

TABLE S11. Estimated parametric coefficients and approximate significance of smooth terms of the fine-scale prevalence community GAMMs. The deviance explained (D^2) is given for every model as a measure of the model fit.

	Term	Smooth terms				edf ¹
		Parametric coefficient				
		Estimate	Standard error	Statistic	p-value	
Evenness (D ² = 69.58%)	Intercept	−0.892	0.471	−1.895 ²	0.070	NA
	s(Evenness)	NA	NA	2.921 ³	0.095	0.707
	s(Lake)	NA	NA	3.658 ³	0.001	7.629
Diversity index (D ² = 78.80%)	Intercept	−0.971	0.597	−1.626 ²	0.115	NA
	s(Diversity)	NA	NA	50.579 ³	0.008	0.993
	s(Lake)	NA	NA	6.101 ³	0.000	8.720
Species richness (D ² = 73.70%)	Intercept	−0.900	0.553	−1.629 ²	0.114	NA
	s(Lake)	NA	NA	5.094 ³	0.000	8.375
	s(Species_richness)	NA	NA	7.517 ³	0.105	0.671
Non-host abundance (D ² = 87.49%)	Intercept	−0.825	0.509	−1.621 ²	0.117	NA
	s(Lake)	NA	NA	7.098 ³	0.000	8.796
	s(tot_Cyprinidae)	NA	NA	179.239 ³	0.000	1.750
Fish abundance (D ² = 80.46%)	Intercept	−0.761	0.546	−1.394 ²	0.174	NA
	s(Lake)	NA	NA	6.282 ³	0.000	8.449
	s(tot_fish)	NA	NA	55.368 ³	0.002	1.435
Elevation (D ² = 69.64%)	Intercept	−0.942	0.487	−1.933 ²	0.063	NA
	s(Elevation)	NA	NA	0.000 ³	0.396	0.000
	s(Lake)	NA	NA	4.594 ³	0.000	8.065
Drainage area (D ² = 69.72%)	Intercept	−0.970	0.488	−1.987 ²	0.056	NA
	s(Drainage_area)	NA	NA	0.077 ³	0.324	0.164
	s(Lake)	NA	NA	4.453 ³	0.000	7.935
Water residence time (D ² = 69.64%)	Intercept	−0.942	0.487	−1.933 ²	0.063	NA
	s(Lake)	NA	NA	4.594 ³	0.000	8.065
	s(WRT)	NA	NA	0.000 ³	0.830	0.000
Distance to nearest lake (D ² = 69.64%)	Intercept	−0.942	0.487	−1.933 ²	0.063	NA
	s(Connectivity)	NA	NA	0.000 ³	0.575	0.000
	s(Lake)	NA	NA	4.594 ³	0.000	8.065
Lake maximum depth (D ² = 69.64%)	Intercept	−0.942	0.487	−1.933 ²	0.063	NA
	s(Lake)	NA	NA	4.594 ³	0.000	8.065
	s(Max_depth)	NA	NA	0.000 ³	0.792	0.000
Lake mean depth (D ² = 69.64%)	Intercept	−0.942	0.487	−1.933 ²	0.063	NA
	s(Lake)	NA	NA	4.594 ³	0.000	8.065
	s(Mean_depth)	NA	NA	0.000 ³	0.768	0.000
Perimeter (D ² = 69.64%)	Intercept	−0.942	0.487	−1.933 ²	0.063	NA
	s(Lake)	NA	NA	4.594 ³	0.000	8.065
	s(Perimeter)	NA	NA	0.000 ³	0.590	0.000
Surface area (D ² = 69.16%)	Intercept	−1.151	0.424	−2.714 ²	0.011	NA
	s(Lake_area)	NA	NA	16.644 ³	0.010	2.828
	s(Lake)	NA	NA	1.694 ³	0.003	4.259
Area:Perimeter (D ² = 67.80%)	Intercept	−1.311	0.356	−3.682 ²	0.001	NA
	s(Area_Perimeter)	NA	NA	17.886 ³	0.000	2.966
	s(Lake)	NA	NA	0.000 ³	0.078	0.000
Conductivity (D ² = 56.19%)	Intercept	−0.665	0.177	−3.766 ²	0.001	NA
	s(Conductivity)	NA	NA	9.975 ³	0.000	2.617
	s(Lake)	NA	NA	0.000 ³	0.271	0.000
DO (D ² = 75.17%)	Intercept	−0.885	0.497	−1.780 ²	0.086	NA
	s(DO)	NA	NA	64.497 ³	0.016	1.046
	s(Lake)	NA	NA	4.548 ³	0.000	7.781
pH (D ² = 70.12%)	Intercept	−0.718	0.357	−2.014 ²	0.053	NA
	s(Lake)	NA	NA	1.761 ³	0.009	6.079
	s(pH)	NA	NA	35.861 ³	0.019	1.399
Turbidity (D ² = 76.24%)	Intercept	−0.923	0.491	−1.880 ²	0.070	NA
	s(Lake)	NA	NA	5.025 ³	0.000	8.236
	s(Turbidity)	NA	NA	4.051 ³	0.052	1.214
Temperature (D ² = 79.55%)	Intercept	−0.720	0.469	−1.535 ²	0.136	NA
	s(Lake)	NA	NA	4.144 ³	0.000	7.755
	s(Temperature)	NA	NA	69.780 ³	0.001	1.524
Trunk (D ² = 69.64%)	Intercept	−0.942	0.487	−1.933 ²	0.063	NA
	s(Lake)	NA	NA	4.594 ³	0.000	8.065
	s(Trunk)	NA	NA	0.000 ³	0.358	0.000
Transect depth (D ² = 69.64%)	Intercept	−0.942	0.487	−1.933 ²	0.063	NA
	s(Lake)	NA	NA	4.594 ³	0.000	8.065
	s(Site_depth)	NA	NA	0.000 ³	0.709	0.000
Macrophyte cover (D ² = 84.15%)	Intercept	−0.870	0.457	−1.906 ²	0.067	NA
	s(Lake)	NA	NA	6.203 ³	0.000	8.449
	s(Macrophyte)	NA	NA	44.108 ³	0.000	1.564
Boulder (D ² = 69.64%)	Intercept	−0.942	0.487	−1.933 ²	0.063	NA
	s(Boulder)	NA	NA	0.000 ³	0.811	0.000
	s(Lake)	NA	NA	4.594 ³	0.000	8.065
Rock (D ² = 69.64%)	Intercept	−0.942	0.487	−1.933 ²	0.063	NA
	s(Lake)	NA	NA	4.594 ³	0.000	8.065
	s(Rock)	NA	NA	0.000 ³	0.813	0.000
Sand (D ² = 74.31%)	Intercept	−1.024	0.494	−2.070 ²	0.047	NA
	s(Lake)	NA	NA	5.624 ³	0.000	8.061
	s(Sand)	NA	NA	4.159 ³	0.046	0.919
Silt (D ² = 69.64%)	Intercept	−0.942	0.487	−1.933 ²	0.063	NA
	s(Lake)	NA	NA	4.594 ³	0.000	8.065
	s(Silt)	NA	NA	0.000 ³	0.675	0.000
TOC (D ² = 69.64%)	Intercept	−0.942	0.487	−1.933 ²	0.063	NA
	s(Lake)	NA	NA	4.593 ³	0.000	8.065
	s(TOC)	NA	NA	0.000 ³	0.344	0.000
TP (D ² = 73.31%)	Intercept	−0.916	0.488	−1.875 ²	0.071	NA
	s(Lake)	NA	NA	4.554 ³	0.000	8.131
	s(TP)	NA	NA	9.240 ³	0.053	0.838
TN (D ² = 70.50%)	Intercept	−0.941	0.494	−1.907 ²	0.066	NA
	s(Lake)	NA	NA	4.654 ³	0.000	8.064
	s(TN)	NA	NA	0.394 ³	0.244	0.241
TN:TP (D ² = 80.96%)	Intercept	−0.977	0.487	−2.007 ²	0.055	NA
	s(Lake)	NA	NA	6.226 ³	0.000	8.447
	s(TN_TP)	NA	NA	17.630 ³	0.185	2.408
Null (D ² = 69.64%)	Intercept	−0.942	0.487	−1.933 ²	0.063	NA
	s(Lake)	NA	NA	4.594 ³	0.000	8.065

¹ Effective degrees of freedom

² t-value

³ F-value