Table S1. Summary of results from the sediment cores collected in 2014 and 2015. Depth is given in cm. Loss on ignition (LOI) gives the content of organic material. Not all of the cores at a given station reached the same depth.

Station	Depth	n	ng Hg /g dw			µg Hg/g LOI			% water			LOI (%)		
1	2	3	7,3	±	0,5	1,2	±	0,01	19	±	0,3	0,62	±	0,05
	4	3	8,9	±	0,4	1,3	±	0,11	18	±	0,2	0,67	±	0,02
	6	3	17,1	±	7,1	2,3	±	0,77	18	±	0,6	0,69	±	0,06
	8	3	8,5	±	0,8	1,3	±	0,05	18	±	0,8	0,68	±	0,05
	10	3	7,5	±	0,7	1,1	±	0,09	17	±	0,6	0,66	±	0,04
	12	3	6,5	±	0,1	1,0	±	0,08	16	±	0,3	0,63	±	0,05
	14	3	5,8	±	0,2	1,1	±	0,15	16	±	0,2	0,58	±	0,06
	16	3	7,4	±	0,7	1,0	±	0,13	17	±	0,1	0,72	±	0,02
	18	3	8,9	±	0,7	1,4	±	0,22	16	±	0,1	0,64	±	0,05
	20	3	6,4	±	0,1	1,1	±	0,05	16	±	0,1	0,57	±	0,04
	22	1	6,2			0,38			16			1,64		
2	2	3	34,4	±	9,7	2,3	±	0,45	26	±	1,2	1,43	±	0,16
	4	3	46,7	±	13	1,8	±	0,07	28	±	3,6	2,58	±	0,68
	6	3	40,9	±	11	2,4	±	0,47	23	±	1,6	1,59	±	0,23
	8	3	30,9	±	6,4	0,52	±	0,07	40	±	1,7	5,78	±	0,56
	10	3	27,6	±	3,5	0,12	±	0,02	68	±	5,9	26,92	±	6,52
	12	3	24,4	±	2,0	0,08	±	0,01	72	±	3,1	31,04	±	3,66
	14	3	11,5	±	5,8	0,07	±	0,01	53	±	11,4	16,31	±	6,92
	16	1	22,5			0,06			75			34,95		
3	2	3	20,7	±	1,7	0,76	±	0,08	28	±	2,3	2,85	±	0,46
	4	3	21,3	±	3,7	0,50	±	0,05	31	±	1,2	4,15	±	0,31
	6	3	16,2	±	2,3	0,51	±	0,08	28	±	0,1	3,20	±	0,14
	8	3	21,5	±	2,7	0,39	±	0,04	34	±	0,7	5,56	±	0,49
	10	3	23,3	±	1,5	0,34	±	0,02	40	±	1,2	6,98	±	0,48
	12	3	26,3	±	8,3	0,32	±	0,09	43	±	0,9	8,07	±	0,37
	14	3	19,2	±	0,3	0,16	±	0,02	48	±	2,2	12,49	±	1,78
	16	3	18,6	±	2,1	0,15	±	0,04	53	±	7,9	17,30	±	6,68
	18	1	18,6			0,05			74			38,53		
	20	1	18,9			0,05			72			35,11		
	22	1	16,9			0,05			73			35,21		
	24	1	22,5			0,06			75			36,10		
5	2	3	12,6	±	0,6	2,2	±	0,22	20	±	0,2	0,59	±	0,05
	4	3	29,8	±	2,5	3,7	±	0,42	19	±	0,4	0,82	±	0,04
	6	3	23,8	±	0,2	3,8	±	1,56	19	±	0,3	1,09	±	0,42
	8	3	50,5	±	14	2,5	±	0,48	18	±	0,4	2,07	±	0,39
	10	3	32,3	±	5,2	2,6	±	0,12	18	±	0,7	1,25	±	0,24
	12	3	28,7	±	2,1	2,1	±	0,74	18	±	0,3	3,91	±	2,48
	14	3	34,7	±	3,5	5,7	±	0,34	18	±	0,3	0,61	±	0,03

	16	3	25,0	±	1,9	4,4	±	0,28	18	±	0,4	0,57	±	0,03
	18	2	22,7	±	1,6	5,8	±	0,01	17	±	0,3	0,39	±	0,03
6	2	3	8,1	±	0,8	1,6	±	0,12	20	±	0,4	0,52	±	0,05
	4	3	6,6	±	0,4	1,0	±	0,19	20	±	0,4	0,78	±	0,19
	6	3	9,5	±	3,0	0,93	±	0,19	21	±	0,5	1,03	±	0,21
	8	3	7,6	±	1,3	0,70	±	0,25	22	±	1,9	1,53	±	0,41
	10	3	4,5	±	0,3	0,79	±	0,39	21	±	1,3	1,42	±	0,68
	12	3	6,3	±	1,6	0,80	±	0,34	23	±	1,3	1,33	±	0,42
	14	3	4,0	±	0,5	0,21	±	0,08	22	±	2,5	3,74	±	1,82
	16	2	5,0	±	0,9	0,42	±	0,07	22	±	0,9	1,21	±	0,002
	18	1	2,7			0,45	±	0,00	20			0,60		
7	2	3	4,1	±	0,9	0,75	±	0,07	20	±	0,4	0,52	±	0,07
	4	3	2,8	±	0,4	0,55	±	0,08	20	±	0,3	0,53	±	0,08
	6	3	1,4	±	0,1	0,35	±	0,02	18	±	0,8	0,41	±	0,03
	8	3	1,8	±	0,1	0,35	±	0,07	18	±	0,9	0,57	±	0,09
	10	3	1,6	±	0,1	0,34	±	0,04	19	±	0,6	0,50	±	0,08
	12	3	2,7	±	0,9	0,30	±	0,12	21	±	0,6	0,96	±	0,11
	14	3	1,9	±	0,2	0,22	±	0,02	20	±	0,9	0,88	±	0,15
	16	2	1,6	±	0,0	0,19	±	0,03	21	±	0,4	0,86	±	0,12
	18	2	1,7	±	0,5	0,31	±	0,05	19	±	0,1	0,53	±	0,07
	20	1	1,6			0,29			18			0,53		
8	2	3	9,1	±	0,2	1,5	±	0,06	20	±	0,5	0,59	±	0,02
	4	3	8,4	±	1,2	1,4	±	0,24	20	±	0,5	0,60	±	0,03
	6	3	8,1	±	0,4	1,3	±	0,26	19	±	0,3	0,75	±	0,19
	8	3	4,7	±	0,7	1,0	±	0,24	19	±	0,5	0,55	±	0,09
	10	3	3,6	±	0,4	1,0	±	0,17	18	±	0,4	0,37	±	0,02
	12	3	2,2	±	0,2	0,41	±	0,03	18	±	0,2	0,55	±	0,07
	14	3	2,8	±	0,5	0,37	±	0,04	19	±	0,2	0,78	±	0,14
	16	3	1,5	±	0,2	0,36	±	0,04	19	±	0,8	0,46	±	0,11
	18	2	4,8	±	2,5	0,41	±	0,05	24	±	4,2	1,35	±	0,75
	20	1	1,9			0,52			18			0,37		
9	2	3	23	±	3,8	2,4	±	0,17	21	±	0,2	0,93	±	0,09
	4	3	36	±	9,2	2,7	±	0,22	21	±	0,9	1,35	±	0,3
	6	3	42	±	9,6	2,6	±	0,35	20	±	0,9	1,58	±	0,25
	8	3	30	±	5,2	3,7	±	0,24	21	±	1,1	0,80	±	0,12
	10	3	49	±	15	3,1	±	0,60	23	±	1,6	1,53	±	0,28
	12	3	33	±	5,2	2,9	±	0,43	20	±	1,6	1,27	±	0,35
	14	2	27	±	0,8	2,7	±	0,24	17	±	1,1	1,01	±	0,06
	16	2	21	±	0,2	2,0	±	0,28	18	±	0,1	1,06	±	0,14
10	2	6	251	±	57	22	±	5	24	±	0,6	22	±	5
	4	6	1430	±	985	101	±	65	21	±	0,3	101	±	65
	6	6	822	±	459	69	±	34	24	±	3,1	69	±	34
	8	6	678	±	233	75	±	26	28	±	6,6	75	±	26
	10	6	839	±	398	92	±	41	27	±	6,6	92	±	41

	12	6	193	±	50	26	±	7	22	±	1,9	26	±	7
	14	6	173	±	65	31	±	12	19	±	0,4	31	±	12
	16	4	88	±	34	18	±	7	18	±	0,1	18	±	7
R1	2	3	5,0	±	2,1	19	±	1,0	19	±	1,0	0,64	±	0,04
	4	3	3,0	±	0,8	17	±	1,2	17	±	1,2	0,56	±	0,06
	6	3	2,3	±	0,4	15	±	1,4	15	±	1,4	0,51	±	0,07
	8	3	2,7	±	0,3	11	±	2,0	11	±	2,0	0,44	±	0,05
	10	3	3,7	±	0,7	10	±	1,6	10	±	1,6	0,42	±	0,03
	12	2	2,3	±	0,0	12	±	0,2	12	±	0,2	0,81	±	0,31
	14	2	2,3	±	0,5	14	±	0,8	14	±	0,8	0,53	±	0,01
	16	1	2,4			20			20			0,59		
	18	1	1,2			17			17			0,48		
	20	1	1,5			17			17			0,41		
R2	2	3	5,7	±	1,1	24	±	1,2	24	±	1,2	0,95	±	0,13
	4	3	13,3	±	6,3	21	±	1,1	21	±	1,1	0,89	±	0,15
	6	3	4,1	±	0,2	18	±	0,3	18	±	0,3	0,87	±	0,31
	8	3	3,2	±	0,4	17	±	0,2	17	±	0,2	0,49	±	0,06
	10	3	3,6	±	0,7	16	±	0,5	16	±	0,5	0,71	±	0,16
	12	3	6,5	±	1,3	13	±	0,4	13	±	0,4	0,57	±	0,08
	14	2	22,2	±	0,1	15	±	0,8	15	±	0,8	1,05	±	0,14
	16	2	22,4	±	0,6	14	±	1,2	14	±	1,2	1,38	±	0,24
	18	2	20,9	±	0,6	13	±	1,0	13	±	1	1,20	±	0,18
	20	1	27,3			14			14			1,10		

Table S2. Details for the main species sampled in the 2014-sampling (October 30) along Harboøre Tange and the 2 Funen reference sites R1 and R2 (February 4, 2015).

Species	n	Total weight (g ww)	Height, width or length (mm)	[Hg] (ng g^{-1} ww)	[Hg] (ng g^{-1} dw)
Station 1					
Mytilus edulis	5		50±1	47±1.8	319±10.4
Littorina littorea	5		19±0.4	25±2.9	155±18.4
Cerastroderma edule	5		31±1	35±6.2	371±68.5
Station 2					
Palaemon elegans	5	0.29±0.05		21±4	109±19.5
Crangon crangon	3	1.03±0.06		68±5.7	310±9.4
Zostera marina	3			31±3.2	10.1±2.18
Station 3					
Mytilus edulis	5		54±23	71± 6	499±51
Littorina littorea	5		20±1	31± 3	170±11
Palaemon elegans	2	0.23±0.03		17±0.6	80±13
Crangon crangon	2	0.88±0.09		30±16	135±74
Zostera marina	3			8.8±0.8	38±5
Station 4					
Littorina littorea	5		20±0.2	43±11	208±53
Crangon crangon	1	0.381		49	181
Station 5					
Littorina littorea	5		20±0.3	40±5	247±24
Cerastroderma edule	5		22±0.2	133±24	1123±176
Crangon crangon	3	1.45±0.5		99±15	437±73
Zostera marina	3			3.2±0.9	24±3
Station 6					
Littorina littorea	5		19±0.5	41±3	301±18
Cerastroderma edule	5		24±0.6	83±16	831±127
Carcinus maenas	1		46	132	689
Palaemon elegans	2	0.19±0.04		42±13	214±8
Station 7					
Mytilus edulis	1		57	66	372
Littorina littorea	5			71±8	438±41
Cerastroderma edule	1		28	122	996
Carcinus maenas	1		13	71	305
Palaemon elegans	4	0.22±0.02		38±7	209±53
Zostera marina	3			3.7±0.4	23± 2
Station 8					
Littorina littorea	5		19±0.4	48±6	275±33
Cerastroderma edule	2		30±1	125±3	1160±133
Carcinus maenas	2		34±0.5	88±13	385±11

Crangon crangon	1	0.171		77	300
Zostera marina	3			7±0.6	38±2
Chordaria flagelliformis	3			6±0.3	31±1
Station 9					
Littorina littorea	5		20±0.4	42±4	234±14
Cerastroderma edule	5		27±1.2	119±5	1002±23
Palaemon elegans	5	0.25±0.02		30±8	139±36
Crangon crangon	5	1.03±0.08		81±12	340±68
Zostera marina	3			4±0.1	22±1
Chordaria flagelliformis	3			10±1.4	49±4
Station 10					
Littorina littorea	2		21±1.5	40±14	250±55
Carcinus maenas	1		17	32	299
Palaemon elegans	5	0.17±0.02		28±5	121±24
Crangon crangon	5	1.36±0.12		84±13	423±50
Zostera marina	3			14±1.9	67±8
Station R1					
Mytilus edulis	5		43±1.9	15±2.4	170±11
Cerastroderma edule	1		23	22	307
Chordaria flagelliformis	2			4±0.6	12±2.7
Station R2					
Cerastroderma edule	2		18±8	9±3	149±14
Chordaria flagelliformis	1			1.6	6.4

Table S3. Details for the main species sampled in the 2016-sampling at Funen reference stations and Harboøre South and North.

Species	n	Height, width or length (mm)	Collection date	[Hg] (ng g^{-1} ww)	[Hg] (ng g^{-1} dw)
Station B1			May 20		
Mytilus edulis	5	39±4		9.7±0.4	56±2
Littorina littorea	5	21±1.2		14±1	55±6
Fucus vesiculosus	5			1.5±0.2	9.7±0.9
Station B2			October 14		
Mytilus edulis	19	43±2		9.5±0.8	67±4
Littorina littorea	18	19±0.8		18±1	64±4
Fucus vesiculosus	18			2.5±0.27	11±1
Station Bo			June 3		
Mytilus edulis	20	41±2		10±0.4	61±2
Littorina littorea	20	23±0.5		15±0.7	55±3
Carcinus maenas	8	6.78±1.46		10.7±1.5	48±3
Fucus vesiculosus	20			2.3±0.14	11±0.5
Station F1			May 20		
Mytilus edulis	5	43±6		16±1	117±10
Littorina littorea	5	21±1.3		14±0.8	55±2
Fucus vesiculosus	20			1.9±0.17	12±1
Station F2			October 14		
Mytilus edulis	18	50±2		14±1.2	124±7
Littorina littorea	18	21±0.4		18±1	67±4
Fucus vesiculosus	5			1.0±0.1	7.6±0.6
Station K1			May 6		
Mytilus edulis	5	39±2		12±0.8	64±2
Littorina littorea	5	23±0.6		13±1	51±4
Fucus vesiculosus	3			1.5±0.3	10±2
Station K2			September 14		
Mytilus edulis	23	37±1.5		12±1.3	63±7
Littorina littorea	22	22±0.6		23±2	83±8
Fucus vesiculosus	23			2.2±0.13	11±0.5
Station K3			July 2017		
Paleamon elegans	10	0.90±0.08[#]		16.6±5.7	66±23
Crangon crangon	20	0.65±0.07[#]		11.3±0.8	47±3
Station N1			May 6		
Mytilus edulis	5	32±2		8.4±0.5	46±2
Littorina littorea	5	24±1		15±0.9	62±5
Fucus vesiculosus	3			1.3±0.1	10±0.2

Station N2			September 14		
Mytilus edulis	23	36±1		7.3±0.17	37±1
Littorina littorea	20	25±0.4		19±1.5	69±5
Fucus vesiculosus	23			2.4±0.11	12±0.6
Station Harboøre N			June 11		
Mytilus edulis	20	52±1		65±2	315±15
Littorina littorea	20	23±0.4		80±5	274±15
Carcinus maenas	20	19.5±5.2		57±8	176±19
Fucus vesiculosus	20			4.6±0.14	20±0.5
Station Harboøre S			June 11		
Mytilus edulis		Not present			
Littorina littorea	20	26±0.6		130±4	443±15
Carcinus maenas	13	9.7±5.3		107±11	364±20
Zostera marina	20			6.1±0.4	40±3
Chordaria flagelliformis	20			3.9±0.3	34±1.1
Fucus vesiculosus	20			7.6±0.2	38±1

[#]: Weight in g.

Table S4. Details for the supplementary species collected in the 2014-sampling (October 30) along Harboøre Tange and the 2 Funen reference sites R1 and R2 (February 4, 2015).

Species	n	Total weight (g ww)	Height, width or length (mm)	[Hg] (ng g^{-1} ww)	[Hg] (ng g^{-1} dw)
Station 1					
Arenicola marina	2	0.805±0.003		15±1	66±30
Nereis/hediste sp.	5	0.112±0.027		1.4±0.4	9±2
Crassostrea gigas	4		105±12	24±8	297±14
Polyplacora	2	0.051±0.017		24±5	157±41
Fucus spiralis	2			6.5±1.2	21±3
Station 2					
Syngnathus rostellatus	1	0.62		31	126
Fucus spiralis	3			9.3±1.2	44±4
Polysiphonia sp.	3			14±2	87±2
Ulva lactuca	3			4.4±0.2	34±1
Station 5					
Arenicola marina	1	0.192		56	139
Nereis/hediste sp.	5	0.30±0.05		49±9	257±26
Mya arenaria	3		55±8	99±3	921±6
Station 6					
Polyplacora sp.	1	0.018		a	228
Station 7					
Pomatoschistus minutus	2	0.69±0.10		103±34	447±142
Arenicola marina	5	0.76±0.35		71±8	160±45
Crassostrea gigas	1		91	72	520
Station 8					
Pomatoschistus minutus	1	0.254		95	411
Arenicola marina	4	0.21±0.06		49±3	193±36
Nereis/hediste sp.	4	0.12±0.07		30±17	311±73
Crepidula fornicata	5		38±0.6	63±16	369±96
Praunus flexuosus	1	0.025		76	946
Station 9					
Pomatoschistus minutus	5	0.34±0.3		78±13	316±50
Syngnathus rostellatus	1	0.688		118	460
Gasterosteus aculeatus	1	1.02		87	322
Arenicola marina	1	2.19		32	163
Mya arenaria	1		22	101	685
Station 10					
Pomatoschistus minutus	4	0.92±0.32		45±20	290±105
Ulva latuca	4			30±13	158±71
Station R1					
Fucus spiralis	3			2.6±0.2	8.9±0.2
Station R2					
Fucus spiralis	2			2.9±0.5	10±1.6

Table S5. Details for the supplementary species sampled in the 2016-sampling at Funen reference stations and Harboøre South and North.

Species	n	Weight (g)	Collection date	[Hg] (ng g^{-1} ww)	[Hg] (ng g^{-1} dw)
Station B1			May 20		
Palaemon adspersus	5	1.12±0.16		5.0±0.7	19.6±2.8
Gammarus locusta	5	0.070±0.016		6.1±0.6	22.8±2.3
Station Bo			June 3		
Palaemon adspersus	20	0.311±0.026		13.9±0.9	56±3
Gammarus locusta	20	0.040±0.009		6.1±0.3	19.7±0.5
Praunus flexuosus	20	0.085±0.006		14.9 0.8	64±4
Station F1			May 20		
Palaemon adspersus	5	1.12±0.16		6.9±1.1	26.4±3.8
Idotea sp.	5	0.066±0.023		5.4±0.9	18.3±3.1
Gammarus locusta	5	0.062±0.016		7.7±0.8	31±5
Praunus flexuosus	3	0.089±0.002		9.0±0.4	37±2
Station K1			May 6		
Palaemon adspersus	5	0.94±0.34		12±1.3	63±7
Idotea sp.	3	0.049±0.022		4.2±0.82	16±5
Gammarus locusta	2	0.047±0.015		4.9±0.10	19.4±2.7
Station N1			May 6		
Palaemon adspersus	5	1.02±0.26		10.5±1.0	40±4
Idotea sp.	5	0.029±0.06		5.6±1.1	18±2
Gammarus locusta	5	0.065±0.014		4.2±0.4	18.6±1.4
Station Harboøre S			June 11		
Idotea sp.	20	0.022±0.004		65±3	219±9
Gammarus locusta	20	0.039±0.004		62±4	245±15
Ulva lactuca	20			7.3±0.5	56±2

Table S6. Exact locations of the sampling sites.

	North	East
2014-2015		
Station 1	56°40.265’	8°12.762’
Station 2	56°39.621’	8°12.812’
Station 3	56°39.384’	8°12.934’
Station 4	56°38.990’	8°11.655’
Station 5	56°38.923’	8°11.541’
Station 6	56°38.348’	8°11.286’
Station 7	56°38.236’	8°11.235’
Station 8	56°38.134’	8°11.204’
Station 9	56°38.051’	8°11.176’
Station 10	56°37.934’	8°11.214’
Reference 1	55°32.019’	10°31.700’
Reference 2	55°32.704’	10°29.922’
2016		
Harboøre North	56°40.259’	8°12.819’
Harboøre South	56°38.066’	8°11.213’
Kerteminde (**K**)	55°26.610’	10°40.314’
Nyborg (**N)**	55°20.315’	10°48.333’
Ballen (**B**)	55°2.516’	10°28.052’
Faldsled (**F**)	55°8.174’	10°9.582’
Bogense (**Bo**)	55°34.029’	10°4.478’

Table S7. Literature values for total mercury in some of the species found along Harboøre Tange. Where given in the references, sediment concentrations are also presented.

Species	Hg in organism		Hg in sediment	Site	Reference
	ng Hg g^{-1} dw	ng Hg g^{-1} ww	ng Hg g^{-1} dw		
Fucus spiralis	15-80		3-112	Northwestern Portugal	Cairrao et al., 2007
Fucus vesiculosus	35-150		7-112	Northwestern Portugal	Cairrao et al., 2007
	45±2			Mondego Estuary, Portugal	Henriques et al., 2015
	11			Sommarøy, Norway	Maehre et al., 2014
		1.89±0.50		Baltic, western Pomerania	Rudel et al., 2010
		7.68±1.99		North Sea, Schleswig-Holstein	Rudel et al., 2010
		13.4±3.46		North Sea, Lower Saxony	Rudel et al., 2010
Polysiphonia fucoides	37			Southern Baltic, Poland	Zalewska and Danowska, 2017
Ulva lactuca		6 - 50		Sao Estuary, Portugal	Lillebo et al., 2011
	29±2			Mondego Estuary, Portugal	Henriques et al., 2015
	5			Trondheimsfjorden, Norway	Maehre et al., 2014
	110			El-Mex Bay, Egypt	Mohamed and Khaled, 2005
	1232			Eastern Harbour, Egypt	Mohamed and Khaled, 2005
	1168			Abu-Qir, Egypt	Mohamed and Khaled, 2005
	58±29		1000±510	Guyamas Bay, Mexico	Green-Ruiz et al., 2005
Zostera marina	15			Great Bay Estuary	Pannhorst and Weber, 1999
	41-45			Great Bay Estuary	Morrison and Weber, 1997
	15-32			Gdansk Bay, Poland	Falandysz, 1994
Arenicola marina	10-140		50 - 32000	Northern Spain	Casado-Martinez et al., 2008
Nereis/hediste diversicolor	52-164		152 - 945	Schelde Estuary	Muhaya et al., 1997
	23-466		16 - 855	Pialassa Lagoons, Adriatic Sea	Virgilio et al., 2003
		6-200	70 - 75000	Mondego Estuary, Portugal	Cardoso et al., 2009
		20-130	50 - 50000	Ria de Aveiro lagoon, Portugal	Coelho et al., 2008
		15-73	3 - 540	Sao Estuary, Portugal	Lillebo et al., 2011
	52-164		144 -1890	Schelde Estuary	Baeyens et al., 1998
		140-270	470-570$	Wadden Sea	Bietz et al., 1997
	139±31		35-2529	Narragansett Bay, USA	Taylor et al., 2012
Littorina littorea	82-112		8	Gulf of Maine	Chen et al., 2009
	100-196		69	Gulf of Maine	Chen et al., 2009
	168		424	Gulf of Maine	Chen et al., 2009
	180-464		1135	Gulf of Maine	Chen et al., 2009
	90±4		35-2529	Narragansett Bay, USA	Taylor et al., 2012
	600±200		100	Georgia salt marshes	Horne et al., 1999
	33100±7800		15000	Georgia salt marshes	Horne et al., 1999

Crassostrea gigas		<10-290		Northern Adriatic	Burioli et al., 2017
	110 -380			Entire French coast	Briant et al., 2017
	230		1000±510	Guyamas Bay, Mexico	Green-Ruiz et al., 2005
	120 -270			Ebro Delta, Spain	Ochoa et al., 2013
	97±56			3 Taiwan bays	Chen and Chen, 2003
Mytilus edulis		3.99±0.80		Baltic, western Pomerania	Rudel et al., 2010
		22.7±2.09		North Sea, Schleswig-Holstein	Rudel et al., 2010
		31.5±11.2		North Sea, Lower Saxony	Rudel et al., 2010
	50-660			Entire French coast	Briant et al., 2017
	95±4		40-2630	Narragansett Bay, USA	Taylor et al., 2012
	224		8	Gulf of Maine	Chen et al., 2009
	72-108		69	Gulf of Maine	Chen et al., 2009
	350-860		424	Gulf of Maine	Chen et al., 2009
	232-376		1135	Gulf of Maine	Chen et al., 2009
Mya arenaria	148±11			Narragansett Bay, USA	Taylor et al., 2012
Cerastroderma edule	450		800-1000	Poole Harbour, UK	Aly et al., 2013
		16-41		Sao Estuary, Portugal	Lillebo et al., 2011
		100-270	470-570$^{\$}$	Wadden Sea	Bietz et al., 1997
Gammarus spp.	93±13			Narragansett Bay, USA	Taylor et al., 2012
Crangon crangon	140			Gdansk Bay, Poland	Falandysz, 1994
		33±16		Weser Estuary	Marx and Brunner, 1998
Carcinus maenas					
Muscle		15-170		Sao Estuary, Portugal	Lillebo et al., 2011
Midgut gland		7-140		Sao Estuary, Portugal	Lillebo et al., 2011
Gills		8-58		Sao Estuary, Portugal	Lillebo et al., 2011
	126±12		35-2529	Narragansett Bay, USA	Taylor et al., 2012
	40		8	Gulf of Maine	Chen et al., 2009
	104		69		Chen et al., 2009
	110-224		424		Chen et al., 2009
	104-148		1135		Chen et al., 2009
Sand goby		510		Isle of Man, UK	Geffen et al., 1998
Threespine stickleback	140-220			Benka Lake, Alaska	Willacker et al., 2013
	314-560			Adak Island, Alaska	Kenney et al., 2012
	230 700			San Francisco Bay	Eagles-Smith and Ackerman, 2009
		12 - 110		Gdansk Bay, Poland	Falandysz and Kowalewska, 1993

#: Recalculated from the value in the reference given on wet weight basis.

$: Given on wet weight basis

References

Aly, W., Williams, I.D., Hudson, M.D., 2013. Metal contamination in water, sediment and biota from a semi-enclosed coastal area. Environmental Monitoring and Assessment 185, 3879-3895.

Baeyens, W., Meuleman, C., Muhaya, B., Leermakers, M., 1998. Behaviour and speciation of mercury in the Scheldt estuary (water, sediments and benthic organisms). Hydrobiologia 366, 63-79.

Bietz, H., Mattig, F.R., Becker, P.H., Ballin, U., 1997. Spatial and temporal variation in heavy metal contamination of *Nereis* and *Cerastoderma* in the Wadden Sea. Archive of Fishery and Marine Research 45, 243-254.

Briant, N., Chouvelon, T., Martinez, L., Brach-Papa, C., Chiffoleau, J.F., Savoye, N., Sonke, J., Knoery, J., 2017. Spatial and temporal distribution of mercury and methylmercury in bivalves from the French coastline. Marine Pollution Bulletin 114, 1096-1102.

Burioli, E.A.V., Squadrone, S., Stella, C., Foglini, C., Abete, M.C., Prearo, M., 2017. Trace element occurrence in the Pacific oyster *Crassostrea gigas* from coastal marine ecosystems in Italy. Chemosphere 187, 248-260.

Cairrao, E., Pereira, M.J., Pastorinho, M.R., Morgado, F., Soares, A., Guilhermino, L., 2007. *Fucus* spp. as a mercury contamination bioindicator in costal areas (Northwestern Portugal). Bulletin of Environmental Contamination and Toxicology 79, 388-395.

Cardoso, P.G., Lillebo, A.I., Pereira, E., Duarte, A.C., Pardal, M.A., 2009. Different mercury bioaccumulation kinetics by two macrobenthic species: The bivalve *Scrobicularia plana* and the polychaete *Hediste diversicolor*. Marine Environmental Research 68, 12-18.

Casado-Martinez, M.C., Branco, V., Vale, C., Ferreira, A.M., DelValls, T.A., 2008. Is *Arenicola marina* a suitable test organism to evaluate the bioaccumulation potential of Hg, PAHs and PCBs from dredged sediments? Chemosphere 70, 1756-1765.

Chen, C.Y., Chen, M.H., 2003. Investigation of Zn, Cu, Cd and Hg concentrations in the oyster of Chi-ku, Tai-shi and Tapeng Bay, southwestern Taiwan. Journal of Food and Drug Analysis 11, 32-38.

Chen, C.Y., Dionne, M., Mayes, B.M., Ward, D.M., Sturup, S., Jackson, B.P., 2009. Mercury Bioavailability and Bioaccumulation in Estuarine Food Webs in the Gulf of Maine. Environmental Science & Technology 43, 1804-1810.

Coelho, J.P., Nunes, M., Dolbeth, M., Pereira, M.E., Duarte, A.C., Pardal, M.A., 2008. The role of two sediment-dwelling invertebrates on the mercury transfer from sediments to the estuarine trophic web. Estuarine Coastal and Shelf Science 78, 505-512.

Eagles-Smith, C.A., Ackerman, J.T., 2009. Rapid Changes in Small Fish Mercury Concentrations in Estuarine Wetlands: Implications for Wildlife Risk and Monitoring Programs. Environmental Science & Technology 43, 8658-8664.

Falandysz, J., 1994. Mercury concentrations in benthic animals and plants inhabiting the Gulf of Gdansk, Baltic Sea. Science of the Total Environment 141, 45-49.

Falandysz, J., Kowalewska, M., 1993. Mercury concentration of stickleback *Gasterosteus aculeatus* from the gulf of gdansk. Bulletin of Environmental Contamination and Toxicology 51, 710-715.

Geffen, A.J., Pearce, N.J.G., Perkins, W.T., 1998. Metal concentrations in fish otoliths in relation to body composition after laboratory exposure to mercury and lead. Marine Ecology Progress Series 165, 235-245.

Green-Ruiz, C., Ruelas-Inzunza, J., Paez-Osuna, F., 2005. Mercury in surface sediments and benthic organisms from Guaymas Bay, east coast of the Gulf of California. Environmental Geochemistry and Health 27, 321-329.

Henriques, B., Rocha, L.S., Lopes, C.B., Figueira, P., Monteiro, R.J.R., Duarte, A.C., Pardal, M.A., Pereira, E., 2015. Study on bioaccumulation and biosorption of mercury by living marine macroalgae: Prospecting for a new remediation biotechnology applied to saline waters. Chemical Engineering Journal 281, 759-770.

Horne, M.T., Finley, N.J., Sprenger, M.D., 1999. Polychlorinated biphenyl- and mercury-associated alterations on benthic invertebrate community structure in a contaminated salt marsh in southeast Georgia. Archives of Environmental Contamination and Toxicology 37, 317-325.

Kenney, L.A., von Hippel, F.A., Willacker, J.J., O'Hara, T.M., 2012. Mercury concentrations of a resident freshwater forage fish at Adak Island, Aleutian Archipelago, Alaska. Environmental Toxicology and Chemistry 31, 2647-2652.

Lillebo, A.I., Coelho, J.P., Pato, P., Valega, M., Margalho, R., Reis, M., Raposo, J., Pereira, E., Duarte, A.C., Pardal, M.A., 2011. Assessment of Mercury in Water, Sediments and Biota of a Southern European Estuary (Sado Estuary, Portugal). Water Air and Soil Pollution 214, 667-680.

Maehre, H.K., Malde, M.K., Eilertsen, K.E., Elvevoll, E.O., 2014. Characterization of protein, lipid and mineral contents in common Norwegian seaweeds and evaluation of their potential as food and feed. Journal of the Science of Food and Agriculture 94, 3281-3290.

Marx, H., Brunner, B., 1998. Heavy metal contamination of North Sea shrimp (*Crangon crangon* L.). Zeitschrift Fur Lebensmittel-Untersuchung Und-Forschung a-Food Research and Technology 207, 273-275.

Mohamed, L.A., Khaled, A., 2005. Comparative study of heavy metal distribution in some coastal seaweeds of Alexandria, Egypt. Chemistry and Ecology 21, 181-189.

Morrison, M.A., Weber, J.H., 1997. Comparison of digestion media for speciation of mercury in the seagrass *Zostera marina* L. followed by quantitation by hydride generation atomic fluorescence spectrometry. Environmental Science & Technology 31, 3325-3329.

Muhaya, B.B.M., Leermakers, M., Baeyens, W., 1997. Total mercury and methylmercury in sediments and in the polychaete *Nereis diversicolor* at Groot Buitenschoor (Scheldt estuary, Belgium). Water Air and Soil Pollution 94, 109-123.

Ochoa, V., Barata, C., Riva, M.C., 2013. Heavy metal content in oysters (*Crassostrea gigas*) cultured in the Ebro Delta in Catalonia, Spain. Environmental Monitoring and Assessment 185, 6783-6792.

Pannhorst, T.S., Weber, J.H., 1999. Speciation of mercury in eelgrass (*Zostera marina* L.): a seasonal study in the Great Bay Estuary, New Hampshire. Applied Organometallic Chemistry 13, 461-467.

Rudel, H., Fliedner, A., Kosters, J., Schroter-Kermani, C., 2010. Twenty years of elemental analysis of marine biota within the German Environmental Specimen Bank-a thorough look at the data. Environmental Science and Pollution Research 17, 1025-1034.

Taylor, D.L., Linehan, J.C., Murray, D.W., Prell, W.L., 2012. Indicators of sediment and biotic mercury contamination in a southern New England estuary. Marine Pollution Bulletin 64, 807-819.

Virgilio, M., Baroncini, N., Trombini, C., Abbiati, M., 2003. Relationships between sediments and tissue contamination and allozymic patterns in Hediste diversicolor (Polychaeta Nereididae) in the Pialassa lagoons (north Adriatic Sea). Oceanologica Acta 26, 85-92.

Willacker, J.J., von Hippel, F.A., Ackerly, K.L., O'Hara, T.M., 2013. Habitat-specific foraging and sex determine mercury concentrations in sympatric benthic and limnetic ecotypes of threespine stickleback. Environmental Toxicology and Chemistry 32, 1623-1630.

Zalewska, T., Danowska, B., 2017. Marine environment status assessment based on macrophytobenthic plants as bio-indicators of heavy metals pollution. Marine Pollution Bulletin 118, 281-288.

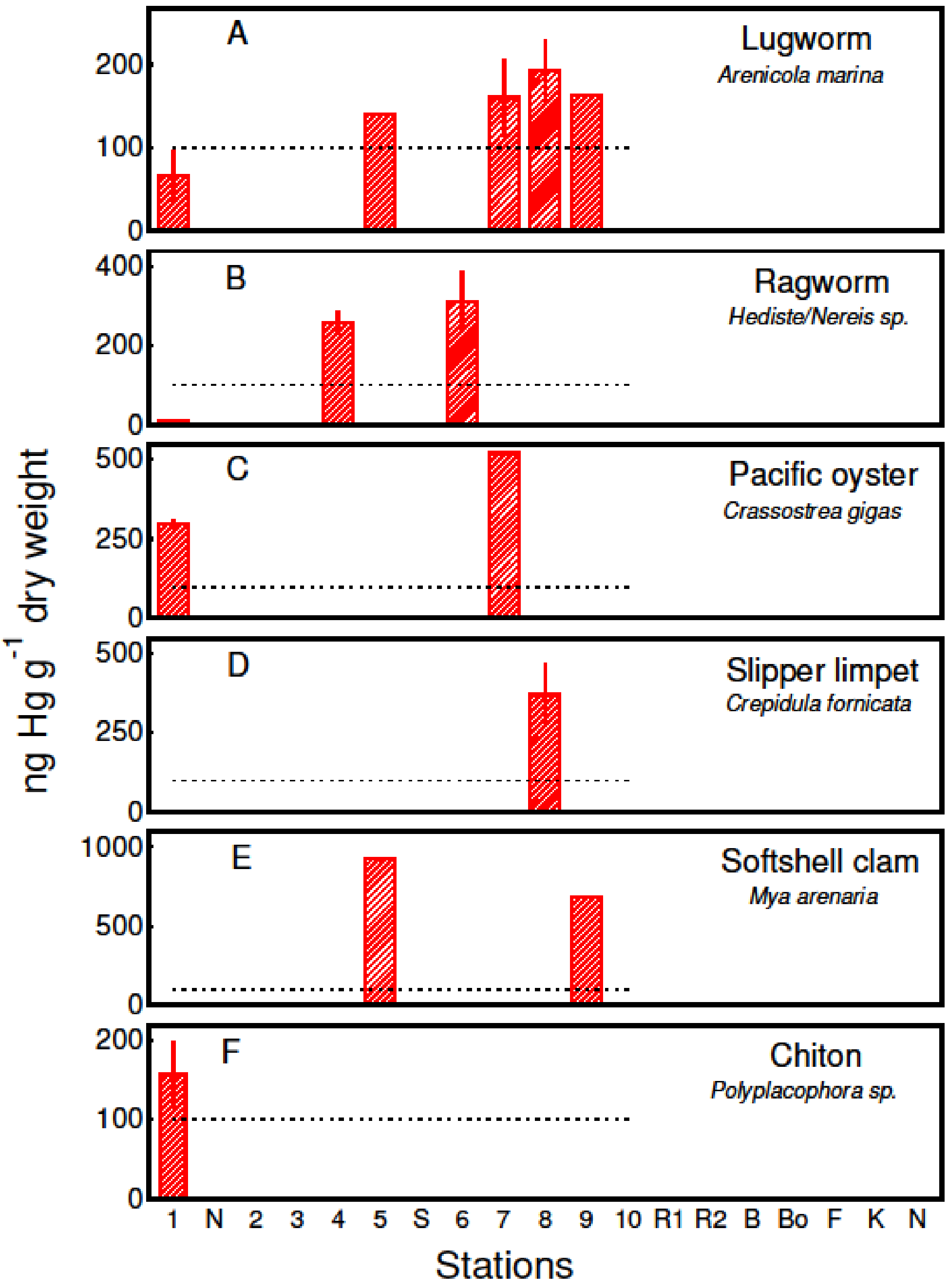

Fig. S1. Mercury concentrations in the less abundant species collected at samplings along Harboøre Tange and at the Funen reference sites 2014-2016. Number of individual organisms given in Table S4 and S5. Symbols as in Fig. 4.

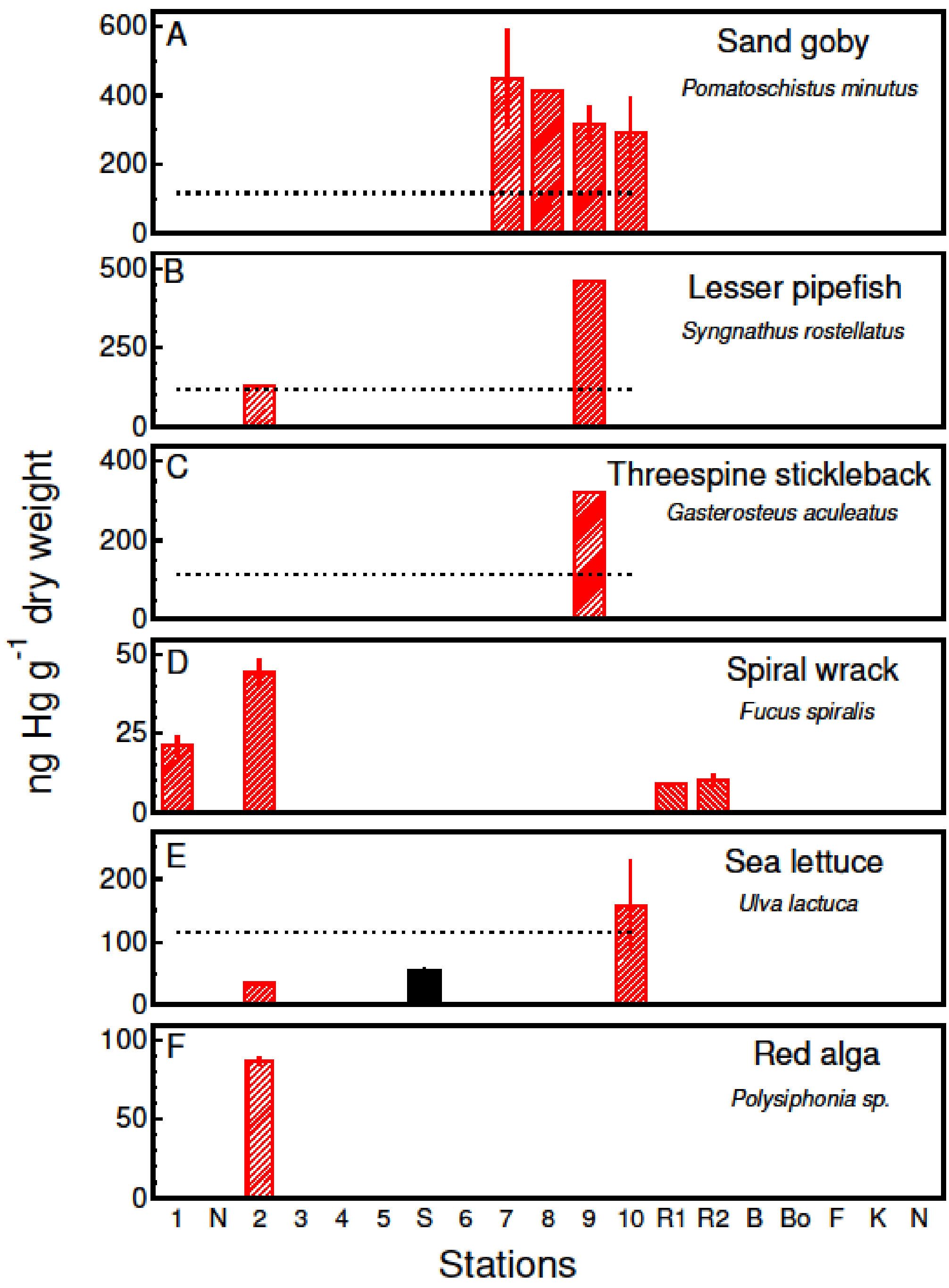

Fig. S2. Mercury concentrations in the less abundant species collected at samplings along Harboøre Tange and at the Funen reference sites 2014-2016. Number of individual organisms given in Table S4 and S5. Symbols as in Fig. 4.

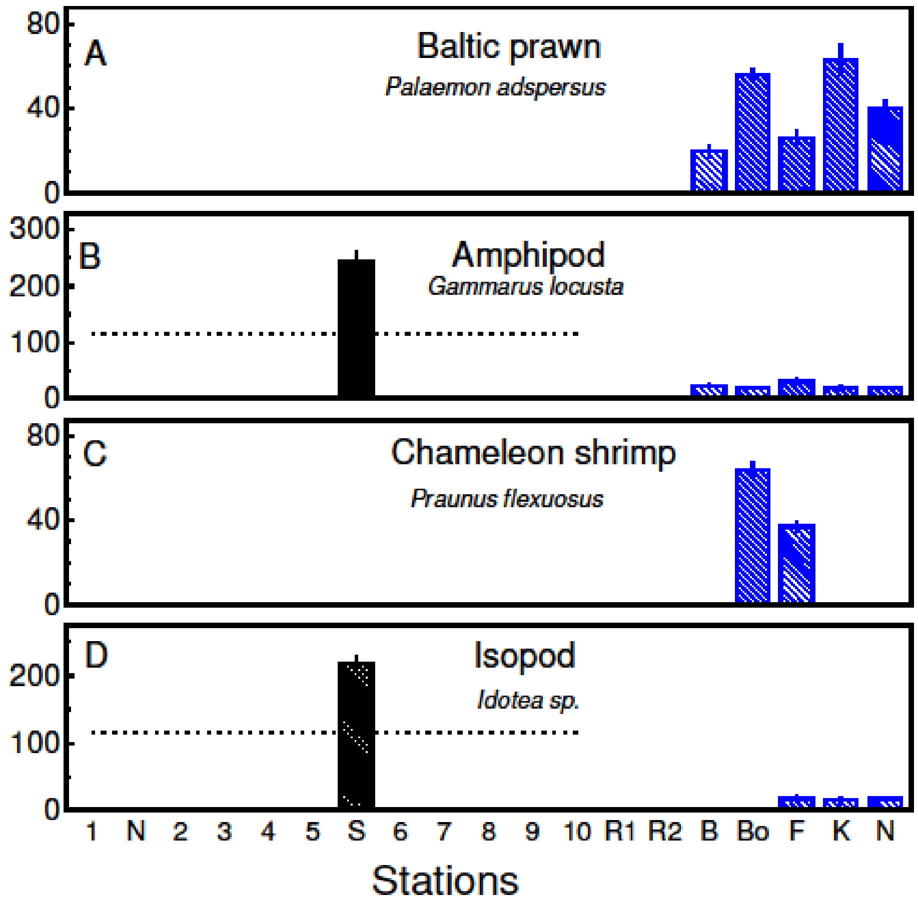

Fig. S3. Mercury concentrations in the less abundant species collected at samplings along Harboøre Tange and at the Funen reference sites 2014-2016. Number of individual organisms given in Table S4 and S5. Symbols as in Fig. 4.