

Oxygen budgets in subtidal arctic (Kongsfjorden, Svalbard) and temperate (Helgoland, North Sea) microphytobenthic communities

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Supplement. Further details on statistical analyses (Table S1), the diatom species identified and their relative occurrence (Table S2), porewater nutrient concentrations of the Svalbard sediment (Fig. S1) and the species distribution within the two study sites at Svalbard and Helgoland (Fig. S2)

Table S1. One-way ANOVA of comparisons between the 2 sites (Helgoland and Svalbard) with respect to various parameters describing the site or its MPB community

Parameter	df	<i>F</i>	p
Permeability	1	11.83	0.08
Porosity	4	6.03	0.04
C:N	5	3.42	0.09
chl <i>a</i>	5	0.08	0.78
Fucoxanthin	5	0.06	0.81
<i>P</i> _{net}	2	0.29	0.62
<i>P</i> _{gross}	2	0.13	0.73
<i>R</i> _{phot}	2	0.06	0.05

Table S2. Taxonomy and abundances of the identified diatoms from the studied sites in Helgoland and Svalbard. Abundances are quantified as frequent (+++), rare (++), very rare (+) and absent (-) (see ‘Materials and methods: Diatom identification’ in the main article for definitions)

CLASS	ORDER	FAMILY	GENUS	SPECIES	frequency Hel / Sval	
Bacillariophyceae	Naviculales	Sellaphoraceae	<i>Fallacia</i>	<i>forcipata</i>	++ / ++	
		Diploneidaceae	<i>Diploneis</i>	<i>smithii</i>	+++ / +++	
				<i>bomboides</i>	++ / ++	
				<i>cf. notabilis</i>	- / ++	
				<i>cf. sp.</i>	- / ++	
				<i>suborbicularis</i>	++ / -	
				<i>sp.</i>	- / ++	
				<i>directa</i>	- / +++	
				<i>karianria var.</i>	- / ++	
				<i>Frigida</i>		
				<i>sp.</i>	- / ++	
				<i>cancellata</i>	+++ / -	
				<i>cf. pinnata</i>	++ / -	
		Pinnulariaceae	<i>Pinnularia</i>	<i>quadratarea</i>	- / +	
		Plagiotropidaceae	<i>Plagiotropis</i>	<i>Lepidoptera</i>	- / +++	
		Pleurosigmataceae	<i>Pleurosigma</i>	<i>normanii</i>	- / ++	
				<i>sp.</i>	++ / -	
				<i>reticulatum</i>	++ / -	
			<i>Donkinia</i>	<i>carinata</i>	- / +++	
		Acanthales	Acanthidiaceae	<i>Planothidium</i>	<i>delicatulum</i>	- / +++
			Achnantheaceae	<i>Achnanthes</i>	<i>sp.</i>	+ / ++
					<i>fimbriata</i>	+ / +
		Thalassiophysales	Catenulaceae	<i>Amphora</i>	<i>marina</i>	++ / +++
				<i>cf. arenaria</i>	++ / ++	
				<i>sp.</i>	++ / ++	
				<i>acutiuscula</i>	+ / ++	
				<i>cf. obtusa</i>	- / ++	
				<i>levitissima</i>	- / ++	
				<i>lineolata</i>	- / ++	
				<i>crassa</i>	- / +	
				<i>sulcata</i>	- / +++	
	Bacillariales	Bacillariaceae	<i>Nitzschia</i>	<i>hybrida</i>	- / ++	
				<i>sp.</i>	- / ++	
	Lyrellales	Lyrellaceae	<i>Petroneis</i>	<i>marina</i>	+++ / ++	
				<i>humerosa</i>	+++ / -	
			<i>Lyrella</i>	<i>abrupta</i>	++ / -	
	Centrales	Eupodiscaceae	<i>Odontella</i>	<i>aurita</i>	++ / ++	
	Fragilariales	Fragilariaceae	<i>Opehora</i>	<i>sp.</i>	++ / -	
	Anaulales	Anaulaceae	<i>Eunotogramma</i>	<i>marinum</i>	+ / -	
	Triceratiales	Tricerateaceae	<i>Auliscus</i>	<i>sculptus</i>	+ / -	
Coscinodiscophyceae	Coscinodiscales	Hemidiscaceae	<i>Actinocyclus</i>	<i>actinochilus</i>	+ / -	

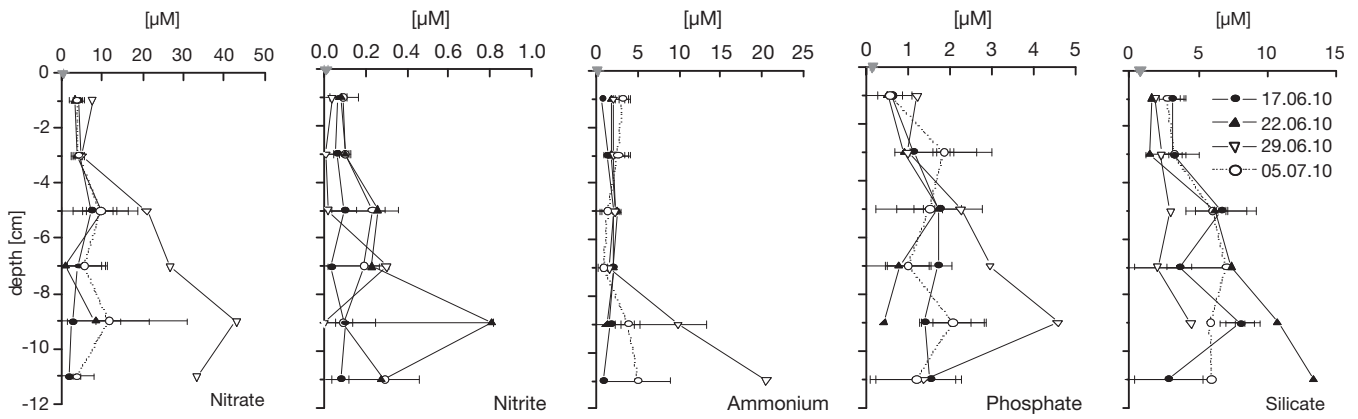


Fig. S1. Vertical profiles of porewater nutrients in the Svalbard sediment extracted *in situ* with rhizones (open symbols). Filled symbols show nutrient concentrations in the overlying water. Data represent measurements done on different dates (see key). When available, error-bars indicate SD of 2 replicate measurements. Comparable data for the Helgoland site is not available due to sample loss during transport.

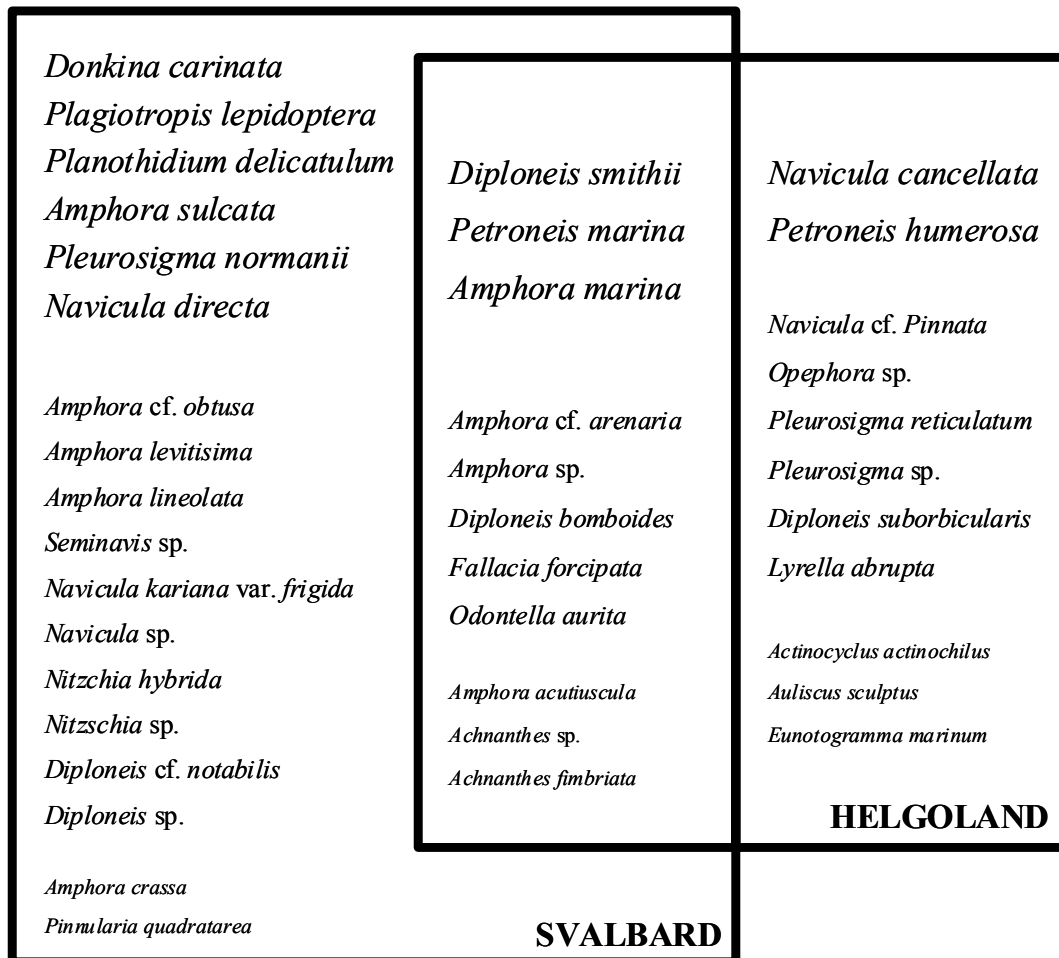


Fig. S2. Diatom species distribution between the 2 studied sites in Helgoland and Svalbard. The font sizes from largest to smallest indicate relative abundance, given as frequent, rare, and very rare.