Supporting information:

Tables:

Table S1. Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Flood seasons						
TN	0.121	12	0.200*	.956	12	0.724
NH_4^+-N	0.226	12	0.091	.761	12	0.003
NO_3^--N	0.258	12	0.027	.835	12	0.024
NO_2^--N	0.164	12	0.200*	.903	12	0.173
TP	0.247	12	0.041	.850	12	0.037
OP	0.213	12	0.138	.879	12	0.086
IP	0.298	12	0.004	.781	12	0.006
NaOH-P	0.171	12	0.200*	.882	12	0.093
HCl-P	0.209	12	0.156	.936	12	0.447
Dry seasons						
TN	0.225	12	0.095	.911	12	0.218
NH_4^+-N	0.200	12	0.200*	.885	12	0.102
NO_3^--N	0.347	12	0.000	.681	12	0.001
NO_2^--N	0.129	12	0.200*	.946	12	0.575
TP	0.159	12	0.200*	.928	12	0.362
OP	0.210	12	0.150	.833	12	0.023
IP	0.256	12	0.029	.848	12	0.035
NaOH-P	0.238	12	0.058	.819	12	0.016
HCl-P	0.273	12	0.014	.855	12	0.042

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

Table S2. One-sample K-S Tests of Normality

		Flood seasons				*Dry seasons*				
		NH_4^+-N	NO_3^--N	TP	IP	NO_3^--N	OP	IP	NaOH-P	HCl-P
N		12	12	12	12	12	12	12	12	12
Normal Parameters[a]	Mean	18.806	43.310	162.232	79.0660	35.595	20.344	28.968	23.219	69.337
	Std. Deviation	21.216	44.144	47.152	74.69173	47.969	18.362	27.090	21.987	48.310
Most Extreme Differences	Absolute	0.226	0.258	0.247	0.298	0.3470	0.210	0.256	0.238	0.273
	Positive	0.224	0.258	0.247	0.298	0.3470	0.210	0.256	0.238	0.273
	Negative	-0.226	-0.191	-0.150	-0.244	-0.251	-0.186	-0.195	-0.181	-0.172
Kolmogorov-Smirnov Z		0.783	0.892	0.857	1.033	1.203	0.727	0.887	0.826	0.946
Asymp. Sig. (2-tailed)		0.572	0.403	0.454	0.236	0.111	0.665	0.410	0.503	0.332

a. Test distribution is Normal.

Table S3. Rotation component matrix for nutrients in the sediments from Qingcaosha Reservoir

Element	Component		
	PC1	PC2	PC3
Flood seasons			
TN	**0.902**	0.296	0.125
NH_4^+-N		**0.894**	0.120
NO_3^--N	**0.875**	0.201	
NO_2^--N	0.159	**0.664**	-0.557
TP	**0.917**	-0.145	
IP	0.456	**0.695**	-0.390
OP	**0.536**	-0.725	0.218
HCl-P	**0.912**	-0.197	-0.305
NaOH-P			**0.879**
Eigenvalue	3.839	2.708	1.083
% of variance explained	42.652	30.088	12.038
% of cumulative	42.652	72.739	84.777

Element	Component	
	PC1	PC2
Dry seasons		
TN	**0.882**	
NH_4^+-N	**0.961**	
NO_3^--N		-0.850
NO_2^--N	**0.866**	0.147
TP	**0.600**	**0.715**
IP	**0.819**	**0.546**
OP	-0.287	-0.878
HCl-P	**0.884**	0.326
NaOH-P		**0.944**
Eigenvalue	5.517	2.161
% of variance explained	61.303	24.009
% of cumulative	61.303	85.312

Figures:

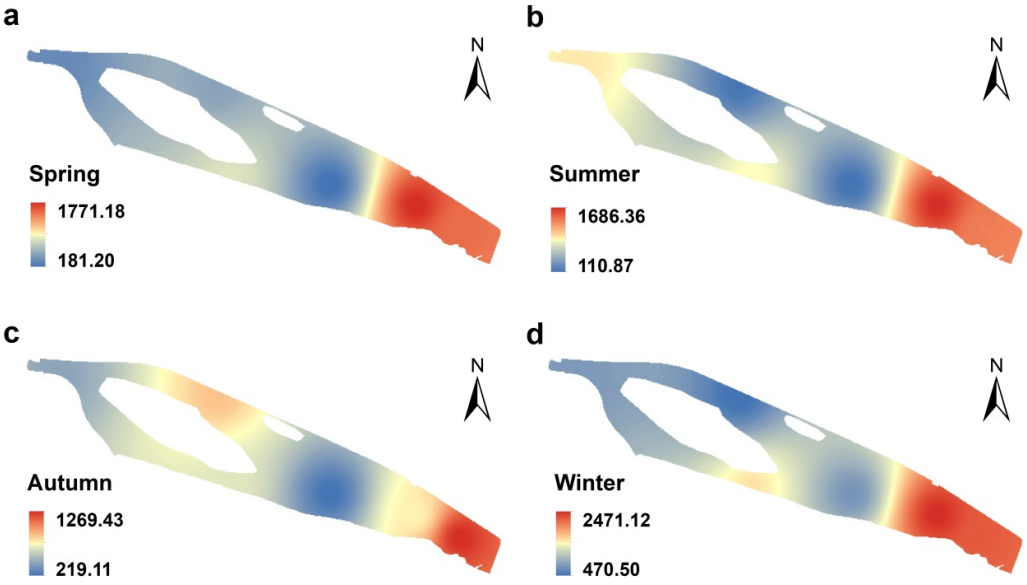

Figure S1. Spatial distribution of total nitrogen (mg/kg) in spring (a), summer (b), autumn (c), and winter (d) in surface sediments of QCS Reservoir, Shanghai.

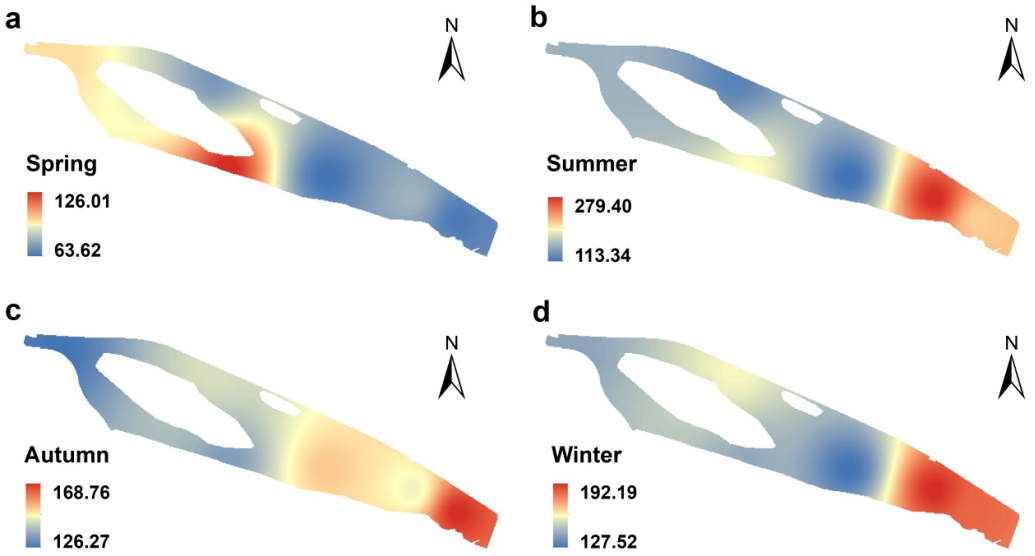

Figure S2. Spatial distribution of total phosphorus (mg/kg) in spring (a), summer (b), autumn (c), and winter (d) in surface sediments of QCS Reservoir, Shanghai.