SUPPLEMENTARY MATERIALS

Table S1. Sequence data for DGGE bands identified in Figure 3 of Sanders and Gast.

Arctic DGGE band 1
TAGTAGGATTGACAGATTGATAGCTCTTTCTTGATTCTATGGGTGGTGGT
GCATGGCCGTTCTTAGTTGGTGGAGTGATTTGTCTGGTTAATTCCGTTAA
CGAACGAGACCTCAGCCTGCTAAATAGTTGTACACTACTCTTAGTGCAGC
AACTTCTTAGAGGGACTATGTGCGTTTAGTACATGGAAGTTTGAGGCAAT
AACAGGTCTGTGATGCCCA

Arctic DGGE band 2
TAGTGAGGATTGACAGATTGATGAGCTCTTTCTTGATTCTATGGGTGGTG
GTGCATGGCCGTTCTTAGTTGGTGGAGTGATTTGTCTGGTTAATTCCGTT
AACGAACGAGACCTTAGCCTGCTAAATAGTTACAGGAATCATTTTTCATT
GCTGATGGTTTCTTAAAGGGATTTGTAGTATAAAACTACAGGAAGATTGG
GGCAATAACAGGTCTGGGATGCCCA

Arctic DGGE band 3
TGGAGGATTGACAGATTGAGAGCTCTTTCTCGATTCGGTGGGTGGTGGTG
CATGGCCGTTCTTAGTTGGTGGAGTGATTTGTCTGGTTAATTCCGATAAC
GAACGAGACTCTGTCCTGCTAAATAGTTGGGTCGTCCTTCGTGCGATCCA
AGTTCTTCTTAGAGGGACTGGCTGCGTCTAGCAGCACGAGATTGAGCAAT
AACAGGTCTGTGATGCCCA

Arctic DGGE band 4
TAGTGAGGATTGACAGATTGATGAGCTCTTTCTTGATTCTATGGGTGGTG
GTGCATGGCCGTTCTTAGTTGGTGGAGTGATTTGTCTGGTTAATTCCGTT
AACGAACGAGACCTTAGCCTGCTAAATAATCACAGGAATGATTTTTCATT
GGTGATGCTTTCTTAAAGGGATATGT

Arctic DGGE band 5
TAGTAGGATTGACAGATTGATAGCTCTTTCTTGATTCTATGGGTGGTGGT
GCATGGCCGTTCTTAGTTGGTGGAGTGATTTGTCTGGTTAATTCCGTTAA
CGAACGAGACCTTAACCTGCTAAATAGTTACACGTATCTTCGGGTACGGG
GGATTCTTCTTAGAGGGACTTTGATTTTGTAACGGAAGGAAGGTTGAGGC
AATAACAGGGTTGTGATG

Arctic DGGE band 6
TGGAGGATTGACAGATTGAGAGCTCTTTCTCGATTCTATGGGTGGTGGTG
CATGGCCGTTCTTAGTTGGTGGAGTGATTTGTCTGGTTAATTCCGATAAC
GAACGAGACTCTGTCCTGCTAAATAGTTGGGTCGTCCTTCGTGCGATCCA
AGTTCTTCTTAGAGGGACTGGCTGCGTCTAGCAGCACGAGATTGAGCAAT
AACAGGTCTGTGATGCCCA

Arctic DGGE band 7

GTAGTAGGATTGACAGATTGATAGCTCTTTCTTGATTCTATGGGTGGTGG
TGCATGGCCGTTCTTAGTTGGTGGAGTGATTTGTCTGGTTAATTCCGTTA
ACGAACGAGACCTCAGCCTGCTAAATAGTTGTACACTACTCTTAGTGCAG
CAACTTCTTAGAGGGACTATGTGCGTTTAGCACATGGAAGTTTGAGGCAA
TAACAGGTCTGTGATGCCCA

Arctic DGGE band 8
TAGTAGGATTGACAGATTGATAGCTCTTTCTTGATTCTATGGGTGGTGGT
GCATGGCCGTTCTTAGTTGGTGGAGTGATTTGTCTGGTTAATTCCGTTAA
CGAACGAGACCTTAACCTGCTAAATAGTTACGCGCAACTTTGGGTACGGG
GGCTTCTTCTTAGGAGGATTTTGGGTGTGTAAATGGAAGGATGATGAGAT
AATAACACGGTTGTGATC

Arctic DGGE band 9
AATAGTAGGATTGACAGATTGATAGCTCTTTCTTGATTCTATGGGTGGTG
GTGCATGGCCGTTCTTAGATGGTGGAGTGATTTGTCTGGTTAATTCCGTT
AACGAACGAGACCTTAGCCTGCTAAATAGGATCCGCCAACCTCCGGGTAG
GAGGAGTCCTTCTTA

Arctic DGGE band 10
CAGGATTGACAGATTGAGAGCTCTTTCTCGATTCGATGGGTGGTGGTGCA
TGGCCGTTCTTAGTTGGTGGAGTGATTTGTCTGGTTAATTCCGATAACGA
ACGAGACTCTGTCCTGCTAAATAGTTGGGTCGTCCTTCGTGCGATCCAAG
TTCTTCTTAGAGGGACTGGCTGCGTCTAGCAGCACGAGATTGAGCAATAA
CAGGGCTGTGATGCCCA

Arctic DGGE band 11
ATAGTAGGATTGACAGATTGATAGCTCTTTCTTGATTCTATGGGTGGTGG
TGCATGGACGTTCTTAGTTGGTGGAGTGATTTGTCTGGTTAATTCCGTTA
ACGAACGAGACCTCAGCCTGCTAAATAGTTGTACACTACTCTTAGTGCAG
CAACTTCTTAGAGGGACTATGTGCGTTTAGCACATGGAAGTTTGAGGCAA
TAACAGGTCTGTGATGCCCA

Arctic DGGE band 12
GTGAGGATTGACAGATTGAGAGCTCTTTCTTAGATTCTATGGGTGGTGGT
GCATGGCCGTTCTTAGTTGGTGGAGTGATTTGTCTGGTTAATTCCGTTAA
CGAACGAGACCTTAACCTGCTAAATAGTTACGCTAATCATTCTTCATTGA
CGATGGTTCCTAA

Arctic DGGE band 13
GAATAGTAGGATTGACAGATTGATAGCTCTTTCTTGATTCTATGGGTGGT
GGTGCAAGGCCGTTCTTAGTTGGTGGAGTGATTTGTCTGGTTAATTCCGA
TAACGAACGAGACCTTAGCCTGCTAAATAGTT

Arctic DGGE band 14

TAGTGAGGATTGACAGATTGAGAGCTCTTTCTTGATTCTATGGGTGGTGG
TGCAGGCCGTTCTTAGTTGGTGGAGTGATTTGTCTGGTTAATTCCGTTAA
CGAACGAGACCGCAGCCTGCTAAATAATCACAGTAATGATTTTTCATTGC
TGATGCTTCCTTAGAGGGACATGTAGTATAAAACTACAGGAAGATTGCGG
CAATA

Arctic DGGE band 15
GGATTGACAGATTGATAGCTCTTTCTTGATTCTATGGGTGGTGGCGAATA
ACCGTTCTTAGTTGGTGGAGTGATTTGTCTGGTTAATCCGATAACGAACG
AGACCTTAACCTGCTAAATAGTTACTCGATTCTCCGGATACGAGGGATAC
TTCTTAGAGGGACTTTGGTGCCCAAACGCCAAGGAAGTTTGAGGCAATAG
GAGGTCTGTGATGCCCA

Arctic DGGE band 16
TTGTAGGATTGACAGATTGATGAGCTCTTTCTTGATTCTATGGGTGGTGG
TGCATGGCCGTTCTTAGTTGGTGGAGTGATTTGTCTGGTTAATTCCGTTA
ACGAACGAGACCTTAGCCTGCTAAATAGTTGCGCCATCCTTCGGGTAGGA
GGAGGTCTTCTTAGAGGGACTTTGTGTGTCTAACACGAGGAAGTTGGAGG
CAATAACAGGTGTGTGATGCCCA

Arctic DGGE band 17
CTGGAGGATTGACAGATTGAGAGCTCTTTCTCGATTCGGTGGGTGGTGGT
GCATGGCCGTTCTTAGTTGGTGGAGTGATTTGTCTGGTTAATTCCGATAA
CGAACGAGACTCTGTCCTGCTAAATAGTTGGGTCGTCCTTCGTGCGATCC
AAGTTCTTCTTAGAGGGACTGGCTGCGTCTAGCAGCACGAGATTGAGCAA
TAACAGGTCTGTGATGCCCA

Arctic DGGE band 18
TAGTATGGATTGACAGATTGATAGCTCTTTCTTGATTCTATGGGTGGTGG
TGCATGGCCGTTCTTAGTTGGTGGAGTGATTTGTCTGGTTAATTCCGTTA
ACGAACGAGACCTCAGCCTGCTAAATAGTTGTACACTACTCTTAGTGCAG
CAACTTCTTAGAGGGACTATGTGCTGTTTAGCACATGGAAGTTTGAGGCA
ATAACAGGGCTGTGATGCCCA

Arctic DGGE band 19
TAGTGAGGATTGACAGATTGAGAGCTCTTTCTTGATTCTATGGGTGGTGG
TGCATGGCCGTTCTTAGTTGGTGGAGTGATTTGTCTGGTTAATTCCGTTA
ACGAACGAGACCTTAACCTGCTAAATAATTACACTAATGTTCTTTCATTG
CTGATGCTTTCTTAAGGGAACTTG

Arctic DGGE band 20
ATAGTAGGATTGACAGATTGATAGCTCTTTCTTGATTCTATGGGTGGTGG
TGCATGGCCGTTCTTAGTTGGTGGAGTGATTTGTCTGGTTAATTCCGTTA
ACGAACGAGACCTTAACCTGCTAAATAGTTACTCGTTTCTCCGGATACGA
GGGATACTTCTTAGAGGGACTTTGAGGCCTAAACGCAAGGAAGTTTGAGG
CAATAACAGGTCTGTGATGCCCA

Arctic DGGE band 21
TAGTAGGATTGACAGATTGATAGCTCTTTCTTGATTCTATGGGTGGTGGT
GCATGGCCGTTCTTAGTTGGTGGAGTGATTTGTCTGGTTAATTCCGTTAA
CGAACGAGACCTCAGCCTGCTAAATAGTTGTACACTACTCTTAGTGCAGC
AACTTCTTAGAGGGACTATGTGCGTTTAGCACATGGAAGTTTGAGGCAAT
AACAGGTCTGTGATGCCCA

Arctic DGGE band 24
ATAGGTATGATTGACAGATTGAGAGCTCTTTCTTGATTCTATGGGTGGTG
GTGCATGGCCGTTCTTAGTTGGTGGAGTGATTTGTCTGGTTAATTCCGAT
AACGAACGAGACCTTAGACCTGCTAAATAGT

Table S2. Ingestion rates (bacteria protist^{-1} h^{-1} ± S.E.) of heterotrophic nanoflagellates (HNAN), phototrophic nanoflagellates (PNAN), mixotrophic nanoflagellates (MNAN), and mixotrophic picoeukaryotes (Mpeuk). Tracer types were fluorescently labeled bacteria (FLB) and 0.6µm-fluorescent microspheres (µsph). Both tracer types were used at Stations 3 and 4. Mpeuk were not observed to ingest the FLB, Not detected (nd).

STA	Depth (m)	Tracer Type	HNAN	MNAN	Mpeuk
1	5	FLB	0.8 ± 0.31	7.3 ± 0.92	–
2	5	FLB	0.6 ± 0.06	2.5 ± 0.51	–
	50	FLB	0.8 ± 0.54	2.1 ± 0.43	–
3	5	FLB	0.1 ± 0.05	1.1 ± 0.61	–
		µsph	0.7 ± 0.66	2.2 ± 0.21	4.0 ± 0.20
	50	FLB	0.2 ± 0.08	nd	–
		µsph	0.3 ± 0.19	2.3 ± 1.4	2.0 ± 0.4
4	5	FLB	0.1 ± 0.07	3.0 ± 0.76	–
		µsph	1.9 ± 0.41	5.7 ± 1.9	3.7 ± 0.3
	60	FLB	0.1 ± 0.03	2.6 ± 0.76	–
		µsph	0.4 ± 0.28	3.0 ± 0.28	2.1 ± 1.2
5	5	µsph	3.8 ± 0.83	8.7 ± 0.72	5.3 ± 0.45
	37	µsph	0.6 ± 0.27	8.9 ± 3.7	5.6 ± 0.50
6	5	µsph	1.7 ± 0.39	2.0 ± 0.42	0.9 ± 0.36
	60	µsph	0.7 ± 0.13	2.1 ± 1.2	1.12 ± 0.90
8	5	µsph	2.5 ± 0.90	8.4 ± 4.44	2.0 ± 0.43
	30	µsph	1.5 ± 0.04	4.0 ± 0.57	1.7 ± 0.07
	70	µsph	1.9 ± 0.70	3.0 ± 3.0	2.1 ± 0.08
9	5	µsph	0.7 ± 0.13	4.4 ± 1.4	2.9 ± 0.15
	47	µsph	0.4 ± 0.08	2.2 ± 0.11	1.25 ± 0.07
10	5	µsph	0.33 ± 0.23	0.19 ± 0.19	1.74 ± 0.9
	55	µsph	1.8 ± 1.1	12 ± 6.0	9.0 ± 4.5
11	5	µsph	1.1 ± 0.36	7.0 ± 3.8	nd
	75	µsph	1.3 ± 0.34	9.9 ± 0.36	3.2 ± 0.30

Table S3. Protistan grazing impact as a percentage of bacteria standing stock removed per day. Rates were calculated from ingestion determined using 0.6 µm fluorescent microspheres, that were more representative of the size distribution of the natural bacterioplankton, except for Stations 1 and 2 where experiments used larger fluorescently labeled bacteria (FLB).

STA	Depth (m)	HNAN	MNAN	Mpeuk	Total
1	5	0.3	0.2	-	0.5
2	5	0.3	0.1	-	0.4
	50	0.3	0.1	-	0.4
3	5	0.6	0.3	1.6	2.6
	50	0.1	0.1	0.4	0.6
4	5	1.7	0.2	2.0	3.8
	60	0.3	0.6	0.2	1.1
5	5	6.5	2.3	16.4	25.2
	37	1.1	1.7	10.5	13.2
6	5	2.8	1.0	0.1	3.9
	60	0.9	0.5	0.0	1.4
8	5	5.8	1.2	3.1	10.1
	30	3.1	0.8	2.1	6.0
	70	3.1	0.2	0.1	3.4
9	5	2.0	0.1	6.0	8.1
	47	1.1	0.7	1.7	3.6
10	5	0.6	0.1	0.4	1.1
	55	2.0	0.2	1.4	3.6
11	5	3.1	1.3	0.0	4.4
	75	1.7	1.3	1.6	4.6

Table S4. Spearmann correlations between bacterivory measurements (protist ingestion rates and mixotrophs as proportions of heterotrophs and phototrophs) and environmental parameters and abundances. * = p<0.05; ** = p<0.01; *** = p<0.001.

	Salinity	Temp	PAR	chla	Bacteria	Ciliates	Dinos	Diatoms	pEuk	PNAN
HNAN Ing rate	-0.44	-0.03	0.60**	0.00	-0.03	0.24	0.26	0.32	0.30	-0.17
MNAN I Ing rate	-0.10	0.35	0.32	0.18	0.14	0.13	0.20	0.26	0.38	-0.40
Mpeuk I Ing rate	0.33	-0.23	0.03	0.36	0.46	0.16	0.30	0.29	0.17	-0.21
MNAN as % HNAN	-0.68**	0.21	0.57*	-0.14	-0.32	0.16	0.23	0.08	0.47	0.00
MNAN as % PNAN	-0.16	0.35	0.20	0.30	-0.31	0.18	0.19	0.06	0.32	-0.18
Mpeuk as % Peuk	-0.04	-0.18	0.34	0.52*	-0.08	0.46	0.66**	0.38	0.74***	-0.11

Table S5. Recovered DGGE band sequences.

DGGE band (# basepairs)	Blast match	% coverage / % identity
Band 1 (219 bp)	*Micromonas* JF698889 *	99% / 99%
Band 2 (225 bp)	*Chaetoceros* JF699009 *	99% / 94%
Band 3 (219 bp)	*Oithona* GU969179	99% / 99%
Band 4 (176 bp)	*Chaetoceros* JF699009 *	100% / 95%
Band 5 (218 bp)	Dinoflagellate DQ504326	100% / 93%
Band 6 (219 bp)	*Oithona* GU969179	99% / 98%
Band 7 (220 bp)	*Micromonas* JF698889 *	99% / 99%
Band 8 (218 bp)	Dinoflagellate HM474615	99% / 90%
Band 9 (165 bp)	Uncultured alveolate EU793590	99% / 93%
Band 10 (217 bp)	*Oithona* GU969179	99% / 99%
Band 11 (220 bp)	*Micromonas* JF698889 *	99% / 99%
Band 12 (163 bp)	*Chaetoceros* JF699040 *	96% / 94%
Band 13 (132 bp)	Dinoflagellate HM474615	98% / 97%
Band 14 (205 bp)	*Chaetoceros* JF699009 *	100% / 98%
Band 15 (217 bp)	Potential dinoflagellate parasite FJ832117	99% / 91%
Band 16 (223 bp)	Dinoflagellate/syndiniales EU682615	97% / 93%
Band 17 (220 bp)	*Oithona* GU969179	99% / 99%
Band 18 (221 bp)	*Micromonas* JF698889 *	99% / 98%
Band 19 (174 bp)	*Chaetoceros* JF699009 *	97% / 94%
Band 20 (223 bp)	Syndiniales EU793174	99% / 95%
Band 21 (219 bp)	*Micromonas* JF698889 *	99% / 99%
Band 24 (131 bp)	Stramenopile GU823377	100% / 97%

* Sequences recovered from Beaufort Sea study.