SUPPLEMENTARY INFORMATION to publication 'Is trophic diversity of marine benthic consumers decoupled from taxonomic and functional trait diversity? Isotopic niches of Arctic communities' by Maria Włodarska-Kowalczuk, Magnus Aune, Loïc N. Michel, Agata Zaborska, Joanna Legeżyńska

Table S1 $\delta^{13}C$ (mean ± SD) in potential basal sources for the benthic communities in Hornsund: sediment organic matter (SOM), particulate organic matter (POM), macroalgae (a mixture of local kelp species) collected at *INNER* and *OUTE*R site and tundra.

Source	*INNER*	*OUTER*	Mann-Whitney test
macroalgae	-19.4 ± 2.5	-21.0 ± 2.1	p = 0.785
SOM	-24.6 ± 0.5	-24.5 ± 0.6	p = 0.229
POM	-25.8 ± 0.4	-26.1 ± 0.6	p = 0.700
Tundra	-27.1 ± 2.0		

Table S2. Average $\delta^{13}C$ and $\delta^{15}N$ values of benthic taxa collected at *INNER* and *OUTER* localities in Hornsund. FM - feeding mode: c - carnivore, d - deposit feeder, f - suspension feeder. N_R - number of replicates, N_I - number of individuals constituting a single sample
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		INNER			*OUTER*		
SPECIES	FM	N_R (N_I)	$\delta^{13}C$	$\delta^{15}N$	N_R (N_I)	$\delta^{13}C$	$\delta^{15}N$
Aglaophamus malmgreni	c	3 (2-5)	-19.83	10.91			
Acanthostepheia malmgreni	c	1 (1)	-21.86	9.94			
Alcyonidium gelatinosum	f	1 (1)	-21.43	9.01	1 (1)	-19.28	6.99
Ampelisca eschrichtii	f				3 (1-3)	-21.65	6.73
Ampharetinae indet.	d	1 (3)	-23.55	6.55			
Amphiura sundevalli	c					-19.56	10.1
Anobothrus gracilis	d				2 (1-3)	-20.77	8.25
Anonyx nugax	c	2 (1-5)	-21.84	6.68	3 (1)	-20.5	10.7
Artacama proboscidea	d				3 (3)	-20.47	7.87
Astarte montagui	f				3 (3-4)	-19.76	6
Balanus balanus	f				1 (2)	-20.3	5.58
Brada villosa	d				1 (1)	-21.23	6.95

Buccinidae indet.	c	1 (1)	-21.00	10.15			
Buccinum polare	c				1 (1)	-17.54	11.8
Buccinum scalariformis	c	1 (1)	-18.67	12.38	3 (1)	-18.12	10.7
Byblis gaimardi	f				1 (2)	-22.18	6.03
Capitella capitata	d	1 (6)	-22.06	9.01			
Cerianthus sp.	c	3 (1-2)	-21.55	9.78			
Chaetozone setosa	d	1 (3)	-22.49	6.79			
Ciliatocardium ciliatum	f				3 (1-2)	-19.41	5.56
Cirratulidae indet.	d	2 (88-120)	-21.98	7.03	3 (37-46)	-21.4	7.6
Colus kroyeri	c				2 (1)	-16.82	13.4
Cryptonatica affinis	c				1 (2)	-16.99	10.8
Diastylis scorpioides	f				1 (2)	-22.24	5.41
Diplocirrus longisetosus	d				1 (1)	-21.41	7.37
Edwardsidae indet.	c	2 (1)	-21.05	13.15			
Eualus gaimardii belcheri	c	2 (1)	-20.05	10.31	3 (1)	-20	9.44
Euchone analis	f				1 (1)	-20.73	8.44
Euchone sp.	f	1 (1)	-21.16	9.06			
Eudorella emarginata	d				1 (2)	-20.85	7.95
Gattyana cirrhosa	c				3 (2-5)	-19.38	11.4

Goldfingia margaritacea	d				3 (1)	-19.65	9.88
Haploops tubicola	f				3 (1-2)	-22.22	6.43
Heteromastus filiformis	d	1 (5)	-21.29	5.65			
Hyas araneus	c				2 (1-3)	-20.53	7.92
Lanassa nordenskioeldi	d				2 (1-2)	-21.38	7.74
Lanassa sp.	d				1 (1)	-20.43	8.1
Lepidepecreum umbo	c	1 (1)	-21.38	7.33			
Liljeborgia fissicornis	c				1 (2)	-20.51	10
Lumbrineris spp.	c	1 (5)	-22.09	11.24	3 (15-16)	-21.91	10.9
Lyssipe labiata	d				1 (1)	-21.24	6.47
Macoma calcarea	d				1 (2)	-19.16	10.4
Maldane sarsi	d				3 (1-5)	-20.38	10.7
Margarites groenlandicus	d				1 (2)	-21.66	5.96
Margarites helicynus	d				1 (2)	-20.98	6.94
Quasimelita quadrispinosa	d				2 (1-5)	-21.72	4.37
Munnopsis typica	c	1 (1)	-20.32	10.90			
Nemertea indet.	c	1 (1)	-17.46	13.53	4 (1)	-19.4	9.86
Nepthys cirriata	c				1 (1)	-19.36	9.88
Nepthys sp.	c	1 (1)	-19.65	9.11			

Nuculana pernula	d				1 (3)	-19.92	10.4
Nudibranchia indet.	c				3 (1)	-21.38	9.89
Oenopota sp.	c				1 (3)	-20.32	7.4
Onisimus caricus	c	1 (1)	-20.29	15.35			
Ophelina acuminata	d				2 (3)	-20.58	8.1
Orbinidae indet.	d	1 (2)	-21.64	9.19	1 (8)	-21.56	7.79
Pagurus pubescens	c				3 (1-4)	-21.05	7.88
Pectinaria hyperborea	d				1 (1)	-21.98	9.07
Phyllodoce groenlandica	c				3 (1-2)	-20.45	9.03
Polycirrus arcticus	d	3 (5-7)	-21.45	8.43	1 (1)	-21.88	8.6
Portlandia arctica	d	1 (3)	-22.2	4.59			
Praxilella spp.	d				1 (2)	-20.32	9.76
Priapulus caudatus	c				3 (1-3)	-20.12	10.4
Pseudomma truncatum	d	1 (3)	-22.17	9.88			
Sabelides borealis	d				2 (1-2)	-20.55	7.64
Sabellinae indet.	f	1 (2)	-22.64	4.63			
Sabinea septemcarinata	c	3 (1)	-20.15	11.86	3 1)	-19.55	10.9
Scalibrema inflatum	d				1 (3)	-20.99	7.39
Scoletoma fragilis	c	3 (1-2)	-19.9	11.47	1 (1)	-20.43	11.9

Spionidae indet. /*Prionospio* sp.	d	1 (1)	-21.72	6.66			
Spirontocis spinus	c				2 (1)	-20.81	9.01
Syllis cornuta	c				1 (9)	-20.94	9.77
Terebellides stroemi	d				3 (3-7)	-21.17	7.65
Thyassira dunbari	d	1 (9)	-21.81	5.30			
Actiniaria indet. 1	c	4 (2)	-21.76	10.61			
Actiniaria indet. 2	c				1 (1)	-19.74	10.4
Unciola leucopis	d				2 (1)	-21.52	6.87
Urasterias lincki	c	3 (1)	-19.05	13.94			
Yoldia hyperborea	d				2 (3-4)	-19.8	7.45

Table S3. Functional trait characteristics and dominance of the taxa in the two communities.
D (%) – average percentage in the total abundance in samples collected at the *INNER* and *OUTER* sites; Mobility: m – mobile, dm – discretely mobile, sed – sedentary; Feeding: c – carnivore, d – deposit-feeder, f – suspension-feeder, h – herbivore, g – grazer, sc – suctorial parasite ; Food source: SU –sub-surface, SR – surface, EP – epibenthic; Size class: s10 – under 10 mm, s50 – 11-50 mm, s100 – 51-100mm, o100 – over 100mm; Life habit: A – attached, B – burrowing, F – free-living, T – tube-dweller, X – parasitic.

Phylum	taxon	D (%) INNER	D (%) OUTER	Mobility	Feeding	Food source	Size class	Life habit
Annelida	*Aglaophamus malmgreni*	1.53	0.07	m	c	SU	o100	F
	Ampharete acutifrons		0.01	sed	d	SR	s50	T
	Ampharete borealis		0.01	sed	d	SR	s50	T
	Ampharete finmarchica		0.03	sed	d	SR	s50	T
	Ampharete goesi		0.01	sed	d	SR	s50	T
	Ampharetinae indet.		0.20	sed	d	SR	s50	T
	Amphicteis gunneri		0.01	sed	d	SR	s100	T
	Anobothrus gracilis		0.35	sed	d	SR	s50	T
	Apistobranchus tullbergi		6.46	dm	d	SR	s50	T
	Aricidea sp.		0.01	m	d/h	SR	s50	T
	Aricidea (Strelzovia) suecica		0.01	m	d/h	SR	s50	T
	Artacama proboscidea		0.41	sed	d	SR	s100	T
	Autolytinae indet.		<0.01	m	c/d	SR	s50	F
	Brada cf. *rugosa*		0.03	dm	d	SR	s50	F
	Brada incrustata		0.01	dm	d	SR	s50	F
	Brada sp.		<0.01	dm	d	SR	s50	F
	Brada villosa		0.06	dm	d	SR	s50	F
	Bushiella (Jugaria) quadrangularis		<0.01	sed	f	EP	s10	T
	Bylgides elegans	0.10	0.02	m	c	SR	s100	F
	Capitella spp. (*C. capitata* complex)	0.10	0.66	m	d	SU	s10	F
	Chitinopoma serrula		<0.01	sed	f	SU	s10	F

	Chone spp.	2.69	0.55	sed	f	EP	s100	T
	Cirratulidae	54.45	46.01	m	d	SR	s50	F
	Cistenides hyperborea		0.12	m	d	SU	s100	T
	Clymenura polaris		0.02	sed	d	SU	s50	T
	Clymenura/Microclymene		0.01	sed	d	SU	s50	T
	Cossura sp.	31.42	8.38	m	d	SR	s50	F
	Diplocirrus longisetosus		0.09	dm	d	SR	s10	F
	Dipolydora sp.		0.04	dm	d	SR	s50	T
	Dorvilleidae indet.		<0.01	m	c/h	SR	s10	F
	Enipo torelli		0.05	m	c	SU	s50	F
	Ephesiella abyssorum		<0.01	m	d	SR	s10	F
	Erinaceusyllis erinaceus		0.05	m	c/d	SU	s10	F
	Eteone flava		0.02	m	c/d	SR	o100	F
	Eteone flava/ E. longa	0.27	1.22	m	c/d	SR	o100	F
	Eteone spetsbergensis		0.01	m	c/d	SR	s100	F
	Euchone analis		0.09	sed	f	EP	s50	T
	Euchone papillosa		0.01	sed	f	EP	s50	T
	Euchone spp.	2.32	0.05	sed	f	EP	s50	T
	Eunoe oerstedi		<0.01	m	c	SR	s100	F
	Eusyllinae indet	0.23		m	c	SU	s50	F
	Exogone (Exogone) naidina		0.06	m	c/d	SR	s10	F
	Fabriciidae indet.		0.01	dm	d	SR	s10	T
	Flabelligera affinis		<0.01	m	d	SR	s100	F
	Galathowenia oculata		0.15	m	d	SR	s50	T
	Gattyana cirrhosa		0.19	m	c	SR	s50	F
	Glycera capitata		<0.01	m	d	SU	s100	F
	Harmothoe cf. *vridis*		0.11	m	c	SR	s50	F
	Harmothoe imbricata		0.04	m	c	SR	s100	F
	Harmothoe sp.		0.01	m	c	SR	s100	F

	Hesioninae indet.		<0.01	m	c	SU	s50	F
	Heteromastus filiformis	0.79	1.30	m	d	SU	o100	F
	Lanassa nordenskioldi		0.45	sed	d	SR	s100	T
	Lanassa venusta		0.05	sed	d	SR	s100	T
	Laonome kroyeri		0.02	sed	f	EP	s50	T
	Laphania boecki		0.07	sed	d	SR	s100	T
	Leaena ebranchiata		0.39	sed	d	SR	s100	T
	Leitoscoloplos mammosus	0.03	6.45	m	d	SU	s50	F
	Levinsenia gracilis		<0.01	m	d/h	SR	s50	B
	Levinsenia sp.	0.40	0.03	m	d/h	SR	s50	B
	Lumbriclymene sp.		<0.01	sed	d	SU	s50	T
	Lumbrineris spp.	0.05	8.72	m	c	SU	o100	F
	Lysippe labiata	0.05	0.19	sed	d	SR	s50	T
	Maldane sarsi		4.85	sed	d	SU	o100	T
	Melinna cristata		<0.01	sed	d	SR	s50	T
	Melinna elisabethae		<0.01	sed	d	SR	s100	T
	Microclymene sp.		<0.01	sed	d	SU	s50	T
	Microphthalmus sczelkowii		<0.01	m	c/h	SR	s10	F
	Myriochele heeri		0.06	m	d	SR	s50	T
	Myriochele sp.		0.01	m	d	SR	s50	T
	Nephtys ciliata		<0.01	m	c	SU	o100	F
	Nephtys incisa		<0.01	m	d	SU	s100	F
	Nereimyra punctata		<0.01	m	c/d	SU	s50	F
	Nereis zonata		<0.01	dm	d	SR	o100	T
	Ophelina acuminata		0.18	m	d	SU	s100	F
	Ophryotrocha sp.		0.01	m	c/h	SR	s10	F
	Oweniidae indet.		<0.01	dm	d/f	SR	s50	T
	Paradexiospira (Spirorbides) vitrea		<0.01	sed	f	EP	s10	T
	Paraonidae indet.	0.13	0.53	m	d	SR	s50	B

	Parougia spp.	0.02	0.88	m	c/h	SU	s10	F
	Petaloproctus tenuis		0.01	sed	d/h	SU	s50	T
	Pholoe assimilis	0.02	0.26	m	c	SU	s10	F
	Phyllodoce cf. *maculata*		<0.01	m	c	SR	s100	F
	Phyllodoce groenlandica		0.17	m	c	SR	o100	F
	Phyllodocinae indet.		<0.01	m	c	SR	o100	F
	Polycirrus spp.	3.88	0.47	dm	d	SR	s100	T
	Polydora sp.		0.20	dm	d	SR	s50	T
	Polynoidae indet.		0.02	m	c	SU	s100	F
	Praxillella gracilis		0.02	sed	d	SU	s100	T
	Praxillella praetermissa		0.08	sed	d	SU	s100	T
	Praxillella sp.		<0.01	sed	d	SU	s100	T
	Praxillura sp.		<0.01	sed	d	SU	s50	T
	Prionospio cirrifera	0.06	0.02	dm	d	SR	s50	T
	Proceraea cf. *cornuta*		0.01	m	c	SU	s50	F
	Proceraea sp.		<0.01	m	c	SU	s50	F
	Proclea graffii		<0.01	sed	d	SR	s50	T
	Proclea malmgreni		0.03	sed	d	SR	s50	T
	Sabellides borealis	0.02	0.02	sed	d	SR	s50	F
	Scalibregma inflatum		0.43	m	d	SU	s50	B
	Scoletoma fragilis		0.02	m	c	SU	o100	F
	Serpulidae indet.		<0.01	sed	f	EP	s10	T
	Sosane wireni			sed	d	SR	s10	T
	Sphaerodoropsis sp.		0.02	m	d	SR	s50	F
	Spio spp.	0.03	0.22	dm	d	SR	s50	T
	Spiochaetopterus typicus		0.01	sed	f/d	SR	o100	T
	Spiophanes kroyeri		<0.01	dm	d	SR	s50	T
	Spirorbinae indet.		0.01	sed	f	EP	s10	T
	Syllis cornuta		0.64	m	c	SR	s50	F

	Terebellides stroemii		0.70	sed	d	SR	s100	T
	Terebellinae indet.		0.24	sed	d	SR	s100	T
	Trichobranchus glacialis		0.02	sed	d	SR	s50	T
	Trichobranchus roseus		<0.01	sed	d	SR	s50	T
Arthropoda	*Acanthonotozoma* sp.		0.01	m	d	E	s50	F
	Ampelisca eschrichti		0.08	dm	f	E	s50	T
	Anonyx nugax	0.03	<0.01	m	c	E	s50	F
	Arrhis phyllonyx	0.10	0.01	m	d/c	SU/SR	s50	F
	Byblis gaimardii		<0.01	dm	f	E	s50	T
	Corophiida indet.		0.01	m	d/f	SR	s10	F
	Diastylis goodsiri		<0.01	m	d/g	E/SR	s50	F
	Diastylis lucifera	0.02	0.02	m	d/g	E/SR	s10	F
	Diastylis rathkei		<0.01	m	d/g	E/SR	s50	F
	Diastylis scorpioides		0.03	m	d/g	E/SR	s50	F
	Diastylis sulcata		<0.01	m	d/g	E/SR	s50	F
	Eudorella emarginata	0.03	0.15	m	d/g	SR	s10	F
	Haploops tubicola		0.10	dm	f	E	s50	T
	Hyas araneus		0.01	m	c	SR	s100	F
	Leucon spp.		0.11	m	d/g	SR	s10	F
	Lysianassoidea indet.		0.01	m	c	SU	s10	F
	Melita dentata		<0.01	m	d	SR	s50	F
	Metopa sp.		0.02	m	c	SR	s10	F
	Monoculodes packardi	0.13	0.01	m	d/c	SU/SR	s10	F
	Onisimus sp.		0.01	m	c	SR	s50	F
	Onisimus brevicaudatus		<0.01	m	c	SR	s50	F
	Onisimus edwardsii	0.03		m	c	SR	s50	F
	Orchomenella minuta		0.01	m	c/d	SR	s10	F
	Pagurus pubescens		0.33	m	c	SR	s100	F
	Parapleustes bicuspis		0.01	m	c	SR	s50	F

	Phoxocephalus holbolli		0.01	m	c	SR/SU	s10	F
	Pleustidae indet.		<0.01	m	c	SR	s50	F
	Pontoporeia femorata		0.03	m	d	SR	s50	F
	Protomedeia grandimana		<0.01	m	f	SR	s10	T
	Protomedeia sp.		0.04	m	f	SR	s10	T
	Quasimelita formosa		0.87	m	d	SR	s50	F
	Quasimelita quadrispinosa		0.08	m	d	SR	s50	F
	Rhachotropis aculeata		0.01	m	c	E	s50	F
	Rostroculodes borealis		<0.01	m	d/c	SU/SR	s50	F
	Sabinea septemcarinata		0.01	m	c	SR	s100	F
	Spirontocaris spinus		<0.01	m	c	E/SR	s50	F
	Stenothoidae indet.		0.01	m	c	SR	s10	F
	Syrrhoe crenulata		<0.01	m	c	E	s50	F
	Tanaidacea indet.		0.24	dm	d/g	SR	s10	T
	Unciola leucopis		0.08	dm	d	SR	s50	T
Brachiopoda	Brachiopoda indet.		0.01	sed	f	EP	s50	A
Cephalorhyncha	*Priapulus caudatus*		0.05	m	c	SU	s100	B
Cnidaria	*Cerianthus* sp.	0.16	0.09	sed	f	SR	o100	B
	Hydrozoa indet.		0.11	sed	f	EP	s100	A
Echinodermata	*Amphiura sundevalli*		0.04	dm	d/c	SR	s50	F
	Cucumaria frondosa		0.01	dm	f	EP	o100	F
	Ophiura robusta		0.01	m	d/c	SR	s10	F
	Ophiuroidea		0.05	m	d/c	SR	s50	F
Mollusca	*Admete viridula*		0.03	m	sc	SR	s50	X
	Astarte borealis		<0.01	sed	f	EP	s50	B
	Astarte crenata		0.01	sed	f	EP	s50	B
	Astarte montagui		0.10	sed	f	EP	s50	B
	Astarte sp.		0.02	sed	f	EP	s50	B
	Axinopsida orbiculata		0.02	m	d	EP	s10	F

	Buccinidae indet.		<0.01	m	c	SR	s100	F
	Buccinum polare		<0.01	m	c	SR	s100	F
	Buccinum scalariforme		<0.01	m	c	SR	s100	F
	Chaetoderma nitidulum		0.02	m	c	SU	s100	F
	Ciliatocardium ciliatum		0.13	sed	f	SR	s50	B
	Cryptonatica affinis		<0.01	m	c	SU	s50	F
	Cylichna sp.		0.02	m	c	SU	s50	F
	Cylichnoides occultus		0.10	m	c	SU	s50	F
	Dacrydium vitreum		0.01	sed	f	EP	s10	A
	Ennucula tenuis	0.03	0.21	m	d	SU	s50	F
	Euspira pallida		<0.01	m	c	SU	s50	F
	Frigidoalvania cruenta		0.09	m	d	SR	s10	F
	Kurtiella sovaliki		0.49	dm	d	SU	s10	F
	Lepeta caeca		0.18	m	d	SR	s50	F
	Macoma sp.		0.04	dm	d	SR	s50	F
	Margarites groenlandicus		0.01	m	d/h	SR	s50	F
	Menestho truncatula		0.45	dm	sc	SR	s10	X
	Montacuta spitzbergensis		0.29	m	d	SR	s10	F
	Muricidae indet.		<0.01	m	c	SR	s100	F
	Mya truncata		<0.01	sed	f	EP	s100	F
	Neogastropoda indet.	0.02		m	c	SR	s100	F
	Neptunea despecta		<0.01	m	c	SR	o100	F
	Nuculana pernula		0.03	m	d	SR	s50	F
	Oenopota impressa		0.02	m	c	SR	s50	F
	Oenopota pyramidalis		<0.01	m	c	SR	s50	F
	Oenopota sp.		0.01	m	c	SR	s50	F
	Onoba mighelsii		0.01	m	d	SR	s10	F
	Parathyasira dunbari	0.72	0.02	m	d	SU	s10	F
	Portlandia arctica	0.11		m	d	SU	s50	B

	Propebela nobilis		0.02	m	d	SR	s50	F
	Retusa sp.		0.05	m	g/d	SR	s50	F
	Thyasira gouldi		0.06	m	d	SR	s10	F
	Turitellopsis stimpsoni		0.03	m	d	SR	s50	F
	Yoldia hyperborea		0.05	m	d	SU	s100	B
	Yoldiella frigida		0.01	m	d	SU	s10	B
	Yoldiella solidula	0.03	0.03	m	d	SU	s10	B
Nemertea	Nemertea indet.	0.02	0.07	m	c	SU	o100	F
Sipuncula	*Golfingia (Golfingia) margaritacea*		0.62	dm	d/g/f	SR	o100	F
	Golfingia (Golfingia) vulgaris		0.39	dm	d/g/f	SR	o100	F
	Golfingia sp.		0.15	dm	d/g/f	SR	o100	F
	Nephasoma sp.		0.01	dm	d/g/f	SR	s50	F
	Phascolion strombus		0.01	dm	d	SR	s50	F
	Sipuncula indet.		<0.01	dm	d/g/f	SR	s50	F
Platyhelminthes	Platyhelminthes indet.		<0.01	m	c	SR	s50	F