Supplement: Additional Material

Table S1. Classification of the 21 open ocean water regions. Additionally the number of ingoing in-situ measurements of bromoform and the Root Mean Square Error (RMSE) in pmol L^{-1} for the *Robust Fit (RF)* and *Ordinary Least Square (OLS)* regression techniques are shown. The orders of the regression method used are marked by crosses. Options are: in dependency of latitude (lat) and longitude (lon) or only latitude. Regions with no crosses indicate that the linear regression of neighboring open ocean regions of the same latitudinal band is used for filling the missing values.

	area				regression with lat		regression with lon/lat		RMSE	
region	longitude	latitude	basin	observations	*RF*	*OLS*	*RF*	*OLS*	*RF*	*OLS*
1	180°E - 180°W	90° - 66°N	Arctic	30	x				2.87	7.19
2	130°E - 120°W	66° - 40°N	Pacific	369		x	x		0.32	1.69
3	100°E - 77°W	40° - 5°N	Pacific	617			x	x	0.65	1.08
4	102°E - 80°W	5°N - 0°	Pacific	228			x	x	0.43	1.65
5	102°E - 80°W	0° - 5°S	Pacific	28			x	x	2.16	4.52
6	70°E - 129°W	5° - 40°S	Pacific	137			x	x	2.09	2.06
7	65°E - 140°W	40° - 66°S	Pacific	212					1.82	7.39
8	65°E - 140°W	66° - 90°S	Pacific	471					0.74	1.99
9	93°W - 23°E	66° - 40°N	Atlantic	1398	x	x			1.31	16.55
10	98°W - 42°E	40° - 5°N	Atlantic	892			x		1.55	13.01
11	50°W - 9°E	5°N - 0°	Atlantic	57		x	x		7.42	3.77
12	50°W - 9°E	0° - 5°S	Atlantic	112		x	x		0.30	9.15
13	57°W - 7°E	5° - 40°S	Atlantic	213			x	x	1.67	0.87
14	65°W - 20°E	40° - 66°S	Atlantic	266					1.82	7.39
15	65°W - 20°E	66° - 90°S	Atlantic	6					0.74	1.99
16	38° - 98°E	40° - 5°N	Indic	7				x	1.10	38.0
17	42° - 98°E	5°N - 0°	Indic	-					0.83	2.59
18	40° - 100°E	0° - 5°S	Indic	-					6.39	8.91
19	34° - 129°E	5° - 40°S	Indic	3					0.58	13.01
20	20° - 140°E	40° - 66°S	Indic	91					1.82	7.39
21	20° - 140°E	66° - 90°S	Indic	-					0.74	1.99
Global *open ocean* water				5137						

Table S2. Classification of the 21 open ocean atmosphere regions. Additionally the number of ingoing in-situ measurements and the Root Mean Square Error (RMSE) in ppt for the *Robust Fit* (*RF*) regression and *Ordinary Least Square* (*OLS*) regression techniques are shown. The orders of the regression method used are marked by crosses. Options are: in dependency of latitude (lat) and longitude (lon) or only latitude. Regions with no crosses indicate that the linear regression of neighboring open ocean regions of the same latitudinal band is used for filling the missing values.

	area				regression with lat		regression with lon/lat		RMSE	
region	longitude	latitude	basin	observation	*RF*	*OLS*	*RF*	*OLS*	*RF*	*OLS*
1	180°E - 180°W	90° - 60°N	Arctic	16	x				0.80	0.91
2	130°E - 120°W	60° - 30°N	Pacific	428		x	x		0.12	0.22
3	100°E - 77°W	30° - 10°N	Pacific	160			x	x	0.17	0.29
4	102°E - 80°W	10°N - 0°	Pacific	219			x	x	0.22	0.61
5	102°E - 80°W	0° - 10°S	Pacific	131		x	x		0.83	0.73
6	70°E - 129°W	10° - 30°S	Pacific	99		x	x		0.24	0.44
7	65°E - 140°W	30° - 60°S	Pacific	392	x				0.32	0.39
8	65°E - 140°W	60° - 90°S	Pacific	732					0.20	0.49
9	93°W - 23°E	60° - 30°N	Atlantic	692			x		0.47	1.10
10	98°W - 42°E	30° - 10°N	Atlantic	503		x			0.43	2.87
11	50°W - 9°E	10°N - 0°	Atlantic	151		x	x		1.31	6.56
12	50°W - 9°E	0° - 10°S	Atlantic	55		x			1.18	1.32
13	57°W - 7°E	10° - 30°S	Atlantic	100		x	x		0.03	0.05
14	65°W - 20°E	30° - 60°S	Atlantic	126					0.34	0.39
15	65°W - 20°E	60° - 90°S	Atlantic	50					0.20	0.49
16	38° - 98°E	30° - 10°N	Indic	-					0.43	5.55
17	42° - 98°E	10°N - 0°	Indic	-					0.57	2.98
18	40° - 100°E	0° - 10°S	Indic	-					1.18	1.08
19	34° - 129°E	10° - 30°S	Indic	-					0.24	0.45
20	20° - 140°E	30° - 60°S	Indic	69					0.34	0.39
21	20° - 140°E	60° - 90°S	Indic	136					0.20	0.49
Global *open ocean* atmosphere				4059						

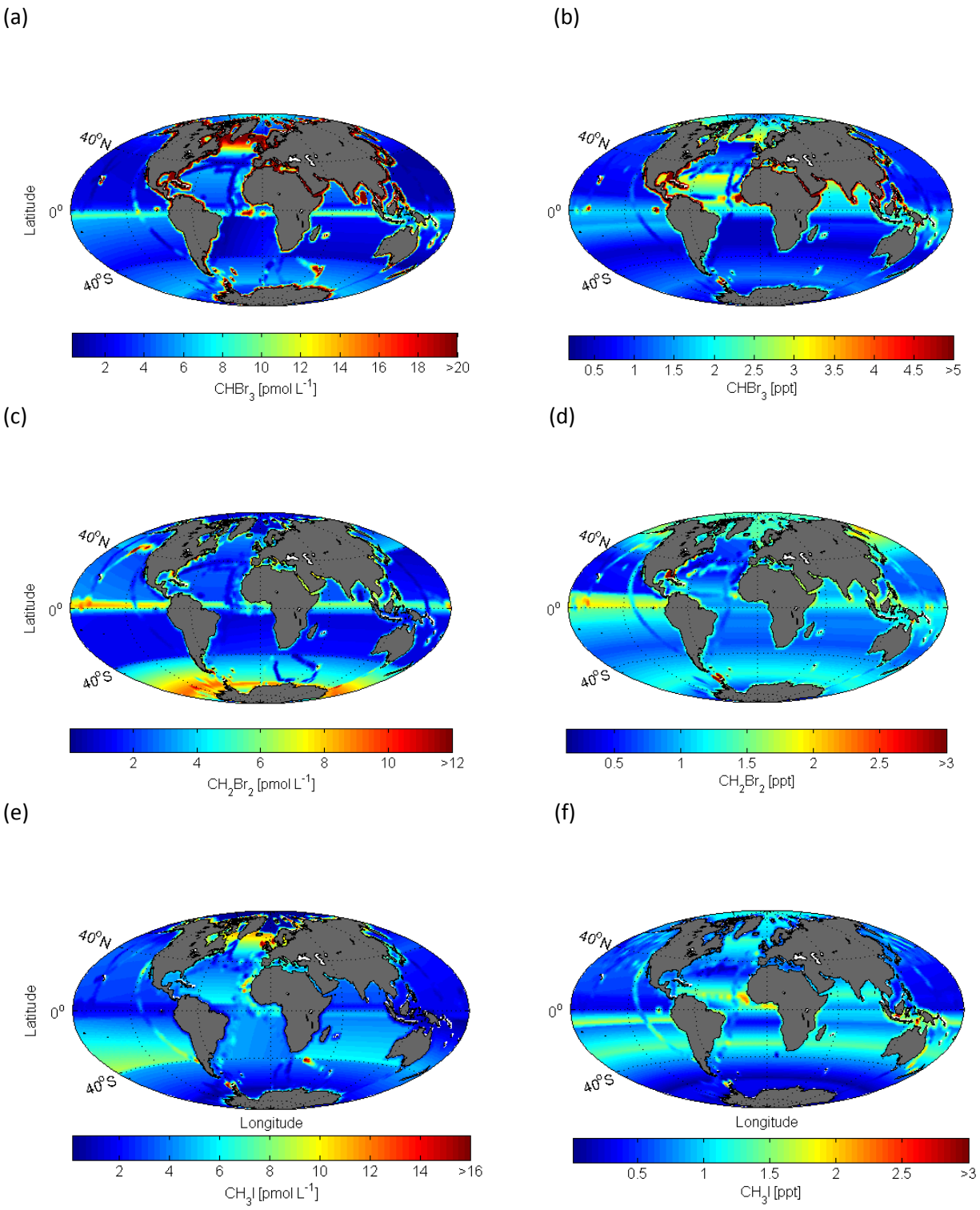

Figure S3. Global climatological marine concentrations in pmol L^{-1} and atmospheric mixing ratios in ppt maps for bromoform (a,b), dibromomethane (c,d) and methyl iodide (e,f) based on the *OLS* analyses.