Table S1. Species composition in Taizi River.

Scientific names	Total		G1		G2	
	N_i (%)	F_i (%)	N_i (%)	F_i (%)	N_i (%)	F_i (%)
PETROMYZONTIFORMES						
Petromyzontidae						
1. *Lampetra reissneri* (Dybowski, 1896)	0.04	9.09	0.08	21.43	--	--
CYPRINIFORMES						
Cyprinidae						
2. *Zacco platypus* (Temminck & Schlegel, 1846)	13.74	81.82	13.34	100	14.26	68.42
3. *Opsariichthys bidens* (Günther, 1873)	0.04	9.09	--	--	0.08	15.79
4. *Aphyocypris chinensis* (Günther, 1868)	0.66	39.39	0.72	35.71	0.56	42.10
5. *Phoxinus lagowskii* (Dybowski, 1869)	28.95	63.64	51.32	100	0.70	36.84
6. *Hemiculter leucisculus* (Basilewsky, 1855)	4.63	36.36	0.09	7.14	10.37	57.90
7. *Hemiculter bleekeri* (Warpachowski, 1888)	0.01	3.03	--	--	0.02	5.26
8. *Cultrichthys compressocorpus* (Yih & Chu, 1959)	0.01	3.03	--	--	0.03	5.26
9. *Acheilognathus macropterus* (Bleeker, 1871)	2.31	39.39	0.81	7.14	4.21	63.16
10. *Paracheilognathus imberbis* (Günther, 1868)	0.63	15.15	--	--	1.43	26.32
11. *Rhodeus lighti* (Wu, 1931)	0.07	12.12	0.02	7.14	0.14	15.79
12. *Rhodeus ocellatus* (Kner, 1866)	4.58	51.52	0.26	28.57	10.04	68.42
13. *Rhodeus fangi* (Miao, 1934)	0.61	24.24	--	--	1.37	42.11
14. *Hemibarbus labeo* (Pallas, 1776)	0.03	3.03	0.06	7.14	--	--
15. *Pseudorasbora parva* (Temminck & Schlegel, 1846)	7.85	84.85	2.06	71.43	15.17	94.74
16. *Sarcocheilichthys nigripinnis* (Günther, 1873)	0.06	6.06	0.11	14.29	--	--
17. *Gobio cynocephalus* (Dybowski, 1869)	0.03	9.09	0.02	7.14	0.04	10.53
18. *Gobio tenuicorpus* (Mori, 1934)	0.02	6.06	--	--	0.05	10.53
19. *Gobio rivuloides* (Nichols, 1925)	0.01	3.03	0.02	7.14	--	--
20. *Squalidus argentatus* (Sauvage & Dabry de Thiersant,	0.47	15.15	0.84	35.71	--	--

	1874)						
	21. *Squalidus chankaensis* (Dybowski, 1872)	0.37	24.24	0.59	35.71	0.08	15.79
	22. *Squalidus wolterstorffi* (Regan, 1908)	0.37	6.06	--	--	0.83	10.53
	23. *Huigobio chinssuensis* (Nichols, 1926)	3.01	54.55	4.31	92.86	1.37	26.32
	24. *Abbottina rivularis* (Basilewsky, 1855)	0.33	45.46	0.13	28.57	0.59	57.90
	25. *Abbottina liaoningensis* (Qin, 1987)	0.01	3.03	--	--	0.03	5.23
	26. *Cyprinus carpio* (Linnaeus, 1758)	0.18	9.09	--	--	0.40	15.79
	27. *Cyprinus carpio var. specularis* (Linnaeus, 1758)	0.02	6.06	0.02	7.14	0.03	5.26
	28. *Carassius auratus* (Linnaeus, 1758)	9.19	96.97	2.52	92.86	17.62	100.00
Cobitidae							
	29. *Barbatula nuda* (Bleeker, 1864)	1.24	48.49	2.16	92.86	0.07	15.79
	30. *Lefua costata* (Kessler, 1876)	0.04	12.12	0.03	14.29	0.06	10.53
	31. *Cobitis sibirica* (Gladkov, 1935)	2.27	51.52	3.90	92.86	0.20	21.05
	32. *Misgurnus anguillicaudatus* (Cantor, 1842)	1.95	72.73	2.11	71.43	1.76	73.68
	33. *Misgurnus bipartitus* (Sauvage & Dabry de Thiersant, 1874)	0.71	12.12	0.06	14.29	1.53	10.53
	34. *Misgurnus mohoity* (Cantor, 1842)	0.05	12.12	0.07	21.43	0.03	5.26
	35. *Paramisgurnus dabryanus* (Dabry de Thiersant, 1872)	0.68	39.39	0.08	21.43	1.44	52.63
SILURIFORMES							
Bagridae							
	36. *Pelteobagrus fulvidraco* (Richardson, 1846)	0.02	6.06	0.01	7.14	0.03	5.26
	37. *Pseudobagrus ussuriensis* (Dybowski, 1872)	0.01	3.03	--	--	0.02	5.26
Siluridae							
	38. *Silurus asotus* (Linnaeus, 1758)	0.16	27.27	0.11	21.43	0.23	31.58
OSMERIFORMES							
Osmeridae							
	39. *Hypomesus olidus* (Pallas, 1814)	0.01	3.03	0.02	7.14	--	--
CYPRINODONTIFORMES							

Adrianichthyida							
	40. *Oryzias latipes* (Temminck & Schlegel, 1846)	3.70	51.52	0.06	7.14	8.3	84.21
GASTEROSTEIFORMES							
Gasterosteidae							
	41. *Pungitius sinensis* (Guichenot, 1869)	2.45	27.27	4.34	57.14	0.07	5.26
PERCIFORMES							
Mugilidae							
	42. *Mugil cephalus* (Linnaeus, 1758)	0.02	3.03	--	--	0.05	5.26
Odontobutidae							
	43. *Odontobutis obscurus* (Temminck & Schlegel, 1845)	1.17	33.33	2.03	71.43	0.08	5.26
	44. *Hypseleotris swinhonis* (Günther, 1873)	1.25	60.61	0.10	28.57	2.71	84.21
Gobiidae							
	45. *Rhinogobius cliffordpopei* (Nichols, 1925)	3.29	48.49	5.44	64.29	0.57	36.84
	46. *Rhinogobius brunneus* (Temminck & Schlegel, 1845)	0.42	42.42	0.24	35.71	0.65	47.37
	47. *Rhinogobius giurinus* (Rutter, 1897)	2.11	39.39	1.91	57.14	2.36	26.32
	48. *Chloea laevis* (Hilgendorf, 1879)	0.04	12.12	0.01	7.14	0.08	15.79
Osphronemidae							
	49. *Macropodus ocellatus* (Cantor, 1842)	0.05	9.09	--	--	0.12	15.79
Channidae							
	50. *Channa argus* (Cantor, 1842)	0.13	21.21	--	--	0.30	36.84

Table S2. Mean value and standard errors of different environmental factors between the upstream, the midstream and downstream.

	upstream	**midstream**	**downstream**
AL (m)	288.89±89.40 ^{a}	129.00±60.46 ^{b}	26.11±12.93 ^{c}
WC (cm)	41.94±26.95 ^{a}	48.5±21.77 ^{a}	42.47±6.23 ^{a}
WD (m)	0.45±0.32 ^{a}	0.51±0.22 ^{a}	0.89±0.56 ^{a}
WW (cm)	60.11±39.61 ^{a}	128.2±84.84 ^{a}	94.53±78.17 ^{a}
CV (m/s)	0.40±0.11 ^{a}	0.32±0.27 ^{ab}	0.21±0.18 ^{b}
WT (℃)	15.32±1.44 ^{b}	16.07±1.70 ^{ab}	17.42±2.01 ^{a}
DO (mg/L)	10.70±0.76 ^{ab}	11.35±0.97 ^{a}	9.88±1.32 ^{b}
pH	8.41±0.25 ^{a}	8.35±0.18 ^{a}	8.30±0.22 ^{a}
COD_{Mn} (mg/L)	2.26±0.40 ^{b}	2.00±0.20 ^{b}	4.88±1.76 ^{a}
TP (mg/L)	0.22±0.31 ^{a}	0.08±0.02 ^{a}	0.33±0.20 ^{a}
SRP (mg/L)	0.03±0.02 ^{a}	0.02±0.01 a	0.08±0.09 ^{a}
TN (mg/L)	2.71±0.47 ^{b}	2.81±0.41 ^{b}	5.46±2.24 ^{a}
NO_3^--N (mg/L)	1.06±0.31 ^{b}	1.29±0.27 ^{b}	1.91±0.53 ^{a}
NH_4^+-N (mg/L)	0.16±0.05 ^{a}	0.25±0.13 ^{a}	0.97±1.06 ^{a}
NO_2^--N (mg/L)	0.003±0.004 ^{b}	0.007±0.01 ^{b}	0.14±0.11 ^{a}
CL (%)	0.19±0.06 ^{b}	0.27±0.10 ^{b}	0.61±0.23 ^{a}
For (%)	0.72±0.10 ^{a}	0.54±0.20 ^{a}	0.10±0.15 ^{b}
Gra (%)	0.05±0.03 ^{a}	0.12±0.11 ^{a}	0.06±0.07 ^{a}
UL (%)	0.04±0.04 ^{b}	0.07±0.03 ^{b}	0.24±0.13 ^{a}

'a', 'b', and 'c' were used to distinguish differences among different groups.