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Appendix S3. Quantile regression models statistics for the relationships between diversity measures and 4 hydrological flow metrics. The 4 stream flow metrics are: % flow permanence in year of sample (flowyr), % flow permanence by season (flowsea), mean duration of zero flow periods each year (MDZFP), and number of ZFP each year (numZFP). NS refers to a relationship that was not statistically significant.

Relationship	Model equation	Regression quantile	<i>p</i> value
Functional richness (FRic)			
flowyr	0.078(flowyr) + 0.189	0.05	<0.0001
	0.084(flowyr) + 2.30	0.25	<0.0001
	0.076(flowyr) + 5.230	0.5	<0.0001
	0.055(flowyr) + 9.038	0.75	0.006
	0.051(flowyr) + 12.149	0.95	<0.0001
flowsea	0.083(flowsea) - 0.240	0.05	<0.0001
	0.082(flowsea) + 2.22	0.25	<0.0001
	0.070(flowsea) + 5.876	0.50	<0.0001
	0.048(flowsea) + 9.742	0.75	0.04
	0.044(flowsea) + 12.586	0.95	<0.0001
MDZFP	-0.118(MDZFP) + 7.430	0.05	0.00003
	-0.127(MDZFP) + 10.420	0.25	0.0008
	-0.085(MDZFP) + 12.630	0.50	0.04
	-0.045(MDZFP) + 14.310	0.75	0.05
	-0.045(MDZFP) + 16.970	0.95	0.002
numZFP	-1.38(numZFP) + 7.430	0.05	0.0002
	-1.348(numZFP) + 10.170	0.25	0.02
	-0.644(numZFP) + 12.60	0.50	NS

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	$-0.464(\text{numZFP}) + 14.240$	0.75	0.00003
	$-0.305(\text{numZFP}) + 16.970$	0.95	<0.0001
Functional evenness (FEve)			
flowyr	$0.002(\text{flowyr}) + 0.452$	0.05	0.00001
	$0.002(\text{flowyr}) + 0.501$	0.25	<0.0001
	$0.001(\text{flowyr}) + 0.632$	0.50	0.014
	$0.0003(\text{flowyr}) + 0.759$	0.75	0.030
	$0.000(\text{flowyr}) + 0.802$	0.95	NS
flowsea	$0.002(\text{flowsea}) + 0.449$	0.05	0.00001
	$0.0024(\text{flowsea}) + 0.486$	0.25	0.00001
	$0.0016(\text{flowsea}) + 0.615$	0.50	0.017
	$0.000(\text{flowsea}) + 0.7460$	0.75	NS
	$0.001(\text{flowsea}) + 0.789$	0.95	NS
numZFP	$-0.043(\text{numZFP}) + 0.67$	0.05	<0.0001
	$-0.033(\text{numZFP}) + 0.720$	0.25	NS
	$-0.006(\text{numZFP}) + 0.770$	0.50	NS
	$-0.004(\text{numZFP}) + 0.800$	0.75	NS
	$0.000(\text{numZFP}) + 0.840$	0.95	NS
MDZFP	$-0.004(\text{MDZFP}) + 0.67$	0.05	<0.0001
	$-0.003(\text{MDZFP}) + 0.73$	0.25	0.022
	$-0.001(\text{MDZFP}) + 0.770$	0.50	NS
	$-0.000(\text{MDZFP}) + 0.790$	0.75	NS
	$-0.001(\text{MDZFP}) + 0.840$	0.95	NS
Taxonomic richness			
flowyr	$0.128(\text{flowyr}) + 5.179$	0.05	<0.0001
	$0.167(\text{flowyr}) + 8.333$	0.25	<0.0001

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	0.211(flowyr) + 10.873	0.50	<0.0001
	0.218(flowyr) + 18.236	0.75	<0.0001
	0.175 (flowyr) + 31.474	0.95	NS
flowsea	0.131(flowsea) + 4.869	0.05	<0.0001
	0.182(flowsea) + 6.818	0.25	<0.0001
	0.200(flowsea) + 11.956	0.5	<0.0001
	0.212(flowsea) + 18.788	0.75	<0.0001
	0.170(flowsea) + 32.000	0.95	NS
MDZFP	-0.157(MDZFP) + 16.000	0.05	NS
	-0.235(MDZFP) + 24.000	0.25	<0.0001
	-0.179(MDZFP) + 31.000	0.5	0.003
	-0.129(MDZFP) + 39.000	0.75	NS
	-0.121(MDZFP) + 49.000	0.95	<0.0001
numZFP	-1.750(numZFP) + 16.000	0.05	NS
	-3.000(numZFP) + 24.000	0.25	<0.0001
	-1.625(numZFP) + 31.000	0.50	NS
	-1.889(numZFP) + 39.000	0.75	<0.0001
	-1.813(numZFP) + 48.000	0.95	<0.0001
Functional diversity			
Flowyr	0.003(flowyr) + 2.068	0.05	0.003
	0.005(flowyr) + 2.193	0.25	<0.0001
	0.004(flowyr) + 2.465	0.5	0.007
	0.002(flowyr) + 2.690	0.75	0.037
	0.0005(flowyr) + 2.950	0.95	NS
flowsea	0.003(flowsea) + 2.093	0.05	NS
	0.005(flowsea) + 2.199	0.25	<0.0001

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	0.003(flowsea) + 2.49	0.5	0.013
	0.002(flowsea) + 2.73	0.75	NS
	0.0004(flowsea) + 2.95	0.95	NS
MDZFP	-0.005(MDZFP) + 2.41	0.05	0.028
	-0.007(MDZFP) + 2.68	0.25	0.0001
	-0.003(MDZFP) + 2.81	0.5	NS
	-0.002(MDZFP) + 2.89	0.75	<0.0001
	0.000(MDZFP) + 2.99	0.95	NS
numZFP	-0.060(numZFP) + 2.41	0.05	NS
	-0.083(numZFP) + 2.68	0.25	0.003
	-0.032(numZFP) + 2.81	0.5	0.057
	-0.016(numZFP) + 2.88	0.75	NS
	-0.003(numZFP) + 2.99	0.95	NS
Taxonomic diversity (H')			
flowyr	0.002(flowyr) + 1.074	0.05	NS
	0.007(flowyr) + 1.347	0.25	<0.0001
	0.010(flowyr) + 1.550	0.5	<0.0001
	0.006(flowyr) + 2.109	0.75	0.031
	0.003(flowyr) + 2.704	0.95	NS
flowsea	0.001(flowsea) + 1.090	0.05	NS
	0.008(flowsea) + 1.304	0.25	<0.0001
	0.010(flowsea) + 1.540	0.5	<0.0001
	0.006(flowsea) + 2.065	0.75	0.024
	0.002(flowsea) + 2.760	0.95	NS
numZFP	-0.007(numZFP) + 1.217	0.05	NS
	-0.073(numZFP) + 1.980	0.25	NS

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	$-0.075(\text{numZFP}) + 2.440$	0.50	0.014
	$-0.070(\text{numZFP}) + 2.67$	0.75	NS
	$-0.019(\text{numZFP}) + 2.950$	0.95	<0.0001
MDZFP	$0.002(\text{MDZFP}) + 1.130$	0.05	NS
	$-0.010(\text{MDZFP}) + 2.01$	0.25	<0.0001
	$-0.009(\text{MDZFP}) + 2.480$	0.50	0.043
	$-0.004(\text{MDZFP}) + 2.680$	0.75	0.021
	$-0.005(\text{MDZFP}) + 2.960$	0.95	0.006