Supplement of

Organic Iron Complexes Enhance Iron Transport Capacity along Estuarine Salinity Gradients

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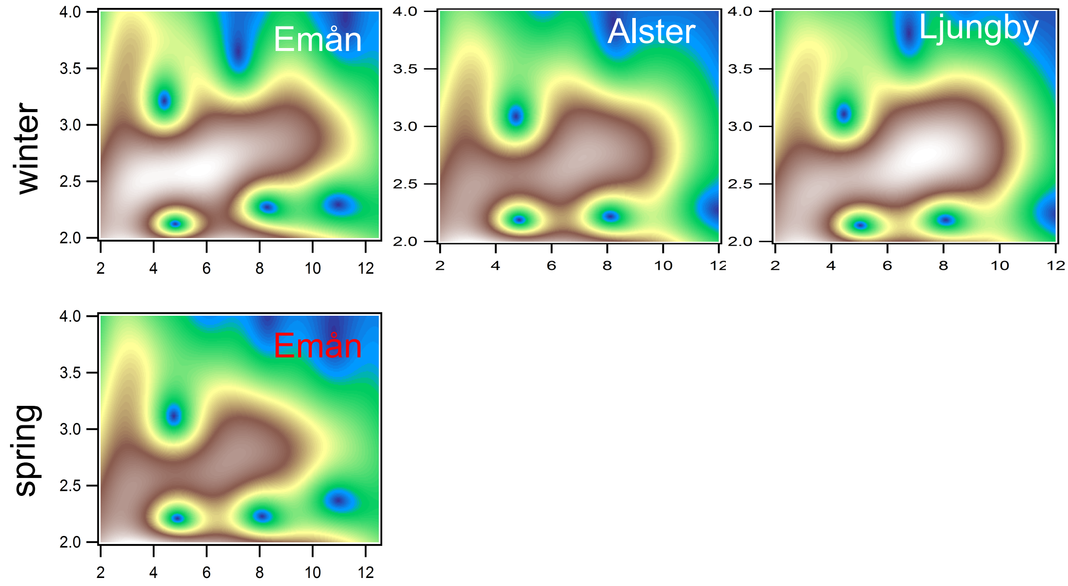
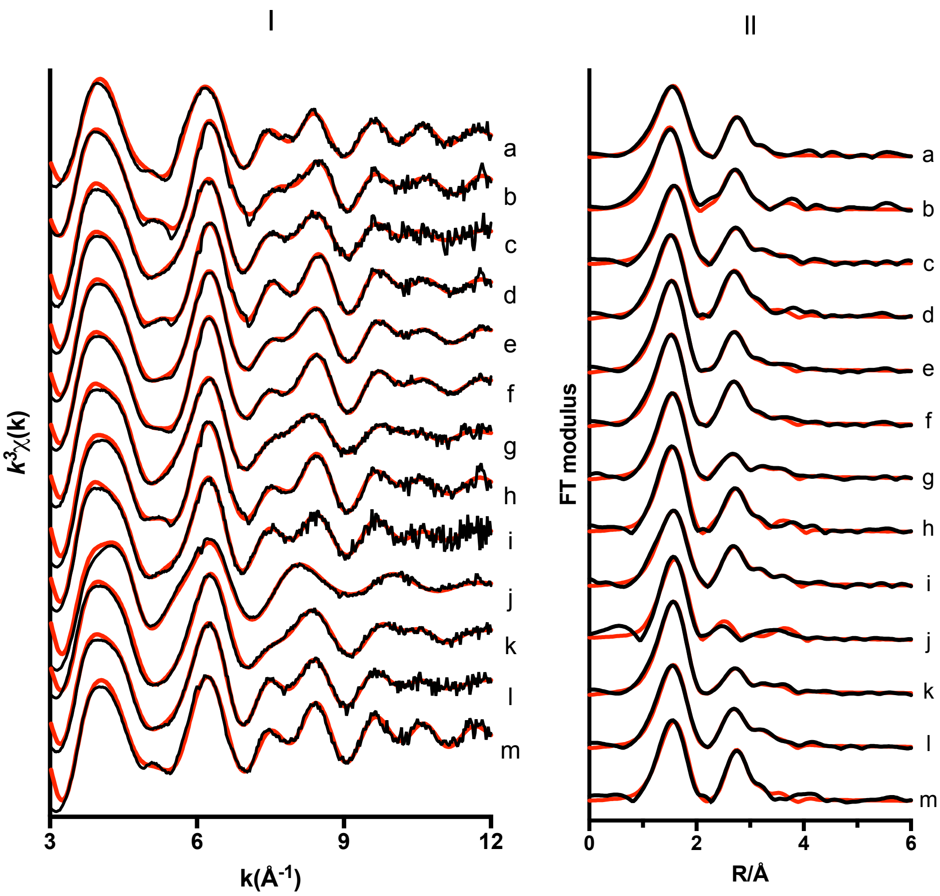


Figure S1: High resolution WT modulus (η= 4, σ= 2) of EXAFS data river Emån, Alster and Ljungby (white=autumn, red spring). The samples are plotted as a function of k ($Å^{-1}$) on the x-axis and R (Å) on the y-axis.



20 **Figure S2: k^3-weighted EXAFS spectra (I) and Fourier transformations (II) of all samples (black line) and corresponding model fits (red line): a= Öre river; b= Emån autumn; c= Emån spring; d= Alster; e= Ljungby; f= Lyckeby autumn; g= Lyckeby spring; h= Mörrum autumn; i= Mörrum spring; j= Svineö; k= Biveröd; l= Helge spring and m= Örekil.**

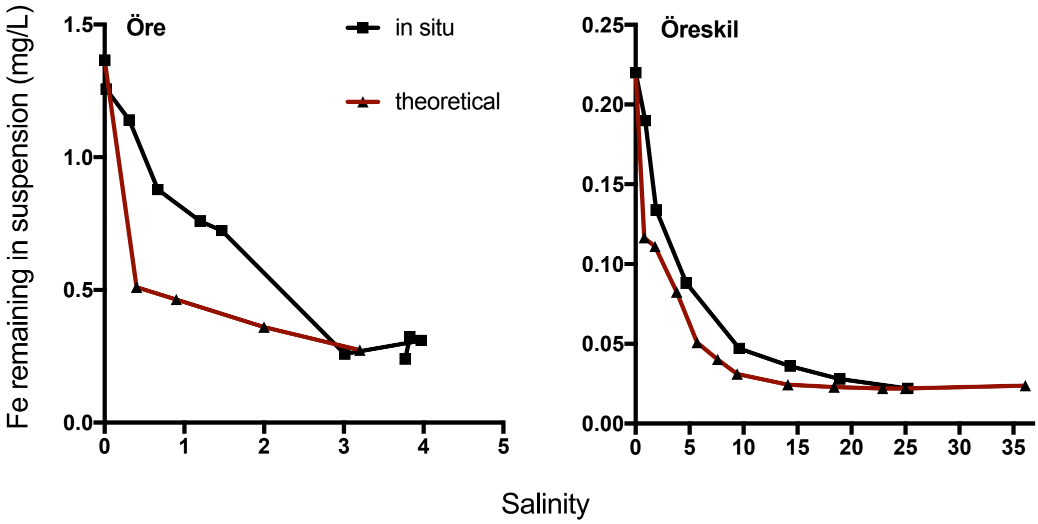


Figure S3: Fe remaining in suspension in response of increasing salinity of *in situ* samples along a transect and theoretical for river Öre and Örekil. The black line denote the *in situ* samples and the brown the theoretical values.

Table S1: k^3-weighted Fe K-edge EXAFS fit results for all samples

Fe-O (SS)			Fe-Fe (SS)		Fe-Fe (SS)		Fe-C (SS)		Fe-C/O (MS)[a]		ΔE^0	Ratio Fe-C/Fe-Fe[b]
CN	R(Å)	σ2	CN	R(Å)	CN	R(Å)	CN	R(Å)	CN	R(Å)	%	
6.0	2.03	0.0150	1.7	3.11	0.8	3.43	0.9	2.91	1.8	3.95	3.7	0.5
6.1	1.98	0.0129	1.9	3.06	0.7	3.41	2.6	2.87	5.2	4.30	0.4	1.4
6.0	2.03	0.0143	1.5	3.12	0.5	3.45	2.5	2.98	5.1	4.23	6.3	1.6
5.9	2.00	0.0132	2.2	3.07	0.7	3.41	2.2	2.89	4.5	4.22	3.7	1.0
6.0	2.01	0.0123	1.9	3.08	0.4	3.41	1.9	2.90	3.8	4.19	3.7	1.0
6.0	2.00	0.0121	2.1	3.08	0.5	3.42	2.0	2.92	4.1	4.20	2.9	1.0
6.0	2.03	0.0131	1.0	3.12	0.4	3.46	2.8	2.99	5.6	4.23	5.8	2.7
5.7	2.02	0.0128	2.4	3.12	0.8	3.40	3.5	2.96	7.0	4.31	7.2	1.5
6.5	2.04	0.0159	1.5	3.13	0.6	3.45	3.0	3.02	6.0	4.26	7.1	2.0
5.4	2.05	0.0132	-	-	-	-	3.1	3.00	6.3	4.32	10	-
6.0	2.01	0.0118	1.2	3.09	0.3	3.44	2.0	2.94	4.0	4.18	3.1	1.7
6.1	2.03	0.0136	1.4	3.11	0.7	3.48	2.3	3.02	4.6	4.21	5.9	1.6
5.9	2.04	0.0140	2.7	3.13	0.8	3.40	2.2	2.93	4.3	4.21	7.1	0.8

Abbreviations were used for coordination number (CN), bond distance (R) and Debye-Waller factor (σ^2). [a]Fe-C/O is correlated to as CN (Fe-C) x 2. Also the Debye-Waller factor of Fe-C/O was correlated to as σ^2 (Fe-C) x 2. The σ^2 for both Fe-Fe was 0.01, adapted from Maillot, et al. (2011) and for Fe-C it was 0.0075 from Sundman, et al. (2014). S_0^2 was set to 0.85. [b]Ratio between the CN of the first Fe-C path and the Fe-Fe path.

Table S2: EXAFS LCF results for the river mouth samples.

Site	Fe-OM	Fe-oxides			LCF ratio	Chi-Sq.
	F(III) bound to Suwannee river fulvic acids	Ferrihydrite	Lepidocrocite	Sum	(Fe-OM/ Fe-oxides)	
River Öre	0.26	0.38	0.1	0.48	0.54	32.3
River Emån	0.24	0.54	0.08	0.62	0.38	22.2
	0.28	0.5	0.06	0.56	0.50	35.4
River Alster	0.22	0.62	0.08	0.7	0.31	17.0
River Ljungby	0.34	0.43	0.1	0.53	0.64	9.9
River Lyckeby	0.3	0.49	0.11	0.6	0.50	9.0
	0.39	0.39	0.05	0.44	0.89	24.9
River Mörrum	0.3	0.46	0.11	0.57	0.53	41.5
	0.47	0.52	0.14	0.66	0.71	20.7
Biverö	0.42	0.36	0.06	0.42	1.00	9.6
Svineö	0.58	-	-	-	-	88.3
River Helge	-	-	-	-	-	-
	0.27	0.52	0.07	0.59	0.46	24.2
River Örekil	0.27	0.43	0.13	0.56	0.47	62.4