

The amphipod scavenging guild in two Arctic fjords: seasonal variations, abundance and trophic interactions

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Supplement. Trap catches in Adventfjorden (Table S1) and, Rjippfjorden (Table S2), and ice trap catches in Rjippfjorden (Table S3), indicated as catch per unit effort (CPUE; i.e. mean number of individuals per trap). The fatty acid composition data for *Anonyx nugax*, *Onisimus glacialis*, *O. nanseni*, *O. littoralis* and *O. caricus* are presented in Table S4.

Table S1. CPUE (i.e. mean number of individuals per trap) of baited traps in Adventfjorden. Values >10 are in **bold** to easier spot the most abundant species. Dashes indicate that the species was not found

Month (sampling date)	Depth	Number of traps	<i>Anonyx nugax</i>	<i>A. sarsi</i>	<i>A. laticoxae</i>	<i>Anonyx</i> spp. juveniles	<i>Orisimus caricus</i>	<i>O. edwardsii</i>	<i>O. littoralis</i>	<i>Schisturella pulchra</i>	<i>Gammarus setosus</i>	<i>Eualus gaimardii</i>	Total
September (29.09.06)	0-5 m	7	-	28.3	46.4	13.4	17.6	-	1.1	-	0.1	1.4	108.4
	5-20 m	11	2.0	6.4	17.8	4.0	16.8	0.1	7.4	-	0.2	0.1	54.7
	20-40 m	2	13.5	2.0	285.5	41.0	8.5	-	-	-	-	-	350.5
October (19.10.06)	0-5 m	4	-	0.5	2.0	1.0	16.8	-	-	-	-	-	20.3
	5-20 m	12	1.7	0.3	19.5	3.2	255.7	-	0.3	-	-	-	280.5
November (07.11.06)	0-5 m	1	-	-	-	-	11.0	-	4.0	-	-	-	15.0
	5-20 m	11	2.1	0.4	26.1	0.3	361.6	-	-	-	-	-	390.5
	20-40 m	3	1.0	-	16.3	-	719.3	-	-	-	-	-	736.7
December (07.12.06)	0-5 m	5	-	0.2	0.6	-	16.0	-	30.2	-	0.2	-	47.2
	5-20 m	5	0.4	-	9.2	-	209.6	-	-	-	-	-	219.2
	20-40 m	5	-	-	1.0	-	118.8	-	-	-	-	-	119.8
February (08.02.07)	0-5 m	6	-	0.3	0.2	-	-	-	-	-	0.2	-	0.7
	5-20 m	5	2.0	1.0	62.8	-	87.0	-	-	-	-	-	152.8
	20-40 m	5	0.4	0.8	19.2	-	123.8	-	-	-	-	-	144.2
March (21.03.07)	0-5 m	7	-	4.3	-	-	0.3	-	2.4	-	1.3	-	8.3
	5-20 m	6	1.0	8.8	16.3	-	102.0	-	0.2	-	-	-	128.3
	20-40 m	3	-	-	8.3	-	78.0	-	-	-	-	-	86.3
April (19.04.07)	0-5 m	6	-	0.8	-	-	0.3	-	0.5	-	-	-	1.7
	5-20 m	6	-	0.3	-	-	1.7	-	1.7	-	-	-	3.7
	20-40 m	6	-	0.8	-	-	160.3	-	2.5	-	-	-	163.7
May (23.05.07)	0-5 m	6	-	0.5	-	-	-	-	10.7	-	0.3	-	11.5
	5-20 m	4	0.3	-	-	-	0.5	-	-	-	-	-	0.8
	20-40 m	5	-	-	0.8	-	15.0	-	-	-	-	-	15.8
June (20.06.07)	0-5 m	6	-	4.0	-	-	24.5	-	1.2	-	1.2	-	30.8
	5-20 m	4	-	-	-	-	336.0	-	-	-	-	-	336.0
	20-40 m	5	-	-	8.2	-	195.6	-	-	0.2	-	-	204.0
August (15.08.07)	0-5 m	6	-	7.3	-	-	0.2	-	4.7	-	14.0	-	26.2
	5-20 m	3	-	-	0.3	-	33.3	-	1.3	-	0.3	-	35.3
	20-40 m	6	-	0.2	0.2	-	65.8	-	1.8	-	-	-	68.0

Table S2. CPUE (i.e. mean number of individuals per trap) of baited traps in Rjipfjorden. Values >10 are **bold** to easier spot the most abundant species. Dashes indicate that the species was not found

Month (sampling period)	Depth	Number of traps	<i>Anonyx nugax</i>	<i>A. liljeborgi</i>	<i>A. sarsi</i>	<i>A. laticoxae</i>	<i>A. pacificus</i>	<i>Anonyx</i> spp. juveniles	<i>Onisimus brevicaudatus</i>	<i>O. edwardsii</i>	<i>O. glacialis</i>	<i>O. nanseni</i>	<i>O. nr. sibiricus</i>	<i>Orchomene pectinatus</i>	<i>Orchomenella minuta</i>	<i>Schisturella pulchra</i>	<i>Centromedon productus</i>	<i>Tmetonyx cicada</i>	<i>Gammarus setosus</i>	<i>G. wilkitzkii</i>	<i>Weyprechtia pinguis</i>	Total
February (02.02.07)	0-5 m	4	58.0	-	64.5	-	-	57.8	-	5.8	-	-	9.8	-	1.5	-	-	-	-	-	-	197.3
	5-20 m	8	92.9	0.1	4.6	-	-	54.5	-	13.0	-	-	-	0.1	0.4	-	-	-	-	-	-	165.6
	20-40 m	3	101.7	-	2.7	0.7	-	241.0	-	14.7	-	-	-	-	1.0	-	-	-	-	-	-	361.7
March (05–13.03.07)	0-5 m	3	17.3	-	5.0	-	-	104.7	-	7.7	-	-	-	-	-	-	-	-	1.7	-	-	136.3
	5-20 m	6	15.3	-	0.7	-	-	8.5	-	0.2	0.5	-	-	-	-	-	-	-	-	-	-	25.2
	20-40 m	14	18.1	12.5	-	0.1	0.2	5.5	0.1	0.2	-	0.1	-	0.5	-	7.6	-	-	-	-	-	44.9
April-May (24.04–01.05.07)	0-5 m	3	14.3	-	28.0	-	-	22.3	-	28.3	-	-	-	-	-	-	-	-	0.3	-	-	93.3
	5-20 m	4	9.3	0.3	0.8	-	-	19.3	-	3.0	-	-	-	-	-	-	-	-	-	-	-	32.5
	20-40 m	8	11.1	6.6	-	-	-	7.5	2.9	-	-	0.1	-	3.1	-	5.1	-	-	0.1	-	-	36.6
	40-100 m	4	16.0	41.7	-	-	-	9.7	2.0	-	-	-	-	2.3	-	49.3	56.0	-	-	-	-	176.8
	>100 m	2	26.5	21.5	-	-	-	39.0	462.0	-	-	-	-	14.0	8.0	6.5	1.0	-	-	-	-	578.5
June (05–08.06.07)	0-5 m	6	-	-	-	-	-	8.8	-	7.0	-	-	-	-	-	-	-	-	0.2	-	0.2	16.2
	5-20 m	7	-	-	-	-	-	7.1	-	0.9	-	-	-	-	-	-	-	-	-	-	-	8.0
	20-40 m	4	0.8	0.8	-	-	-	2.0	-	-	-	-	-	0.3	-	1.3	-	-	-	-	-	5.0
July (10–16.07.07)	0-5 m	14	-	-	6.1	-	-	-	-	2.6	0.1	1.1	-	-	-	-	-	-	4.9	0.1	-	15.1
	5-20 m	8	0.1	-	3.9	-	-	-	-	0.5	-	-	-	-	-	-	-	-	0.5	-	-	5.0
	20-40 m	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8.0	-	-	8.0
September (04.09.07)	0-5 m	4	1.8	-	12.5	-	-	109.5	-	7.5	0.5	-	-	-	-	-	-	-	0.3	-	-	132.0
	5-20 m	4	0.8	-	1.0	-	-	6.0	-	1.5	-	-	0.8	-	-	-	-	-	-	0.5	-	10.5
October (08.10.07)	0-5 m	4	4.0	-	0.5	-	-	2.8	-	-	-	-	-	-	-	-	-	-	-	-	-	7.3
	5-20 m	5	81.6	-	-	-	-	17.4	-	-	-	-	-	-	1.4	-	-	-	-	-	-	100.4
	20-40 m	1	173.0	-	-	-	-	71.0	-	-	-	-	-	-	1.0	-	-	-	-	-	-	245.0
April-May (26.04–03.05.08)	0-5 m	1	4.0	1.0	-	-	-	-	1.0	-	-	-	-	-	-	-	-	-	-	-	-	6.0
	5-20 m	2	10.5	-	-	-	-	11.0	-	-	-	-	-	-	-	-	-	-	-	-	-	21.5
	20-40 m	2	5.5	6.5	-	-	-	-	-	-	-	-	-	-	-	3.0	-	-	-	-	-	15.0
	40-100 m	2	6.5	23.5	-	-	-	6.5	4.5	-	-	-	-	9.0	1.0	9.5	-	-	-	-	-	60.5
	>100 m	2	147.0	45.0	-	-	-	99.0	91.0	-	-	-	-	35.0	-	118.0	47.5	1.0	-	-	-	583.5

Table S3. CPUE (i.e. mean number of individuals per trap) of ice traps in Rjipfjorden. Values >10 are **bold** to easier spot the most abundant species. Dashes indicate that the species was not found

Month (sampling period)	Water depth	Number of traps	<i>Anonyx nugax</i>	<i>A. sarsi</i>	<i>Anonyx</i> spp. juveniles	<i>Onisimus glacialis</i>	<i>O. nansenii</i>	<i>Gammarus setosus</i>	<i>G.wilkitzkii</i>	<i>Ischyrocerus angipes</i>	<i>Weyprechtia pinguis</i>	Total
March (05–13.03.07)	<40 m	23	7.2	1.0	-	-	-	1.3	0.5	-	-	9.9
April–May (24.04–01.05.07)	<40 m	14	1.9	0.3	0.5	-	0.1	0.9	-	-	-	3.8
	>40 m	11	2.0	-	-	-	86.5	-	-	-	-	88.5
June (05–08.06.07)	<40 m	7	-	-	-	-	-	17.6	-	0.1	0.3	17.7
	>40 m	5	1.2	-	-	0.2	58.8	-	-	-	-	60.2
April–May (26.04–03.05.08)	>40 m	44	20.6	-	-	-	0.2	-	0.5	-	-	21.3

Table S4. *Anonyx nugax*, *Onisimus glacialis*, *O. nanseni*, *O. litoralis* and *O. caricus*. Fatty acid composition. SFA = saturated fatty acids, MUFA = monounsaturated fatty acids, PUFA = polyunsaturated fatty acids. A=Adventfjorden, R=Rijpfjorden, P=Pack ice north of Svalbard, * Individuals collected in ice traps. n indicates number of replicate samples. Values over 10 % are **bold**.

Area Month n	<i>Anonyx nugax</i>								<i>Onisimus glacialis</i>					<i>O. nanseni</i>							<i>O. litoralis</i>						<i>O. caricus</i>			
	A	R	R	R	R	R	R	R	R	R	R	P	R	R	R	R	R	R	R	P	R	A	A	A	A	A	A	A	A	A
	Feb	Mar	Apr	Apr*	Jun*	Aug	Sep	Oct	Jun*	Jul*	Aug	Sep*	Oct	Apr*	May*	Jun*	Jul	Aug	Sep	Sep*	Oct	Apr	May	Jun	Jul	Aug	Nov	Feb	Jun	Nov
	7	8	3	7	2	3	3	3	1	1	2	3	1	3	3	3	3	3	3	3	3	3	3	2	3	3	3	3	3	3
14:0	1.6	1.5	2.1	1.3	1.2	1.9	2.5	1.4	4.0	4.1	3.4	3.2	3.8	4.7	4.4	3.5	4.1	3.1	4.0	1.9	3.5	2.7	3.0	4.1	4.7	3.7	1.5	1.5	2.1	1.8
14:1 n-5	0.0	0.1	0.3	0.2	0.2	0.3	0.3	0.2	0.3	0.2	0.3	0.2	0.4	0.6	0.7	0.4	0.4	0.3	0.3	0.3	0.3	0.4	0.5	0.7	0.7	0.6	0.1	0.2	0.3	0.3
16:0	15.2	14.8	12.5	12.9	14.2	11.8	12.2	15.0	14.9	16.0	15.8	15.2	14.7	12.3	11.9	12.5	13.4	10.2	12.0	15.6	12.3	19.8	18.2	18.8	16.0	16.8	19.8	16.8	14.8	15.3
16:1 n-7	6.8	6.7	8.0	4.6	2.2	9.4	8.3	7.4	23.9	26.5	17.8	27.8	14.0	7.0	7.5	9.9	14.1	8.0	9.0	8.7	10.0	7.6	17.4	18.9	15.4	12.5	3.1	3.6	4.2	6.1
16:1 n-5	0.2	0.2	0.5	0.5	0.6	0.4	0.5	0.5	0.3	0.3	0.4	0.3	0.4	0.4	0.6	0.4	0.5	0.4	0.4	0.3	0.4	0.4	0.3	0.2	0.4	0.4	0.4	0.3	0.2	0.4
17:0	0.2	0.2	0.3	0.5	0.6	0.3	0.3	0.3	0.2	0.2	0.3	0.2	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.5	0.5	0.3	0.2	0.3	0.3	0.8	0.7	0.6	0.8
16:2 n-7	0.1	0.1	0.2	0.1	0.1	0.2	0.2	0.1	0.7	0.6	0.5	0.5	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.1	0.3	0.3	0.8	0.9	0.8	0.5	0.1	0.0	0.1	0.2
17:1	0.1	0.2	0.3	0.2	0.2	0.3	0.3	0.3	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.3	0.3	0.2	0.1	0.4	0.2	0.3	0.1	0.1	0.2	0.2	0.6	0.7	1.2
18:0	1.3	2.1	1.4	1.3	1.5	1.2	1.1	1.7	4.1	4.8	3.8	2.2	5.5	3.4	2.5	3.2	2.1	1.3	1.8	4.5	2.3	5.7	2.6	2.1	2.2	2.1	7.2	2.7	2.9	2.2
16:4 n-1	0.3	0.3	0.6	0.2	0.3	0.3	0.3	0.1	0.9	0.5	0.5	0.6	0.4	0.3	0.1	0.4	0.4	0.3	0.3	0.1	0.3	0.6	1.3	2.1	1.3	0.7	0.1	0.2	0.2	0.3
18:1 n-9	27.9	26.7	23.9	18.1	16.7	21.9	19.7	32.9	13.0	12.0	14.9	14.9	14.1	17.1	21.8	18.4	19.2	18.4	15.1	25.5	19.1	21.2	18.1	14.4	13.0	21.7	19.0	39.7	40.5	39.2
18:1 n-7	3.9	3.8	3.9	4.9	5.5	3.9	3.7	4.3	1.9	1.8	2.4	2.5	1.9	1.7	1.8	2.0	2.6	2.8	2.5	2.4	2.7	2.7	3.2	4.1	3.3	3.0	2.9	2.9	1.8	3.0
18:2 n-6	2.1	5.7	1.5	1.5	1.7	1.4	1.5	1.3	0.8	3.3	1.3	1.6	1.2	2.5	3.9	2.4	1.1	1.7	1.4	8.5	1.2	3.1	1.4	0.9	1.3	3.1	1.9	8.2	12.8	5.1
18:3 n-6	0.3	0.2	0.2	0.2	0.2	0.2	0.3	0.2	0.5	0.4	0.5	0.4	0.6	0.2	0.2	0.3	0.4	0.3	0.3	0.3	0.4	0.3	0.4	0.2	0.2	0.2	0.2	0.1	0.2	0.2
18:3 n-3	0.8	1.2	0.6	0.5	0.5	0.5	0.7	0.5	0.4	0.8	0.8	0.8	0.9	0.9	0.9	0.8	0.6	0.8	0.7	1.6	0.6	0.6	0.5	0.2	0.6	0.9	0.9	0.8	1.0	0.8
18:4 n-3	1.0	1.3	1.3	0.7	0.3	1.2	2.3	1.1	0.9	4.3	2.4	2.3	2.7	0.8	1.0	1.3	1.5	2.8	1.7	0.9	1.7	0.9	1.9	2.1	4.0	2.3	0.5	0.3	1.2	0.7
20:1 n-11	0.9	1.7	4.9	4.2	1.8	4.3	4.8	1.3	1.9	1.0	1.7	0.8	2.3	6.7	5.1	5.9	3.4	5.9	8.2	2.2	4.3	1.5	1.5	0.6	1.0	1.7	0.9	0.6	0.5	0.8
20:1 n-9	5.3	5.6	9.0	9.2	4.6	11.0	10.9	4.4	7.3	5.4	6.6	2.9	10.2	17.4	16.4	14.9	9.8	12.5	15.9	7.1	11.2	5.1	4.0	2.2	5.5	5.7	3.2	1.8	1.5	3.2
20:1 n-7	1.2	1.0	0.9	0.7	1.1	0.8	0.8	0.9	0.5	0.5	0.7	0.6	0.6	0.7	0.6	0.8	1.0	1.0	1.1	0.5	1.3	0.6	0.8	1.0	1.0	0.8	0.5	0.6	0.3	0.5
20:4 n-6	1.9	1.8	0.8	3.0	4.3	0.6	0.6	1.9	0.4	0.6	0.4	0.4	0.5	0.3	0.4	0.4	0.6	0.3	0.3	0.4	0.4	0.7	0.4	0.3	0.3	0.3	1.6	2.3	0.9	1.3
20:4 n-3	0.4	0.4	0.5	0.3	0.3	0.5	0.6	0.4	0.4	0.4	0.5	0.5	0.6	0.4	0.5	0.4	0.5	0.6	0.5	0.2	0.6	0.3	0.3	0.3	0.4	0.4	0.2	0.2	0.1	0.2
22:1 n-11	3.7	3.0	3.9	5.1	1.7	4.2	4.7	1.4	2.3	3.0	2.7	1.2	5.0	8.7	6.6	6.4	4.6	8.0	6.5	2.3	4.4	2.9	2.0	1.0	2.8	2.0	1.3	0.8	0.4	1.1
22:1 n-9	0.5	0.9	1.1	1.3	0.8	0.9	1.1	0.5	0.4	0.5	0.7	0.3	1.0	1.3	1.2	1.2	1.3	1.6	1.4	0.6	1.3	0.6	0.4	0.3	0.6	0.5	0.5	0.7	0.1	0.3
20:5 n-3	9.8	8.4	9.5	9.8	14.0	9.0	9.1	8.3	12.9	7.6	11.1	12.5	10.4	5.0	4.1	6.3	7.7	8.2	7.1	7.1	9.9	10.9	12.6	15.8	13.7	10.2	14.2	6.2	5.4	7.0
21:5	0.3	0.2	0.2	0.1	0.1	0.3	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.1	0.1	0.1	0.2	0.3	0.2	0.1	0.2	0.2	0.4	0.7	0.6	0.4	0.1	0.1	0.1	0.1
22:5 n-3	0.9	0.5	0.5	0.6	1.7	0.7	0.5	0.5	0.2	0.2	0.4	0.2	0.3	0.2	0.3	0.4	0.3	0.4	0.3	0.2	0.4	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.2	0.3
22:6 n-3	11.0	9.1	9.4	15.9	21.0	10.4	10.6	10.9	4.9	3.1	7.8	5.6	5.6	4.6	4.5	5.2	7.4	8.0	6.4	6.4	8.2	7.9	5.0	5.4	7.3	6.7	16.3	5.5	5.2	5.6
Σ SFA	18.5	18.8	16.2	16.0	17.7	15.3	16.3	18.7	23.5	25.3	23.5	24.6	21.1	20.9	19.5	19.7	20.2	15.1	18.1	22.3	19.0	29.2	24.4	25.4	23.4	23.1	30.0	22.4	20.7	20.6
Σ MUFA	51.1	50.6	56.7	48.8	35.8	58.0	55.6	54.3	48.6	51.6	52.2	50.4	51.8	62.3	62.9	60.9	57.7	59.7	60.8	50.0	55.8	43.7	48.9	43.8	44.2	49.7	32.6	52.3	50.9	56.5
Σ PUFA	29.6	30.0	25.2	33.0	45.6	26.0	27.7	26.3	27.4	22.8	23.8	24.5	26.7	16.2	17.1	19.0	21.6	24.7	19.5	25.9	24.8	26.6	26.2	30.4	32.0	26.8	36.9	25.0	27.9	22.4
Σ diatom FATM	17.0	15.5	18.4	14.7	16.7	18.9	18.0	15.9	38.4	35.2	30.0	41.4	25.2	12.6	12.0	16.9	22.4	16.7	16.7	16.1	20.4	19.4	32.1	37.7	31.2	24.0	17.5	10.0	9.9	13.5
Σ <i>Calanus</i> FATM	11.6	12.1	19.8	20.4	10.0	21.2	22.2	8.5	12.5	10.4	12.4	5.7	19.1	34.7	30.0	29.3	20.2	29.0	33.2	12.7	22.5	10.7	8.8	5.1	10.8	10.7	6.4	4.5	2.8	6.0
Ratio 18:1 n-9/n-7	7.2	7.0	6.0	3.7	3.0	5.6	5.3	7.6	7.0	6.6	6.2	5.9	7.4	9.8	12.0	9.2	7.5	6.5	6.1	10.8	7.2	7.9	5.6	3.5	3.9	7.2	6.6	13.8	22.3	13.3