

1 Table S1. Pearson correlation coefficients for 14 water environmental variables. Correlation coefficients greater than 0.75 were indicated in

	BOD	Chla	COD	EC	NH4N	NO3N	pH	SS	TDN	TDP	Temp	TN	TOC	TP
BOD	1													
Chla	0.4671	1												
COD	0.9412	0.5704	1											
EC	0.5495	0.4475	0.5236	1										
NH4N	0.7845	0.1510	0.7129	0.4824	1									
NO3N	0.4689	0.3484	0.4299	0.6768	0.4321	1								
pH	-0.3118	0.1813	-0.2025	-0.2532	-0.4661	-0.1193	1							
SS	0.6447	0.6648	0.7507	0.5132	0.3239	0.3407	-0.0447	1						
TDN	0.7978	0.2864	0.7297	0.6525	0.9136	0.7536	-0.3891	0.4067	1					
TDP	0.8647	0.3275	0.8588	0.4286	0.5961	0.2897	-0.2025	0.6122	0.5850	1				
Temp	0.4311	0.3796	0.4706	0.4003	0.3004	0.4260	0.0737	0.4173	0.4044	0.3086	1			
TN	0.7995	0.2965	0.7440	0.6460	0.8995	0.7584	-0.3728	0.4155	0.9927	0.5902	0.4102	1		
TOC	0.9217	0.5425	0.9522	0.6125	0.7555	0.5127	-0.3289	0.6943	0.7925	0.7713	0.4312	0.8041	1	
TP	0.8748	0.3549	0.8781	0.4431	0.6080	0.3203	-0.2003	0.6502	0.6069	0.9943	0.3315	0.6150	0.7977	1

2 bold text.

3 Note: BOD, biochemical oxygen demand; Chla, chlorophyll *a*; COD, chemical oxygen demand; EC, electrical conductivity; NH4N, ammonium nitrogen;
 4 NO3N, nitrate nitrogen; SS, suspended solids; TDN, total dissolved nitrogen; TDP, total dissolved phosphorus; Temp, water temperature during the
 5 growing season; TN, total nitrogen; TOC, total organic carbon; TP, total phosphorus.

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8 Table S2. Results of PCA for water environmental factors.

	PC1	PC2	r2	Pr (>r)	
Temp	0.86987	-0.49328	0.0430	0.060939	.
pH	-0.51937	0.85455	0.0090	0.556444	
SS	0.69197	-0.72192	0.1233	0.000999	***
NO3N	0.98589	-0.16737	0.2171	0.000999	***
EC	0.98423	-0.17687	0.2393	0.000999	***
TDP	0.93948	-0.34259	0.1139	0.000999	***
Chla	0.99999	0.00528	0.0878	0.002997	**
WD	-0.35472	0.93497	0.0670	0.008991	**
WV	0.62381	-0.78157	0.0424	0.057942	.

9 Note: Chla, chlorophyll *a*; EC, electrical conductivity; NO3N, nitrate nitrogen; SS, suspended solids; TDP, total dissolved phosphorus; Temp, water
10 temperature during the growing season; WD, water depth; WV, water velocity.