

Supplementary Materials

Table S1. Comparison of the models for taxonomic richness (TR), estimated biomass (WT) and abundance (AA). H₁: X dependent on local edges; H₂: X dependent on local agriculture; H₃: X dependent on landscape complexity; H₄: X dependent on local edge and local; agriculture; H₅: X dependent on local edge and landscape complexity; H₆: X dependent on local agriculture and landscape complexity; H₇: Global Model; H₈: X dependent on abundance (only for TR. Paper showing relationship); and H₉: Null Model. Df: degrees of freedom of the model; AICc: corrected AIC; Δ AICc: difference in AICc between the model and the model with the smallest AICc; AICcWt: model weight according to Δ AICc; Cum. Wt: cumulative model weights; LL: Log Likelihood.

(a) TR

TR	K	AICc	Δ AICc	AICcWt	Cum.Wt	LL
H ₁	20	5128.33	0.00	1	1	−2543.68
H ₄	35	5141.39	13.05	0	1	−2534.22
H ₃	32	5147.47	19.13	0	1	−2540.50
H ₂	24	5149.94	21.61	0	1	−2550.28
H ₅	46	5152.90	24.57	0	1	−2527.89
H ₆	50	5165.54	37.21	0	1	−2529.73
H ₇	61	5171.79	43.46	0	1	−2520.33
H ₈	5	5178.53	50.20	0	1	−2584.23
H ₉	3	5324.57	196.24	0	1	−2659.27

(b) WT

WT	K	AICc	Δ AICc	AICcWt	Cum.Wt	LL
H ₁	19	2928.34	0.00	1	1	−1444.73
H ₃	31	2947.35	19.01	0	1	−1441.52
H ₄	34	2948.13	19.79	0	1	−1438.67
H ₉	4	2950.93	22.59	0	1	−1471.44
H ₅	45	2956.96	28.62	0	1	−1431.03
H ₂	23	2957.24	28.91	0	1	−1454.98
H ₆	49	2976.58	48.24	0	1	−1436.37
H ₇	60	2980.81	52.47	0	1	−1425.99

(c) AA

AA	K	AICc	Δ AICc	AICcWt	Cum.Wt	LL
H ₅	45	2627.05	0.00	0.89	0.89	−1266.07
H ₇	60	2631.92	4.86	0.08	0.97	−1251.54
H ₃	31	2634.06	7.00	0.03	0.99	−1284.87
H ₁	19	2638.14	11.09	0	1	−1299.64
H ₄	34	2640.16	13.10	0	1	−1284.69
H ₆	49	2640.95	13.90	0	1	−1268.56
H ₉	4	2645.03	17.97	0	1	−1318.49
H ₂	23	2647.84	20.78	0	1	−1300.28

Table S2. Models and summary tables for taxonomic diversity (TD) and biomass (WT). Variables included Location (FI or FE); average vegetation height (EdgeHt), variation in the vegetation height (EdgeSD), length of the field (Length), depth of the area between tilled area and roadway or next field (EdgeDepth), percentage of bare ground (Bareground), treatment of the edge (none, herbicide drift, mowing), and a correction factor for sample size (ln Abundance). Our random factors were method of collection (sticky board, pitfall trap, or sweep net) and field within county within year (RegionYearField).

- a) $TD \sim (\text{FieldEdge} * (\text{EdgeHt} + \text{EdgeSD} + \text{Length} + \text{EdgeDepth} + \text{Bareground} + \text{Treatment})) + \ln(\text{Abundance}) + (1 | \text{RegionYearField}) + (1 | \text{Method})$

Taxonomic Diversity	Estimate	Std. Error	z value
Intercept (FI)	1.21E+00	2.73E-01	4.412
Location FE	4.65E-02	1.67E-01	0.278
EdgeHt	-3.89E-05	1.04E-03	-0.037
EdgeSD	9.90E-04	1.35E-03	0.736
Length	-3.01E-04	1.50E-04	-2.001
EdgeDepth	2.05E-03	2.31E-03	0.887
Bareground	1.13E-03	1.75E-03	0.645
TreatmentNone	2.54E-01	8.29E-02	3.062
TreatmentRU	1.89E-01	1.05E-01	1.804
ln.Abundance	-1.48E-02	1.67E-02	-0.888
FieldEdgeField:EdgeHt	1.80E-03	1.31E-03	1.372
FieldEdgeField:EdgeSD	2.74E-03	1.58E-03	1.735
FieldEdgeField:Length	4.88E-04	1.78E-04	2.740
FieldEdgeField:EdgeDepth	-4.48E-03	2.92E-03	-1.533
FieldEdgeField:Bareground	1.15E-03	2.36E-03	0.489
FieldEdgeField:TreatmentNone	-3.03E-01	1.06E-01	-2.863
FieldEdgeField:TreatmentRU	-2.24E-01	1.45E-01	-1.540

- b) $Wt \sim (\text{FieldEdge} * (\text{EdgeHt} + \text{EdgeSD} + \text{Length} + \text{EdgeDepth} + \text{Bareground} + \text{Treatment})) + (1 | \text{RegionYearField}) + (1 | \text{Method})$

Weight	Estimate	Std. Error	z value
Intercept (FI)	5.77E+00	6.33E-01	9.120
Location FE	5.97E-02	3.64E-01	0.164
EdgeHt	3.68E-03	3.24E-03	1.136
EdgeSD	-6.84E-03	4.65E-03	-1.472
Length	-7.75E-05	5.12E-04	-0.151
EdgeDepth	6.47E-03	8.36E-03	0.773
Bareground	3.82E-03	4.78E-03	0.798
TreatmentNone	3.26E-01	2.45E-01	1.331
TreatmentRU	4.19E-01	3.12E-01	1.342
FieldEdgeField:EdgeHt	4.45E-04	2.90E-03	0.154
FieldEdgeField:EdgeSD	1.35E-02	4.10E-03	3.295
FieldEdgeField:Length	3.68E-04	3.97E-04	0.929
FieldEdgeField:EdgeDepth	-1.70E-02	6.49E-03	-2.622
FieldEdgeField:Bareground	2.82E-03	5.40E-03	0.523
FieldEdgeField:TreatmentNone	-7.27E-01	2.32E-01	-3.134
FieldEdgeField:TreatmentRU	-5.71E-01	3.25E-01	-1.754

Table S3. Birds seen or heard during sampling; population trends and life history compiled from literature. P/M: permanent or migratory; ag: agriculture. Nest location, number of broods, feeding habits, diet, and habitat (Ehrlich 1988), residence status and trend per year over the past 50 years (Kleen 2004); trends, diet and habitat (Walk 2011).

Species	Latin Name	Trend per yr	P/M	Nest Location	Broods	Feeding Habits	Diet	Habitat
Ring-necked pheasant	<i>Phasianus colchicus</i>	−2.0%	P	ground nest	1	ground glean	terrestrial and aquatic invertebrates, small vertebrates, seeds, grain, fruit	edge, ag, open country, woodlands
Northern bobwhite	<i>Colinus virginianus</i>	−1.9%	P	ground nest	1	ground glean	leaves, fruit, tubers, spiders, snails, small vertebrates 85% veg 15% animals more insects in summer	hedgerows, tall grassland, old fields, woodlands, ag
Killdeer	<i>Charadrius vociferus</i>	8.1%	M	ground nest	1	ground glean	75% insects, remainder wide variety of invertebrates 2% weed seeds	gravel
Mourning dove	<i>Zenaidura macroura</i>	0.5%	M	usually tree 0'–40'	multiple (2–6)	ground, foliage glean	seeds, including waste grain from cultivated fields > 99% of diet.	edge, ag
House wren	<i>Troglodytes aedon</i>	1.6%	M	cavity (snag) 0'–20'	2–3	ground, foliage glean	insects, including millipedes, spiders, snails	open woodland, shrubland, ag
American robin	<i>Turdus migratorius</i>	2.9%	M	tree or shrub 10'–20'	2	ground, foliage glean	insects, fruit	forest, woodland, gardens parks
Gray catbird	<i>Dumetella carolinensis</i>	0.7%	M	dense brush shrubland, edge 2'–10'	2	ground, foliage glean	insects, fruit, spiders, berries	dense brush
Brown thrasher	<i>Toxostoma rufum</i>	−0.9%	M	low shrub 0'–10'	2–3	ground, foliage glean	omnivore: insects invertebrates, small vertebrates, berries, fruit	dense brush, shrubland, edge
White-eyed vireo	<i>Vireo griseus</i>	−1.8%	M	dense brush 1'–8'	1–2	foliage glean	insects during breeding season, 20–30% berries in winter	edge, ag, brushy moist areas near streams, old fields, scrub

Table S3. Cont.

Species	Latin Name	Trend per yr	P/M	Nest Location	Broods	Feeding Habits	Diet	Habitat
Field sparrow	<i>Spizella pusilla</i>	−3.0%	M	sapling, shrub 0–2.5'	2–3	ground, foliage glean	insects, seeds, incl few spiders, seeds of forbs and grass	old fields, brush, edge, thorn scrub
Northern cardinal	<i>Cardinalis cardinalis</i>	0.6%	P	dense brush, sapling 1'–15'	multiple 2–4	ground glean	insects, seeds, fruit	dense shrubs, brush, thickets, riparian thickets
Blue grosbeak	<i>Guiraca caerulea</i>	1.7%	M	shrub 3'–12'	2	ground, foliage glean	insects, seeds, including snails, grain occasional fruit	dense brush
Indigo bunting	<i>Passerina cyanea</i>	−1.0%	M	tree, tangle 1.5–4'	2–3	foliage, ground glean	insects, seeds, fruit, including grain, berries	forest edge, woodland, old fields, shrub, orchards
American goldfinch	<i>Carduelis tristis</i>	−0.5%	M	shrub, forb 2'–40'	1–2	foliage, ground glean	seeds, insects, including seeds of deciduous trees, forbs, grass, floral buds, berries	weedy and cultivated fields, woodland, riparian edge
Song sparrow	<i>Melospiza melodia</i>	0.1%	M	shrub 0–3'	2–4	ground, foliage glean	insects, seeds, including grass and forb seeds, some berries, crustaceans and mollusks	early succession, dense veg riparian, forest edge
Red-winged blackbird	<i>Agelaius phoeniceus</i>	−0.3%	M	brush (wet), reeds	2–3	ground, foliage glean, hawks	insects, seeds, spiders, grass and forb seeds, rarely fruit	fresh water marshes, riparian edge, fields
Eastern meadowlark	<i>Sturnella magna</i>	−2.3%	M	ground nest	2	ground glean	insects, seeds, spiders, grass and forb seeds, some fruit	edge, ag, grassland savanna
Brown-headed cowbird	<i>Molothrus ater</i>	1.1%	M	parasitic, shrub and ground	1–80 eggs	ground glean	insects, seeds, spiders, few snails, grain, grass and forb seeds	edge, ag, woodland forest edge, grassland
Dickcissel	<i>Spiza americana</i>	−3.5%	M	shrub, herbs 0–2'	1	ground glean	insects, seeds, young birds 70% grain grass and forb seeds, 30% insects: adults is reverse	early succession, grasslands, cultivated and abandoned fields