

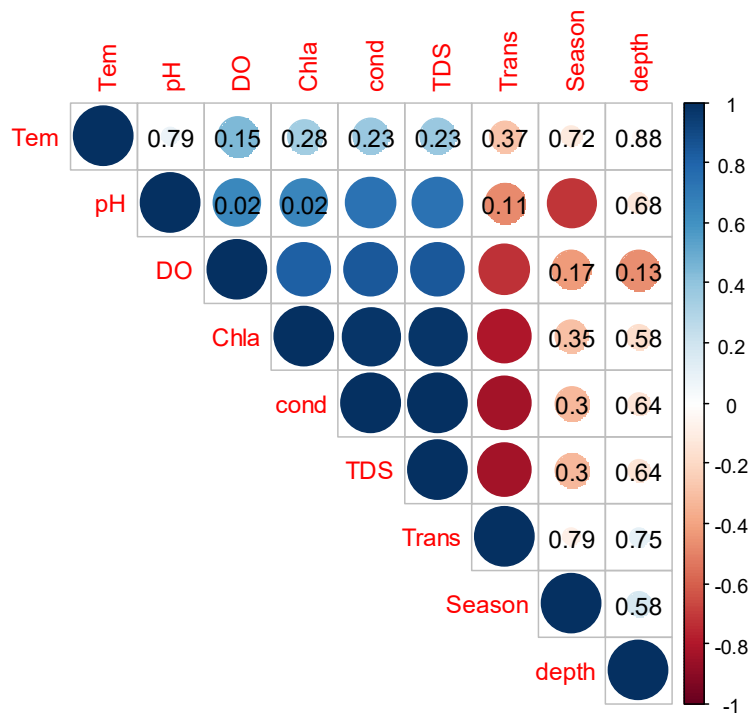
**Supplementary file S3. Pearson correlation analysis to select the water parameters for the Redundancy Analysis.**

With the values of water depth, temperature, dissolved oxygen, transparency, conductivity, total dissolved solids, and chlorophyll, with the hydrological season, we calculated paired Pearson correlations. To carry out this analysis, we transformed season in a dummy variable with a value of 1 for high waters and 2 for rising waters.

**Table. Pearson correlation scores of season and water physical and chemical parameters.**

Variable	Season	depth	Tem	DO	Trans	pH	cond	TDS	Chla
Season	1.00	0.18	-0.12	-0.43	-0.08	-0.71	-0.33	-0.32	-0.30
depth	0.18	1.00	-0.05	-0.47	0.10	-0.13	-0.15	-0.15	-0.18
Tem	-0.12	-0.05	1.00	0.45	-0.29	0.09	0.38	0.38	0.34
DO	-0.43	-0.47	0.45	1.00	-0.72	0.64	0.85	0.84	0.82
Trans	-0.08	0.10	-0.29	-0.72	1.00	-0.48	-0.84	-0.84	-0.81
pH	-0.71	-0.13	0.09	0.64	-0.48	1.00	0.73	0.73	0.66
cond	-0.33	-0.15	0.38	0.85	-0.84	0.73	1.00	1.00	0.98
TDS	-0.32	-0.15	0.38	0.84	-0.84	0.73	1.00	1.00	0.98
Chla	-0.30	-0.18	0.34	0.82	-0.81	0.66	0.98	0.98	1.00

Probability values and directions of the correlations are shown in the figure below.



**Figure.** Correlation plot of season and water physical and chemical parameters. Numbers on the dots indicate non-significant correlations at a 99% confidence level.

The correlation plot indicates that there were positive significant correlations between conductivity and total dissolved solids, between the latter and chlorophyll, dissolved oxygen and pH. There were also positive significant relationships between conductivity and chlorophyll, dissolved oxygen and pH. Based on these results, we selected water temperature, dissolved oxygen, transparency and depth. We decided to exclude season as well, since this variable encompassed a prior grouping of the sites, and could cause overfitting, and also because of its different distribution.