Supplementary Material – 2 (S2)

QA/QC Data for PAHs and *dl*-PCBs

Table S2-1. Measurement details for PAH congener analysis in muscle tissue of the FISH samples.

Polycyclic Aromatics Hydrocarbons (PAHs) Acquisition Date: 10 Nov 2016	*Notothenia coriiceps* Sample weight:3.25 g Final extract vol.: 1000 µL Injection vol.:2 µL				*Trematomus bernacchii* Sample weight:7.02 g Final extract vol.: 1000 µL Injection vol.:2 µL			
	Result (ng/g dw)	MU (%)	LOD (ng/g dw)	LOQ (ng/g dw)	Result (ng/g dw)	MU (%)	LOD (ng/g dw)	LOQ (ng/g dw)
Naphthalene	<4.6	----	0.019	4.60	<4.3	----	0.014	4.30
Acenaphthylene	<0.62	----	0.027	0.62	<0.39	----	0.023	0.39
Acenaphthene	<0.62	----	0.036	0.62	<0.85	----	0.031	0.85
Fluorene	<3.1	----	0.043	3.10	<3.1	----	0.036	3.10
Phenanthrene	10.0	±30.0	0.013	5.40	9.80	±30.0	0.011	2.50
Anthracene	<0.46	----	0.017	0.46	<0.46	----	0.014	0.46
Fluoranthene	4.70	±30.0	0.014	2.00	3.40	±30.0	0.012	0.93
Pyrene	7.80	±30.0	0.012	2.80	7.70	±30.0	0.011	1.30
Benz(a)anthracene	<0.46	----	0.016	0.46	<0.36	----	0.014	0.36
Chrysene	<0.46	----	0.018	0.46	<0.21	----	0.015	0.21
Benzo(b)fluoranthene	<0.31	----	0.023	0.31	<0.21	----	0.018	0.21
Benzo(k)fluoranthene	<0.31	----	0.028	0.31	<0.21	----	0.021	0.21
Benzo(a)pyrene	<0.31	----	0.018	0.31	<0.14	----	0.015	0.14
Indeno(1.2.3.cd)pyrene	<0.31	----	0.027	0.31	<0.14	----	0.023	0.14
Dibenzo(a,h)anthracene	<0.31	----	0.025	0.31	<0.14	----	0.021	0.14
Benzo(g.h.i)perylene	<0.31	----	0.024	0.31	<0.21	----	0.017	0.21
Σ 16PAH lowerbound	23				21			
Σ 16PAH upperbound	35				32			

- Measurement uncertainty (MU) is expressed as expanded measurement uncertainty with coverage factor k = 2, representing 95% confidence.
- The limits of quantification (LOQ) are defined as the fivefold of the detection limits (LOD) for PAH which haven´t positive blank or as the fivefold of the blank for PAH which have positive blank.
- The limit of detection is defined as the amount of analyte producing a signal with S/N≥3.
- The value of the detection limit is mentioned as the actual value at the acquisition date.
- Estimation of uncertainty PAH is 30% for each PAH and 20% for summation parameters.
- These values were ensured by analyses of certified reference material under conditions of internal reproducibility. Results marked "<" are lower than the LOD or LOQ.
- Levels „Lowerbound" a „Upperbound" are defined in Regulation 589/2014 and EN 1948-4.

Brief Method Summaries PAHs in muscle tissue of the FISH samples

Analytical Methods	Method Descriptions
B-PAHHMS02	CZ_SOP_D06_06_180 - except chap. 11.3.3.1 - 11.3.3.7, 11.3.3.9 l, 11.3.4 (US EPA 429, ISO 11338, IP 346): Determination of polyaromatic hydrocarbons by isotope dilution method using HRGC -HRMS and calculation of polyaromatic hydrocarbons sums from measured values. The samples were stored in laboratory in the darkness and under temperature <4°C. Actual LOQ are noticed in the attachment. Estimation of measurement uncertainty (95% confidential interval) for each individual PAH is 30%, for sum of PAH4 and PAH16 is 20%. QC Level: ALS CR Standard Quality Control Schedule (ALS Laboratory, Czech Republic, s.r.o)

Table S2-2a. Measurement details for *dl*-PCB congener analysis in muscle tissue of the FISH samples.

PCB dioxin-like	*Notothenia coriiceps* Sample weight:3.25 g, Final extract vol.: 250 µL, Injection vol.:4 µL					
Acquisition Date: 13 Nov 2016	Result (pg/g dw)	MU (%)	LOD (pg/g dw)	LOQ (pg/g dw)	WHO 2005 TEFs	WHO-TEQ Upperbound (pg/g dw)
PCB 77	<37	----	1.4	37	0.0001	0.0037
PCB 81	<2.8	----	2.8	9.2	0.0003	0.00083
PCB 126	<4.5	----	4.5	15	0.1	0.45
PCB 169	<3.1	----	3.1	10	0.03	0.092
PCB 105	5500	±30.0	3.9	350	0.00003	0.16
PCB 114	<29	----	3.8	29	0.00003	0.00086
PCB 118	15000	±30.0	2.9	740	0.00003	0.46
PCB 123	<18	----	4.1	18	0.00003	0.00055
PCB 156	4000	±30.0	1.9	110	0.00003	0.12
PCB 157	1000	±30.0	2	10	0.00003	0.031
PCB 167	1000	±30.0	1.8	52	0.00003	0.031
PCB 189	93	±30.0	2.6	13	0.00003	0.0028
WHO-TEQ from quantified PCBs lowerbound						0.81
WHO-TEQ from quantified, 0.5 LOD and 0.5 LOQ non quantified PCBs mediumbound						1.1
WHO-TEQ from quantified, LOD and LOQ non quantified PCBs upperbound						1.4

	Result (ng/g dw)	MU (%)	LOD (ng/g dw)	LOQ (ng/g dw)	∑indicatorPCB Lowerbound (ng/g dw)	∑indicatorPCB Upperbound (ng/g dw)
PCB 28	<0.52	----	0.001	0.52	0	0.52
PCB 52	<0.87	----	0.0012	0.87	0	0.87
PCB 101	7.9	±30.0	0.0053	1.6	7.9	7.9
PCB 138	17	±30.0	0.0018	1.5	17	17
PCB 153	29	±30.0	0.0022	1.9	29	29
PCB 180	5.5	±30.0	0.0028	0.73	5.5	5.5
∑indicator PCB6 lowerbound					59	
∑indicator PCB6 upperbound						60

- Measurement uncertainty (MU) is expressed as a double k = 2 relative standard deviation (RSD%), and corresponds to 95% confidence interval.
- Estimation of uncertainty of each PCB congener is 30%, total WHO-TEQ and sum of PCB6 is 20%. These values were ensured by analysis of certified reference material under conditions of internal reproducibility.
- The limits of quantification (LOQ) are defined on the base of blank level.
- The limit of detection is defined as the amount of analyte producing a signal with S/N≥3.
- The value of the detection limit is mentioned as the actual value at the acquisition date.
- Limit of detection (LOD) is equal to LOQ according to Commission Regulation (EU) No 589/2014.
- These values were ensured by analyses of certified reference material under conditions of internal reproducibility.
- Results marked "<" are lower than the LOD or LOQ.
- Levels 'Lowerbound' a 'Upperbound' are defined in Regulation 589/2014 and EN 1948-4, while Mediumbound is defined in Regulation 589/2014.

Table S2-2b. Measurement details for *dl*-PCB congener analysis in muscle tissue of the FISH samples.

PCB dioxin-like	*Trematomus bernacchii* Sample weight:7.02 g, Final extract vol.: 250 µL, Injection vol.:4 µL					
Acquisition Date: 13 Nov 2016	Result (pg/g dw)	MU (%)	LOD (pg/g dw)	LOQ (pg/g dw)	WHO 2005 TEFs	WHO-TEQ Upperbound (pg/g dw)
PCB 77	83	±30.0	0.57	63	0.0001	0.0083
PCB 81	<8.8	----	0.47	8.8	0.0003	0.0026
PCB 126	36	±30.0	0.73	2.4	0.1	3.6
PCB 169	<0.58	----	0.58	1.9	0.03	0.017
PCB 105	32000	±30.0	0.73	160	0.00003	0.97
PCB 114	680	±30.0	0.6	14	0.00003	0.02
PCB 118	110000	±30.0	0.65	340	0.00003	3.2
PCB 123	600	±30.0	0.59	5.6	0.00003	0.018
PCB 156	12000	±30.0	0.72	51	0.00003	0.35
PCB 157	1900	±30.0	0.6	4.7	0.00003	0.057
PCB 167	3400	±30.0	0.61	24	0.00003	0.1
PCB 189	230	±30.0	0.85	5.9	0.00003	0.0069
WHO-TEQ from quantified PCBs lowerbound						8.3
WHO-TEQ from quantified, 0.5 LOD and 0.5 LOQ non quantified PCBs mediumbound						8.3
WHO-TEQ from quantified, LOD and LOQ non quantified PCBs upperbound						8.3

	Result (ng/g dw)	MU (%)	LOD (ng/g dw)	LOQ (ng/g dw)	∑indicatorPCB Lowerbound (ng/g dw)	∑indicatorPCB Upperbound (ng/g dw)
PCB 28	<1.1	----	0.00036	1.1	0	1.1
PCB 52	3	±30.0	0.00046	0.69	3	3
PCB 101	47	±30.0	0.00081	0.74	47	47
PCB 138	49	±30.0	0.00069	0.69	49	49
PCB 153	64	±30.0	0.00074	0.9	64	64
PCB 180	10	±30.0	0.00077	0.34	10	10
∑indicator PCB6 lowerbound					170	
∑indicator PCB6 upperbound						170

- Measurement uncertainty (MU) is expressed as a double k = 2 relative standard deviation (RSD%), and corresponds to 95% confidence interval.
- Estimation of uncertainty of each PCB congener is 30%, total WHO-TEQ and sum of PCB6 is 20%. These values were ensured by analysis of certified reference material under conditions of internal reproducibility.
- The limits of quantification (LOQ) are defined on the base of blank level.
- The limit of detection is defined as the amount of analyte producing a signal with S/N≥3.
- The value of the detection limit is mentioned as the actual value at the acquisition date.
- Limit of detection (LOD) is equal to LOQ according to Commission Regulation (EU) No 589/2014.
- These values were ensured by analyses of certified reference material under conditions of internal reproducibility.
- Results marked "<" are lower than the LOD or LOQ.
- Levels 'Lowerbound' a 'Upperbound' are defined in Regulation 589/2014 and EN 1948-4, while Mediumbound is defined in Regulation 589/2014.

Brief Method Summaries *dl*-PCBs in muscle tissue of the FISH samples

Analytical Methods	Method Descriptions
B-PCBHMS02	CZ_SOP_D06_06_173 - except chap. 11.2.3.1-11.2.3.5., 11.2.3.7l, 11.2.4 (US EPA 1668, modified): Determination of polychlorinated biphenyls by isotope dilution method using HRGC-HRMS and calculation of PCB sums and TEQ parameter from measured values. The samples were stored in laboratory in the darkness and under temperature <4°C. Actual LOQ are noticed in the attachment. Estimation of measurement uncertainty (95% confidential interval) for each PCB congener is 30%, for total WHO-TEQs and is 20%. QC Level: ALS CR Standard Quality Control Schedule (ALS Laboratory, Czech Republic, s.r.o)

Table S2-3. Measurement details for PAH congener analysis in thallus and rhizoid of the MOSS samples.

Polycyclic Aromatics Hydrocarbons (PAHs) Acquisition Date: 12 Jul 2017	*Polytrichum briedel* (thallus) Weight:22.2g, Dry matter: 92.8% Final extract vol.: 1000 µL Injection vol.:2 µL				*Polytrichum briedel* (rhizoide) Weight:21.6 g, Dry matter: 91.4% Final extract vol.: 1000 µL Injection vol.:2 µL			
	Result (ng/g dw)	MU (%)	LOD (ng/g dw)	LOQ (ng/g dw)	Result (ng/g dw)	MU (%)	LOD (ng/g dw)	LOQ (ng/g dw)
Naphthalene	<4.1	----	0.0038	4.10	<5.3	----	0.0058	5.30
Acenaphthylene	<0.24	----	0.0092	0.24	<0.33	----	0.013	0.33
Acenaphthene	<0.27	----	0.0086	0.27	<0.43	----	0.012	0.43
Fluorene	<0.27	----	0.012	0.27	<1.4	----	0.017	1.40
Phenanthrene	<2.2	----	0.0038	2.20	<6.3	----	0.0048	6.30
Anthracene	<0.36	----	0.005	0.36	<1	----	0.0062	1.00
Fluoranthene	<0.88	----	0.0035	0.88	<2.3	----	0.0052	2.30
Pyrene	<0.9	----	0.0031	0.90	<4.3	----	0.0047	4.30
Benz(a)anthracene	<0.24	----	0.0033	0.24	<0.38	----	0.0058	0.38
Chrysene	<0.36	----	0.0034	0.36	<0.38	----	0.005	0.38
Benzo(b)fluoranthene	<0.24	----	0.0055	0.24	<0.38	----	0.012	0.38
Benzo(k)fluoranthene	<0.24	----	0.0066	0.24	<0.38	----	0.014	0.38
Benzo(a)pyrene	<0.24	----	0.0057	0.24	<0.25	----	0.012	0.25
Indeno(1.2.3.cd)pyrene	<0.24	----	0.015	0.24	<0.25	----	0.017	0.25
Dibenzo(a,h)anthracene	<0.24	----	0.012	0.24	<0.25	----	0.021	0.25
Benzo(g.h.i)perylene	<0.24	----	0.011	0.24	<0.25	----	0.02	0.25
Σ 16PAH lowerbound	0				0			
Σ 16PAH upperbound	11				24			

- Measurement uncertainty (MU) is expressed as expanded measurement uncertainty with coverage factor k = 2, representing 95% confidence interval.
- The limits of quantification (LOQ) are defined as the fivefold of the detection limits (LOD) for PAH which haven´t positive blank or as the fivefold of the blank for PAH which have positive blank.
- The limit of detection is defined as the amount of analyte producing a signal with S/N≥3.
- The value of the detection limit is mentioned as the actual value at the acquisition date.
- Estimation of uncertainty PAH is 30% for each PAH and 20% for summation parameters.
- These values were ensured by analyses of certified reference material under conditions of internal reproducibility. Results marked "<" are lower than the LOD or LOQ.
- Levels 'Lowerbound' a 'Upperbound' are defined in Regulation 589/2014 and EN 1948-4.

Brief Method Summaries PAHs in thallus and rhizoid of the MOSS samples

Analytical Methods	Method Descriptions
B-PAHHMS02	CZ_SOP_D06_06_180 except chap. 10.3.3.1 - 10.3.3.8 (US EPA 429-modified, STN EN 16619-modified): Determination of polycyclic aromatic hydrocarbons by isotope dilution method using HRGC -HRMS and calculation of polyaromatic hydrocarbons sums from measured values. The samples were stored in laboratory in the darkness and under temperature <4°C. Actual LOQ are noticed in the attachment. Estimation of measurement uncertainty (95% confidential interval) for each individual PAH is 30%, for sum of PAH4 is 20%. QC Level: ALS CR Standard Quality Control Schedule (ALS Laboratory, Czech Republic, s.r.o)

Table S2-4a. Measurement details for *dl*-PCB congener analysis in thallus of the MOSS samples.

PCB dioxin-like Acquisition Date: 13 Jul 2017	*Polytrichum briedel* (thallus) sample weight:22.2g, Dry matter: 92.8% Final extract vol.: 250 μL Injection vol.:4 μL					
	Result (pg/g dw)	MU (%)	LOD (pg/g dw)	LOQ (pg/g dw)	WHO 2005 TEFs	WHO-TEQ Upperbound (pg/g dw)
PCB 77	<3.2	----	0.21	3.2	0.0001	0.00032
PCB 81	<0.31	----	0.31	1	0.0003	0.000093
PCB 126	<0.51	----	0.51	1.7	0.1	0.051
PCB 169	<0.037	----	0.037	0.12	0.03	0.0011
PCB 105	<5.8	----	0.11	5.8	0.00003	0.00018
PCB 114	<0.39	----	0.11	0.39	0.00003	0.000012
PCB 118	<9.2	----	0.089	9.2	0.00003	0.00028
PCB 123	<0.44	----	0.099	0.44	0.00003	0.000013
PCB 156	<2.7	----	0.29	2.7	0.00003	0.000082
PCB 157	<0.28	----	0.28	0.94	0.00003	0.0000085
PCB 167	<0.67	----	0.67	2.2	0.00003	0.00002
PCB 189	<1.9	----	0.18	1.9	0.00003	0.000058
WHO-TEQ from quantified PCBs lowerbound						0
WHO-TEQ from quantified, 0.5 LOD and 0.5 LOQ non quantified PCBs mediumbound						0.026
WHO-TEQ from quantified, LOD and LOQ non quantified PCBs upperbound						0.053

- Measurement uncertainty (MU) is expressed as a double k = 2 relative standard deviation (RSD%), and corresponds to 95% confidence interval.
- Estimation of uncertainty of each PCB congener is 30%, total WHO-TEQ and sum of PCB6 is 20%. These values were ensured by analysis of certified reference material under conditions of internal reproducibility.
- The limits of quantification (LOQ) are defined on the base of blank level.
- The limit of detection is defined as the amount of analyte producing a signal with S/N≥3.
- The value of the detection limit is mentioned as the actual value at the acquisition date.
- Limit of detection (LOD) is equal to LOQ according to Commission Regulation (EU) No 589/2014.
- These values were ensured by analyses of certified reference material under conditions of internal reproducibility.
- Results marked "<" are lower than the LOD or LOQ.
- Levels 'Lowerbound' a 'Upperbound' are defined in Regulation 589/2014 and EN 1948-4, while Mediumbound is defined in Regulation 589/2014.

Table S2-4b. Measurement details for *dl*-PCB congener analysis in rhizoide of the MOSS samples.

PCB dioxin-like Acquisition Date: 13 Jul 2017	*Polytrichum briedel* (rhizoide) sample weight:21.6g, Dry matter: 91.4% Final extract vol.: 250 µL Injection vol.:4 µL					
	Result (pg/g dw)	MU (%)	LOD (pg/g dw)	LOQ (pg/g dw)	WHO 2005 TEFs	WHO-TEQ Upperbound (pg/g dw)
PCB 77	<3.4	----	0.37	3.4	0.0001	0.00034
PCB 81	<0.56	----	0.56	1.9	0.0003	0.00017
PCB 126	<0.48	----	0.48	1.6	0.1	0.048
PCB 169	<0.3	----	0.30	1	0.03	0.009
PCB 105	<9.6	----	0.20	9.6	0.00003	0.00029
PCB 114	<0.67	----	0.20	0.67	0.00003	0.00002
PCB 118	<9.7	----	0.20	9.7	0.00003	0.00029
PCB 123	<0.71	----	0.21	0.71	0.00003	0.000021
PCB 156	<5.1	----	0.14	5.1	0.00003	0.00015
PCB 157	<1.2	----	0.12	1.2	0.00003	0.000037
PCB 167	<3	----	0.40	3	0.00003	0.000091
PCB 189	<0.33	----	0.33	1.1	0.00003	0.0000098
WHO-TEQ from quantified PCBs lowerbound						0
WHO-TEQ from quantified, 0.5 LOD and 0.5 LOQ non quantified PCBs mediumbound						0.029
WHO-TEQ from quantified, LOD and LOQ non quantified PCBs upperbound						0.058

- Measurement uncertainty (MU) is expressed as a double k = 2 relative standard deviation (RSD%), and corresponds to 95% confidence interval.
- Estimation of uncertainty of each PCB congener is 30%, total WHO-TEQ and sum of PCB6 is 20%. These values were ensured by analysis of certified reference material under conditions of internal reproducibility.
- The limits of quantification (LOQ) are defined on the base of blank level.
- The limit of detection is defined as the amount of analyte producing a signal with S/N≥3.
- The value of the detection limit is mentioned as the actual value at the acquisition date.
- Limit of detection (LOD) is equal to LOQ according to Commission Regulation (EU) No 589/2014.
- These values were ensured by analyses of certified reference material under conditions of internal reproducibility.
- Results marked "<" are lower than the LOD or LOQ.
- Levels 'Lowerbound' a 'Upperbound' are defined in Regulation 589/2014 and EN 1948-4, while Mediumbound is defined in Regulation 589/2014.

Brief Method Summaries *dl*-PCBs in thallus and rhizoid of the MOSS samples

Analytical Methods	Method Descriptions
B-PCBHMS02	CZ_SOP_D06_06_173 - except chap. 10.2.3.1-10.2.3.6 (US EPA 1668-modified, CSN P CEN/TS 16190-modified): Determination of polychlorinated biphenyls by isotope dilution method using HRGC -HRMS and calculation of PCB sums and TEQ parameter from measured values. The samples were stored in laboratory in the darkness and under temperature <4°C. Actual LOQ are noticed in the attachment. Estimation of measurement uncertainty (95% confidential interval) for each PCB congener is 30%, for total WHO-TEQs is 20%. QC Level: ALS CR Standard Quality Control Schedule (ALS Laboratory, Czech Republic, s.r.o)

Table S2-5a. Measurement details for PAH congener analysis in the SEDIMENT samples.

Polycyclic Aromatics Hydrocarbons (PAHs)	Sediment (Station 2 – St2) Sample weight:4.19 g, Dry matter %: 98.4 Final extract vol.: 1000 µL, Injection vol.:2 µL				Sediment (Station 3 – St3) sample weight:3.20 g Dry matter %: 98.6 Final extract vol.: 1000 µL, Injection vol.:2 µL			
Acquisition Date: 7-8-9 Nov 2016	Result (ng/g dw)	MU (%)	LOD (ng/g dw)	LOQ (ng/g dw)	Result (ng/g dw)	MU (%)	LOD (ng/g dw)	LOQ (ng/g dw)
Naphthalene	<0.049	----	0.00024	0.049	<0.15	----	0.00058	0.15
Acenaphthylene	<0.0036	----	0.00015	0.0036	<0.012	----	0.00025	0.012
Acenaphthene	<0.0049	----	0.00021	0.0049	<0.014	----	0.00033	0.014
Fluorene	<0.061	----	0.00025	0.061	<0.095	----	0.0004	0.095
Phenanthrene	<0.03	----	0.000017	0.03	<0.035	----	0.0000099	0.035
Anthracene	<0.003	----	0.000021	0.003	<0.004	----	0.000013	0.004
Fluoranthene	<0.02	----	0.000013	0.02	<0.017	----	0.0000059	0.017
Pyrene	<0.018	----	0.000011	0.018	<0.016	----	0.0000052	0.016
Benz(a)anthracene	<0.0061	----	0.000017	0.0061	<0.0048	----	0.0000063	0.0048
Chrysene	<0.0073	----	0.00002	0.0073	<0.0063	----	0.0000074	0.0063
Benzo(b)fluoranthene	<0.0085	----	0.000023	0.0085	<0.0063	----	0.0000084	0.0063
Benzo(k)fluoranthene	<0.0067	----	0.000028	0.0067	<0.004	----	0.00001	0.004
Benzo(a)pyrene	<0.0067	----	0.000022	0.0067	<0.0048	----	0.0000079	0.0048
Indeno(1.2.3.cd)pyrene	<0.0061	----	0.000034	0.0061	<0.004	----	0.000012	0.004
Dibenzo(a,h)anthracene	<0.0024	----	0.000036	0.0024	<0.0016	----	0.000012	0.0016
Benzo(g.h.i)perylene	<0.0051	----	0.000023	0.0051	<0.004	----	0.0000079	0.004
Σ 16PAH lowerbound	0				0			
Σ 16PAH upperbound	0.24				0.37			

- Measurement uncertainty (MU) is expressed as a double (k = 2) relative standard deviation (RSD%), and corresponds to 95% confidence interval.
- The limits of quantification (LOQ) are defined as the fivefold of the detection limits (LOD) for PAH which haven´t positive blank or as the fivefold of the blank for PAH which have positive blank.
- The limit of detection is defined as the amount of analyte producing a signal with S/N≥3.
- The value of the detection limit is mentioned as the actual value at the acquisition date.
- Estimation of uncertainty PAH is 30% for each PAH and 20% for summation parameters.
- These values were ensured by analyses of certified reference material under conditions of internal reproducibility.
- Results marked "<" are lower than the LOD or LOQ.
- Levels 'Lowerbound' a 'Upperbound' are defined in Regulation 589/2014 and EN 1948-4.

Table S2-5b. Measurement details for PAH congener analysis in the SEDIMENT samples.

Polycyclic Aromatics Hydrocarbons (PAHs)	Sediment (Station 4 – St4) Sample weight:3.85 g, Dry matter %: 99.0 Final extract vol.: 1000 µL, Injection vol.:2 µL				Sediment (Station 5 – St5) sample weight:3.90 g Dry matter %: 98.7 Final extract vol.: 1000 µL, Injection vol.:2 µL			
Acquisition Date: 7-8-9 Nov 2016	Result (ng/g dw)	MU (%)	LOD (ng/g dw)	LOQ (ng/g dw)	Result (ng/g dw)	MU (%)	LOD (ng/g dw)	LOQ (ng/g dw)
Naphthalene	<0.011	----	0.000022	0.011	<0.013	----	0.00008	0.013
Acenaphthylene	<0.0011	----	0.000029	0.0011	<0.0019	----	0.000094	0.0019
Acenaphthene	<0.0011	----	0.000039	0.0011	<0.0026	----	0.00013	0.0026
Fluorene	<0.059	----	0.000047	0.059	<0.019	----	0.00015	0.019
Phenanthrene	<0.014	----	0.0000097	0.014	<0.019	----	0.000039	0.019
Anthracene	<0.00092	----	0.000012	0.00092	<0.0013	----	0.00005	0.0013
Fluoranthene	<0.0046	----	0.00001	0.0046	<0.013	----	0.000043	0.013
Pyrene	<0.0059	----	0.0000091	0.0059	<0.014	----	0.000038	0.014
Benz(a)anthracene	<0.00066	----	0.000012	0.00066	<0.0052	----	0.000055	0.0052
Chrysene	<0.00066	----	0.000013	0.00066	<0.0052	----	0.00006	0.0052
Benzo(b)fluoranthene	<0.00092	----	0.000015	0.00092	<0.0058	----	0.00007	0.0058
Benzo(k)fluoranthene	<0.00066	----	0.000018	0.00066	<0.0052	----	0.000083	0.0052
Benzo(a)pyrene	<0.00066	----	0.000017	0.00066	<0.0052	----	0.000068	0.0052
Indeno(1.2.3.cd)pyrene	<0.00053	----	0.000026	0.00053	<0.0052	----	0.0001	0.0052
Dibenzo(a,h)anthracene	<0.00026	----	0.000023	0.00026	<0.0013	----	0.00011	0.0013
Benzo(g.h.i)perylene	<0.00066	----	0.000017	0.00066	<0.0039	----	0.000057	0.0039
Σ 16PAH lowerbound	0				0			
Σ 16PAH upperbound	0.1				0.12			

- Measurement uncertainty (MU) is expressed as a double (k = 2) relative standard deviation (RSD%), and corresponds to 95% confidence interval.
- The limits of quantification (LOQ) are defined as the fivefold of the detection limits (LOD) for PAH which haven´t positive blank or as the fivefold of the blank for PAH which have positive blank.
- The limit of detection is defined as the amount of analyte producing a signal with S/N≥3.
- The value of the detection limit is mentioned as the actual value at the acquisition date.
- Estimation of uncertainty PAH is 30% for each PAH and 20% for summation parameters.
- These values were ensured by analyses of certified reference material under conditions of internal reproducibility.
- Results marked "<" are lower than the LOD or LOQ.
- Levels 'Lowerbound' a 'Upperbound' are defined in Regulation 589/2014 and EN 1948-4.

Table S2-5c. Measurement details for PAH congener analysis in the SEDIMENT samples.

Polycyclic Aromatics Hydrocarbons (PAHs) Acquisition Date: 7-8-9 Nov 2016	Sediment (Station 6 – St6) Sample weight:3.91 g, Dry matter %: 97.9 Final extract vol.: 1000 µL, Injection vol.:2 µL			
	Result (ng/g dw)	MU (%)	LOD (ng/g dw)	LOQ (ng/g dw)
Naphthalene	<0.013	----	0.000053	0.013
Acenaphthylene	<0.002	----	0.00011	0.002
Acenaphthene	<0.0046	----	0.00014	0.0046
Fluorene	<0.047	----	0.00017	0.047
Phenanthrene	<0.033	----	0.000048	0.033
Anthracene	<0.0018	----	0.000061	0.0018
Fluoranthene	<0.01	----	0.000057	0.01
Pyrene	<0.014	----	0.00005	0.014
Benz(a)anthracene	<0.0033	----	0.00007	0.0033
Chrysene	<0.0021	----	0.000066	0.0021
Benzo(b)fluoranthene	<0.0033	----	0.000099	0.0033
Benzo(k)fluoranthene	<0.0026	----	0.00012	0.0026
Benzo(a)pyrene	<0.0026	----	0.000086	0.0026
Indeno(1.2.3.cd)pyrene	<0.0026	----	0.00013	0.0026
Dibenzo(a,h)anthracene	<0.0013	----	0.00013	0.0013
Benzo(g.h.i)perylene	<0.0034	----	0.000093	0.0034
Σ 16PAH lowerbound	0			
Σ 16PAH upperbound	0.15			

- Measurement uncertainty (MU) is expressed as a double (k = 2) relative standard deviation (RSD%), and corresponds to 95% confidence interval.
- The limits of quantification (LOQ) are defined as the fivefold of the detection limits (LOD) for PAH which haven´t positive blank or as the fivefold of the blank for PAH which have positive blank.
- The limit of detection is defined as the amount of analyte producing a signal with S/N≥3.
- The value of the detection limit is mentioned as the actual value at the acquisition date.
- Estimation of uncertainty PAH is 30% for each PAH and 20% for summation parameters.
- These values were ensured by analyses of certified reference material under conditions of internal reproducibility.
- Results marked "<" are lower than the LOD or LOQ.
- Levels 'Lowerbound' a 'Upperbound' are defined in Regulation 589/2014 and EN 1948-4.

Brief Method Summaries PAHs in the SEDIMENT samples

Analytical Methods	Method Descriptions
S-PAHHMS02	CZ_SOP_D06_06_180 except chap. 11.3.3.1 - 11.3.3.5, 11.3.3.7 - 11.3.3.9, 11.3.5, 11.3.6.1 e (US EPA 429, ISO 11338, US EPA 3540): Determination of polyaromatic hydrocarbons by isotope dilution method using HRGC -HRMS and calculation of polyaromatic hydrocarbons sums from measured values. The samples were stored in laboratory in the darkness and under temperature <4°C. Estimation of measurement uncertainty (95% confidential interval) for each individual PAH is 30%, for sum of PAH is 20%. Actual LOQ are noticed in the table. QC Level: ALS CR Standard Quality Control Schedule (ALS Laboratory, Czech Republic, s.r.o)

Table S2-6a. Measurement details for *dl*-PCB congener analysis in the SEDIMENT samples.

PCB dioxin-like	Sediment (Station 2 – St2) Sample weight:4.19 g, Dry matter: 98.4 %, Final extract vol.: 250 µL, Injection vol.:4 µL					
Acquisition Date: 12 Nov 2016	Result (ng/g dw)	MU (%)	LOD (ng/g dw)	LOQ (ng/g dw)	TEFs	TEQ Upperbound (ng/g dw)
PCB 77	<0.088	----	0.00073	0.088	0.0005	0.000044
PCB 81	<0.00083	----	0.00083	0.0028	-	0
PCB 126	<0.00071	----	0.00071	0.0024	0.1	0.000071
PCB 169	<0.0011	----	0.0011	0.0035	0.01	0.000011
PCB 105	<1.3	----	0.00069	1.3	0.0001	0.00013
PCB 114	<0.029	----	0.0006	0.029	0.0005	0.000015
PCB 118	<2.6	----	0.00055	2.6	0.0001	0.00026
PCB 123	<0.039	----	0.00067	0.039	0.0001	0.0000039
PCB 156	<0.17	----	0.00088	0.17	0.0005	0.000085
PCB 157	<0.063	----	0.00093	0.063	0.0005	0.000032
PCB 167	<0.097	----	0.00092	0.097	0.00001	0.00000097
PCB 170	<0.26	----	0.0014	0.26	0.0001	0.000026
PCB 180	<0.49	----	0.0012	0.49	0.00001	0.0000049
PCB 189	<0.0018	----	0.0018	0.006	0.0001	0.00000018
TEQ from quantified PCBs lowerbound						0
TEQ from PCBs mediumbound						0.00034
Maximum possible TEQ upperbound						0.00068

	Result (ng/g dw)	LOD (ng/g dw)	LOQ (ng/g dw)	∑indicator PCB Lowerbound	TEQ Upperbound (ng/g dw)
PCB 28	<0.47	0.0006	0.47	0	0.47
PCB 52	<1.1	0.00072	1.1	0	1.1
PCB 101	<1.8	0.0009	1.8	0	1.8
PCB 118	<2.6	0.00055	2.6	0	2.6
PCB 138	<1.6	0.0012	1.6	0	1.6
PCB 153	<1.7	0.0012	1.7	0	1.7
PCB 180	<0.49	0.0012	0.49	0	0.49
∑indicator PCB6 lowerbound				0	
Max. possible ∑indicator PCB6 upperbound					7.1
∑indicator PCB7 lowerbound				0	
Max. possible ∑indicator PCB7 upperbound					9.7

-Measurement uncertainty (MU) is expressed as a double k = 2 relative standard deviation (RSD%), and corresponds to 95% confidence interval.
- Estimation of uncertainty of each PCB congener is 30%, total TEQ and PCB6/PCB7 is 20%. These values were ensured by analysis of certified reference material under conditions of internal reproducibility.
- The limits of quantification (LOQ) are defined on the base of blank level.
- The limit of detection is defined as the amount of analyte producing a signal with S/N≥3.
-The value of the detection limit is mentioned as the actual value at the acquisition date.
- Results marked "<" are lower than the LOD or LOQ.
- Levels 'Lowerbound' a 'Upperbound' are defined in Regulation 589/2014 and EN 1948-4, while Mediumbound is defined in Regulation 589/2014.

Table S2-6b. Measurement details for *dl*-PCB congener analysis in the SEDIMENT samples.

PCB dioxin-like	Sediment (Station 3 – St3) Sample weight:3.20 g, Dry matter: 98.6%, Final extract vol.: 250 µL, Injection vol.:4 µL					
Acquisition Date: 12 Nov 2016	Result (ng/g dw)	MU (%)	LOD (ng/g dw)	LOQ (ng/g dw)	TEFs	TEQ Upperbound (ng/g dw)
PCB 77	<0.036	----	0.00095	0.036	0.0005	0.000018
PCB 81	<0.0011	----	0.0011	0.0037	-	0
PCB 126	<0.0011	----	0.0011	0.0037	0.1	0.00011
PCB 169	<0.0015	----	0.0015	0.0049	0.01	0.000015
PCB 105	<1.2	----	0.001	1.2	0.0001	0.00012
PCB 114	<0.031	----	0.001	0.031	0.0005	0.000015
PCB 118	<2.1	----	0.00089	2.1	0.0001	0.00021
PCB 123	<0.032	----	0.0012	0.032	0.0001	0.0000032
PCB 156	<0.22	----	0.0014	0.22	0.0005	0.00011
PCB 157	<0.044	----	0.0013	0.044	0.0005	0.000022
PCB 167	<0.13	----	0.0014	0.13	0.00001	0.0000013
PCB 170	<0.33	----	0.0018	0.33	0.0001	0.000033
PCB 180	<0.71	----	0.0016	0.71	0.00001	0.0000071
PCB 189	<0.0023	----	0.0023	0.0077	0.0001	0.00000023
TEQ from quantified PCBs lowerbound						0
TEQ from PCBs mediumbound						0.00033
Maximum possible TEQ upperbound						0.00066

	Result (ng/g dw)	LOD (ng/g dw)	LOQ (ng/g dw)	∑indicator PCB Lowerbound	TEQ Upperbound (ng/g dw)
PCB 28	<1.2	0.001	1.2	0	1.2
PCB 52	<1	0.0012	1	0	1
PCB 101	<1.7	0.0016	1.7	0	1.7
PCB 118	<2.1	0.00089	2.1	0	2.1
PCB 138	<1.6	0.0014	1.6	0	1.6
PCB 153	<2	0.0014	2	0	2
PCB 180	<0.71	0.0016	0.71	0	0.71
Σindicator PCB6 lowerbound				0	
Max. possible Σindicator PCB6 upperbound					8.3
Σindicator PCB7 lowerbound				0	
Max. possible Σindicator PCB7 upperbound					10

-Measurement uncertainty (MU) is expressed as a double k = 2 relative standard deviation (RSD%), and corresponds to 95% confidence interval.

- Estimation of uncertainty of each PCB congener is 30%, total TEQ and PCB6/PCB7 is 20%. These values were ensured by analysis of certified reference material under conditions of internal reproducibility.

- The limits of quantification (LOQ) are defined on the base of blank level.

- The limit of detection is defined as the amount of analyte producing a signal with S/N≥3.

-The value of the detection limit is mentioned as the actual value at the acquisition date.

- Results marked "<" are lower than the LOD or LOQ.

- Levels 'Lowerbound' a 'Upperbound' are defined in Regulation 589/2014 and EN 1948-4, while Mediumbound is defined in Regulation 589/2014.

Table S2-6c. Measurement details for *dl*-PCB congener analysis in the SEDIMENT samples.

PCB dioxin-like	Sediment (Station 4 – St4) Sample weight:3.85 g, Dry matter: 99.0 %, Final extract vol.: 250 µL, Injection vol.:4 µL					
Acquisition Date: 12 Nov 2016	Result (ng/g dw)	MU (%)	LOD (ng/g dw)	LOQ (ng/g dw)	TEFs	TEQ Upperbound (ng/g dw)
PCB 77	<0.014	----	0.0038	0.014	0.0005	0.0000072
PCB 81	<0.0036	----	0.0036	0.012	-	0
PCB 126	<0.0042	----	0.0042	0.014	0.1	0.00042
PCB 169	<0.0047	----	0.0047	0.016	0.01	0.000047
PCB 105	<0.17	----	0.0037	0.17	0.0001	0.000017
PCB 114	<0.0037	----	0.0037	0.012	0.0005	0.0000019
PCB 118	<0.36	----	0.0031	0.36	0.0001	0.000036
PCB 123	<0.0039	----	0.0039	0.013	0.0001	0.00000039
PCB 156	<0.0042	----	0.0042	0.014	0.0005	0.0000021
PCB 157	<0.0042	----	0.0042	0.014	0.0005	0.0000021
PCB 167	<0.0058	----	0.0058	0.019	0.00001	0.000000058
PCB 170	<0.0061	----	0.0061	0.02	0.0001	0.00000061
PCB 180	<0.032	----	0.0054	0.032	0.00001	0.00000032
PCB 189	<0.0066	----	0.0066	0.022	0.0001	0.00000066
TEQ from quantified PCBs lowerbound						0
TEQ from PCBs mediumbound						0.00027
Maximum possible TEQ upperbound						0.00053
	Result (ng/g dw)	LOD (ng/g dw)	LOQ (ng/g dw)	∑indicator PCB Lowerbound	TEQ Upperbound (ng/g dw)	
PCB 28	<0.3	0.0028	0.3	0	0.3	
PCB 52	<0.35	0.0039	0.35	0	0.35	
PCB 101	<0.52	0.0066	0.52	0	0.52	
PCB 118	<0.36	0.0031	0.36	0	0.36	
PCB 138	<0.24	0.0057	0.24	0	0.24	
PCB 153	<0.27	0.0051	0.27	0	0.27	
PCB 180	<0.032	0.0054	0.032	0	0.032	
∑indicator PCB6 lowerbound				0		
Max. possible ∑indicator PCB6 upperbound					1.7	
∑indicator PCB7 lowerbound				0		
Max. possible ∑indicator PCB7 upperbound					2.1	

-Measurement uncertainty (MU) is expressed as a double k = 2 relative standard deviation (RSD%), and corresponds to 95% confidence interval.
- Estimation of uncertainty of each PCB congener is 30%, total TEQ and PCB6/PCB7 is 20%. These values were ensured by analysis of certified reference material under conditions of internal reproducibility.
- The limits of quantification (LOQ) are defined on the base of blank level.
- The limit of detection is defined as the amount of analyte producing a signal with S/N≥3.
-The value of the detection limit is mentioned as the actual value at the acquisition date.
- Results marked "<" are lower than the LOD or LOQ.
- Levels 'Lowerbound' a 'Upperbound' are defined in Regulation 589/2014 and EN 1948-4, while Mediumbound is defined in Regulation 589/2014.

Table S2-6d. Measurement details for *dl*-PCB congener analysis in the SEDIMENT samples.

PCB dioxin-like	Sediment (Station 5 – St5) Sample weight:3.90 g, Dry matter: 98.7 %, Final extract vol.: 250 µL, Injection vol.:4 µL					
Acquisition Date: 12 Nov 2016	Result (ng/g dw)	MU (%)	LOD (ng/g dw)	LOQ (ng/g dw)	TEFs	TEQ Upperbound (ng/g dw)
PCB 77	<0.0049	----	0.0049	0.016	0.0005	0.0000025
PCB 81	<0.0016	----	0.0016	0.0052	-	0
PCB 126	<0.003	----	0.003	0.0098	0.1	0.0003
PCB 169	<0.0015	----	0.0015	0.0051	0.01	0.000015
PCB 105	<1	----	0.0041	1	0.0001	0.0001
PCB 114	<0.0013	----	0.0013	0.0045	0.0005	0.00000067
PCB 118	<1.8	----	0.0012	1.8	0.0001	0.00018
PCB 123	<0.0014	----	0.0014	0.0047	0.0001	0.00000014
PCB 156	<0.14	----	0.0023	0.14	0.0005	0.00007
PCB 157	<0.0026	----	0.0026	0.0088	0.0005	0.0000013
PCB 167	<0.044	----	0.0011	0.044	0.00001	0.00000044
PCB 170	<0.07	----	0.0023	0.07	0.0001	0.000007
PCB 180	<0.62	----	0.0021	0.62	0.00001	0.0000062
PCB 189	<0.0018	----	0.0018	0.0059	0.0001	0.00000018
TEQ from quantified PCBs lowerbound						0
TEQ from PCBs mediumbound						0.00034
Maximum possible TEQ upperbound						0.00068
	Result (ng/g dw)	LOD (ng/g dw)	LOQ (ng/g dw)	∑indicator PCB Lowerbound	TEQ Upperbound (ng/g dw)	
PCB 28	<2.1	0.0013	2.1	0	2.1	
PCB 52	<1.3	0.0018	1.3	0	1.3	
PCB 101	<2.8	0.0019	2.8	0	2.8	
PCB 118	<1.8	0.0012	1.8	0	1.8	
PCB 138	<1.3	0.0012	1.3	0	1.3	
PCB 153	<1.6	0.00086	1.6	0	1.6	
PCB 180	<0.62	0.0021	0.62	0	0.62	
Σindicator PCB6 lowerbound				0		
Max. possible Σindicator PCB6 upperbound					9.7	
Σindicator PCB7 lowerbound				0		
Max. possible Σindicator PCB7 upperbound					11	

-Measurement uncertainty (MU) is expressed as a double k = 2 relative standard deviation (RSD%), and corresponds to 95% confidence interval.

- Estimation of uncertainty of each PCB congener is 30%, total TEQ and PCB6/PCB7 is 20%. These values were ensured by analysis of certified reference material under conditions of internal reproducibility.

- The limits of quantification (LOQ) are defined on the base of blank level.

- The limit of detection is defined as the amount of analyte producing a signal with S/N≥3.

-The value of the detection limit is mentioned as the actual value at the acquisition date.

- Results marked "<" are lower than the LOD or LOQ.

- Levels 'Lowerbound' a 'Upperbound' are defined in Regulation 589/2014 and EN 1948-4, while Mediumbound is defined in Regulation 589/2014.

Table S2-6e. Measurement details for *dl*-PCB congener analysis in the SEDIMENT samples.

PCB dioxin-like	Sediment (Station 6 – St6) Sample weight:3.91 g, Dry matter: 97.9 %, Final extract vol.: 250 µL, Injection vol.:4 µL					
Acquisition Date: 12 Nov 2016	Result (ng/g dw)	MU (%)	LOD (ng/g dw)	LOQ (ng/g dw)	TEFs	TEQ Upperbound (ng/g dw)
PCB 77	<0.073	----	0.0031	0.073	0.0005	0.000036
PCB 81	<0.0034	----	0.0034	0.011	-	0
PCB 126	<0.0028	----	0.0028	0.0092	0.1	0.00028
PCB 169	<0.0042	----	0.0042	0.014	0.01	0.000042
PCB 105	<0.37	----	0.003	0.37	0.0001	0.000037
PCB 114	<0.0038	----	0.0038	0.013	0.0005	0.0000019
PCB 118	<0.7	----	0.003	0.7	0.0001	0.00007
PCB 123	<0.004	----	0.004	0.013	0.0001	0.0000004
PCB 156	<0.094	----	0.0037	0.094	0.0005	0.000047
PCB 157	<0.0036	----	0.0036	0.012	0.0005	0.0000018
PCB 167	<0.044	----	0.0038	0.044	0.00001	0.00000044
PCB 170	<0.2	----	0.0052	0.2	0.0001	0.00002
PCB 180	<0.2	----	0.0047	0.2	0.00001	0.000002
PCB 189	<0.0056	----	0.0056	0.019	0.0001	0.00000056
TEQ from quantified PCBs lowerbound						0
TEQ from PCBs mediumbound						0.00027
Maximum possible TEQ upperbound						0.00053

	Result (ng/g dw)	LOD (ng/g dw)	LOQ (ng/g dw)	∑indicator PCB Lowerbound	TEQ Upperbound (ng/g dw)
PCB 28	<2.1	0.0029	2.1	0	2.1
PCB 52	<2.2	0.0037	2.2	0	2.2
PCB 101	<1.4	0.0049	1.4	0	1.4
PCB 118	<0.7	0.003	0.7	0	0.7
PCB 138	<0.86	0.0041	0.86	0	0.86
PCB 153	<1	0.0046	1	0	1
PCB 180	<0.2	0.0047	0.2	0	0.2
Σindicator PCB6 lowerbound				0	
Max. possible Σindicator PCB6 upperbound					7.8
Σindicator PCB7 lowerbound				0	
Max. possible Σindicator PCB7 upperbound					8.5

-Measurement uncertainty (MU) is expressed as a double k = 2 relative standard deviation (RSD%), and corresponds to 95% confidence interval.
- Estimation of uncertainty of each PCB congener is 30%, total TEQ and PCB6/PCB7 is 20%. These values were ensured by analysis of certified reference material under conditions of internal reproducibility.
- The limits of quantification (LOQ) are defined on the base of blank level.
- The limit of detection is defined as the amount of analyte producing a signal with S/N≥3.
-The value of the detection limit is mentioned as the actual value at the acquisition date.
- Results marked "<" are lower than the LOD or LOQ.
- Levels 'Lowerbound' a 'Upperbound' are defined in Regulation 589/2014 and EN 1948-4, while Mediumbound is defined in Regulation 589/2014

Brief Method Summaries dl-PCBs in the SEDIMENT

Analytical Methods S-PCBHMS01	Method Descriptions
	CZ_SOP_D06_06_172 (JIS K0311, modified): Determination of coplanar polychlorinated biphenyls in stationary emission sources by isotope dilution method using HRGC-HRMS and calculation of PCB sums and TEQ parameter from measured values.The samples were stored in laboratory in the darkness and under temperature <4°C.Actual LOQ are noticed in the table.
	QC Level: ALS CR Standard Quality Control Schedule (ALS Laboratory, Czech Republic, s.r.o)