

Appendix 1. Model selection table including the 54 models tested in our study and model theme with fixed effects predictors and control variables as well as random effects control variables, the model degrees of freedom (df), log likelihood (Log Lik.), Akaike Information Criterion corrected for small sample sizes (AICc), Δ AICc, and AIC model weight (Wt.). Model themes included ecotope classifications within 1000-m or 400-m buffers of use and available locations (Ecotope1000m or Ecotope400m), wetland landcover classifications within 1000-m or 400-m buffers of use or available locations (Wetland1000m or Wetland400m), and the proportion of landcover within 1000-m or 400-m buffers of use or available locations with various flooding frequencies. Fixed predictor effects included the proportion of each landcover class within a 1000-m or 400-m buffer of use or available locations including agricultural wetland (AgWetland1000 or AgWetland400), meadow marsh (MeadowMarsh1000 or MeadowMarsh400), prairie (Prairie1000 or Prairie400), riverine (River1000 or River 400), woodland (Wood1000 or Wood400), open water (OpenWater1000, or OpenWater400), wet prairie (WetPrairie1000 or WetPrairie400), invasive vegetation (Invasive1000 or Invasive400), and shrubland (Shrub1000 or Shrub400). Fixed effects also included the proportion of landcover within a 1000-m or 400-m buffer with flooding frequencies from the National Wetland Inventory including none, very rare, rare, occasional, and frequently (FloodNone1000, FloodVeryRare1000, FloodRare1000, FloodOccasional1000, and FloodFreq1000, or FloodNone400, FloodVeryRare400, FloodRare400, FloodOccasional400, and FloodFreq400, respectively). Controlled fixed effects included proportion of developed landcover within 1000 m or 400 m of use and available locations (Dev1000 or Dev400) as well as the Euclidean distance to the nearest paved road (RoadDist). Random effects included categories of landcover class (LandcovClass) and categories of population density within a 2.6 km² buffer (PopCat).

Model Theme	Fixed Effects (Predictors)	Fixed Effects (Controls)	Random Effects (Controls)	df	Log Lik.	AICc	Δ	
							AICc	Wt.
Ecotope 1000m	AgWetland1000 + MeadowMarsh1000 + Prairie1000 + River1000 + Wood1000	Dev1000 + RoadDist	LandcovClass + PopCat	10	-1226.1	2472.3	0.00	0.503
Ecotope 1000m	AgWetland1000 + MeadowMarsh1000 + River1000 + Wood1000	Dev1000 + RoadDist	LandcovClass + PopCat	9	-1227.6	2473.3	1.05	0.298
Ecotope 1000m	AgWetland1000 + MeadowMarsh1000 + OpenWater1000 + Prairie1000 + River1000 + WetPrairie1000 + Wood1000	Dev1000 + RoadDist	LandcovClass + PopCat	12	-1225.6	2475.2	2.96	0.115
Ecotope 1000m	AgWetland1000 + AgUpland1000 + MeadowMarsh1000 + OpenWater1000 + River1000 + WetPrairie1000 + Wood1000	Dev1000 + RoadDist	LandcovClass + PopCat	12	-1226.6	2477.2	4.90	0.043

Ecotope 1000m	MeadowMarsh1000 + Prairie1000 + WetPrairie1000 + River1000 + Wood1000	Dev1000 + RoadDist	LandcovClass + PopCat	10	-1228.7	2477.4	5.17	0.038
Ecotope 1000m	AgUpland1000 + AgWetland1000 + Wood1000 + River1000	Dev1000 + RoadDist	LandcovClass + PopCat	9	-1232.3	2482.5	10.26	0.003
Ecotope 1000m	AgWetland1000 + Invasive1000 + MeadowMarsh1000 + OpenWater1000 + Prairie1000 + WetPrairie1000 + Wood1000	Dev1000 + RoadDist	LandcovClass + PopCat	12	-1234.8	2493.7	21.41	0.000
Ecotope 1000m	AgUpland1000 + AgWetland1000 + Invasive1000 + MeadowMarsh1000 + OpenWater1000 + WetPrairie1000 + Wood1000	Dev1000 + RoadDist	LandcovClass + PopCat	12	-1236.1	2496.3	24.03	0.000
Wetland 1000m	Palustrine1000 + Wood1000	Dev1000 + RoadDist	LandcovClass + PopCat	7	-1253.5	2521.0	48.70	0.000
Wetland 1000m	Palustrine1000	Dev1000 + RoadDist	LandcovClass + PopCat	6	-1256.1	2524.1	51.87	0.000
Ecotope 400m	AgWetland400 + MeadowMarsh400 + River400 + Wood400	Dev400 + RoadDist	LandcovClass + PopCat	9	-1265.1	2548.2	75.91	0.000
Ecotope 400m	AgWetland400 + MeadowMarsh400 + Prairie400 + River400 + Wood400	Dev400 + RoadDist	LandcovClass + PopCat	10	-1264.9	2549.7	77.48	0.000
Ecotope 400m	AgWetland400 + MeadowMarsh400 + OpenWater400 + Prairie400 + River400 + WetPrairie400 + Wood400	Dev400 + RoadDist	LandcovClass + PopCat	12	-1263.7	2551.4	79.11	0.000
Ecotope 400m	AgWetland400 + OpenWater400 + MeadowMarsh400 + Prairie400 + Shrub400 + WetPrairie400	Dev400 + RoadDist	LandcovClass + PopCat	12	-1263.9	2551.8	79.54	0.000
Ecotope 400m	MeadowMarsh400 + Prairie400 + River400 + WetPrairie400 + Wood400	Dev400 + RoadDist	LandcovClass + PopCat	10	-1270.4	2560.8	88.50	0.000

Ecotope 400m	AgUpland400 + AgWetland400 + River400 + Wood400	Dev400 + RoadDist	LandcovClass + PopCat	9	-1273.2	2564.4	92.12	0.000
Ecotope 400m	AgUpland400 + AgWetland400 + Invasive400 + MeadowMarsh400 + OpenWater400 + WetPrairie400 + Wood400	Dev400 + RoadDist	LandcovClass + PopCat	12	-1272.3	2568.7	96.43	0.000
Ecotope 400m	AgWetland400 + Invasive400 + MeadowMarsh400 + OpenWater400 + Prairie400 + WetPrairie400 + Wood400	Dev400 + RoadDist	LandcovClass + PopCat	12	-1272.4	2568.8	96.58	0.000
Ecotope 1000m	AgWetland1000 + MeadowMarsh1000 + OpenWater1000 + Prairie1000 + Shrub1000 + WetPrairie1000	Dev1000 + RoadDist	LandcovClass + PopCat	11	-1280.4	2582.8	110.55	0.000
Flooding 400m	FloodFreq400 + FloodNone400	Dev400 + RoadDist	LandcovClass + PopCat	7	-1287.4	2588.7	116.46	0.000
Flooding 400m	FloodFreq400 + FloodNone400 + FloodVeryRare400	Dev400 + RoadDist	LandcovClass + PopCat	8	-1287.1	2590.3	117.98	0.000
Ecotope 1000m	AgUpland1000 + AgWetland1000 + MeadowMarsh1000 + OpenWater1000 + Shrub1000 + WetPrairie1000	Dev1000 + RoadDist	LandcovClass + PopCat	11	-1284.2	2590.4	118.18	0.000
Flooding 400m	FloodNone400	Dev400 + RoadDist	LandcovClass + PopCat	6	-1292.8	2597.6	125.31	0.000
Flooding 1000m	FloodFreq1000 + FloodNone1000	Dev1000 + RoadDist	LandcovClass + PopCat	7	-1293.2	2600.4	128.18	0.000
Wetland 400m	Palustrine400	Dev400 + RoadDist	LandcovClass + PopCat	6	-1294.7	2601.3	129.05	0.000
Wetland 400m	Palustrine400 + Wood400	Dev400 + RoadDist	LandcovClass + PopCat	7	-1293.7	2601.4	129.18	0.000
Flooding 1000m	FloodFreq1000 + FloodNone1000 + FloodVeryRare1000	Dev1000 + RoadDist	LandcovClass + PopCat	8	-1293.0	2602.1	129.82	0.000

Flooding 400m	FloodOccasion400 + FloodRare400 + FloodVeryRare400	Dev400 + RoadDist	LandcovClass + PopCat	8	-1297.0	2610.1	137.83	0.000
Flooding 400m	FloodFreq400 + FloodOccasion400 + FloodRare400 + FloodVeryRare400	Dev400 + RoadDist	LandcovClass + PopCat	9	-1297.0	2612.0	139.78	0.000
Flooding 1000m	FloodNone1000	Dev1000 + RoadDist	LandcovClass + PopCat	6	-1301.0	2614.1	141.83	0.000
Flooding 400m	FloodOccasion400 + FloodRare400	Dev400 + RoadDist	LandcovClass + PopCat	7	-1301.1	2616.3	144.03	0.000
Ecotope 400m	AgWetland400 + MeadowMarsh400 + OpenWater400 + Prairie400 + Shrub400 + WetPrairie400	Dev400 + RoadDist	LandcovClass + PopCat	11	-1299.1	2620.2	147.96	0.000
Ecotope 400m	AgUpland400 + AgWetland400 + MeadowMarsh400 + OpenWater400 + Shrub400 + WetPrairie400	Dev400 + RoadDist	LandcovClass + PopCat	11	-1299.9	2621.8	149.52	0.000
Flooding 400m	FloodRare400	Dev400 + RoadDist	LandcovClass + PopCat	6	-1308.7	2629.4	157.16	0.000
Flooding 1000m	FloodOccasion1000 + FloodRare1000 + FloodVeryRare1000	Dev1000 + RoadDist	LandcovClass + PopCat	8	-1310.1	2636.2	163.89	0.000
Flooding 1000m	FloodOccasion1000 + FloodRare1000	Dev1000 + RoadDist	LandcovClass + PopCat	7	-1311.1	2636.2	163.90	0.000
Ecotope 1000m	MeadowMarsh1000 + Wood1000	Dev1000 + RoadDist	LandcovClass + PopCat	7	-1311.2	2636.4	164.18	0.000
Flooding 1000m	FloodFreq1000 + FloodOccasion1000 + FloodRare1000 + FloodVeryRare1000	Dev1000 + RoadDist	LandcovClass + PopCat	9	-1309.6	2637.2	164.95	0.000
Ecotope 1000m	MeadowMarsh1000	Dev1000 + RoadDist	LandcovClass + PopCat	6	-1313.5	2639.0	166.76	0.000

Ecotope 400m	MeadowMarsh400	Dev1000 + RoadDist	LandcovClass + PopCat	6	-1318.6	2649.2	176.92	0.000
Ecotope 400m	MeadowMarsh400 + Wood400	Dev400 + RoadDist	LandcovClass + PopCat	7	-1318.6	2651.2	178.92	0.000
Flooding 1000m	FloodRare1000	Dev1000 + RoadDist	LandcovClass + PopCat	6	-1321.8	2655.6	183.35	0.000
Flooding 400m	FloodVeryRare400	Dev400 + RoadDist	LandcovClass + PopCat	6	-1322.4	2656.9	184.63	0.000
Flooding 400m	FloodOccasion400	Dev400 + RoadDist	LandcovClass + PopCat	6	-1322.7	2657.5	185.23	0.000
Flooding 1000m	FloodOccasion1000	Dev1000 + RoadDist	LandcovClass + PopCat	6	-1323.3	2658.6	186.33	0.000
Ecotope 400m	AgWetland400	Dev400 + RoadDist	LandcovClass + PopCat	6	-1323.8	2659.5	187.25	0.000
Ecotope 400m	AgWetland400 + Wood400	Dev400 + RoadDist	LandcovClass + PopCat	7	-1323.7	2661.5	189.23	0.000
Flooding 400m	FloodFreq400	Dev400 + RoadDist	LandcovClass + PopCat	6	-1329.7	2671.4	199.15	0.000
Ecotope 1000m	AgWetland1000 + Wood1000	Dev1000 + RoadDist	LandcovClass + PopCat	7	-1329.0	2671.9	199.65	0.000
Flooding 1000m	FloodVeryRare1000	Dev1000 + RoadDist	LandcovClass + PopCat	6	-1331.9	2675.8	203.51	0.000
Ecotope 1000m	AgWetland1000	Dev1000 + RoadDist	LandcovClass + PopCat	6	-1333.8	2679.6	207.30	0.000
Flooding 1000m	FloodFreq1000	Dev1000 + RoadDist	LandcovClass + PopCat	6	-1338.0	2688.0	215.71	0.000

Null + Random	1	-	LandcovClass + PopCat	3	-1365.3	2736.6	264.32	0.000
Null	1	-	-	1	-1395.1	2792.1	319.84	0.000
