

**Revealing higher than expected meiofaunal diversity in Antarctic sediments: a metabarcoding approach**

**Supplementary Information**

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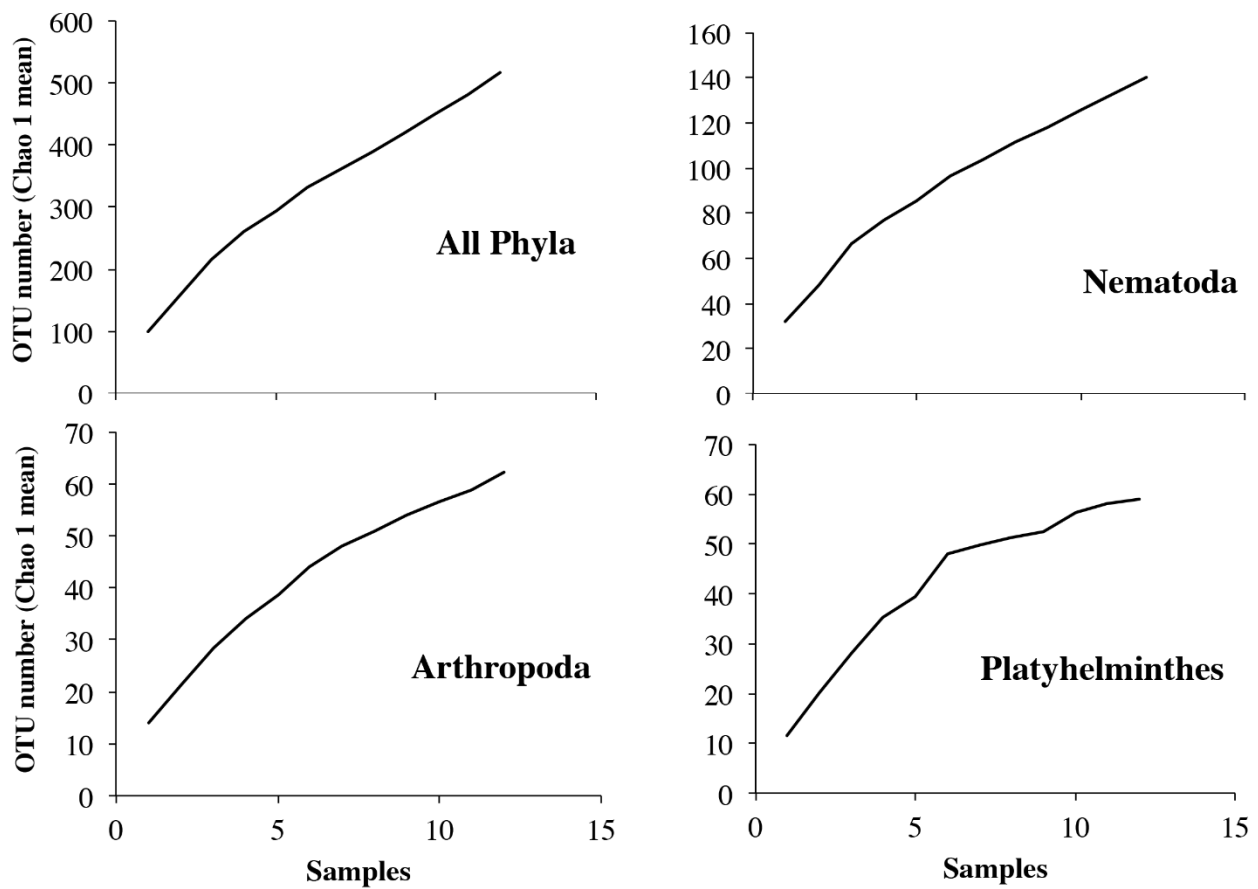
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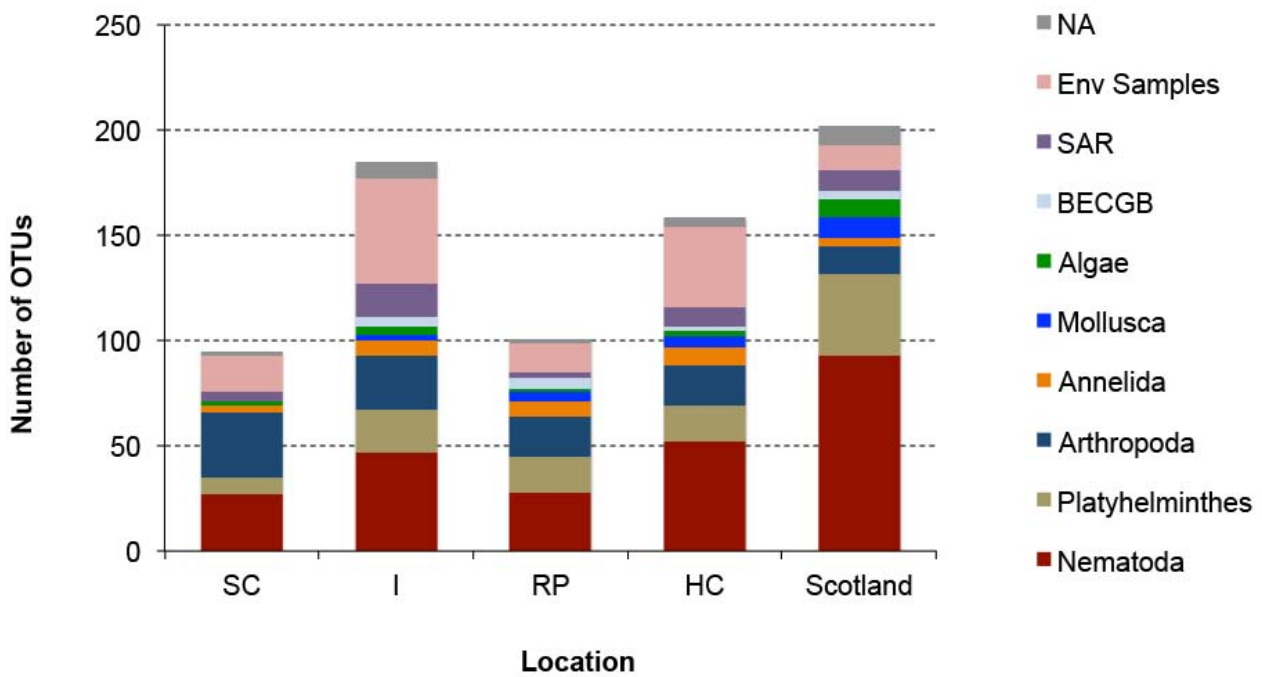
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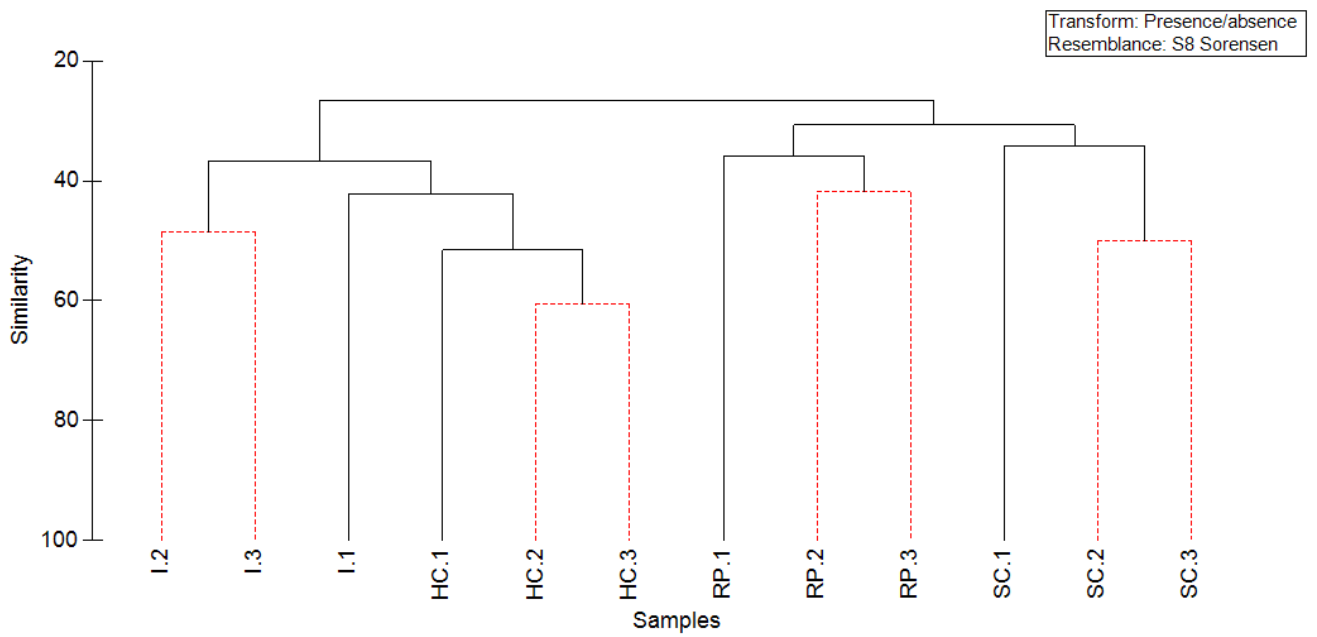
<sup>7</sup>British Antarctic Survey, Natural Environment Research Council, High Cross, Madingley Road, Cambridge, CB3 0ET, UK



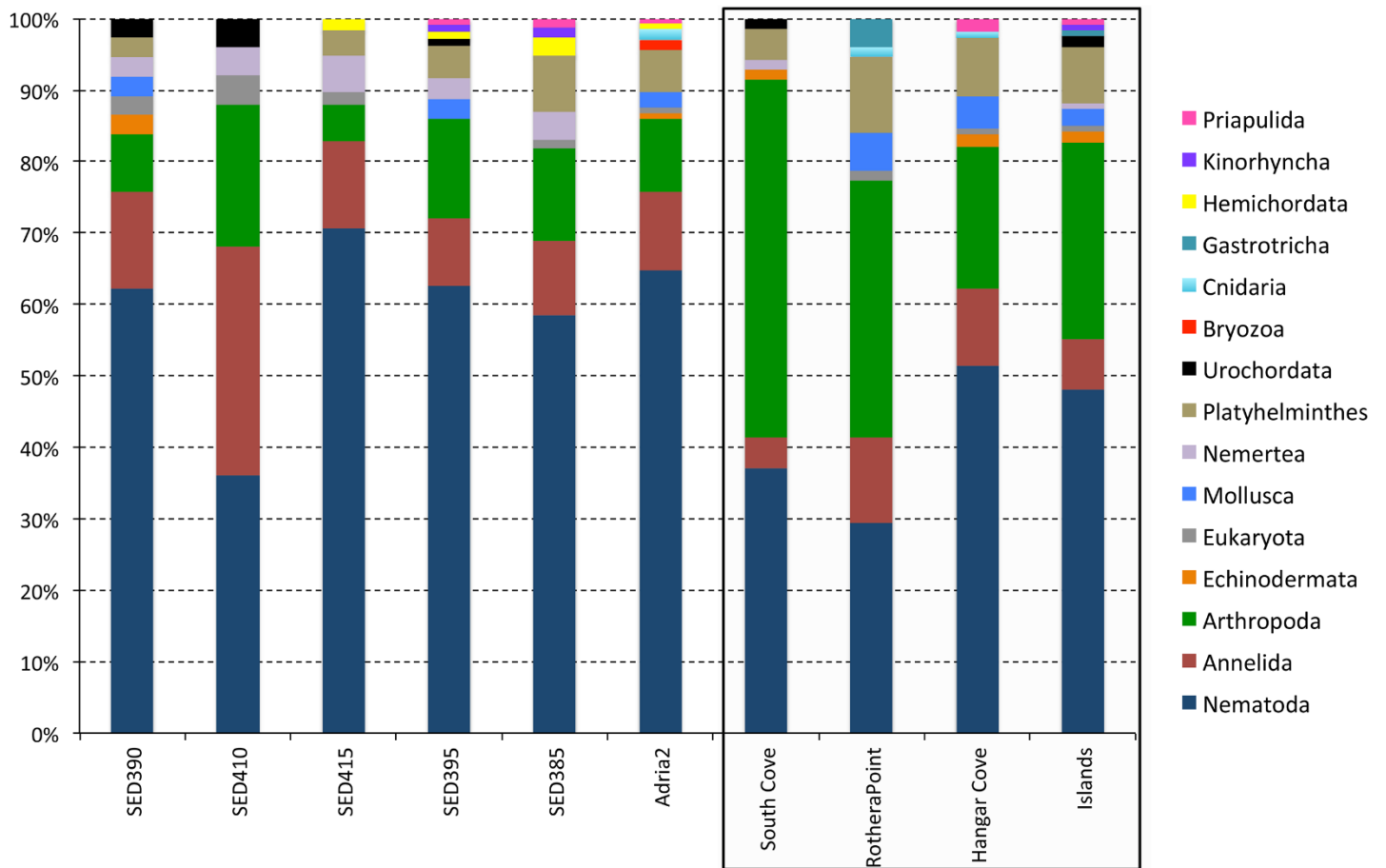
**Supplementary Figure S1:** Rarefaction curves of the Chao 1 diversity estimator. Plots are shown for all phyla, Nematoda, Arthropoda and Platyhelminthes at 97% identity OTU cut-off for all the Antarctic Peninsula sampled sites samples. Curves were estimated from 100 randomizations, without replacement, using EstimateS, version 8.2.0.



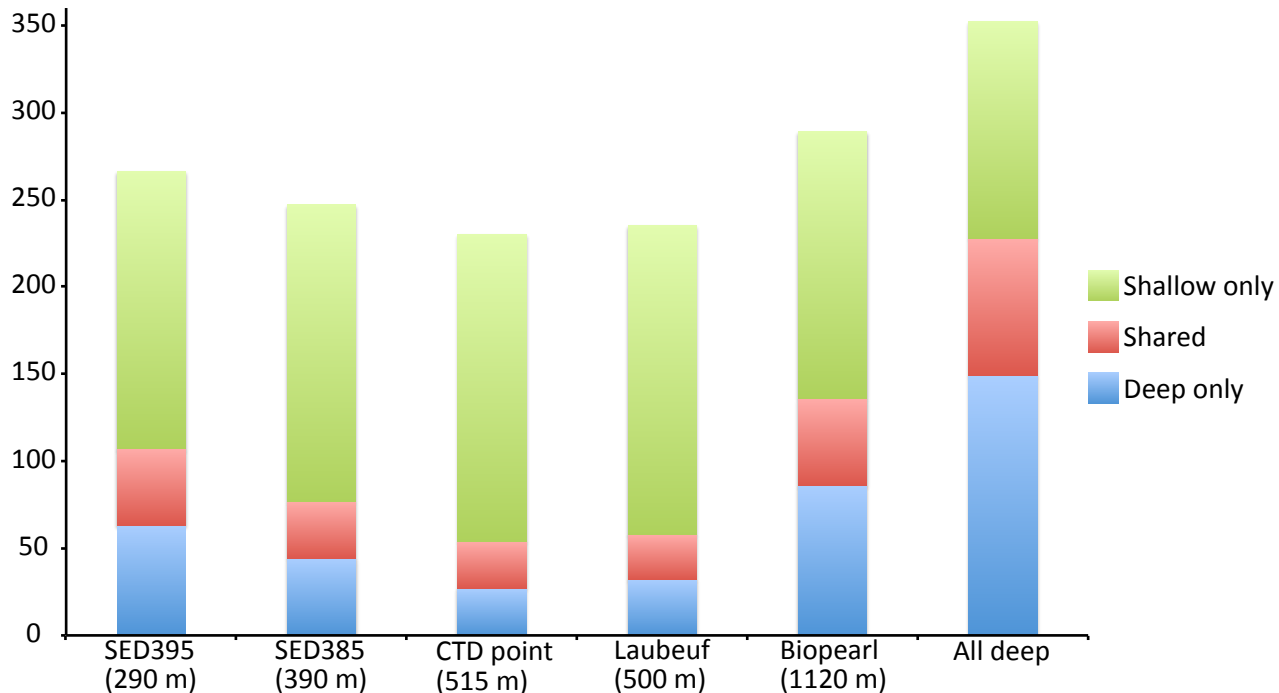
**Supplementary Figure S2:** Community composition for the Antarctic sampled areas Hangar Cove (HC), Rothera Point (RP), Islands (I), South Cove (SC) and also for the Scottish sampled site<sup>26</sup>. Taxonomy assignment was performed using the SILVA database and the number of total OTUs for each sample site is shown (triplicates were merged per sample site).



**Supplementary\_Figure\_S3:** Cluster analysis for taxonomic patterns of meiofaunal communities based on Sørensen similarities of OTU presence/absence data for the combined sites. In the dendrogram, black solid lines represent samples sharing a significant similarity profile with a SIMPROF analysis.



**Supplementary Figure S4:** Community composition for the shallow and deep-water samples. The shallow-water samples are highlighted within a border. Taxonomy assignment was performed using the SILVA database with the percentage of OTUs per phyla shown in all sample sites.



**Supplementary Figure S5:** Overlap of metazoan OTUs between merged shallow samples and deep samples (individual and merged). Values are based on presence/absence data, with a total of 203 distinct metazoan OTUs found in all shallow samples and between 54 and 136 distinct OTUs in each of the deep samples for a total of 228 different deep metazoan OTUs.

Supplementary Material S1:

Fonseca et al. “**Revealing higher than expected meiofaunal diversity in Antarctic sediments: a metabarcoding approach**”

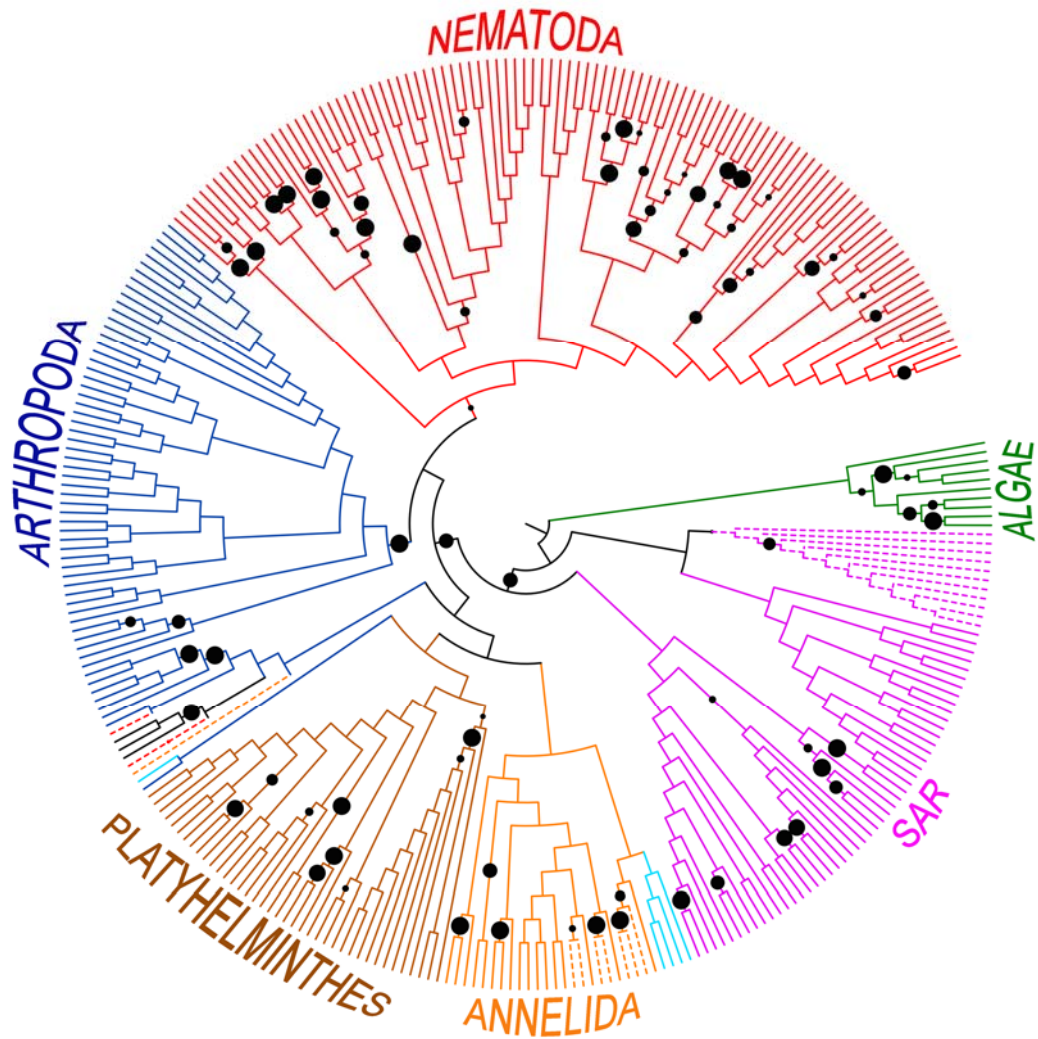
Supplementary analysis

**Method**

All Eukaryotic OTUs retrieved from the data analysis were used to confirm the taxonomic position and community composition within the main eukaryotic metazoan found, using a Neighbour-Joining (NJ) phylogeny reconstruction, 500 bootstrap replications and the Kimura 2-parameter pairwise distance model. The analysis was performed using the software Mega7 (Kumar *et al.*, 2016) and illustrated via a phylogenetic tree produced using the Interactive Tree of Life iTOL tool (Letunic & Bork, 2007).

**Result**

Phylogenetic analysis of the total Eukaryotic OTUs further confirmed the presence of five taxonomically distinct phyla groups, the Nematoda, Arthropoda, Platyhelminthes, Annelida and the SAR supergroup (Starmenopiles, Alveolata and Rhizaria) and all phylogenetic clusters were supported by strong to moderate bootstrap values (Figure S1). OTUs assigned to Fungi were removed from the analysis and the Chloroplastida OTUS (ALGAE) were used as an out-group (Figure S1). The Arthropoda cluster had a strong bootstrap support but it also showed a smaller independent cluster comprised mainly of the Ostracoda class (Figure S1). Here, three Echinodermata OTUs, two Kynorincha OTUs and one Mollusca OTU also sub-clustered. The Mollusca (7 OTUs) and Gastrotricha (4 OTUs) clustered inside the Annelida phyla. Within the SAR supergroup the Rhizaria (Cercozoa) also showed an independent phylogenetic sub-cluster, whereas the Stramenopiles and Alveolata clustered concurrently (Figure S1).



**Figure S1-** Phylogenetic tree of all Eukaryotic OTUs using a Neighbour-Joining analysis based on the Kimura 2-parameter model. Black symbols at nodes represent the corresponding range of bootstrap support values, from the smallest (75% support) to the largest (100% support). Five main distinct phylogenetic groups were formed the Nematoda, Arthropoda, Platyhelminthes, Annelida and the SAR supergroup (Starmenopiles, Alveolata and Rhizaria). The Rhizaria from the SAR supergroup is depicted in dash-purple. Other phyla are also clustered, the Mollusca (dash-orange), Kynorincha (dash-red), Gastrotricha (light blue) and Echinodermata (solid black). The outgroup is the ALGAE green cluster. SILVA database was used for OTU taxonomy classification.



**Supplementary Table S1.1-** Closest BLAST matches of Operational Taxonomic Units (OTUs) retrieved from Rothera sample sites, assigned to Nematoda, up to genus or species levels (Description) using SILVA 1.11 database. Depicted are the public accession numbers (AcNumber), BLAST identity percentage against SILVA (BLAST % ID), Phylum and other Taxa ranking.

OTU#	AcNumber	BLAST % ID	Phylum	Taxa Rank	Description
denovo208	gb AY593940.1	94,5	phylum: Nematoda	class: Chromadorea	Achromadora cf terricola
denovo219	emb AJ966473.1	91,17	phylum: Nematoda	class: Chromadorea	Anaplectus sp.
denovo150	gb HM564638.1	98,53	phylum: Nematoda	class: Enoplea	Anticoma sp.
denovo169	gb HM564638.1	96,19	phylum: Nematoda	class: Enoplea	Anticoma sp.
denovo46	gb JN968252.1	100	phylum: Nematoda	class: Enoplea	Aporcelaimellus sp.
denovo165	gb KF935309.1	96,99	phylum: Nemertea	class: Enopla	Argonemertes australiensis
denovo166	gb FJ040461.1	96,03	phylum: Nematoda	class: Chromadorea	Axonolaimus sp.
denovo310	gb FJ040461.1	92,36	phylum: Nematoda	class: Chromadorea	Axonolaimus sp.
denovo88	emb AJ966476.1	92,68	phylum: Nematoda	class: Enoplea	Bathylaimus assimilis
denovo159	gb AY854218.1	94,44	phylum: Nematoda	class: Chromadorea	Calomicrolaimus parahonestus
denovo160	gb AY854218.1	94,97	phylum: Nematoda	class: Chromadorea	Calomicrolaimus parahonestus
denovo294	gb AY854218.1	98,14	phylum: Nematoda	class: Chromadorea	Calomicrolaimus parahonestus
denovo281	gb JN968284.1	90	phylum: Nematoda	class: Chromadorea	Calomicrolaimus sp.
denovo336	gb JX678599.1	95,62	phylum: Nematoda	class: Chromadorea	Camacolaimus sp.
denovo93	gb EF591327.1	97,94	phylum: Nematoda	class: Chromadorea	Camacolaimus sp.
denovo170	gb HM564544.1	98,83	phylum: Nematoda	class: Enoplea	Chaetonema sp.
denovo38	gb JN968217.1	91,88	phylum: Nematoda	class: Chromadorea	Daptonema sp.
denovo298	gb JN968217.1	91,91	phylum: Nematoda	class: Chromadorea	Daptonema sp.
denovo304	gb EF591333.1	95,53	phylum: Nematoda	class: Chromadorea	Desmolaimus sp.
denovo275	gb EF591333.1	97,63	phylum: Nematoda	class: Chromadorea	Desmolaimus sp.
denovo138	gb EF591333.1	95,79	phylum: Nematoda	class: Chromadorea	Desmolaimus sp.
denovo65	gb EF591333.1	96,59	phylum: Nematoda	class: Chromadorea	Desmolaimus sp.
denovo184	gb EF591333.1	97,63	phylum: Nematoda	class: Chromadorea	Desmolaimus sp.
denovo267	gb EF591333.1	94,23	phylum: Nematoda	class: Chromadorea	Desmolaimus sp.
denovo75	gb EF591333.1	97,63	phylum: Nematoda	class: Chromadorea	Desmolaimus sp.
denovo8	gb EF591333.1	94,74	phylum: Nematoda	class: Chromadorea	Desmolaimus sp.
denovo195	gb EF591333.1	94,47	phylum: Nematoda	class: Chromadorea	Desmolaimus sp.
denovo178	gb EF591333.1	95,01	phylum: Nematoda	class: Chromadorea	Desmolaimus sp.
denovo321	gb EF591333.1	93,79	phylum: Nematoda	class: Chromadorea	Desmolaimus sp.
denovo76	gb FJ182217.1	97,63	phylum: Nematoda	class: Chromadorea	Draconema japonicum
denovo168	gb AY854193.1	98,66	phylum: Nematoda	class: Enoplea	Enoploides brunettii
denovo42	gb HM564545.1	98,49	phylum: Nematoda	class: Enoplea	Halalaimus sp.
denovo330	gb HM564479.1	98,5	phylum: Nematoda	class: Enoplea	Halalaimus sp.
denovo84	gb FJ040458.1	93,18	phylum: Nematoda	class: Chromadorea	Leptolaimus sp.
denovo209	gb FJ040458.1	93,18	phylum: Nematoda	class: Chromadorea	Leptolaimus sp.
denovo97	gb FJ040458.1	93,07	phylum: Nematoda	class: Chromadorea	Leptolaimus sp.
denovo81	gb FJ040458.1	90,84	phylum: Nematoda	class: Chromadorea	Leptolaimus sp.
denovo124	gb FJ040458.1	94	phylum: Nematoda	class: Chromadorea	Leptolaimus sp.
denovo149	gb JF293035.1	98,45	phylum: Nemertea	class: Anopla	Lineus torquatus
denovo231	gb EF591337.1	92,86	phylum: Nematoda	class: Chromadorea	Linhomoeidae sp.
denovo314	gb JN968218.1	93,88	phylum: Nematoda	class: Chromadorea	Metadesmolaimus sp.
denovo110	gb AY854210.1	97,89	phylum: Nematoda	class: Chromadorea	Neochromadora
denovo299	gb AY854210.1	97,36	phylum: Nematoda	class: Chromadorea	Neochromadora
denovo328	gb AY854210.1	96,31	phylum: Nematoda	class: Chromadorea	Neochromadora
denovo198	gb AY854210.1	96,57	phylum: Nematoda	class: Chromadorea	Neochromadora
denovo252	gb AY854210.1	98,29	phylum: Nematoda	class: Chromadorea	Neochromadora
denovo133	gb AY854210.1	95,51	phylum: Nematoda	class: Chromadorea	Neochromadora
denovo60	gb AY854210.1	97,63	phylum: Nematoda	class: Chromadorea	Neochromadora
denovo10	gb AY854210.1	95,78	phylum: Nematoda	class: Chromadorea	Neochromadora
denovo193	gb AY854210.1	95,51	phylum: Nematoda	class: Chromadorea	Neochromadora
denovo48	gb AY854210.1	93,95	phylum: Nematoda	class: Chromadorea	Neochromadora
denovo333	gb JN968246.1	94,72	phylum: Nematoda	class: Chromadorea	Neochromadora sp.
denovo207	gb JN968246.1	93,14	phylum: Nematoda	class: Chromadorea	Neochromadora sp.
denovo78	gb JN968246.1	96,31	phylum: Nematoda	class: Chromadorea	Neochromadora sp.
denovo197	gb JN968246.1	92,61	phylum: Nematoda	class: Chromadorea	Neochromadora sp.
denovo154	gb JN968246.1	95,78	phylum: Nematoda	class: Chromadorea	Neochromadora sp.
denovo194	gb JN968246.1	94,74	phylum: Nematoda	class: Chromadorea	Neochromadora sp.
denovo261	gb JN968246.1	93,44	phylum: Nematoda	class: Chromadorea	Neochromadora sp.
denovo25	gb JN968215.1	95,25	phylum: Nematoda	class: Chromadorea	Neochromadora sp.
denovo96	gb JN968215.1	91,6	phylum: Nematoda	class: Chromadorea	Neochromadora sp.
denovo66	gb FJ040459.1	97,6	phylum: Nematoda	class: Chromadorea	Odontophora sp.
denovo139	gb FJ040459.1	94,43	phylum: Nematoda	class: Chromadorea	Odontophora sp.
denovo289	gb AY854196.1	96,32	phylum: Nematoda	class: Enoplea	Odontophora sp.
denovo300	gb FJ040499.1	96,55	phylum: Nematoda	class: Enoplea	Oxystomina sp.
denovo277	gb FJ040499.1	95,78	phylum: Nematoda	class: Enoplea	Oxystomina sp.
denovo274	gb FJ040499.1	96,55	phylum: Nematoda	class: Enoplea	Oxystomina sp.
denovo57	gb KJ638035.1	95,89	phylum: Nematoda	class: Chromadorea	Paracanthochus sp.
denovo258	gb KF591743.1	92,73	phylum: Nematoda	class: Chromadorea	Pomponema sp.
denovo0	gb JF293023.1	98,73	phylum: Nemertea	class: Enopla	Prosorhochmus americanus
denovo316	gb JN968227.1	90,81	phylum: Nematoda	class: Chromadorea	Punctodora ratzeburgensis
denovo117	gb JN968228.1	98,43	phylum: Nematoda	class: Chromadorea	Sabatieria pulchra
denovo19	gb JN968228.1	91,95	phylum: Nematoda	class: Chromadorea	Sabatieria pulchra
denovo141	gb JN968228.1	97,45	phylum: Nematoda	class: Chromadorea	Sabatieria pulchra
denovo183	gb JN968221.1	97,97	phylum: Nematoda	class: Chromadorea	Sabatieria sp.
denovo43	gb JN968221.1	92,15	phylum: Nematoda	class: Chromadorea	Sabatieria sp.
denovo101	gb JN968221.1	97,38	phylum: Nematoda	class: Chromadorea	Sabatieria sp.
denovo113	gb JN968221.1	94,5	phylum: Nematoda	class: Chromadorea	Sabatieria sp.
denovo68	gb EF591321.1	95,26	phylum: Nematoda	class: Chromadorea	Setostephanolaimus spartinae
denovo29	gb JN968264.1	95,36	phylum: Nematoda	class: Chromadorea	Sphaerolaimus hirsutus
denovo180	gb JN968239.1	91,6	phylum: Nematoda	class: Chromadorea	Sphaerolaimus hirsutus
denovo21	gb JN968216.1	99,44	phylum: Nematoda	class: Chromadorea	Spirinia parasitifera
denovo31	gb JN968216.1	95,24	phylum: Nematoda	class: Chromadorea	Spirinia parasitifera isolate
denovo54	gb FJ040468.1	97,87	phylum: Nematoda	class: Chromadorea	Synonchiella sp.
denovo23	gb AY284683.1	90,89	phylum: Nematoda	class: Chromadorea	Teratocephalus terrestris
denovo69	gb JN968231.1	93,99	phylum: Nematoda	class: Chromadorea	Theristus sp.
denovo89	gb JN968231.1	97,14	phylum: Nematoda	class: Chromadorea	Theristus sp.
denovo128	gb JN968231.1	95,56	phylum: Nematoda	class: Chromadorea	Theristus sp.
denovo129	gb AY763130.1	96,89	phylum: Nematoda	environmental samples	Uncultured nematode
denovo115	gb AY854198.1	97,62	phylum: Nematoda	class: Enoplea	Viscosia viscosa
denovo100	gb AY854198.1	94,97	phylum: Nematoda	class: Enoplea	Viscosia viscosa
denovo9	gb KC920423.1	93,97	phylum: Nematoda	class: Chromadorea	Zygonemella striata
denovo272	gb KC920423.1	90,62	phylum: Nematoda	class: Chromadorea	Zygonemella striata

**Supplementary Table S1.2-** Closest BLAST matches of Operational Taxonomic Units (OTUs) retrieved from Rothera sample sites, assigned to Arthropoda, Annelida and Mollusca up to genus or species levels (Description) using SILVA 1.11 database. Depicted are the public accession numbers (AcNumber), BLAST identity percentage against SILVA (BLAST % ID), Phylum and other Taxa ranking

OTU#	AcNumber	BLAST % ID	Phylum	Taxa Rank	Description
denovo224	dbj AB076626.1	99,74	phylum: Arthropoda	superfamily: Cytheroidea	Howeina sp.
denovo64	dbj AB076628.1	95,61	phylum: Arthropoda	superfamily: Cytheroidea	Cytheropteron subuchioi
denovo295	dbj AB076628.1	96,38	phylum: Arthropoda	superfamily: Cytheroidea	Cytheropteron subuchioi
denovo36	dbj AB076644.1	98,71	phylum: Arthropoda	superfamily: Cytheroidea	Robustaurilla salebroza
denovo200	gb DQ538499.1	94,78	phylum: Arthropoda	order: Siphonostomatoida	Kroyeria sp.
denovo322	gb DQ538499.1	93,77	phylum: Arthropoda	order: Siphonostomatoida	Kroyeria sp.
denovo238	gb EU380295.1	99,22	phylum: Arthropoda	order: Harpacticoida	Dactylopusia sp.
denovo326	gb AY627016.1	96,08	phylum: Arthropoda	order: Harpacticoida	Bradya sp.
denovo297	gb EU380302.1	93,83	phylum: Arthropoda	order: Harpacticoida	Parastenhelia sp.
denovo103	gb EU380309.1	96,87	phylum: Arthropoda	order: Harpacticoida	Itunella muelleri
denovo257	gb AY627016.1	97,39	phylum: Arthropoda	order: Harpacticoida	Bradya sp.
denovo53	gb KC815328.1	96,86	phylum: Arthropoda	order: Harpacticoida	Amphiascoides atopus
denovo162	gb AY627015.1	93,23	phylum: Arthropoda	order: Harpacticoida	Bryocampus pygmaeus
denovo334	gb AY627016.1	98,44	phylum: Arthropoda	order: Harpacticoida	Bradya sp.
denovo233	gb EU380309.1	95,3	phylum: Arthropoda	order: Harpacticoida	Itunella muelleri
denovo105	gb AY627016.1	97,13	phylum: Arthropoda	order: Harpacticoida	Bradya sp.
denovo201	gb EU380309.1	97,65	phylum: Arthropoda	order: Harpacticoida	Itunella muelleri
denovo303	gb EU380306.1	98,17	phylum: Arthropoda	order: Harpacticoida	Argestigens sp.
denovo163	gb EU380285.1	98,69	phylum: Arthropoda	order: Harpacticoida	Harpacticus sp.
denovo172	gb AY692343.1	96,86	phylum: Arthropoda	order: Harpacticoida	Tisbe furcata
denovo273	gb EU380309.1	95,05	phylum: Arthropoda	order: Harpacticoida	Itunella muelleri
denovo338	gb EU380309.1	95,06	phylum: Arthropoda	order: Harpacticoida	Itunella muelleri
denovo176	gb EU380309.1	93,01	phylum: Arthropoda	order: Harpacticoida	Itunella muelleri
denovo265	gb KC815328.1	97,38	phylum: Arthropoda	order: Harpacticoida	Amphiascoides atopus
denovo210	gb AY627016.1	96,43	phylum: Arthropoda	order: Harpacticoida	Bradya sp.
denovo144	gb EU380309.1	95,83	phylum: Arthropoda	order: Harpacticoida	Itunella muelleri
denovo228	gb EU380306.1	97,38	phylum: Arthropoda	order: Harpacticoida	Argestigens sp.
denovo119	gb EU380300.1	95,05	phylum: Arthropoda	order: Harpacticoida	Paramenophia sp.
denovo234	gb EU380309.1	96,87	phylum: Arthropoda	order: Harpacticoida	Itunella muelleri
denovo332	gb EU380297.1	95,4	phylum: Arthropoda	order: Harpacticoida	Diarthodes sp.
denovo324	gb EU380309.1	97,14	phylum: Arthropoda	order: Harpacticoida	Itunella muelleri
denovo1	gb EU380309.1	93,75	phylum: Arthropoda	order: Harpacticoida	Itunella muelleri
denovo11	gb EU380309.1	94,27	phylum: Arthropoda	order: Harpacticoida	Itunella muelleri
denovo132	gb EU380309.1	93,99	phylum: Arthropoda	order: Harpacticoida	Itunella muelleri
denovo12	gb EU380303.1	98,69	phylum: Arthropoda	order: Harpacticoida	Ameira scotti
denovo77	gb EU380299.1	96,08	phylum: Arthropoda	order: Harpacticoida	Sewellia tropica
denovo121	gb EU380306.1	96,82	phylum: Arthropoda	order: Harpacticoida	Argestigens sp.
denovo135	gb EU380295.1	95,04	phylum: Arthropoda	order: Harpacticoida	Dactylopusia sp.
denovo190	gb EU380309.1	96,72	phylum: Arthropoda	order: Harpacticoida	Itunella muelleri
denovo212	gb EU380309.1	94,26	phylum: Arthropoda	order: Harpacticoida	Itunella muelleri
denovo226	gb EU380309.1	92,72	phylum: Arthropoda	order: Harpacticoida	Itunella muelleri
denovo229	gb EU380295.1	95,34	phylum: Arthropoda	order: Harpacticoida	Dactylopusia sp.
denovo291	gb EU380295.1	95,48	phylum: Arthropoda	order: Harpacticoida	Dactylopusia sp.
denovo305	gb EU380297.1	95,09	phylum: Arthropoda	order: Harpacticoida	Diarthodes sp.
denovo307	gb EU380309.1	95,6	phylum: Arthropoda	order: Harpacticoida	Itunella muelleri
denovo280	gb AY118078.2	100	phylum: Arthropoda	order: Calanoida	Ctenocalanus citer
denovo99	gb FJ372639.1	93,75	phylum: Arthropoda	infraclass: Paraneoptera	Saldula sp.
denovo2	emb AJ238061.1	100	phylum: Arthropoda	genus: Artemia	Artemia franciscana
denovo283	gb JQ000095.1	99,22	phylum: Arthropoda	family: Glycyphagidae	Marsupialichus brasiliensis
denovo179	gb GU902153.1	100	phylum: Annelida	Clitellata	Grania sp.
denovo206	gb AF411887.1	99,74	phylum: Annelida	Clitellata	Heronidrilus gravidus
denovo157	gb JN936459.1	99,23	phylum: Annelida	class: Polychaeta	Tharyx sp.
denovo309	gb AF448150.1	98,73	phylum: Annelida	class: Polychaeta	Apistobranchnus typicus
denovo6	gb JN852836.1	100	phylum: Annelida	class: Polychaeta	Neopolynoe paradoxa
denovo329	gb GU179368.1	100	phylum: Annelida	class: Polychaeta	Aglaophamus trissophyllus
denovo158	gb EU418858.1	98,74	phylum: Annelida	class: Polychaeta	Polycirrus sp.
denovo331	gb JF509728.1	96,34	phylum: Annelida	class: Polychaeta	Capitella teleta
denovo182	gb AY525627.1	94,85	phylum: Annelida	class: Polychaeta	Eulalia viridis
denovo192	gb AF508126.1	96,15	phylum: Annelida	class: Polychaeta	Scoloplos johnstonei
denovo104	gb DQ153064.1	99,74	phylum: Annelida	class: Polychaeta	Polygordius jouinae
denovo259	gb AY532362.1	92,33	phylum: Annelida	class: Polychaeta	Phylo michaelsoni
denovo145	gb KF511823.1	99,74	phylum: Annelida	class: Polychaeta	Ophelina sp.
denovo73	gb KC984696.1	100	phylum: Mollusca	class: Bivalvia	Yoldia eightsi
denovo127	gb KC429382.1	100	phylum: Mollusca	class: Bivalvia	Cyamiomacra laminifera
denovo164	gb JQ611498.1	100	phylum: Mollusca	class: Bivalvia	Pecten jacobaeus
denovo111	dbj AB714767.1	97,69	phylum: Mollusca	class: Bivalvia	Nipponomontacuta actinariophila
denovo312	gb KC429372.1	99,74	phylum: Mollusca	class: Bivalvia	Mysella charcoti
denovo56	gb KC429331.1	100	phylum: Mollusca	class: Bivalvia	Mytilus edulis
denovo40	gb KC984695.1	95,66	phylum: Mollusca	class: Bivalvia	Neilonella whoii
denovo221	gb KC429382.1	97,49	phylum: Mollusca	class: Bivalvia	Cyamiomacra laminifera

**Supplementary Table S1.3-** Closest BLAST matches of Operational Taxonomic Units (OTUs) retrieved from Rothera sample sites, assigned to Platyhelminthes, up to genus or species levels (Description) using SILVA 1.11 database. Depicted are the public accession numbers (AcNumber), BLAST identity percentage against SILVA (BLAST % ID), Phylum and other Taxa ranking.

OTU#	AcNumber	BLAST % ID	Phylum	Taxa Rank	Description
denovo47	emb AJ012531.1	95,84	phylum: Platyhelminthes	order: Macrostomida	Paromalostomum fuscum
denovo230	emb AJ012531.1	93,54	phylum: Platyhelminthes	order: Macrostomida	Paromalostomum fuscum
denovo34	emb AJ012531.1	93,75	phylum: Platyhelminthes	order: Macrostomida	Paromalostomum fuscum
denovo74	emb AJ012531.1	93,51	phylum: Platyhelminthes	order: Macrostomida	Paromalostomum fuscum
denovo262	emb AJ012531.1	92,45	phylum: Platyhelminthes	order: Macrostomida	Paromalostomum fuscum
denovo260	emb AJ012531.1	93,51	phylum: Platyhelminthes	order: Macrostomida	Paromalostomum fuscum
denovo14	gb KC869790.1	94,59	phylum: Platyhelminthes	order: Macrostomida	Macrostomum sp.
denovo79	emb AJ012531.1	92,99	phylum: Platyhelminthes	order: Macrostomida	Paromalostomum fuscum
denovo94	emb AJ012531.1	93,77	phylum: Platyhelminthes	order: Macrostomida	Paromalostomum fuscum
denovo175	emb AJ012531.1	94,06	phylum: Platyhelminthes	order: Macrostomida	Paromalostomum fuscum
denovo243	emb AJ012531.1	93,01	phylum: Platyhelminthes	order: Macrostomida	Paromalostomum fuscum
denovo218	gb KC529506.1	96,13	phylum: Platyhelminthes	suborder: Dalyellioida	Pogaina sp.
denovo50	gb KC602396.1	94,85	phylum: Platyhelminthes	suborder: Kalyptorhynchia	Acrorhynchides robustus
denovo67	gb KJ887470.1	95,03	phylum: Platyhelminthes	suborder: Kalyptorhynchia	Uncinorhynchus flavidus v
denovo33	gb KC529411.1	96,34	phylum: Platyhelminthes	suborder: Neodalyelliida	Proxenetes puccinellicola
denovo16	gb KC529435.1	93,93	phylum: Platyhelminthes	suborder: Neodalyelliida	Byrsophleps delamarei
denovo186	gb AY775738.1	97,91	phylum: Platyhelminthes	suborder: Kalyptorhynchia	Stradorhynchus sp.
denovo203	gb AY775741.1	94,04	phylum: Platyhelminthes	suborder: Kalyptorhynchia	Mesorhynchus terminostylus
denovo340	gb KJ887440.1	98,95	phylum: Platyhelminthes	suborder: Kalyptorhynchia	Odontorhynchus aculeatus
denovo7	gb KJ887470.1	97,9	phylum: Platyhelminthes	suborder: Kalyptorhynchia	Uncinorhynchus flavidus
denovo17	emb AJ012507.1	91,67	phylum: Platyhelminthes	suborder: Kalyptorhynchia	Cheliplana cf. orthocirra
denovo61	gb KJ887445.1	94,52	phylum: Platyhelminthes	suborder: Kalyptorhynchia	Opisthocystis goettei
denovo282	gb KC529506.1	94,07	phylum: Platyhelminthes	suborder: Dalyellioida	Pogaina sp. 3
denovo98	gb KC529523.1	95,63	phylum: Platyhelminthes	suborder: Dalyellioida	Dalyellioida sp.
denovo279	gb GU936108.1	93,19	phylum: Platyhelminthes	suborder: Kalyptorhynchia	Schizorhynchidae sp.
denovo239	gb KJ887448.1	94,79	phylum: Platyhelminthes	suborder: Kalyptorhynchia	Thylacorhynchus conglobatus
denovo320	gb KC602396.1	93,56	phylum: Platyhelminthes	suborder: Kalyptorhynchia	Acrorhynchides robustus
denovo41	gb KC602396.1	93,04	phylum: Platyhelminthes	suborder: Kalyptorhynchia	Acrorhynchides robustus
denovo63	gb AY775746.1	100	phylum: Platyhelminthes	suborder: Kalyptorhynchia	Schizochilus choriurus
denovo107	gb KC529518.1	93,79	phylum: Platyhelminthes	suborder: Dalyellioida	Wahlia macrostyliifera
denovo146	gb KC529521.1	92,98	phylum: Platyhelminthes	suborder: Typhloplanoida	Austradenopharynx sp.
denovo185	gb KC529506.1	96,66	phylum: Platyhelminthes	suborder: Dalyellioida	Pogaina sp.
denovo271	gb KC869833.1	92,54	phylum: Platyhelminthes	suborder: Dalyellioida	Baicalellia canadensis
denovo290	gb KC869833.1	96,39	phylum: Platyhelminthes	suborder: Dalyellioida	Baicalellia canadensis
denovo313	gb U70077.1 ARU70	92,23	phylum: Platyhelminthes	order: Proseriata	Archiloa rivularis
denovo268	gb AY775733.1	99,74	phylum: Platyhelminthes	order: Proseriata	Cirrifera sopotthelersae
denovo199	gb AY222124.1	94,72	phylum: Platyhelminthes	order: Plagiorchiida	Enenterum aureum

**Supplementary Table S2:** Overview of the Antarctic sampled sites *in silico* statistics for the NGS of 18S rRNA gene region used. Each replicated sampled site had a 8 nucleotide multiplex-identification tag (MID), depth in meters (m), abbreviated description of the sample, post-quality control and chimera checked number of reads and total number of OTUs at the 97% threshold.

Location	MIDTag	Depth (m)	Description	No Reads	QC/ Chimera check reads	Total OTUs
Hangar_1	TCGTCTAC	18	HC.1	1224	970	49
Hangar_2	AGACAGAC	18	HC.2	13007	10399	104
Hangar_3	CTGTTCAC	18	HC.3	4160	3076	117
Rothera Point_1	AGTCAGAG	15	RP.1	402	341	37
Rothera Point_2	TCAGCTCT	15	RP.2	478	376	30
Rothera Point3	ACTCAGAC	15	RP.3	7230	6181	79
Islands_1	CTAGTCCT	13	I.1	19716	16730	157
Islands_2	CAGTTGAC	13	I.2	549	455	54
Islands_3	TAGGTTGC	13	I.3	3617	2924	50
South cove_1	TCTGCTCA	8	SC.1	424	337	21
South cove_2	ATCGTAGC	8	SC.2	4767	4034	51
South cove_3	CATGTGCA	8	SC.3	549	3832	69