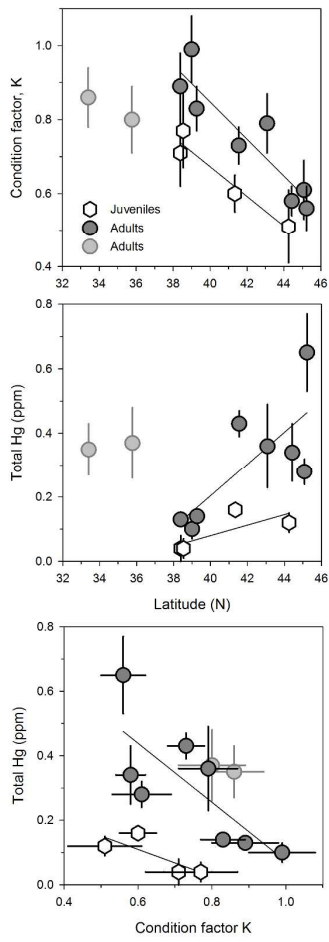


## Supporting Information

Table S1: MeHg concentrations in seawater and on particles as well as partition coefficients from either published studies or from this study. Notes: n= number of sampling locations, including multiple sampling times; \* = average value calculated using  $K_D$  in the reference

	Latitude °N	N	Dissolved MeHg (pg L <sup>-1</sup> )	Particulate MeHg (µg g <sup>-1</sup> )	$K_d \times 10^4$ (L kg <sup>-1</sup> )	Log <sub>10</sub> $K_D$	Reference
Bay of Fundy, NB, Canada; 2001/02	45.2	6	40.1	0.9	2.3	4.4	(Sunderland et al. 2010)
Bar Harbor, ME; 2013	44.3	4	862.5 ± 541.6	13.4 ± 10.9	1.7	4.2	(Seelen et al. 2015)
Mt Desert Is, ME; 2013	44.3	4	782.3 ± 361.1				This study
Wells, ME, 2009	43.3	6	42.1 ± 32.1	2.17 ± 0.18	5.1	4.7	(Balcom et al. 2015)
Wells, ME 2008	43.3	3	1.0	0.14	14	5.1	(Chen et al. 2014)
Portsmouth, NH, 2009	43.1	6	16.0 ± 4.0	0.75 ± 0.27	4.7	4.7	This study
Portsmouth, NH; 2008	43.1	3	6.0	0.39	6.5	4.8	(Chen et al. 2014)
Waquoit Bay, MA; 2008	41.6	3	10.0	2.59	26	5.4	(Chen et al. 2014)
Buzzards Bay, MA; 2008	41.5	3	6.0	2.85	47	5.7	(Chen et al. 2014)
Bold Point, RI; 2008	41.8	3	2.0	15.16	760	6.9	(Chen et al. 2014)
Barn Island, CT; 2013	41.3	4	320.9 ± 190.6	4.77	5.2	4.7	(Seelen et al. 2015)
Barn Island, CT; 2008	41.3	3	4.0	2.13	53	5.7	(Chen et al. 2014)
Waterford, CT, 2013	41.3	4	30.1 ± 18.1	0.67 ± 0.16	2.2	4.3	This study
Old Saybrook, CT; 2008	41.3	3	-	0.42			(Chen et al. 2014)
Milford, CT; 2008	41.2	3	4.0	0.5	13	5.1	(Chen et al. 2014)

Hudson estuary (Harbor), NY; 2002/03	40.6	6	12.0 ± 6.0	3.03 ± 2.25	25	5.4	(Balcom et al. 2008)
Poquott, NY; 2013	40.9	4	42.1 ± 8.0	0.05 ± 0.10	0.12	3.1	This study
Hudson estuary (Jamaica Bay); 2002/03	40.5	3	22.1 ± 12.0	6.36 ± 5.46	29	5.5	(Balcom et al. 2008)
Hudson estuary (Jamaica Bay); 2008	40.5	3	16.0	1.50	9.4	5.0	(Chen et al. 2014)
Delaware River estuary; DE; 20011/12	39.7	18	46.1 ± 42.1	0.82 ± 0.38	1.8	4.3	(Gosnell et al. 2015)
Mid-Chesapeake Bay; 2005/06	38.7	8	102.3 ± 108.3				(Hollweg et al. 2009)
Patuxent River, MD; 1993, >7ppt	38.3	6	16.0	1.36	8.5	4.9	(Benoit et al. 1998)
Parker Ck, MD, Chesapeake Bay; 2013	38.3	4	26.1 ± 8.0	0.74 ± 0.42	2.8	4.5	This study
Patuxent River, MD; 2013	38.3	4	40.1 ± 38.1	3.99 ± 4.71	10	5.0	This study
Lower Chesapeake Bay, MD; 2005/06	37.3	4	60.2 ± 50.1				(Hollweg et al. 2009)
Winyah Bay Estuary, SC, 1999	33.3	3	24.1				(Guentzel and Tsukamoto 2001)



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**Figure S1.** Relationships between condition factor (K) and latitude (top); total Hg (THg) and latitude (middle), and K and THg (bottom).