

Table S1. Characteristics of the surface layer of bottom sediments in the Norwegian and Barents Seas in different years of research.

Areas	Stations	n	AHCs, µg/g		C _{org} , %		Moisture, %	
			interval	average	interval	average	interval	average
August – September, 2016								
All areas	5405–5456	42	3–44	14	0.07–2.59	1.085	20.1–69.7	45.6
Shtockman poligon	5413–5421	7	9–27	15	0.67–2.578	1.812	23.7–69.7	53.0
Medvezhinsky Trough	5431–5441	10	6–44	17	0.25–1.71	0.791	27.0–58.5	40.6
Russian Harbor	5422–5430	7	4–22	11	0.242–1.860	0.960	27.9–60.0	40.1
Svalbard - ZFI	5447–5446	8	8–24	16	0.699–1.475	1.214	33.2–68.5	55.5
July – August, 2017								
All areas	5516–5581	48	3–57	12	0.03–2.38	1.02	17.0–72.1	49.5
Western part	5516–5532	16	15–37	10	0.30–1.70	0.65	30.4–60.7	49.6
Svalbard – ZFI	5550–5564	14	4–37	13	0.72–2.38	1.52	37.6–72.0	54.3
Novaya Zemlya	5565–5569	5	6–57	19	0.80–1.66	1.19	40.5–63.4	49.8
Central part	5570–5581	13	4–17	10.8	0.032–1.94	0.93	17.0–63.4	49.1
May –June, 2019								
All areas	6131–6217	49	6–64	25	0.05–1.87	0.83	17.1–72.6	56.0
Mohns Ridge	6131–6146	7	7–51	18	0.23–0.77	0.51	35.0–72.6	49.8
Lofoten Basin	6139–6142	4	6–28	17	0.49–0.69	0.58	65.2–72.6	68.5
KnipovichRidge	6150–6157	7	14–37	27	0.52–1.32	0.96	60.1–71.2	66.1
Western shelf Svalbard	6152–6163	6	15–35	27	0.58–1.66	0.88	35.3–71.2	54.1
Quaytol Trough	6164–6172	5	7–59	23	0.47–0.80	0.63	34.1–61.0	47.2
Meridional section (27.5°N)	6181–6196	6	28–53	40	1.31–1.87	1.70	50.0–76.2	64.3
South section	6197–6217	14	10–64	23	0.05–1.51	0.52	17.1–68.2	64.3
July – August, 2020								
All areas	6821–6867	21	3–186	45	0.30–1.56	0.92	22.2–72.9	58.6
Mohns Ridge	6821–6838	7	3–27	14	0.30–0.51	0.44	38.5–61.5	49.9
Sturford	6840–6843	4	36–186	90	0.69–1.36	1.12	22.2–66.2	46.3
Eastern shelf Svalbard	6844–6851	5	17–86	52	1.07–1.56	1.29	59.5–72.9	69.6

Trough-ZFI	6852–6867	5	17–30	25	0.68–0.87	0.83	67.6–69.6	68.6
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Table S2. Concentrations of organic compounds in bottom sediments at individual stations and distribution of markers in the composition of PAHs

Station	Horizon	AHCs, μg/g	C _{org} , %	ΣPAH, ng/g	% ΣNAPH	FLT/ PYR	ΣNaph/ PHEN	(FLT+PYR))/(PHEN+ CHR)	PHEN/ ANTR	ANTR / ANTR + PHEN	BaA/ BaA+CH R	FLT / FLT+ PYR	BaP/ BaP+Be P
May –June 2019													
6147	0-2	5	0.557	291	21.5	2.68	0.31	0.29	10.66	0.09	0.18	0.73	0.35
	4-11	17	0.382	264	24.2	2.65	0.43	0.25	11.60	0.08	0.21	0.73	0.37
	5-11	12	0.222	314	5.6	2.31	0.53	0.38	13.83	0.07	0.25	0.70	0.32
6157	0-1	32	1.325	376	6.4	2.61	0.36	0.27	11.17	0.08	0.31	0.72	0.31
	1-2	31	1.292	422	20.7	2.03	0.25	0.42	8.23	0.11	0.09	0.67	0.37
6161	0-2	35	0.640	1125	22.8	0.23	1.66	1.05	8.53	0.10	0.04	0.19	0.10
6163	0-2	35	1.665	838	25.6	0.75	1.11	0.88	6.46	0.13	0.02	0.43	0.08
6164	0-2	15	0.625	1456	8.3	0.46	0.49	1.92	7.30	0.12	0.02	0.32	0.06
6209	0-1	37	1.047	290.6	12.9	2.68	0.31	0.29	10.66	0.09	0.18	0.73	0.35
	1-2	27	1.082	263.8	16.9	2.65	0.43	0.25	11.60	0.08	0.21	0.73	0.37
	3-4	33	0.842	313.6	18.3	2.31	0.53	0.38	13.83	0.07	0.25	0.70	0.32
	5-7	34	0.887	376.1	15.5	2.61	0.36	0.27	11.17	0.08	0.31	0.72	0.31
	15-18	32	0.910	422.5	12.2	2.03	0.25	0.42	8.23	0.11	0.09	0.67	0.37
July – August 2020													
6841	0-1	37	1.320	800	20.0	2.07	0.63	0.28	10.54	0.09	0.28	0.67	0.15
	3-4	32	1.280	2164	22.0	1.85	0.98	0.37	16.69	0.06	0.26	0.65	0.16
	5-6	25	1.417	759	14.5	2.30	0.36	0.26	8.75	0.10	0.36	0.70	0.11
	7-8	26	1.470	356	14.0	1.70	0.38	0.23	7.64	0.12	0.33	0.63	0.12
6842	0-1	186	1.357	985	45.6	3.55	2.29	0.68	42.68	0.02	0.06	0.78	0.11
6845	0-1	183	1.564	888	34.4	2.86	1.51	0.62	21.56	0.04	0.36	0.74	0.16
	1-2	210	1.582	780	37.4	3.00	1.78	0.60	24.85	0.04	0.36	0.75	0.15
	2-3	176	1.737	768	34.6	2.84	1.95	0.76	21.68	0.04	0.39	0.74	0.14
	3-4	15	1.812	723	34.3	2.76	2.01	0.76	18.95	0.05	0.35	0.73	0.12
	4-5	180	1.820	692	34.1	3.07	2.33	1.02	26.63	0.04	0.38	0.75	0.12
	5-6	76	1.717	808	31.3	2.89	1.81	0.82	19.65	0.05	0.40	0.74	0.13
	6-7	68	2.014	693	28.1	3.03	2.03	1.09	32.07	0.03	0.39	0.75	0.15
	7-8	166	1.812	760	32.5	3.03	1.99	0.83	21.40	0.04	0.38	0.75	0.12
	8-9	53	1.790	691	29.3	3.08	2.16	1.18	26.80	0.04	0.43	0.75	0.16
	9-10	32	1.697	728	29.6	2.62	1.82	0.94	20.48	0.05	0.46	0.72	0.16
	10-13	33	1.647	820	29.4	2.99	1.92	1.03	29.19	0.03	0.40	0.75	0.18
	13-16	35	1.695	639	31.0	2.75	1.94	1.02	29.97	0.03	0.39	0.73	0.18
	16-19	26	1.595	566	30.9	2.61	2.02	1.04	39.36	0.02	0.33	0.72	0.21
	19-22	27	1.525	583	32.1	2.20	1.71	0.80	23.83	0.04	0.32	0.69	0.20
	22-25	16	1.542	543	30.0	2.49	1.82	1.04	33.22	0.03	0.31	0.71	0.20
	25-26	23	1.600	521	32.3	2.18	1.90	0.94	42.05	0.02	0.33	0.69	0.21

6847	1-2	39	1.295	1011	19.3	1.61	0.77	0.22	10.94	0.08	0.36	0.62	0.14
	5-6	43	1.127	992	19.3	1.04	0.65	0.20	8.70	0.10	0.20	0.51	0.14
	24-27	71	1.130	1434	15.1	0.85	0.58	0.25	8.29	0.11	0.26	0.46	0.15
6850	0-1	40	1.070	2436	11.9	2.18	0.32	1.17	48.10	0.02	0.33	0.69	0.21
	1-2	22	0.892	2978	9.1	2.01	0.28	1.57	39.36	0.02	0.52	0.67	0.26
	2-3	28	1.022	1424	12.5	2.28	0.30	0.79	45.37	0.02	0.35	0.69	0.17
	3-6	49	1.009	1112	15.6	2.46	0.39	0.68	13.11	0.07	0.33	0.71	0.14
	6-9	34	1.142	833	21.7	2.65	0.58	0.49	11.44	0.08	0.32	0.73	0.09
	9-12	30	1.092	973	17.8	2.22	0.44	0.58	13.70	0.07	0.30	0.69	0.10
	12-15	33	2.107	2184	10.6	2.18	0.31	1.28	13.82	0.07	0.26	0.69	0.13
	15-18	21	0.980	588	21.1	1.77	0.58	0.44	9.31	0.10	0.31	0.64	0.11
	18-21	36	1.017	830	13.9	2.19	0.38	0.80	9.71	0.09	0.26	0.69	0.12
	21-24	26	1.027	807	16.7	2.22	0.40	0.48	11.25	0.08	0.28	0.69	0.13
6864	21-27	56	1.045	1365	11.8	2.26	0.27	0.58	8.15	0.11	0.28	0.69	0.14
	0-1	17	0.675	859	22.8	2.47	0.56	0.42	23.78	0.04	0.04	0.71	0.15
	1-2	25	0.620	983	29.6	2.69	0.69	0.24	28.03	0.03	0.05	0.73	0.13
	2-3	23	0.615	845	33.6	3.02	0.81	0.16	17.80	0.05	0.09	0.75	0.11
	3-4	21	0.580	736	36.3	2.63	0.92	0.16	25.31	0.04	0.11	0.72	0.12
	4-7	19	0.600	776	31.4	2.43	0.72	0.17	22.98	0.04	0.08	0.71	0.14
	7-10	26	0.577	749	32.1	2.81	0.72	0.16	18.30	0.05	0.10	0.74	0.17
	10-13	21	0.552	758	30.2	2.50	0.67	0.22	21.40	0.04	0.04	0.71	0.14
	13-16	20	0.485	865	25.9	2.65	0.51	0.18	14.82	0.06	0.03	0.73	0.09
	16-19	37	0.457	706	35.9	2.10	0.84	0.12	20.24	0.05	0.12	0.68	0.10
	19-21	19	0.450	677	45.1	1.40	1.46	0.10	18.03	0.05	0.17	0.58	0.13
	21-24	29	0.492	913	36.7	2.32	0.96	0.13	13.85	0.07	0.16	0.70	0.15
	24-26	21	0.465	1322	34.8	2.43	0.92	0.34	11.41	0.08	0.19	0.71	0.16