

**Supplementary Materials:**

**Table S1.** Correlation and significance of EEAs, EEAs/MBC and ES and environmental factors.

		TC	TN	TP	NO <sub>3</sub> - N	NH <sub>4</sub> - N	SAP	DOC	C:N	pH	SM	EC
EEAs	R <sup>2</sup>	0.567	0.534	0.332	0.364	0.359	0.327	0.220	0.502	0.065	0.567	0.497
	P	0.001	0.001	0.020	0.012	0.009	0.016	0.061	0.001	0.511	0.001	0.002
EEAs/ MBC	R <sup>2</sup>	0.559	0.516	0.334	0.450	0.331	0.638	0.415	0.191	0.097	0.562	0.475
	P	0.001	0.001	0.013	0.003	0.015	0.001	0.004	0.098	0.339	0.001	0.001
ES	R <sup>2</sup>	0.841	0.845	0.724	0.439	0.757	0.120	0.355	0.293	0.514	0.807	0.807
	P	0.001	0.001	0.001	0.004	0.001	0.259	0.016	0.028	0.001	0.001	0.001

**Table S2.** Individual effect of each environmental factor.

	EEAs		EEAs/MBC		ES	
	Individual	Pr(>I)	Individual	Pr(>I)	Individual	Pr(>I)
TC	0.100	0.059	0.091	0.062	0.080	0.094
TN	0.093	0.062	0.089	0.066	0.083	0.073
TP	0.059	0.119	0.054	0.111	0.041	0.190
CN	0.096	0.045*	0.073	0.082	0.116	0.046*
NO <sub>3</sub> -N	0.069	0.103	0.064	0.103	0.042	0.156
NH <sub>4</sub> -N	0.031	0.188	0.076	0.07	0.031	0.209
SAP	0.035	0.181	0.038	0.171	0.024	0.215
DOC	0.028	0.179	0.020	0.236	0.035	0.182
pH	0.051	0.13	0.054	0.132	0.110	0.063
SM	0.069	0.08	0.068	0.086	0.048	0.164
EC	0.080	0.087	0.074	0.097	0.061	0.126

Individual effect of each environmental factor (from hierarchical partitioning), its value is equal to its marginal effect plus its average shared common effect with other environmental factors. \*,  $p < 0.05$ .