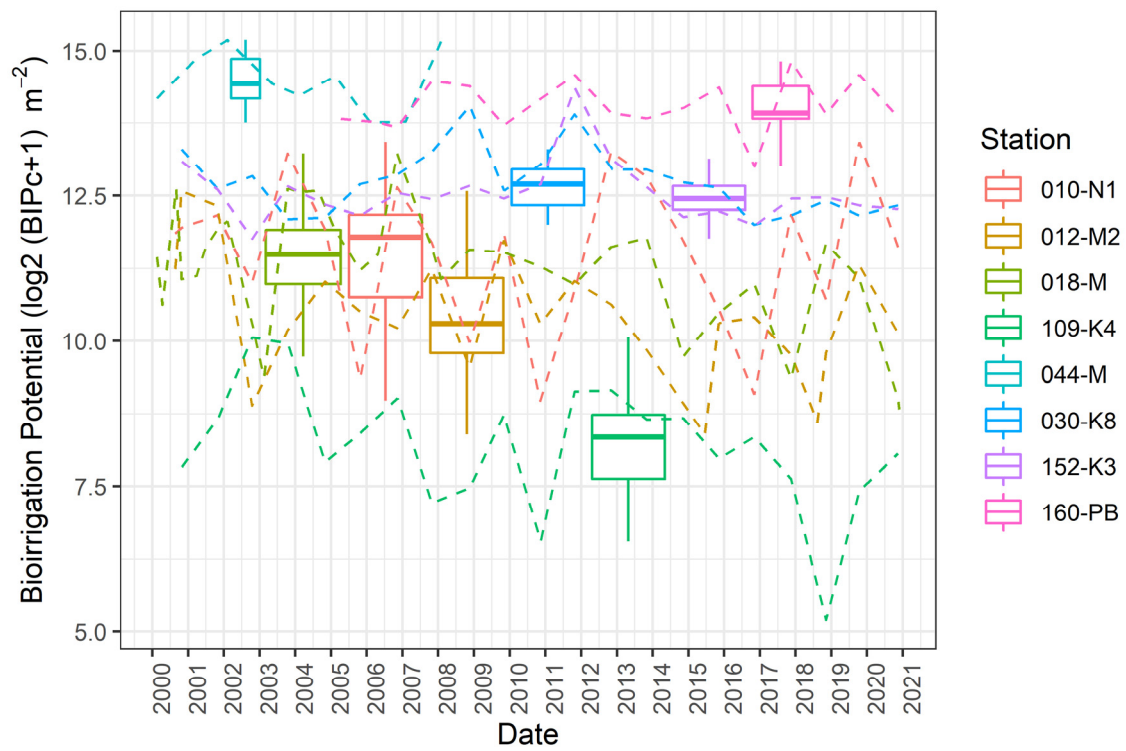
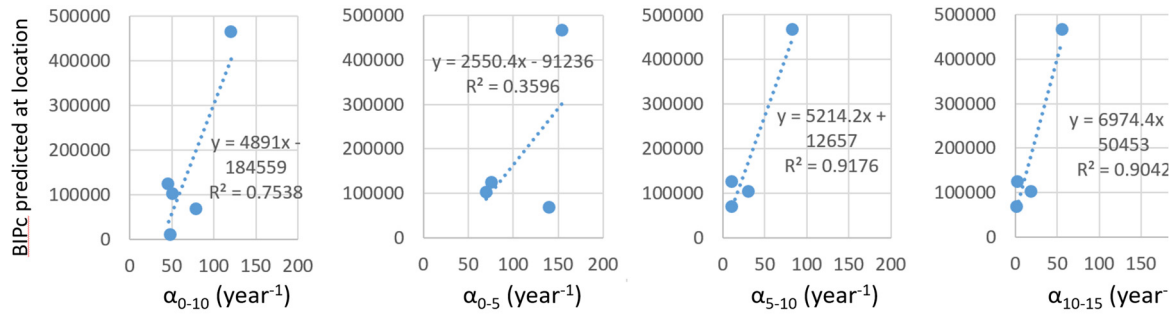


# SUPPLEMENTARY MATERIAL



**Figure S1.** Figure showing time-series of BIPc values at 8 monitoring stations.



Irrigation rate constants integrated for corresponding sediment depth interval (in cm) from Powilleit and Forster (2018).

(a)

	Pearson correlations coefficients (n=14)		Corresponding p-values											
	Inventory Br mmol/m <sup>2</sup>	Irrigation L/(m <sup>2</sup> d) entire core depth	Irrigation L/(m <sup>2</sup> d) in 2 to 10 cm sediment depth layer	BIPc diff	BIPc diff in 2 to 10 cm sediment depth layer	BIPc (adv scores in fine sands)	BIPc	BIPc in 2 to 10 cm sediment depth layer	Abundance, ind/m <sup>2</sup>	Wet weight biomass, g/m <sup>2</sup>	Ash free dry weight biomass, g/m <sup>2</sup>			
Inventory Br mmol/m <sup>2</sup>		0.938	0.859	0.425	0.396	0.365	0.429	0.383	0.278	0.303	0.320			
Irrigation L/(m <sup>2</sup> d) entire core depth	0.000		0.897	0.350	0.366	0.148	0.301	0.320	0.118	0.301	0.305			
Irrigation L/(m <sup>2</sup> d) in 2 to 10 cm sediment depth layer	0.000	0.000		0.181	0.200	0.109	0.093	0.109	0.078	0.170	0.170			
BIPc diff	0.130	0.220	0.535		0.945	0.474	0.812	0.906	0.112	0.912	0.931			
BIPc diff in 2 to 10 cm sediment depth layer	0.162	0.199	0.492	0.000		0.255	0.637	0.909	-0.176	0.971	0.977			
BIPc (adv scores in fine sands)	0.199	0.612	0.710	0.087	0.378		0.599	0.283	0.771	0.134	0.171			
BIPc	0.126	0.296	0.752	0.000	0.014	0.024		0.805	0.532	0.551	0.596			
BIPc in 2 to 10 cm sediment depth layer	0.177	0.264	0.711	0.000	0.000	0.326	0.001		-0.040	0.843	0.866			
Abundance, ind/m <sup>2</sup>	0.337	0.688	0.790	0.704	0.548	0.001	0.050	0.893		-0.269	-0.226			
Wet weight biomass, g/m <sup>2</sup>	0.293	0.296	0.560	0.000	0.000	0.649	0.041	0.000	0.353		0.998			
Ash free dry weight biomass, g/m <sup>2</sup>	0.265	0.290	0.562	0.000	0.000	0.559	0.025	0.000	0.437	0.000				
Wet weight biomass in 2 to 10 cm sediment depth layer, g/m <sup>2</sup>	0.310	0.289	0.514	0.000	0.000	0.822	0.083	0.000	0.215	0.000	0.000			

(b)

**Figure S2.** Correlations of BIPc values with measured bioirrigation rates. **(a)** Correlations of predicted BIPc values with bioirrigation constants resulting from bromide tracer experiments estimated for various depth intervals, as reported in Powilleit and Forster (2018). **(b)** Pearson correlation coefficients (above the diagonal) with significance levels ( $p$ -value below the diagonal) calculated between bioirrigation intensity measured with bromide tracer and macrofauna-based parameters. **(a)** Predicted BIPc values at corresponding locations plotted against bioirrigation constants resulting from bromide tracer experiments reported in Powilleit and Forster (2018) for various depth intervals.