

TABLE S5 | Variance decomposition of RDA coefficients, and significant Spearman's correlation coefficients of RDA axes to species and main environmental variables. Total explained variance is weighted by adjusted R^2 . ORD: Strahler stream order; TC: water temperature; DU: distance to the Usumacinta; FC: forest cover; DO: dissolved oxygen.

Variable	Variance (total)	Variance (% fitted)	F	p
ORD	0.195	0.636	7.180	<0.001
TC	0.048	0.155	8.739	<0.001
DU	0.030	0.098	5.501	<0.001
FC	0.021	0.069	3.919	<0.001
DO	0.012	0.042	2.350	0.009
Residual	0.693	-	-	-

Species	RDA1		RDA2	
	r	pval	r	pval
<i>Atractosteus tropicus</i>	-	-	0.218	0.023
<i>Dorosoma anale</i>	-	-	0.218	0.023
<i>Dorosoma petenense</i>	0.214	0.026	0.292	0.002
<i>Astyanax brevimanus</i>	0.461	<0.001	-	-
<i>Brycon guatemalensis</i>	-	-	-	-
<i>Rhamdia guatemalensis</i>	-0.345	<0.001	-	-
<i>Rhamdia laticauda</i>	-0.196	0.043	-	-
<i>Atherinella alvarezi</i>	0.274	0.004	-0.768	<0.001
<i>Atherinella schultzi</i>	-0.204	0.034	-	-
<i>Strongylura hubbsi</i>	0.319	0.001	-	-
<i>Carlhubbsia kidderi</i>	-	-	0.220	0.022
<i>Gambusia sexradiata</i>	-	-	0.350	<0.001
<i>Phallichthys fairweatheri</i>	-	-	0.312	0.001
<i>Poecilia kykesis</i>	-	-	0.417	<0.001
<i>Poecilia mexicana</i>	0.327	0.001	-0.310	0.001
<i>Pseudoxiphophorus bimaculatus</i>	-0.819	<0.001	-0.401	<0.001
<i>Xenodexia ctenolepis</i>	-	-	-0.579	<0.001
<i>Xiphophorus hellerii</i>	-0.675	<0.001	-0.230	0.017
<i>Cynodonichthys tenuis</i>	-0.468	<0.001	0.214	0.026
<i>Ophisternon aenigmaticum</i>	-0.356	<0.001	-	-
<i>Chuco intermedius</i>	-	-	-0.510	<0.001
<i>Cinzelichthys pearsei</i>	-	-	0.259	0.007
<i>Maskaheros argenteus</i>	-	-	0.209	0.030
<i>Mayaheros urophtalmus</i>	-	-	0.410	<0.001
<i>Parachromis multifasciatus</i>	-	-	0.192	0.047
<i>Petenia splendida</i>	0.219	0.023	0.297	0.002
<i>Rheoheros lentiginosus</i>	0.194	0.044	-	-



TABLE S5 | (Continued)

Species	RDA1		RDA2	
	<i>r</i>	<i>pval</i>	<i>r</i>	<i>pval</i>
<i>Rocio octofasciata</i>	-0.356	<0.001	-	-
<i>Theraps irregularis</i>	-	-	-0.231	0.016
<i>Thorichthys helleri</i>	-	-	-	-
<i>Thorichthys meeki</i>	-	-	0.424	<0.001
<i>Thorichthys pasionis</i>	-	-	0.441	<0.001
<i>Trichromis salvini</i>	-0.249	0.009	-	-
<i>Vieja bifasciata</i>	-	-	0.342	<0.001
<i>Vieja melanura</i>	-	-	0.305	0.001
<i>Eugerres mexicanus</i>	-	-	0.228	0.018
<i>Leptophilypnus guatemalensis</i>	-0.379	<0.001	-0.568	<0.001
Variable	RDA1		RDA2	
	<i>r</i>	<i>pval</i>	<i>r</i>	<i>pval</i>
<i>FC</i>	-0.315	0.001	-0.465	<0.001
<i>DO</i>	0.247	0.010	-	-
<i>ORD</i>	0.511	<0.001	0.397	<0.001
<i>DU</i>	-	-	-0.465	<0.001
<i>TC</i>	-	-	0.210	0.030



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