	729
Owenia sp.	3	5	8	16
Terebellida				
Lagis koreni		1	4	5
Ampharete borealis			1	1
Anobothrus gracilis			1	1
Ampharete baltica	2	1		3
Ampharete petersenae	8	5	6	19
Glyphanostomum pallescens		1		1
Laphania boeckii	3	1	2	6
Sabellida				
Chone sp.	2			2
CRUSTACEA				
Malacostraca				
Cumacea				
Eudorellopsiis deformis	4	13	9	26
Tanaidacea				

<i>Phylum</i>	<i>Class</i>	<i>Order</i>	<i>Species/Taxa</i>	<i>01</i>	<i>02</i>	<i>03</i>	<i>Total</i>
		Amphipoda	Tanaidacea indet.			4	4
			Byblis gaimardii		1		1
			Photis sp.	6	8	7	21
			Protomeдея fasciata	6	3	2	11
			Hippomedon sp.		2		2
			Lysianassidae indet.			1	1
			Synchelidium sp.			1	1
			Harpinia sp.	1	2		3
			Dulichidae indet.	1	3	1	5
MOLLUSCA		Prosobranchia					
		Neogastropoda					
			Oenopota sp.	1	1		2
	Bivalvia	Nuculoida					
			Ennucula tenuis	1	1	1	3
		Veneroida					
			Spisula elliptica	3	2		5
			Macoma calcarea	2	1		3
			Abra prismatica	5	7	3	15
			Arctica islandica	26	41	13	80
ECHINODERMATA		Ophiuroidea					
		Ophiurida					
			Ophiocten affinis			1	1
TUNICATA		Ascidiacea					
			Ascidiacea indet. (solit)	3	5		8
			Max:	288	225	216	729
			Number:	28	31	24	41
			Total:				1062

Station.nr.: 8

CNIDARIA

Anthozoa

NEMERTINI

Edwardsia sp.

1

1

SIPUNCULIDA

Nemertea indet.

4

6

3

13

ANNELIDA

Polychaeta

Sipuncula indet.

3

3

6

Orbiniida

Leitoscoloplos mammosus

3

3

Scoloplos armiger

2

2

Levinsenia gracilis

7

7

14

Aricidea sp.

1

4

5

Cirrophorus branchiatus

1

1

Spionida

Apistobanchus tullbergi

2

1

3

Dipolydora sp.

3

1

4

Dipolydora flava

2

2

2

Prionospio cirrifera

1

1

Spio limicola

3

17

27

47

Spio sp.

1

1

Aphelochaeta sp.

8

14

8

30

Chaetozone setosa

16

16

2

18

Chaetozone sp.

16

23

39

Cirratulus cirratus

1

1

2

Capitellida

Heteromastus filiformis

2

3

5

<i>Phylum</i>	<i>Class</i>	<i>Order</i>	<i>Species/Taxa</i>	<i>01</i>	<i>02</i>	<i>03</i>	<i>Total</i>
			Notomastus latericeus	2	5	6	13
			Rhodine gracilior	5	70	66	141
			Rhodine sp.	2			2
			Praxillura longissima		26	14	40
			Nicomache lumbricalis	3	2		5
			Petaloproctus tenuis	1	1	2	4
			Chirimia biceps	1	57	83	141
			Maldane sarsi	1	43	35	79
			Praxillella gracilis			1	1
			Praxillella praetermissa		2	1	3
			Euclymeninae indet.		3	2	5
			Maldanidae indet.	3			3
		Opheliida					
			Scalibregma inflatum		3	1	4
		Phyllococida					
			Eteone barbata		1		1
			Eteone flava/longa	1			1
			Eumida bahusiensis	3			3
			Phyllodoce groenlandica		1	1	2
			Pholoe assimilis			1	1
			Pholoe inornata			1	1
			Nereimyra punctata			2	2
			Syllis armillaris	15		1	16
			Syllis hyalina	1		1	2
			Exogone verugera		3	1	4
			Syllis cornuta	2	3	2	7
			Syllidae indet.			1	1
			Nereis zonata	1			1
			Glycera lapidum		3	3	6
			Nephtys caeca			1	1
			Nephtys paradoxa			1	1
			Nephtys pente	2			2
			Nephtys sp.		1	1	2
			Sphaerodorium gracilis	2			2
		Amphinomida					
			Euprosine cirrata	1			1
		Eunicida					
			Nothria conchylega	3	5	5	13
			Lumbrineris mixochaeta			4	4
			Scoletoma fragilis		2	1	3
			Parougia eliasoni		1		1
		Oweniida					
			Galathowenia fragilis		7	4	11
			Galathowenia oculata	64	150	120	334
			Myriochele malmgreni/olgae		5	4	9
			Owenia sp.	2	5	13	20
		Flabelligerida					
			Diplocirrus longisetosus			1	1
		Terebellida					
			Cistenides hyperborea	1			1
			Ampharete octocirrata	2			2
			Anobothrus gracilis	9	4	4	17
			Ampharete finmarchica	9	5		14
			Ampharete petersenae	11	2	3	16
			Amphicteis gunneri	3	17	3	23
			Glyphanostomum pallescens	1	6	6	13
			Melinna cristata		1		1
			Melinna elisabethae	26	7	1	34
			Ampharetidae indet.	1			1
			Amaeana trilobata			1	1
			Amphitrite cirrata	1		1	2
			Lanassa venusta	1			1
			Laphania boeckii	1	2	2	5
			Leaena ebranchiata	2	3		5
			Polycirrus medusa	2	1	6	9

<i>Phylum</i>	<i>Class</i>	<i>Order</i>	<i>Species/Taxa</i>	<i>01</i>	<i>02</i>	<i>03</i>	<i>Total</i>
			Proclea graffii	2	3	3	8
			Streblosoma intestinale	10			10
			Thelepus cincinnatus	17		1	18
			Terebellidae indet.	2		1	3
			Terebellides sp.	5	13	9	27
		Sabellida	Bispira crassicornis	1			1
			Chone sp.	58	54	37	149
			Euchone elegans		2		2
			Euchone papillosa			5	5
			Euchone sp.	6	3		9
			Laonome kroyeri		1		1
			Potamilla neglecta			2	2
			Chitinopoma serrula			1	1
CHELICERATA							
		Pycnogonida					
			Pycnogonida indet.	3			3
CRUSTACEA							
		Ostracoda					
			Ostracoda indet.	1	2	1	4
		Malacostraca					
		Cumacea					
			Eudorella sp.			1	1
			Leucon sp.	1			1
			Diastylis rathkei		2	1	3
			Diastylis scorpioides			5	5
			Leptostylis sp.	2			2
		Tanaidacea					
			Pseudosphyrapus anomalus		2		2
		Amphipoda					
			Ampelisca macrocephala			2	2
			Byblis gaimardii	1	12	5	18
			Haploops setosa		1	1	2
			Haploops sp.		6	1	7
			Unciola leucopis	1	4	7	12
			Unciola planipes		6	3	9
			Argissa hamatipes			1	1
			Photis sp.			1	1
			Protomeдея fasciata		4	4	8
			Lysianassidae indet.		1	1	2
			Oedicerotidae indet.			1	1
			Harpinia sp.			2	2
			Phoxocephalus holbolli			2	2
			Tiron spiniferus		5	3	8
			Gammaridea indet.	3		2	5
		Isopoda					
			Gnathia sp.			2	2
		Decapoda					
			Calathura brachiata		1		1
			Hyas coarctatus	1			1
MOLLUSCA							
		Polyplocophora					
		Lepidopleurida					
			Leptochiton arcticus	10	1		11
		Ischnochitonidae					
			Stenosemus albus	2			2
		Prosobranchia					
		Archaeogastropoda					
			Lepeta caeca	3	1		4
		Neogastropoda					
			Oenopota sp.		1	1	2
		Opisthobranchia					
		Nudibranchia					
			Doto sp.	1			1
			Gastropoda indet.			1	1

<i>Phylum</i>	<i>Class</i>	<i>Order</i>	<i>Species/Taxa</i>	<i>01</i>	<i>02</i>	<i>03</i>	<i>Total</i>
	Bivalvia	Nuculoidea	Ennucula corticata		1		1
			Ennucula tenuis	1	1		2
			Nuculana pernula	2	8		10
			Nuculana sp. juv.	3	9	5	17
			Yoldiella lucida			1	1
		Mytiloidea	Crenella decussata	1	12	7	20
			Musculus sp. juv.		5	7	12
			Dacrydium vitreum		2	1	3
		Ostreoidea	Heteranomia squamula	4			4
		Veneroidea	Mendicula pygmaea	1	18	10	29
			Parathyasira dunbari			1	1
			Montacutidae indet.	1			1
			Parvicardium pinnulatum	1	1		2
			Ciliatocardium ciliatum			1	1
			Macoma calcarea			1	1
			Abra prismatica		1		1
		Pholadomyoidea	Thracia myopsis	4	2	1	7
ECHINODERMATA		Asteroidea	Asteroidea indet. juv.		1		1
		Ophiuroidea	Ophiurida				
			Ophiopholis aculeata	3			3
			Amphipholis squamata	3			3
			Ophiacantha bidentata	1			1
			Ophiura robusta	4			4
			Ophiura sarsii			1	1
			Ophiuroidea indet. juv.	9	3	3	15
		Echinoidea	Echinoida				
			Echinidea indet. juv.	1			1
		Holothuroidea	Dendrochirotida				
			Psolus sp. juv.	2		1	3
			Holothuroidea indet.	1			1
			Holothuroidea indet. juv.	1			1
TUNICATA		Ascidiacea	Ascidiacea indet. (solit)	4	5	4	13
			Max:	64	150	120	334
			Number:	81	79	99	151
			Total:				1758
Station.nr.:	9						
CNIDARIA		Anthozoa	Edwardsia sp.	9	8	7	24
			Actinaria indet.			1	1
NEMERTINI			Nemertea indet.		5	1	6
SIPUNCULIDA			Golfingiidae indet.	1		1	2
			Phascolion strombus		1	2	3

<i>Phylum</i>	<i>Class</i>	<i>Order</i>	<i>Species/Taxa</i>	<i>01</i>	<i>02</i>	<i>03</i>	<i>Total</i>	
ANNELIDA	Polychaeta		Sipuncula indet.	1			1	
		Orbiniida	Leitoscoloplos mammosus			2	2	
			Levinsenia gracilis	1	2	1	4	
			Aricidea sp.			2	2	
			Cirrophorus furcatus		1		1	
		Spionida	Apistobranchus tullbergi				1	1
			Spio limicola		6	12		18
			Aphelochaeta sp.		1			1
			Chaetozone sp.	3	2			5
		Capitellida	Heteromastus filiformis		1	3		4
			Notomastus latericeus	3	2	1		6
			Rhodine gracilior	3	1	8		12
			Rhodine sp.	1				1
			Microclymene acirrata			1		1
			Nicomache lumbricalis		1	1		2
			Petaloproctus tenuis	1	1	1		3
			Chirimia biceps	16	15	18		49
			Maldane arctica			5		5
			Maldane sarsi	154	136	247		537
			Maldanidae indet.	1				1
		Opheliida	Polyphysia crassa			1		1
		Phyllodocida	Harmothoe mariannae			1		1
			Polynoidae indet.	1	1			2
			Syllis hyalina	2		1		3
			Ceratocephale loveni	1	1	1		3
			Aglaophamus malmgreni			1		1
		Eunicida	Nothria conchylega		1	2		3
			Abyssoninoe abyssorum		2	3		5
			Abyssoninoe sp.	3				3
			Lumbrineris mixochaeta	1	3	4		8
			Scoletoma fragilis		2			2
		Sternaspida	Sternaspis scutata		1			1
		Oweniida	Galathowenia fragilis				3	3
			Galathowenia oculata	371	230	404		1005
			Myriochele malmgreni/olgae	1	1			2
			Owenia sp.	3	4	5		12
		Flabelligerida	Diplocirrus hirsutus	1	1	2		4
			Diplocirrus longisetosus			1		1
		Terebellida	Amage auricula		1			1
			Ampharete finmarchica	2	4	2		8
			Amphicteis gunneri	2		1		3
			Glyphanostomum pallescens	6	9	14		29
			Melinna cristata	2	5	5		12
			Laphania boeckii			5		5
			Leaena ebranchiata	1	1	1		3
			Proclea graffii	1				1
			Terebellides sp.		2	4		6
Sabellida	Chone sp.	1	4	6		11		
	Euchone papillosa	1		1		2		
	Euchone sp.	1				1		
CRUSTACEA								
	Ostracoda							

<i>Phylum</i>	<i>Class</i>	<i>Order</i>	<i>Species/Taxa</i>	<i>01</i>	<i>02</i>	<i>03</i>	<i>Total</i>
			Ostracoda indet.			3	3
	Malacostraca						
		Cumacea					
			Diastylis goodsiri	1	3	1	5
			Diastylis rathkei	4	1	1	6
			Diastylis scorpioides	1		5	6
			Leptostylis sp.		1		1
		Amphipoda					
			Ampelisca macrocephala		1	2	3
			Byblis gaimardii			3	3
			Haploops sp.	1			1
			Unciola leucopis	1	2		3
			Unciola planipes	1			1
			Photis sp.		1		1
			Protomeдея fasciata			1	1
			Tmetonyx sp.			1	1
			Lysianassidae indet.	1			1
			Megamoera dentata	2		3	5
			Paraphoxus oculatus			5	5
			Phoxocephalus holbolli	1			1
			Tiron spiniferus		1		1
			Gammaridea indet.	2	2		4
		Isopoda					
			Gnathia sp.	2			2
			Crustacea indet. juv.		1		1
MOLLUSCA							
	Prosobranchia						
		Mesogastropoda					
			Euspira pallida			1	1
		Neogastropoda					
			Nepotilla amoena			1	1
	Opisthobranchia						
		Cephalaspidea					
			Laona finmarchica			1	1
			Philine lima	1			1
			Pseudocylichna magna		1		1
	Bivalvia						
		Nuculoida					
			Nuculana minuta	1			1
			Nuculana pernula		2		2
			Nuculana sp. juv.			1	1
			Yoldiella lucida	1	2	1	4
			Yoldiella solidula	10	6	4	20
		Mytiloida					
			Crenella decussata	3	2		5
			Musculus sp. juv.			1	1
			Dacrydium vitreum		1		1
		Arcoida					
			Bathyarca pectunculoides		1		1
		Veneroida					
			Mendicula pygmaea	14	29	16	59
			Parathyasira dunbari	1	1	3	5
			Thyasira gouldi	1			1
			Astarte crenata		1	2	3
			Parvicardium minimum		1	1	2
			Arctica islandica		1		1
ECHINODERMATA							
	Asterozoa						
		Asterozoa indet. juv.			2		2
	Ophiurozoa						
		Ophiurozoa indet. juv.		1			1
	Holothurozoa						
		Apodida					
			Trochoderma elegans			1	1
		Molpadiida					

<i>Phylum</i>	<i>Class</i>	<i>Order</i>	<i>Species/Taxa</i>	<i>01</i>	<i>02</i>	<i>03</i>	<i>Total</i>
			Molpadia borealis	1		1	2
			Holothuroidea indet.		2		2
TUNICATA			Holothuroidea indet. juv.	1			1
	Asciacea						
			Asciacea indet. (solit)	1			1
			Max:	371	230	404	1005
			Number:	53	56	64	103
			Total:				2011
					TOTAL:		
						Max:	3906
						Sum:	38926



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ANALYSERAPPORT

Sedimentprøver

Kunde: Landsvirkjun
Kunde referanse: Øst Island sedimentovervåking
Kontaktperson kunde:
e-post:

Kontaktperson Akvaplan-niva: Lars-Henrik Larsen

Dato: 25.02.2020

Rapport nr.: 60935
Analyseparameter(e): Korn, TOC, TN
Kontaktperson: Janne B. Johnsen

Analyseansvarlig: *Eda Sofie Bye Wilhelmson* (sign.)

Underskriftsberettiget: *Lina Tordal* (sign.)

Prøvene ble sendt/levert til Akvaplan-Niva AS av oppdragsgiver, og merket som angitt i tabellen på side 2.
Resultater av analysene er gitt fra side 3.

MERKNADER:

Prøve 8, 11, 14 og 16 inneholder skjellbiter større enn 15 mm som ikke er inkludert i kornanalysen. Skjellbitene ville utgjøre henholdsvis 3.3, 2.5, 1.2 og 1.8 vekt% av den totale prøven.

Analysene gjelder bare for de prøver som er testet. De oppgitte analyseresultat omfatter ikke feil som måtte følge av prøvetagningen, inhomogenitet eller andre forhold som kan ha påvirket prøven før den ble mottatt av laboratoriet. Rapporten får kun kopieres i sin helhet og uten noen form for endringer. En eventuell klage skal leveres laboratoriet senest en måned etter mottak av analyseresultat. Nærmere informasjon om analysemetodene (måleusikkerhet, metodeprinsipp etc.) fås ved henvendelse til Akvaplan-Niva AS

Lab-id.	Kundens id.	Materiale	Mottatt lab	Parametere	Analyse-periode
60935/1	1	Frossent	29.07.2019	Korn, TOC	20.01.20 - 18.02.20
60935/2	2	Frossent	29.07.2019	Korn, TOC	20.01.20 - 31.01.20
60935/3	3	Frossent	29.07.2019	Korn, TOC	20.01.20 - 07.02.20
60935/4	4	Frossent	29.07.2019	Korn, TOC	20.01.20 - 31.01.20
60935/5	5	Frossent	29.07.2019	Korn, TOC	20.01.20 - 31.01.20
60935/6	6	Frossent	29.07.2019	Korn, TOC	20.01.20 - 31.01.20
60935/7	7**	Frossent	29.07.2019	Korn, TOC	20.01.20 - 07.02.20
60935/8	8	Frossent	29.07.2019	Korn, TOC	20.01.20 - 31.01.20
60935/9	9***	Frossent	29.07.2019	Korn, TOC	20.01.20 - 07.02.20
60935/10	10	Frossent	29.07.2019	Korn, TOC	20.01.20 - 31.01.20
60935/11	11	Frossent	29.07.2019	Korn, TOC	20.01.20 - 31.01.20
60935/12	12	Frossent	29.07.2019	Korn, TOC	20.01.20 - 07.02.20
60935/13	13	Frossent	29.07.2019	Korn, TOC	20.01.20 - 31.01.20
60935/14	14	Frossent	29.07.2019	Korn, TOC	20.01.20 - 31.01.20
60935/15	15	Frossent	29.07.2019	Korn, TOC	20.01.20 - 07.02.20
60935/16	16	Frossent	29.07.2019	Korn, TOC	20.01.20 - 31.01.20
60935/17	17	Frossent	29.07.2019	Korn, TOC	20.01.20 - 31.01.20
60935/18	18	Frossent	29.07.2019	Korn, TOC	20.01.20 - 31.01.20

Følgende analysemetoder er benyttet

Parameter	Metoderereferanse
Kornfordeling (splitt i to)	Sikting, basert på Bale, A.J. & Kenny, A.J. 2005. Sediment analysis and seabed characterisation . In: Eleftheriou,A; McIntyre, A.D. "Methods for the study of marine benthos", 3rd ed. Blackwell Science, Oxford, UK. ISBN 0-632-05488-3, pp. 43-86
Totalt organisk karbon-TOC	NDIR-deteksjon. Intern metode basert på DIN 19539:2016
Totalt bundet nitrogen - Total-N	Elektrokjemisk deteksjon. Intern metode basert på NS-EN 12260:2003. MERK: ved TOC-verdier større enn ca 60 mg/g TS kan TN-resultater bli underestimert

Resultater

	TOC	TN	Pelitt	> 0,063 mm	N TOC	C/N
Kundens id.:	mg/g TS	mg/g TS	vekt%	vekt%	mg/g TS	
1	0,7	<0.05	4,4	95,6	17,9	13,8
2	5,8	0,95	91,2	8,8	7,3	6,1
3	6,7	0,97	85,5	14,5	9,3	6,9
4	1,6	0,18	19,6	80,4	16,1	8,9
5	6,4	1,2	90,1	9,9	8,2	5,4
6	6,0	1,1	95,8	4,2	6,7	5,3
7**	1,0	0,10	18,2	81,8	15,7	9,6
8	5,4	0,83	36,8	63,2	16,8	6,5

** For stasjon 7 er resultatet av TN et gjennomsnitt av 3 enkeltresultater.

Variasjonskoeffisient for TOC = 55,5%

$N\ TOC\ (Normalisert\ TOC) = målt\ TOC\ mg/g + 18 \cdot (1-F)$, der F =andel finstoff (pelitt) gitt ved %pelitt/100.

Tilstandsklassifisering for organisk innhold i marine sedimenter ihht. Veileder 02:2018:

Normalisert TOC, mg/g TS	< 20	20-27	27-34	34-41	> 41
	I Svært god	II God	III Moderat	IV Dårlig	V Svært dårlig

Resultater forts.

	TOC	TN	Pelitt	> 0,063 mm	N TOC	C/N
Kundens id.:	mg/g TS	mg/g TS	vekt%	vekt%	mg/g TS	
9***	4,3	0,80	51,1	48,9	13,1	5,4
10	1,5	0,14	14,1	85,9	17,0	10,9
11	5,1	0,74	50,6	49,4	14,0	6,9
12	7,4	1,1	62,1	37,9	14,2	6,6
13	3,1	0,56	19,3	80,7	17,6	5,4
14	9,7	2,0	61,8	38,2	16,6	4,9
15	8,3	1,6	59,4	40,6	15,6	5,1
16	5,6	1,3	29,8	70,2	18,2	4,3
17	9,9	2,1	80,5	19,5	13,4	4,8
18	9,1	2,0	61,1	38,9	16,1	4,5

*** For stasjon 9 er resultatet av TOC & TN et gjennomsnitt av 3 enkeltresultater.

Variasjonskoeffisient for TOC = 47,0%, TN= 52,0%