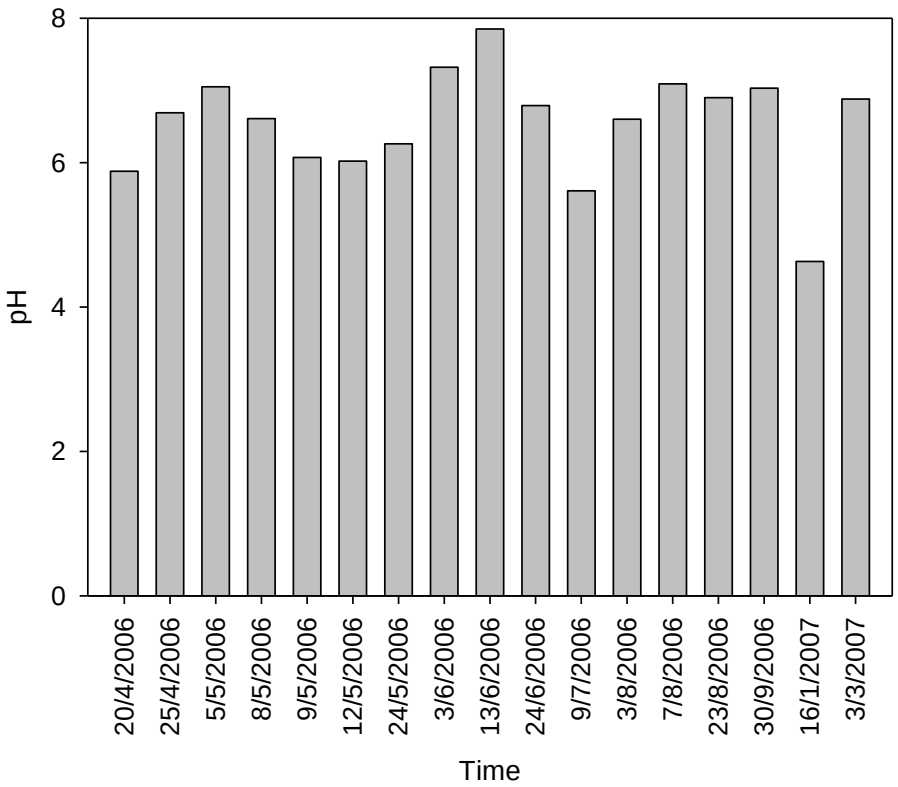

Fig. S3. Rain water pH in Wuhan City of the Han River estuary, Central China.

Table 3. Pearson R coefficients between pCO_2 and water chemical parameters for each season and each station in the Danjiangkou Reservoir, China.

	Han Res.						Dan Res.						Dam			River below Dam					
	Dry			Wet			Dry			Wet						Dry			Wet		
	R	p	N	R	p	N	R	p	N	R	p	N	R	p	N	R	p	N	R	p	N
F^-	-0.76	0.03	8	0.56	0.15	8	0.10	0.73	15	0.09	0.75	16	0.65	0.08	8	0.67	0.33	4	0.63	0.38	4
Cl^-	0.12	0.72	12	-0.32	0.30	12	0.28	0.16	27	-0.04	0.85	28	-0.48	0.23	8	0.17	0.69	8	0.91	0.00	8
SO_4^{2-}	-0.50	0.10	12	-0.47	0.12	12	0.06	0.78	27	-0.04	0.82	28	-0.29	0.49	8	-0.30	0.46	8	-0.03	0.95	8
Na	0.30	0.30	14	-0.29	0.35	12	0.19	0.31	31	-0.19	0.34	28	-0.27	0.49	9	0.35	0.36	9	0.77	0.02	8
K	0.20	0.51	14	0.43	0.17	12	-0.13	0.49	31	0.09	0.64	28	0.03	0.94	9	0.07	0.85	9	0.61	0.11	8
Ca	0.32	0.26	14	0.36	0.26	12	0.46	0.01	31	0.14	0.47	28	-0.14	0.73	9	0.26	0.49	9	0.50	0.21	8
Mg	0.34	0.23	14	0.19	0.56	12	0.58	0.00	31	0.17	0.39	28	-0.29	0.46	9	0.05	0.89	9	0.63	0.10	8
Si	-0.55	0.12	9	0.86	0.00	11	0.33	0.18	18	0.46	0.02	25	0.65	0.08	8	-0.27	0.66	5	0.52	0.23	7
TSS	0.29	0.36	12	0.14	0.69	10	0.20	0.31	27	0.35	0.10	24	-0.47	0.29	7	0.59	0.12	8	0.22	0.64	7
Turbidity	0.27	0.35	14	0.15	0.63	12	0.16	0.40	31	0.30	0.12	28	-0.16	0.69	9	-0.29	0.45	9	0.01	0.98	8
COD_{Mn}	-0.12	0.71	12	-0.36	0.25	12	0.21	0.29	27	-0.04	0.83	28	-0.55	0.16	8	0.34	0.40	8	-0.36	0.38	8
BOD5	-0.04	0.98	3	0.94	0.23	3	0.64	0.07	9	0.24	0.54	9				0.82	0.39	3	0.05	0.97	3
DO	0.02	0.96	8	-0.24	0.45	12	-0.25	0.24	23	0.15	0.45	28	0.67	0.15	6	-0.22	0.64	7	-0.64	0.09	8
DO%	0.41	0.36	7	-0.74	0.01	12	0.33	0.15	20	-0.40	0.03	28	0.10	0.85	6	0.32	0.53	6	-0.73	0.04	8
ORP	-0.33	0.25	14	0.05	0.92	8	-0.24	0.20	31	-0.22	0.36	20	-0.53	0.22	7	-0.53	0.14	9	-0.27	0.61	6

AmmoniumN	0.62	0.10	8	-0.26	0.47	10	0.75	0.00	20	-0.37	0.07	24	0.01	0.99	5	0.44	0.39	6	-0.40	0.43	6
NitrateN	0.25	0.55	8	-0.42	0.18	12	-0.10	0.66	20	-0.18	0.35	28	-0.47	0.35	6	-0.21	0.66	7	0.96	0.00	6
DIN	0.97	0.03	4	-0.07	0.93	4	0.52	0.09	12	0.02	0.96	12				0.66	0.34	4	-0.34	0.66	4
DN	-0.72	0.05	8	0.14	0.75	8	0.23	0.41	15	-0.30	0.26	16	-0.25	0.55	8	-0.93	0.07	4	-0.63	0.37	4
TN	-0.77	0.03	8	0.31	0.45	8	-0.25	0.37	15	-0.27	0.35	14	-0.39	0.34	8	-0.92	0.08	4	-0.63	0.37	4
SRP	-0.34	0.41	8	0.44	0.28	8	0.82	0.00	15	-0.20	0.46	16	0.03	0.94	8	0.75	0.25	4	0.67	0.33	4
DP	-0.38	0.41	7	-0.48	0.16	10	0.79	0.00	12	-0.51	0.02	20	-0.34	0.41	8	0.80	0.06	6	0.64	0.12	7
TP	0.28	0.43	10	0.23	0.58	8	0.32	0.19	19	0.14	0.61	16	-0.01	0.98	9	0.85	0.07	5	0.55	0.45	4
TOC	0.25	0.55	8	-0.13	0.76	8	0.67	0.01	15	-0.03	0.93	16	0.21	0.63	8	0.97	0.03	4	-0.60	0.40	4
DOC	0.73	0.04	8	-0.10	0.82	8	0.45	0.09	15	0.29	0.28	16	0.38	0.36	8	0.32	0.68	4	-0.26	0.74	4
Chl-a	0.13	0.76	8	-0.89	0.00	8	0.34	0.22	15	-0.26	0.35	15	-0.66	0.07	8	0.81	0.19	4	0.71	0.50	3

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

We split sampling months to wet and dry periods, and sampling sites to four categories (Han Res., Dan Res., Dam, and river below the Dam).