

Supplements

Table S1. Detailed introduction for sampling in the Danjiangkou Reservoir, China.

Year	Month	Variables	Sites			
			Dan Reservoir	Han Reservoir	Site close dam	River downstream dam
2004	24 Nov.	A+B	DJK1-3	DJK4		DJK5
2005	17 Jan., 8 Apr., 30 Jun., 24 Aug., 13 Nov.	A+B	DJK1-3	DJK4		DJK5
2006	8 Apr., 3 Jul	A+B	DJK1-3	DJK4		DJK5
2007	31 May, 16 Nov.	A+C	DJK1, DJK2, D1, DJK3	DJK4, D2	D3	DJK5
2008	31 Jul., 31 Nov.	A+C	DJK1, DJK2, D1, DJK3	DJK4, D2	D3	DJK5
2009	23 Apr., 11 Aug., 5 Nov.	A+C	DJK1, DJK2, D1, DJK3	DJK4, D2	D3	DJK5
2010	20 Jan., 23 Apr., 20 Aug., 30 Nov.	A+C	DJK1, DJK2, D1, DJK3	DJK4, D2	D3	DJK5
2011	Mar., 31 May	A+C	DJK1, DJK2, D1, DJK3	DJK4, D2	D3	DJK5

5 samples for individual survey were collected during 2004-2006, while 8 samples for individual survey during 2007-2011. There were three replicates for each sampling, thus a total of 432 samples were collected while 144 water samples were determined.

Water chemical properties:

A-T, pH, Alkalinity, F-, Cl, SO₄, Na, K, Ca, Mg, Si, TSS, Turbidity, DO%, ORP (oxidation reduction potential), COD, NH₄-N, NO₃-N, DP

B- BOD

C- SRP, TP, TOC, DOC, TDN, DIN, Chl-a

Table S2. Spearman's rho coefficients for $p\text{CO}_2$ and water chemical parameters in the Danjiangkou Reservoir, China.

	$p\text{CO}_2$	R coefficient	p	n
F ⁻	0.353**	0.01	55	
Cl ⁻	-0.03	0.77	87	
SO ₄ ²⁻	-0.09	0.39	87	
Na	-0.05	0.66	94	
K	0.02	0.83	94	
Ca	0.06	0.57	94	
Mg	0.15	0.14	94	
Si	0.396**	0.00	71	
COD	-0.07	0.51	87	
BOD ₅	0.25	0.24	24	
DO	-0.17	0.15	77	
DO%	-0.281*	0.02	73	
ORP	-0.248*	0.03	80	
Ammonium-N	0.03	0.81	67	
Nitrate-N	-0.14	0.23	74	
TSS	0.02	0.84	80	
Turbidity	0.16	0.14	94	
SRP	0.03	0.86	55	
TP	0.395**	0.00	62	
DP	-0.17	0.20	57	
TOC	0.25	0.07	55	
DOC	0.416**	0.00	55	
TN	-0.314*	0.02	53	
DN	-0.09	0.50	55	
DIN	0.13	0.49	32	
Chl-a	-0.408**	0.00	54	

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

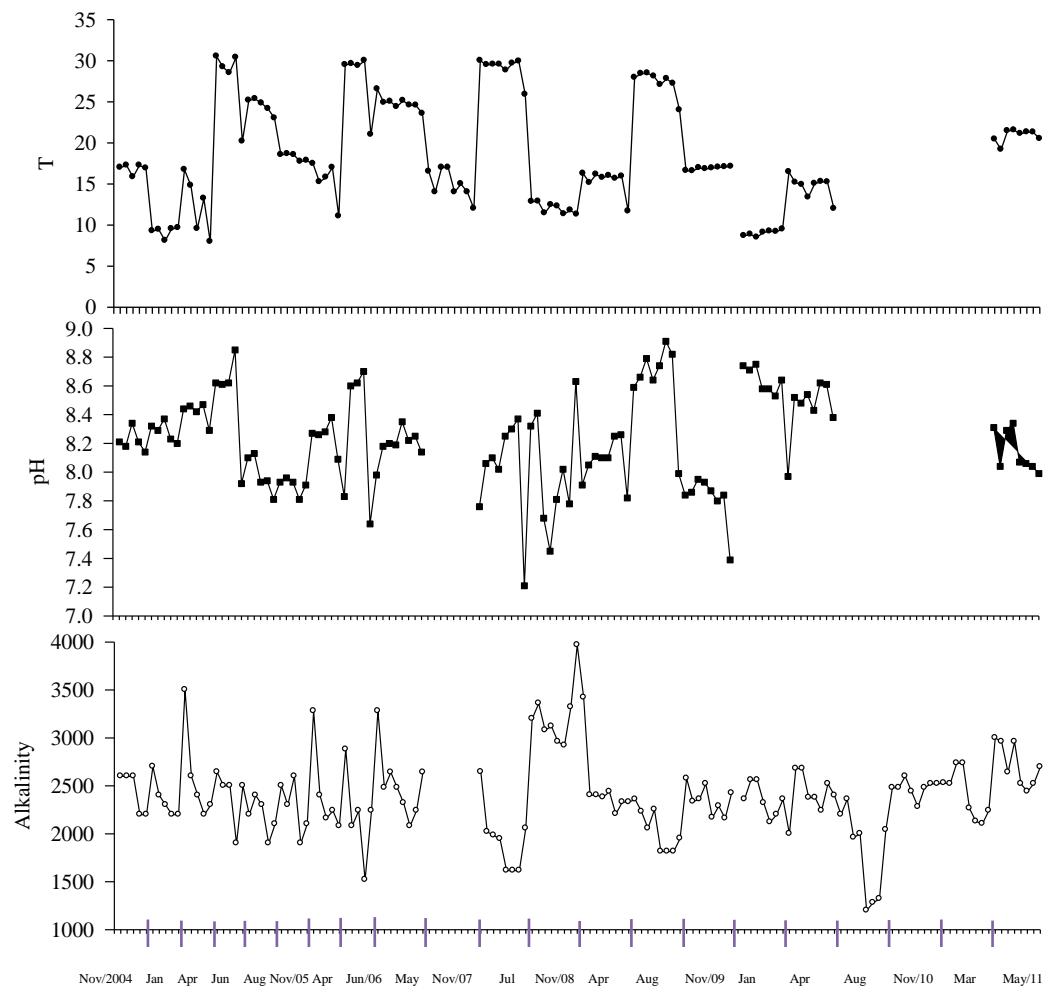


Fig. S1. T ($^{\circ}\text{C}$), pH and alkalinity ($\mu\text{mol/l}$) in the Danjiangkou Reservoir during 2004-2011 (five sampling sites DJK1-DJK5 from left to right during 2004-2006; while eight sites DJK1, DJK2, D1, DJK3, DJK4, D2, D3 and DJK5 from 2007 afterwards).