

*Supplementary Materials*

# Feeding Habit-Specific Heavy Metal Bioaccumulation and Health Risk Assessment of Fish in a Tropical Reservoir in Southern China

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**Table S1.** The detailed information of fish sampled in this study.

Scientific name	Sites (N <sup>a</sup> )	Length (mm)	Weight (g)	Feeding habit <sup>b</sup>	Habitat <sup>b</sup>	Percentage of water
<i>Xenocypris davidi</i>	S1(1), S6(1)	138±1.41	31.6±5.03	Omnivore	Benthopelagic	82.24%
<i>Osteochilus salsburyi</i>	S1(1), S5(1), S8(1)	118±14.79	33.2±8.76	Omnivore	Benthopelagic	82.13%
<i>Oreochromis niloticus</i>	S3(2), S4(1), S5(1), S8(2)	113.7±17.8	64.6±28.43	Omnivore	Benthopelagic	80.18%
<i>Opsariichthys bidens</i>	S2(2), S3(2), S9(1)	119±15.65	27±8.53	Carnivore	Benthopelagic	79.51%
<i>Carassius auratus</i>	S1(1), S3(1), S5(1), S6(1), S7(1), S8(1)	112±21	47.5±21.89	Omnivore	Benthopelagic	80.89%
<i>Aristichthys nobilis</i>	S5(1), S6(1), S9(1)	160.3±32.02	77.8±60.11	Omnivore	Pelagic	82.63%
<i>Culter alburnus</i>	S4(1), S8(1), S9(2)	158.3±77.17	73±106.96	Omnivore	Benthopelagic	82.97%
<i>Cirrhinus molitorella</i>	S3(2), S5(3)	202±13.06	172±45.99	Omnivore	Benthopelagic	80.22%
<i>Channa argus</i>	S4(1), S6(2)	257.3±59	294.8±178.73	Carnivore	Benthopelagic	80.72%
<i>Pseudohemiculter dispar</i>	S1(1), S2(1), S4(2), S7(2)	146.8±16.88	32.2±15.48	Omnivore	Benthopelagic	78.73%
<i>Oxyeleotris marmorata</i>	S1(1), S3(1), S5(1), S6(1), S7(1), S8(1)	172±28.32	126.7±52.32	Carnivore	Demersal	81.68%
<i>Claris fuscus</i>	S3(1), S5(1), S6(1)	284.8±12.04	340.6±19.74	Omnivore	Demersal	81.38%
<i>Misgurnus anguillicaudatus</i>	S2(2), S5(2), S7(2)	191.9±5.87	88±11.56	Omnivore	Demersal	77.59%

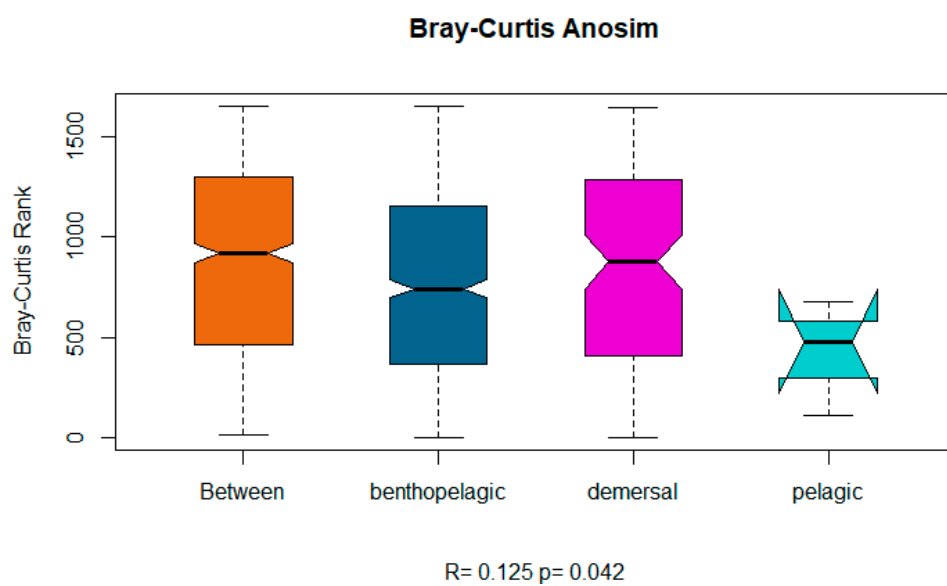
<sup>a</sup> The number of fish collected at the sampling site. <sup>b</sup> Froese and Pauly (2017).

**Table S2.** The heavy metal contents of water at each sampling site in every season.

Time	Site	Cr	Mn	Fe	Ni	Cu	Zn	Cd	Pb
March	S1	0.164	3.725	31.862	0.000	0.353	5.518	0.006	0.590
	S2	0.110	2.724	27.632	0.000	0.264	0.506	0.009	0.239
	S4	0.140	3.294	28.663	0.000	0.446	8.889	0.003	0.776
	S5	0.231	9.069	52.228	0.000	0.755	11.464	0.022	1.283
	S6	0.104	5.721	30.106	0.000	0.266	12.000	0.003	0.865
	S7	0.091	4.250	33.539	0.000	0.239	7.358	0.005	0.496
	S3	0.484	3.917	40.826	0.000	0.360	12.253	0.004	1.814
	S8	0.266	7.085	49.428	0.000	0.632	14.488	0.006	1.170
	S9	0.122	17.399	83.928	0.000	0.428	7.776	0.006	1.017
June	S1	0.289	6.558	16.409	1.307	0.472	5.196	0.006	0.25
	S2	0.393	6.666	28.549	1.504	0.589	7.315	0.023	1.491
	S4	0.56	6.652	19.839	1.308	0.495	7.261	0.005	0.575
	S5	1.683	9.055	52.061	2.229	2.424	15.19	0.016	3.126
	S6	1.105	11.328	29.435	1.463	0.987	7.197	0.011	2.451
	S7	1.445	11.069	36.369	1.441	0.709	9.236	0.01	3.232
	S3	0.815	5.078	30.039	1.869	1.339	13.171	0.01	1.068
	S8	0.437	9.271	77.163	1.744	0.955	5.815	0.008	0.726
	S9	0.475	21.277	86.453	1.712	0.851	7.511	0.009	0.732
September	S1	0.021	7.792	20.679	0.000	0.189	0.788	0.002	0.000
	S2	0.043	6.397	21.801	0.000	0.178	1.439	0.007	0.000
	S4	0.027	5.419	18.830	0.000	0.179	0.000	0.000	0.000
	S5	0.021	3.151	11.422	0.000	0.178	0.000	0.000	0.000
	S6	0.012	6.013	14.995	0.000	0.155	0.000	0.002	0.000
	S7	0.068	7.758	32.277	0.162	1.523	8.587	0.013	0.185
	S3	0.028	7.603	27.129	0.000	0.303	1.292	0.003	0.000
	S8	0.027	17.474	64.225	0.000	0.285	0.000	0.004	0.000
	S9	0.033	15.057	52.101	0.000	0.319	0.667	0.006	0.084
December	S1	0.069	56.402	34.759	0.367	0.000	15.356	0.003	0.000
	S2	0.106	107.350	64.366	0.348	0.000	10.753	0.018	0.081
	S4	0.005	119.208	48.291	0.306	0.000	11.691	0.001	0.024
	S5	0.033	197.475	30.436	0.260	0.000	7.505	0.001	0.000
	S6	0.059	41.944	15.780	0.211	0.000	21.510	0.001	0.000
	S7	0.019	31.940	24.067	0.221	0.000	6.902	0.002	0.028
	S3	0.000	126.595	21.249	0.226	0.000	4.330	0.001	0.000
	S8	0.033	5.203	20.524	0.316	0.000	8.236	0.002	0.010
	S9	0.072	19.252	59.022	0.478	0.000	23.786	0.004	0.030

**Table S3.** The heavy metal contents of sediment at each sampling site in every season.

Time	Site	Cr	Mn	Fe	Ni	Cu	Zn	Cd	Pb
March	S1	31.132	345.780	33026.124	150.910	21.416	51.389	0.118	32.473
	S2	10.492	63.445	5066.277	19.615	7.771	4.698	0.051	5.036
	S4	112.891	390.425	21633.663	126.655	23.672	31.591	0.159	10.014
	S5	57.602	483.426	18100.771	88.457	30.595	18.682	0.142	17.835
	S6	66.995	749.480	20737.848	116.469	25.811	36.784	0.256	20.978
	S7	11.531	315.882	19119.131	77.308	31.547	23.449	0.300	31.932
	S3	49.304	246.051	17798.181	85.139	23.689	31.037	0.113	16.465
	S8	39.475	224.624	13105.861	60.431	30.935	27.322	0.161	23.080
	S9	83.256	191.114	29949.498	144.726	48.535	36.650	0.178	22.912
June	S1	43.017	197.385	28208.617	129.384	16.304	52.861	0.158	27.478
	S2	44.367	127.940	19566.775	92.189	24.852	22.516	0.125	13.226
	S4	60.381	113.461	13784.453	68.364	33.303	19.280	0.125	9.777
	S5	9.477	197.841	6160.625	26.964	7.678	9.829	0.138	15.791
	S6	10.224	268.266	5913.029	23.397	14.118	7.245	0.104	23.600
	S7	8.992	181.376	17931.461	72.679	14.312	28.206	0.313	32.642
	S3	34.807	308.308	29251.720	123.084	24.512	23.137	0.177	22.602
	S8	57.448	169.743	18436.121	90.959	28.476	24.712	0.137	45.141
	S9	27.501	179.821	16696.382	72.214	21.028	31.020	0.189	20.174
September	S1	59.228	404.195	9289.946	61.395	18.262	160.335	1.997	45.417
	S2	66.889	112.508	3054.219	30.126	8.408	44.874	0.377	12.695
	S4	17.239	118.193	3591.799	23.120	5.576	61.902	0.573	50.914
	S5	122.606	283.334	39123.352	188.260	33.425	110.785	2.334	16.797
	S6	36.983	303.968	2112.273	38.677	18.363	75.295	2.086	74.872
	S7	26.407	168.421	1710.322	52.295	20.919	89.912	1.740	112.523
	S3	62.811	235.977	3685.128	29.467	8.712	84.175	1.781	102.325
	S8	19.113	354.883	9954.651	58.135	13.205	88.634	1.576	62.865
	S9	39.253	475.868	13005.051	70.069	6.739	91.770	1.478	73.272
December	S1	56.708	353.198	17354.582	97.493	53.654	116.689	2.682	85.646
	S2	52.802	191.245	6624.050	68.064	48.321	90.446	2.205	11.449
	S4	146.739	216.487	13886.164	87.653	66.009	105.234	2.208	112.245
	S5	145.650	163.432	16020.261	88.738	40.272	86.304	1.654	54.035
	S6	52.759	303.290	8381.088	68.626	29.541	78.102	2.124	106.708
	S7	62.901	237.998	16506.466	62.495	40.793	90.219	1.655	49.259
	S3	43.911	114.454	7234.171	52.065	373.807	164.806	1.404	6.941
	S8	37.801	216.901	7361.763	49.427	62.439	102.434	2.011	27.810
	S9	53.495	182.549	16905.498	85.538	44.406	114.349	2.285	33.209



**Figure S1.** ANOSIM result of fish with different living habitats (pelagic, benthopelagic and demersal).