



**Fig. S1. Relationship between body density and study site, sex, body size, body mass, and condition factor.**

(A, B) Measured body densities compared between study sites (A) and sex (B). Each dot represents the measured body density of an individual. The whiskers of the box plots indicate 1.5 of the interquartile range of the lower and upper quartiles. (C–E) Measured body densities are plotted against standard length (C), body mass (D), and condition factor (E). Open circles and triangles indicate lentic males and females, respectively, and filled circles and cross marks indicate lotic males and females, respectively. Body density did not differ between lentic and lotic individuals (A; Mann-Whitney U test,  $U = 26.5$ ,  $N = 26$ ,  $P = 0.94$ ) or between sexes (B; Mann-Whitney U test,  $U = 26.5$ ,  $N = 26$ ,  $P = 0.94$ ), and it was not significantly correlated with the standard length (C; Spearman's correlation test,  $P = 0.62$ ,  $r_s = -0.10$ ) or body mass (D; Spearman's correlation test,  $P = 0.59$ ,  $r_s = -0.11$ ) of the fish. There was a significant negative correlation between body density and the condition factor (E; Spearman's correlation test,  $P = 0.017$ ,  $r_s = -0.46$ ).

**Table S1. Measured body density and the maximum swim bladder volume of channel catfish.**

Fish No.	Sex	Standard length (cm)	Body mass (g)	Condition factor (g cm <sup>-3</sup> )	Body density (kg m <sup>-3</sup> )	Maximum bladder volume (cm <sup>3</sup> )	Maximum bladder volume (%)
<b>Lentic</b>							
<b>D1</b>	F	15.5	50	1.34	1075	-	-
<b>D2</b>	M	15.7	55	1.42	1074	-	-
<b>D3</b>	M	16.1	60	1.44	1083	-	-
<b>D4</b>	M	16.4	55	1.25	1070	-	-
<b>D5</b>	F	23.0	155	1.27	1086	-	-
<b>D6</b>	F	23.0	160	1.32	1086	-	-
<b>D7</b>	M	23.4	180	1.40	1085	-	-
<b>D8</b>	M	24.5	185	1.26	1085	-	-
<b>D9</b>	M	31.5	455	1.46	1076	-	-
<b>D10</b>	M	32.0	430	1.31	1086	-	-
<b>D11</b>	M	32.0	430	1.31	1088	-	-
<b>D12</b>	M	34.8	575	1.36	1076	-	-
<b>D13</b>	M	47.0	1620	1.56	1082	-	-
<b>D14</b>	F	47.5	1710	1.60	1076	-	-
<b>D15</b>	M	47.5	2105	1.96	1075	-	-
<b>D16</b>	F	48.6	1865	1.62	1071	-	-
<b>Mean</b>	-	-	-	-	<u>1080±6</u>	-	-
<b>Lotic</b>							
<b>D17</b>	M	19.4	95	1.45	1079	-	-
<b>D18</b>	M	20.2	102	1.50	1077	-	-
<b>D19</b>	F	20.3	101	1.48	1074	-	-
<b>D20</b>	F	22.5	115	1.48	1080	-	-
<b>D21</b>	F	23.6	131	1.47	1086	-	-
<b>D22</b>	M	23.6	154	1.54	1087	-	-
<b>D23</b>	M	27.0	280	1.55	1083	-	-
<b>D24</b>	F	35.2	873	1.43	1062	-	-
<b>D25</b>	F	40.0	1040	1.46	1054	-	-
<b>D26</b>	M	47.0	1325	1.44	1077	-	-
<b>V1</b>	F	47.6	1850	1.72	-	100	5.8
<b>V2</b>	M	39.5	1130	1.83	-	62	5.9
<b>V3</b>	M	42.4	995	1.31	-	86	9.3
<b>Mean</b>	-	-	-	-	<u>1076±10</u>	-	-
<b>Grand mean</b>						<b>1078±8</b>	