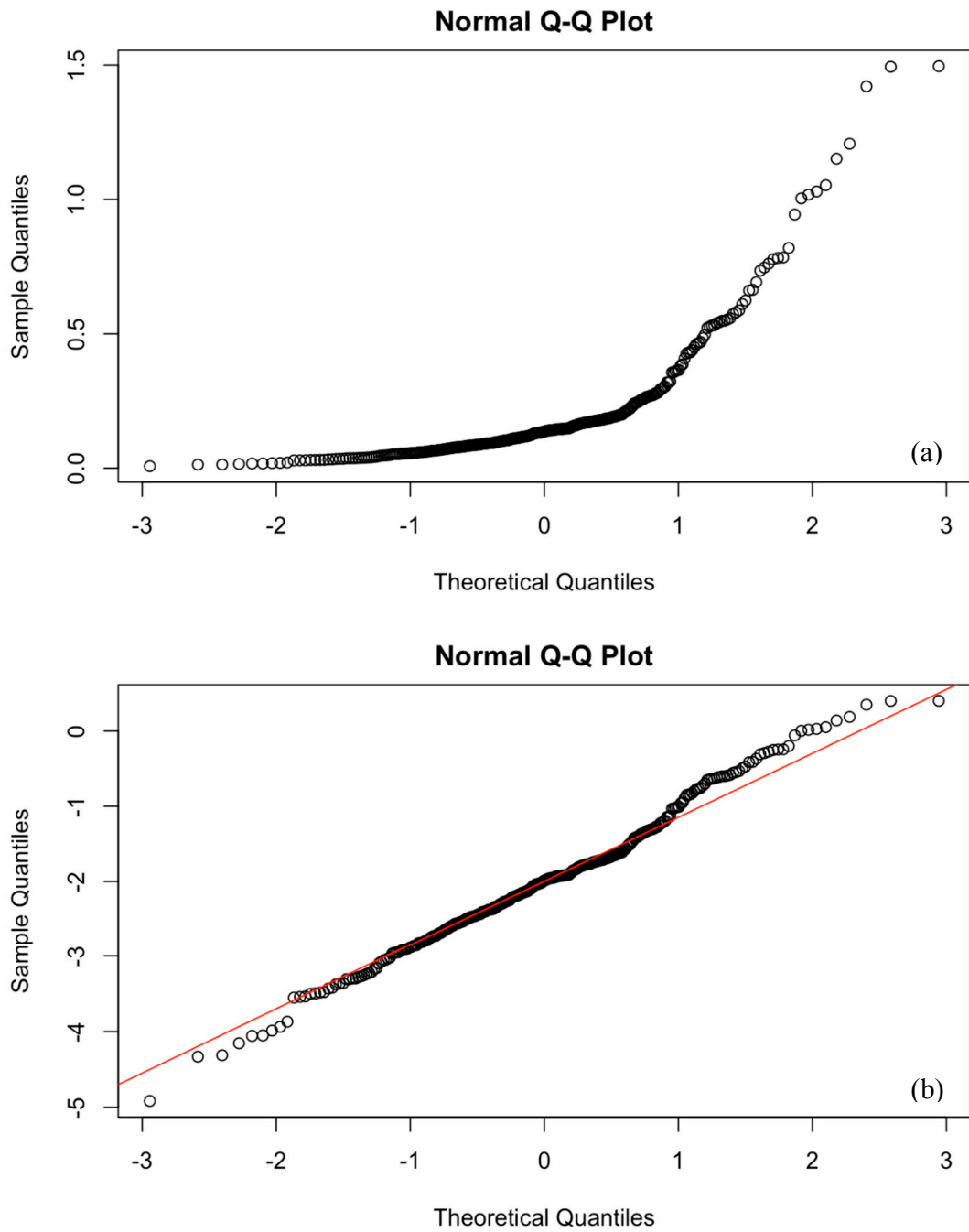


**Supplementary Materials:**

**Table S1.** Sample site list with Global Positioning System coordinates. Sites 1-9 correspond to Tambopata River, sites 10-15 correspond to Malinowski River, and sites 16-25 correspond to Heath River. Sites with \* were also sampled for sediment.

Site Name	Latitude	Longitude
1 – Chuncho* (T)	13° 1' 12"	69° 31' 13"
2 – Chuncho 2* (T)	13° 0' 9"	69° 30' 49"
3 – Colpa Chuncho (T)	12° 59' 1"	69° 29' 49"
4 – 8 Gallinas 1 (T)	12° 57' 59"	69° 29' 50"
5 – 8 Gallinas 2 (T)	12° 57' 33"	69° 29' 52"
6 – 8 Gallinas 3* (T)	13° 4' 0"	69° 34' 13"
7 – Isla de Monos* (T)	13° 0' 36"	69° 30' 34"
8 – Isla de Monos 2 (T)	12° 57' 47"	69° 30' 45"
9 – Boca Alto Tambopata (T)	12° 57' 11"	69° 31' 38"
10 – Alto Tetas Malinowski (M)	12° 56' 41"	69° 34' 29"
11 – Aguas Negras Alto Malinowski* (M)	12° 57' 16"	69° 35' 31"
12 – Alto Malinowski (M)	12° 56' 45"	69° 34' 42"
13 – Bajo Malinowski* (M)	12° 56' 57"	69° 33' 17"
14 – Quebrada Yarinal* (M)	12° 54' 37"	69° 38' 47"
15 – Tambopata Boca Malinowski (M)	12° 54' 9"	69° 31' 6"
16 – Lago Guacamayo 1* (H)	12° 41' 36"	68° 44' 10"
17 – Lago Guacamayo 2 (H)	12° 41' 28"	68° 43' 48"
18 – Lago Guacamayo 3 (H)	12° 41' 49"	68° 44' 10"
19 – Quebrada Maquisapa* (H)	12° 39' 60"	68° 43' 52"
20 – Quebrada San Antonio* (H)	12° 39' 32"	68° 44' 17"
21 – Quebrada Dario (H)	12° 38' 22"	68° 44' 18"
22 – Alto Heath* (H)	12° 50' 32"	68° 50' 15"
23 – Lago Heath (H)	12° 48' 26"	68° 50' 5"
24 – Grande Piedra* (H)	12° 44' 32"	68° 45' 58"
25 – Quebrada Boli* (H)	12° 42' 49"	68° 43' 43"



**Figure S1.** Quantile-quantile plots examining normality of  $Hg_{fish}$  data: (a) raw  $Hg_{fish}$  data and (b) log-transformed  $Hg_{fish}$  data.

**Table S2.** Raw mercury concentrations for fish samples collected during both wet and dry season sampling events for all rivers combined. Sampling Location identifies where each specie was collected – Tambopata River (T), Malinowski River (M), and Heath River (H).

Common Name	Species	Samples (n=308)	Sampling Location <sup>1</sup>	T-Hg (mg/kg) mean (Min, Max)	Strd. Dev. (mg/kg)	Mean Length (mm)	Mean Weight (g)
Añashua	<i>Crenicichla semicincta</i>	1	T	0.05	--	80	8
Anguila	<i>Electrophorus electricus</i>	1	T	0.50	--	720	1520
Bagre	<i>Exallodontus agaunai</i> , <i>Megalonema platycephalum</i> , <i>Pimelodus sp.</i>	21	T, M, H	0.13 (0.03, 0.24)	0.06	182 (118, 236)	139 (24, 260)
Bocachico	<i>Prochilodus nigricans</i>	39	T, M, H	0.10 (0.02, 0.28)	0.06	301 (208, 380)	722 (260, 1460)
Bocon, Toa	<i>Ageniosus inermis</i>	3	H	0.60 (0.47, 0.74)	0.14	377 (325, 411)	953 (620, 1140)
Bujurqui	<i>Satanoperca jurupari</i>	18	M	0.14 (0.09, 0.21)	0.04	114 (104, 134)	49 (35, 77)
Canero	<i>Cetopsis coecutiens</i> <i>Hypostomus sp.</i>	2	T, M	0.32 (0.17, 0.47)	0.21	120 (77, 164)	64 (8, 120)
Carachama	<i>Lamontichthys filamentosus</i> , <i>Squaliforma emarginata</i>	24	T, M, H	0.04 (0.02, 0.08)	0.02	190 (69, 265)	162 (8, 338)
Chambira	<i>Cynodon gibbus</i>	7	T, H	0.72 (0.12, 1.20)	0.41	248 (151, 363)	214 (80, 390)
Chio-chio	<i>Psectrogaster rutiloides</i>	1	H	0.04	--	158	140
Corvina	<i>Pachypops fourcroyi</i> <i>Charax sp.</i>	1	T	0.43	--	196	130
Dentón	<i>Cynopotamus amazonus</i> , <i>Galleocharax sp.</i> , <i>Roebooides affinis</i>	7	T	0.40 (0.16, 0.61)	0.18	156 (79, 228)	67 (7, 160)
Doncella	<i>Pseudoplatystoma tigrinum</i>	2	T, H	0.86 (0.78, 0.94)	0.12	641 (606, 676)	3595 (3360, 3830)
Gamitana	<i>Colossoma macropomum</i>	1	H	0.16	--	432	3320
Huasaco	<i>Hoplias malabaricus</i>	6	T, M	0.15 (0.10, 0.22)	0.04	143 (77, 205)	71 (7, 160)
Lamista	<i>Tetragonopterus argenteus</i>	1	T	0.09	--	112	70

Lisa	<i>Leporinus friderici</i>	4	H	0.11 (0.08, 0.14)	0.04	255 (240, 271)	348 (260, 430)
Macana	<i>Eigenmannia virescens</i> , <i>Sternarchorhynchus sp</i>	6	M	0.14 (0.07, 0.20)	0.05	192 (151, 232)	12 (7, 15)
Mota Punteada	<i>Calophysus macropterus</i>	1	M	0.29	--	399	540
Palometa	<i>Mylossoma aureum</i> , <i>Mylossoma duriventre</i> , <i>Myleus sp</i>	10	M, H	0.05 (0.01, 0.09)	0.03	154 (105, 217)	169 (43, 390)
Paña	<i>Pristobrycon sp</i> , <i>Serrasalmus cf compressus</i> , <i>Serrasalmus rhombeus</i> , <i>Serrasalmus spilopleuras</i>	31	M, H	0.53 (0.08, 1.50)	0.38	136 (75, 280)	145 (8, 830)
Pejeperro	<i>Acestrorhynchus falcatus</i>	7	M	0.34 (0.23, 0.44)	0.07	125 (104, 150)	28 (12, 47)
Pico de Pato	<i>Hemisorubim platyrhynchos</i> , <i>Platystomatichthys sturio</i> , <i>Sorubim lima</i>	9	T, M, H	0.53 (0.13, 1.15)	0.38	225 (91, 442)	180 (4, 630)
Pirillo	<i>Leptodoras acipenserinus</i> , <i>Nemadoras humeralis</i> , <i>Trachydoras steindachneri</i>	5	T, H	0.31 (0.20, 0.45)	0.10	168 (91, 215)	76 (11, 105)
Piro	<i>Megalodoras uranoscopus</i>	3	H	0.02 (0.01, 0.02)	0.002	382 (333, 418)	1737 (1060, 2240)
Platanito	<i>Auchenipterichthys sp</i>	2	M	0.11 (0.10, 0.11)	0.001	93 (90, 95)	9 (9, 10)
Puma Zungaro	<i>Pseudoplatystoma tigrinum</i>	1	H	0.82	--	980	10500
Raya	<i>Potamotrygon falkneri</i> , <i>Potamotrygon sp</i>	3	T, M	0.56 (0.53, 0.59)	0.03	636 (540, 697)	2227 (1450, 3050)
Sábalo	<i>Brycon amazonicus</i>	4	T, H	0.14 (0.05, 0.28)	0.10	391 (350, 474)	1445 (840, 2880)
Sapamama	<i>Triportheus albus</i> , <i>Triportheus angulatus</i>	10	T, H	0.14 (0.07, 0.29)	0.08	171 (148, 193)	104 (47, 160)
Sapocunchi	<i>Trachelyopterus cf galeatus</i>	1	H	0.10	--	168	150
Sardina	<i>Astyanax abramis</i> , <i>Astyanax bimaculatus</i> ,	6	M	0.09 (0.05, 0.19)	0.05	82 (66, 104)	15 (9, 29)

	<i>Astyanax maximus</i>						
Tucunare	<i>Cichla monoculus</i>	1	H	0.19	--	203	210
Turushuki	<i>Oxydoras niger</i>	1	H	0.25	--	540	2440
Yahuarachi	<i>Potamorhina altamazonica</i>	64	H	0.12 (0.03, 0.026)	0.05	215 (165, 289)	268 (90, 620)
Yulilla	<i>Anodus elongatus,</i> <i>Hemiodus microlepis</i>	4	T, H	0.28 (0.06, 0.56)	0.21	262 (204, 294)	298 (250, 340)

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<sup>1</sup> Tambopata River (T), Malinowski River (M), and Heath River (H).