

**Evaluating wildlife response to vegetation restoration on reclaimed mine lands
in southwestern Virginia**

Amy Leigh Carrozzino

Thesis submitted for the Faculty of the
Virginia Polytechnic Institute and State University
in partial fulfillment of the requirements for the degree of

Master of Science

in

Fisheries and Wildlife Sciences

Dean F. Stauffer, Chair
Carola A. Haas
Sarah M. Karpanty

April 22, 2009
Blacksburg, Virginia

Keywords: coal mine reclamation, birds, amphibians, wildlife response to human disturbance,
habitat models

Copyright 2009, Amy Leigh Carrozzino

Appendices

Appendix A. Bird species observed on the study areas.

Code	Common name	Scientific name
ACFL	Acadian flycatcher	<i>Empidonax vireescens</i>
AMCR	American crow	<i>Corvus brachyrhynchos</i>
AMGO	American goldfinch	<i>Carduelis tristis</i>
AMKE	American kestrel	<i>Falco sparverius</i>
AMRO	American robin	<i>Turdus migratorius</i>
AMWO	American woodcock	<i>Scolopax minor</i>
BASW	Barn swallow	<i>Hirundo rustica</i>
BAWW	Black-and-white warbler	<i>Mniotilta varia</i>
BBCU	Black-billed cuckoo	<i>Coccyzus erythrophthalmus</i>
BLWA	Blackburnian warbler	<i>Dendroica fusca</i>
BCCH	Black-capped chickadee	<i>Poecile atricapilla</i>
BTBW	Black-throated blue warbler	<i>Dendroica caerulescens</i>
BTGW	Black-throated green warbler	<i>Dendroica virens</i>
BLJA	Blue jay	<i>Cyanocitta cristata</i>
BGGN	Blue-gray gnatcatcher	<i>Poliotilta caerulea</i>
BHVI	Blue-headed vireo	<i>Vireo solitarius</i>
BWWA	Blue-winged warbler	<i>Vermivora pinus</i>
BRTH	Brown thrasher	<i>Toxostoma rufum</i>
BHCO	Brown-headed cowbird	<i>Molothrus ater</i>
CACH	Carolina chickadee	<i>Poecile carolinensis</i>
CAWR	Carolina wren	<i>Thryothorus ludovicianus</i>
CEWX	Cedar waxwing	<i>Bombycilla cedrorum</i>
CEWA	Cerulean warbler	<i>Dendroica cerulea</i>
CSWA	Chestnut-sided warbler	<i>Dendroica pensylvanica</i>
CHSW	Chimney swift	<i>Chaetura pelagica</i>
CHSP	Chipping sparrow	<i>Spizella passerina</i>
CLSW	Cliff swallow	<i>Petrochelidon pyrrhonota</i>
COGR	Common grackle	<i>Quiscalus quiscula</i>
CORA	Common raven	<i>Corvus corax</i>
COYE	Common yellowthroat	<i>Geothlypis trichas</i>
COHA	Cooper's hawk	<i>Accipiter cooperii</i>
DEJU	Dark-eyed junco	<i>Junco hyemalis</i>
DOWO	Downy woodpecker	<i>Picoides pubescens</i>
EABL	Eastern bluebird	<i>Sialia sialis</i>
EAME	Eastern meadowlark	<i>Sturnella magna</i>
EAPH	Eastern phoebe	<i>Sayornis phoebe</i>
EATO	Eastern towhee	<i>Pipilo erythrophthalmus</i>
EAWP	Eastern wood-pewee	<i>Contopus virens</i>
EUST	European starling	<i>Sturnus vulgaris</i>
FISP	Field sparrow	<i>Spizella pusilla</i>
GWWA	Golden-winged warbler	<i>Vermivora chrysoptera</i>
GRSP	Grasshopper sparrow	<i>Ammodramus savannarum</i>
GRCA	Gray catbird	<i>Dumetella carolinensis</i>
HAWO	Hairy woodpecker	<i>Picoides villosus</i>
HOWA	Hooded warbler	<i>Wilsonia citrina</i>
INBU	Indigo bunting	<i>Passerina cyanea</i>

Appendix A. (continued)

Code	Common name	Scientific name
KEWA	Kentucky warbler	<i>Oporornis formosus</i>
KILD	Killdeer	<i>Charadrius vociferus</i>
MAWA	Magnolia warbler	<i>Dendroica magnolia</i>
MODO	Mourning dove	<i>Zenaida macroura</i>
NOBO	Northern bobwhite	<i>Colinus virginianus</i>
NOCA	Northern cardinal	<i>Cardinalis cardinalis</i>
NOMO	Northern mockingbird	<i>Mimus polyglottos</i>
NOPA	Northern parula	<i>Parula americana</i>
RWSW	Northern rough-winged swallow	<i>Stelgidopteryx serripennis</i>
OVEN	Ovenbird	<i>Seiurus aurocapillus</i>
PIWO	Pileated woodpecker	<i>Dryocopus pileatus</i>
PIWA	Pine warbler	<i>Dendroica pinus</i>
PRWA	Prairie warbler	<i>Dendroica discolor</i>
RBWO	Red-bellied woodpecker	<i>Melanerpes carolinus</i>
REVI	Red-eyed vireo	<i>Vireo olivaceus</i>
RHOW	Red-headed woodpecker	<i>Melanerpes erythrocephalus</i>
RSHA	Red-shouldered hawk	<i>Buteo lineatus</i>
RTHA	Red-tailed hawk	<i>Buteo jamaicensis</i>
RWBL	Red-winged blackbird	<i>Agelaius phoeniceus</i>
RTHU	Ruby-throated hummingbird	<i>Archilochus colubris</i>
SCTA	Scarlet tanager	<i>Piranga olivacea</i>
SOSP	Song sparrow	<i>Melospiza melodia</i>
SWWA	Swainson's warbler	<i>Limnothlypis swainsonii</i>
TRSW	Tree swallow	<i>Tachycineta bicolor</i>
TUTI	Tufted titmouse	<i>Baeolophus bicolor</i>
VEER	Veery	<i>Catharus fuscescens</i>
WBNU	White-breasted nuthatch	<i>Sitta carolinensis</i>
WEVI	White-eyed vireo	<i>Vireo griseus</i>
WITU	Wild turkey	<i>Meleagris gallopavo</i>
WOTH	Wood thrush	<i>Hylocichla mustelina</i>
WEWA	Worm-eating warbler	<i>Helminthos vermivora</i>
YBCU	Yellow-billed cuckoo	<i>Coccyzus americanus</i>
YBCH	Yellow-breasted chat	<i>Icteria virens</i>
YTVI	Yellow-throated vireo	<i>Vireo flavifrons</i>

Appendix B. Avian functional guild assignments

Table B1. Nesting guild composition (N=80 species).

Cavity (n=13)	Ground (n=18)	Trees/shrubs (n=44)
Black-capped chickadee	American woodcock	Acadian flycatcher
Carolina chickadee	Black-and-white warbler	American crow
Downy woodpecker	Blue-winged warbler	American goldfinch
Eastern bluebird	Brown thrasher	American kestrel
European starling	Common yellowthroat	American robin
Hairy woodpecker	Eastern meadowlark	Black-billed cuckoo
Northern rough-winged swallow	Eastern towhee	Blackburnian warbler
Pileated woodpecker	Field sparrow	Black-throated blue warbler
Red-bellied woodpecker	Golden-winged warbler	Black-throated green warbler
Red-headed woodpecker	Grasshopper sparrow	Blue jay
Tree swallow	Kentucky warbler	Blue-gray gnatcatcher
Tufted titmouse	Killdeer	Blue-headed vireo
White-breasted nuthatch	Northern bobwhite	Carolina wren
	Ovenbird	Cedar waxwing
	Song sparrow	Cerulean warbler
	Veery	Chestnut-sided warbler
	Wild turkey	Chipping sparrow
	Worm-eating warbler	Common grackle
		Common raven
		Cooper's hawk
		Dark-eyed junco
		Eastern wood-pewee
		Gray catbird
		Hooded warbler
		Indigo bunting
		Magnolia warbler
		Mourning dove
		Northern cardinal
		Northern mockingbird
		Northern parula
		Pine warbler
		Prairie warbler
		Red-eyed vireo
		Red-shouldered hawk
		Red-tailed hawk
		Red-winged blackbird
		Ruby-throated hummingbird
		Scarlet tanager
		Swainson's warbler
		White-eyed vireo
		Wood thrush
		Yellow-billed cuckoo
		Yellow-breasted chat
		Yellow-throated vireo
<hr/>		
Parasitic (n=1)		
Brown-headed cowbird		
<hr/>		
Structural (n=4)		
Barn swallow		
Chimney swift		
Cliff swallow		
Eastern phoebe		

Table B2. Migration status guild composition (N=80 species).

Neotropical (n=40)	Resident (n=25)	Short-distance (n=15)
Acadian flycatcher	American crow	American robin
Barn swallow	American goldfinch	American woodcock
Black-and-white warbler	American kestrel	Brown thrasher
Black-billed cuckoo	Black-capped chickadee	Brown-headed cowbird
Blackburnian warbler	Blue jay	Cedar waxwing
Black-throated blue warbler	Carolina chickadee	Chipping sparrow
Black-throated green warbler	Carolina wren	Common grackle
Blue-gray gnatcatcher	Common raven	Dark-eyed junco
Blue-headed vireo	Cooper's hawk	Eastern towhee
Blue-winged warbler	Downy woodpecker	Field sparrow
Cerulean warbler	Eastern bluebird	Killdeer
Chestnut-sided warbler	Eastern meadowlark	Pine warbler
Chimney swift	European starling	Red-shouldered hawk
Cliff swallow	Hairy woodpecker	Red-winged blackbird
Common yellowthroat	Mourning dove	Song sparrow
Eastern phoebe	Northern bobwhite	
Eastern wood-pewee	Northern cardinal	
Golden-winged warbler	Northern mockingbird	
Grasshopper sparrow	Pileated woodpecker	
Gray catbird	Red-bellied woodpecker	
Hooded warbler	Red-headed woodpecker	
Indigo bunting	Red-tailed hawk	
Kentucky warbler	Tufted titmouse	
Magnolia warbler	White-breasted nuthatch	
Northern parula	Wild turkey	
Northern rough-winged swallow		
Ovenbird		
Prairie warbler		
Red-eyed vireo		
Ruby-throated hummingbird		
Scarlet tanager		
Swainson's warbler		
Tree swallow		
Veery		
White-eyed vireo		
Wood thrush		
Worm-eating warbler		
Yellow-billed cuckoo		
Yellow-breasted chat		
Yellow-throated vireo		

Table B3. Foraging guild composition (N=80 species).

Carnivorous (n=4)	Insectivorous (n=41)	Omnivorous (n=30)
American kestrel	Acadian flycatcher	American crow
Cooper's hawk	American woodcock	American robin
Red-shouldered hawk	Barn swallow	Black-billed cuckoo
Red-tailed hawk	Black-and-white warbler	Black-capped chickadee
	Blackburnian warbler	Blue jay
	Black-throated blue warbler	Brown thrasher
	Black-throated green warbler	Brown-headed cowbird
Frugivorous (n=2)	Blue-gray gnatcatcher	Carolina chickadee
Cedar waxwing	Blue-headed vireo	Chipping sparrow
Ruby-throated hummingbird	Blue-winged warbler	Common grackle
	Carolina wren	Common raven
	Cerulean warbler	Dark-eyed junco
Granivorous (n=3)	Chestnut-sided warbler	Downy woodpecker
American goldfinch	Chimney swift	Eastern towhee
Mourning dove	Cliff swallow	European starling
Northern bobwhite	Common yellowthroat	Hairy woodpecker
	Eastern bluebird	Indigo bunting
	Eastern meadowlark	Northern cardinal
	Eastern pheobe	Northern mockingbird
	Eastern wood-pewee	Pileated woodpecker
	Field sparrow	Red-bellied woodpecker
	Golden-winged warbler	Red-headed woodpecker
	Grasshopper sparrow	Red-winged blackbird
	Gray catbird	Scarlet tanager
	Hooded warbler	Song sparrow
	Kentucky warbler	Tufted titmouse
	Killdeer	White-breasted nuthatch
	Magnolia warbler	Wild turkey
	Northern parula	Wood thrush
	Northern rough-winged swallow	Yellow-billed cuckoo
	Ovenbird	
	Pine warbler	
	Prairie warbler	
	Red-eyed vireo	
	Swainson's warbler	
	Tree swallow	
	Veery	
	White-eyed vireo	
	Worm-eating warbler	
	Yellow-breasted chat	
	Yellow-throated vireo	

Appendix C. Amphibian species observed on the study areas.

Species	Scientific name
American toad	<i>Bufo americanus</i>
Bullfrog	<i>Rana catesbeiana</i>
Fowler's toad	<i>Bufo woodhousei fowleri</i>
Gray treefrog	<i>Hyla versicolor</i>
Green frog	<i>Rana clamitans</i>
Longtail salamander	<i>Eurycea longicauda</i>
Northern red salamander	<i>Pseudotriton ruber</i>
Northern slimy salamander	<i>Plethodon glutinosus</i>
Pickerel frog	<i>Rana palustris</i>
Red-spotted newt	<i>Notophthalmus viridescens viridescens</i>
Southern two-lined salamander	<i>Eurycea cirrigera</i>
Spotted salamander	<i>Ambystoma maculatum</i>
Spring peeper	<i>Pseudacris crucifer</i>
Upland chorus frog	<i>Pseudacris feriarum</i>

Appendix D. Field data collection sheets.

Figure D1. Data sheet used for habitat sampling in Wise and Dickenson Counties, Virginia in May and June 2007 and 2008.

Date: _____ Observer(s): _____ Locale: PRP PALS

Sampling point ID number: _____ Plot # 1 2 3 4

Successional stage/age of stand (if known): _____

Land status (circle one): Mined Clearcut Reference

Dominant vegetation type (circle): hardwood pine mixed shrub pasture

Trees (within circular plot of 11.3m radius, 0.04 ha)

Species	S 3-8 cm DBH	A 8-15 cm DBH	B 15-23 cm DBH	C 23-38 cm DBH	D 38-53 cm DBH	E > 53 cm DBH

**NOTE: Size classes C-E were later combined into a mature size class (MAT) for analysis.

Woody stems < 3cm DBH (within 2 x 10 m transects in cardinal directions from point)

	N	S	E	W
Deciduous				
Coniferous				

Canopy height
Height of tallest tree = _____ m

Figure D1. (continued)

Slope

Maximum slope: _____°

Point quarter for tree and log dispersion

	Tree		Log (>0.5 m long, > 8cm diameter)		
	distance	DBH	distance	DBH	length
NE					
SE					
SW					
NW					

Canopy and Ground cover

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
canopy																				
herb																				
leaf																				

Canopy: # hits= _____/20 = _____% canopy cover

Ground:

Herbaceous: # hits= _____/20 = _____% grass cover

Leaf litter: # hits= _____/20 = _____% leaf litter cover

Species dominance

Dominant shrub species (>1m tall, <3cm dbh):

1. _____
2. _____
3. _____
4. _____
5. _____

Dominant ground cover species:

1. _____
2. _____
3. _____
4. _____
5. _____

Figure D2. Data sheet used for bird sampling in Wise and Dickenson Counties, Virginia from May through July 2007 and 2008.

Date: _____ Start time: _____ Stop time: _____ Sampling point ID number: _____ Locale: PRP PALS
 Observer: _____ Temperature: _____ Wind code: _____ Weather conditions: _____

Point	Species	Sex/Age (M/F/J)	Time observed	Distance from observer code	ID method code	Use code	Behavior notes

Figure D2. (continued)

Point	Species	Sex/Age (M/F/J)	Time observed	Distance from observer code	ID method code	Use code	Behavior notes

Beaufort Wind Codes
 0 = Calm (<1mph, smoke rises vertically)
 1 = Light Air (1-3 mph, smoke drifts, weather vane inactive)
 2 = Light Breeze (4-7 mph, leaves rustle, can feel wind on face)
 3 = Gentle Breeze (8-12 mph, leaves and twigs move around, small flag extends)
 4* = Moderate Breeze (13-18 mph, moves thin branches, raises loose papers)
 *do not conduct survey if wind is at Level 4 or greater

Distance from Observer Codes
 1: 0- 5 m
 2: 5-10 m
 3: 10-20 m
 4: 20-30 m
 5: 30-50 m
 6: 50-70 m

ID Method Codes
 1- by sight only
 2- by call or song only
 3- both auditory and visual observation

Use of Habitat Codes:
 1- *primary* use of habitat (foraging, nesting, perching, etc.)
 2- *tangential* use of habitat (fly over, etc.)

Figure D3. Data sheet used for salamander sampling in Wise and Dickenson Counties, Virginia in June and July 2007 and May through September 2008.

Date: _____ Start time: _____ Stop time: _____ Locale: PRP PALS

Sampling point ID number: _____ Observer(s): _____

Temperature: _____ Relative humidity: _____ Weather: _____

#	Species	Weight (g)	Snout-vent length (mm)	Vent-tail length (mm)	Location found/substrate code
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					

Location Codes
 1- under woody debris
 2- under rock
 3- under cover board
 4- under leaf litter
 5- foraging/active

Figure D4. Data sheet used for frog call sampling in Wise and Dickenson Counties, Virginia in June and July 2007 and May through July 2008.

Date: _____ Start time: _____ Stop time: _____ Locale: PRP PALS

Sampling point ID number: _____ Observer(s): _____

Air temperature: _____ Current conditions: _____

Wind code: _____ Sky code: _____ Number of days since last rainfall: _____

	Site 1	Site 2	Site 3	Site 4	Site 5	Site 6	Site 7
Species							
Cricket frog							
Spring Peeper							
Upland Chorus frog							
Bullfrog							
Green frog							
Pickerel frog							
Wood frog							
Gray tree frog							
American toad							
Fowler's toad							

**Enter Amphibian Calling Index in spaces above if species is detected at the site.

Amphibian Calling Index
 1 = Individuals can be counted; there is space between calls
 2 = Calls of individuals can be distinguished but there is some overlapping of calls
 3 = Full chorus, calls are constant, continuous and overlapping

Sky Codes
 0 = Few clouds
 1 = Partly cloudy (scattered) or variable sky
 2 = Cloudy or overcast
 4 = Fog or smoke
 5 = Drizzle or light rain (does not affect hearing ability)
 6 = Showers (affects hearing ability - do not conduct survey)

Beaufort Wind Codes
 0 = Calm (<1mph, smoke rises vertically)
 1 = Light Air (1-3 mph, smoke drifts, weather vane inactive)
 2 = Light Breeze (4-7 mph, leaves rustle, can feel wind on face)
 3 = Gentle Breeze (8-12 mph, leaves and twigs move around, small flag extends)
 4* = Moderate Breeze (13-18 mph, moves thin branches, raises loose papers)
 *do not conduct survey if wind is at Level 4 or greater

Figure D4. (continued)

Water body locations/descriptions:

Survey site 1: _____

Survey site 2: _____

Survey site 3: _____

Survey site 4: _____

Survey site 5: _____

Survey site 6: _____

Survey site 7: _____

Appendix E. Logistic regression model results relating avian presence to site-specific habitat data.

Superscript “step” indicates the model was selected from all variables (n=26) in stepwise logistic regression. Single variable and multi-variable models are listed from lowest to highest AICc. Models with delta AICc < 2 were considered to be equivalent.

Table E1. American crow was present at 50 sampling points (N=102). AICc from test models was compared to the AIC Intercept Only value of 143.36 to determine the best models.

Variable	AIC	AICc	Δ AICc	LR X2	LR p-value	Odds estimate	CI include 1?	ROC	B0	B1	GOF p-val
cvmat*	139.489	139.6102	0.000	5.8735	0.0154	1.185	yes	0.080	-0.1226	0.1697	
mdstem	142.030	142.1512	2.541	3.3329	0.0679	1.000	yes	0.545	0.2656	-0.00015	0.7988
denb	143.616	143.7372	4.127	1.7467	0.1863	1.004	yes	0.481	-0.2455	0.00376	0.7768
condenb	143.667	143.7882	4.178	1.6955	0.1929	1.001	yes	0.256	-0.1417	0.00137	0.3873
cvb	144.605	144.7262	5.116	0.7578	0.3840	0.998	yes	0.477	0.1335	-0.00228	0.5817
grasscov	144.647	144.7682	5.158	0.7156	0.3976	1.005	yes	0.527	-0.2903	0.00494	0.7384
hwdenmat	144.730	144.8512	5.241	0.6331	0.4262	0.998	yes	0.339	0.0595	-0.00224	0.2667
cvs	144.779	144.9002	5.290	0.5841	0.4447	1.003	yes	0.539	-0.2697	0.00302	0.2412
condens	144.978	145.0992	5.489	0.3847	0.5351	1.000	yes	0.312	0.0133	-0.00031	0.233
canht	145.126	145.2472	5.637	0.2364	0.6268	0.991	yes	0.478	0.0827	-0.00922	0.8565
dena	145.200	145.3212	5.711	0.1626	0.6868	1.000	yes	0.465	0.0292	-0.00041	0.711
cvtot	145.229	145.3502	5.740	0.1334	0.7149	1.002	yes	0.491	-0.139	0.00153	0.4149
hwdenb	145.247	145.3682	5.758	0.1154	0.7341	1.001	yes	0.407	-0.1071	0.00118	0.1909
mcstem	145.278	145.3992	5.789	0.0849	0.7708	1.001	yes	0.360	-0.0659	0.000677	0.0639
dens	145.292	145.4132	5.803	0.0709	0.7900	1.000	yes	0.523	0.0103	-0.00012	0.6342
cvstem	145.318	145.4392	5.829	0.0448	0.8324	1.001	yes	0.488	-0.1193	0.000975	0.2783
condenmat	145.318	145.4392	5.829	0.0443	0.8332	1.000	yes	0.151	-0.0497	0.000491	
cancov	145.324	145.4452	5.835	0.0388	0.8439	1.001	yes	0.487	-0.1022	0.00141	0.6122
hwdens	145.331	145.4522	5.842	0.0317	0.8587	1.000	yes	0.388	-0.0644	0.00006	0.2549
condena	145.339	145.4602	5.850	0.0239	0.8770	1.000	yes	0.179	-0.0276	-0.00007	0.703
sumhwden	145.345	145.4662	5.856	0.0181	0.8930	1.000	yes	0.403	-0.067	0.00004	0.8328
hwdena	145.351	145.4722	5.862	0.0118	0.9134	1.000	yes	0.382	-0.0581	0.000109	0.6167
denmat	145.355	145.4762	5.866	0.0076	0.9305	1.000	yes	0.311	-0.0489	0.000442	0.7663
cva	145.358	145.4792	5.869	0.0045	0.9463	1.000	yes	0.427	-0.0565	0.000209	0.8843
sumconden	145.360	145.4812	5.871	0.0031	0.9554	1.000	yes	0.163	-0.0339	-0.00001	0.0732
totalden	145.360	145.4812	5.871	0.0029	0.9567	1.000	yes	0.390	-0.0519	0.000013	0.8318

* Maximum likelihood estimate may not exist! Validity of the model is questionable.

STEP: Best model is intercept only!

Table E2. American goldfinch was present at 51 sampling points (N=102). AICc from test models was compared to the AIC Intercept Only value of 143.4 to determine the best models.

Variable	AIC	AICc	Δ AICc	LR X2	LR p-value	Odds estimate	CI include 1?	ROC	B0	B1	GOF p-val
cancov	123.197	123.4419	0	24.2046	<0.0001	0.970	no, -	0.760	0.3832	-0.0308	0.537
cvstem						1.012	no, +			0.0121	
cancov ^{step}	123.398	123.6429	0.2010	24.0038	<0.0001	0.959	no, -	0.770	1.6638	-0.0423	0.2874
condenb						1.002	yes			0.00245	
cancov	125.884	126.0052	2.5633	19.5180	<0.0001	0.966	no, -	0.739	1.5477	-0.0349	0.2125
grasscov	126.833	127.0779	3.6360	20.5691	<0.0001	1.021	no, +	0.752	-2.082	0.0209	0.8091
cvstem						1.013	no, +			0.0124	
grasscov	128.343	128.7554	5.3135	21.0592	0.0001	1.020	no, +	0.749	-2.1521	0.02	0.8101
cvstem						1.011	yes			0.0105	
cvs						1.004	yes			0.00356	
cvs	129.228	129.4729	6.0310	18.1742	0.0001	1.008	yes	0.731	-1.6918	0.00781	0.0496
grasscov						1.022	no, +			0.0216	
grasscov	130.164	130.2852	6.8433	15.2380	<0.0001	1.025	no, +	0.704	-1.2439	0.0244	0.5965
hwdenb	132.011	132.1322	8.6903	13.3909	0.0003	0.986	no, -	0.647	0.8087	-0.0146	0.4554
grasscov	132.088	132.3329	8.8910	15.3137	0.0005	1.025	no, +	0.713	-1.293	0.0248	0.5846
sumconden						1.000	yes			0.000066	
canht	132.392	132.5132	9.0713	13.0095	0.0003	0.924	no, -	0.732	0.9972	-0.0793	0.1313
cvstem	134.695	134.8162	11.3743	10.7068	0.0011	1.017	no, +	0.674	-1.341	0.0165	0.7169
denmat	134.976	135.0972	11.6553	10.4265	0.0012	0.980	no, -	0.505	0.3797	-0.02	0.8597
hwdenmat	134.996	135.1172	11.6753	10.4064	0.0013	0.990	no, -	0.476	0.4177	-0.0104	0.5958
totalden	137.204	137.3252	13.8833	8.1976	0.0042	0.999	yes	0.665	0.6974	-0.00073	0.6018
totalden	137.459	137.7039	14.2620	9.9428	0.0069	0.999	yes	0.672	0.1523	-0.00059	0.8851
cvtot						1.006	yes			0.00644	
cvs	138.135	138.2562	14.8143	7.2666	0.007	1.011	no, +	0.649	-0.846	0.0113	0.2498
cvmat*	139.694	139.8152	16.3733	5.7084	0.0169	0.844	yes	0.078	0.0817	-0.169	
cvtot	139.971	140.0922	16.6503	5.4307	0.0198	1.010	no, +	0.612	-0.6586	0.0103	0.7028
cva	140.105	140.2262	16.7843	5.2969	0.0214	1.007	no, +	0.611	-0.6011	0.00736	0.0414
mdstem	141.538	141.6592	18.2173	3.8637	0.0493	1.000	yes	0.581	0.3294	-0.00016	0.9629
dena	142.227	142.3482	18.9063	3.1755	0.0747	0.998	yes	0.632	0.3136	-0.00193	0.0608
condenmat	142.288	142.4092	18.9673	3.1144	0.0776	0.994	yes	0.151	0.0966	-0.00582	

Table E2. (continued)

Variable	AIC	AICc	Δ AICc	LR X2	LR p-value	Odds estimate	CI include 1?	ROC	B0	B1	GOF p-val
cvb	142.645	142.7662	19.3243	2.7566	0.0969	0.996	yes	0.569	0.3315	-0.00438	0.0323
denb	144.064	144.1852	20.7433	1.3385	0.2473	0.997	yes	0.630	0.18	-0.00328	0.0031
condena	144.470	144.5912	21.1493	0.9322	0.3343	1.000	yes	0.306	0.0729	-0.00048	0.1978
dens	144.588	144.7092	21.2673	0.8143	0.3668	1.000	yes	0.513	0.171	-0.00042	0.2874
mcstem	145.083	145.2042	21.7623	0.3191	0.5721	1.001	yes	0.297	-0.0519	0.00133	0.7419
hwdens	145.084	145.2052	21.7633	0.3179	0.5729	1.000	yes	0.515	-0.0803	0.000191	0.3874
sumconden	145.115	145.2362	21.7943	0.2868	0.5923	1.000	yes	0.339	0.0513	-0.00012	0.0647
condenb	145.166	145.2872	21.8453	0.2357	0.6274	1.000	yes	0.175	-0.038	0.000495	0.1444
sumhwden	145.386	145.5072	22.0653	0.0161	0.8989	1.000	yes	0.446	0.0262	-0.00004	0.2397
condens	145.393	145.5142	22.0723	0.0093	0.9233	1.000	yes	0.140	0.008	-0.00005	0.1837
hwdena	145.402	145.5232	22.0813	0	0.9972	1.000	yes	0.256	-0.00061	3.499E-06	0.4734

* Maximum likelihood estimate may not exist! Validity of the model is questionable.

Table E3. American robin was present at 25 sampling points (N=102). AICc from test models was compared to the AIC Intercept Only value of 115.605 to determine the best models.

Variable	AIC	AICc	Δ AICc	LR X2	LR p-value	Odds estimate	CI include 1?	ROC	B0	B1	GOF p-val
mcstem	114.969	115.0902	0.000	2.6355	0.1045	1.004	yes	0.395	-1.305	0.00399	0.2775
cvmat*	115.303	115.4242	0.334	2.3018	0.1292	0.855	yes	0.052	-1.0716	-0.1565	
canht	116.311	116.4322	1.342	1.2936	0.2554	0.973	yes	0.522	-0.7855	-0.0272	0.5232
condenb	116.770	116.8912	1.801	0.835	0.3608	1.001	yes	0.156	-1.2112	0.000999	0.0446
dena	116.822	116.9432	1.853	0.7824	0.3764	0.999	yes	0.586	-0.9455	-0.00115	0.3824
hwdenmat	116.858	116.9792	1.889	0.7471	0.3874	0.997	yes	0.334	-1.0028	-0.00302	0.6173
mdstem	116.869	116.9902	1.900	0.7352	0.3912	1.000	yes	0.502	-1.288	0.000075	0.4682
totalden	116.940	117.0612	1.971	0.6645	0.415	1.000	yes	0.538	-0.9055	-0.00024	0.4244
cancov	117.032	117.1532	2.063	0.5723	0.4493	0.994	yes	0.536	-0.8487	-0.00635	0.7359
condenmat	117.120	117.2412	2.151	0.4845	0.4864	1.002	yes	0.112	-1.1662	0.00171	
hwdenb	117.199	117.3202	2.230	0.4058	0.5241	0.997	yes	0.439	-0.9777	-0.00265	0.8468
condens	117.364	117.4852	2.395	0.2407	0.6237	1.000	yes	0.406	-1.1718	0.000254	0.2568
sumconden	117.380	117.5012	2.411	0.2242	0.6358	1.000	yes	0.398	-1.1775	0.000116	0.3322
cvstem	117.408	117.5292	2.439	0.1966	0.6575	1.002	yes	0.494	-1.3206	0.00235	0.4831
cvb	117.429	117.5502	2.460	0.1753	0.6754	1.001	yes	0.443	-1.223	0.00126	0.4583
cvs	117.435	117.5562	2.466	0.1698	0.6803	1.002	yes	0.496	-1.2693	0.00186	0.8021
denmat	117.475	117.5962	2.506	0.1296	0.7189	0.998	yes	0.335	-1.0788	-0.00219	0.0803
denb	117.482	117.6032	2.513	0.1225	0.7263	1.001	yes	0.439	-1.1878	0.0011	0.3994
hwdena	117.488	117.6092	2.519	0.1167	0.7326	1.000	yes	0.376	-1.1928	0.000383	0.5974
grasscov	117.500	117.6212	2.531	0.1043	0.7467	0.998	yes	0.498	-1.0156	-0.00218	0.4622
dens	117.547	117.6682	2.578	0.0575	0.8105	1.000	yes	0.484	-1.1761	0.000124	0.5061
cvtot	117.585	117.7062	2.616	0.02	0.8877	1.001	yes	0.447	-1.1698	0.000685	0.3525
hwdens	117.594	117.7152	2.625	0.0109	0.9169	1.000	yes	0.394	-1.142	0.00004	0.7255
cva	117.600	117.7212	2.631	0.0048	0.9446	1.000	yes	0.424	-1.1456	0.000251	0.4722
condena	117.601	117.7222	2.632	0.0038	0.9511	1.000	yes	0.251	-1.1196	-0.00003	0.6605
sumhwden	117.602	117.7232	2.633	0.0029	0.9573	1.000	yes	0.339	-1.1378	0.000018	0.7515

* Maximum likelihood estimate may not exist! Validity of the model is questionable.

STEP: Best model is intercept only!

Table E4. Black-and-white warbler was present at 62 sampling points (N=102). AICc from test models was compared to the AIC Intercept Only value of 138.62 to determine the best models.

Variable	AIC	AICc	Δ AICc	LR X2	LR p-value	Odds estimate	CI include 1?	ROC	B0	B1	GOF p-val
grasscov ^{step} ‡	95.123	95.7480	-7.3504	51.4965	<0.0001	0.923	no, -	0.885	7.2992	-0.0797	0.2203
mdstem						0.999	yes			-0.00064	
condena						1.007	no, +			0.00721	
sumconden						0.995	no, -			-0.0054	
grasscov	102.686	103.0984	0	41.9338	<0.0001	0.933	no, -	0.844	6.1858	-0.0694	0.821
mdstem						0.999	yes			-0.00056	
sumconden						0.998	no, -			-0.00176	
grasscov	104.256	104.8810	1.7826	42.3635	<0.0001	0.936	no, -	0.845	5.9277	-0.0666	0.6909
mdstem						0.999	yes			-0.00059	
sumconden						0.998	no, -			-0.00169	
hwdenmat						1.004	yes			0.00405	
cancov	118.216	118.6284	15.5300	26.4031	<0.0001	1.054	no, +	0.788	-0.6969	0.0524	0.5137
mdstem						1.000	yes			-0.00022	
sumconden						0.999	no, -			-0.00137	
cancov	119.359	119.6039	16.5055	23.2606	<0.0001	1.040	0.999	0.772	-0.7055	0.039	0.3755
sumconden										-0.00107	
grasscov	121.510	121.9224	18.8240	23.1096	<0.0001	0.970	no, -	0.771	2.3677	-0.0309	0.3013
mdstem						1.000	yes			-0.00031	
hwdenmat						1.011	yes			0.0106	
canht	124.054	124.2989	21.2005	18.5652	<0.0001	1.101	no, +	0.777	-0.4301	0.0958	0.0979
sumconden						0.999	yes			-0.00055	
grasscov	124.228	124.3492	21.2508	16.3917	<0.0001	0.974	no, -	0.729	1.8758	-0.0265	0.2936
grasscov	124.578	124.8229	21.7245	18.0413	0.0001	0.980	no, -	0.76	1.3404	-0.0205	0.3481
hwdenmat						1.006	yes			0.00631	
canht	126.723	126.8442	23.7458	13.8969	0.0002	1.099	no, +	0.748	-0.6668	0.0948	0.0332
hwdenmat	129.012	129.1332	26.0348	11.6076	0.0007	1.013	no, +	0.519	-0.00139	0.0128	0.0542
hwdenmat	129.180	129.4249	26.3265	13.4392	0.0012	1.009	yes	0.732	-0.442	0.00908	0.2087
cancov						1.014	yes			0.0135	
cancov	130.628	130.7492	27.6508	9.9918	0.0016	1.025	no, +	0.677	-0.6121	0.0247	0.6171

Table E4. (continued)

Variable	AIC	AICc	Δ AICc	LR X2	LR p-value	Odds estimate	CI include 1?	ROC	B0	B1	GOF p-val
hwdenb	131.604	131.7252	28.6268	9.0153	0.0027	1.012	no, +	0.625	-0.2036	0.0122	0.0292
condens	132.327	132.4482	29.3498	8.2926	0.0040	0.998	yes	0.48	0.748	-0.00194	0.5235
sumconden	135.200	135.3212	32.2228	5.4197	0.0199	0.999	yes	0.512	0.6835	-0.00058	0.5149
denmat	136.077	136.1982	33.0998	4.5424	0.0331	1.013	yes	0.519	0.1935	0.013	0.0496
cvb	136.322	136.4432	33.3448	4.2979	0.0382	1.006	yes	0.563	0.0242	0.00576	0.2159
cvmat*	136.532	136.6532	33.5548	4.0875	0.0432	1.177	yes	0.065	0.3716	0.1628	
hwdens	137.173	137.2942	34.1958	3.4462	0.0634	0.999	yes	0.556	0.7224	-0.00067	0.5421
condenb	137.925	138.0462	34.9478	2.6943	0.1007	0.998	yes	0.254	0.5736	-0.00171	0.3038
mcstem	137.952	138.0732	34.9748	2.6673	0.1024	0.996	yes	0.39	0.5966	-0.00395	0.4475
totalden	138.488	138.6092	35.5108	2.1310	0.1443	1.000	yes	0.597	0.0884	0.000371	0.665
condena	138.504	138.6252	35.5268	2.1151	0.1459	0.999	yes	0.412	0.5528	-0.00071	0.0789
mdstem	138.929	139.0502	35.9518	1.6906	0.1935	1.000	yes	0.627	0.2184	0.000111	0.0171
sumhwden	138.940	139.0612	35.9628	1.6797	0.1950	1.000	yes	0.533	0.7161	-0.00039	0.0009
cvtot	139.040	139.1612	36.0628	1.5793	0.2089	1.006	yes	0.596	0.0834	0.00559	0.1909
dens	139.908	140.0292	36.9308	0.7118	0.3989	1.000	yes	0.521	0.5993	-0.00039	0.1212
hwdena	139.988	140.1092	37.0108	0.6312	0.4269	0.999	yes	0.497	0.5794	-0.0008	0.012
cvs	140.126	140.2472	37.1488	0.4934	0.4824	1.003	yes	0.565	0.2217	0.00287	0.5585
condenmat	140.440	140.5612	37.4628	0.1799	0.6714	0.999	yes	0.096	0.4601	-0.001	
denb	140.521	140.6422	37.5438	0.0986	0.7535	1.001	yes	0.591	0.3887	0.000901	0.0009
cva	140.573	140.6942	37.5958	0.0464	0.8295	1.001	yes	0.46	0.3819	0.000686	0.045
cvstem	140.616	140.7372	37.6388	0.0036	0.9522	1.000	yes	0.442	0.4151	0.000283	0.5191
dena†	140.619	140.7402	37.6418	0	0.9988	1.000	yes	0	0.4385	-1.53E-06	0.4651

* Maximum likelihood estimate may not exist! Validity of the model is questionable.

† Measures of association between the observed and predicted values were not calculated because the predicted probabilities are indistinguishable when they are classified into intervals of length 0.002.

‡ Model contains variables that are highly correlated with each other.

Table E5. Blue jay was present at 25 sampling points (N=102). AICc from test models was compared to the AIC Intercept Only value of 115.6 to determine the best models.

Variable	AIC	AICc	Δ AICc	LR X2	LR p-value	Odds estimate	CI include 1?	ROC	B0	B1	GOF p-val
condens	109.424	110.0490	0.0000	10.1811	0.0062	0.997	yes	0.718	-1.645	-0.00331	0.5231
cvstem						1.010	yes			0.00959	
condens	110.853	110.9742	0.9252	6.7519	0.0094	0.997	yes	0.418	-0.8139	-0.00334	0.5724
condens	111.088	111.5004	1.4514	10.5168	0.0146	0.997	yes	0.685	-1.604	-0.00286	0.6899
cva						1.005	yes			0.00471	
cvb						1.004	yes			0.00368	
condens	112.015	112.6400	2.5910	11.5900	0.0207	0.997	yes	0.719	-1.9142	-0.00295	0.1072
cva						1.003	yes			0.0033	
cvb						1.003	yes			0.0026	
cvstem						1.006	yes			0.00627	
cva ^{step}	113.364	113.4852	3.4362	4.2408	0.0395	1.007	yes	0.628	-1.7814	0.00732	0.1169
cvb	113.447	113.5682	3.5192	4.1579	0.0414	1.006	yes	0.583	-1.6401	0.00608	0.7429
cvstem	113.7	113.8212	3.7722	3.9048	0.0481	1.011	yes	0.643	-2.0309	0.0104	0.792
sumconden	114.192	114.3132	4.2642	3.4126	0.0647	0.999	yes	0.449	-0.9019	-0.00073	0.6085
condena	114.237	114.3582	4.3092	3.3679	0.0665	0.998	yes	0.342	-0.9555	-0.00178	0.6354
cvmat	114.261	114.3822	4.3332	3.3440	0.0674	1.011	yes	0.118	-1.2142	0.0111	
denmat	115.439	115.5602	5.5112	2.1655	0.1411	1.008	yes	0.484	-1.323	0.00803	0.0792
hwdena	115.948	116.0692	6.0202	1.6565	0.1981	0.998	yes	0.527	-0.8335	-0.00188	0.01
mcstem	116.012	116.1332	6.0842	1.5922	0.2070	0.996	yes	0.298	-0.9877	-0.00433	0.7309
dena	116.338	116.4592	6.4102	1.2664	0.2604	0.998	yes	0.462	-0.8936	-0.00152	0.3061
cvs	116.371	116.4922	6.4432	1.2339	0.2667	1.005	yes	0.607	-1.5179	0.00496	0.0012
condenmat	116.39	116.5112	6.4622	1.2146	0.2704	1.003	yes	0.114	-1.1917	0.00268	
grasscov	116.529	116.6502	6.6012	1.0753	0.2997	0.993	yes	0.561	-0.7832	-0.00702	0.354
cvtot	116.591	116.7122	6.6632	1.0133	0.3141	1.005	yes	0.589	-1.4473	0.00476	0.2414
cancov	116.855	116.9762	6.9272	0.7496	0.3866	1.007	yes	0.559	-1.4559	0.00718	0.4822
condenb	117.244	117.3652	7.3162	0.3604	0.5483	0.999	yes	0.234	-1.0714	-0.00077	0.1905
sumhwden	117.26	117.3812	7.3322	0.3448	0.5570	1.000	yes	0.559	-0.9793	-0.00022	0.1816

Table E5. (continued)

Variable	AIC	AICc	ΔAICc	LR X2	LR p-value	Odds estimate	CI include 1?	ROC	B0	B1	GOF p-val
mdstem	117.448	117.5692	7.5202	0.1564	0.6924	1.000	yes	0.426	-1.05	-0.00004	0.0967
canht	117.482	117.6032	7.5542	0.1229	0.7259	1.008	yes	0.578	-1.2267	0.00757	0.0119
hwdens	117.504	117.6252	7.5762	0.1005	0.7512	1.000	yes	0.493	-1.0719	-0.00013	0.255
hwdenmat	117.527	117.6482	7.5992	0.0773	0.7811	1.001	yes	0.419	-1.1652	0.000885	0.0562
denb	117.541	117.6622	7.6132	0.0641	0.8002	0.999	yes	0.377	-1.0797	-0.00083	0.0013
hwdenb	117.546	117.6672	7.6182	0.0591	0.8079	1.001	yes	0.459	-1.1816	0.000969	0.0865
dens	117.588	117.7092	7.6602	0.0164	0.8980	1.000	yes	0.504	-1.0971	-0.00007	0.0025
totalden	117.592	117.7132	7.6642	0.0125	0.9109	1.000	yes	0.409	-1.0947	-0.00003	0.06

Table E6. Black-throated green warbler was present at 21 sampling points (N=102). AICc from test models was compared to the AIC Intercept Only value of 105.72 to determine the best models.

Variable	AIC	AICc	Δ AICc	LR X2	LR p-value	Odds estimate	CI include 1?	ROC	B0	B1	GOF p-val
canht ^{step} cvb	90.218	90.4629	0.0000	19.5054	< 0.0001	1.097 1.012	no, + no, +	0.788	-3.9558	0.093 0.012	0.6558
hwdenmat cvb	94.209	94.4539	3.9910	15.5151	0.0004	1.011 1.010	no, + no, +	0.761	-2.8736	0.0107 0.00971	0.0402
cancov cvb	95.075	95.3199	4.8570	14.6492	0.0007	1.033 1.012	no, + no, +	0.748	-4.0955	0.0325 0.0119	0.2839
canht	97.496	97.6172	7.1543	10.2273	0.0014	1.071	no, +	0.761	-2.3983	0.069	0.5502
denmat	99.261	99.3822	8.9193	8.4627	0.0036	1.016	no, +	0.645	-1.8043	0.0163	0.1256
canht mdstem	99.353	99.5979	9.1350	10.3711	0.0056	1.064 1.000	no, + yes	0.760	-2.4037	0.0624 0.000044	0.4734
hwdenmat	99.559	99.6802	9.2173	8.1652	0.0043	1.009	no, +	0.581	-1.8513	0.00896	0.0094
hwdenmat mdstem	101.107	101.3519	10.8890	8.6170	0.0135	1.007 1.000	yes yes	0.718	-1.944	0.00737 0.000076	0.1785
hwdens	101.721	101.8422	11.3793	6.0026	0.0143	0.998	yes	0.676	-0.7492	-0.00204	0.5604
cvb	102.107	102.2282	11.7653	5.6168	0.0178	1.008	no, +	0.674	-2.0148	0.00751	0.0105
cancov mdstem	102.343	102.4642	12.0013	5.3809	0.0204	1.021 1.000	no, + yes	0.659	-2.3779	0.0208 0.000197	0.7996
grasscov	102.853	102.9742	12.5113	4.8709	0.0273	0.984	no, -	0.634	-0.6156	-0.0162	0.0547
hwdenb	103.123	103.2442	12.7813	4.6007	0.0320	1.009	no, +	0.657	-1.9258	0.0088	0.0137
sumhwden	105.096	105.2172	14.7543	2.6281	0.1050	0.999	yes	0.606	-0.8732	-0.00078	0.5573
dens	105.301	105.4222	14.9593	2.4232	0.1196	0.999	yes	0.575	-0.9428	-0.00115	0.4468
condens	105.8	105.9212	15.4583	1.9239	0.1654	0.999	yes	0.366	-1.185	-0.00132	0.3978
hwdena	106.237	106.3582	15.8953	1.4866	0.2228	0.998	yes	0.584	-1.0535	-0.00193	0.043
sumconden	106.618	106.7392	16.2763	1.1055	0.2931	1.000	yes	0.381	-1.2217	-0.00036	0.6583
mcstem	106.654	106.7752	16.3123	1.0693	0.3011	0.996	yes	0.294	-1.2311	-0.0037	0.6424
condenmat	106.756	106.8772	16.4143	0.9677	0.3252	1.002	yes	0.175	-1.4132	0.00244	
condena	106.838	106.9592	16.4963	0.8853	0.3468	0.999	yes	0.300	-1.2628	-0.0007	0.5667
totalden	107.077	107.1982	16.7353	0.6470	0.4212	1.000	yes	0.574	-1.585	0.00023	0.405
condenb	107.315	107.4362	16.9733	0.4091	0.5224	0.999	yes	0.202	-1.2897	-0.00089	0.4861

Table E6. (continued)

Variable	AIC	AICc	ΔAICc	LR X2	LR p-value	Odds estimate	CI include 1?	ROC	B0	B1	GOF p-val
cvmat	107.378	107.4992	17.0363	0.3461	0.5563	0.995	yes	0.037	-1.3248	-0.00522	
cva	107.391	107.5122	17.0493	0.3329	0.5640	1.002	yes	0.511	-1.5358	0.00219	0.5329
denb	107.498	107.6192	17.1563	0.2257	0.6347	1.002	yes	0.660	-1.4408	0.00157	0.0053
cvstem	107.531	107.6522	17.1893	0.1931	0.6604	0.997	yes	0.549	-1.1449	-0.00254	0.2448
dena	107.592	107.7132	17.2503	0.1320	0.7163	1.000	yes	0.414	-1.273	-0.00048	0.2072
cvs	107.682	107.8032	17.3403	0.0413	0.8390	1.001	yes	0.456	-1.4255	0.000982	0.1658
cvtot	107.69	107.8112	17.3483	0.0341	0.8536	1.001	yes	0.440	-1.4123	0.000949	0.4285

Table E7. Blue-winged warbler was present at 46 sampling points (N=102). AICc from test models was compared to the AIC Intercept Only value of 142.42 to determine the best models.

Variable	AIC	AICc	ΔAICc	LR X2	LR p-value	Odds estimate	CI include 1?	ROC	B0	B1	GOF p-val
dens ^{step} ‡	110.122	111.0062	-14.7432	42.2978	<0.0001	1.008	no, +	0.835	-1.9101	0.00841	0.1016
totalden						0.998	no, -			-0.00199	
mcstem						1.007	yes			0.00713	
cvstem						1.018	no, +			0.0175	
hwdens						0.997	no, -			-0.0032	
dens	125.337	125.7494	0	23.0826	<0.0001	1.003	no, +	0.746	-0.0688	0.00333	0.1796
totalden						0.999	yes			-0.00127	
canht						0.985	yes			-0.0147	
mcstem	127.306	127.9310	2.1816	23.1140	0.0001	1.005	yes	0.771	-1.2102	0.00533	0.8441
cvstem						1.011	yes			0.0111	
dens						1.002	no, +			0.00213	
cancov						0.979	no, -			-0.0216	
dens	130.856	131.2684	5.5190	17.5637	0.0005	1.002	yes	0.741	-2.3523	0.00171	0.2683
mcstem						1.005	yes			0.00524	
cvstem						1.015	no, +			0.0151	
cvstem	132.905	133.1499	7.4005	13.5148	0.0012	1.014	no, +	0.710	-2.0877	0.0136	0.814
dens						1.002	no, +			0.00188	
denmat	136.891	137.0122	11.2628	7.5290	0.0061	0.983	no, -	0.456	0.1196	-0.0169	0.9259
denmat	138.502	138.7469	12.9975	7.9184	0.0191	0.989	yes	0.622	0.3079	-0.0112	0.7743
canht						0.977	yes			-0.0232	
canht	137.729	137.8502	12.1008	6.6909	0.0097	0.947	no, -	0.630	0.4907	-0.0544	0.0847
dens	137.770	137.8912	12.1418	6.6501	0.0099	1.001	yes	0.597	-0.7448	0.00138	0.0053
mcstem	139.263	139.3842	13.6348	5.1572	0.0232	1.006	yes	0.386	-0.4193	0.00605	0.749
cancov	140.162	140.2832	14.5338	4.2581	0.0391	0.985	yes	0.602	0.4725	-0.0152	0.007
hwdena	140.941	141.0622	15.3128	3.4793	0.0621	0.998	yes	0.556	0.1633	-0.0022	0.3123
denb	141.123	141.2442	15.4948	3.2975	0.0694	0.995	yes	0.596	0.0911	-0.00545	0.1475
cvstem	141.282	141.4032	15.6538	3.1383	0.0765	1.008	yes	0.593	-0.8868	0.00836	0.506
condenb	141.305	141.4262	15.6768	3.1154	0.0776	0.998	yes	0.284	-0.0583	-0.00203	0.1742
condens	141.771	141.8922	16.1428	2.6493	0.1036	1.001	yes	0.419	-0.3472	0.00091	0.9784
totalden	141.793	141.9142	16.1648	2.6274	0.1050	1.000	yes	0.562	0.1865	-0.0004	0.0115

Table E7. (continued)

Variable	AIC	AICc	Δ AICc	LR X2	LR p-value	Odds estimate	CI include 1?	ROC	B0	B1	GOF p-val
hwdenb	141.864	141.9852	16.2358	2.5557	0.1099	0.994	yes	0.533	0.1301	-0.0058	0.7014
hwdenmat	142.338	142.4592	16.7098	2.0824	0.1490	0.996	yes	0.359	-0.0166	-0.00423	0.6713
condenmat	142.525	142.6462	16.8968	1.8955	0.1686	0.996	yes	0.191	-0.1237	-0.00421	
hwdens	142.920	143.0412	17.2918	1.5001	0.2207	1.000	yes	0.568	-0.3756	0.000426	0.9258
cvb	142.998	143.1192	17.3698	1.4223	0.2330	0.997	yes	0.533	0.04	-0.00316	0.018
cva	143.228	143.3492	17.5998	1.1918	0.2750	1.003	yes	0.521	-0.4799	0.00342	0.3792
dena	143.462	143.5832	17.8338	0.9580	0.3277	0.999	yes	0.552	-0.0277	-0.00103	0.4126
grasscov	143.521	143.6422	17.8928	0.8992	0.3430	1.006	yes	0.522	-0.4814	0.00557	0.0164
condena	143.965	144.0862	18.3368	0.4549	0.5000	1.000	yes	0.280	-0.1458	-0.00033	0.2019
cvmat	144.081	144.2022	18.4528	0.3386	0.5606	0.996	yes	0.052	-0.1751	-0.00355	
cvs	144.299	144.4202	18.6708	0.1211	0.7279	0.999	yes	0.475	-0.0916	-0.00138	0.1219
sumhwden	144.347	144.4682	18.7188	0.0733	0.7866	1.000	yes	0.455	-0.2529	0.00008	0.6864
mdstem	144.357	144.4782	18.7288	0.0632	0.8015	1.000	yes	0.493	-0.2378	0.00002	0.4995
cvtot	144.412	144.5332	18.7838	0.0081	0.9284	1.000	yes	0.445	-0.2214	0.000379	0.1492
sumconden	144.415	144.5362	18.7868	0.0054	0.9412	1.000	yes	0.242	-0.1896	-0.00002	0.0596

‡ Model contains variables that are highly correlated with each other.

Table E8. Carolina chickadee was present at 55 sampling points (N=102). AICc from test models was compared to the AIC Intercept Only value of 142.77 to determine the best models.

Variable	AIC	AICc	Δ AICc	LR X2	LR p-value	Odds estimate	CI include 1?	ROC	B0	B1	GOF p-val
grasscov step	123.035	123.2799	0	23.7392	<0.0001	0.970	no, -	0.759	0.3764	-0.0301	0.3454
cvs						1.017	no, +			0.0172	
grasscov mdstem	129.262	129.6744	6.3945	19.5123	0.0002	0.984	yes	0.774	0.9992	-0.0165	0.0864
mcstem						1.000	yes			0.000172	
						0.992	no, -			-0.00775	
cancov mdstem	131.762	132.1744	8.8945	17.0124	0.0007	1.012	yes	0.747	-0.529	0.0115	0.0089
mcstem						1.000	yes			0.000257	
						0.992	no, -			-0.0077	
grasscov	133.775	133.8962	10.6163	10.9990	0.0009	0.980	no, -	0.676	1.2164	-0.0204	0.1943
hwdenb	136.535	136.6562	13.3763	8.2391	0.0041	1.011	no, +	0.584	-0.452	0.0111	0.1974
mdstem	137.053	137.1742	13.8943	7.7208	0.0055	1.000	yes	0.646	-0.3254	0.000254	0.2955
cancov	137.446	137.6909	14.4110	9.3282	0.0094	1.011	yes	0.677	-0.6852	0.0108	0.2272
mdstem						1.000	yes			0.000192	
cancov	138.913	139.0342	15.7543	5.8614	0.0155	1.018	no, +	0.645	-0.6326	0.0179	0.5
mcstem	139.294	139.4152	16.1353	5.4798	0.0192	0.994	yes	0.407	0.3871	-0.00635	0.4041
cvs	139.667	139.7882	16.5083	5.1073	0.0238	1.009	no, +	0.656	-0.5444	0.00941	0.137
canht	141.135	141.2562	17.9763	3.6392	0.0564	1.039	yes	0.677	-0.3357	0.0382	0.0094
cvb	141.793	141.9142	18.6343	2.9805	0.0843	1.005	yes	0.561	-0.1859	0.0046	0.1708
hwdenmat	142.068	142.1892	18.9093	2.7062	0.1000	1.005	yes	0.416	-0.0484	0.00485	0.1241
totalden	142.513	142.6342	19.3543	2.2608	0.1327	1.000	yes	0.604	-0.1973	0.00037	0.7663
denmat	142.571	142.6922	19.4123	2.2029	0.1378	1.008	yes	0.472	-0.00933	0.00799	0.0704
condens	143.174	143.2952	20.0153	1.5998	0.2059	0.999	yes	0.506	0.2695	-0.00067	0.169
cvtot	143.396	143.5172	20.2373	1.3780	0.2404	1.005	yes	0.584	-0.1671	0.00503	0.0354
denb	143.780	143.9012	20.6213	0.9938	0.3188	1.003	yes	0.579	0.00214	0.00284	0.0339
hwdens	143.840	143.9612	20.6813	0.9338	0.3339	1.000	yes	0.503	0.2966	-0.00033	0.0794
sumconden	143.975	144.0962	20.8163	0.7987	0.3715	1.000	yes	0.523	0.2437	-0.0002	0.264
cva	144.141	144.2622	20.9823	0.6330	0.4263	1.002	yes	0.515	-0.047	0.00249	0.0534
condenmat	144.159	144.2802	21.0003	0.6149	0.4330	1.002	yes	0.119	0.1173	0.002	
dena	144.294	144.4152	21.1353	0.4797	0.4886	1.001	yes	0.579	0.0386	0.000719	0.3397

Table E8. (continued)

Variable	AIC	AICc	Δ AICc	LR X2	LR p-value	Odds estimate	CI include 1?	ROC	B0	B1	GOF p-val
condena	144.295	144.4162	21.1363	0.4789	0.4889	1.000	yes	0.405	0.2095	-0.00033	0.0767
cvstem	144.488	144.6092	21.3293	0.2856	0.5931	1.002	yes	0.500	-0.0458	0.00248	0.051
sumhwden	144.501	144.6222	21.3423	0.2730	0.6014	1.000	yes	0.491	0.2657	-0.00016	0.3387
dens	144.603	144.7242	21.4443	0.1713	0.6790	1.000	yes	0.457	0.0796	0.000191	0.1784
condenb	144.673	144.7942	21.5143	0.1005	0.7512	1.000	yes	0.227	0.1821	-0.00032	0.2317
hwdena	144.703	144.8242	21.5443	0.0706	0.7904	1.000	yes	0.419	0.2034	-0.00027	0.224
cvmat	144.710	144.8312	21.5513	0.0643	0.7999	1.001	yes	0.036	0.1477	0.00149	

Table E9. Carolina wren was present at 72 sampling points (N=102). AICc from test models was compared to the AIC Intercept Only value of 125.58 to determine the best models.

Variable	AIC	AICc	Δ AICc	LR X2	LR p-value	Odds estimate	CI include 1?	ROC	B0	B1	GOF p-val
sumhwden ^{step}	120.038	120.1592	0.000	7.5445	0.0060	1.001	yes	0.629	0.1003	0.00132	0.1317
hwdens	121.062	121.1832	1.024	6.5208	0.0107	1.002	yes	0.617	0.354	0.00161	0.5988
hwdena	124.184	124.3052	4.146	3.3984	0.0653	1.003	yes	0.594	0.4622	0.00273	0.6211
cvb	124.220	124.3412	4.182	3.3622	0.0667	1.006	yes	0.544	0.4923	0.00554	0.5942
hwdenb	124.946	125.0672	4.908	2.6362	0.1045	1.007	yes	0.507	0.5191	0.00671	0.249
dens	125.442	125.5632	5.404	2.1402	0.1435	1.001	yes	0.613	0.547	0.000882	0.0728
canht	125.661	125.7822	5.623	1.9216	0.1657	0.973	yes	0.482	1.258	-0.0277	0.1315
denmat	125.692	125.8132	5.654	1.8911	0.1691	0.993	yes	0.356	1.0483	-0.00727	0.0579
cvtot	125.819	125.9402	5.781	1.7634	0.1842	0.994	yes	0.518	1.2788	-0.00597	0.004
mcstem	125.942	126.0632	5.904	1.6403	0.2003	1.004	yes	0.343	0.7441	0.00397	0.7271
hwdenmat	126.683	126.8042	6.645	0.8999	0.3428	0.997	yes	0.319	1.0074	-0.0028	0.0736
cvs	126.934	127.0552	6.896	0.6488	0.4205	0.997	yes	0.495	1.1428	-0.00343	0.3482
condens	127.016	127.1372	6.978	0.5667	0.4516	1.000	yes	0.252	0.9441	-0.00037	0.2805
cva	127.018	127.1392	6.980	0.5651	0.4522	0.997	yes	0.498	1.0899	-0.00254	0.0831
condena	127.196	127.3172	7.158	0.3864	0.5342	1.000	yes	0.252	0.9273	-0.00031	0.4237
condenb	127.206	127.3272	7.168	0.3767	0.5394	1.001	yes	0.189	0.8236	0.000727	0.0995
totalden	127.227	127.3482	7.189	0.3559	0.5508	1.000	yes	0.569	0.7236	0.00016	0.017
sumconden	127.267	127.3882	7.229	0.3161	0.5740	1.000	yes	0.276	0.9345	-0.00013	0.4041
condenmat	127.370	127.4912	7.332	0.2124	0.6449	0.999	yes	0.219	0.901	-0.00112	
denb	127.389	127.5102	7.351	0.1937	0.6599	1.001	yes	0.500	0.8011	0.00138	0.065
cvmat	127.413	127.5342	7.375	0.1699	0.6802	0.998	yes	0.065	0.8929	-0.00249	
cancov	127.437	127.5582	7.399	0.1459	0.7025	1.003	yes	0.533	0.7424	0.00301	0.0001
cvstem	127.439	127.5602	7.401	0.1440	0.7043	1.002	yes	0.529	0.7182	0.00193	0.9374
dena	127.543	127.6642	7.505	0.0398	0.8419	1.000	yes	0.345	0.9125	-0.00022	0.145
grasscov	127.559	127.6802	7.521	0.0239	0.8771	0.999	yes	0.481	0.9259	-0.00099	0.0215
mdstem	127.575	127.6962	7.537	0.0078	0.9298	1.000	yes	0.366	0.8912	-7.6E-06	0.2615

Table E10. Chipping sparrow was present at 46 sampling points (N=102). AICc from test models was compared to the AIC Intercept Only value of 142.42 to determine the best models.

Variable	AIC	AICc	Δ AICc	LR X2	LR p-value	Odds estimate	CI include 1?	ROC	B0	B1	GOF p-val
totalden	126.731	127.1434	0.0000	21.6892	< 0.0001	0.999	yes	0.755	0.2807	-0.0008	0.8162
cvtot						1.009	yes			0.00855	
mdstem						1.000	yes			-0.00015	
totalden ^{step}	129.075	129.1962	2.0528	15.3449	< 0.0001	0.999	yes	0.707	0.799	-0.0011	0.0983
totalden	129.899	130.1439	3.0005	16.5211	0.0003	0.999	yes	0.719	0.1401	-0.00087	0.0553
grasscov						1.009	yes			0.00858	
totalden	130.953	131.1979	4.0545	15.4667	0.0004	0.999	yes	0.704	0.8542	-0.00104	0.0424
canht						0.992	yes			-0.00829	
cancov	132.063	132.3079	5.1645	14.3570	0.0008	0.985	yes	0.703	-0.2834	-0.0149	0.7814
cvtot						1.012	no, +			0.0115	
cvtot	133.022	133.1432	5.9998	11.3981	0.0007	1.016	no, +	0.679	-1.194	0.0154	0.618
grasscov	134.022	134.1432	6.9998	10.3976	0.0013	1.020	no, +	0.663	-1.23	0.0199	0.2779
cancov	134.995	135.1162	7.9728	9.4247	0.0021	0.977	no, -	0.663	0.8182	-0.0232	0.3403
cvs	135.089	135.2102	8.0668	9.3309	0.0023	1.013	no, +	0.669	-1.1741	0.0128	0.8033
dena	135.806	135.9272	8.7838	8.6144	0.0033	0.996	no, -	0.698	0.3696	-0.0038	0.0562
mdstem	137.009	137.1302	9.9868	7.4112	0.0065	1.000	yes	0.595	0.2761	-0.00025	0.2322
cvstem	137.43	137.5512	10.4078	6.9900	0.0082	1.013	no, +	0.641	-1.2582	0.0128	0.7192
canht	140.057	140.1782	13.0348	4.3626	0.0367	0.958	yes	0.611	0.3476	-0.0425	0.0251
denmat	140.663	140.7842	13.6408	3.7566	0.0526	0.989	yes	0.439	0.023	-0.0109	0.1357
cva	140.951	141.0722	13.9288	3.4694	0.0625	1.006	yes	0.573	-0.6855	0.00588	0.2166
hwdenmat	141.123	141.2442	14.1008	3.2975	0.0694	0.995	yes	0.397	0.0307	-0.00544	0.4771
dens	141.611	141.7322	14.5888	2.8092	0.0937	0.999	yes	0.636	0.1418	-0.00087	0.2404
hwdena	141.716	141.8372	14.6938	2.7040	0.1001	0.998	yes	0.592	0.1142	-0.00188	0.1017
denb	141.824	141.9452	14.8018	2.5958	0.1071	0.995	yes	0.566	0.0573	-0.00477	0.3826
cvb	142.085	142.2062	15.0628	2.3354	0.1265	1.004	yes	0.482	-0.5059	0.00402	0.0534
mcstem	142.236	142.3572	15.2138	2.1845	0.1394	0.996	yes	0.290	-0.0572	-0.00385	0.5547
condenb	142.682	142.8032	15.6598	1.7385	0.1873	0.999	yes	0.232	-0.0934	-0.00144	0.5295
sumconden	142.798	142.9192	15.7758	1.6218	0.2028	1.000	yes	0.406	-0.0714	-0.00031	0.3168
condena	143.054	143.1752	16.0318	1.3661	0.2425	0.999	yes	0.344	-0.1079	-0.00061	0.4582

Table E10. (continued)

Variable	AIC	AICc	ΔAICc	LR X2	LR p-value	Odds estimate	CI include 1?	ROC	B0	B1	GOF p-val
sumhwden	143.38	143.5012	16.3578	1.0396	0.3079	1.000	yes	0.563	0.0207	-0.00032	0.6369
condens	143.715	143.8362	16.6928	0.7051	0.4011	1.000	yes	0.361	-0.1239	-0.00044	0.2256
cvmat	144.081	144.2022	17.0588	0.3386	0.5606	0.996	yes	0.052	-0.1751	-0.00355	
hwdenb	144.197	144.3182	17.1748	0.2232	0.6366	0.998	yes	0.469	-0.1017	-0.00166	0.2992
hwdens	144.296	144.4172	17.2738	0.1240	0.7247	1.000	yes	0.488	-0.1464	-0.00012	0.7214
condenmat	144.42	144.5412	17.3978	0.2444	0.6210	0.999	yes	0.133	-0.1717	-0.00121	

Table E11. Common yellowthroat was present at 38 sampling points (N=102). AICc from test models was compared to the AIC Intercept Only value of 136.7 to determine the best models.

Variable	AIC	AICc	Δ AICc	LR X2	LR p-value	Odds estimate	CI include 1?	ROC	B0	B1	GOF p-val
sumconden	122.158	122.4029	0	18.5426	<0.0001	1.001	yes	0.714	-0.3017	0.000809	0.5963
mdstem						1.000	yes			-0.00033	
canht ^{step}	122.225	122.4699	0.0670	18.4763	<0.0001	0.932	no, -	0.778	-0.0513	-0.0703	0.689
sumconden						1.001	yes			0.000885	
sumconden	124.397	124.6419	2.2390	16.3041	0.0003	1.001	yes	0.769	-1.8332	0.00107	0.8324
grasscov						1.016	no, +			0.0162	
sumconden	128.121	128.2422	5.8393	10.5803	0.0011	1.001	yes	0.604	-0.8931	0.000909	0.6497
mdstem	128.476	128.5972	6.1943	10.2248	0.0014	1.000	yes	0.617	0.072	-0.00035	0.3243
canht	128.642	128.8869	6.4840	12.0589	0.0024	0.960	yes	0.660	0.3817	-0.0413	0.6123
mdstem						1.000	yes			-0.00024	
condenb	128.792	128.9132	6.5103	9.9089	0.0016	1.004	no, +	0.329	-0.7964	0.00369	0.6325
hwdena	129.025	129.1462	6.7433	9.6756	0.0019	1.004	no, +	0.579	-1.1764	0.00382	0.416
hwdenmat	129.203	129.3242	6.9213	9.4981	0.0021	0.989	no, -	0.424	-0.1242	-0.0114	0.7559
condena	129.472	129.5932	7.1903	9.2287	0.0024	1.002	yes	0.517	-0.7827	0.00182	0.048
canht	129.900	130.0212	7.6183	8.8007	0.0030	0.932	no, -	0.656	0.3216	-0.0704	0.349
grasscov	130.216	130.4609	8.0580	10.4851	0.0053	0.996	yes	0.637	0.3567	-0.00402	0.4978
mdstem						1.000	yes			-0.00039	
condens	133.680	133.8012	11.3983	5.0207	0.0250	1.001	yes	0.589	-0.7482	0.00134	0.0977
dena	134.162	134.2832	11.8803	4.5384	0.0331	1.002	yes	0.581	-0.9081	0.00226	0.8839
denmat	134.714	134.8352	12.4323	3.9873	0.0458	0.988	yes	0.432	-0.2908	-0.0123	0.1645
hwdenb	135.141	135.2622	12.8593	3.5594	0.0592	0.993	yes	0.521	-0.1255	-0.0073	0.4196
mcstem	135.888	136.0092	13.6063	2.8127	0.0935	1.004	yes	0.458	-0.6859	0.00405	0.0479
grasscov	136.288	136.4092	14.0063	2.4127	0.1204	1.010	yes	0.570	-1.017	0.0095	0.658
cvs	136.701	136.8222	14.4193	2.4384	0.1184	0.993	yes	0.554	-0.0299	-0.00666	0.2564
sumhwden	137.539	137.6602	15.2573	1.1618	0.2811	1.000	yes	0.571	-0.7523	0.000325	0.32
cancov	137.923	138.0442	15.6413	0.7776	0.3779	0.993	yes	0.544	-0.2318	-0.00657	0.3387
condenmat	138.040	138.1612	15.7583	0.6612	0.4161	1.002	yes	0.125	-0.5642	0.00193	
cva	138.100	138.2212	15.8183	0.6010	0.4382	0.997	yes	0.500	-0.3173	-0.00252	0.1247
hwdens	138.169	138.2902	15.8873	0.5323	0.4656	1.000	yes	0.611	-0.6277	0.000247	0.0156
totalden	138.211	138.3322	15.9293	0.4901	0.4839	1.000	yes	0.531	-0.6908	0.000172	0.7646

Table E11. (continued)

Variable	AIC	AICc	Δ AICc	LR X2	LR p-value	Odds estimate	CI include 1?	ROC	B0	B1	GOF p-val
cvstem	138.219	138.3402	15.9373	0.4816	0.4877	1.003	yes	0.572	-0.7941	0.00329	0.1944
cvtot	138.237	138.3582	15.9553	0.4636	0.4959	0.997	yes	0.494	-0.3285	-0.00301	0.0139
denb	138.571	138.6922	16.2893	0.1294	0.7190	1.001	yes	0.411	-0.5787	0.00102	0.7061
cvmat	138.622	138.7432	16.3403	0.0793	0.7782	0.998	yes	0.046	-0.5105	-0.00174	
dens	138.640	138.7612	16.3583	0.0612	0.8045	1.000	yes	0.586	-0.5686	0.000115	0.0384
cvb †	138.701	138.8222	16.4193	0.0000	0.9986	1.000	yes	0.000	-0.5209	-4.86E-06	0.8647

† Measures of association between the observed and predicted values were not calculated because the predicted probabilities are indistinguishable when they are classified into intervals of length 0.002.

Table E12. Downy woodpecker was present at 21 sampling points (N=102). AICc from test models was compared to the AIC Intercept Only value of 105.72 to determine the best models.

Variable	AIC	AICc	Δ AICc	LR X2	LR p-value	Odds estimate	CI include 1?	ROC	B0	B1	GOF p-val
condenb	105.631	105.7522	0.0000	2.0927	0.1480	1.002	yes	0.305	-1.5004	0.0016	0.8901
cvmat*	105.838	105.9592	0.2070	1.8860	0.1697	0.870	yes	0.049	-1.2993	-0.1388	
condena	106.31	106.4312	0.6790	1.4142	0.2344	1.001	yes	0.343	-1.4648	0.000614	0.3326
denb	106.391	106.5122	0.7600	1.3327	0.2483	1.004	yes	0.517	-1.5741	0.00368	0.3251
sumconden	106.511	106.6322	0.8800	1.2130	0.2707	1.000	yes	0.454	-1.4819	0.000269	0.8954
cvb	106.861	106.9822	1.2300	0.8626	0.3530	0.997	yes	0.476	-1.1308	-0.00309	0.5968
condenmat	107.056	107.1772	1.4250	0.6681	0.4137	1.002	yes	0.092	-1.402	0.00205	
grasscov	107.065	107.1862	1.4340	0.6591	0.4169	0.994	yes	0.531	-1.0653	-0.00584	0.4354
dens	107.163	107.2842	1.5320	0.5608	0.4539	1.000	yes	0.508	-1.168	-0.00048	0.6338
cancov	107.2	107.3212	1.5690	0.5235	0.4694	1.006	yes	0.547	-1.6441	0.00637	0.7946
hwdenmat	107.233	107.3542	1.6020	0.4907	0.4836	0.997	yes	0.337	-1.2447	-0.00259	0.3399
hwdena	107.267	107.3882	1.6360	0.4570	0.4991	1.001	yes	0.507	-1.4907	0.000774	0.4102
cvtot	107.381	107.5022	1.7500	0.3430	0.5581	0.997	yes	0.490	-1.1517	0.00314	0.4434
cva	107.411	107.5322	1.7800	0.3126	0.5761	1.002	yes	0.534	-1.53	0.00212	0.3504
mdstem	107.49	107.6112	1.8590	0.2341	0.6285	1.000	yes	0.475	-1.2522	-0.00005	0.6158
sumhwden	107.529	107.6502	1.8980	0.1952	0.6586	1.000	yes	0.477	-1.4608	0.000154	0.6079
cvstem	107.547	107.6682	1.9160	0.1772	0.6738	1.002	yes	0.512	-1.5476	0.00237	0.172
mcstem	107.552	107.6732	1.9210	0.1714	0.6788	0.999	yes	0.256	-1.3031	-0.00128	0.4596
totalden	107.563	107.6842	1.9320	0.1607	0.6886	1.000	yes	0.522	-1.466	0.000116	0.8909
canht	107.587	107.7082	1.9560	0.1370	0.7113	1.008	yes	0.504	-1.4641	0.00845	0.8162
hwdens	107.604	107.7252	1.9730	0.1199	0.7291	1.000	yes	0.444	-1.4094	0.000136	0.4477
condens	107.619	107.7402	1.9880	0.1052	0.7456	1.000	yes	0.397	-1.3829	0.000179	0.5577
denmat	107.631	107.7522	2.0000	0.0927	0.7607	1.002	yes	0.320	-1.3921	0.00185	0.2583
dena	107.712	107.8332	2.0810	0.0115	0.9147	1.000	yes	0.347	-1.3723	0.000133	0.2481
cvs	107.723	107.8442	2.0920	0.0008	0.9781	1.000	yes	0.287	-1.3397	-0.00013	0.752
hwdenb	107.723	107.8442	2.0920	0.0004	0.9847	1.000	yes	0.317	-1.3547	0.000082	0.4125

* Maximum likelihood estimate may not exist! Validity of the model is questionable.

STEP: Best model is intercept only!

Table E13. Eastern towhee was present at 81 sampling points (N=102). AICc from test models was compared to the AIC Intercept Only value of 105.72 to determine the best models.

Variable	AIC	AICc	Δ AICc	LR X2	LR p-value	Odds estimate	CI include 1?	ROC	B0	B1	GOF p-val
canht ^{step} sumhwden	77.845	78.0899	0	31.8792	<0.0001	0.871 1.004	no, - no, +	0.848	1.4832	-0.1376 0.00429	0.81
canht sumhwden condens	78.154	78.5664	0.4765	33.5698	<0.0001	0.876 1.004 1.002	no, - no, + yes	0.868	1.2294	-0.1328 0.00432 0.00247	0.738
canht hwdens condens	81.993	82.4054	4.3155	29.7308	<0.0001	0.916 1.005 1.003	no, - yes yes	0.848	1.4087	-0.0874 0.00499 0.00263	0.9886
canht mdstem dens	85.382	85.6269	7.5370	26.3413	<0.0001	0.885 1.000 1.003	no, - yes yes	0.804	2.1367	-0.1224 0.000053 0.00336	0.9559
cancov hwdens condens	86.645	87.0574	8.9675	25.0783	<0.0001	0.972 1.005 1.003	no, - yes yes	0.815	1.2375	-0.0281 0.00521 0.00329	0.9425
canht	88.772	88.8932	10.8033	18.9513	<0.0001	0.908	no, -	0.716	2.8723	-0.0969	0.3759
canht mdstem	89.877	90.1219	12.0320	19.8468	<0.0001	0.889 1.000	no, - yes	0.733	2.9033	-0.1173 0.00012	0.4337
grasscov denmat	92.771	93.0159	14.9260	16.9527	0.0002	1.016 0.986	yes yes	0.735	1.0808	0.0162 -0.0142	0.13
cancov mdstem dens	93.176	93.4209	15.3310	18.5474	0.0003	0.970 1.000 1.004	no, - yes no, +	0.752	1.904	-0.0309 -0.00012 0.00399	0.4817
denmat	93.308	93.4292	15.3393	14.4160	0.0001	0.978	no, -	0.578	1.9822	-0.022	0.4269
grasscov	94.637	94.7582	16.6683	13.0863	0.0003	1.028	no, +	0.718	0.1817	0.0281	0.0616
hwdens	96.540	96.6612	18.5713	11.1839	0.0008	1.004	yes	0.683	0.3722	0.00393	0.3896
hwdenmat	96.590	96.7112	18.6213	11.1335	0.0008	0.990	no, -	0.529	1.9551	-0.0106	0.035
cancov	100.718	100.8392	22.7493	7.0056	0.0081	0.976	no, -	0.658	2.5494	-0.024	0.0605
condens	101.110	101.2312	23.1413	6.6140	0.0101	1.004	yes	0.414	1.0212	0.00397	0.7997
sumhwden	101.546	101.6672	23.5773	6.1779	0.0129	1.001	yes	0.621	0.5446	0.00144	0.1577
hwdena	102.556	102.6772	24.5873	5.1675	0.0230	1.005	yes	0.609	0.7062	0.00478	0.2277

Table E13. (continued)

Variable	AIC	AICc	Δ AICc	LR X2	LR p-value	Odds estimate	CI include 1?	ROC	B0	B1	GOF p-val
condenmat	102.649	102.7702	24.6803	5.0743	0.0243	0.994	yes	0.318	1.5131	-0.00617	
condena	103.364	103.4852	25.3953	4.3598	0.0368	1.003	yes	0.350	1.128	0.00311	0.7721
dens	103.427	103.5482	25.4583	4.2968	0.0382	1.002	yes	0.606	0.784	0.0017	0.5394
mdstem	103.656	103.7772	25.6873	4.0676	0.0437	1.000	yes	0.662	1.7715	-0.00018	0.669
sumconden	105.090	105.2112	27.1213	2.6334	0.1046	1.001	yes	0.401	1.1433	0.00068	0.0295
cvstem	105.926	106.0472	27.9573	1.7977	0.1800	1.008	yes	0.603	0.7216	0.00807	0.1813
dena	106.337	106.4582	28.3683	1.3872	0.2389	1.002	yes	0.497	1.0893	0.00176	0.3907
hwdenb	106.838	106.9592	28.8693	0.8861	0.3465	0.996	yes	0.533	1.5881	-0.00388	0.1768
cvmat	107.043	107.1642	29.0743	0.6804	0.4094	0.995	yes	0.093	1.3916	-0.00513	
cvb	107.245	107.3662	29.2763	0.4791	0.4888	1.002	yes	0.454	1.1851	0.00228	0.1568
condenb	107.560	107.6812	29.5913	0.1636	0.6859	1.001	yes	0.173	1.3115	0.000539	0.0112
cva	107.576	107.6972	29.6073	0.1473	0.7012	0.999	yes	0.477	1.4728	-0.00146	0.2181
denb	107.594	107.7152	29.6253	0.1302	0.7182	0.999	yes	0.549	1.4189	-0.0012	0.325
totalden	107.700	107.8212	29.7313	0.0234	0.8785	1.000	yes	0.485	1.394	-0.00004	0.2386
cvtot	107.700	107.8212	29.7313	0.0233	0.8786	0.999	yes	0.459	1.4015	-0.00079	0.0592
mcstem	107.724	107.8452	29.7553	0.0970	0.7555	0.999	yes	0.223	1.3853	-0.00086	0.5144
cvs †	107.724	107.8452	29.7553	0	0.9992	1.000	yes	0	1.3496	4.71E-06	0.1202

† Measures of association between the observed and predicted values were not calculated because the predicted probabilities are indistinguishable when they are classified into intervals of length 0.002.

Table E14. Field sparrow was present at 52 sampling points (N=102). AICc from test models was compared to the AIC Intercept Only value of 143.36 to determine the best models.

Variable	AIC	AICc	Δ AICc	LR X2	LR p-value	Odds estimate	CI include 1?	ROC	B0	B1	GOF p-val
canht ^{step} ‡	84.452	85.3362	-2.8348	68.9106	<0.0001	0.841	no, -	0.929	-2.7798	-0.1733	0.0112
grasscov						1.063	no, +			0.0615	
dens						1.002	yes			0.0021	
sumconden						1.001	yes			0.000945	
cvmat						1.041	no, +			0.0398	
grasscov	87.546	88.1710	0.0000	63.8166	< 0.0001	1.082	no, +	0.915	-5.5968	0.0789	0.0132
dens						1.002	yes			0.00222	
sumconden						1.001	yes			0.00109	
cvmat						1.026	no, +			0.0256	
grasscov	96.669	97.0814	8.9104	52.6939	<0.0001	1.061	no, +	0.892	-3.9891	0.0591	0.0291
dens						1.002	yes			0.00152	
sumconden						1.001	yes			0.000842	
grasscov	98.995	99.2399	11.0689	48.3680	<0.0001	1.055	no, +	0.876	-3.1514	0.0538	0.1549
sumconden						1.001	yes			0.000872	
mdstem	100.629	101.0414	12.8704	48.7339	<0.0001	1.000	yes	0.876	-2.7439	-0.00011	0.1252
grasscov						1.051	no, +			0.0499	
sumconden						1.001	yes			0.000799	
canht	101.746	102.3710	14.2000	49.6171	<0.0001	0.737	no, -	0.880	2.6895	-0.3052	0.0779
dens						1.001	yes			0.000916	
sumconden						1.000	yes			0.000288	
cvmat						1.038	no, +			0.0371	
grasscov	106.312	106.4332	18.2622	39.0511	<0.0001	1.046	no, +	0.830	-2.2416	0.0446	0.4767
canht	111.509	111.6302	23.4592	33.8536	<0.0001	0.840	no, -	0.839	2.0503	-0.1738	0.0831
cancov	117.881	118.1259	29.9549	29.4816	<0.0001	0.954	no, -	0.802	1.7373	-0.047	0.5978
sumconden						1.001	yes			0.000822	
mdstem	120.614	120.7352	32.5642	24.7488	<0.0001	0.999	yes	0.737	1.0326	-0.00058	0.1486
cancov	124.461	124.5822	36.4112	20.9018	<0.0001	0.964	no, -	0.752	1.6592	-0.0364	0.4108
hwdenmat	124.592	124.7132	36.5422	20.7713	<0.0001	0.983	no, -	0.566	0.6592	-0.0169	0.1015
hwdenb	125.579	125.7002	37.5292	19.7833	<0.0001	0.982	no, -	0.743	1.0671	-0.0186	0.0128
denmat	134.672	134.7932	46.6222	10.6907	0.0011	0.980	no, -	0.629	0.4251	-0.0201	0.0015

Table E14. (continued)

Variable	AIC	AICc	Δ AICc	LR X2	LR p-value	Odds estimate	CI include 1?	ROC	B0	B1	GOF p-val
hwdens	138.033	138.1542	49.9832	7.3299	0.0068	1.001	yes	0.567	-0.4224	0.00122	0.0867
condens	139.795	139.9162	51.7452	5.5674	0.0183	1.002	yes	0.451	-0.1981	0.00163	0.8892
cvstem	140.565	140.6862	52.5152	4.7900	0.0285	1.011	no, +	0.654	-0.8187	0.0105	0.3667
totalden	141.058	141.1792	53.0082	4.3052	0.0380	0.999	yes	0.666	0.5338	-0.00051	0.0427
cvb	141.504	141.6252	53.4542	3.8591	0.0495	0.995	yes	0.612	0.4336	-0.00521	0.0011
denb	142.512	142.6332	54.4622	2.8510	0.0913	0.995	yes	0.713	0.305	-0.00487	0.0001
sumhwden	143.434	143.5552	55.3842	1.9291	0.1649	1.000	yes	0.496	-0.2593	0.000435	0.0046
sumconden	143.586	143.7072	55.5362	1.7767	0.1826	1.000	yes	0.472	-0.0914	0.000317	0.1196
mcstem	143.871	143.9922	55.8212	1.4918	0.2219	1.003	yes	0.369	-0.0746	0.003	0.4538
condenmat	143.966	144.0872	55.9162	1.3967	0.2373	0.997	yes	0.192	0.1005	-0.00316	
dens	144.082	144.2032	56.0322	1.2806	0.2578	1.001	yes	0.502	-0.1781	0.000541	0.2432
condena	144.426	144.5472	56.3762	0.9372	0.3330	1.000	yes	0.353	-0.0339	0.000479	0.6843
dena	145.112	145.2332	57.0622	0.2504	0.6168	0.999	yes	0.602	0.1242	-0.00051	0.3349
cvmat	145.229	145.3502	57.1792	0.1337	0.7146	1.002	yes	0.038	0.0256	0.00214	
cvtot	145.276	145.3972	57.2262	0.0866	0.7686	1.001	yes	0.458	-0.0411	0.00123	0.3928
cva	145.357	145.4782	57.3072	0.0059	0.9388	1.000	yes	0.425	0.0196	0.000239	0.298
cvs	145.359	145.4802	57.3092	0.0036	0.9520	1.000	yes	0.386	0.0211	0.000238	0.8276
condenb	145.362	145.4832	57.3122	0.0009	0.9756	1.000	yes	0.140	0.0368	0.000031	0.411
hwdena	145.363	145.4842	57.3132	0.0001	0.9910	1.000	yes	0.305	0.0412	-0.00001	0.0143

‡ Model contains variables that are highly correlated with each other.

Table E15. Hooded warbler was present at 72 sampling points (N=102). AICc from test models was compared to the AIC Intercept Only value of 125.58 to determine the best models.

Variable	AIC	AICc	Δ AICc	LR X2	LR p-value	Odds estimate	CI include 1?	ROC	B0	B1	GOF p-val
grasscov ^{step}	93.571	93.8159	0	36.0116	<0.0001	0.947	no, -	0.845	4.4408	-0.0541	0.0582
condenb						0.997	yes			-0.00311	
grasscov	96.047	96.1682	2.3523	31.5357	<0.0001	0.955	no, -	0.831	3.6964	-0.0464	0.2518
canht	102.852	103.0969	9.2810	26.7307	<0.0001	1.155	no, +	0.788	-1.201	0.1443	0.4562
mdstem						1.001	yes			0.000532	
cancov	105.568	105.8129	11.9970	24.0143	<0.0001	1.029	no, +	0.776	-0.5778	0.0284	0.1327
hwdenmat						1.017	yes			0.017	
canht	106.702	106.8232	13.0073	20.8805	<0.0001	1.188	no, +	0.742	-0.8595	0.1726	0.3848
canht	106.959	107.2039	13.3880	22.6240	<0.0001	1.154	no, +	0.753	-0.9591	0.1435	0.8126
totalden						1.000	yes			0.000454	
cancov	108.142	108.2632	14.4473	19.4405	<0.0001	1.042	no, +	0.749	-0.7004	0.0409	0.1078
mdstem	108.868	108.9892	15.1733	18.7146	<0.0001	1.001	yes	0.749	-0.1241	0.00077	0.1112
hwdenmat	109.820	109.9412	16.1253	17.7625	<0.0001	1.025	no, +	0.491	0.3048	0.0245	0.095
hwdenb	113.775	113.8962	20.0803	13.8079	0.0002	1.018	no, +	0.635	0.0438	0.018	0.3186
totalden	116.114	116.2352	22.4193	11.4688	0.0007	1.001	yes	0.718	-0.031	0.00111	0.0292
denmat	116.841	116.9622	23.1463	10.7419	0.0010	1.032	no, +	0.528	0.4633	0.0315	0.0222
denmat	116.751	116.9959	23.1800	12.8313	0.0016	1.030	no, +	0.719	1.1296	0.0296	0.0011
cvstem						0.993	yes			-0.00741	
totalden	118.400	118.8124	24.9965	13.1827	0.0043	1.001	yes	0.711	0.7136	0.000944	0.0714
cvtot						0.997	yes			-0.00271	
cvstem						0.995	yes			-0.005	
dens	121.572	121.6932	27.8773	6.0103	0.0142	1.002	yes	0.660	0.2795	0.00173	0.7207
cvtot	122.320	122.4412	28.6253	5.2625	0.0218	0.990	no, -	0.604	1.5902	-0.0103	0.4338
cvstem	123.312	123.4332	29.6173	4.2711	0.0388	0.990	yes	0.665	1.7699	-0.0104	0.0304
cvs	124.173	124.2942	30.4783	3.4098	0.0648	0.992	yes	0.602	1.501	-0.00783	0.0214
denb	124.307	124.4282	30.6123	3.2757	0.0703	1.006	yes	0.625	0.5627	0.00647	0.2965
cvmat*	124.729	124.8502	31.0343	2.8539	0.0912	1.172	yes	0.056	0.8183	0.1584	
sumhwden	125.095	125.2162	31.4003	2.4877	0.1147	1.001	yes	0.591	0.4798	0.00062	0.3364
dena	125.301	125.4222	31.6063	2.2813	0.1309	1.002	yes	0.657	0.5781	0.00198	0.163

Table E15. (continued)

Variable	AIC	AICc	Δ AICc	LR X2	LR p-value	Odds estimate	CI include 1?	ROC	B0	B1	GOF p-val
condenmat	125.981	126.1022	32.2863	1.6013	0.2057	1.005	yes	0.147	0.8019	0.00518	
mcstem	126.393	126.5142	32.6983	1.1899	0.2753	1.003	yes	0.330	0.7643	0.00325	0.7892
cva	126.642	126.7632	32.9473	0.9406	0.3321	0.997	yes	0.518	1.1536	-0.00327	0.6246
hwdena	126.882	127.0032	33.1873	0.7004	0.4026	1.001	yes	0.505	0.7076	0.00102	0.377
hwdens	127.132	127.2532	33.4373	0.4508	0.5019	1.000	yes	0.481	0.7672	0.00027	0.3815
cvb	127.244	127.3652	33.5493	0.3387	0.5606	1.002	yes	0.492	0.7508	0.00169	0.054
condenb	127.496	127.6172	33.8013	0.0869	0.7681	1.000	yes	0.181	0.901	-0.00032	0.1381
condens	127.529	127.6502	33.8343	0.0540	0.8162	1.000	yes	0.350	0.854	0.000126	0.2656
condena	127.553	127.6742	33.8583	0.0297	0.8633	1.000	yes	0.251	0.8897	-0.00009	0.5316
sumconden	127.579	127.7002	33.8843	0.0037	0.9515	1.000	yes	0.170	0.8691	0.000015	0.0917

* Maximum likelihood estimate may not exist! Validity of the model is questionable.

Table E16. Indigo bunting was present at 93 sampling points (N=102). AICc from test models was compared to the AIC Intercept Only value of 62.88 to determine the best models.

Variable	AIC	AICc	Δ AICc	LR X2	LR p-value	Odds estimate	CI include 1?	ROC	B0	B1	GOF p-val
grasscov* ‡ denmat cvstem	27.873	28.2854	-8	41.0077	<0.0001	2.219 0.977 1.053	yes yes yes	0.973	-0.7153	0.7971 -0.0236 0.0519	0.9858
grasscov* denmat cvstem	28.963	29.0842	-7.0497	35.9184	<0.0001	2.451	yes	0.903	0.00091	0.8966	0.9455
denmat cvstem	35.889	36.1339	0	30.9916	< 0.0001	0.960 1.063	no, - no, +	0.946	1.1142	-0.0408 0.061	0.9996
canht cvstem	36.653	36.8979	0.7640	30.2279	< 0.0001	0.865 1.049	no, - yes	0.957	2.8652	-0.1451 0.0474	0.9032
canht cvs cvstem	38.653	39.0654	2.9315	31.2282	< 0.0001	0.865 1.000 1.049	no, - yes yes	0.955	2.8778	-0.1453 -0.00024 0.0475	0.9045
canht ^{step}	39.147	39.2682	3.1343	25.7342	<0.0001	0.854	no, -	0.941	5.6534	-0.1578	0.839
canht cvs	40.777	41.0219	4.8880	26.1038	< 0.0001	0.862 1.010	no, - yes	0.939	4.8703	-0.1481 0.00948	0.7196
cancov denmat cvtot	42.602	42.7232	6.5893	22.2790	<0.0001	0.915 0.969 1.029	no, - no, - yes	0.908	8.2259	-0.0883 -0.0318 0.0281	0.4842
denmat cancov cvs	42.752	42.9969	6.8630	24.1290	< 0.0001	0.967 0.919 1.008	no, - no, - yes	0.949	2.5483	-0.0318 -0.0847 0.00836	0.9265
denmat cancov cvs	43.189	43.3102	7.1763	21.6916	<0.0001	0.967 0.919 1.008	no, - no, - yes	0.932	3.8598	-0.0339 -0.0847 0.00836	0.2557
denmat cancov cvs	44.352	44.5969	8.4630	22.5291	<0.0001	0.919 1.008	no, - yes	0.907	7.5123	-0.0847 0.00836	0.6139
hwdenmat mdstem cvstem	45.819	45.9402	9.8063	19.0617	<0.0001	0.982 1.000 1.033	no, - yes no, +	0.822	3.8932	-0.0181 -0.00043 0.0323	<0.0001
cvstem cvtot	50.218	50.3392	14.2053	14.6628	0.0001	1.000 1.033	yes no, +	0.920	3.7602	-0.00043 0.0323	0.5726
cvstem cvtot	55.572	55.6932	19.5593	9.3089	0.0023	1.033 1.025	no, + yes	0.830	0.2936	0.0323 0.0251	0.4667
cvtot condenmat cvs	59.532	59.6532	23.5193	5.3484	0.0207	1.025 0.994 1.019	yes yes yes	0.708	1.1202	0.0251 -0.00565 0.0187	0.9685
cvtot condenmat cvs	60.591	60.7122	24.5783	4.2896	0.0383	0.994 1.019 1.014	yes yes yes	0.517	2.5582	-0.00565 0.0187 0.0138	0.5105
cvtot condenmat cvs	60.706	60.8272	24.6933	4.1746	0.0410	1.019 1.014 1.003	yes yes yes	0.692	1.2019	0.0187 0.0138 0.00261	0.2165
cvtot condenmat cvs	60.764	60.8852	24.7513	4.1166	0.0425	1.014 1.003 0.991	yes yes yes	0.670	1.4718	0.0138 0.00261 -0.00948	0.2165
cvtot condenmat cvs	61.567	61.6882	25.5543	3.3142	0.0687	1.003 0.991	yes yes	0.606	1.6529	0.00261 -0.00948	0.6452
cvtot condenmat cvs	61.761	61.8822	25.7483	3.1199	0.0773	0.991	yes	0.717	3.0119	-0.00948	0.1507

Table E16. (continued)

Variable	AIC	AICc	Δ AICc	LR X2	LR p-value	Odds estimate	CI include 1?	ROC	B0	B1	GOF p-val
totalden	61.879	62.0002	25.8663	3.0021	0.0832	0.999	yes	0.750	3.1091	-0.00066	0.0048
condens	61.905	62.0262	25.8923	2.9759	0.0845	1.004	yes	0.393	2.0266	0.00434	0.5215
denb	62.131	62.2522	26.1183	2.7499	0.0973	0.993	yes	0.808	2.8154	-0.00672	0.0306
cvb	62.799	62.9202	26.7863	2.0817	0.1491	1.008	yes	0.538	1.8832	0.00758	0.0032
condena	63.457	63.5782	27.4443	1.4240	0.2327	1.002	yes	0.336	2.1649	0.00222	0.5427
hwdena	64.345	64.4662	28.3323	0.5359	0.4641	1.002	yes	0.473	2.0824	0.00167	0.7026
sumhwden	64.467	64.5882	28.4543	0.4138	0.5201	1.000	yes	0.435	2.0812	0.000401	0.0919
condenb	64.534	64.6552	28.5213	0.3471	0.5558	0.999	yes	0.481	2.4214	-0.00092	0.0141
sumconden	64.551	64.6722	28.5383	0.3301	0.5656	1.000	yes	0.348	2.2365	0.000279	0.0027
dens	64.687	64.8082	28.6743	0.1935	0.6600	1.000	yes	0.436	2.1832	0.000401	0.2371
dena	64.760	64.8812	28.7473	0.1204	0.7286	0.999	yes	0.607	2.4378	-0.00058	0.2192
mcstem	64.879	65.0002	28.8663	0.0019	0.9652	1.000	yes	0.213	2.3283	0.000181	0.2751
cvmat	64.880	65.0012	28.8673	0.0009	0.9766	1.000	yes	0.000	2.3373	-0.00029	

* Maximum likelihood estimate may not exist! Validity of the model is questionable.

‡ Model contains variables that are highly correlated with each other.

Table E17. Mourning dove was present at 44 sampling points (N=102). AICc from test models was compared to the AIC Intercept Only value of 141.47 to determine the best models.

Variable	AIC	AICc	ΔAICc	LR X2	LR p-value	Odds estimate	CI include 1?	ROC	B0	B1	GOF p-val
condenmat*	118.125	118.3699	-2.7305	27.3493	<0.0001	0.814	yes	0.503	0.3509	-0.2062	0.7512
mcstem						0.987	no, -			-0.0134	
mdstem ^{step}	120.688	121.1004	0	26.7860	<0.0001	1.000	yes	0.761	0.0294	0.000346	0.7111
mcstem						0.985	no, -			-0.0155	
denmat						0.971	no, -			-0.029	
condenmat*	127.369	127.4902	6.3898	16.1050	<0.0001	0.816	yes	0.207	-0.0225	-0.2039	
mdstem	130.467	130.7119	9.6115	17.0077	0.0007	1.000	yes	0.682	0.2262	0.000168	0.4551
mcstem						0.988	no, -			-0.0117	
totalden						0.999	yes			-0.00056	
mcstem	132.046	132.1672	11.0668	11.4287	0.0007	0.986	no, -	0.400	0.0856	-0.0137	0.4324
mdstem	134.014	134.2589	13.1585	11.4599	0.0032	1.000	yes	0.665	-0.3784	0.000263	0.915
denmat						0.977	no, -			-0.0231	
cvmat*	138.835	138.9562	17.8558	4.6396	0.0312	0.848	yes	0.069	-0.2048	-0.1649	
denmat*	138.971	139.2159	18.1155	6.5033	0.0387	0.991	yes	0.411	-0.0558	-0.0087	0.9728
cvmat						0.854	yes			-0.1573	
denmat	139.122	139.2432	18.1428	4.3523	0.0370	0.988	yes	0.409	-0.0391	-0.0121	0.9813
totalden	139.582	139.7032	18.6028	3.8927	0.0485	0.999	yes	0.584	0.1949	-0.0005	0.5031
condens	140.017	140.1382	19.0378	3.4575	0.0630	0.999	yes	0.477	-0.095	-0.00124	0.0488
sumconden	141.351	141.4722	20.3718	2.1231	0.1451	1.000	yes	0.536	-0.1309	-0.00037	0.0191
mdstem	141.846	141.9672	20.8668	1.6285	0.2019	1.000	yes	0.522	-0.4883	0.000101	0.8364
grasscov	142.100	142.2212	21.1208	1.3745	0.2410	1.007	yes	0.549	-0.6329	0.00694	0.2823
sumhwden	142.268	142.3892	21.2888	1.2060	0.2721	1.000	yes	0.487	-0.0392	-0.00035	0.324
condenb	142.318	142.4392	21.3388	1.1565	0.2822	0.999	yes	0.253	-0.1918	-0.00117	0.1571
hwdens	142.682	142.8032	21.7028	0.7928	0.3733	1.000	yes	0.428	-0.1452	-0.00032	0.1956
hwdena	142.717	142.8382	21.7378	0.7570	0.3843	0.999	yes	0.514	-0.1195	-0.00093	0.2353
cancov	142.786	142.9072	21.8068	0.6887	0.4066	0.994	yes	0.534	-0.00897	-0.00602	0.4422
cvtot	142.869	142.9902	21.8898	0.6055	0.4365	1.003	yes	0.589	-0.4916	0.00329	0.0234
dens	142.872	142.9932	21.8928	0.6021	0.4378	1.000	yes	0.510	-0.1274	-0.00037	0.7916
canht	142.942	143.0632	21.9628	0.5327	0.4655	0.986	yes	0.510	-0.0908	-0.0141	0.3972

Table E17. (continued)

Variable	AIC	AICc	Δ AICc	LR X2	LR p-value	Odds estimate	CI include 1?	ROC	B0	B1	GOF p-val
hwdenmat	143.030	143.1512	22.0508	0.4444	0.5050	0.998	yes	0.321	-0.1931	-0.00191	0.4566
cvb	143.071	143.1922	22.0918	0.4032	0.5254	1.002	yes	0.474	-0.4042	0.00167	0.4089
cvs	143.077	143.1982	22.0978	0.3970	0.5286	1.003	yes	0.584	-0.4679	0.0025	0.0273
dena	143.081	143.2022	22.1018	0.3935	0.5304	0.999	yes	0.516	-0.1682	-0.00066	0.1864
condena	143.312	143.4332	22.3328	0.1620	0.6873	1.000	yes	0.407	-0.2458	-0.0002	0.0293
cva	143.417	143.5382	22.4378	0.0573	0.8108	0.999	yes	0.483	-0.2145	-0.00075	0.3899
hwdenb	143.428	143.5492	22.4488	0.0460	0.8302	1.001	yes	0.443	-0.3196	0.000751	0.5122
cvstem	143.433	143.5542	22.4538	0.0419	0.8379	0.999	yes	0.493	-0.1982	-0.00095	0.8616
denb	143.446	143.5672	22.4668	0.0284	0.8662	1.000	yes	0.380	-0.2501	-0.00047	0.4424

* Maximum likelihood estimate may not exist! Validity of the model is questionable.

Table E18. Northern cardinal was present at 75 sampling points (N=102). AICc from test models was compared to the AIC Intercept Only value of 119.9 to determine the best models.

Variable	AIC	AICc	Δ AICc	LR X2	LR p-value	Odds estimate	CI include 1?	ROC	B0	B1	GOF p-val
condenmat ^{step}	96.469	96.8814	0	29.4268	<0.0001	0.981	no, -	0.807	-0.2421	-0.0194	0.7629
cvs						1.015	no, +			0.0149	
cvb						1.011	no, +			0.0108	
denmat	100.990	101.2349	4.3535	24.9059	<0.0001	0.983	no, -	0.798	0.0769	-0.0176	0.7459
cvs						1.010	yes			0.01	
cvb						1.013	no, +			0.0129	
condenmat	106.841	107.0859	10.2045	17.0547	0.0002	0.986	yes	0.613	1.8712	-0.0145	0.0477
canht						0.959	yes			-0.0421	
condenmat	108.190	108.3112	11.4298	13.7058	0.0002	0.982	no, -	0.362	1.3211	-0.0179	
condenmat	108.964	109.2089	12.3275	14.9324	0.0006	0.985	yes	0.643	1.7737	-0.0149	0.0854
cancov						0.990	yes			-0.0104	
cvtot	110.572	110.6932	13.8118	11.3240	0.0008	1.021	no, +	0.686	-0.1186	0.0208	0.2503
cvb	110.885	111.0062	14.1248	11.0109	0.0009	1.012	no, +	0.613	0.3249	0.0115	0.0184
denmat	112.114	112.2352	15.3538	9.7825	0.0018	0.983	no, -	0.472	1.4634	-0.0172	0.0405
canht	113.025	113.1462	16.2648	8.8707	0.0029	0.941	no, -	0.586	1.9052	-0.0611	0.0881
cancov	113.163	113.4079	16.5265	10.7331	0.0047	0.985	yes	0.699	0.9214	-0.015	0.2776
cvs						1.012	yes			0.0123	
cvs	114.161	114.2822	17.4008	7.7346	0.0054	1.015	no, +	0.650	0.0264	0.0147	0.9206
cancov	115.494	115.6152	18.7338	6.4025	0.0114	0.979	no, -	0.639	2.0335	-0.0209	0.0127
grasscov	115.544	115.6652	18.7838	6.3518	0.1170	1.017	no, +	0.629	0.2342	0.017	0.0089
hwdenmat	116.217	116.3382	19.4568	5.6795	0.0172	0.993	no, -	0.383	1.3852	-0.00711	0.0011
cvstem	116.685	116.8062	19.9248	5.2114	0.0224	1.013	no, +	0.656	0.019	0.0131	0.6587
cva	116.939	117.0602	20.1788	4.9569	0.0260	1.009	no, +	0.624	0.3884	0.00854	0.181
denb	118.643	118.7642	21.8828	3.2528	0.0713	0.995	yes	0.549	1.3479	-0.00536	0.5153
cvmat	118.892	119.0132	22.1318	3.0039	0.0831	0.990	yes	0.110	1.1027	-0.0105	
sumconden	119.532	119.6532	22.7718	2.3639	0.1242	1.000	yes	0.481	1.1932	-0.00036	0.0201
condenb	119.775	119.8962	23.0148	2.1207	0.1453	0.998	yes	0.403	1.158	-0.00154	0.0126
totalden	120.222	120.3432	23.4618	1.6739	0.1957	1.000	yes	0.574	1.3709	-0.00034	0.4951
condena	120.757	120.8782	23.9968	1.1395	0.2858	0.999	yes	0.353	1.1148	-0.00053	0.3433

Table E18. (continued)

Variable	AIC	AICc	ΔAICc	LR X2	LR p-value	Odds estimate	CI include 1?	ROC	B0	B1	GOF p-val
mcstem	120.847	120.9682	24.0868	1.0489	0.3058	0.997	yes	0.332	1.1297	-0.00251	0.3648
dena	121.060	121.1812	24.2998	0.8362	0.3605	0.999	yes	0.503	1.1965	-0.001	0.5085
condens	121.076	121.1972	24.3158	0.8202	0.3651	1.000	yes	0.364	1.1071	-0.00045	0.218
mdstem	121.269	121.3902	24.5088	0.6269	0.4285	1.000	yes	0.489	1.1683	-0.00007	0.3236
hwdenb	121.370	121.4912	24.6098	0.5259	0.4683	0.997	yes	0.448	1.1882	-0.00279	0.498
hwdens	121.642	121.7632	24.8818	0.2537	0.6145	1.000	yes	0.549	0.9385	0.000205	0.2681
dens	121.700	121.8212	24.9398	0.1956	0.6583	1.000	yes	0.489	0.9264	0.00024	0.2888
sumhwden	121.877	121.9982	25.1168	0.0195	0.8890	1.000	yes	0.438	0.9888	0.000047	0.8181
hwdena	121.882	122.0032	25.1218	0.0140	0.9060	1.000	yes	0.460	0.9983	0.000136	0.3793

Table E19. Ovenbird was present at 26 sampling points (N=102). AICc from test models was compared to the AIC Intercept Only value of 117.8 to determine the best models.

Variable	AIC	AICc	ΔAICc	LR X2	LR p-value	Odds estimate	CI include 1?	ROC	B0	B1	GOF p-val
grasscov ^{step}	70.029	70.4414	0	53.7729	<0.0001	0.941	no, -	0.915	1.3493	-0.0607	0.8369
mdstem						1.000	yes			-0.00034	
denmat						1.028	no, +			0.0273	
grasscov	75.158	75.4029	4.9615	46.6437	<0.0001	0.928	no, -	0.897	2.3427	-0.075	0.8131
mdstem						1.000	yes			-0.00025	
grasscov	77.690	77.8112	7.3698	42.1118	<0.0001	0.945	no, -	0.871	1.0478	-0.0568	0.7184
cancov	78.278	78.6904	8.2490	45.5243	<0.0001	1.055	no, +	0.888	-4.1756	0.0537	0.8972
mdstem						1.000	yes			-0.00015	
denmat						1.022	yes			0.0213	
cancov	78.824	78.9452	8.5038	40.9780	<0.0001	1.070	no, +	0.877	-4.773	0.0673	0.0925
cancov	80.422	80.6669	10.2255	41.3795	<0.0001	1.074	no, +	0.880	-4.8284	0.0713	0.1862
mdstem						1.000	yes			-0.00007	
canht	85.134	85.3789	14.9375	36.6683	<0.0001	1.215	no, +	0.867	-3.3751	0.1946	0.7231
mdstem						1.000	yes			-0.00027	
denmat	86.235	86.3562	15.9148	33.5674	<0.0001	1.041	no, +	0.820	-2.1015	0.0402	0.0169
canht	86.547	86.6682	16.2268	33.2548	<0.0001	1.147	no, +	0.869	-3.1405	0.1374	0.103
hwdenmat	94.176	94.2972	23.8558	25.6259	<0.0001	1.017	no, +	0.733	-2.0123	0.0171	0.4535
hwdenmat	95.377	95.6219	25.1805	26.4246	<0.0001	1.016	no, +	0.832	-1.6262	0.0164	0.6589
cvtot						0.994	yes			-0.00568	
totalden	103.929	104.1739	33.7325	17.8734	0.0001	1.001	yes	0.795	-2.5946	0.000976	0.1727
mdstem						1.000	yes			0.000177	
totalden	105.815	105.9362	35.4948	13.9871	0.0002	1.001	yes	0.785	-2.2117	0.00102	0.0071
cvmat*	108.376	108.4972	38.0558	11.4256	0.0007	1.198	yes	0.154	-1.2397	0.1809	
condenmat	108.646	108.7672	38.3258	44.1559	0.0008	1.014	no, +	0.336	-1.333	0.0136	
hwdenb	109.471	109.5922	39.1508	10.3305	0.0013	1.013	no, +	0.691	-1.9309	0.013	0.0166
denb	110.790	110.9112	40.4698	9.0117	0.0027	1.009	no, +	0.799	-1.6546	0.00914	0.0013
mdstem	113.793	113.9142	43.4728	6.0091	0.0142	1.000	yes	0.712	-1.5541	0.000207	0.0337
dena	115.111	115.2322	44.7908	4.6915	0.0303	1.002	yes	0.708	-1.5035	0.00235	0.1862
cvtot	115.889	116.0102	45.5688	3.9128	0.0479	0.989	yes	0.613	-0.4343	-0.0108	0.496

Table E19. (continued)

Variable	AIC	AICc	Δ AICc	LR X2	LR p-value	Odds estimate	CI include 1?	ROC	B0	B1	GOF p-val
cvs	116.689	116.8102	46.3688	3.1134	0.0777	0.991	yes	0.592	-0.4538	-0.00874	0.2529
cva	117.492	117.6132	47.1718	2.3095	0.1286	0.994	yes	0.581	-0.6357	-0.0057	0.0191
condenb	117.903	118.0242	47.5828	1.8988	0.1682	1.001	yes	0.418	-1.2031	0.00147	0.0052
cvstem	118.314	118.4352	47.9938	1.4884	0.2225	0.993	yes	0.572	-0.5416	-0.00672	0.6554
hwdens	118.382	118.5032	48.0618	1.4205	0.2333	0.999	yes	0.460	-0.8581	-0.00057	0.3068
hwdena	118.669	118.7902	48.3488	1.1326	0.2872	1.001	yes	0.526	-1.28	0.00114	0.3497
condena	118.877	118.9982	48.5568	0.9254	0.3361	1.000	yes	0.400	-1.1575	0.000483	0.1655
sumconden	119.192	119.3132	48.8718	0.6097	0.4349	1.000	yes	0.487	-1.1586	0.000185	0.0557
condens	119.370	119.4912	49.0498	0.4323	0.5109	1.000	yes	0.322	-1.0067	-0.00042	0.3293
mcstem	119.503	119.6242	49.1828	0.2988	0.5846	1.001	yes	0.306	-1.1304	0.00139	0.0951
sumhwden	119.760	119.8812	49.4398	0.0423	0.8371	1.000	yes	0.538	-1.121	0.000069	0.2674
dens	119.787	119.9082	49.4668	0.0145	0.9040	1.000	yes	0.351	-1.0468	-0.00006	0.1255
cvb	119.790	119.9112	49.4698	0.0117	0.9138	1.000	yes	0.384	-1.048	-0.00032	<0.0001

* Maximum likelihood estimate may not exist! Validity of the model is questionable.

Table E20. Pileated woodpecker was present at 26 sampling points (N=102). AICc from test models was compared to the AIC Intercept Only value of 117.8 to determine the best models.

Variable	AIC	AICc	Δ AICc	LR X2	LR p-value	Odds estimate	CI include 1?	ROC	B0	B1	GOF p-val
sumhwden	116.937	117.0582	0.0000	2.8650	0.0905	0.999	yes	0.573	-0.6173	-0.00073	0.0178
hwdens	117.373	117.4942	0.4360	2.4289	0.1191	0.999	yes	0.561	-0.7776	-0.00083	0.8049
hwdenmat	118.132	118.2532	1.1950	1.6701	0.1962	0.995	yes	0.334	-0.8932	-0.00465	0.2707
denb	118.285	118.4062	1.3480	1.5168	0.2181	0.996	yes	0.488	-0.8532	-0.00439	0.6911
cvs	118.308	118.4292	1.3710	1.4942	0.2216	1.005	yes	0.572	-1.5002	0.00538	0.6658
dens	118.384	118.5052	1.4470	1.4177	0.2338	0.999	yes	0.507	-0.7968	-0.00074	0.2177
cvstem	118.578	118.6992	1.6410	1.2240	0.2686	1.006	yes	0.582	-1.5601	0.00576	0.5474
cvb	119.338	119.4592	2.4010	0.4641	0.4957	1.002	yes	0.455	-1.2316	0.00202	0.5779
cva	119.434	119.5552	2.4970	0.3677	0.5443	1.002	yes	0.509	-1.2533	0.00214	0.1269
mdstem	119.436	119.5572	2.4990	0.3657	0.5454	1.000	yes	0.478	-0.9592	-0.00006	0.6433
condenmat	119.494	119.6152	2.5570	0.3083	0.5787	1.001	yes	0.075	-1.1049	0.00137	
hwdena	119.527	119.6482	2.5900	0.2751	0.6000	0.999	yes	0.449	-0.9648	-0.00065	0.2219
condens	119.578	119.6992	2.6410	0.2240	0.6360	1.000	yes	0.336	-1.026	-0.00029	0.4559
hwdenb	119.592	119.7132	2.6550	0.2100	0.6468	0.998	yes	0.428	-0.9679	-0.00186	0.0566
sumconden	119.679	119.8002	2.7420	0.1232	0.7256	1.000	yes	0.395	-1.0341	-0.00009	0.1631
cvtot	119.682	119.8032	2.7450	0.1198	0.7292	1.002	yes	0.486	-1.1812	0.00165	0.5086
dena	119.701	119.8222	2.7640	0.1015	0.7501	1.000	yes	0.393	-1.0103	-0.00038	0.2088
mcstem	119.708	119.8292	2.7710	0.0942	0.7589	1.001	yes	0.244	-1.1049	0.000793	0.6311
condenb	119.709	119.8302	2.7720	0.0932	0.7601	1.000	yes	0.222	-1.0455	-0.00037	0.4908
grasscov	119.718	119.8392	2.7810	0.0843	0.7716	0.998	yes	0.491	-0.9754	-0.00194	0.2055
condena	119.729	119.8502	2.7920	0.0727	0.7875	1.000	yes	0.260	-1.0495	-0.00015	0.4596
canht	119.733	119.8542	2.7960	0.0694	0.7922	0.994	yes	0.411	-0.9967	-0.00058	0.1351
cancov	119.735	119.8562	2.7980	0.0668	0.7960	1.002	yes	0.499	-1.1682	0.00212	0.3771
cvmat	119.76	119.8812	2.8230	0.0420	0.8377	1.001	yes	0.037	-1.0816	0.00131	
totalden	119.799	119.9202	2.8620	0.0028	0.9579	1.000	yes	0.381	-1.0867	0.000014	0.6688
denmat	119.802	119.9232	2.8650	0.0002	0.9892	1.000	yes	0.072	-1.0744	0.000079	0.2162

STEP: Best model is intercept only!

Table E21. Prairie warbler was present at 35 sampling points (N=102). AICc from test models was compared to the AIC Intercept Only value of 133.19 to determine the best models.

Variable	AIC	AICc	Δ AICc	LR X2	LR p-value	Odds estimate	CI include 1?	ROC	B0	B1	GOF p-val
grasscov	79.241	80.1252	0	63.9505	< 0.0001	1.043	no, +	0.927	-1.0056	0.0424	0.6921
cvs						0.972	no, -			-0.0282	
hwdens						1.001	yes			0.00148	
hwdena						1.003	yes			0.00273	
hwdenb						0.980	no, -			-0.0205	
grasscov ^{step}	80.003	80.6280	0.5028	61.1881	<0.0001	1.046	no, +	0.920	-0.405	0.045	0.9383
cvs						1.004	no, +			0.00369	
hwdena						0.979	no, -			-0.0217	
hwdenb						0.968	no, -			-0.0327	
grasscov	85.671	86.2960	6.1708	55.5208	< 0.0001	1.053	no, +	0.907	-2.6382	0.0512	0.6307
cvs						0.975	no, -			-0.0252	
hwdens						1.002	yes			0.0016	
hwdena						1.002	yes			0.00215	
grasscov	86.09	86.5024	6.3772	53.1013	<0.0001	1.053	no, +	0.903	-2.6646	0.0517	0.3599
cvs						0.975	no, -			-0.0251	
sumhwden						1.002	yes			0.00153	
canht	90.76	91.1724	11.0472	48.4312	<0.0001	0.806	no, -	0.889	1.9883	-0.216	<0.0001
sumhwden						1.001	yes			0.00129	
cvs						0.983	no, -			-0.0174	
canht	95.467	95.7119	15.5867	41.7247	<0.0001	0.824	no, -	0.867	3.1131	-0.1934	0.6738
cvs						0.977	no, -			-0.0233	
mcstem	98.335	98.7474	18.6222	40.8568	<0.0001	1.009	no, +	0.863	0.517	0.00935	0.4979
dens						1.002	no, +			0.00158	
canht						0.809	no, -			-0.2118	
canht	110.997	111.1182	30.9930	24.1939	<0.0001	0.840	no, -	0.805	1.1548	-0.1748	0.0041
hwdenb	114.311	114.4322	34.3070	20.8798	<0.0001	0.978	no, -	0.676	0.3746	-0.022	0.2542
hwdens	114.557	114.6782	34.5530	20.6347	<0.0001	1.002	no, +	0.676	-1.5888	0.00235	0.0026
grasscov	115.507	115.6282	35.5030	19.6838	<0.0001	1.031	no, +	0.745	-2.3956	0.031	0.9375
denmat	118.695	118.8162	38.6910	16.4959	<0.0001	0.958	no, -	0.570	-0.1384	-0.0425	0.0113
hwdenmat	120.348	120.4692	40.3440	14.8432	0.0001	0.983	no, -	0.502	-0.142	-0.0173	0.3165

Table E21. (continued)

Variable	AIC	AICc	Δ AICc	LR X2	LR p-value	Odds estimate	CI include 1?	ROC	B0	B1	GOF p-val
sumhwden	123.142	123.2632	43.1380	12.0488	0.0005	1.001	yes	0.639	-1.5301	0.00124	0.0026
cvs	124.031	124.1522	44.0270	11.1606	0.0008	0.984	no, -	0.684	0.4839	-0.0164	0.1403
dens	126.761	126.8822	46.7570	8.4299	0.0037	1.002	yes	0.673	-1.2998	0.00155	0.1929
mcstem	126.822	126.9432	46.8180	8.3689	0.0038	1.008	no, +	0.493	-0.9601	0.00776	0.271
cancov	127.894	128.0152	47.8900	7.2969	0.0069	0.979	no, -	0.657	0.2551	-0.0215	0.7533
mdstem	128.252	128.3732	48.2480	6.9393	0.0084	1.000	yes	0.638	-0.1656	-0.00028	0.7437
cvb	130.102	130.2232	50.0980	5.0898	0.0241	0.993	no, -	0.601	-0.1926	-0.00657	0.0323
condenmat	130.144	130.2652	50.1400	5.0468	0.0247	0.984	yes	0.161	-0.5092	-0.016	
condens	131.448	131.5692	51.4440	3.7434	0.0530	1.001	yes	0.588	-0.84	0.00107	0.0886
cvmat*	131.744	131.8652	51.7400	3.4469	0.0634	0.852	yes	0.060	-0.5878	-0.1605	
cva	131.788	131.9092	51.7840	3.4028	0.0651	0.994	yes	0.576	-0.1564	-0.00631	0.2557
cvtot	131.914	132.0352	51.9100	3.2771	0.0703	0.991	yes	0.596	-0.1173	-0.00862	0.188
denb	132.629	132.7502	52.6250	2.5623	0.1094	0.995	yes	0.659	-0.3853	-0.00521	0.0097
hwdena	132.977	133.0982	52.9730	2.2141	0.1368	1.002	yes	0.548	-0.9249	0.00154	0.105
sumconden	133.13	133.2512	53.1260	2.0612	0.1511	1.000	yes	0.548	-0.7975	0.000327	0.1309
condena	133.682	133.8032	53.6780	1.5090	0.2193	1.001	yes	0.425	-0.7486	0.000593	0.4499
totalden	134.744	134.8652	54.7400	0.4475	0.5035	1.000	yes	0.562	-0.4857	-0.00017	0.6539
condenb	134.802	134.9232	54.7980	0.3895	0.5326	1.001	yes	0.230	-0.7015	0.000647	0.7545
dena	135.081	135.2022	55.0770	0.1104	0.7397	1.000	yes	0.434	-0.7085	0.000351	0.8484
cvstem †	135.191	135.3122	55.1870	0	0.9960	1.000	yes	0	-0.6513	0.000024	0.4533

* Maximum likelihood estimate may not exist! Validity of the model is questionable.

† Measures of association between the observed and predicted values were not calculated because the predicted probabilities are indistinguishable when they are classified into intervals of length 0.002.

Table E22. Red-eyed vireo was present at 87 sampling points (N=102). AICc from test models was compared to the AIC Intercept Only value of 87.18 to determine the best models.

Variable	AIC	AICc	ΔAICc	LR X2	LR p-value	Odds estimate	CI include 1?	ROC	B0	B1	GOF p-val
cancov ^{step}	54.707	54.9519	0.0000	36.4775	<0.0001	1.114	no, +	0.914	-2.5636	0.108	0.4124
cva						1.014	no, +			0.0136	
denmat*	59.541	59.7859	4.8340	31.6441	<0.0001	2.515	yes	0.883	-1.3812	0.9222	0.6036
canht						1.467	no, +			0.3834	
canht	60.092	60.2132	5.2613	29.0924	<0.0001	1.584	no, +	0.867	-1.6883	0.4598	0.5922
cancov	60.170	60.2912	5.3393	29.0149	<0.0001	1.094	no, +	0.887	-0.7503	0.0898	0.8724
totalden	60.100	60.3449	5.3930	31.0851	<0.0001	1.001	yes	0.880	-1.8659	0.000944	0.9459
canht						1.505	no, +			0.4091	
condenmat*	61.702	61.9469	6.9950	29.4833	<0.0001	1.132	yes	0.869	-1.6292	0.1243	0.3555
canht						1.562	no, +			0.4462	
canht	61.733	61.9779	7.0260	29.4516	<0.0001	1.559	no, +	0.866	-1.8527	0.4443	0.415
cva						1.003	yes			0.00286	
canht	61.840	62.0849	7.1330	29.3447	<0.0001	1.566	no, +	0.870	-1.9691	0.4488	0.2838
cvstem						1.004	yes			0.00383	
mdstem	61.993	62.2379	7.2860	31.1915	<0.0001	1.000	yes	0.883	-1.9168	0.00007	0.9441
totalden						1.001	yes			0.000948	
canht						1.497	no, +			0.4035	
grasscov	64.568	64.8129	9.8610	26.6171	<0.0001	0.941	no, -	0.866	5.2407	-0.0608	0.4548
cva						1.009	yes			0.00865	
grasscov	65.800	65.9212	10.9693	23.3851	<0.0001	0.943	no, -	0.852	5.8512	-0.059	0.277
denmat*	69.750	69.8712	14.9193	19.4349	<0.0001	3.384	yes	0.517	1.0298	1.2192	0.8768
denb	70.162	70.2832	15.3313	19.0232	<0.0001	1.056	no, +	0.745	0.6712	0.0547	0.7901
hwdenmat*	72.610	72.7312	17.7793	16.5748	<0.0001	1.214	yes	0.460	1.1421	0.1941	0.9998
totalden	72.746	72.8672	17.9153	16.4393	<0.0001	1.002	no, +	0.822	0.3268	0.0024	0.1312
dena	77.437	77.5582	22.6063	11.7475	0.0006	1.012	no, +	0.776	0.6345	0.0118	0.0905
hwdenb	78.855	78.9762	24.0243	10.3296	0.0013	1.022	no, +	0.629	0.9143	0.0221	0.2875
mdstem	83.637	83.7582	28.8063	5.5475	0.0185	1.000	yes	0.699	1.141	0.000443	0.1314
condenb	83.694	83.8152	28.8633	5.4909	0.0191	1.015	yes	0.261	1.5053	0.0152	0.776
condenmat*	84.735	84.8562	29.9043	4.4503	0.0349	1.184	no, +	0.149	1.596	0.1691	

Table E22. (continued)

Variable	AIC	AICc	Δ AICc	LR X2	LR p-value	Odds estimate	CI include 1?	ROC	B0	B1	GOF p-val
condena	86.417	86.5382	31.5863	2.7680	0.0962	1.003	yes	0.349	1.5616	0.00268	0.7874
cvb	86.684	86.8052	31.8533	2.5008	0.1138	1.006	yes	0.572	1.3503	0.00641	0.0412
hwdena	86.941	87.0622	32.1103	2.2441	0.1341	1.003	yes	0.648	1.306	0.00321	0.004
cvmat*	87.185	87.3062	32.3543	1.3003	0.2542	1.147	yes	0.046	1.7108	0.1368	
sumconden	87.461	87.5822	32.6303	1.7234	0.1892	1.001	yes	0.402	1.5687	0.00063	0.1497
mcstem	88.003	88.1242	33.1723	1.1815	0.2771	0.997	yes	0.448	1.9024	-0.00305	0.0707
dens	88.133	88.2542	33.3023	1.0519	0.3051	1.001	yes	0.590	1.4605	0.000824	0.2039
cva	88.241	88.3622	33.4103	0.9436	0.3314	1.004	yes	0.578	1.4173	0.00448	0.0217
cvs	88.443	88.5642	33.6123	0.7420	0.3890	1.005	yes	0.545	1.3916	0.0051	0.3466
cvstem	88.745	88.8662	33.9143	0.4402	0.5070	1.004	yes	0.509	1.4052	0.00445	0.0536
hwdens	88.791	88.9122	33.9603	0.3938	0.5303	1.000	yes	0.420	1.8787	-0.00026	0.067
sumhwden	89.094	89.2152	34.2633	0.0907	0.7633	1.000	yes	0.587	1.668	0.000133	0.0904
condens	89.159	89.2802	34.3283	0.0264	0.8709	1.000	yes	0.201	1.7385	0.000115	0.2484
cvtot	89.168	89.2892	34.3373	0.0169	0.8965	0.999	yes	0.433	1.808	-0.00076	0.2839

* Maximum likelihood estimate may not exist! Validity of the model is questionable.

Table E23. Scarlet tanager was present at 31 sampling points (N=102). AICc from test models was compared to the AIC Intercept Only value of 127.29 to determine the best models.

Variable	AIC	AICc	Δ AICc	LR X2	LR p-value	Odds estimate	CI include 1?	ROC	B0	B1	GOF p-val
grasscov ^{step}	102.209	102.6214	0.0000	31.0773	< 0.0001	0.977	no, -	0.821	-0.02	-0.0232	0.7311
hwdenb						0.995	yes			-0.00498	
hwdena						1.015	no, +			0.0151	
cancov	107.447	107.8594	5.2380	25.8395	< 0.0001	1.017	yes	0.813	-1.8843	0.0167	0.2068
hwdena						0.995	no, -			-0.00526	
hwdenb						1.016	no, +			0.0164	
canht	108.899	109.3114	6.6900	24.3882	< 0.0001	1.030	yes	0.806	-1.6378	0.0296	0.4615
hwdena						0.995	yes			-0.0047	
hwdenb						1.017	no, +			0.0168	
grasscov	112.664	112.7852	10.1638	16.6227	< 0.0001	0.973	no, -	0.734	0.4191	-0.0278	0.5808
hwdenmat	113.515	113.7599	11.1385	17.7720	0.0001	1.004	yes	0.766	-0.0321	0.00408	0.2692
grasscov						0.978	no, -			-0.0222	
hwdenb	113.992	114.1132	11.4918	15.2950	< 0.0001	1.016	no, +	0.698	-1.8593	0.016	0.7633
cancov	114.818	115.0629	12.4415	16.4691	0.0003	1.032	no, +	0.753	-1.5228	0.0316	0.0361
sumhwden						0.999	yes			-0.00132	
canht	116.750	116.8712	14.2498	12.5363	0.0004	1.075	no, +	0.745	-1.8605	0.0727	0.3378
hwdenmat	118.011	118.1322	15.5108	11.2762	0.0008	1.010	no, +	0.586	-1.3368	0.0101	0.152
hwdenmat	118.167	118.4119	15.7905	13.1193	0.0014	1.007	yes	0.729	-1.5165	0.00724	0.4019
mdstem						1.000	yes			0.000145	
cancov	119.772	119.8932	17.2718	9.5150	0.0020	1.025	no, +	0.697	-2.0263	0.0248	0.1605
mdstem	119.924	120.0452	17.4238	9.3629	0.0022	1.000	yes	0.648	-1.4116	0.000258	0.0413
hwdens	122.773	122.8942	20.2728	6.5132	0.0107	0.998	yes	0.566	-0.3161	-0.00157	0.1052
denmat	123.105	123.2262	20.6048	6.1816	0.0129	1.013	no, +	0.603	-1.1508	0.0133	0.0222
denb	126.134	126.2552	23.6338	3.1530	0.0758	1.005	yes	0.689	-1.1355	0.00516	0.01
sumhwden	126.482	126.6032	23.9818	2.8044	0.0940	0.999	yes	0.528	-0.4102	-0.00066	0.077
cvb	126.528	126.6492	24.0278	2.7584	0.0967	1.005	yes	0.582	-1.2061	0.00466	0.0308
hwdena	127.029	127.1502	24.5288	2.2580	0.1329	0.998	yes	0.528	-0.51	-0.00203	0.0906
cvtot	127.424	127.5452	24.9238	1.8624	0.1723	0.993	yes	0.557	-0.4185	-0.00661	0.116
cva	127.542	127.6632	25.0418	1.7446	0.1866	0.995	yes	0.578	-0.4663	-0.00461	0.0038
mcstem	127.751	127.8722	25.2508	1.5360	0.2152	0.996	yes	0.327	-0.703	-0.00374	0.6901

Table E23. (continued)

Variable	AIC	AICc	Δ AICc	LR X2	LR p-value	Odds estimate	CI include 1?	ROC	B0	B1	GOF p-val
condenmat	127.761	127.8822	25.2608	1.5257	0.2168	1.003	yes	0.121	-0.8989	0.003	
cvstem	128.016	128.1372	25.5158	1.2707	0.2596	0.994	yes	0.588	-0.3636	-0.00582	0.7756
totalden	128.184	128.3052	25.6838	1.1031	0.2936	1.000	yes	0.613	-1.0983	0.000268	0.1775
cvs	128.435	128.5562	25.9348	0.8514	0.3562	0.996	yes	0.529	-0.5264	-0.00408	0.77
dens	128.710	128.8312	26.2098	0.5770	0.4475	1.000	yes	0.512	-0.6692	-0.00041	0.2839
dena	129.058	129.1792	26.5578	0.2286	0.6326	1.001	yes	0.588	-0.9164	0.000515	0.072
condenb	129.157	129.2782	26.6568	0.1293	0.7192	1.000	yes	0.197	-0.7984	-0.00041	0.5846
sumconden	129.271	129.3922	26.7708	0.0159	0.8997	1.000	yes	0.306	-0.8418	0.00003	0.8654
condens	129.277	129.3982	26.7768	0.0102	0.9196	1.000	yes	0.113	-0.8378	0.000052	0.3711
condena	129.281	129.4022	26.7808	0.0053	0.9418	1.000	yes	0.142	-0.8347	0.000037	0.8948
cvmat †	129.287	129.4082	26.7868	0.0000	0.9952	1.000	yes		-0.8284	-0.00004	

† Measures of association between the observed and predicted values were not calculated because the predicted probabilities are indistinguishable when they are classified into intervals of length 0.002.

Table E24. Tufted titmouse was present at 63 sampling points (N=102). AICc from test models was compared to the AIC Intercept Only value of 137.7 to determine the best models.

Variable	AIC	AICc	Δ AICc	LR X2	LR p-value	Odds estimate	CI include 1?	ROC	B0	B1	GOF p-val
cancov ^{step}	127.521	127.7659	0	14.1805	0.0008	1.030	no, +	0.718	-1.9291	0.0297	0.2739
cvstem						1.014	no, +			0.0138	
canht	128.281	128.5259	0.7600	13.4203	0.0012	1.084	no, +	0.720	-1.5117	0.0805	0.5727
cvstem						1.012	no, +			0.0123	
cancov	128.492	128.9044	1.1385	15.2096	0.0016	1.022	yes	0.725	-1.7371	0.022	0.437
cvstem						1.014	no, +			0.0135	
denmat						1.009	yes			0.00936	
canht	130.201	130.6134	2.8475	13.5006	0.0037	1.081	no, +	0.719	-1.5773	0.0776	0.8012
cvstem						1.013	no, +			0.0126	
totalden						1.000	yes			0.000081	
canht	131.591	131.7122	3.9463	8.1102	0.0044	1.068	no, +	0.689	-0.3171	0.0658	0.0039
cancov	131.778	131.8992	4.1333	7.9237	0.0049	1.022	no, +	0.660	-0.4517	0.0218	0.4743
hwdens	131.717	131.9619	4.1960	9.9849	0.0068	0.999	yes	0.685	1.5584	-0.00067	0.5691
grasscov						0.985	no, -			-0.015	
denmat	132.552	132.6732	4.9073	7.1498	0.0075	1.018	no, +	0.457	0.1676	0.0179	0.6934
denb	132.903	133.0242	5.2583	6.7986	0.0091	1.009	no, +	0.617	0.0453	0.009	0.3528
grasscov	132.954	133.0752	5.3093	6.7477	0.0094	0.984	no, -	0.638	1.3381	-0.0162	0.3076
cancov	133.624	133.8689	6.1030	8.0776	0.0176	1.020	yes	0.661	-0.4107	0.0193	0.5045
hwdenmat						1.002	yes			0.0017	
hwdens	135.273	135.3942	7.6283	4.4284	0.0353	0.999	yes	0.519	0.809	-0.00078	0.009
hwdenmat	135.361	135.4822	7.7163	4.3410	0.0372	1.007	yes	0.398	0.2149	0.00677	0.1968
condenb	136.472	136.5932	8.8273	3.2293	0.0723	1.002	yes	0.270	0.3374	0.00227	0.6065
hwdenb	136.746	136.8672	9.1013	2.9556	0.0856	1.007	yes	0.544	0.1213	0.00654	0.0801
sumhwden	137.560	137.6812	9.9153	2.1420	0.1433	1.000	yes	0.492	0.7962	-0.00045	0.0848
cvstem	137.611	137.7322	9.9663	2.0906	0.1482	1.007	yes	0.568	-0.0893	0.00707	0.1478
cvb	137.981	138.1022	10.3363	1.7209	0.1896	1.004	yes	0.536	0.216	0.00359	0.0851
dens	138.229	138.3502	10.5843	1.4724	0.2250	0.999	yes	0.488	0.7152	-0.00057	0.1055
condena	138.272	138.3932	10.6273	1.4297	0.2318	1.001	yes	0.354	0.3867	0.000668	0.875
cvs	138.307	138.4282	10.6623	1.3946	0.2376	1.005	yes	0.600	0.112	0.00493	0.1091

Table E24. (continued)

Variable	AIC	AICc	ΔAICc	LR X2	LR p-value	Odds estimate	CI include 1?	ROC	B0	B1	GOF p-val
dena	138.405	138.5262	10.7603	1.2971	0.2547	1.001	yes	0.601	0.2759	0.00128	0.5084
totalden	138.447	138.5682	10.8023	1.2548	0.2626	1.000	yes	0.574	0.2109	0.000283	0.2377
sumconden	138.701	138.8222	11.0563	1.0008	0.3171	1.000	yes	0.382	0.3796	0.00025	0.9036
mdstem	139.137	139.2582	11.4923	0.5650	0.4523	1.000	yes	0.550	0.3531	0.000063	0.155
mcstem	139.171	139.2922	11.5263	0.5307	0.4663	0.998	yes	0.311	0.5487	-0.00171	0.8833
condenmat	139.354	139.4752	11.7093	0.3479	0.5553	1.002	yes	0.121	0.449	0.00155	
cva	139.691	139.8122	12.0463	0.0103	0.9190	1.000	yes	0.449	0.4528	0.000325	0.0915
hwdena	139.696	139.8172	12.0513	0.0058	0.9394	1.000	yes	0.377	0.466	0.000078	0.0892
cvmat	139.699	139.8202	12.0543	0.0025	0.9601	1.000	yes	0.050	0.4815	-0.0003	
condens	139.700	139.8212	12.0553	0.0013	0.9717	1.000	yes	0.150	0.4765	0.000017	0.2624
cvtot	139.701	139.8222	12.0563	0.0007	0.9791	1.000	yes	0.247	0.4722	0.000113	0.0178

Table E25. White-eyed vireo was present at 25 sampling points (N=102). AICc from test models was compared to the AIC Intercept Only value of 115.6 to determine the best models.

Variable	AIC	AICc	Δ AICc	LR X2	LR p-value	Odds estimate	CI include 1?	ROC	B0	B1	GOF p-val
cv ^s _{step}	103.850	104.0949	0	15.7500	0.0004	1.017	no, +	0.742	-0.4892	0.0166	0.9591
cvstem						0.969	no, -			-0.0311	
canht	105.783	106.1954	2.1005	15.8217	0.0012	0.994	yes	0.738	-0.3781	-0.00595	0.9978
cvstem						1.016	yes			0.0161	
cv ^s						0.970	no, -			-0.0309	
cv ^s hwdens	106.181	106.4259	2.3310	13.4239	0.0012	0.982	no, -	0.714	-0.2305	-0.0178	0.2511
						1.001	yes			0.000543	
cv ^s	106.410	106.5312	2.4363	11.1946	0.0008	0.981	no, -	0.701	0.1391	-0.0195	0.2784
dens	107.332	107.5769	3.4820	12.2727	0.0022	1.001	yes	0.745	-0.8924	0.00116	0.714
cvtot						0.986	yes			-0.0137	
canht	107.837	108.0819	3.9870	11.7680	0.0028	0.984	yes	0.724	0.3987	-0.0165	0.4924
cv ^s						0.980	no, -			-0.0201	
dens	109.443	109.5642	5.4693	8.1612	0.0043	1.002	yes	0.774	-1.8127	0.00154	0.4663
cvtot	109.938	110.0592	5.9643	7.6665	0.0056	0.983	no, -	0.631	-0.1898	-0.0167	0.1635
canht	111.434	111.6789	7.5840	8.1704	0.0168	0.998	yes	0.771	-1.7816	-0.00222	0.4431
dens						1.002	yes			0.00153	
hwdens	112.670	112.7912	8.6963	4.9346	0.0263	1.001	yes	0.618	-1.5029	0.000812	0.7629
sumhwden	113.329	113.4502	9.3553	4.2754	0.0387	1.001	yes	0.647	-1.6265	0.000665	0.7759
totalden	114.800	114.9212	10.8263	2.8049	0.0940	1.000	yes	0.654	-1.5948	0.000448	0.022
mcstem	114.969	115.0902	10.9953	2.6355	0.1045	1.004	yes	0.428	-1.305	0.00399	0.2708
condens	115.053	115.1742	11.0793	2.5514	0.1102	1.001	yes	0.586	-1.2873	0.000829	0.1722
sumconden	115.774	115.8952	11.8003	1.8306	0.1761	1.000	yes	0.585	-1.2786	0.000317	0.0145
condena	115.976	116.0972	12.0023	1.6289	0.2019	1.001	yes	0.459	-1.2404	0.000637	0.0466
dena	116.397	116.5182	12.4233	1.2077	0.2718	1.001	yes	0.580	-1.3405	0.00122	0.5113
hwdenb	116.727	116.8482	12.7533	0.8777	0.3488	0.996	yes	0.471	-0.9086	-0.00398	0.4008
cva	116.793	116.9142	12.8193	0.8115	0.3677	0.997	yes	0.532	-0.8614	-0.00334	0.1965
grasscov	116.814	116.9352	12.8403	0.7902	0.3740	0.994	yes	0.547	-0.8305	-0.00601	0.1652
cancov	117.039	117.1602	13.0653	0.5653	0.4522	1.006	yes	0.552	-1.4112	0.00623	0.1083
mdstem	117.073	117.1942	13.0993	0.5321	0.4657	1.000	yes	0.575	-1.2634	0.000064	0.2624

Table E25. (continued)

Variable	AIC	AICc	Δ AICc	LR X2	LR p-value	Odds estimate	CI include 1?	ROC	B0	B1	GOF p-val
cvb	117.139	117.2602	13.1653	0.4659	0.4949	0.998	yes	0.475	-0.9713	-0.00211	0.8253
denb	117.285	117.4062	13.3113	0.3198	0.5717	0.998	yes	0.475	-1.0237	-0.00191	0.7302
hwdena	117.402	117.5232	13.4283	0.2024	0.6528	1.001	yes	0.557	-1.214	0.0005	0.2329
denmat	117.461	117.5822	13.4873	0.1436	0.7047	0.998	yes	0.353	-1.0764	-0.00231	0.9607
cvstem	117.540	117.6612	13.5663	0.0646	0.7994	0.999	yes	0.463	-1.0134	-0.00137	0.6542
cvmat	117.543	117.6642	13.5693	0.0621	0.8033	1.002	yes	0.039	-1.136	0.0016	
condenmat	117.547	117.6682	13.5733	0.0578	0.8099	0.999	yes	0.106	-1.111	-0.00069	
hwdenmat	117.552	117.6732	13.5783	0.0524	0.8190	1.001	yes	0.310	-1.1581	0.000731	0.9138
canht	117.561	117.6822	13.5873	0.0438	0.8343	0.995	yes	0.471	-1.0639	-0.00465	0.5382
condenb	117.587	117.7082	13.6133	0.0175	0.8947	1.000	yes	0.213	-1.137	0.000154	0.3447

Table E26. Wood thrush was present at 37 sampling points (N=102). AICc from test models was compared to the AIC Intercept Only value of 135.61 to determine the best models.

Variable	AIC	AICc	Δ AICc	LR X2	LR p-value	Odds estimate	CI include 1?	ROC	B0	B1	GOF p-val
cancov ^{step}	109.147	109.2682	0.000	28.4694	<0.0001	1.047	no, +	0.794	-2.771	0.0455	0.7548
grasscov	110.735	110.8562	1.588	26.8812	<0.0001	0.965	no, -	0.786	1.0676	-0.0355	0.1013
cvmat	110.757	111.0019	1.734	28.8589	<0.0001	1.006	yes	0.793	-2.7085	0.00582	0.5366
cancov						1.045	no, +			0.0437	
denmat	111.140	111.3849	2.117	28.4764	<0.0001	0.999	yes	0.797	-2.7904	-0.00067	0.6851
cancov						1.047	no, +			0.0462	
hwdenmat	111.692	112.1044	2.836	29.9242	<0.0001	1.003	yes	0.799	-2.5553	0.00302	0.6744
condenmat						1.004	yes			0.00422	
grasscov						1.038	no, +			0.0369	
cancov	111.930	112.3424	3.074	29.6859	<0.0001	1.053	no, +	0.798	-2.8623	0.0515	0.377
dena						1.000	yes			0.000358	
denb						0.996	yes			-0.00447	
canht	113.087	113.3319	4.064	26.5290	<0.0001	1.091	no, +	0.798	-2.3693	0.0869	0.4517
totalden						1.001	yes			0.000582	
canht	115.205	115.3262	6.058	22.4113	<0.0001	1.111	no, +	0.775	-1.9869	0.1053	0.1977
hwdenmat	122.545	122.6662	13.398	15.0713	0.0001	1.012	no, +	0.533	-1.1259	0.0122	0.9526
totalden	124.313	124.4342	15.166	13.3032	0.0003	1.001	yes	0.737	-1.5367	0.00095	0.0701
denmat	124.517	124.6382	15.370	13.0989	0.0003	1.021	no, +	0.608	-1.0288	0.0209	0.1544
mdstem	125.564	125.6852	16.417	12.0519	0.0005	1.000	yes	0.631	-1.2071	0.000301	0.1416
hwdenb	126.927	127.0482	17.780	10.6894	0.0011	1.013	no, +	0.667	-1.331	0.0126	0.0302
condenmat	129.180	129.3012	20.033	8.4366	0.0037	1.012	yes	0.237	-0.7538	0.0123	
dena	130.459	130.5802	21.312	7.1571	0.0075	1.003	no, +	0.701	-1.0648	0.00293	0.1938
hwdena	131.490	131.6112	22.343	6.1261	0.0133	1.003	yes	0.619	-1.0525	0.00279	0.0583
denb	132.649	132.7702	23.502	4.9672	0.0258	1.006	no, +	0.690	-0.9365	0.00644	0.0077
cvmat	132.718	132.8392	23.571	4.8983	0.0269	1.017	yes	0.081	-0.6512	0.0169	
cvs	132.956	133.0772	23.809	4.6605	0.0309	0.990	yes	0.610	0.129	-0.00955	0.882
cvtot	133.485	133.6062	24.338	4.1312	0.0421	0.990	yes	0.597	0.0296	-0.00961	0.2776
cvstem	133.504	133.6252	24.357	4.1125	0.0426	0.990	yes	0.625	0.2533	-0.0103	0.5742
sumconden	133.708	133.8292	24.561	3.9077	0.0481	1.000	yes	0.382	-0.7703	0.000466	0.1265

Table E26. (continued)

Variable	AIC	AICc	Δ AICc	LR X2	LR p-value	Odds estimate	CI include 1?	ROC	B0	B1	GOF p-val
condenb	134.111	134.2322	24.964	3.5054	0.0612	1.002	yes	0.326	-0.7223	0.00195	0.3105
cva	134.185	134.3062	25.038	3.4314	0.0640	0.994	yes	0.598	-0.0734	-0.00624	0.149
condena	135.019	135.1402	25.872	2.5971	0.1071	1.001	yes	0.332	-0.6933	0.00079	0.2311
dens	135.411	135.5322	26.264	2.2048	0.1376	1.001	yes	0.605	-0.858	0.000706	0.0051
sumhwden	135.635	135.7562	26.488	1.9808	0.1593	1.000	yes	0.617	-0.8693	0.000429	0.3731
condens	136.137	136.2582	26.990	1.4794	0.2239	1.001	yes	0.344	-0.6728	0.00061	0.8645
cvb	137.351	137.4722	28.204	0.2653	0.6065	0.999	yes	0.429	-0.4582	-0.00141	0.0008
mcstem	137.569	137.6902	28.422	0.0470	0.8284	1.001	yes	0.249	-0.5841	0.000518	0.45
hwdens	137.616	137.7372	28.469	0.0002	0.9890	1.000	yes	0.027	-0.5655	4.815E-06	0.1151

Table E27. Yellow-breasted chat was present at 64 sampling points (N=102). AICc from test models was compared to the AIC Intercept Only value of 136.7 to determine the best models.

Variable	AIC	AICc	Δ AICc	LR X2	LR p-value	Odds estimate	CI include 1?	ROC	B0	B1	GOF p-val
dens ^{step} canht	105.315	105.5599	0	35.3862	<0.0001	1.005 0.902	no, + no, -	0.821	0.4105	0.0051 -0.1028	0.4012
dens canht cvs	105.707	106.1194	0.5595	36.9940	<0.0001	1.005 0.899 0.993	no, + no, - yes	0.828	1.1797	0.00449 -0.1069 -0.00653	0.5205
hwdens canht	113.068	113.3129	7.7530	27.6300	<0.0001	1.004 0.939	no, + no, -	0.800	0.3663	0.00374 -0.0633	0.4524
cvtot canht	116.910	117.1549	11.5950	23.7800	<0.0001	0.983 0.907	no, - no, -	0.764	3.0454	-0.017 -0.0979	0.9658
cvs canht	117.378	117.6229	12.0630	20.4000	<0.0001	0.985 0.912	no, - no, -	0.757	3.0591	-0.015 -0.092	0.0452
hwdens	119.938	120.0592	14.4993	18.7625	<0.0001	1.004	no, +	0.743	-0.4993	0.00359	0.6017
sumhwden canht	120.647	120.8919	15.3320	20.2530	<0.0001	1.001 0.925	yes no, -	0.765	0.7544	0.00139 -0.0781	0.9239
dens	121.460	121.5812	16.0213	17.2370	<0.0001	1.003	no, +	0.715	-0.5427	0.00326	0.8725
condens canht	124.720	124.9649	19.4050	15.9800	0.0003	1.002 0.938	yes no, -	0.715	1.1837	0.00173 -0.0644	0.5302
canht	126.453	126.5742	21.0143	12.2400	0.0005	0.931	no, -	0.693	1.4945	-0.0716	0.8442
hwdenmat	131.614	131.7352	26.1753	7.0800	0.0078	0.992	no, -	0.455	0.884	-0.0078	0.2719
hwdenb	131.674	131.7952	26.2353	7.0200	0.0080	0.990	no, -	0.627	1.1161	-0.00987	0.2196
denmat	131.890	132.0112	26.4513	6.8000	0.0091	0.986	no, -	0.518	0.8393	-0.014	0.2543
sumhwden	132.270	132.3912	26.8313	6.4200	0.0112	1.001	yes	0.627	-0.1171	0.00102	0.0486
condens	132.350	132.4712	26.9113	6.3500	0.0117	1.002	yes	0.423	0.2551	0.00217	0.9179
cvs	133.692	133.8132	28.2533	5.0080	0.0252	0.991	no, -	0.625	1.2407	-0.00917	0.1642
cvtot	133.799	133.9202	28.3603	4.9010	0.0268	0.990	no, -	0.610	1.1674	-0.00964	0.2745
cvb	134.259	134.3802	28.8203	4.4410	0.0351	0.994	yes	0.607	0.9743	-0.00569	0.0701
cva	135.228	135.3492	29.7893	3.4720	0.0624	0.994	yes	0.579	1.0309	-0.00599	0.1072
condenmat	135.846	135.9672	30.4073	2.8500	0.0911	0.995	yes	0.254	0.6159	-0.0046	
cancov	136.680	136.8012	31.2413	2.0100	0.1560	0.990	yes	0.572	1.0031	-0.0105	0.3215

Table E27. (continued)

Variable	AIC	AICc	ΔAICc	LR X2	LR p-value	Odds estimate	CI include 1?	ROC	B0	B1	GOF p-val
sumconden	136.819	136.9402	31.3803	1.8810	0.1701	1.000	yes	0.409	0.3812	0.000367	0.0175
condena	136.920	137.0412	31.4813	1.7780	0.1823	1.001	yes	0.360	0.4169	0.000775	0.6054
grasscov	137.000	137.1212	31.5613	1.6900	0.1929	1.008	yes	0.551	0.1308	0.00787	0.0772
dena	137.772	137.8932	32.3333	0.9286	0.3350	1.001	yes	0.505	0.3491	0.00107	0.4963
mcstem	137.847	137.9682	32.4083	0.8540	0.3554	1.002	yes	0.359	0.433	0.00241	0.3507
denb	138.120	138.2412	32.6813	0.5752	0.4482	0.998	yes	0.601	0.6428	-0.00214	0.3049
totalden	138.350	138.4712	32.9113	0.3528	0.5525	1.000	yes	0.516	0.3785	0.000149	0.9906
cvstem	138.382	138.5032	32.9433	0.3187	0.5724	0.997	yes	0.484	0.7429	-0.00268	0.466
condenb	138.620	138.7412	33.1813	0.0804	0.7767	1.000	yes	0.276	0.5444	-0.00029	0.03
mdstem	138.670	138.7912	33.2313	0.0298	0.8630	1.000	yes	0.439	0.5503	-0.00001	0.991
cvmat	138.690	138.8112	33.2513	0.0079	0.9293	0.999	yes	0.051	0.5248	-0.00053	
hwdena	138.696	138.8172	33.2573	0.0045	0.9464	1.000	yes	0.384	0.5093	0.000069	0.1195

Appendix F. Logistic regression model results relating avian presence to landscape level habitat data.

Superscript “step” indicates the model was selected from all variables (n=33) in stepwise logistic regression. Single variable and multi-variable models are listed from lowest to highest AICc. Models with delta AICc < 2 were considered to be equivalent.

Table F1. American crow was present at 50 sampling points (N=102). AICc from test models was compared to the AIC Intercept Only value of 143.36 to determine the best models.

variable	AIC	AICc	Δ AICc	LR X2	LR p-value	Odds estimate	CI include 1?	ROC	B0	B1	GOF p-val
dpine	141.393	141.5142	0	3.9702	0.0463	0.999	yes	0.551	0.3085	-0.00101	0.7614
samepatch_100	142.997	143.1182	1.604	2.3655	0.1240	2.705	yes	0.098	-1.1116	0.995	
ED	143.456	143.5772	2.063	1.9067	0.1673	2.989	yes	0.576	-1.6855	1.0948	0.2028
pshrub_100	143.517	143.6382	2.124	1.8455	0.1743	0.991	yes	0.483	0.1997	-0.0091	0.6484
pwater_100 *	143.927	144.0482	2.534	1.4362	0.2308	999.999	yes	0.020	-0.0594	9.0577	
dmature	143.970	144.0912	2.577	1.3928	0.2379	0.997	yes	0.512	0.1962	-0.00337	0.2730
pdisturb_100	144.110	144.2312	2.717	1.2524	0.2631	0.927	yes	0.038	-0.0052	-0.0755	
dwater	144.284	144.4052	2.891	1.0792	0.2989	1.000	yes	0.602	0.1763	-0.00026	0.2108
edgeha_100	144.330	144.4512	2.937	1.0323	0.3096	1.003	yes	0.549	-0.3967	0.00339	0.7152
pwater_500	144.391	144.5122	2.998	0.9714	0.3243	1.499	yes	0.351	-0.1459	0.4048	0.2800
ppine_1000	144.472	144.5932	3.079	0.8907	0.3453	1.046	yes	0.514	-0.2206	0.0452	0.0187
dopen	144.662	144.7832	3.269	0.7007	0.4026	0.998	yes	0.458	0.0813	-0.00181	0.8247
pshrub_500	144.715	144.8362	3.322	0.6474	0.4210	0.989	yes	0.538	0.1448	-0.0111	0.2300
pwater_1000	144.814	144.9352	3.421	0.5487	0.4588	1.685	yes	0.462	-0.1629	0.522	0.1973
ddisturb	144.839	144.9602	3.446	0.5240	0.4691	1.002	yes	0.482	-0.1596	0.00163	0.6143
popen_100	144.968	145.0892	3.575	0.3944	0.5300	1.004	yes	0.462	-0.1349	0.00404	0.0161
pmature_100	145.033	145.1542	3.64	0.3303	0.5655	1.003	yes	0.501	-0.1805	0.00338	0.4511
edgeha_1000	145.049	145.1702	3.656	0.3136	0.5755	1.005	yes	0.530	-0.3636	0.00492	0.2789
samepatch_1000	145.086	145.2072	3.693	0.2772	0.5985	1.030	yes	0.478	-0.1986	0.0295	0.3398
perimeter	145.124	145.2452	3.731	0.2384	0.6253	1.000	yes	0.521	-0.1558	0.000097	0.1925
ppine_500	145.196	145.3172	3.803	0.1670	0.6828	1.011	yes	0.420	-0.0839	0.0106	0.2220
popen_500	145.227	145.3482	3.834	0.1356	0.7127	1.006	yes	0.510	-0.1142	0.00573	0.9344
pshrub_1000	145.236	145.3572	3.843	0.1267	0.7219	0.993	yes	0.496	0.0547	-0.00681	0.7067
dshrub	145.242	145.3632	3.849	0.1204	0.7286	1.001	yes	0.437	-0.0922	0.00115	0.8219
pmature_500	145.248	145.3692	3.855	0.1146	0.7349	1.003	yes	0.495	-0.2566	0.00342	0.3372
ppine_100	145.270	145.3912	3.877	0.0928	0.7606	1.003	yes	0.165	-0.0639	0.00337	0.1899
edgeha_500	145.277	145.3982	3.884	0.0857	0.7697	1.002	yes	0.520	-0.1964	0.0021	0.0414
popen_1000	145.278	145.3992	3.885	0.0843	0.7715	1.007	yes	0.497	-0.1132	0.00719	0.7061

Table F1. (continued)

variable	AIC	AICc	Δ AICc	LR X2	LR p-value	Odds estimate	CI include 1?	ROC	B0	B1	GOF p-val
areaha	145.329	145.4502	3.936	0.0342	0.8534	1.000	yes	0.385	-0.0636	-3.237E-07	0.3122
pdisturb_500	145.333	145.4542	3.94	0.0297	0.8631	0.996	yes	0.219	-0.0291	-0.00442	0.0334
samepatch_500	145.344	145.4652	3.951	0.0184	0.8922	0.985	yes	0.355	-0.00383	-0.0154	0.1513
pdisturb_1000	145.351	145.4722	3.958	0.0113	0.9152	0.998	yes	0.294	-0.0302	-0.00219	0.3627
pmature_1000	145.354	145.4752	3.961	0.0093	0.9232	0.999	yes	0.420	0.0314	-0.00105	0.1470

* Maximum likelihood estimate may not exist! Validity of the model is questionable.

STEP: Best model is intercept only!

Table F2. American goldfinch was present at 51 sampling points (N=102). AICc from test models was compared to the AIC Intercept Only value of 143.4 to determine the best models.

variable	AIC	AICc	Δ AICc	LR X2	LR p-value	Odds estimate	CI include 1?	ROC	B0	B1	GOF p-val
pmature_100 ^{step} popen_1000	118.037	118.2819	0.0000	29.3647	< 0.0001	0.928 0.966	no, - no, -	0.787	2.1601	-0.0753 -0.0344	0.6873
pmature_100	122.784	122.9052	4.6233	22.6177	< 0.0001	0.970	no, -	0.752	1.2677	-0.0309	0.4789
pmature_100 popen_100	124.779	125.0239	6.7420	22.6230	< 0.0001	0.970 1.001	no, - yes	0.752	1.2443	-0.0306 0.000585	0.3019
pmature_100 pshrub_100 popen_100	125.127	125.5394	7.2575	24.2747	< 0.0001	0.981 1.017 1.014	yes yes yes	0.774	-0.00768	-0.0191 0.0172 0.0139	0.3207
dmature pshrub_100 popen_100	127.803	128.2154	9.9335	21.5991	< 0.0001	1.000 1.034 1.030	yes no, + no, +	0.759	-1.6134	0.000485 0.0332 0.0296	0.2942
dshrub popen_100	132.479	132.7239	14.4420	14.9234	0.0006	0.986 1.018	no, - no, +	0.683	0.1303	-0.0136 0.018	0.2167
dmature dshrub dopen	133.403	133.8154	15.5335	15.9994	0.0011	1.006 0.991 0.995	yes yes yes	0.722	0.2299	0.00606 -0.00952 -0.00455	0.4071
dshrub	136.397	136.5182	18.2363	9.0049	0.0027	0.989	no, -	0.559	0.4934	-0.0114	0.6726
dmature	138.023	138.1442	19.8623	7.3790	0.0066	1.008	no, +	0.714	-0.5576	0.00813	0.0030
pshrub_100	138.581	138.7022	20.4203	6.8210	0.0090	1.018	no, +	0.575	-0.467	0.018	0.6243
dopen	138.996	139.1172	20.8353	6.4056	0.0114	0.994	no, -	0.560	0.3827	-0.00606	0.8770
popen_100	140.852	140.9732	22.6913	4.5496	0.0329	1.014	no, +	0.481	-0.3287	0.0142	0.1264
popen_1000	141.015	141.1362	22.8543	4.3874	0.0362	0.948	no, -	0.591	0.5443	-0.0534	0.2939
pwater_1000	141.649	141.7702	23.4883	3.7526	0.0527	0.249	yes	0.524	0.3252	-1.3892	0.6872
pdisturb_500	142.120	142.2412	23.9593	3.2825	0.0700	1.059	yes	0.331	-0.1098	0.0572	0.3215
ED	142.781	142.9022	24.6203	2.6209	0.1055	0.275	yes	0.594	1.9423	-1.2926	0.0200
edgeha_1000	142.849	142.9702	24.6883	2.5532	0.1101	0.986	yes	0.602	0.9383	-0.0142	0.6364
pshrub_500	143.571	143.6922	25.4103	1.8307	0.1760	1.019	yes	0.577	-0.3117	0.0188	0.8896
pmature_500	143.592	143.7132	25.4313	1.8102	0.1785	0.986	yes	0.608	0.8735	-0.0137	0.0541
dwater	143.945	144.0662	25.7843	1.4574	0.2273	1.000	yes	0.558	0.2509	-0.00031	0.8689

Table F2. (continued)

variable	AIC	AICc	Δ AICc	LR X2	LR p-value	Odds estimate	CI include 1?	ROC	B0	B1	GOF p-val
pdisturb_1000	143.996	144.1172	25.8353	1.4062	0.2357	1.026	yes	0.452	-0.1015	0.0254	0.9432
pwater_100 *	144.006	144.1272	25.8453	1.3962	0.2374	999.999	yes	0.020	-0.0198	9.0302	
pdisturb_100	144.081	144.2022	25.9203	1.3215	0.2503	1.081	yes	0.039	-0.0351	0.0775	
edgeha_500	144.176	144.2972	26.0153	1.2259	0.2682	1.008	yes	0.559	-0.6	0.00802	0.5936
areaha	144.297	144.4182	26.1363	1.1052	0.2931	1.000	yes	0.448	0.1398	-1.88E-06	0.2817
pwater_500	144.413	144.5342	26.2523	0.9895	0.3199	0.664	yes	0.304	0.1076	-0.4097	0.2498
edgeha_100	144.462	144.5832	26.3013	0.9397	0.3323	1.003	yes	0.536	-0.3404	0.00323	0.3684
perimeter	144.708	144.8292	26.5473	0.6944	0.4047	1.000	yes	0.495	0.1996	-0.00017	0.2406
dpine	144.807	144.9282	26.6463	0.5951	0.4405	1.000	yes	0.512	0.1331	-0.00038	0.5694
ppine_100	145.145	145.2662	26.9843	0.2569	0.6122	1.006	yes	0.246	-0.0411	0.00563	0.3013
popen_500	145.167	145.2882	27.0063	0.2349	0.6279	0.992	yes	0.470	0.0989	-0.00757	0.0799
pshrub_1000	145.246	145.3672	27.0853	0.1556	0.6933	1.008	yes	0.483	-0.1041	0.00755	0.0529
ppine_1000	145.258	145.3792	27.0973	0.1438	0.7045	0.982	yes	0.538	0.0723	-0.018	0.0023
ppine_500	145.316	145.4372	27.1553	0.0864	0.7689	1.008	yes	0.488	-0.0321	0.00761	0.1144
samepatch_100	145.320	145.4412	27.1593	0.0822	0.7744	1.179	yes	0.075	-0.1792	0.1648	
ddisturb	145.333	145.4542	27.1723	0.0688	0.7931	0.999	yes	0.426	0.0434	-0.00059	0.6259
pmature_1000	145.368	145.4892	27.2073	0.0340	0.8536	1.002	yes	0.477	-0.135	0.002	0.2060
samepatch_500	145.399	145.5202	27.2383	0.0032	0.9548	0.994	yes	0.376	0.0148	-0.00642	0.0848
samepatch_1000											
†	145.402	145.5232	27.2413	0	1.0000	1.000	yes		0	0	

* Maximum likelihood estimate may not exist! Validity of the model is questionable.

† Measures of association between the observed and predicted values were not calculated because the predicted probabilities are indistinguishable when they are classified into intervals of length 0.002.

Table F3. American robin was present at 25 sampling points (N=102). AICc from test models was compared to the AIC Intercept Only value of 115.605 to determine the best models.

variable	AIC	AICc	Δ AICc	LR X2	LR p-value	Odds estimate	CI include 1?	ROC	B0	B1	GOF p-val
popen_1000 ^{step}	104.952	105.5770	0.0000	14.6529	0.0007	0.901	no, -	0.744	0.5575	-0.104	0.8643
pmature_100						0.979	no, -			-0.0211	
popen_500	106.176	106.4209	0.8439	13.4282	0.0012	0.938	no, -	0.734	0.561	-0.0642	0.0328
pmature_100						0.975	no, -			-0.0257	
popen_500	108.150	108.5624	2.9854	13.4543	0.0038	0.939	no, -	0.729	0.5576	-0.0628	0.0353
pmature_100						0.975	no, -			-0.025	
dshrub						0.999	yes			-0.00099	
popen_1000	109.973	110.0942	4.5172	7.6316	0.0057	0.911	no, -	0.637	-0.3033	-0.0932	0.0182
pmature_100	111.894	112.0152	6.4382	5.7111	0.0169	0.983	no, -	0.618	-0.4849	-0.0174	0.2595
dshrub	114.081	114.2022	8.6252	3.5238	0.0605	0.991	yes	0.517	-0.7816	-0.00893	0.7700
popen_500	114.252	114.3732	8.7962	3.3529	0.0671	0.962	yes	0.583	-0.6748	-0.0391	0.7420
edgeha_100	115.189	115.3102	9.7332	2.4152	0.1202	1.006	yes	0.564	-1.8024	0.00612	0.2625
pwater_500	115.707	115.8282	10.2512	1.8981	0.1683	0.463	yes	0.352	-0.9559	-0.7695	0.5311
ppine_100	115.793	115.9142	10.3372	1.8118	0.1783	1.016	yes	0.295	-1.2601	0.0159	0.1992
pshrub_100	115.794	115.9152	10.3382	1.8105	0.1785	1.010	yes	0.515	-1.4142	0.0101	0.2682
edgeha_1000	115.863	115.9842	10.4072	1.7415	0.1870	0.986	yes	0.619	-0.2383	-0.0138	0.4719
pshrub_500	116.348	116.4692	10.8922	1.2565	0.2623	1.017	yes	0.573	-1.4293	0.0173	0.3681
ppine_500	116.484	116.6052	11.0282	1.1202	0.2899	1.030	yes	0.544	-1.2594	0.0292	0.5218
pdisturb_100	116.507	116.6282	11.0512	1.0980	0.2947	1.059	yes	0.040	-1.1655	0.0577	
pwater_1000	116.585	116.7062	11.1292	1.0200	0.3125	0.423	yes	0.487	-0.9359	-0.8615	0.1915
dwater	116.699	116.8202	11.2432	0.9055	0.3416	1.000	yes	0.528	-1.3549	0.000267	0.2817
pmature_1000	116.789	116.9102	11.3332	0.8153	0.3666	1.012	yes	0.568	-1.9409	0.0119	0.0138
ddisturb	116.905	117.0262	11.4492	0.6999	0.4028	0.998	yes	0.436	-0.9623	-0.00234	0.2557
edgeha_500	116.967	117.0882	11.5112	0.6377	0.4245	0.993	yes	0.567	-0.6222	-0.00683	0.5310
pwater_100 *	117.039	117.1602	11.5832	0.5655	0.4520	0.001	yes	0.013	-1.1119	-8.5159	
dmature	117.047	117.1682	11.5912	0.5571	0.4554	1.002	yes	0.573	-1.2998	0.00238	0.2886
perimeter	117.301	117.4222	11.8452	0.3038	0.5815	1.000	yes	0.471	-0.9713	-0.00013	0.8962
dopen	117.329	117.4502	11.8732	0.2751	0.5990	0.999	yes	0.423	-1.0374	-0.00137	0.8939
ED	117.380	117.5012	11.9242	0.2244	0.6357	0.646	yes	0.545	-0.4711	-0.4368	0.9450

Table F3. (continued)

variable	AIC	AICc	Δ AICc	LR X2	LR p-value	Odds estimate	CI include 1?	ROC	B0	B1	GOF p-val
ppine_1000	117.402	117.5232	11.9462	0.2026	0.6526	1.024	yes	0.452	-1.2242	0.024	0.1265
pdisturb_500	117.404	117.5252	11.9482	0.2006	0.6543	1.013	yes	0.243	-1.156	0.0126	0.9349
samepatch_1000	117.405	117.5262	11.9492	0.1993	0.6553	0.971	yes	0.497	-0.9685	-0.0295	0.5967
pdisturb_1000	117.440	117.5612	11.9842	0.1647	0.6849	1.009	yes	0.289	-1.1653	0.00929	0.1960
areaha	117.479	117.6002	12.0232	0.1256	0.7230	1.000	yes	0.419	-1.0705	-7.46E-07	0.5182
samepatch_500	117.485	117.6062	12.0292	0.1192	0.7299	0.955	yes	0.369	-1.0199	-0.0463	0.5410
popen_100	117.535	117.6562	12.0792	0.0693	0.7923	1.002	yes	0.425	-1.1719	0.00194	0.4936
pmature_500	117.582	117.7032	12.1262	0.0227	0.8803	0.998	yes	0.462	-1.0132	-0.00176	0.5396
samepatch_100	117.585	117.7062	12.1292	0.0192	0.8897	0.910	yes	0.062	-1.0224	-0.0945	
pshrub_1000	117.594	117.7152	12.1382	0.0108	0.9173	0.998	yes	0.392	-1.0931	-0.00232	0.0785
dpine	117.604	117.7252	12.1482	0.0007	0.9786	1.000	yes	0.324	-1.1196	-0.00002	0.5398

* Maximum likelihood estimate may not exist! Validity of the model is questionable.

Table F4. Black-and-white warbler was present at 62 sampling points (N=102). AICc from test models was compared to the AIC Intercept Only value of 138.62 to determine the best models.

variable	AIC	AICc	Δ AICc	LR X2	LR p-value	Odds estimate	CI include 1?	ROC	B0	B1	GOF p-val
edgeha_1000 ^{step}	84.639	85.5232	0.0000	63.9808	< 0.0001	1.050	no, +	0.920	-6.6227	0.0484	0.5769
pdisturb_1000						0.864	no, -			-0.1458	
popen_500						0.925	no, -			-0.078	
pmature_100						1.043	no, +			0.0423	
ED						14.942	no, +			2.7041	
dmature	99.902	100.0232	14.5000	40.7173	< 0.0001	0.976	no, -	0.827	2.144	-0.0241	0.4688
ED	100.024	100.2689	14.7457	42.5952	< 0.0001	4.047	yes	0.851	0.0537	1.3979	0.6240
dmature						0.977	no, -			-0.0237	
dmature	99.854	100.0989	14.5757	42.7656	< 0.0001	0.976	no, -	0.864	2.2717	-0.0239	0.0615
pdisturb_1000						0.960	yes			-0.0404	
pmature_100	101.086	101.2072	15.6840	39.5338	< 0.0001	1.050	no, +	0.835	-1.2571	0.0483	0.5527
pmature_100	102.389	102.6339	17.1107	40.2305	< 0.0001	1.047	no, +	0.846	-0.9877	0.0455	0.8596
popen_100						0.993	yes			-0.00691	
pmature_500	121.084	121.3289	35.8057	21.5351	< 0.0001	1.029	no, +	0.779	-0.522	0.0285	0.0055
popen_500						0.938	no, -			-0.0639	
popen_500	125.009	125.1302	39.6070	15.6105	< 0.0001	0.931	no, -	0.711	1.3894	-0.0719	0.1698
pmature_500	129.042	129.1632	43.6400	11.5773	0.0007	1.037	no, +	0.688	-1.8439	0.0365	0.8409
popen_100	129.317	129.4382	43.9150	11.3027	0.0008	0.977	no, -	0.576	1	-0.0228	0.4275
pdisturb_500	133.708	133.8292	48.3060	6.9115	0.0086	0.913	yes	0.406	0.6115	-0.0908	0.0006
pdisturb_1000	134.481	134.6022	49.0790	6.1388	0.0132	0.945	no, -	0.588	0.6662	-0.0565	0.3620
pdisturb_100 *	134.861	134.9822	49.4590	5.7583	0.0164	0.293	yes	0.050	0.5162	-1.2281	
ppine_100	135.034	135.1552	49.6320	5.5853	0.0181	0.973	no, -	0.329	0.6419	-0.0273	0.4954
ED	135.314	135.4352	49.9120	5.3052	0.0213	7.189	no, +	0.614	-2.498	1.9726	0.1187
ppine_500	136.818	136.9392	51.4160	3.8017	0.0512	0.948	yes	0.674	0.6651	-0.0534	0.0889
dwater	136.825	136.9462	51.4230	3.7945	0.0514	1.001	yes	0.566	0.0171	0.000545	0.3338
pmature_1000	136.860	136.9812	51.4580	3.7595	0.0525	1.022	yes	0.515	-0.9996	0.0215	0.0012
samepatch_1000	136.980	137.1012	51.5780	3.6394	0.0564	0.896	yes	0.562	1.0442	-0.11	0.0006
samepatch_500	137.694	137.8152	52.2920	2.9254	0.0872	0.821	yes	0.429	0.9018	-0.1974	0.9524
dopen	137.964	138.0852	52.5620	2.6550	0.1032	1.004	yes	0.487	0.1938	0.00393	0.1314
perimeter	138.141	138.2622	52.7390	2.4780	0.1154	1.000	yes	0.641	0.8277	-0.00032	0.1916

Table F4. (continued)

variable	AIC	AICc	Δ AICc	LR X2	LR p-value	Odds estimate	CI include 1?	ROC	B0	B1	GOF p-val
popen_1000	138.259	138.3802	52.8570	2.3608	0.1244	0.962	yes	0.574	0.8472	-0.0389	0.0287
dshrub	138.295	138.4162	52.8930	2.3248	0.1273	1.006	yes	0.483	0.1955	0.00559	0.0953
areaha	138.409	138.5302	53.0070	2.2107	0.1371	1.000	yes	0.670	0.6428	-2.65E-06	0.0407
samepatch_100	138.557	138.6782	53.1550	2.0628	0.1509	0.424	yes	0.121	1.3728	-0.858	
pshrub_100	138.581	138.7022	53.1790	2.0386	0.1534	0.990	yes	0.510	0.7009	-0.00964	0.9528
dpine	138.601	138.7222	53.1990	2.0184	0.1554	1.001	yes	0.575	0.188	0.000744	0.0160
ppine_1000	138.685	138.8062	53.2830	1.9341	0.1643	0.935	yes	0.541	0.7132	-0.067	0.0173
edgeha_500	138.748	138.8692	53.3460	1.8714	0.1713	0.990	yes	0.539	1.1992	-0.0101	0.8430
pwater_1000	139.389	139.5102	53.9870	1.2301	0.2674	0.452	yes	0.525	0.6309	-0.7933	0.0008
											<
ddisturb	139.516	139.6372	54.1140	1.1035	0.2935	0.998	yes	0.715	0.6177	-0.00237	0.0001
pshrub_500	139.610	139.7312	54.2080	1.0090	0.3151	1.014	yes	0.509	0.2037	0.0144	0.2032
pwater_100 *	139.617	139.7382	54.2150	1.0021	0.3168	999.999	yes	0.016	0.422	8.7749	
pshrub_1000	140.205	140.3262	54.8030	0.4148	0.5195	1.013	yes	0.496	0.2642	0.0128	0.0007
edgeha_1000	140.248	140.3692	54.8460	0.3710	0.5424	1.006	yes	0.564	0.0777	0.00549	0.0148
pwater_500	140.573	140.6942	55.1710	0.0467	0.8290	1.094	yes	0.292	0.4145	0.0903	0.1147
edgeha_100	140.617	140.7382	55.2150	0.0025	0.9599	1.000	yes	0.390	0.4562	-0.00017	0.4081

* Maximum likelihood estimate may not exist! Validity of the model is questionable.

Table F5. Blue jay was present at 25 sampling points (N=102). AICc from test models was compared to the AIC Intercept Only value of 115.6 to determine the best models.

variable	AIC	AICc	Δ AICc	LR X2	LR p-value	Odds estimate	CI include 1?	ROC	B0	B1	GOF p-val
dmature ^{step}	96.811	97.2234	0.0000	24.7932	< 0.0001	0.978	no, -	0.803	-1.2003	-0.0219	0.8332
edgeha_500						1.033	no, +			0.0326	
ppine_1000						0.678	no, -			-0.3886	
dmature	99.707	100.1194	2.8960	21.8972	< 0.0001	0.982	no, -	0.779	0.6406	-0.0186	0.1648
ppine_1000						0.779	yes			-0.2406	
pdisturb_1000						0.917	yes			-0.0863	
dmature	100.051	100.2959	3.0725	19.5533	< 0.0001	0.982	no, -	0.757	0.5056	-0.0177	0.8117
ppine_1000						0.778	no, -			-0.2511	
dmature	104.352	104.4732	7.2498	13.2531	0.0003	0.983	no, -	0.672	-0.2618	-0.0167	0.0668
ppine_1000	109.148	109.2692	12.0458	8.4567	0.0036	0.788	no, -	0.649	-0.3767	-0.2386	0.2506
pmature_500	109.907	110.3194	13.0960	11.6977	0.0085	1.027	yes	0.708	-2.1309	0.0265	0.5058
popen_500						0.970	yes			-0.0302	
ddisturb						0.993	yes			-0.00691	
pdisturb_1000	110.300	110.4212	13.1978	7.3045	0.0069	0.849	yes	0.485	-0.8189	-0.1641	0.2115
pmature_100	110.495	110.6162	13.3928	7.1101	0.0077	1.019	no, +	0.675	-1.997	0.0186	0.6556
pmature_1000	111.433	111.5542	14.3308	6.1715	0.0130	1.038	no, +	0.613	-3.7789	0.0376	0.8029
pmature_1000	111.690	112.1024	14.8790	9.9148	0.0193	1.017	yes	0.622	-1.5562	0.0167	0.3126
popen_1000						0.968	yes			-0.0322	
ppine_1000						0.863	yes			-0.1477	
ppine_500	112.082	112.2032	14.9798	5.5229	0.0188	0.874	yes	0.586	-0.7542	-0.1345	0.7663
ddisturb	112.123	112.2442	15.0208	5.4813	0.0192	0.992	yes	0.732	-0.636	-0.0083	0.0853
popen_1000	112.878	112.9992	15.7758	4.7266	0.0297	0.933	no, -	0.635	-0.4849	-0.0699	0.8734
pmature_500	113.022	113.1432	15.9198	4.5823	0.0323	1.028	no, +	0.626	-2.9505	0.0275	0.7902
popen_500	113.324	113.4452	16.2218	4.2802	0.0386	0.956	yes	0.599	-0.6118	-0.0454	0.7262
samepatch_100 *	113.504	113.6252	16.4018	4.1011	0.0429	0.001	yes	0.091	10.7327	-11.7623	
pdisturb_500	113.872	113.9932	16.7698	3.7331	0.0533	0.846	yes	0.308	-0.9707	-0.1678	0.4669
samepatch_500	114.525	114.6462	17.4228	3.0792	0.0793	0.769	yes	0.402	-0.5726	-0.263	0.1712
dpine	114.749	114.8702	17.6468	2.8552	0.0911	1.001	yes	0.580	-1.4783	0.000911	0.3961

Table F5. (continued)

variable	AIC	AICc	Δ AICc	LR X2	LR p-value	Odds estimate	CI include 1?	ROC	B0	B1	GOF p-val
pwater_100 *	114.762	114.8832	17.6598	2.8429	0.0918	999.999	yes	0.040	-1.1658	10.3816	
ppine_100	114.936	115.0572	17.8338	2.6684	0.1024	0.973	yes	0.259	-0.9834	-0.0274	0.4500
samepatch_1000	115.666	115.7872	18.5638	1.9386	0.1638	0.908	yes	0.505	-0.6348	-0.0964	0.2248
edgeha_1000	115.696	115.8172	18.5938	1.9085	0.1671	0.986	yes	0.556	-0.1962	-0.0145	0.3435
popen_100	115.715	115.8362	18.6128	1.8893	0.1693	0.989	yes	0.471	-0.8893	-0.0112	0.0900
pdisturb_100 *	115.888	116.0092	18.7858	1.7163	0.1902	0.334	yes	0.039	-1.0852	-1.0961	
perimeter	116.174	116.2952	19.0718	1.4305	0.2317	1.000	yes	0.651	-0.7863	-0.0003	0.0475
pwater_1000	116.259	116.3802	19.1568	1.3452	0.2461	0.369	yes	0.507	-0.9089	-0.9974	0.1978
edgeha_500	116.754	116.8752	19.6518	0.8506	0.3564	0.992	yes	0.553	-0.543	-0.00793	0.0651
pshrub_100	117.162	117.2832	20.0598	0.4424	0.5059	0.995	yes	0.447	-0.9924	-0.00524	0.6377
areaha	117.177	117.2982	20.0748	0.4278	0.5131	1.000	yes	0.615	-1.0243	-1.42E-06	0.0046
pwater_500	117.273	117.3942	20.1708	0.3314	0.5648	0.751	yes	0.312	-1.0537	-0.2866	0.1849
pshrub_500	117.292	117.4132	20.1898	0.3125	0.5762	1.009	yes	0.444	-1.2745	0.00873	0.0053
pshrub_1000	117.430	117.5512	20.3278	0.1751	0.6756	1.009	yes	0.459	-1.2542	0.0092	0.5235
dopen	117.478	117.5992	20.3758	0.1270	0.7216	1.001	yes	0.385	-1.1844	0.000862	0.8513
ED	117.511	117.6322	20.4088	0.0933	0.7601	1.317	yes	0.499	-1.5402	0.2753	0.3664
dwater	117.551	117.6722	20.4488	0.0540	0.8163	1.000	yes	0.482	-1.0692	-0.00007	0.0148
edgeha_100	117.587	117.7082	20.4848	0.0175	0.8949	1.001	yes	0.461	-1.1788	0.000509	0.7053
dshrub	117.592	117.7132	20.4898	0.0124	0.9114	1.000	yes	0.420	-1.1052	-0.00043	0.3748

* Maximum likelihood estimate may not exist! Validity of the model is questionable.

Table F6. Black-throated green warbler was present at 21 sampling points (N=102). AICc from test models was compared to the AIC Intercept Only value of 105.72 to determine the best models.

variable	AIC	AICc	ΔAICc	LR X2	LR p-value	Odds estimate	CI include 1?	ROC	B0	B1	GOF p-val
popen_500 ^{step}	64.363	64.7754	0.0000	47.3608	< 0.0001	0.798	no, -	0.911	2.2008	-0.2261	0.0103
pshrub_1000						0.774	no, -			-0.2568	
pmature_100						1.024	yes			0.0233	
dmature	74.351	74.5959	9.8205	35.3723	< 0.0001	0.973	no, -	0.874	1.2385	-0.0277	0.0016
pshrub_1000						0.871	no, -			-0.1377	
perimeter	79.553	79.7979	15.0225	30.1711	< 0.0001	0.999	yes	0.864	-3.1926	-0.00079	0.8406
pmature_100						1.049	no, +			0.0478	
pmature_100	84.372	84.4932	19.7178	23.3522	< 0.0001	1.041	no, +	0.819	-3.545	0.0405	0.1626
											<
pmature_500	85.086	85.2072	20.4318	22.6381	< 0.0001	1.097	no, +	0.839	-8.0049	0.0928	0.0001
perimeter	86.297	86.7094	21.9340	25.4268	< 0.0001	0.999	yes	0.846	0.3048	-0.00078	0.0123
dopen						1.003	yes			0.00322	
dmature						0.973	no, -			-0.0273	
									-		
dopen	86.395	86.8074	22.0320	25.3289	< 0.0001	1.004	yes	0.831	10.2571	0.00382	0.0002
pmature_500						1.107	no, +			0.102	
edgeha_500						1.020	yes			0.0198	
pshrub_1000	88.825	88.9462	24.1708	18.8986	< 0.0001	0.862	no, -	0.783	0.1317	-0.1485	0.1064
dmature	89.019	89.1402	24.3648	18.7049	< 0.0001	0.974	no, -	0.765	-0.2281	-0.026	0.1251
pshrub_100	93.215	93.3362	28.5608	14.5091	0.0001	0.956	no, -	0.638	-0.6117	-0.0448	0.4506
pshrub_500	96.171	96.2922	31.5168	11.5523	0.0007	0.926	no, -	0.755	-0.3842	-0.0766	0.0012
pmature_1000	97.991	98.1122	33.3368	9.7331	0.0018	1.060	no, +	0.671	-5.5577	0.0581	0.0043
edgeha_500	100.656	100.7772	36.0018	7.0676	0.0078	0.973	no, -	0.673	0.556	-0.0275	0.7353
dwater	100.844	100.9652	36.1898	6.8796	0.0087	1.001	yes	0.608	-2.0581	0.000747	0.3857
dopen	101.321	101.4422	36.6668	6.4026	0.0114	1.006	no, +	0.523	-1.8305	0.006	0.8284
perimeter	103.349	103.4702	38.6948	4.3747	0.0365	0.999	yes	0.651	-0.6883	-0.00064	0.6455
pdisturb_1000	103.687	103.8082	39.0328	4.0367	0.0445	0.906	yes	0.503	-1.1241	-0.0983	0.4591
pdisturb_500	103.744	103.8652	39.0898	3.9793	0.0461	0.757	yes	0.330	-1.1611	-0.2786	0.1859

Table F6. (continued)

variable	AIC	AICc	ΔAICc	LR X2	LR p-value	Odds estimate	CI include 1?	ROC	B0	B1	GOF p-val
popen_500	103.845	103.9662	39.1908	3.8785	0.0489	0.954	yes	0.573	-0.8311	-0.0469	0.0025
samepatch_100 *	104.365	104.4862	39.7108	3.3587	0.0669	0.001	yes	0.086	10.4152	-11.6747	
areaha	104.785	104.9062	40.1308	2.9388	0.0865	1.000	yes	0.656	-1.0584	-4.95E-06	0.7116
dshrub	105.169	105.2902	40.5148	2.5552	0.1099	1.006	yes	0.539	-1.6619	0.00597	0.2729
popen_100	105.413	105.5342	40.7588	2.3104	0.1285	0.986	yes	0.449	-1.0756	-0.0137	0.0217
pdisturb_100 *	106.317	106.4382	41.6628	1.4065	0.2356	0.376	yes	0.037	-1.3122	-0.9791	
samepatch_500	106.570	106.6912	41.9158	1.1534	0.2828	0.849	yes	0.371	-0.9971	-0.1634	0.1747
edgeha_1000	106.838	106.9592	42.1838	0.8853	0.3467	0.990	yes	0.543	-0.6804	-0.0104	0.3079
samepatch_1000	106.848	106.9692	42.1938	0.8762	0.3493	0.934	yes	0.507	-1.0011	-0.0678	0.0007
pwater_100 *	107.260	107.3812	42.6058	0.4636	0.4959	0.001	yes	0.012	-1.3375	-8.4579	
ppine_100	107.359	107.4802	42.7048	0.3652	0.5456	0.991	yes	0.217	-1.2916	-0.00899	0.1292
ppine_500	107.372	107.4932	42.7178	0.3520	0.5530	0.979	yes	0.465	-1.2683	-0.0211	0.1165
pwater_1000	107.449	107.5702	42.7948	0.2750	0.6000	1.565	yes	0.434	-1.4607	0.4478	0.1998
edgeha_100	107.476	107.5972	42.8218	0.2473	0.6190	0.998	yes	0.491	-1.1396	-0.00204	0.0362
pwater_500	107.489	107.6102	42.8348	0.2351	0.6278	1.262	yes	0.326	-1.4155	0.2324	0.3480
popen_1000	107.584	107.7052	42.9298	0.1397	0.7086	1.011	yes	0.587	-1.4686	0.0113	0.0099
ED	107.673	107.7942	43.0188	0.0512	0.8210	1.242	yes	0.505	-1.6773	0.217	0.4208
ppine_1000	107.673	107.7942	43.0188	0.0504	0.8224	1.013	yes	0.497	-1.4026	0.0129	0.2413
dpine	107.676	107.7972	43.0218	0.0482	0.8263	1.000	yes	0.429	-1.3034	-0.00013	0.9280
ddisturb	107.678	107.7992	43.0238	0.0457	0.8308	1.001	yes	0.332	-1.3937	0.00058	0.0823

* Maximum likelihood estimate may not exist! Validity of the model is questionable.

Table F7. Blue-winged warbler was present at 46 sampling points (N=102). AICc from test models was compared to the AIC Intercept Only value of 142.42 to determine the best models.

variable	AIC	AICc	Δ AICc	LR X2	LR p-value	Odds estimate	CI include 1?	ROC	B0	B1	GOF p-val
perimeter ^{step}	95.063	95.9472	0.0000	57.3572	< 0.0001	0.999	yes	0.907	4.5412	-0.00096	0.5326
ED						0.085	no, -			-2.4651	
dopen						0.990	no, -			-0.00992	
pshrub_100						1.049	no, +			0.0483	
pwater_1000						0.013	no, -			-4.3358	
perimeter	105.191	105.8160	9.8688	45.2290	< 0.0001	0.999	yes	0.865	2.2704	-0.00081	0.2521
ED						0.261	yes			-1.3436	
dopen						0.989	no, -			-0.0111	
pshrub_100						1.040	no, +			0.0396	
pshrub_100	120.664	121.0764	25.1292	27.7556	< 0.0001	1.036	no, +	0.810	1.8926	0.035	0.0050
popen_100						0.998	yes			-0.00179	
ED						0.140	no, -			-1.9663	
pshrub_100	121.272	121.3932	25.4460	23.1476	< 0.0001	1.037	no, +	0.715	-1.1386	0.0361	0.2203
perimeter	130.653	130.7742	34.8270	13.7669	0.0002	0.999	yes	0.688	0.7883	-0.0009	0.1697
ddisturb	131.794	132.0389	36.0917	14.6264	0.0007	0.995	yes	0.717	0.9047	-0.00476	0.8749
popen_1000						0.924	no, -			-0.0795	
popen_1000	132.822	132.9432	36.9960	11.5984	0.0007	0.911	no, -	0.700	0.7181	-0.0935	0.1039
pwater_1000	132.973	133.0942	37.1470	11.4475	0.0007	0.074	no, -	0.594	0.3716	-2.6086	0.0665
pshrub_500	133.302	133.7144	37.7672	15.1177	0.0017	1.034	yes	0.724	-0.1704	0.0337	0.0050
popen_500						0.975	yes			-0.0249	
ppine_500						0.932	yes			-0.0708	
edgeha_100	134.098	134.5104	38.5632	14.3219	0.0025	1.002	yes	0.663	0.3135	0.00239	0.6275
dshrub						0.992	yes			-0.00849	
dopen						0.992	no, -			-0.00757	
areaha	135.184	135.3052	39.3580	9.2360	0.0024	1.000	yes	0.668	0.2401	0.06	0.1428
dopen	135.219	135.3402	39.3930	9.2012	0.0024	0.992	no, -	0.544	0.2774	-0.00807	0.1820
pshrub_1000	135.405	135.5262	39.5790	9.0149	0.0027	1.063	no, +	0.658	-1.0442	0.0611	0.5683
pshrub_500	136.388	136.5092	40.5620	8.0320	0.0046	1.042	no, +	0.684	-0.8821	0.041	0.0373

Table F7. (continued)

variable	AIC	AICc	Δ AICc	LR X2	LR p-value	Odds estimate	CI include 1?	ROC	B0	B1	GOF p-val
d disturb	137.057	137.1782	41.2310	7.3632	0.0067	0.993	no, -	0.590	0.2826	-0.00707	0.1916
popen_500	137.249	137.3702	41.4230	7.1714	0.0074	0.954	no, -	0.665	0.3885	-0.0475	0.2642
dshrub	137.710	137.8312	41.8840	6.7102	0.0096	0.990	no, -	0.529	0.2229	-0.0099	0.2184
ED	138.178	138.2992	42.3520	6.2422	0.0125	0.124	no, -	0.661	2.9269	-2.09	0.0730
popen_100	139.104	139.2252	43.2780	5.3164	0.0211	0.984	no, -	0.511	0.1574	-0.0159	0.4596
ppine_500	139.288	139.4092	43.4620	5.1325	0.0235	0.928	yes	0.541	0.076	-0.0748	0.0999
ppine_1000	139.556	139.6772	43.7300	4.8641	0.0274	0.889	no, -	0.596	0.2511	-0.1174	0.8104
pwater_500	140.014	140.1352	44.1880	4.4057	0.0358	0.384	yes	0.395	0.0334	-0.9566	0.0297
edgeha_100	140.332	140.4532	44.5060	4.0883	0.0432	1.007	yes	0.595	-0.934	0.00692	0.2240
dwater	141.827	141.9482	46.0010	2.5927	0.1074	1.000	yes	0.581	-0.535	0.000411	0.1951
pmature_100	141.979	142.1002	46.1530	2.4409	0.1182	0.991	yes	0.564	0.1878	-0.00934	0.0192
pwater_100 *	142.815	142.9362	46.9890	1.6047	0.2052	999.999	yes	0.022	-0.2187	9.1775	
samepatch_100	142.887	143.0082	47.0610	1.5332	0.2156	0.447	yes	0.105	0.6695	-0.8046	
samepatch_1000	143.132	143.2532	47.3060	1.2881	0.2564	0.937	yes	0.489	0.1498	-0.0649	0.6076
ppine_100	143.297	143.4182	47.4710	1.1226	0.2894	0.988	yes	0.214	-0.1113	-0.0122	0.1244
samepatch_500	143.360	143.4812	47.5340	1.0605	0.3031	0.888	yes	0.392	0.0752	-0.1193	0.8967
pdisturb_1000	143.462	143.5832	47.6360	0.9585	0.3276	0.979	yes	0.474	-0.1129	-0.0212	0.2618
edgeha_500	143.711	143.8322	47.8850	0.7093	0.3997	0.994	yes	0.499	0.2603	-0.00612	0.0009
pmature_1000	143.758	143.8792	47.9320	0.6625	0.4157	1.009	yes	0.488	-0.803	0.00896	0.0293
pmature_500	143.959	144.0802	48.1330	0.4608	0.4973	1.007	yes	0.506	-0.638	0.00692	0.0638
dpine	144.178	144.2992	48.3520	0.2416	0.6231	1.000	yes	0.468	-0.282	0.000241	0.0125
dmature	144.186	144.3072	48.3600	0.2341	0.6285	0.999	yes	0.425	-0.1003	-0.00138	0.0002
pdisturb_100	144.304	144.4252	48.4780	0.1156	0.7339	1.018	yes	0.022	-0.2072	0.0183	
pdisturb_500	144.345	144.4662	48.5190	0.0746	0.7848	0.993	yes	0.299	-0.1806	-0.00712	0.0314
edgeha_1000	144.396	144.5172	48.5700	0.0240	0.8770	0.999	yes	0.462	-0.1068	-0.00136	0.0561

* Maximum likelihood estimate may not exist! Validity of the model is questionable.

Table F8. Carolina chickadee was present at 55 sampling points (N=102). AICc from test models was compared to the AIC Intercept Only value of 142.77 to determine the best models.

variable	AIC	AICc	Δ AICc	LR X2	LR p-value	Odds estimate	CI include 1?	ROC	B0	B1	GOF p-val
dmature ^{step} popen_1000	111.620	111.8649	0.0000	35.1540	< 0.0001	0.982 0.905	no, - no, -	0.814	2.2974	-0.0178 -0.0997	0.3221
dmature popen_500	115.910	116.1549	4.2900	30.8644	< 0.0001	0.985 0.950	no, - no, -	0.799	1.7719	-0.0147 -0.0518	0.7829
dmature	119.121	119.2422	7.3773	25.6532	< 0.0001	0.983	no, -	0.730	1.3216	-0.0174	0.1510
dmature samepatch_500	119.844	120.0889	8.2240	26.9296	< 0.0001	0.984 0.852	no, - yes	0.757	1.6146	-0.0165 -0.1605	0.0102
pmature_100 perimeter	126.910	127.1549	15.2900	19.8644	< 0.0001	1.025 0.999	no, + yes	0.743	-0.2374	0.025 -0.00051	0.1673
popen_500 pmature_500	127.796	128.0409	16.1760	18.9779	< 0.0001	0.932 1.020	no, - yes	0.744	-0.2071	-0.0708 0.0194	0.6891
popen_500	128.686	128.8072	16.9423	16.0880	< 0.0001	0.927	no, -	0.723	1.1058	-0.0756	0.4007
popen_1000	129.349	129.4702	17.6053	15.4249	< 0.0001	0.899	no, -	0.701	1.249	-0.1068	0.7171
pmature_100	130.466	130.5872	18.7223	14.3078	0.0002	1.024	no, +	0.704	-0.8034	0.0238	0.0587
pwater_1000	136.992	137.1132	25.2483	7.7816	0.0053	0.132	no, -	0.574	0.6374	-2.0252	0.5278
pmature_500	137.665	137.7862	25.9213	7.1094	0.0077	1.028	no, +	0.628	-1.6107	0.0278	0.1738
samepatch_500	138.566	138.6872	26.8223	6.2080	0.0127	0.745	no, -	0.473	0.8313	-0.2939	0.8744
samepatch_1000	138.946	139.0672	27.2023	5.8274	0.0158	0.869	no, -	0.592	0.9146	-0.1401	0.1801
popen_100	139.292	139.4132	27.5483	5.4819	0.0192	0.985	no, -	0.509	0.5233	-0.0155	0.4594
perimeter	139.918	140.0392	28.1743	4.8560	0.0276	1.000	yes	0.627	0.7005	-0.00046 -3.94E-06	0.0495
areaha	140.282	140.4032	28.5383	4.4921	0.0341	1.000	yes	0.653	0.4475	06	0.0445
pmature_1000	140.745	140.8662	29.0013	4.0291	0.0447	1.022	yes	0.579	-1.3411	0.0222	0.0063
ppine_100	140.873	140.9942	29.1293	3.9005	0.0483	0.977	yes	0.318	0.3191	-0.023	0.3330
ppine_500	140.888	141.0092	29.1443	3.8863	0.0487	0.945	yes	0.625	0.3843	-0.0564	0.5036
edgeha_500	141.294	141.4152	29.5503	3.4794	0.0621	0.986	yes	0.601	1.188	-0.0137	0.6762

Table F8. (continued)

variable	AIC	AICc	Δ AICc	LR X2	LR p-value	Odds estimate	CI include 1?	ROC	B0	B1	GOF p-val
dwater	141.666	141.7872	29.9223	3.1079	0.0779	1.000	yes	0.495	-0.2138	0.000465	0.0454
dpine	141.687	141.8082	29.9433	3.0868	0.0789	1.001	yes	0.528	-0.1485	0.000895	0.0351
ppine_1000	141.821	141.9422	30.0773	2.9530	0.0857	0.919	yes	0.599	0.4948	-0.0842	0.7262
ddisturb	142.260	142.3812	30.5163	2.5141	0.1128	0.996	yes	0.671	0.4251	-0.00362	0.0253
ED	142.556	142.6772	30.8123	2.2181	0.1364	3.304	yes	0.564	-1.6356	1.1952	0.1183
pdisturb_100	143.155	143.2762	31.4113	1.6192	0.2032	0.918	yes	0.043	0.1967	-0.0859	
pwater_500	143.196	143.3172	31.4523	1.5779	0.2091	0.596	yes	0.345	0.2944	-0.517	0.0261
pshrub_500	143.228	143.3492	31.4843	1.5462	0.2137	1.018	yes	0.546	-0.129	0.0174	0.6424
pwater_100 *	143.530	143.6512	31.7863	1.2437	0.2648	999.999	yes	0.018	0.1388	8.9284	
edgeha_100	143.566	143.6872	31.8223	1.2077	0.2718	1.004	yes	0.560	-0.2285	0.00368	0.4629
pshrub_1000	143.621	143.7422	31.8773	1.1524	0.2830	1.021	yes	0.517	-0.1286	0.0209	0.0180
samepatch_100	143.624	143.7452	31.8803	1.1501	0.2835	0.528	yes	0.083	0.8501	-0.6382	
pdisturb_500	143.633	143.7542	31.8893	1.1409	0.2855	0.972	yes	0.323	0.2209	-0.0285	0.0721
dshrub	143.765	143.8862	32.0213	1.0094	0.3151	0.997	yes	0.496	0.3125	-0.00335	0.0860
pdisturb_1000	143.889	144.0102	32.1453	0.8846	0.3469	0.981	yes	0.448	0.2379	-0.0196	0.4445
dopen	144.405	144.5262	32.6613	0.3693	0.5434	1.001	yes	0.444	0.0696	0.00132	0.8911
pshrub_100	144.566	144.6872	32.8223	0.2075	0.6487	0.997	yes	0.412	0.2374	-0.00302	0.2966
edgeha_1000	144.669	144.7902	32.9253	0.1045	0.7465	0.997	yes	0.493	0.3445	-0.00284	0.0413

* Maximum likelihood estimate may not exist! Validity of the model is questionable.

Table F9. Carolina wren was present at 72 sampling points (N=102). AICc from test models was compared to the AIC Intercept Only value of 125.58 to determine the best models.

variable	AIC	AICc	Δ AICc	LR X2	LR p-value	Odds estimate	CI include 1?	ROC	B0	B1	GOF p-val
perimeter ^{step}	82.961	83.8452	0.0000	52.6222	< 0.0001	0.999	yes	0.893	-0.7762	-0.001	0.6560
dwater						1.002	yes			0.00173	
edgeha_1000						1.052	no, +			0.0503	
popen_1000						0.843	no, -			-0.1706	
pwater_500						4.973	no, +			1.604	
perimeter	89.292	89.7044	5.8592	42.2911	< 0.0001	0.999	yes	0.870	0.3673	-0.00095	0.0440
edgeha_1000						1.060	no, +			0.0583	
popen_1000						0.836	no, -			-0.1788	
perimeter	96.319	96.7314	12.8862	35.2636	< 0.0001	0.999	yes	0.831	2.0672	-0.00103	0.7857
edgeha_100						1.008	yes			0.0083	
popen_500						0.956	no, -			-0.0452	
areaha	98.228	98.6404	14.7952	33.3548	< 0.0001	0.923	no, -	0.833	1.093	-0.0806	0.8955
edgeha_100						1.011	no, +			0.0112	
popen_500						0.958	no, -			-0.0432	
perimeter	99.555	99.6762	15.8310	28.0274	< 0.0001	0.999	no, -	0.765	2.5603	-0.00128	0.7586
areaha	103.450	103.5712	19.7260	24.1322	< 0.0001	1.000	yes	0.771	1.764	-0.00001	0.0708
dshrub	110.012	110.2569	26.4117	19.5709	< 0.0001	0.989	no, -	0.755	0.5119	-0.0107	0.7653
edgeha_100						1.009	yes			0.00935	
dshrub	110.741	110.8622	27.0170	16.8414	< 0.0001	0.984	no, -	0.729	1.6826	-0.0157	0.1498
pshrub_500	111.741	112.1534	28.3082	19.8416	0.0002	1.019	yes	0.737	0.00033	0.019	0.2617
ddisturb						0.991	no, -			-0.00855	
edgeha_1000						1.020	yes			0.0199	
ddisturb	112.477	112.5982	28.7530	15.1061	0.0001	0.990	no, -	0.730	1.6638	-0.00966	0.5908
edgeha_100	114.306	114.4272	30.5820	13.2765	0.0003	1.014	no, +	0.702	-0.5017	0.0144	0.7017
dwater	117.937	118.0582	34.2130	9.6458	0.0019	1.001	yes	0.643	0.1004	0.00116	0.3699
popen_500	119.703	119.8242	35.9790	7.8801	0.0050	0.954	no, -	0.678	1.5483	-0.0475	0.6993
popen_1000	119.878	119.9992	36.1540	7.7051	0.0055	0.928	no, -	0.632	1.7114	-0.075	0.0965
popen_100	120.287	120.4082	36.5630	7.2952	0.0069	0.982	no, -	0.503	1.3657	-0.0184	0.0725

Table F9. (continued)

variable	AIC	AICc	Δ AICc	LR X2	LR p-value	Odds estimate	CI include 1?	ROC	B0	B1	GOF p-val
edgeha_1000	121.161	121.2822	37.4370	6.4219	0.0113	1.026	no, +	0.647	-0.7759	0.0261	0.0056
pshrub_500	123.188	123.3092	39.4640	4.3952	0.0360	1.035	yes	0.621	0.3501	0.0347	0.0842
samepatch_1000	123.217	123.3382	39.4930	4.3654	0.0367	1.150	no, +	0.574	0.1722	0.1401	0.6437
dmature	124.191	124.3122	40.4670	3.3916	0.0655	0.994	yes	0.541	1.2932	-0.00554	0.0028
pshrub_1000	124.385	124.5062	40.6610	3.1981	0.0737	1.041	yes	0.594	0.3568	0.0403	0.1467
pshrub_100	124.769	124.8902	41.0450	2.8136	0.0935	1.013	yes	0.508	0.5644	0.013	0.7589
edgeha_500	125.115	125.2362	41.3910	2.4680	0.1162	1.013	yes	0.580	-0.0745	0.013	0.7080
ED	125.512	125.6332	41.7880	2.0708	0.1501	0.295	yes	0.625	2.7279	-1.2194	0.0034
dpine	126.092	126.2132	42.3680	1.4906	0.2221	1.001	yes	0.479	0.6467	0.000698	0.0090
ppine_1000	126.117	126.2382	42.3930	1.4659	0.2260	1.072	yes	0.500	0.6144	0.0694	0.0552
ppine_500	126.241	126.3622	42.5170	1.3416	0.2467	1.040	yes	0.511	0.7309	0.0389	0.3075
samepatch_100	126.266	126.3872	42.5420	1.3164	0.2512	2.535	yes	0.081	-0.1144	0.9304	
pdisturb_1000	126.348	126.4692	42.6240	1.2350	0.2664	1.030	yes	0.489	0.772	0.0293	0.6671
samepatch_500	126.516	126.6372	42.7920	1.0665	0.3017	1.145	yes	0.415	0.5763	0.135	0.1449
pwater_1000	126.800	126.9212	43.0760	0.7825	0.3764	0.511	yes	0.551	1.0417	-0.6714	0.0089
pdisturb_100	126.838	126.9592	43.1140	0.7445	0.3882	0.954	yes	0.033	0.9061	-0.047	
pwater_100 *	126.882	127.0032	43.1580	0.7007	0.4025	999.999	yes	0.014	0.8615	8.5941	
pmature_100	126.891	127.0122	43.1670	0.6913	0.4057	1.005	yes	0.556	0.6563	0.00541	0.0074
ppine_100	127.094	127.2152	43.3700	0.4888	0.4845	1.009	yes	0.219	0.8149	0.00904	0.4512
pmature_1000	127.271	127.3922	43.5470	0.3113	0.5769	0.993	yes	0.537	1.3357	-0.00677	0.0234
dopen	127.348	127.4692	43.6240	0.2343	0.6283	0.999	yes	0.402	0.9517	-0.00111	0.8667
pdisturb_500	127.390	127.5112	43.6660	0.1922	0.6611	1.013	yes	0.225	0.8474	0.0132	0.4705
pwater_500	127.393	127.5142	43.6690	0.1894	0.6634	0.828	yes	0.319	0.9274	-0.1888	0.0331
pmature_500	127.566	127.6872	43.8420	0.0168	0.8968	0.999	yes	0.442	0.9673	-0.00144	0.1285

* Maximum likelihood estimate may not exist! Validity of the model is questionable.

Table F10. Chipping sparrow was present at 46 sampling points (N=102). AICc from test models was compared to the AIC Intercept Only value of 142.42 to determine the best models.

variable	AIC	AICc	ΔAICc	LR X2	LR p-value	Odds estimate	CI include 1?	ROC	B0	B1	GOF p-val
perimeter ^{step}	126.377	126.7894	0.0000	22.0426	< 0.0001	0.999	yes	0.748	0.4824	-0.00079	0.0931
popen_100						1.026	no, +			0.0258	
pwater_1000						0.153	no, -			-1.8744	
popen_100	128.739	128.9839	2.1945	17.6810	0.0001	1.029	no, +	0.706	-0.3101	0.0285	0.3569
areaha						0.911	no, -			-0.0935	
popen_100	129.776	130.0209	3.2315	16.6437	0.0002	1.027	no, +	0.708	0.0665	0.0264	0.7758
perimeter						0.999	yes			-0.00081	
dopen	135.286	135.5309	8.7415	11.1339	0.0038	0.994	no, -	0.694	0.7829	-0.00616	0.2458
pshrub_1000						0.957	no, -			-0.0439	
pwater_1000	136.573	136.6942	9.9048	7.8469	0.0051	0.122	no, -	0.626	0.2717	-2.1031	0.2027
pmature_1000	136.662	137.0744	10.2850	11.7584	0.0083	1.019	yes	0.697	-0.5036	0.0192	0.5161
pshrub_1000						0.969	yes			-0.032	
perimeter						1.000	yes			-0.00048	
popen_100	136.974	137.0952	10.3058	7.4461	0.0064	1.018	no, +	0.569	-0.6285	0.0183	0.2344
dopen	137.738	137.8592	11.0698	6.6822	0.0097	0.994	no, -	0.625	0.1976	-0.0065	0.0849
pwater_500	138.652	138.7732	11.9838	5.7676	0.0163	0.323	no, -	0.407	0.0682	-1.1306	0.4114
pmature_1000	138.885	139.0062	12.2168	5.5348	0.0186	1.028	no, +	0.638	-2.0499	0.0271	0.1693
pshrub_1000	139.925	140.0462	13.2568	4.4954	0.0340	0.958	no, -	0.637	0.3783	-0.0427	0.0564
										-4.19E-	
areaha	139.946	140.0672	13.2778	4.4736	0.0344	1.000	yes	0.548	0.0938	06	0.2841
perimeter	140.342	140.4632	13.6738	4.0776	0.0435	1.000	yes	0.573	0.3018	-0.00043	0.0564
ddisturb	140.636	140.7572	13.9678	3.7839	0.0517	0.995	yes	0.618	0.1366	-0.00473	0.0043
samepatch_100	140.650	140.7712	13.9818	3.7697	0.0522	0.221	yes	0.106	1.4087	-1.5105	
dshrub	140.708	140.8292	14.0398	3.7116	0.0540	0.993	yes	0.476	0.1078	-0.00695	0.0405
dwater	141.038	141.1592	14.3698	3.3824	0.0659	1.000	yes	0.558	-0.5847	0.000472	0.3500
pdisturb_1000	142.266	142.3872	15.5978	2.1545	0.1421	0.967	yes	0.455	-0.07	-0.0335	0.1013
pmature_500	142.276	142.3972	15.6078	2.1438	0.1431	1.015	yes	0.556	-1.1639	0.0151	0.8134
pshrub_500	142.458	142.5792	15.7898	1.9621	0.1613	0.980	yes	0.571	0.1267	-0.0197	0.4785
dpine	142.590	142.7112	15.9218	1.8299	0.1761	0.999	yes	0.538	0.038	-0.00068	0.7517

Table F10. (continued)

variable	AIC	AICc	Δ AICc	LR X2	LR p-value	Odds estimate	CI include 1?	ROC	B0	B1	GOF p-val
pwater_100 *	142.815	142.9362	16.1468	1.6047	0.2052	999.999	yes	0.022	-0.2187	9.1775	
pmature_100	143.158	143.2792	16.4898	1.2622	0.2612	0.993	yes	0.540	0.0794	-0.00668	0.4111
ppine_100	143.324	143.4452	16.6558	1.0956	0.2952	0.988	yes	0.216	-0.1123	-0.0121	0.1898
pshrub_100	143.370	143.4912	16.7018	1.0500	0.3055	0.993	yes	0.468	-0.0169	-0.00689	0.5013
ppine_500	143.452	143.5732	16.7838	0.9685	0.3251	0.973	yes	0.440	-0.0872	-0.0269	0.1810
ED	143.473	143.5942	16.8048	0.9468	0.3305	0.461	yes	0.552	0.9642	-0.7733	0.9361
pdisturb_500	143.592	143.7132	16.9238	0.8285	0.3627	0.975	yes	0.323	-0.1428	-0.0252	0.5497
edgeha_100	143.655	143.7762	16.9868	0.7647	0.3819	1.003	yes	0.542	-0.5065	0.00293	0.2501
pdisturb_100	143.697	143.8182	17.0288	0.7228	0.3952	1.050	yes	0.043	-0.2231	0.0489	
edgeha_1000	143.894	144.0152	17.2258	0.5259	0.4683	0.994	yes	0.531	0.2253	-0.00642	0.8153
popen_500	143.916	144.0372	17.2478	0.5036	0.4779	1.011	yes	0.587	-0.3426	0.0111	0.0788
ppine_1000	144.054	144.1752	17.3858	0.3661	0.5451	0.971	yes	0.477	-0.0803	-0.0291	0.8735
samepatch_1000	144.106	144.2272	17.4378	0.3140	0.5752	1.032	yes	0.518	-0.3672	0.0315	0.2347
dmature	144.211	144.3322	17.5428	0.2092	0.6474	1.001	yes	0.542	-0.2881	0.00129	0.1564
samepatch_500	144.214	144.3352	17.5458	0.2064	0.6496	0.949	yes	0.349	-0.0774	-0.052	0.5051
popen_1000	144.217	144.3382	17.5488	0.2031	0.6522	0.989	yes	0.475	-0.0814	-0.0113	0.0696
edgeha_500	144.419	144.5402	17.7508	0.0012	0.9722	1.000	yes	0.280	-0.1779	-0.00025	0.2906

* Maximum likelihood estimate may not exist! Validity of the model is questionable.

Table F11. Common yellowthroat was present at 38 sampling points (N=102). AICc from test models was compared to the AIC Intercept Only value of 136.7 to determine the best models.

variable	AIC	AICc	Δ AICc	LR X2	LR p-value	Odds estimate	CI include 1?	ROC	B0	B1	GOF p-val
ppine_100 ^{step} ED	111.393	111.6379	0.0000	29.3076	< 0.0001	0.112 1.083	no, - no, +	0.762	2.2656	-2.1863 0.0799	0.6586
ppine_100	114.030	114.1512	2.5133	24.6708	< 0.0001	1.089	no, +	0.442	-0.9802	0.0852	0.8596
ppine_100 edgeha_500 dmature	114.444	114.8564	3.2185	28.2570	< 0.0001	1.073 1.013 1.004	no, + yes yes	0.772	-2.1317	0.0707 0.0126 0.00422	0.8083
ppine_500 ED	119.437	119.6819	8.0440	21.2636	< 0.0001	1.158 0.126	no, + no, -	0.737	1.9797	0.1463 -2.0688	0.5050
ppine_500	121.850	121.9712	10.3333	16.8507	< 0.0001	1.174	no, +	0.658	-1.1144	0.1602	0.1225
perimeter dpine dmature	124.146	124.5584	12.9205	18.5552	0.0003	0.999 0.999 1.011	yes yes no, +	0.751	-0.3216	-0.00067 -0.00079 0.0107	0.4327
edgeha_500	125.527	125.6482	14.0103	13.1734	0.0003	1.029	no, +	0.677	-2.745	0.029	0.3088
samepatch_1000	127.240	127.3612	15.7233	11.4607	0.0007	1.227	no, +	0.630	-1.667	0.2044	0.2394
pmature_500 edgeha_500	127.266	127.5109	15.8730	13.4346	0.0012	0.992 1.025	yes no, +	0.672	-1.9509	-0.00775 0.025	0.3986
samepatch_500	127.665	127.7862	16.1483	11.0356	0.0009	1.491	no, +	0.524	-1.4714	0.3993	0.5321
ppine_1000 dmature	128.376	128.4972	16.8593	10.3245	0.0013	1.185	no, +	0.632	-1.2178	0.1695	0.5843
pmature_500	129.312	129.4332	17.7953	9.3891	0.0022	1.009	no, +	0.704	-1.1944	0.00912	0.0805
pmature_100	130.160	130.2812	18.6433	8.5411	0.0035	0.969	no, -	0.651	1.4187	-0.0311	0.2482
pmature_1000	130.506	130.6272	18.9893	8.1953	0.0042	0.982	no, -	0.647	0.1921	-0.0183	0.9982
pmature_1000	131.844	131.9652	20.3273	6.8571	0.9710	0.971	no, -	0.609	1.4403	-0.0294	0.0306
edgeha_1000 ED	132.490	132.6112	20.9733	6.2108	0.0127	1.024	no, +	0.613	-2.0868	0.0233	0.1924
edgeha_100	132.631	132.7522	21.1143	6.0704	0.0137	0.115	no, -	0.640	2.6839	-2.1589	0.7164
dpine	133.016	133.1372	21.4993	5.6845	0.0171	1.009	no, +	0.634	-1.4506	0.00852	0.2772
ppine_1000	133.193	133.3142	21.6763	5.5080	0.0189	0.999	yes	0.650	-0.1005	-0.00133	0.1280
pwater_1000	133.525	133.6462	22.0083	5.1755	0.0229	5.192	no, +	0.564	-0.9331	1.647	0.9538
samepatch_100	134.018	134.1392	22.5013	1.6832	0.0305	4.071	yes	0.129	-2.044	1.4039	

Table F11. (continued)

variable	AIC	AICc	Δ AICc	LR X2	LR p-value	Odds estimate	CI include 1?	ROC	B0	B1	GOF p-val
perimeter	134.578	134.6992	23.0613	4.1231	0.0423	1.000	yes	0.544	0.00193	-0.00046	0.0528
areaha	134.692	134.8132	23.1753	4.0092	0.0453	1.000	yes	0.505	-0.2384	-4.27E-06	0.0011
dshrub	135.034	135.1552	23.5173	3.6667	0.0555	0.993	yes	0.549	-0.21	-0.00741	0.2339
dwater	135.575	135.6962	24.0583	3.1263	0.0770	1.000	yes	0.538	-0.1366	-0.0005	0.4797
pdisturb_1000	136.216	136.3372	24.6993	2.4852	0.1149	1.034	yes	0.558	-0.6634	0.0332	0.4974
pwater_100 *	136.709	136.8302	25.1923	1.9915	0.1582	999.999	yes	0.026	-0.548	9.4823	
ddisturb	137.299	137.4202	25.7823	1.4019	0.2364	0.997	yes	0.513	-0.3159	-0.00291	0.2903
popen_500	137.483	137.6042	25.9663	1.2174	0.2699	1.018	yes	0.569	-0.7559	0.0176	0.0132
pshrub_1000	137.549	137.6702	26.0323	1.1516	0.2832	1.021	yes	0.565	-0.8183	0.0211	0.0133
pshrub_100	137.683	137.8042	26.1663	1.0181	0.3130	1.007	yes	0.461	-0.7076	0.00685	0.9453
pshrub_500	137.780	137.9012	26.2633	0.9211	0.3372	1.014	yes	0.541	-0.7502	0.0135	0.1211
popen_1000	137.817	137.9382	26.3003	0.8841	0.3471	1.024	yes	0.531	-0.7717	0.0239	0.0943
pdisturb_100	138.131	138.2522	26.6143	0.5703	0.4501	0.950	yes	0.031	-0.4981	-0.0514	
popen_100	138.395	138.5162	26.8783	0.3062	0.5800	0.996	yes	0.426	-0.4348	-0.00372	0.7851
pwater_500	138.452	138.5732	26.9353	0.2486	0.6181	1.229	yes	0.390	-0.5772	0.2058	0.4589
dopen	138.502	138.6232	26.9853	0.1993	0.6553	0.999	yes	0.423	-0.4551	-0.00101	0.8146
pdisturb_500	138.620	138.7412	27.1033	0.0808	0.7762	1.007	yes	0.362	-0.5387	0.00741	0.0036

* Maximum likelihood estimate may not exist! Validity of the model is questionable.

Table F12. Downy woodpecker was present at 21 sampling points (N=102). AICc from test models was compared to the AIC Intercept Only value of 105.72 to determine the best models.

variable	AIC	AICc	Δ AICc	LR X2	LR p-value	Odds estimate	CI include 1?	ROC	B0	B1	GOF p-val
dshrub	102.651	102.7722	0	5.0729	0.0243	0.987	yes	0.561	-0.904	-0.0128	0.8424
pwater_100 *	104.524	104.6452	1.873	3.1995	0.0737	999.999	yes	0.048	-1.3987	10.2118	
popen_500	104.820	104.9412	2.169	2.9033	0.0884	0.962	yes	0.581	-0.9055	-0.0391	0.4475
ppine_100	104.971	105.0922	2.32	2.7527	0.0971	1.020	yes	0.272	-1.5332	0.0201	0.4034
edgeha_100	105.492	105.6132	2.841	2.2313	0.1352	1.006	yes	0.597	-2.0488	0.00626	0.8221
popen_100	106.362	106.4832	3.711	1.3615	0.2433	0.990	yes	0.454	-1.1378	-0.0101	0.6278
ddisturb	106.584	106.7052	3.933	1.1396	0.2857	0.997	yes	0.610	-1.1272	-0.00334	0.4263
dopen	106.641	106.7622	3.99	1.0828	0.2981	1.003	yes	0.534	-1.5367	0.00255	0.6181
edgeha_500	106.781	106.9022	4.13	0.9429	0.3315	1.008	yes	0.545	-1.9956	0.00841	0.3680
popen_1000	106.798	106.9192	4.147	0.9262	0.3359	0.970	yes	0.546	-1.0507	-0.0308	0.4373
pwater_1000	106.872	106.9932	4.221	0.8522	0.3559	2.183	yes	0.541	-1.549	0.7805	0.7247
samepatch_500	106.903	107.0242	4.252	0.8206	0.3650	1.129	yes	0.374	-1.6433	0.1216	0.5566
ppine_500	106.915	107.0362	4.264	0.8085	0.3686	1.026	yes	0.422	-1.471	0.026	0.2394
dwater	106.958	107.0792	4.307	0.7654	0.3816	1.000	yes	0.521	-1.125	-0.00029	0.0303
ppine_1000	107.042	107.1632	4.391	0.6814	0.4091	1.046	yes	0.495	-1.5434	0.0454	0.3437
dpine	107.078	107.1992	4.427	0.6457	0.4217	1.000	yes	0.497	-1.5247	0.000467	0.4319
ED	107.137	107.2582	4.486	0.5869	0.4436	0.466	yes	0.551	-0.2124	-0.7635	0.8851
dmature	107.140	107.2612	4.489	0.5833	0.4450	0.997	yes	0.509	-1.1649	-0.00279	0.4771
samepatch_100	107.142	107.2632	4.491	0.5817	0.4456	1.621	yes	0.092	-1.8835	0.4831	
pshrub_1000	107.175	107.2962	4.524	0.5485	0.4589	1.017	yes	0.499	-1.5955	0.0171	0.6024
perimeter	107.202	107.3232	4.551	0.5216	0.4702	1.000	yes	0.545	-1.1346	-0.00019	0.8689
areaha	107.238	107.3592	4.587	0.4861	0.4857	1.000	yes	0.496	-1.2357	-1.65E-06	0.5141
pwater_500	107.246	107.3672	4.595	0.4775	0.4996	1.386	yes	0.389	-1.4441	0.3264	0.7447
pshrub_500	107.253	107.3742	4.602	0.4704	0.4928	1.011	yes	0.482	-1.5462	0.0113	0.4187
samepatch_1000	107.440	107.5612	4.789	0.2842	0.5940	1.037	yes	0.477	-1.5505	0.0363	0.9248
pdisturb_500	107.519	107.6402	4.868	0.2050	0.6507	1.013	yes	0.295	-1.3835	0.0133	0.1607
pmature_1000	107.632	107.7532	4.981	0.0914	0.7624	0.996	yes	0.458	-1.0817	-0.004	0.2143

Table F12. (continued)

variable	AIC	AICc	Δ AICc	LR X2	LR p-value	Odds estimate	CI include 1?	ROC	B0	B1	GOF p-val
pdisturb_100	107.642	107.7632	4.991	0.0816	0.7752	1.018	yes	0.047	-1.3611	0.0174	
edgeha_1000	107.663	107.7842	5.012	0.0605	0.8057	1.003	yes	0.470	-1.5262	0.00266	0.2654
pdisturb_1000	107.700	107.8212	5.049	0.0239	0.8771	1.004	yes	0.246	-1.3662	0.00385	0.1541
pshrub_100	107.708	107.8292	5.057	0.0158	0.8999	1.001	yes	0.353	-1.3773	0.00102	0.3614
pmature_500	107.710	107.8312	5.059	0.0135	0.9076	0.999	yes	0.424	-1.2583	-0.00144	0.5602
pmature_100	107.718	107.8392	5.067	0.0055	0.9411	0.999	yes	0.365	-1.3275	-0.00054	0.2347

* Maximum likelihood estimate may not exist! Validity of the model is questionable.

STEP: Best model is intercept only!

Table F13. Eastern towhee was present at 81 sampling points (N=102). AICc from test models was compared to the AIC Intercept Only value of 105.72 to determine the best models.

variable	AIC	AICc	ΔAICc	LR X2	LR p-value	Odds estimate	CI include 1?	ROC	B0	B1	GOF p-val
perimeter	73.702	74.1144	0.0000	38.0214	< 0.0001	1.000	yes	0.897	4.6199	-0.00048	0.6994
pmature_100						0.959	no, -			-0.0419	
dshrub						0.992	yes			-0.00765	
pmature_100	75.176	75.5884	1.4740	36.5482	< 0.0001	0.959	no, -	0.893	4.1953	-0.0419	0.5838
dshrub						0.988	no, -			-0.0123	
dopen						1.002	yes			0.00165	
pmature_100 ^{step}	76.705	76.8262	2.7118	31.0183	< 0.0001	0.951	no, -	0.845	4.2028	-0.0504	0.2724
edgeha_500	79.381	79.7934	5.6790	32.3431	< 0.0001	1.026	no, +	0.855	-2.3138	0.0258	0.4082
popen_100						1.047	no, +			0.0455	
pshrub_100										0.051	
pmature_100	80.181	80.5934	6.4790	31.5431	< 0.0001	0.964	yes	0.850	2.723	-0.0362	0.3885
pshrub_100						1.020	yes			0.0196	
popen_100						1.016	yes			0.0159	
dshrub	88.183	88.3042	14.1898	19.5411	< 0.0001	0.982	no, -	0.737	2.3868	-0.0177	0.2331
dmature	88.816	89.0609	14.9465	20.9082	< 0.0001	1.022	no, +	0.832	-1.1739	0.0217	<
edgeha_500						1.023	yes			0.0229	0.0001
pmature_500	89.509	89.6302	15.5158	18.2145	< 0.0001	0.926	no, -	0.790	6.7566	-0.0764	0.1507
dmature	90.269	90.3902	16.2758	17.4551	< 0.0001	1.025	no, +	0.784	0.2741	0.0243	0.0008
samepatch_1000	95.543	95.6642	21.5498	12.1807	0.0005	1.373	no, +	0.668	-0.0397	0.3171	0.0453
pdisturb_500	97.474	97.5952	23.4808	10.2496	0.0014	4.632	yes	0.409	0.9678	1.5331	0.8073
pshrub_100	98.150	98.2712	24.1568	9.5739	0.0020	1.033	no, +	0.600	0.7424	0.0324	0.0793
edgeha_500	98.568	98.6892	24.5748	9.1559	0.0025	1.033	no, +	0.662	-0.8653	0.0323	0.3594
ppine_500	98.835	98.9562	24.8418	8.8884	0.0029	1.326	yes	0.673	0.7577	0.2821	0.1542
dopen	100.455	100.5762	26.4618	7.2687	0.0070	0.994	no, -	0.550	1.8665	-0.00641	0.7013
pdisturb_1000	100.606	100.7272	26.6128	7.1181	0.0076	1.230	yes	0.628	1.0212	0.2072	0.2725
areaha	100.627	100.7482	26.6338	7.0967	0.0077	1.000	yes	0.567	1.8192	-5.13E-06	0.3669

Table F13. (continued)

variable	AIC	AICc	Δ AICc	LR X2	LR p-value	Odds estimate	CI include 1?	ROC	B0	B1	GOF p-val
perimeter	101.112	101.2332	27.1188	6.6113	0.0101	0.999	yes	0.597	2.1426	-0.00059	0.0176
ddisturb	101.241	101.3622	27.2478	6.4829	0.0109	0.994	no, -	0.523	1.9014	-0.00632	0.1591
popen_100	101.968	102.0892	27.9748	5.7553	0.0164	1.025	no, +	0.545	0.9214	0.0245	0.4824
pshrub_500	103.067	103.1882	29.0738	4.6563	0.0309	1.043	yes	0.660	0.748	0.0423	0.4285
edgeha_100	103.880	104.0012	29.8868	3.8439	0.0499	1.008	yes	0.582	0.5536	0.00822	0.0995
samepatch_100 *	104.365	104.4862	30.3718	3.3587	0.0669	999.999	yes	0.086	-10.4152	11.6747	
pwater_100 *	104.524	104.6452	30.5308	3.1995	0.0737	0.001	yes	0.048	1.3987	-10.2118	
pwater_500	104.736	104.8572	30.7428	2.9873	0.0839	0.460	yes	0.409	1.5961	-0.7767	0.8552
samepatch_500	104.825	104.9462	30.8318	2.8990	0.0886	1.320	yes	0.420	0.7767	0.2774	0.0668
popen_500	105.038	105.1592	31.0448	2.6858	0.1012	1.038	yes	0.620	0.9234	0.0373	0.1504
ppine_100	105.261	105.3822	31.2678	2.4625	0.1166	1.030	yes	0.274	1.2072	0.0292	0.0899
pmature_1000	106.007	106.1282	32.0138	1.7163	0.1902	0.981	yes	0.487	2.6808	-0.0192	0.0294
pdisturb_100 *	106.317	106.4382	32.3238	1.4065	0.2356	2.662	yes	0.037	1.3122	0.9791	
ED	106.636	106.7572	32.6428	1.0882	0.2969	0.374	yes	0.596	2.8474	-0.9836	0.1517
ppine_1000	106.705	106.8262	32.7118	1.0191	0.3127	1.069	yes	0.475	1.1043	0.0664	0.0042
pwater_1000	106.751	106.8722	32.7578	0.9727	0.3240	0.435	yes	0.544	1.5633	-0.8328	0.3166
popen_1000	107.220	107.3412	33.2268	0.5036	0.4779	0.979	yes	0.514	1.5774	-0.0213	0.0376
dwater	107.236	107.3572	33.2428	0.4875	0.4850	1.000	yes	0.514	1.171	0.00023	0.8879
pshrub_1000	107.249	107.3702	33.2558	0.4745	0.4909	1.017	yes	0.526	1.1267	0.0168	0.0472
edgeha_1000	107.510	107.6312	33.5168	0.2134	0.6441	1.005	yes	0.481	1.021	0.00505	0.0470
dpine	107.542	107.6632	33.5488	0.1822	0.6695	1.000	yes	0.598	1.4418	-0.00025	0.0997

* Maximum likelihood estimate may not exist! Validity of the model is questionable.

Table F14. Field sparrow was present at 52 sampling points (N=102). AICc from test models was compared to the AIC Intercept Only value of 143.36 to determine the best models.

variable	AIC	AICc	Δ AICc	LR X2	LR p-value	Odds estimate	CI include 1?	ROC	B0	B1	GOF p-val
dwater ^{step}	78.108	78.7330	0.0000	73.2549	< 0.0001	0.999	yes	0.923	1.7198	-0.0011	0.0990
popen_500						1.208	no, +			0.1891	
pmature_100						0.949	no, -			-0.0526	
ppine_500						0.911	no, -			-0.0935	
popen_500	83.940	84.3524	5.6194	65.4228	< 0.0001	1.168	no, +	0.901	0.7612	0.1552	0.2250
pmature_100						0.951	no, -			-0.0501	
ppine_500						0.938	yes			-0.0641	
popen_500	84.866	85.2784	6.5454	64.4973	< 0.0001	1.136	no, +	0.905	0.857	0.1272	0.8904
pmature_100						0.958	no, -			-0.0425	
dpine						0.999	yes			-0.00116	
dmature	104.305	104.4262	25.6932	41.0579	< 0.0001	1.027	no, +	0.837	-1.5685	0.027	0.0213
ED	104.663	105.0754	26.3424	44.6994	< 0.0001	0.245	yes	0.854	3.3746	-1.4076	0.8804
pmature_100						0.962	no, -			-0.0388	
popen_100						1.018	yes			0.0176	
popen_1000	105.377	105.7894	27.0564	43.9862	< 0.0001	1.053	yes	0.853	-0.9927	0.0517	0.5476
ED						0.496	yes			-0.7018	
dmature						1.028	no, +			0.0272	
pmature_100	105.801	105.9222	27.1892	39.5617	< 0.0001	0.957	no, -	0.826	1.8624	-0.0445	0.4319
popen_500	111.779	111.9002	33.1672	33.5843	< 0.0001	1.149	no, +	0.780	-1.5424	0.1392	0.0936
pmature_500	128.867	128.9882	50.2552	16.4957	< 0.0001	0.956	no, -	0.750	2.9672	-0.0454	0.0036
popen_100	129.032	129.1532	50.4202	16.3305	1.0310	1.031	no, +	0.560	-0.6068	0.0303	0.0172
pmature_1000	132.430	132.6749	53.9419	14.9328	0.0006	0.971	no, -	0.675	2.5884	-0.0294	0.1629
dopen						0.990	no, -			-0.00956	
dpine	134.961	135.0822	56.3492	10.4020	0.0013	0.998	no, -	0.627	0.6181	-0.00172	0.9071
dopen	136.360	136.4812	57.7482	9.0031	0.0027	0.993	no, -	0.599	0.5038	-0.00748	0.1349
dwater	138.226	138.3472	59.6142	7.1367	0.0076	0.999	yes	0.576	0.6122	-0.00072	0.0384
popen_1000	139.260	139.3812	60.6482	6.1029	0.0135	1.066	no, +	0.614	-0.6074	0.0639	0.1818
samepatch_1000	139.486	139.6072	60.8742	5.8771	0.0153	1.153	no, +	0.611	-0.7171	0.1421	0.0259
ED	141.029	141.1502	62.4172	4.3336	0.0374	0.186	no, -	0.586	2.5683	-1.6829	0.0033

Table F14. (continued)

variable	AIC	AICc	Δ AICc	LR X2	LR p-value	Odds estimate	CI include 1?	ROC	B0	B1	GOF p-val
pmature_1000	141.378	141.4992	62.7662	3.9846	0.0459	0.978	yes	0.552	1.553	-0.0223	0.1350
edgeha_500	141.566	141.6872	62.9542	3.7972	0.0513	1.015	yes	0.625	-1.0391	0.0145	0.0363
samepatch_500	141.917	142.0382	63.3052	3.4454	0.0634	1.243	yes	0.440	-0.4547	0.2173	0.7178
pshrub_100	142.368	142.4892	63.7562	2.9945	0.0835	1.012	yes	0.552	-0.266	0.0117	0.0788
ppine_100	143.076	143.1972	64.4642	2.2869	0.1305	1.018	yes	0.320	-0.0827	0.0176	0.0409
pwater_500	143.084	143.2052	64.4722	2.2784	0.1312	0.531	yes	0.395	0.2037	-0.6334	0.1982
pdisturb_1000	143.398	143.5192	64.7862	1.9644	0.1610	1.031	yes	0.496	-0.0812	0.0308	0.1871
pdisturb_500	143.804	143.9252	65.1922	1.5589	0.2118	1.036	yes	0.290	-0.035	0.0353	0.3239
pwater_100 *	143.927	144.0482	65.3152	1.4362	0.2308	0.001	yes	0.020	0.0594	-9.0577	
pdisturb_100	144.110	144.2312	65.4982	1.2524	0.2631	1.078	yes	0.038	0.0052	0.0755	
ppine_1000	144.171	144.2922	65.5592	1.1917	0.2750	1.054	yes	0.578	-0.1715	0.0528	0.1448
dshrub	144.466	144.5872	65.8542	0.8964	0.3438	0.997	yes	0.432	0.1849	-0.00316	0.1849
ppine_500	144.650	144.7712	66.0382	0.7131	0.3984	1.023	yes	0.645	-0.0538	0.0224	0.0017
samepatch_100	144.691	144.8122	66.0792	0.6716	0.4125	1.629	yes	0.075	-0.49	0.488	
ddisturb	144.744	144.8652	66.1322	0.6188	0.4315	1.002	yes	0.677	-0.0917	0.00178	0.0012
areaha	144.817	144.9382	66.2052	0.5455	0.4601	1.000	yes	0.365	0.1371	0.0000013	0.0072
pwater_1000	145.139	145.2602	66.5272	0.2235	0.6364	1.395	yes	0.408	-0.0396	0.3331	0.1136
perimeter	145.251	145.3722	66.6392	0.1120	0.7378	1.000	yes	0.397	0.119	-0.00007	0.1021
edgeha_1000	145.265	145.3862	66.6532	0.0979	0.7543	1.003	yes	0.491	-0.1416	0.00274	0.0014
edgeha_100	145.296	145.4172	66.6842	0.0670	0.7957	1.001	yes	0.479	-0.0511	0.000858	0.0933
pshrub_1000	145.348	145.4692	66.7362	0.0151	0.9023	0.998	yes	0.402	0.0716	-0.00235	0.0007
pshrub_500	145.362	145.4832	66.7502	0.0003	0.9858	1.000	yes	0.314	0.0352	0.000244	0.0022

* Maximum likelihood estimate may not exist! Validity of the model is questionable.

Table F15. Hooded warbler was present at 72 sampling points (N=102). AICc from test models was compared to the AIC Intercept Only value of 125.58 to determine the best models.

variable	AIC	AICc	ΔAICc	LR X2	LR p-value	Odds estimate	CI include 1?	ROC	B0	B1	GOF p-val
dopen	90.174	90.4189	0.0000	39.4089	< 0.0001	1.032	no, +	0.848	1.3937	0.031	0.8132
dmature						0.981	no, -			-0.0192	
popen_100 ^{step}	99.099	99.3439	8.9250	30.4839	< 0.0001	0.972	no, -	0.818	2.5177	-0.028	0.8098
dmature						0.989	no, -			-0.011	
dmature	100.460	100.7049	10.2860	29.1229	< 0.0001	0.986	no, -	0.819	1.5794	-0.0142	0.2219
pwater_500						19.177	no, +			2.9537	
pmature_100	100.468	100.7129	10.2940	29.1142	< 0.0001	1.028	no, +	0.825	-0.8709	0.0276	0.1457
dopen						1.023	no, +			0.0229	
popen_100	106.175	106.2962	15.8773	21.4077	< 0.0001	0.967	no, -	0.678	1.7996	-0.0333	0.4037
dopen	108.479	108.6002	18.1813	19.1042	< 0.0001	1.021	no, +	0.678	0.0369	0.0211	0.3967
dmature	109.112	109.2332	18.8143	18.4710	< 0.0001	0.986	no, -	0.770	1.9698	-0.0137	0.0045
pmature_100	109.199	109.4439	19.0250	20.3834	< 0.0001	1.025	no, +	0.772	0.5895	0.0246	0.0400
popen_500						0.960	no, -			-0.0406	
pmature_100	111.779	111.9002	21.4813	15.8037	< 0.0001	1.030	no, +	0.730	-0.1453	0.0293	0.8985
pwater_500	115.543	115.6642	25.2453	12.0394	0.0005	17.433	no, +	0.425	0.4568	2.8584	0.8502
popen_500	117.170	117.2912	26.8723	10.4127	0.0013	0.946	no, -	0.721	1.6683	-0.0557	0.2919
pwater_1000	124.220	124.3412	33.9223	3.3623	0.0667	4.587	yes	0.538	0.5543	1.5233	0.3359
pshrub_1000	124.952	125.0732	34.6543	2.6308	0.1048	1.037	yes	0.579	0.4057	0.0362	0.0454
pshrub_500	125.040	125.1612	34.7423	2.5425	0.1108	1.026	yes	0.573	0.4777	0.0256	0.1634
pwater_100 *	125.111	125.2322	34.8133	2.4714	0.1159	0.001	yes	0.033	0.9094	-9.9412	
popen_1000	125.255	125.3762	34.9573	2.3274	0.1271	0.960	yes	0.589	1.3152	-0.0408	0.2740
ppine_1000	125.741	125.8622	35.4433	1.8415	0.1748	1.082	yes	0.571	0.581	0.079	0.0734
samepatch_100	126.266	126.3872	35.9683	1.3164	0.2512	2.535	yes	0.081	-0.1144	0.9304	
edgeha_1000	126.419	126.5402	36.1213	1.1641	0.2806	1.011	yes	0.564	0.1912	0.0106	0.0008
dwater	126.426	126.5472	36.1283	1.1568	0.2821	1.000	yes	0.513	0.63	0.000316	0.0173
pshrub_100	126.453	126.5742	36.1553	1.1292	0.2879	1.008	yes	0.468	0.6762	0.00798	0.7366
perimeter	126.762	126.8832	36.4643	0.8211	0.3649	1.000	yes	0.557	1.113	-0.00019	0.1755
pdisturb_100	126.838	126.9592	36.5403	0.7445	0.3882	0.954	yes	0.033	0.9061	-0.047	
pmature_500	126.875	126.9962	36.5773	0.7073	0.4003	1.009	yes	0.557	0.2956	0.00922	0.3823

Table F15. (continued)

variable	AIC	AICc	Δ AICc	LR X2	LR p-value	Odds estimate	CI include 1?	ROC	B0	B1	GOF p-val
areaha	127.103	127.2242	36.8053	0.4794	0.4887	1.000	yes	0.531	0.9763	-1.28E-06	0.0309
pmature_1000	127.110	127.2312	36.8123	0.4726	0.4918	0.992	yes	0.588	1.4467	-0.00839	0.0071
samepatch_500	127.221	127.3422	36.9233	0.3613	0.5478	0.929	yes	0.408	1.0478	-0.0734	0.1536
ppine_100	127.287	127.4082	36.9893	0.2955	0.5867	0.994	yes	0.263	0.9248	-0.00639	0.4568
dshrub	127.322	127.4432	37.0243	0.2607	0.6096	0.998	yes	0.555	0.9614	-0.00181	0.2042
ED	127.336	127.4572	37.0383	0.2470	0.6192	1.540	yes	0.465	0.229	0.4315	0.0029
edgeha_500	127.364	127.4852	37.0663	0.2188	0.6400	0.996	yes	0.514	1.1509	-0.00365	0.8243
samepatch_1000	127.496	127.6172	37.1983	0.0864	0.7687	1.018	yes	0.455	0.7781	0.0182	0.0765
pdisturb_1000	127.513	127.6342	37.2153	0.0697	0.7918	1.006	yes	0.246	0.8509	0.00611	0.2412
dpine	127.544	127.6652	37.2463	0.0388	0.8439	1.000	yes	0.419	0.8383	0.000106	0.6254
ppine_500	127.544	127.6652	37.2463	0.0387	0.8440	1.006	yes	0.308	0.8519	0.00569	0.1318
pdisturb_500	127.555	127.6762	37.2573	0.0272	0.8690	1.005	yes	0.220	0.8649	0.00475	0.0169
ddisturb	127.579	127.7002	37.2813	0.0034	0.9533	1.000	yes	0.321	0.8861	-0.00014	0.7180
edgeha_100	127.582	127.7032	37.2843	0.0008	0.9771	1.000	yes	0.319	0.8865	-0.0001	0.5531

* Maximum likelihood estimate may not exist! Validity of the model is questionable.

Table F16. Indigo bunting was present at 93 sampling points (N=102). AICc from test models was compared to the AIC Intercept Only value of 62.88 to determine the best models.

variable	AIC	AICc	Δ AICc	LR X2	LR p-value	Odds estimate	CI include 1?	ROC	B0	B1	GOF p-val
dmature*	32.698	32.8192	--	32.1824	< 0.0001	2.104	yes	0.871	0.2878	0.7438	0.9277
perimeter ^{step}	33.175	33.4199	0.0000	33.7061	< 0.0001	0.999	yes	0.955	7.4057	-0.00135	0.7170
dopen						0.980	no, -			-0.02	
perimeter	33.991	34.4034	0.9835	34.8900	< 0.0001	0.999	yes	0.952	7.075	-0.00104	0.7391
dshrub						0.992	yes			-0.00754	
dopen						0.983	no, -			-0.0176	
dopen	36.536	36.9484	3.5285	32.3444	< 0.0001	0.989	no, -	0.951	6.2664	-0.0106	0.7765
dshrub						0.988	yes			-0.0123	
pmature_100						0.974	yes			-0.0265	
popen_100	39.481	39.7259	6.3060	27.4002	< 0.0001	1.151	yes	0.926	5.9422	0.1402	0.9408
pmature_100						0.938	no, -			-0.0638	
dopen	42.059	42.1802	8.7603	22.8219	< 0.0001	0.985	no, -	0.889	4.1641	-0.0149	0.4498
dshrub	40.963	41.3754	7.9555	27.9175	< 0.0001	0.983	no, -	0.914	6.1427	-0.0172	0.5558
edgeha_500						1.047	yes			0.0458	
pmature_500						0.933	yes			-0.0696	
pmature_100	42.186	42.4309	9.0110	24.6952	< 0.0001	0.937	no, -	0.908	7.4433	-0.0652	0.5033
perimeter						1.000	yes			-0.0005	
pmature_100	42.548	42.6692	9.2493	22.3334	< 0.0001	0.926	no, -	0.898	7.6876	-0.0774	0.0016
dshrub	47.069	47.1902	13.7703	17.8120	< 0.0001	0.980	no, -	0.897	3.9194	-0.0202	0.2795
pmature_500	48.294	48.4152	14.9953	16.5870	< 0.0001	0.865	no, -	0.860	13.3597	-0.1446	< 0.0001
edgeha_500	48.942	49.0632	15.6433	15.9389	< 0.0001	1.075	no, +	0.827	-1.9912	0.0724	0.8197
edgeha_500	49.486	49.7309	16.3110	17.3946	0.0002	1.073	no, +	0.828	-2.3694	0.0701	0.1529
pshrub_500						1.045	yes			0.0441	
edgeha_100	51.598	51.7192	18.2993	13.2833	0.0003	1.025	no, +	0.778	0.5331	0.0247	0.0632
ddisturb	51.908	52.0292	18.6093	12.9730	0.0003	0.989	no, -	0.804	3.6454	-0.0112	0.7056
popen_100	53.855	53.9762	20.5563	11.0259	0.0009	1.147	yes	0.615	1.514	0.1368	0.9154
samepatch_1000	53.861	53.9822	20.5623	11.0201	0.0009	1.743	no, +	0.750	0.3621	0.5557	0.2934
pshrub_100	57.786	57.9072	24.4873	7.0951	0.0077	1.052	yes	0.603	1.6512	0.0506	0.2522
perimeter	58.202	58.3232	24.9033	6.6792	0.0098	0.999	yes	0.785	3.5189	-0.00076	0.1677

Table F16. (continued)

variable	AIC	AICc	Δ AICc	LR X2	LR p-value	Odds estimate	CI include 1?	ROC	B0	B1	GOF p-val
edgeha_1000	59.348	59.4692	26.0493	5.5326	0.0187	1.042	no, +	0.685	-0.0743	0.0414	0.0036
pdisturb_1000	59.691	59.8122	26.3923	5.1897	0.0227	2.297	yes	0.682	1.8153	0.8317	0.0431
ppine_500	59.870	59.9912	26.5713	5.0107	0.0252	1.481	yes	0.708	1.6712	0.3924	0.2413
areaha	60.245	60.3662	26.9463	4.6355	0.0313	1.000	yes	0.772	2.8903	-5.16E-06	0.1791
pshrub_500	60.658	60.7792	27.3593	4.2229	0.0399	1.068	yes	0.751	1.5374	0.0656	0.1423
pwater_500	61.117	61.2382	27.8183	3.7642	0.0524	0.336	no, -	0.570	2.764	-1.0916	0.0870
popen_500	61.130	61.2512	27.8313	3.7506	0.0528	1.081	yes	0.655	1.6029	0.0781	0.0823
pdisturb_500	62.410	62.5312	29.1113	2.4704	0.1160	1.811	yes	0.335	2.0962	0.5937	0.6488
dwater	62.432	62.5532	29.1333	2.4491	0.1176	1.001	yes	0.553	1.7185	0.000979	0.0158
samepatch_500	62.594	62.7152	29.2953	2.2865	0.1305	1.490	yes	0.434	1.5775	0.399	0.4867
pmature_1000	63.211	63.3322	29.9123	1.6695	0.1963	0.971	yes	0.557	4.4492	-0.0297	0.0850
pwater_1000	63.311	63.4322	30.0123	1.5695	0.2103	0.233	yes	0.692	2.7544	-1.4586	0.2041
pshrub_1000	63.466	63.5872	30.1673	1.4151	0.2342	1.046	yes	0.637	1.7952	0.0451	0.4106
samepatch_100 *	63.539	63.6602	30.2403	1.3420	0.2467	999.999	yes	0.075	-8.1841	10.4412	
ED	64.028	64.1492	30.7293	0.8525	0.3558	0.298	yes	0.621	4.1945	-1.2094	0.1374
pdisturb_100 *	64.318	64.4392	31.0193	0.5629	0.4531	2.598	yes	0.032	2.3026	0.9549	
ppine_1000	64.639	64.7602	31.3403	0.2424	0.6225	1.046	yes	0.448	2.1662	0.0454	0.5704
popen_1000	64.677	64.7982	31.3783	0.2041	0.6514	0.981	yes	0.527	2.5425	-0.0192	0.4029
pwater_100 *	64.695	64.8162	31.3963	0.1857	0.6665	999.999	yes	0.011	2.3246	7.6202	
ppine_100	64.808	64.9292	31.5093	0.0733	0.7866	1.006	yes	0.178	2.298	0.00565	0.2955
dpine †	64.881	65.0022	31.5823	0.0001	0.9943	1.000	yes		2.3375	-6.16E-06	0.2418

* Maximum likelihood estimate may not exist! Validity of the model is questionable.

† Measures of association between the observed and predicted values were not calculated because the predicted probabilities are indistinguishable when they are classified into intervals of length 0.002.

Table F17. Mourning dove was present at 44 sampling points (N=102). AICc from test models was compared to the AIC Intercept Only value of 141.47 to determine the best models.

variable	AIC	AICc	Δ AICc	LR X2	LR p-value	Odds estimate	CI include 1?	ROC	B0	B1	GOF p-val
dwater ^{step}	117.894	118.3064	0.0000	29.5805	< 0.0001	1.002	no, +	0.806	-3.0069	0.0016	0.3961
popen_100						1.017	yes			0.0172	
pshrub_500						1.062	no, +			0.0601	
dwater	124.087	124.2082	5.9018	19.3870	< 0.0001	1.001	yes	0.721	-1.3034	0.0013	0.3047
pwater_500	132.668	133.0804	14.7740	14.8063	0.0020	0.282	no, -	0.739	-0.066	-1.265	0.0944
dpine						1.001	yes			0.00107	
dshrub						0.993	yes			-0.00722	
pwater_1000	134.898	135.3104	17.0040	12.5765	0.0056	0.239	yes	0.693	-0.0157	-1.4325	0.6450
dpine						1.001	yes			0.00097	
dshrub						0.993	yes			-0.00668	
pwater_500	136.049	136.1702	17.8638	7.4258	0.0064	0.254	no, -	0.507	0.0271	-1.3696	0.0151
dshrub	136.063	136.3079	18.0015	9.4110	0.0090	0.993	yes	0.651	-0.3981	-0.0073	0.9853
dpine						1.001	yes			0.00123	
pwater_1000	136.741	136.8622	18.5558	6.7332	0.0095	0.141	no, -	0.604	0.1565	-1.9555	0.2011
dpine	137.880	138.0012	19.6948	5.5940	0.0180	1.001	yes	0.547	-0.6997	0.00119	0.1283
dshrub	139.549	139.6702	21.3638	3.9256	0.0476	0.993	yes	0.542	0.0388	-0.00728	0.6966
pdisturb_100 *	140.018	140.1392	21.8328	3.4559	0.0630	0.317	yes	0.034	-0.2231	-1.1494	
ddisturb	140.336	140.4572	22.1508	3.1387	0.0765	0.996	yes	0.572	0.0274	-0.00432	0.0262
popen_100	141.201	141.4459	23.1395	4.2735	0.1180	1.011	yes	0.609	-1.0749	0.0114	0.9518
pshrub_500						1.031	yes			0.031	
pshrub_500	141.571	141.6922	23.3858	1.9034	0.1677	1.019	yes	0.543	-0.5989	0.0191	0.1907
ppine_1000	141.690	141.8112	23.5048	1.7839	0.1817	0.935	yes	0.563	-0.0133	-0.0673	0.3421
samepatch_100	142.178	142.2992	23.9928	1.2963	0.2549	0.476	yes	0.101	0.522	-0.7415	
ppine_500	142.187	142.3082	24.0018	1.2871	0.2566	0.969	yes	0.520	-0.1484	-0.032	0.0364
pwater_100 *	142.338	142.4592	24.1528	1.1366	0.2864	0.001	yes	0.017	-0.2589	-8.8592	
edgeha_100	142.564	142.6852	24.3788	0.9104	0.3400	0.997	yes	0.537	0.0592	-0.00321	0.6506
perimeter	142.597	142.7182	24.4118	0.8776	0.3489	1.000	yes	0.563	-0.0492	-0.00019	0.0807
pmature_100	142.632	142.7532	24.4468	0.8424	0.3587	0.995	yes	0.536	-0.0502	-0.00547	0.8247

Table F17. (continued)

variable	AIC	AICc	Δ AICc	LR X2	LR p-value	Odds estimate	CI include 1?	ROC	B0	B1	GOF p-val
pdisturb_500	142.721	142.8422	24.5358	0.7529	0.3856	0.976	yes	0.236	-0.2247	-0.0243	0.0377
areaha	142.860	142.9812	24.6748	0.6145	0.4331	1.000	yes	0.511	-0.1714	-1.42E-06	0.5689
pmature_1000	142.888	143.0092	24.7028	0.5859	0.4440	1.009	yes	0.588	-0.8502	0.00847	0.1127
dmature	142.918	143.0392	24.7328	0.5565	0.4557	1.002	yes	0.521	-0.4265	0.00212	0.8304
popen_100	142.972	143.0932	24.7868	0.5027	0.4783	1.005	yes	0.437	-0.3858	0.00457	0.8276
edgeha_500	143.048	143.1692	24.8628	0.4265	0.5137	0.995	yes	0.543	0.0791	-0.00476	0.9768
pshrub_100	143.134	143.2552	24.9488	0.3408	0.5594	1.004	yes	0.452	-0.3801	0.00389	0.3937
dopen	143.273	143.3942	25.0878	0.2015	0.6536	0.999	yes	0.433	-0.2113	-0.00098	0.1673
popen_1000	143.320	143.4412	25.1348	0.1543	0.6944	0.990	yes	0.485	-0.1753	-0.00986	0.2924
pmature_500	143.347	143.4682	25.1618	0.1270	0.7215	0.996	yes	0.492	-0.0458	-0.00363	0.1856
samepatch_500	143.400	143.5212	25.2148	0.0739	0.7857	0.969	yes	0.359	-0.2046	-0.0312	0.9007
samepatch_1000	143.402	143.5232	25.2168	0.0719	0.7886	1.015	yes	0.481	-0.3581	0.0151	0.4672
pdisturb_1000	143.417	143.5382	25.2318	0.0574	0.8106	0.995	yes	0.232	-0.2557	-0.00501	0.0029
edgeha_1000	143.423	143.5442	25.2378	0.0511	0.8211	0.998	yes	0.495	-0.1444	-0.002	0.7492
pshrub_1000	143.425	143.5462	25.2398	0.0491	0.8247	0.996	yes	0.502	-0.2172	-0.00429	0.0846
ppine_100	143.439	143.5602	25.2538	0.0357	0.8500	0.998	yes	0.172	-0.2608	-0.00212	0.4033
popen_500	143.459	143.5802	25.2738	0.0150	0.9024	1.002	yes	0.439	-0.3015	0.00193	0.0898
ED	143.465	143.5862	25.2798	0.0092	0.9237	0.927	yes	0.486	-0.1627	-0.0755	0.1346

* Maximum likelihood estimate may not exist! Validity of the model is questionable.

Table F18. Northern cardinal was present at 75 sampling points (N=102). AICc from test models was compared to the AIC Intercept Only value of 119.9 to determine the best models.

variable	AIC	AICc	ΔAICc	LR X2	LR p-value	Odds estimate	CI include 1?	ROC	B0	B1	GOF p-val
dshrub	93.578	93.8229	0.0000	30.3183	< 0.0001	0.985	no, -	0.789	3.0742	-0.0156	0.1587
popen_1000						0.898	no, -			-0.1074	
dshrub	98.759	99.0039	5.1810	25.1367	< 0.0001	0.984	no, -	0.761	2.5691	-0.0162	0.8670
popen_500						0.954	no, -			-0.0471	
edgeha_100	98.715	99.1274	5.3045	27.1814	< 0.0001	1.011	no, +	0.816	-0.6549	0.011	0.0134
popen_500						0.974	yes			-0.0265	
pshrub_500						1.081	no, +			0.078	
dshrub ^{step}	100.933	101.0542	7.2313	20.9632	< 0.0001	0.982	no, -	0.664	1.9976	-0.0183	0.1534
ddisturb	101.658	102.0704	8.2475	24.2376	< 0.0001	0.994	yes	0.774	2.2705	-0.00571	0.4813
popen_1000						0.903	no, -			-0.102	
pshrub_1000						1.039	yes			0.0383	
pshrub_500	103.276	103.3972	9.5743	18.6205	< 0.0001	1.097	no, +	0.741	-0.1458	0.0929	0.5370
pshrub_100	103.568	103.9804	10.1575	22.3277	< 0.0001	1.027	no, +	0.756	1.6399	0.0267	0.1689
perimeter						0.999	yes			-0.00059	
dopen						0.995	yes			-0.00513	
popen_1000	105.055	105.1762	11.3533	16.8414	< 0.0001	0.889	no, -	0.762	2.4058	-0.1179	0.5505
pwater_1000	108.608	108.7292	14.9063	13.2876	0.0003	0.057	no, -	0.699	1.8344	-2.8621	0.6352
ddisturb	109.853	109.9742	16.1513	12.0432	0.0005	0.992	no, -	0.731	1.7344	-0.00847	0.5953
pshrub_100	110.292	110.4132	16.5903	11.6036	0.0007	1.032	no, +	0.622	0.3907	0.0317	0.4142
perimeter	113.058	113.1792	19.3563	8.8376	0.0030	0.999	yes	0.649	1.8715	-0.00065	0.1638
areaha	113.466	113.5872	19.7643	8.4303	0.0037	1.000	yes	0.654	1.4907	-5.46E-07	0.0551
edgeha_100	113.496	113.6172	19.7943	8.3998	0.0038	1.012	no, +	0.648	-0.0808	0.0115	0.4404
pdisturb_100 *	113.664	113.7852	19.9623	8.2321	0.0041	0.266	yes	0.074	1.1394	-1.3248	
popen_500	113.671	113.7922	19.9693	8.2249	0.0041	0.952	no, -	0.629	1.7346	-0.0493	0.0391
dopen	116.081	116.2022	22.3793	5.8151	0.0159	0.995	no, -	0.587	1.4356	-0.0055	0.9069
pwater_500	116.197	116.3182	22.4953	5.6992	0.0170	0.359	no, -	0.464	1.3371	-1.0232	0.0161
pshrub_1000	116.555	116.6762	22.8533	5.3410	0.0208	1.058	no, +	0.606	0.3282	0.056	0.2212
ppine_1000	118.391	118.5122	24.6893	3.5050	0.0612	0.910	yes	0.650	1.4331	-0.0946	0.2136

Table F18. (continued)

variable	AIC	AICc	ΔAICc	LR X2	LR p-value	Odds estimate	CI include 1?	ROC	B0	B1	GOF p-val
pmature_100	118.455	118.5762	24.7533	3.4410	0.0636	0.988	yes	0.568	1.5794	-0.0124	0.0001
pmature_1000	119.195	119.3162	25.4933	2.7008	0.1003	1.020	yes	0.608	-0.2659	0.0195	0.0805
pdisturb_500	119.469	119.5902	25.7673	2.4274	0.1192	0.960	yes	0.262	1.1314	-0.0412	0.5742
samepatch_500	119.711	119.8322	26.0093	2.1847	0.1394	0.833	yes	0.400	1.4635	-0.1822	0.0807
dwater	119.751	119.8722	26.0493	2.1452	0.1430	1.000	yes	0.492	0.6729	0.000464	0.0015
pdisturb_1000	120.683	120.8042	26.9813	1.2126	0.2708	0.977	yes	0.396	1.1303	-0.0238	0.2815
edgeha_1000	121.191	121.3122	27.4893	0.7054	0.4010	0.992	yes	0.568	1.5781	-0.00831	0.0123
popen_100	121.255	121.3762	27.5533	0.6409	0.4234	0.994	yes	0.460	1.1629	-0.00566	0.7666
pwater_100 *	121.278	121.3992	27.5763	0.6185	0.4316	999.999	yes	0.013	1.0082	8.5464	<
dpine	121.633	121.7542	27.9313	0.2634	0.6078	1.000	yes	0.442	0.9222	0.000292	0.2430
samepatch_1000	121.677	121.7982	27.9753	0.2189	0.6399	0.971	yes	0.460	1.1826	-0.0294	0.2230
edgeha_500	121.712	121.8332	28.0103	0.1839	0.6681	1.004	yes	0.487	0.76	0.00352	0.6693
ppine_500	121.716	121.8372	28.0143	0.1801	0.6713	0.988	yes	0.347	1.0739	-0.0119	0.1476
samepatch_100	121.743	121.8642	28.0413	0.1526	0.6961	0.785	yes	0.105	1.2862	-0.2417	
ppine_100	121.857	121.9782	28.1553	0.0394	0.8427	1.003	yes	0.214	1.0036	0.00253	0.1851
ED	121.889	122.0102	28.1873	0.0071	0.9327	0.928	yes	0.461	1.1342	-0.0748	0.2644
pmature_500	121.891	122.0122	28.1893	0.0051	0.9433	1.001	yes	0.396	0.9699	0.000814	0.1071
dmature †	121.896	122.0172	28.1943	0	0.9930	1.000	yes		1.0218	-2.7E-06	0.0034

* Maximum likelihood estimate may not exist! Validity of the model is questionable.

† Measures of association between the observed and predicted values were not calculated because the predicted probabilities are indistinguishable when they are classified into intervals of length 0.002.

Table F19. Ovenbird was present at 26 sampling points (N=102). AICc from test models was compared to the AIC Intercept Only value of 117.8 to determine the best models.

variable	AIC	AICc	ΔAICc	LR X2	LR p-value	Odds estimate	CI include 1?	ROC	B0	B1	GOF p-val
pmature_100 ^{step}	89.644	89.8889	0.0000	32.1578	< 0.0001	1.054	no, +	0.845	-4.3086	0.0529	0.0283
ppine_100						1.057	no, +			0.055	
pshrub_100	89.861	90.2734	0.3845	33.9413	< 0.0001	0.951	no, -	0.843	1.3066	-0.0498	0.9301
popen_100						0.927	no, -			-0.0761	
pmature_100						0.998	yes			-0.00189	
dopen	92.142	92.5544	2.6655	31.6600	< 0.0001	1.007	no, +	0.788	-3.4667	0.00742	0.1659
perimeter						1.000	yes			0.000481	
pmature_100						1.025	no, +			0.0251	
dopen	92.535	93.1600	3.2711	33.2669	< 0.0001	1.008	no, +	0.794	-1.6929	0.00809	0.2818
dshrub						1.010	yes			0.0102	
dmature						0.989	yes			-0.0107	
ddisturb						1.002	yes			0.00169	
pmature_100	98.563	98.6842	8.7953	21.2393	< 0.0001	1.035	no, +	0.786	-2.8077	0.0343	0.0873
dopen	100.691	100.8122	10.9233	19.1108	< 0.0001	1.011	no, +	0.735	-1.9382	0.0111	0.5627
dmature	102.321	102.4422	12.5533	17.4810	< 0.0001	0.980	no, -	0.786	-0.0708	-0.0203	0.0174
dshrub	105.042	105.1632	15.2743	14.7602	< 0.0001	1.015	no, +	0.616	-1.8536	0.0145	0.1672
popen_100	107.114	107.2352	17.3463	12.6878	0.0004	0.962	no, -	0.568	-0.4691	-0.0388	0.6800
perimeter	109.496	109.7409	19.8520	12.3064	0.0021	1.001	yes	0.721	-1.1436	0.000606	0.8516
popen_500						0.938	no, -			-0.0639	
ddisturb	113.300	113.4212	23.5323	6.5015	0.0108	1.006	no, +	0.586	-1.5816	0.0061	0.0626
pshrub_100	113.801	113.9222	24.0333	6.0005	0.0143	0.979	no, -	0.557	-0.6097	-0.0212	0.5749
popen_500	114.443	114.5642	24.6753	5.3589	0.0206	0.950	no, -	0.618	-0.5004	-0.0513	0.2596
perimeter	115.120	115.2412	25.3523	4.6820	0.0305	1.000	yes	0.603	-1.6807	0.000469	0.0036
pwater_500	115.471	115.5922	25.7033	4.3305	0.0374	2.445	no, +	0.407	-1.3481	0.8942	0.6925
										-3.724E-	
areaha	115.783	115.9042	26.0153	4.0191	0.0450	1.000	yes	0.582	-1.3885	06	0.5084
pwater_1000	116.209	116.3302	26.4413	3.5928	0.0580	4.401	yes	0.604	-1.4645	1.4819	0.1673
dwater	116.888	117.0092	27.1203	2.9137	0.0878	0.999	yes	0.570	-0.6576	-0.00057	0.7865
pwater_100 *	117.039	117.1602	27.2713	2.7629	0.0965	999.999	yes	0.038	-1.1119	10.2793	
pmature_500	117.960	118.0812	28.1923	1.8419	0.1747	1.017	yes	0.607	-2.145	0.0164	0.0858

Table F19. (continued)

variable	AIC	AICc	Δ AICc	LR X2	LR p-value	Odds estimate	CI include 1?	ROC	B0	B1	GOF p-val
pdisturb_100 *	118.006	118.1272	28.2383	1.7963	0.1802	0.333	yes	0.039	-1.0324	-1.0984	
ED	118.083	118.2042	28.3153	1.7190	0.1898	3.171	yes	0.587	-2.8284	1.1539	0.2960
edgeha_100	118.517	118.6382	28.7493	1.2847	0.2570	0.996	yes	0.545	-0.6321	-0.00434	0.5330
samepatch_1000	118.530	118.6512	28.7623	1.2722	0.2594	0.927	yes	0.557	-0.6816	-0.0758	0.1731
pdisturb_500	118.567	118.6882	28.7993	1.2347	0.2665	0.956	yes	0.316	-0.9979	-0.0447	0.0571
ppine_1000	118.864	118.9852	29.0963	0.9377	0.3329	1.051	yes	0.586	-1.284	0.05	0.1363
ppine_100	119.039	119.1602	29.2713	0.7631	0.3824	1.011	yes	0.183	-1.1572	0.0105	0.1786
dpine	119.306	119.4272	29.5383	0.4960	0.4813	1.000	yes	0.470	-0.9347	-0.00041	0.4119
edgeha_500	119.428	119.5492	29.6603	0.3737	0.5410	0.995	yes	0.546	-0.694	-0.00512	0.3110
ppine_500	119.524	119.6452	29.7563	0.2782	0.5979	1.015	yes	0.357	-1.1384	0.0149	0.0322
popen_1000	119.550	119.6712	29.7823	0.2517	0.6159	1.014	yes	0.504	-1.2206	0.0141	0.7135
samepatch_100	119.600	119.7212	29.8323	0.2022	0.6530	1.322	yes	0.074	-1.3786	0.2792	
pmature_1000	119.660	119.7812	29.8923	0.1421	0.7062	0.995	yes	0.540	-0.762	-0.00463	0.0995
edgeha_1000	119.668	119.7892	29.9003	0.1338	0.7145	1.004	yes	0.517	-1.3162	0.00367	0.1084
pdisturb_1000	119.735	119.8562	29.9673	0.0671	0.7955	0.994	yes	0.207	-1.0475	-0.00631	0.0321
samepatch_500	119.782	119.9032	30.0143	0.0202	0.8869	1.019	yes	0.299	-1.1152	0.0184	0.2810
pshrub_500	119.785	119.9062	30.0173	0.0171	0.8959	1.002	yes	0.404	-1.1069	0.00204	0.0988
pshrub_1000	119.798	119.9192	30.0303	0.0038	0.9508	1.001	yes	0.368	-1.0913	0.00136	0.2664

* Maximum likelihood estimate may not exist! Validity of the model is questionable.

Table F20. Pileated woodpecker was present at 26 sampling points (N=102). AICc from test models was compared to the AIC Intercept Only value of 117.8 to determine the best models.

variable	AIC	AICc	ΔAICc	LR X2	LR p-value	Odds estimate	CI include 1?	ROC	B0	B1	GOF p-val
edgeha_100 ^{step}	99.894	100.3064	0.0000	23.9081	< 0.0001	1.017	no, +	0.783	-2.9849	0.0172	0.1101
popen_1000						0.894	no, -			-0.1116	
pmature_100						1.020	no, +			0.0198	
edgeha_100	104.023	104.2679	3.9615	17.7792	0.0001	1.016	no, +	0.750	-5.7755	0.0163	0.7379
pmature_500						1.043	no, +			0.0419	
dmature	108.707	109.1194	8.8130	15.0949	0.0017	0.994	yes	0.743	0.2331	-0.00566	0.7281
popen_500						0.954	yes			-0.0473	
ddisturb						0.992	yes			-0.008	
perimeter	108.939	109.1839	8.8775	12.8633	0.0016	0.999	yes	0.719	0.4402	-0.00068	0.9932
popen_1000						0.911	no, -			-0.0928	
areaha	109.463	109.7079	9.4015	12.3391	0.0021	0.941	yes	0.720	-0.0725	-0.0605	0.6870
popen_500						0.938	no, -			-0.0635	
edgeha_100	110.216	110.3372	10.0308	9.5858	0.0020	1.013	no, +	0.694	-2.5525	0.0128	0.7583
popen_500	111.447	111.5682	11.2618	8.3553	0.0038	0.933	no, -	0.660	-0.3395	-0.0691	0.7641
popen_1000	111.757	111.8782	11.5718	8.0453	0.0046	0.910	no, -	0.650	-0.2377	-0.0944	0.4085
ddisturb	111.918	112.0392	11.7328	7.8844	0.0050	0.989	no, -	0.685	-0.4717	-0.0108	0.3446
areaha	113.748	113.8692	13.5628	6.0539	0.0139	1.000	yes	0.669	-0.669	-7.36E-06	0.0467
perimeter	113.842	113.9632	13.6568	5.9596	0.0146	0.999	yes	0.657	-0.3517	-0.0007	0.6928
pmature_500	114.823	114.9442	14.6378	4.9791	0.0257	1.029	no, +	0.606	-2.954	0.0284	0.0222
dmature	114.959	115.0802	14.7738	4.8433	0.0278	0.992	yes	0.568	-0.5749	-0.00822	0.0844
dshrub	116.031	116.1522	15.8458	3.7705	0.0522	0.991	yes	0.534	-0.7214	-0.00913	0.0150
pmature_1000	116.416	116.5372	16.2308	3.3864	0.0657	1.026	yes	0.536	-2.8522	0.0256	0.0240
pwater_100 *	117.039	117.1602	16.8538	2.7629	0.0965	999.999	yes	0.038	-1.1119	10.2793	
pmature_100	117.648	117.7692	17.4628	2.1535	0.1422	1.010	yes	0.606	-1.5119	0.00988	0.1395
pwater_500	117.649	117.7702	17.4638	2.1527	0.1423	0.443	yes	0.316	-0.8947	-0.8146	0.0013
pwater_1000	117.977	118.0982	17.7918	1.8250	0.1767	0.315	yes	0.502	-0.825	-1.1561	0.1383
ppine_500	118.141	118.2622	17.9558	1.6608	0.1975	0.953	yes	0.553	-0.9013	-0.0484	0.7652
ppine_1000	118.142	118.2632	17.9568	1.6603	0.1976	0.924	yes	0.565	-0.7797	-0.0795	0.3544

Table F20. (continued)

variable	AIC	AICc	Δ AICc	LR X2	LR p-value	Odds estimate	CI include 1?	ROC	B0	B1	GOF p-val
pdisturb_1000	118.145	118.2662	17.9598	1.6568	0.1980	0.962	yes	0.429	-0.9468	-0.0384	0.0140
samepatch_500	118.370	118.4912	18.1848	1.4316	0.2315	0.846	yes	0.391	-0.7081	-0.1674	0.9016
pdisturb_500	118.901	119.0222	18.7158	0.9012	0.3425	0.965	yes	0.260	-1.0091	-0.0356	0.0234
popen_100	119.174	119.2952	18.9888	0.6277	0.4282	0.994	yes	0.429	-0.937	-0.00609	0.7782
samepatch_1000	119.271	119.3922	19.0858	0.5307	0.4663	0.953	yes	0.490	-0.8206	-0.0481	0.0344
pshrub_100	119.473	119.5942	19.2878	0.3294	0.5660	0.996	yes	0.425	-0.9594	-0.00444	0.0631
pshrub_1000	119.479	119.6002	19.2938	0.3230	0.5698	1.012	yes	0.519	-1.2463	0.0123	0.2530
dwater	119.539	119.6602	19.3538	0.2632	0.6080	1.000	yes	0.546	-0.951	-0.00015	0.6532
ppine_100	119.615	119.7362	19.4298	0.1870	0.6654	0.994	yes	0.217	-1.0332	-0.00573	0.1963
pshrub_500	119.658	119.7792	19.4728	0.1443	0.7041	1.006	yes	0.513	-1.1726	0.00589	0.9339
pdisturb_100	119.664	119.7852	19.4788	0.1376	0.7107	0.974	yes	0.026	-1.06	-0.026	
dopen	119.723	119.8442	19.5378	0.0787	0.7791	0.999	yes	0.464	-1.0265	-0.0007	0.3100
dpine	119.760	119.8812	19.5748	0.0417	0.8383	1.000	yes	0.478	-1.0324	-0.00012	0.6014
samepatch_100	119.763	119.8842	19.5778	0.0385	0.8444	0.875	yes	0.063	-0.9281	-0.1333	
edgeha_500	119.771	119.8922	19.5858	0.0313	0.8596	0.999	yes	0.461	-0.9636	-0.00146	0.1866
edgeha_1000	119.791	119.9122	19.6058	0.0108	0.9173	1.001	yes	0.460	-1.1416	0.00105	0.3277
ED	119.795	119.9162	19.6098	0.0070	0.9333	1.078	yes	0.451	-1.1855	0.075	0.1738

* Maximum likelihood estimate may not exist! Validity of the model is questionable.

Table F21. Prairie warbler was present at 35 sampling points (N=102). AICc from test models was compared to the AIC Intercept Only value of 133.19 to determine the best models.

variable	AIC	AICc	Δ AICc	LR X2	LR p-value	Odds estimate	CI include 1?	ROC	B0	B1	GOF p-val
samepatch_500 step	92.449	92.8614	0.0000	46.7422	< 0.0001	1.923	no, +	0.872	0.1251	0.654	0.2433
pmature_100						0.951	no, -			-0.0505	
ppine_1000						0.830	no, -			-0.1858	
pmature_100 samepatch_500	95.621	95.8659	3.0045	41.5702	< 0.0001	0.954	no, -	0.853	0.1233	-0.0471	0.1616
						1.386	no, +			0.3267	
pmature_100	98.507	98.6282	5.7668	36.6846	< 0.0001	0.952	no, -	0.814	0.9587	-0.049	0.1813
pmature_100 ppine_1000	100.490	100.7349	7.8735	36.7015	< 0.0001	0.952	no, -	0.820	0.9923	-0.0492	0.3669
						0.993	yes			-0.00689	
dmature pshrub_100	100.718	100.9629	8.1015	36.4737	< 0.0001	1.018	no, +	0.837	-2.6792	0.0182	0.4720
						1.021	no, +			0.0211	
dmature	105.517	105.6382	12.7768	29.6740	< 0.0001	1.019	no, +	0.826	-2.0606	0.0185	0.0179
pshrub_100 ED	113.108	113.5204	20.6590	26.0829	< 0.0001	1.034	no, +	0.777	-0.5482	0.0333	0.1336
						0.273	yes			-1.2975	
popen_500						1.066	no, +			0.0643	
pmature_500	122.541	122.6622	29.8008	12.6501	0.0004	0.962	no, -	0.699	1.7536	-0.0389	0.2679
samepatch_500	123.997	124.1182	31.2568	11.1942	0.0008	1.497	no, +	0.544	-1.6252	0.4033	0.8972
pshrub_100	124.191	124.3122	31.4508	11.0001	0.0009	1.024	no, +	0.621	-1.3287	0.0235	0.0854
samepatch_1000	124.563	124.6842	31.8228	10.6278	0.0011	1.219	no, +	0.662	-1.7718	0.1977	0.9377
ppine_500	128.499	128.7439	35.8825	8.6920	0.0130	1.051	yes	0.682	-1.363	0.05	0.3794
popen_500						1.036	no, +			0.0355	
pmature_1000	128.848	128.9692	36.1078	6.3438	0.0118	0.972	no, -	0.591	1.2408	-0.0285	0.1922
ED	129.155	129.2762	36.4148	6.0359	0.0140	0.110	yes	0.638	2.6214	-2.209	0.4489
ppine_100	129.554	129.6752	36.8138	5.6373	0.0176	1.028	no, +	0.374	-0.8644	0.0271	0.0456
popen_500	129.922	130.0432	37.1818	5.2695	0.0217	1.038	no, +	0.635	-1.1644	0.0376	0.1162
ppine_500	131.093	131.2142	38.3528	4.0979	0.0429	1.056	yes	0.676	-0.8912	0.055	0.0071
pdisturb_1000	131.683	131.8042	38.9428	3.5086	0.0610	1.041	yes	0.483	-0.8235	0.0398	0.0751
edgeha_500	131.871	131.9922	39.1308	3.3202	0.0684	1.014	yes	0.584	-1.7009	0.0138	0.1586
pdisturb_500	132.194	132.3152	39.4538	2.9969	0.0834	1.048	yes	0.313	-0.7615	0.0468	0.0362

Table F21. (continued)

variable	AIC	AICc	Δ AICc	LR X2	LR p-value	Odds estimate	CI include 1?	ROC	B0	B1	GOF p-val
samepatch_100	132.270	132.3912	39.5298	2.9216	0.0874	2.793	yes	0.112	-1.7724	1.027	
pdisturb_100	132.425	132.5462	39.6848	2.7659	0.0963	1.120	yes	0.057	-0.707	0.1136	
pwater_500	132.690	132.8112	39.9498	2.5010	0.1138	0.464	yes	0.392	-0.4713	-0.7677	0.1279
popen_1000	132.734	132.8552	39.9938	2.4570	0.1170	1.041	yes	0.572	-1.0809	0.0405	0.0514
dopen	132.915	133.0362	40.1748	2.2758	0.1314	0.996	yes	0.468	-0.4171	-0.0038	0.1304
dwater	133.429	133.5502	40.6888	1.7625	0.1843	1.000	yes	0.446	-0.3576	-0.00037	0.0053
dshrub	133.488	133.6092	40.7478	1.7038	0.1918	0.995	yes	0.503	-0.4367	-0.00493	0.4314
dpine	133.491	133.6122	40.7508	1.7001	0.1923	0.999	yes	0.557	-0.414	-0.00071	0.8876
popen_100	133.691	133.8122	40.9508	1.5004	0.2206	1.008	yes	0.438	-0.8504	0.00811	0.3656
pshrub_1000	133.889	134.0102	41.1488	1.3025	0.2538	1.023	yes	0.598	-0.9721	0.0228	0.0017
pshrub_500	134.287	134.4082	41.5468	0.9041	0.3417	1.014	yes	0.599	-0.8806	0.0135	0.0106
pwater_100 *	134.346	134.4672	41.6058	0.8457	0.3578	0.001	yes	0.015	-0.6343	-8.6799	
ppine_1000	134.571	134.6922	41.8308	0.6203	0.4309	1.039	yes	0.508	-0.8074	0.0384	0.1754
edgeha_1000	134.631	134.7522	41.8908	0.5599	0.4543	1.007	yes	0.518	-1.1081	0.0069	0.0671
pwater_1000	134.714	134.8352	41.9738	0.4770	0.4898	1.660	yes	0.493	-0.7724	0.5066	0.7044
areaha	135.000	135.1212	42.2598	0.1912	0.6619	1.000	yes	0.364	-0.5885	-8.26E-07	0.0141
perimeter	135.009	135.1302	42.2688	0.1822	0.6695	1.000	yes	0.411	-0.5419	-0.00009	0.0524
edgeha_100	135.154	135.2752	42.4138	0.0370	0.8475	1.001	yes	0.467	-0.7203	0.000672	0.0752
ddisturb	135.188	135.3092	42.4478	0.0030	0.9561	1.000	yes	0.480	-0.659	0.00013	0.0004

* Maximum likelihood estimate may not exist! Validity of the model is questionable.

Table F22. Red-eyed vireo was present at 87 sampling points (N=102). AICc from test models was compared to the AIC Intercept Only value of 87.18 to determine the best models.

variable	AIC	AICc	ΔAICc	LR X2	LR p-value	Odds estimate	CI include 1?	ROC	B0	B1	GOF p-val
pmature_100	59.991	60.2359	0.0000	31.1939	< 0.0001	1.066	no, +	0.895	-0.7637	0.0637	0.9814
dopen						1.044	no, +			0.0432	
pdisturb_100	65.574	65.9864	5.7505	27.6105	< 0.0001	0.843	yes	0.874	1.9825	-0.1712	0.8367
pmature_100						1.032	yes			0.0315	
popen_100						0.976	no, -			-0.0247	
popen_100 ^{step}	69.689	69.9339	9.6980	21.4960	< 0.0001	0.949	no, -	0.846	4.7316	-0.052	0.3425
pshrub_100						0.962	no, -			-0.039	
pmature_100	70.583	70.7042	10.4683	18.6020	< 0.0001	1.055	no, +	0.808	0.4409	0.0531	0.6488
pmature_100	71.413	71.6579	11.4220	19.7720	< 0.0001	1.057	no, +	0.825	0.079	0.0551	0.3406
pshrub_100						1.010	yes			0.00996	
pmature_500	72.152	72.3969	12.1610	19.0327	< 0.0001	1.039	no, +	0.798	0.6043	0.0381	0.3552
popen_100						0.968	no, -			-0.033	
popen_100	75.488	75.6092	15.3733	13.6971	0.0002	0.970	no, -	0.662	2.7942	-0.0304	0.2050
dopen	75.591	75.7122	15.4763	13.5944	0.0002	1.031	no, +	0.657	0.8841	0.0303	0.8462
dmature	76.906	77.0272	16.7913	12.2790	0.0005	0.987	no, -	0.802	2.9588	-0.0129	0.0532
popen_500	76.993	77.2379	17.0020	14.1923	0.0008	0.969	yes	0.785	3.2193	-0.0317	0.2425
dmature						0.990	no, -			-0.0103	
popen_500	81.009	81.1302	20.8943	8.1763	0.0042	0.946	no, -	0.636	2.6538	-0.0555	0.7947
pdisturb_100	82.774	82.8952	22.6593	6.4105	0.0113	0.829	yes	0.133	1.9087	-0.1881	
pmature_500	84.957	85.0782	24.8423	4.2277	0.0398	1.029	no, +	0.651	0.0662	0.0283	0.7098
samepatch_500	85.082	85.2032	24.9673	4.1034	0.0428	0.745	no, -	0.582	2.5309	-0.2939	0.0159
pdisturb_500	85.444	85.5652	25.3293	3.7413	0.0531	0.947	no, -	0.287	1.9403	-0.0541	0.0129
edgeha_100	87.187	87.3082	27.0723	1.9976	0.1575	1.007	yes	0.614	1.1092	0.00669	0.3992
samepatch_1000	87.243	87.3642	27.1283	1.9419	0.1635	0.900	yes	0.610	2.374	-0.1051	0.5160
popen_1000	87.863	87.9842	27.7483	1.3217	0.2503	0.962	yes	0.561	2.1891	-0.0386	0.1797
pwater_500	87.985	88.1062	27.8703	1.2003	0.2733	2.167	yes	0.353	1.5965	0.7732	0.8477
pdisturb_1000	88.028	88.1492	27.9133	1.1566	0.2822	0.974	yes	0.414	1.8927	-0.0267	0.6623
pshrub_500	88.265	88.3862	28.1503	0.9202	0.3374	1.020	yes	0.530	1.4543	0.0199	0.3711
perimeter	88.347	88.4682	28.2323	0.8378	0.3600	1.000	yes	0.633	2.0664	-0.00024	0.4089

Table F22. (continued)

variable	AIC	AICc	ΔAICc	LR X2	LR p-value	Odds estimate	CI include 1?	ROC	B0	B1	GOF p-val
ppine_100	88.425	88.5462	28.3103	0.7600	0.3833	1.017	yes	0.217	1.6652	0.0164	0.6221
ED	88.471	88.5922	28.3563	0.7135	0.3983	2.654	yes	0.536	0.3106	0.9761	0.4732
pshrub_1000	88.528	88.6492	28.4133	0.6566	0.4177	1.023	yes	0.499	1.4596	0.023	< 0.0001
dwater	88.544	88.6652	28.4293	0.6409	0.4234	1.000	yes	0.444	1.5225	0.000311	0.1074
pwater_1000	88.614	88.7352	28.4993	0.5713	0.4498	0.484	yes	0.433	1.9449	-0.7263	0.7997
dshrub	88.664	88.7852	28.5493	0.5205	0.4706	0.997	yes	0.544	1.9152	-0.00312	0.3703
edgeha_1000	88.709	88.8302	28.5943	0.4762	0.4901	1.009	yes	0.549	1.1988	0.00868	0.0871
ddisturb	88.720	88.8412	28.6053	0.4653	0.4952	0.998	yes	0.662	1.9181	-0.002	0.0669
areaha	88.746	88.8672	28.6313	0.4392	0.5075	1.000	yes	0.649	1.8825	-1.51E-06	0.3537
pmature_1000	88.810	88.9312	28.6953	0.3748	0.5404	1.009	yes	0.483	1.1568	0.00905	0.1390
pwater_100 *	88.865	88.9862	28.7503	0.3198	0.5717	999.999	yes	0.011	1.7463	8.3773	
ppine_500	89.019	89.1402	28.9043	0.1661	0.6836	1.016	yes	0.288	1.6941	0.0164	0.0244
ppine_1000	89.074	89.1952	28.9593	0.1107	0.7393	1.024	yes	0.475	1.6675	0.0232	0.4630
samepatch_100	89.111	89.2322	28.9963	0.0741	0.7854	1.270	yes	0.066	1.5001	0.239	
pshrub_100	89.112	89.2332	28.9973	0.0725	0.7877	0.998	yes	0.392	1.8256	-0.00248	0.9575
edgeha_500	89.183	89.3042	29.0683	0.0019	0.9656	1.000	yes	0.287	1.7252	0.000436	0.1665
dpine	89.185	89.3062	29.0703	0.0004	0.9844	1.000	yes	0.110	1.7626	-0.00001	0.5387

* Maximum likelihood estimate may not exist! Validity of the model is questionable.

Table F23. Scarlet tanager was present at 31 sampling points (N=102). AICc from test models was compared to the AIC Intercept Only value of 127.29 to determine the best models.

variable	AIC	AICc	Δ AICc	LR X2	LR p-value	Odds estimate	CI include 1?	ROC	B0	B1	GOF p-val
pdisturb_500 dmature	112.197	112.4419	0.0000	19.0897	< 0.0001	0.901 0.983	yes no, -	0.749	0.1909	-0.1045 -0.0169	0.3562
dmature ^{step}	112.762	112.8832	0.4413	16.5242	< 0.0001	0.983	no, -	0.720	0.0936	-0.0171	0.5088
dopen	112.911	113.3234	0.8815	20.3760	0.0001	1.002	yes	0.779	-0.5594	0.00221	0.0287
dpine						1.001	yes			0.00095	
dmature						0.986	no, -			-0.0146	
pdisturb_1000 dmature dopen	113.592	114.0044	1.5625	19.6942	0.0002	0.953 0.985 1.003	yes no, - yes	0.776	-0.084	-0.0484 -0.0147 0.00277	0.0437
pmature_100 popen_100 dpine	114.970	115.3824	2.9405	18.3164	0.0004	1.017 0.984 1.001	no, + yes yes	0.767	-1.7398	0.0172 -0.0166 0.00107	0.1571
pmature_100	117.334	117.4552	5.0133	11.9529	0.0005	1.023	no, +	0.696	-1.8981	0.023	0.3560
pmature_100 dopen	118.860	119.1049	6.6630	12.4265	0.0020	1.021 1.002	no, + yes	0.716	-1.9149	0.0207 0.00175	0.2646
popen_100	121.254	121.3752	8.9333	8.0330	0.0046	0.976	no, -	0.520	-0.3718	-0.0242	0.1185
popen_500	122.316	122.4372	9.9953	6.9703	0.0083	0.946	no, -	0.657	-0.2027	-0.0555	0.0216
dpine	123.641	123.7622	11.3203	5.6459	0.0175	1.001	yes	0.572	-1.2978	0.00122	0.1903
edgeha_500	124.538	124.6592	12.2173	4.7491	0.0293	0.982	no, -	0.638	0.5052	-0.0185	0.2050
dopen	124.603	124.7242	12.2823	4.6832	0.0305	1.005	yes	0.608	-1.1804	0.00484	0.3642
pdisturb_500	124.925	125.0462	12.6043	4.3621	0.0367	0.865	yes	0.340	-0.677	-0.1446	0.0767
pdisturb_1000	124.932	125.0532	12.6113	4.3548	0.0369	0.931	yes	0.448	-0.6276	-0.0711	0.4373
pmature_500	125.404	125.5252	13.0833	3.8826	0.0488	1.023	yes	0.625	-2.3341	0.023	0.0027
pmature_500 edgeha_500	126.159	126.4039	13.9620	5.1280	0.0770	1.010 0.987	yes yes	0.637	-0.5233	0.0101 -0.0134	0.4564
ppine_500	126.973	127.0942	14.6523	2.3132	0.1283	0.947	yes	0.615	-0.6357	-0.0544	0.1430
pdisturb_100 *	127.074	127.1952	14.7533	2.2132	0.1368	0.329	yes	0.042	-0.7855	-1.1109	
ppine_1000	127.135	127.2562	14.8143	2.1515	0.1424	0.918	yes	0.577	-0.5121	-0.0852	0.1880

Table F23. (continued)

variable	AIC	AICc	Δ AICc	LR X2	LR p-value	Odds estimate	CI include 1?	ROC	B0	B1	GOF p-val
pmature_1000	127.185	127.3062	14.8643	2.1014	0.1472	1.018	yes	0.533	-2.0788	0.0182	0.5948
samepatch_1000	127.210	127.3312	14.8893	2.0768	0.1496	0.912	yes	0.532	-0.3531	-0.0922	0.6942
popen_1000	127.212	127.3332	14.8913	2.0749	0.1497	0.960	yes	0.579	-0.4321	-0.0406	0.7242
areaha	127.261	127.3822	14.9403	2.0256	0.1547	1.000	yes	0.595	-0.6208	-3.11E-06	0.0032
perimeter	128.030	128.1512	15.7093	1.2568	0.2623	1.000	yes	0.590	-0.5337	-0.00026	0.3340
ddisturb	128.153	128.2742	15.8323	1.1339	0.2869	0.997	yes	0.622	-0.6346	-0.00279	0.3863
samepatch_500	128.161	128.2822	15.8403	1.1255	0.2887	0.872	yes	0.379	-0.5242	-0.1373	0.3272
ppine_100	128.255	128.3762	15.9343	1.0314	0.3098	0.987	yes	0.246	-0.7425	-0.0135	0.3715
pshrub_500	128.257	128.3782	15.9363	1.0294	0.3103	1.015	yes	0.457	-1.0844	0.0148	0.0011
ED	128.470	128.5912	16.1493	0.8163	0.3663	2.137	yes	0.527	-1.9776	0.7592	0.0408
pwater_100 *	128.558	128.6792	16.2373	0.7289	0.3932	0.001	yes	0.014	-0.8145	-8.6106	
pshrub_1000	128.602	128.7232	16.2813	0.6851	0.4078	1.017	yes	0.489	-1.0691	0.017	0.1332
edgeha_100	128.854	128.9752	16.5333	0.4328	0.5106	0.998	yes	0.518	-0.5826	-0.00238	0.4165
samepatch_100	129.063	129.1842	16.7423	0.2235	0.6364	0.729	yes	0.082	-0.4879	-0.3154	
pshrub_100	129.084	129.2052	16.7633	0.2028	0.6524	0.997	yes	0.453	-0.7438	-0.00328	0.7337
dwater	129.085	129.2062	16.7643	0.2013	0.6537	1.000	yes	0.519	-0.9295	0.000121	0.0944
edgeha_1000	129.238	129.3592	16.9173	0.0486	0.8255	0.998	yes	0.489	-0.6903	-0.00211	0.0006
pwater_500	129.243	129.3642	16.9223	0.0432	0.8353	0.911	yes	0.284	-0.8044	-0.0927	0.6070
pwater_1000	129.268	129.3892	16.9473	0.0188	0.8911	0.900	yes	0.357	-0.804	-0.105	0.5518
dshrub	129.279	129.4002	16.9583	0.0075	0.9308	1.000	yes	0.375	-0.8432	0.000312	0.6817

* Maximum likelihood estimate may not exist! Validity of the model is questionable.

Table F24. Tufted titmouse was present at 63 sampling points (N=102). AICc from test models was compared to the AIC Intercept Only value of 137.7 to determine the best models.

variable	AIC	AICc	ΔAICc	LR X2	LR p-value	Odds estimate	CI include 1?	ROC	B0	B1	GOF p-val
pmature_100 ^{step}	126.842	127.0869	0.0000	14.8593	0.0006	1.026	no, +	0.714	-0.7249	0.0256	0.9944
ppine_100						1.029	no, +			0.0288	
ppine_100	128.782	129.0269	1.9400	12.9198	0.0016	1.031	no, +	0.666	1.1012	0.0308	0.9863
dmature						0.989	no, -			-0.0115	
pmature_100	128.617	129.0294	1.9425	15.0848	0.0017	1.024	no, +	0.720	-0.5378	0.0239	0.9099
pshrub_100						0.996	yes			-0.00382	
ppine_100						1.027	yes			0.0271	
pmature_100	129.800	129.9212	2.8343	9.9014	0.0017	1.020	no, +	0.671	-0.3049	0.0202	0.9999
dmature	130.710	130.9549	3.8680	10.9917	0.0041	0.993	no, -	0.660	1.3714	-0.00737	0.4755
pshrub_100						0.987	yes			-0.0126	
pmature_100	130.619	130.8639	3.7770	11.0823	0.0039	1.017	no, +	0.690	0.0373	0.0173	0.8246
pshrub_100						0.992	yes			-0.00821	
dmature	131.852	131.9732	4.8863	7.8498	0.0051	0.992	no, -	0.630	1.0846	-0.00826	0.4997
pshrub_100	134.487	134.6082	7.5213	5.2143	0.0224	0.985	no, -	0.516	0.9121	-0.0156	0.4805
edgeha_100	137.027	137.1482	10.0613	2.6751	0.1019	1.006	yes	0.590	-0.1039	0.00567	0.3229
pmature_500	137.230	137.3512	10.2643	2.4713	0.1159	1.016	yes	0.598	-0.5473	0.0163	0.6888
pdisturb_100	137.367	137.4882	10.4013	2.3342	0.1266	0.901	yes	0.051	0.5301	-0.1037	
popen_100	137.379	137.5002	10.4133	2.3224	0.1275	0.990	yes	0.457	0.724	-0.00995	0.4475
pdisturb_500	138.181	138.3022	11.2153	1.5211	0.2175	0.968	yes	0.308	0.556	-0.0324	0.0654
ddisturb	138.236	138.3572	11.2703	1.4652	0.2261	0.997	yes	0.614	0.6878	-0.00274	0.1460
edgeha_1000	138.243	138.3642	11.2773	1.4586	0.2271	1.011	yes	0.564	-0.242	0.0111	0.9427
pwater_500	138.250	138.3712	11.2843	1.4518	0.2282	1.713	yes	0.382	0.3467	0.5385	0.2932
dopen	138.301	138.4222	11.3353	1.4007	0.2366	1.003	yes	0.486	0.3032	0.00277	0.4192
ppine_100	138.681	138.8022	11.7153	1.0212	0.3122	1.012	yes	0.233	0.3971	0.0122	0.8575
pwater_100 *	138.732	138.8532	11.7663	0.9698	0.3247	999.999	yes	0.016	0.4636	8.7551	
pshrub_500	138.745	138.8662	11.7793	0.9564	0.3281	0.986	yes	0.556	0.7116	-0.0137	0.6362
pwater_1000	138.832	138.9532	11.8663	0.8698	0.3510	1.987	yes	0.492	0.3216	0.6867	0.7851
perimeter	138.836	138.9572	11.8703	0.8656	0.3522	1.000	yes	0.576	0.7086	-0.00019	0.0366
areaha	139.135	139.2562	12.1693	0.5666	0.4516	1.000	yes	0.539	0.5823	-1.33E-06	0.2526

Table F24. (continued)

variable	AIC	AICc	Δ AICc	LR X2	LR p-value	Odds estimate	CI include 1?	ROC	B0	B1	GOF p-val
pdisturb_1000	139.282	139.4032	12.3163	0.4199	0.5170	0.987	yes	0.374	0.5366	-0.0134	0.4543
popen_500	139.307	139.4282	12.3413	0.3946	0.5299	0.990	yes	0.533	0.6116	-0.00997	0.7017
edgeha_500	139.447	139.5682	12.4813	0.2542	0.6141	0.996	yes	0.499	0.7583	-0.0037	0.5194
dwater	139.503	139.6242	12.5373	1.1984	0.6560	1.000	yes	0.520	0.5742	-0.00011	0.3456
pmature_1000	139.507	139.6282	12.5413	0.1947	0.6590	1.005	yes	0.478	0.1502	0.00489	0.3604
popen_1000	139.520	139.6412	12.5543	0.1819	0.6697	0.989	yes	0.501	0.5918	-0.0108	0.7083
ppine_1000	139.627	139.7482	12.6613	0.0746	0.7848	1.014	yes	0.459	0.4259	0.0134	0.9838
samepatch_100	139.633	139.7542	12.6673	0.0689	0.7930	1.171	yes	0.076	0.3081	0.1579	
ppine_500	139.633	139.7542	12.6673	0.0686	0.7933	0.993	yes	0.501	0.5089	-0.00688	0.6556
samepatch_500	139.639	139.7602	12.6733	0.0624	0.8028	0.971	yes	0.374	0.5466	-0.029	0.1231
ED	139.640	139.7612	12.6743	0.0613	0.8044	0.820	yes	0.487	0.7786	-0.1986	0.0815
dshrub	139.682	139.8032	12.7163	0.0200	0.8875	1.000	yes	0.412	0.4573	0.000483	0.4420
samepatch_1000	139.684	139.8052	12.7183	0.0175	0.8947	1.008	yes	1.008	0.4385	0.00762	0.1515
dpine	139.699	139.8202	12.7333	0.0028	0.9575	1.000	yes	0.319	0.4701	0.000027	0.2197
pshrub_1000	139.701	139.8222	12.7353	0.0006	0.9806	1.000	yes	0.236	0.473	0.00048	0.3045

* Maximum likelihood estimate may not exist! Validity of the model is questionable.

Table F25. White-eyed vireo was present at 25 sampling points (N=102). AICc from test models was compared to the AIC Intercept Only value of 115.6 to determine the best models.

variable	AIC	AICc	ΔAICc	LR X2	LR p-value	Odds estimate	CI include 1?	ROC	B0	B1	GOF p-val
popen_100 ^{step}	100.560	101.1850	0.0000	23.0449	0.0001	0.969	no, -	0.809	-0.9114	-0.0315	0.3470
pshrub_100						1.037	no, +			0.036	
pshrub_500						0.940	no, -			-0.0618	
ppine_100						1.028	no, +			0.0276	
ppine_100	104.902	105.3144	4.1294	16.7031	0.0008	1.022	yes	0.761	-1.4937	0.0216	0.9382
popen_100						0.976	yes			-0.0242	
pshrub_100						1.018	yes			0.0177	
popen_100	105.768	106.0129	4.8279	13.8368	0.0010	0.974	yes	0.737	-1.1643	-0.0259	0.9521
pshrub_100						1.015	yes			0.0146	
popen_100	106.815	106.9362	5.7512	10.7901	0.0010	0.966	no, -	0.555	-0.565	-0.0349	0.2248
pshrub_100	108.388	108.5092	7.3242	9.2167	0.0024	1.023	no, +	0.630	-1.841	0.0229	0.3297
popen_100	108.477	108.8894	7.7044	13.1272	0.0044	0.961	no, -	0.719	-0.4112	-0.0397	0.8167
pshrub_500						0.987	yes			-0.0131	
ppine_100						1.017	yes			0.0164	
pdisturb_100 *	108.882	109.0032	7.8182	8.7228	0.0031	3.839	yes	0.120	-1.2528	1.3453	
pdisturb_500	111.910	112.0312	10.8462	5.6945	0.0170	1.069	no, +	0.326	-1.3058	0.0664	0.5436
pdisturb_1000	113.733	113.8542	12.6692	3.8712	0.0491	1.043	yes	0.375	-1.3311	0.0423	0.1052
dshrub	114.183	114.3042	13.1192	3.4213	0.0644	0.991	yes	0.575	-0.787	-0.00876	0.1467
pmature_1000	115.239	115.3602	14.1752	2.3661	0.1240	0.982	yes	0.561	0.1047	-0.0186	0.2964
ppine_100	115.336	115.4572	14.2722	2.2684	0.1320	1.018	yes	0.364	-1.2774	0.0177	0.1733
samepatch_500	115.469	115.5902	14.4052	2.1354	0.1439	1.202	yes	0.393	-1.5731	0.1837	0.2657
edgeha_100	115.772	115.8932	14.7082	1.8327	0.1758	1.005	yes	0.564	-1.7084	0.0053	0.0033
dmature	115.846	115.9672	14.7822	1.7584	0.1848	1.004	yes	0.567	-1.4409	0.00419	0.0693
pmature_100	115.983	116.1042	14.9192	1.6214	0.2029	0.991	yes	0.562	-0.7761	-0.0089	0.6384
pmature_500	116.399	116.5202	15.3352	1.2057	0.2722	0.987	yes	0.539	-0.3344	-0.0127	0.1739
pshrub_1000	116.491	116.6122	15.4272	1.1139	0.2912	1.023	yes	0.572	-1.4558	0.023	0.0600
popen_500	116.572	116.6932	15.5082	1.0322	0.3096	0.980	yes	0.533	-0.8812	-0.0199	0.0276
dopen	116.669	116.7902	15.6052	0.9355	0.3334	1.002	yes	0.595	-1.2877	0.00227	0.1297
edgeha_500	116.770	116.8912	15.7062	0.8346	0.3609	1.008	yes	0.548	-1.6961	0.00748	0.2760

Table F25. (continued)

variable	AIC	AICc	Δ AICc	LR X2	LR p-value	Odds estimate	CI include 1?	ROC	B0	B1	GOF p-val
pshrub_500	116.874	116.9952	15.8102	0.7301	0.3928	1.013	yes	0.583	-1.3552	0.0133	0.0148
dwater	116.898	117.0192	15.8342	1.7064	0.4006	1.000	yes	0.561	-1.3277	0.000237	0.3058
pwater_100 *	117.039	117.1602	15.9752	0.5655	0.4520	0.001	yes	0.013	-1.1119	-8.5159	
perimeter	117.055	117.1762	15.9912	0.5496	0.4585	1.000	yes	0.487	-0.9176	-0.00018	0.0012
dpine	117.157	117.2782	16.0932	0.4479	0.5033	1.000	yes	0.476	-1.2608	0.00037	0.2321
ppine_500	117.196	117.3172	16.1322	0.4084	0.5228	1.018	yes	0.485	-1.2057	0.018	0.5600
ED	117.235	117.3562	16.1712	0.3692	0.5434	0.570	yes	0.517	-0.2834	-0.5629	0.2075
samepatch_100	117.345	117.4662	16.2812	0.2598	0.6102	1.374	yes	0.077	-1.4736	0.3177	
popen_1000	117.350	117.4712	16.2862	0.2543	0.6140	0.985	yes	0.534	-0.9766	-0.0148	0.1454
pwater_1000	117.437	117.5582	16.3732	0.1672	0.6827	0.712	yes	0.419	-1.0469	-0.3391	0.4152
ppine_1000	117.492	117.6132	16.4282	0.1126	0.7372	1.018	yes	0.485	-1.199	0.018	0.0340
samepatch_1000	117.531	117.6522	16.4672	0.0741	0.7855	1.018	yes	0.471	-1.2208	0.0176	0.7582
pwater_500	117.534	117.6552	16.4702	0.0710	0.7899	0.879	yes	0.297	-1.0918	-0.1285	0.7585
areaha	117.589	117.7102	16.5252	0.0152	0.9017	1.000	yes	0.383	-1.106	-2.54E-07	0.2951
ddisturb	117.592	117.7132	16.5282	0.0131	0.9089	1.000	yes	0.347	-1.1029	-0.0003	0.4199
edgeha_1000	117.602	117.7232	16.5382	0.0022	0.9628	1.000	yes	0.311	-1.1563	0.000475	0.0293

* Maximum likelihood estimate may not exist! Validity of the model is questionable.

Table F26. Wood thrush was present at 37 sampling points (N=102). AICc from test models was compared to the AIC Intercept Only value of 135.61 to determine the best models.

variable	AIC	AICc	Δ AICc	LR X2	LR p-value	Odds estimate	CI include 1?	ROC	B0	B1	GOF p-val
dmature ^{step}	104.930	105.3424	0.0000	36.6860	< 0.0001	0.983	no, -	0.839	-1.1087	-0.0174	0.3385
dpine						1.003	no, +			0.00285	
ppine_100						1.072	no, +			0.0695	
dshrub	120.882	121.5070	16.1646	22.7344	0.0001	1.003	yes	0.746	-1.4128	0.00345	0.3226
dpine						1.002	no, +			0.00178	
dmature						0.995	yes			-0.00462	
dopen						1.005	yes			0.00455	
dmature	121.837	122.0819	16.7395	17.7791	0.0001	0.993	yes	0.733	-0.7405	-0.00752	0.2129
dpine						1.002	no, +			0.00175	
dpine	123.048	123.2929	17.9505	16.5683	0.0003	1.002	no, +	0.695	-1.7629	0.00181	0.0462
pmature_100						1.012	yes			0.0119	
dpine	124.319	124.4402	19.0978	13.2973	0.0003	1.002	no, +	0.617	-1.2718	0.0019	0.0554
popen_100	127.288	127.4092	22.0668	12.3278	0.0021	0.980	no, -	0.681	0.2279	-0.0202	0.8055
dmature						0.994	yes			-0.00629	
popen_100	128.627	128.7482	23.4058	8.9894	0.0027	0.977	no, -	0.533	-0.0935	-0.0237	0.7157
dopen	130.099	130.2202	24.8778	7.5169	0.0061	1.006	no, +	0.653	-0.9991	0.00626	0.1826
dmature	130.318	130.4392	25.0968	7.2979	0.0069	0.991	no, -	0.661	0.00236	-0.00895	0.1336
pmature_100	132.095	132.2162	26.8738	9.5210	0.0231	1.006	yes	0.682	-1.3099	0.0064	0.4531
dopen						1.005	yes			0.00474	
dshrub						1.003	yes			0.00313	
pmature_100	132.507	132.6282	27.2858	5.1091	0.0238	1.014	no, +	0.626	-1.1758	0.014	0.2576
popen_500	133.601	133.7222	28.3798	4.0151	0.0451	0.964	yes	0.588	-0.122	-0.0364	0.9149
dshrub	133.625	133.7462	28.4038	3.9910	0.0457	1.007	yes	0.511	-0.8924	0.00682	0.2390
ppine_500	134.822	134.9432	29.6008	2.7944	0.0946	1.046	yes	0.426	-0.758	0.0446	0.1368
edgeha_500	135.231	135.3522	30.0098	2.3856	0.1225	0.988	yes	0.645	0.3188	-0.012	0.0082
ppine_100	135.250	135.3712	30.0288	2.3666	0.1240	1.017	yes	0.230	-0.6976	0.0172	0.2430
perimeter	136.106	136.2272	30.8848	1.5101	0.2191	1.000	yes	0.563	-0.8703	0.00025	0.0128
areaha	136.122	136.2432	30.9008	1.4939	0.2216	1.000	yes	0.530	-0.7334	-2.176E-06	0.0681

Table F26. (continued)

variable	AIC	AICc	Δ AICc	LR X2	LR p-value	Odds estimate	CI include 1?	ROC	B0	B1	GOF p-val
edgeha_100	136.474	136.5952	31.2528	1.1419	0.2853	0.996	yes	0.558	-0.1798	-0.00371	0.4462
samepatch_100	136.595	136.7162	31.3738	1.0214	0.3122	1.797	yes	0.104	-1.204	0.5858	
pdisturb_500	136.633	136.7542	31.4118	0.9829	0.3215	0.970	yes	0.227	-0.503	-0.0307	0.2023
pwater_100 *	136.709	136.8302	31.4878	0.9068	0.3410	0.001	yes	0.015	-0.548	-8.7167	
pmature_500	136.740	136.8612	31.5188	0.8761	0.3493	1.010	yes	0.571	-1.2042	0.00998	0.0215
popen_1000	136.741	136.8622	31.5198	0.8749	0.3496	0.976	yes	0.526	-0.3165	-0.0246	0.3622
pdisturb_100	137.091	137.2122	31.8698	0.5248	0.4688	0.952	yes	0.031	-0.5412	-0.0494	
samepatch_500	137.162	137.2832	31.9408	0.4539	0.5005	1.082	yes	0.356	-0.7466	0.0785	0.3317
pshrub_100	137.371	137.4922	32.1498	0.2448	0.6208	0.997	yes	0.437	-0.474	-0.00344	0.8431
pdisturb_1000	137.375	137.4962	32.1538	0.2413	0.6233	0.989	yes	0.349	-0.5202	-0.0109	0.0010
ddisturb	137.400	137.5212	32.1788	0.2163	0.6419	1.001	yes	0.474	-0.6437	0.00107	0.4426
pshrub_1000	137.438	137.5592	32.2168	0.1779	0.6731	1.008	yes	0.477	-0.6797	0.00836	0.0048
pmature_1000	137.463	137.5842	32.2418	0.1531	0.6956	1.004	yes	0.494	-0.8648	0.00445	0.2038
pwater_1000	137.514	137.6352	32.2928	0.1022	0.7492	0.790	yes	0.423	-0.5084	-0.2351	0.2925
ED	137.560	137.6812	32.3388	0.0563	0.8124	1.212	yes	0.471	-0.8531	0.1924	0.5315
pwater_500	137.561	137.6822	32.3398	0.0555	0.8138	0.905	yes	0.309	-0.5371	-0.1002	0.1216
dwater	137.573	137.6942	32.3518	0.0430	0.8357	1.000	yes	0.516	-0.608	0.000054	0.0229
pshrub_500	137.579	137.7002	32.3578	0.0370	0.8474	1.003	yes	0.424	-0.6091	0.00273	0.0129
edgeha_1000	137.589	137.7102	32.3678	0.0272	0.8691	1.002	yes	0.440	-0.6626	0.0015	0.0226
ppine_1000	137.591	137.7122	32.3698	0.0252	0.8739	1.008	yes	0.304	-0.5949	0.00776	0.0370
samepatch_1000	137.615	137.7362	32.3938	0.0009	0.9763	0.998	yes	0.402	-0.5541	-0.00173	< 0.0001

* Maximum likelihood estimate may not exist! Validity of the model is questionable.

Table F27. Yellow-breasted chat was present at 64 sampling points (N=102). AICc from test models was compared to the AIC Intercept Only value of 136.7 to determine the best models.

variable	AIC	AICc	Δ AICc	LR X2	LR p-value	Odds estimate	CI include 1?	ROC	B0	B1	GOF p-val
areaha ^{step}	97.794	98.2064	0.0000	44.9064	< 0.0001	0.902	no, -	0.875	-0.7384	-0.1029	0.0059
dmature						1.018	no, +			0.0183	
pshrub_100						1.046	no, +			0.0448	
dmature	106.845	107.0899	8.8835	33.8554	< 0.0001	1.012	no, +	0.835	-1.0748	0.012	0.0095
pshrub_100						1.044	no, +			0.0432	
pmature_100	113.921	114.3334	16.1270	28.7796	< 0.0001	0.987	yes	0.806	0.4642	-0.0134	0.4577
pshrub_100						1.038	no, +			0.0375	
dopen						0.998	yes			-0.00159	
perimeter	114.724	114.9689	16.7625	25.9768	< 0.0001	0.999	yes	0.809	4.9546	-0.00062	0.1253
pmature_500						0.946	no, -			-0.0552	
pshrub_100	115.187	115.3082	17.1018	23.5142	< 0.0001	1.044	no, +	0.693	-0.355	0.0428	0.3648
pshrub_500	118.347	118.4682	20.2618	20.3536	< 0.0001	1.085	no, +	0.796	-0.6279	0.0812	0.2372
pmature_500	120.022	120.1432	21.9368	18.6789	< 0.0001	0.947	no, -	0.767	4.1388	-0.0542	0.3161
pshrub_1000	120.924	121.0452	22.8388	17.7766	< 0.0001	1.106	no, +	0.756	-0.7069	0.1003	0.0528
dmature	122.391	123.0160	24.8096	22.3098	0.0002	1.013	no, +	0.740	0.3041	0.013	0.7916
dshrub						0.995	yes			-0.00496	
ddisturb						0.995	yes			-0.00543	
dopen						1.001	yes			0.000508	
pmature_100	123.848	123.9692	25.7628	14.8530	0.0001	0.976	no, -	0.705	1.6286	-0.0247	0.6573
dmature	123.855	123.9762	25.7698	14.8459	0.0001	1.014	no, +	0.704	-0.3104	0.014	0.2649
dmature	123.827	124.0719	25.8655	16.8739	0.0002	1.013	no, +	0.743	-1.1842	0.0124	0.0249
edgeha_500						1.014	yes			0.0134	
pmature_1000	130.095	130.5074	32.3010	12.6060	0.0056	0.970	yes	0.712	3.1961	-0.0306	0.7607
edgeha_1000						0.998	yes			-0.00179	
dshrub						0.991	no, -			-0.00927	
perimeter	130.848	130.9692	32.7628	7.8532	0.0051	0.999	yes	0.600	1.2456	-0.00059	0.3526
areaha	131.133	131.2542	33.0478	7.5678	0.0059	1.000	yes	0.584	0.9201	-5.16E-06	0.3139
dshrub	131.358	131.4792	33.2728	7.3431	0.0067	0.991	no, -	0.594	0.9777	-0.00953	0.1971

Table F27. (continued)

variable	AIC	AICc	Δ AICc	LR X2	LR p-value	Odds estimate	CI include 1?	ROC	B0	B1	GOF p-val
edgeha_500	131.419	131.5402	33.3338	7.2820	0.0070	1.022	no, +	0.664	-1.0815	0.0221	0.0565
ddisturb	132.097	132.2182	34.0118	6.6034	0.0102	0.994	no, -	0.493	0.9814	-0.00601	0.0122
pmature_1000	132.531	132.6522	34.4458	6.1697	0.0130	0.970	no, -	0.634	2.6447	-0.0307	0.0623
edgeha_1000	134.744	134.8652	36.6588	3.9568	0.0467	1.019	yes	0.610	-0.6889	0.0187	0.1287
dopen	134.971	135.0922	36.8858	3.7300	0.0534	0.996	yes	0.486	0.8166	-0.00425	0.3451
pwater_500	135.523	135.6442	37.4378	3.1776	0.0747	0.478	yes	0.372	0.7265	-0.7386	0.3631
pdisturb_100 *	135.851	135.9722	37.7658	2.8503	0.0914	3.097	yes	0.047	0.4733	1.1303	
ppine_100	137.077	137.1982	38.9918	1.6239	0.2025	1.016	yes	0.277	0.4176	0.016	0.2087
edgeha_100	137.243	137.3642	39.1578	1.4574	0.2273	1.004	yes	0.558	0.0898	0.00417	0.1053
samepatch_500	137.407	137.5282	39.3218	1.2934	0.2554	1.148	yes	0.383	0.2113	0.1382	0.5870
pdisturb_500	137.535	137.6562	39.4498	1.1662	0.2802	1.034	yes	0.280	0.4557	0.0337	0.3569
pdisturb_1000	137.633	137.7542	39.5478	1.0681	0.3014	1.024	yes	0.444	0.4305	0.0241	0.0792
popen_1000	137.694	137.8152	39.6088	1.0069	0.3157	0.975	yes	0.603	0.7888	-0.0255	0.0049
popen_100	137.698	137.8192	39.6128	1.0024	0.3167	0.993	yes	0.526	0.6813	-0.00656	0.1532
pwater_100 *	137.763	137.8842	39.6778	0.9380	0.3328	999.999	yes	0.016	0.5055	8.7356	
ppine_500	137.769	137.8902	39.6838	0.9322	0.3343	1.029	yes	0.631	0.4101	0.0281	0.1443
samepatch_1000	137.837	137.9582	39.7518	0.8635	0.3528	1.056	yes	0.509	0.2305	0.0549	0.4705
ED	137.866	137.9872	39.7808	0.8348	0.3609	0.479	yes	0.573	1.6312	-0.7352	0.6056
dwater	138.326	138.4472	40.2408	0.3746	0.5405	1.000	yes	0.493	0.6522	-0.00016	0.4419
popen_500	138.363	138.4842	40.2778	0.3381	0.5609	1.010	yes	0.438	0.3983	0.00956	0.0368
ppine_1000	138.567	138.6882	40.4818	0.1339	0.7144	1.018	yes	0.492	0.4489	0.0182	0.4791
samepatch_100	138.656	138.7772	40.5708	0.0444	0.8331	1.135	yes	0.060	0.3834	0.127	
dpine	138.692	138.8132	40.6068	0.0085	0.9267	1.000	yes	0.410	0.5377	-0.00005	0.0434
pwater_1000	138.701	138.8222	40.6158	0	0.9949	1.005	yes	0.042	0.5202	0.00469	0.1944

* Maximum likelihood estimate may not exist! Validity of the model is questionable.

Appendix G. Significant variables ($P < 0.05$) identified from site-specific and landscape level single variable and multi-variable models.

AMCR
MICROSITE **LANDSCAPE**
 - dpine

AMGO
MICROSITE **LANDSCAPE**
 cancov pmature_100
 cvstem popen_1000
 condenb popen_100
 grasscov pshrub_100
 cvs dmature
 hwdenb dshrub
 sumconden dopen
 canht
 denmat
 hwdenmat
 totalden
 cvtot
 cva
 mdstem

AMRO
MICROSITE **LANDSCAPE**
 popen_1000
 pmature_100
 popen_500
 dshrub

BAWWA
MICROSITE **LANDSCAPE**
 grasscov edgeha_1000
 mdstem pdisturb_1000
 sumconden popen_500
 hwdenmat pmature_100
 cancov ED
 canht dmature
 hwdenb popen_100
 condens pmature_500
 denmat pdisturb_500
 cvb ppine_100
 condena

Appendix G. (continued)

BLJA

MICROSITE	LANDSCAPE
condens	dmature
cvstem	edgeha_500
cva	ppine_1000
cvb	pdisturb_1000
	pmature_500
	popen_500
	ddisturb
	pmature_100
	pmature_1000
	popen_1000
	ppine_500

BTGWA

MICROSITE	LANDSCAPE
canht	popen_500
cvb	pshrub_1000
hwdenmat	pmature_100
cancov	dmature
denmat	perimeter
mdstem	pmature_500
hwdens	dopen
grasscov	edgeha_500
hwdenb	pshrub_100
	pshrub_500
	pmature_1000
	dwater
	pdisturb_1000
	pdisturb_500

BWWA

MICROSITE	LANDSCAPE
dens	perimeter
totalden	ED
mcstem	dopen
cvstem	pshrub_100
hwdens	pwater_1000
canht	popen_100
cancov	ddisturb
denmat	popen_1000
	pshrub_500
	popen_500
	ppine_500
	edgeha_100
	dshrub
	dopen
	areaha
	pshrub_1000
	ppine_1000
	pwater_500

CACH

MICROSITE	LANDSCAPE
grasscov	dmature
cvb	popen_1000
mdstem	popen_500
mcstem	samepatch_500
cancov	pmature_100
hwdenb	perimeter
	pmature_500
	pwater_1000
	samepatch_1000
	popen_100
	areaha
	pmature_1000
	ppine_100
	ppine_500

Appendix G. (continued)

CAWR

MICROSITE	LANDSCAPE
sumhwden	perimeter
hwdens	dwater
	edgeha_1000
	popen_1000
	pwater_500
	areaha
	edgeha_100
	popen_500
	dshrub
	pshrub_500
	ddisturb
	popen_100
	samepatch_1000

CHSP

MICROSITE	LANDSCAPE
totalden	perimeter
cvtot	popen_100
mdstem	pwater_1000
grasscov	areaha
canht	dopen
cancov	pshrub_1000
cvs	pmature_1000
dena	pwater_500
cvstem	

COYE

MICROSITE	LANDSCAPE
sumconden	ppine_100
mdstem	ED
canht	edgeha_500
grasscov	dmature
condenb	ppine_500
hwdena	perimeter
hwdenmat	dpine
condena	dmature
condens	samepatch_1000
dena	pmature_500
denmat	samepatch_500
	ppine_1000
	pmature_100
	pmature_1000
	edgeha_1000
	edgeha_100
	pwater_1000
	samepatch_100
	areaha

DOWO

MICROSITE	LANDSCAPE
	dshrub

Appendix G. (continued)

EATO	
MICROSITE	LANDSCAPE
canht	perimeter
sumhwden	pmature_100
condens	dshrub
hwdens	dopen
mdstem	edgeha_500
dens	popen_100
cancov	pshrub_100
grasscov	dmature
denmat	pmature_500
hwdenmat	samepatch_1000
hwdena	pdisturb_500
condenmat	ppine_500
condena	pdisturb_1000
	areaha
	ddisturb
	pshrub_500
	edgeha_100

HOWA	
MICROSITE	LANDSCAPE
grasscov	dopen
condenb	dmature
canht	popen_100
mdstem	pwater_500
cancov	pmature_100
hwdenmat	popen_500
totalden	
hwdenb	
denmat	
cvstem	
cvtot	
dens	

FISP	
MICROSITE	LANDSCAPE
canht	dwater
grasscov	popen_500
dens	pmature_100
sumconden	ppine_500
cvmat	dpine
mdstem	dmature
cancov	ED
hwdenmat	popen_100
hwdenb	popen_1000
denmat	pmature_500
hwdens	pmature_1000
condens	dopen
cvstem	samepatch_1000
totalden	
cvb	

INBU	
MICROSITE	LANDSCAPE
denmat	perimeter
cvstem	dopen
canht	dshrub
cvs	pmature_100
cancov	popen_100
cvtot	edgeha_500
hwdenmat	pmature_500
mdstem	pshrub_500
condenmat	edgeha_100
cva	ddisturb
	samepatch_1000
	pshrub_100
	edgeha_1000
	pdisturb_1000
	ppine_500
	areaha

Appendix G. (continued)

MODO

MICROSITE	LANDSCAPE
mdstem	perimeter
mcstem	dopen
denmat	dshrub
totalden	pmature_100
	popen_100
	edgeha_500
	pmature_500
	pshrub_500
	edgeha_100
	ddisturb
	samepatch_1000
	pshrub_100
	edgeha_1000
	pdisturb_1000
	ppine_500
	areaha

NOCA

MICROSITE	LANDSCAPE
condenmat	dshrub
cvs	popen_1000
cvb	popen_500
denmat	edgeha_100
canht	pshrub_500
cancov	ddisturb
cvtot	pshrub_1000
grasscov	pshrub_100
hwdenmat	perimeter
cvstem	dopen
cva	pwater_1000
	areaha
	pwater_500

OVEN

MICROSITE	LANDSCAPE
grasscov	pmature_100
mdstem	ppine_100
denmat	pshrub_100
cancov	popen_100
canht	dopen
hwdenmat	perimeter
cvtot	dshrub
totalden	dmature
condenmat	ddisturb
hwdenb	popen_500
denb	pwater_500
dena	areaha

PIWO

MICROSITE	LANDSCAPE
	edgeha_100
	popen_1000
	pmature_100
	pmature_500
	dmature
	popen_500
	ddisturb
	perimeter
	areaha

Appendix G. (continued)

PRWA

MICROSITE	LANDSCAPE
grasscov	samepatch_500
cvs	pmature_100
hwdens	ppine_1000
hwdena	dmature
hwdenb	pshrub_100
sumhwden	ED
canht	popen_500
mcstem	pmature_500
dens	samepatch_1000
denmat	ppine_500
hwdenmat	pmature_1000
cancov	ppine_100
mdstem	
cvb	
condenmat	

REVI

MICROSITE	LANDSCAPE
cancov	pmature_100
cva	dopen
canht	pdisturb_100
totalden	popen_100
cvstem	pshrub_100
mdstem	pmature_500
grasscov	dmature
denb	popen_500
dena	samepatch_500
hwdenb	
condenb	

SCTA

MICROSITE	LANDSCAPE
grasscov	pdisturb_500
hwdenb	dmature
hwdena	dopen
cancov	dpine
canht	pdisturb_1000
hwdenmat	pmature_100
sumhwden	popen_100
mdstem	popen_500
hwdens	edgeha_500
denmat	pmature_500

TUTI

MICROSITE	LANDSCAPE
cancov	pmature_100
cvstem	ppine_100
canht	dmature
denmat	pshrub_100
totalden	
hwdens	
grasscov	
denb	
hwdenmat	

Appendix G. (continued)

WEVI	
MICROSITE	LANDSCAPE
cvs	popen_100
cvstem	pshrub_100
canht	pshrub_500
hwdens	ppine_100
dens	pdisturb_500
cvtot	pdisturb_1000
sumhwden	

WOTH	
MICROSITE	LANDSCAPE
cancov	dmature
grasscov	dpine
cvmat	ppine_100
denmat	dshrub
hwdenmat	dopen
condenmat	pmature_100
dena	popen_100
denb	popen_500
canht	
totalden	
mdstem	
hwdenb	
hwdena	
cvs	
cvtot	
cvstem	
sumconden	

YBCH	
MICROSITE	LANDSCAPE
dens	areaha
canht	dmature
cvs	pshrub_100
hwdens	pmature_100
cvtot	dopen
sumhwden	perimeter
condens	pmature_500
hwdenmat	pshrub_500
hwdenb	pshrub_1000
denmat	dshrub
cvb	ddisturb
	edgeha_500
	pmature_1000
	edgeha_1000

Appendix H. Logistic regression model results relating avian presence to site-specific and landscape level habitat data (mixed scale).

Superscript “step” indicates the model was selected from all variables (n=33) in stepwise logistic regression. Single variable and multi-variable models are listed from lowest to highest AICc. Models with delta AICc < 2 were considered to be equivalent.

Mixed models were not obtained for American crow, American robin, downy woodpecker, and pileated woodpecker because of the lack of significant site-specific habitat variables.

Table H1. American goldfinch was present at 51 sampling points (N=102). AICc from test models was compared to the AIC Intercept Only value of 143.4 to determine the best models.

variable	AIC	AICc	Δ AICc	LR X2	LR p-value	Odds estimate	CI include 1?	ROC	B0	B1	GOF p-val
cv ^s _{step}	114.022	114.4344	0.0000	35.3805	< 0.0001	1.012	no, +	0.821	1.2065	0.012	0.8400
pmature_100						0.964	no, -			-0.0363	
popen_1000						0.937	no, -			-0.0646	
cvstem	119.208	119.6204	5.1860	30.1941	< 0.0001	1.017	no, +	0.796	-2.9607	0.0166	0.7646
popen_100						1.030	no, +			0.0298	
pshrub_100						1.035	no, +			0.0344	
pmature_100	120.635	121.0474	6.6130	28.7673	< 0.0001	0.966	no, -	0.795	0.4531	-0.0346	0.3874
canht						1.008	yes			0.00838	
cvtot						1.013	no, +			0.0134	
cancov	121.784	122.4090	7.9746	29.6179	< 0.0001	0.970	no, -	0.792	1.2587	-0.0306	0.2605
popen_1000						0.956	yes			-0.0449	
cvstem						1.010	yes			0.01	
dshrub						0.993	yes			-0.00711	
grasscov	128.917	129.3294	14.8950	20.4850	0.0001	1.014	yes	0.743	-1.9669	0.014	0.2962
dmature						1.006	yes			0.00611	
cv ^s						1.011	yes			0.011	

Table H2. Black-and-white warbler was present at 62 sampling points (N=102). AICc from test models was compared to the AIC Intercept Only value of 138.62 to determine the best models.

variable	AIC	AICc	Δ AICc	LR X2	LR p-value	Odds estimate	CI include 1?	ROC	B0	B1	GOF p-val
mdstem ^{step}	79.148	80.3395	0.0000	71.4714	< 0.0001	1.000	yes	0.933	-6.4579	-0.00039	0.0785
edgeha_1000						1.049	no, +			0.0479	
pdisturb_1000						0.828	no, -			-0.1884	
popen_500						0.893	no, -			-0.1135	
pmature_100						1.056	no, +			0.0546	
ED						29.465	no, +			3.3832	
hwdenmat	101.532	101.9444	21.6049	43.0873	< 0.0001	0.995	yes	0.857	-4.0051	-0.00531	0.3534
pmature_100						1.056	no, +			0.0544	
ED						6.192	yes			1.8232	
canht	101.879	102.1239	21.7844	40.7405	< 0.0001	0.995	yes	0.834	2.2379	-0.00522	0.3930
dmature						0.976	no, -			-0.0246	
grasscov	103.651	104.0634	23.7239	40.9686	< 0.0001	0.988	yes	0.845	-0.1671	-0.012	0.7892
pmature_100						1.040	no, +			0.0392	
ppine_100						0.987	yes			-0.0134	
edgeha_1000	122.457	123.0820	42.7425	22.1620	< 0.0001	1.021	yes	0.781	-1.1133	0.021	0.7718
hwdenmat						1.015	no, +			0.015	
pdisturb_1000						0.919	no, -			-0.084	

Table H3. Blue jay was present at 25 sampling points (N=102). AICc from test models was compared to the AIC Intercept Only value of 115.6 to determine the best models.

variable	AIC	AICc	Δ AICc	LR X2	LR p-value	Odds estimate	CI include 1?	ROC	B0	B1	GOF p-val
cvstem ^{step}	91.987	92.3994	0.0000	29.6172	< 0.0001	1.022	no, +	0.831	-0.8547	0.0222	0.6164
dmature						0.972	no, -			-0.0288	
ppine_1000						0.736	no, -			-0.3064	
cvstem	96.380	96.7924	4.3930	25.2242	< 0.0001	1.017	no, +	0.806	-1.0429	0.0168	0.5700
dmature						0.975	no, -			-0.0252	
ddisturb						0.995	yes			-0.00537	
cvstem	97.079	97.3239	4.9245	22.5253	< 0.0001	1.020	no, +	0.784	-1.7045	0.0202	0.3357
dmature						0.976	no, -			-0.0243	
cvstem	104.369	104.6139	12.2145	15.2356	0.0005	1.018	no, +	0.746	-3.9385	0.0176	0.1672
pmature_100						1.027	no, +			0.0265	
cva	108.129	108.5414	16.1420	13.4755	0.0037	1.008	yes	0.740	-3.058	0.00769	0.0977
cvb						1.003	yes			0.00349	
pmature_100						1.020	no, +			0.0197	

Table H4. Black-throated green warbler was present at 21 sampling points (N=102). AICc from test models was compared to the AIC Intercept Only value of 105.72 to determine the best models.

variable	AIC	AICc	Δ AICc	LR X2	LR p-value	Odds estimate	CI include 1?	ROC	B0	B1	GOF p-val
grasscov	86.819	87.2314	0.0000	24.9050	< 0.0001	1.010	yes	0.834	-3.9188	0.01	0.7396
pmature_100						1.046	no, +			0.045	
pshrub_500						0.970	yes			-0.0307	
hwdenmat	86.860	87.2724	0.0410	24.8639	< 0.0001	1.002	yes	0.820	-7.5903	0.00232	0.4375
cancov						1.011	yes			0.0105	
pmature_500						1.082	no, +			0.0789	
canht	87.370	87.7824	0.5510	24.3539	< 0.0001	1.143	no, +	0.822	-1.9219	0.1333	0.0283
dopen						1.000	yes			0.000116	
perimeter						0.999	yes			-0.00145	
denmat	90.688	90.9329	3.7015	19.0355	< 0.0001	1.004	yes	0.807	-0.4579	0.00396	0.0535
dmature						0.977	no, -			-0.0229	
hwdenmat	92.580	92.9924	5.7610	19.1433	0.0003	1.003	yes	0.807	0.1136	0.00251	0.1275
cancov						0.991	yes			-0.00905	
dmature						0.973	no, -			-0.0272	

Table H5. Blue-winged warbler was present at 46 sampling points (N=102). AICc from test models was compared to the AIC Intercept Only value of 142.42 to determine the best models.

variable	AIC	AICc	Δ AICc	LR X2	LR p-value	Odds estimate	CI include 1?	ROC	B0	B1	GOF p-val
canht	96.872	98.063489	0.0000	57.5482	< 0.0001	1.017	yes	0.905	4.3649	0.0171	0.3691
perimeter						0.999	yes			-0.00096	
dopen						0.989	no, -			-0.0107	
pshrub_100						1.050	no, +			0.0489	
pwater_1000						0.016	no, -			-4.1518	
ED						0.083	no, -			-2.4837	
cancov	98.697	99.5812	1.5177	53.7233	< 0.0001	1.010	yes	0.877	0.5838	0.00951	0.9817
perimeter						0.999	yes			-0.00109	
dopen						0.989	yes			-0.011	
pshrub_100						1.048	no, +			0.0464	
pwater_1000						0.035	no, -			-3.3578	
denmat	114.784	115.1964	17.1329	33.6359	< 0.0001	1.008	yes	0.805	-0.7189	0.00773	0.3752
dopen						0.987	no, -			-0.0132	
pshrub_100						1.042	no, +			0.0413	
dens	119.794	120.2064	22.1429	28.6261	< 0.0001	1.001	yes	0.799	-2.4665	0.000798	0.3933
cvstem						1.013	no, +			0.0128	
pshrub_100						1.034	no, +			0.0331	
cvstem	120.693	121.1054	23.0419	27.7272	< 0.0001	1.012	yes	0.792	-1.9782	0.012	0.5147
popen_100						0.994	yes			-0.00625	
shrub_100						1.035	no, +			0.0349	

Table H6. Carolina chickadee was present at 55 sampling points (N=102). AICc from test models was compared to the AIC Intercept Only value of 142.77 to determine the best models.

variable	AIC	AICc	Δ AICc	LR X2	LR p-value	Odds estimate	CI include 1?	ROC	B0	B1	GOF p-val
cancov	103.497	104.1220	0.0000	47.2772	< 0.0001	1.022	yes	0.856	2.1684	0.0217	0.7648
mcstem						0.989	no, -			-0.0109	
dmature						0.986	no, -			-0.0141	
popen_1000						0.851	no, -			-0.1612	
mcstem ^{step}	104.829	105.2414	1.1194	43.9452	< 0.0001	0.991	no, -	0.855	2.9612	-0.00888	0.7231
dmature						0.982	no, -			-0.0181	
popen_1000						0.879	no, -			-0.129	
hwdenb	112.266	112.6784	8.5564	36.5075	< 0.0001	1.006	yes	0.820	1.9227	0.00562	0.1744
dmature						0.985	no, -			-0.0155	
popen_1000						0.896	no, -			-0.1095	
mdstem	117.026	117.4384	13.3164	31.7484	< 0.0001	1.000	yes	0.799	1.3487	0.000286	0.1571
mcstem						0.989	no, -			-0.0107	
popen_1000						0.885	no, -			-0.1225	
cvs	123.511	123.9234	19.8014	25.2629	< 0.0001	1.011	no, +	0.786	-1.4079	0.0105	0.7702
pmature_100						1.027	no, +			0.027	
areaha						0.958	no, -			-0.0425	

Table H7. Carolina wren was present at 72 sampling points (N=102). AICc from test models was compared to the AIC Intercept Only value of 125.58 to determine the best models.

variable	AIC	AICc	Δ AICc	LR X2	LR p-value	Odds estimate	CI include 1?	ROC	B0	B1	GOF p-val
sumhwden	82.543	83.734489	0.0000	55.0393	< 0.0001	1.001	yes	0.904	-0.5186	0.00119	0.2991
perimeter						0.999	yes			-0.0011	
dwater						1.002	yes			0.00153	
edgeha_1000						1.039	yes			0.0385	
popen_1000						0.844	no, -			-0.1696	
pwater_500						4.597	yes			1.5255	
hwdens	82.562	83.753489	0.0190	55.0207	< 0.0001	1.001	yes	0.906	-0.5811	0.00134	0.3307
perimeter						0.999	yes			-0.00103	
dwater						1.002	yes			0.00158	
edgeha_1000						1.043	yes			0.0418	
popen_1000						0.844	no, -			-0.1702	
pwater_500						4.792	yes			1.567	
hwdens	95.874	96.1189	12.3844	33.7083	< 0.0001	1.002	yes	0.791	1.97	0.00183	0.3028
perimeter						0.999	no, -			-0.00128	
hwdens	98.488	98.7329	14.9984	31.0946	< 0.0001	1.002	yes	0.788	1.111	0.00223	0.3446
areaha						0.894	no, -			-0.1126	
sumhwden	103.418	103.8304	20.0959	28.1643	< 0.0001	1.002	yes	0.807	1.1135	0.00153	0.1089
dshrub						0.991	yes			-0.00864	
ddisturb						0.992	no, -			-0.00816	

Table H8. Chipping sparrow was present at 46 sampling points (N=102). AICc from test models was compared to the AIC Intercept Only value of 142.42 to determine the best models.

variable	AIC	AICc	Δ AICc	LR X2	LR p-value	Odds estimate	CI include 1?	ROC	B0	B1	GOF p-val
totalden ^{step} areaha	123.908	124.1529	0.000	22.5121	< 0.0001	0.999 0.940	no, - no, -	0.761	1.3257	-0.00182 -0.0614	0.4386
totalden cvstem popen_100 pshrub_1000	129.594	130.2190	6.066	20.8265	0.0003	0.999 1.010 1.004 0.973	yes yes yes yes	0.755	0.0881	-0.00085 0.00963 0.00361 -0.0274	0.4922
totalden dopen	129.997	130.2419	6.089	16.4229	0.0003	0.999 0.997	yes yes	0.710	0.8524	-0.00096 -0.00288	0.0045
grasscov pmature_1000	130.881	131.1259	6.973	15.5390	0.0004	1.020 1.028	no, + no, +	0.725	-3.0841	0.0199 0.0272	0.5780
cancov cvstem pmature_1000	131.712	132.1244	7.971	16.7079	0.0008	0.982 1.009 1.024	no, - yes yes	0.727	-1.7493	-0.0187 0.00903 0.024	0.7885

Table H9. Common yellowthroat was present at 38 sampling points (N=102). AICc from test models was compared to the AIC Intercept Only value of 136.7 to determine the best models.

variable	AIC	AICc	Δ AICc	LR X2	LR p-value	Odds estimate	CI include 1?	ROC	B0	B1	GOF p-val
grasscov ^{step} ppine_100	109.674	109.9189	0.0000	31.0273	< 0.0001	1.019 1.093	no, + no, +	0.783	-2.0362	0.0184 0.0886	0.5148
grasscov ppine_100 mdstem	109.963	110.3754	0.4565	32.7382	< 0.0001	1.010 1.087 1.000	yes no, + yes	0.762	-1.1517	0.0097 0.0838 -0.00023	0.1353
sumconden ppine_100 pmature_100	116.491	116.9034	6.9845	26.2097	< 0.0001	1.000 1.081 0.911	yes no, + yes	0.739	-0.5769	-0.00003 0.0778 -0.0089	0.9962
edgeha_500 dmature grasscov	126.153	126.3979	16.4790	16.5478	0.0009	1.025 1.004 1.005	no, + yes yes	0.692	-3.0172	0.0248 0.00445 0.00505	0.2362
grasscov dpine dmature	129.986	130.2309	20.3120	12.7154	0.0053	0.999 0.999 1.009	yes yes no, +	0.720	-0.7476	-0.00109 -0.00108 0.00848	0.4736

Table H10. Eastern towhee was present at 81 sampling points (N=102). AICc from test models was compared to the AIC Intercept Only value of 105.72 to determine the best models.

variable	AIC	AICc	Δ AICc	LR X2	LR p-value	Odds estimate	CI include 1?	ROC	B0	B1	GOF p-val
sumhwden step	63.212	63.6244	0.0000	48.5117	< 0.0001	1.005	no, +	0.923	4.0044	0.00524	0.9942
pmature_100						0.931	no, -			-0.0714	
areaha						0.871	no, -			-0.1379	
canht	79.898	80.3104	16.6860	31.8259	< 0.0001	0.966	yes	0.852	4.1996	-0.0345	0.2082
mdstem						1.000	yes			0.000051	
pmature_100						0.958	no, -			-0.043	
hwdenmat	82.602	83.0144	19.3900	29.1216	< 0.0001	1.001	yes	0.852	1.4047	0.00104	0.4415
dshrub						0.984	no, -			-0.0165	
dmature						1.016	no, +			0.0164	
dens	84.862	85.2744	21.6500	26.8618	< 0.0001	1.003	yes	0.811	1.7908	0.00297	0.3130
dopen						0.994	yes			-0.00604	
dshrub						0.986	no, -			-0.0145	
mdstem	89.394	89.8064	26.1820	22.3293	< 0.0001	1.000	yes	0.791	6.6541	-0.00005	0.2871
pmature_500						0.934	no, -			-0.068	
ddisturb						0.995	yes			-0.00496	

Table H11. Field sparrow was present at 52 sampling points (N=102). AICc from test models was compared to the AIC Intercept Only value of 143.36 to determine the best models.

variable	AIC	AICc	Δ AICc	LR X2	LR p-value	Odds estimate	CI include 1?	ROC	B0	B1	GOF p-val
grasscov ^{step}	73.512	74.1370	0.0000	77.8511	< 0.0001	1.040	no, +	0.927	-1.2186	0.0396	0.2201
dwater						0.999	yes			-0.00119	
popen_500						1.167	no, +			0.1546	
pmature_100						0.971	no, -			-0.0295	
grasscov	80.436	80.8484	6.7114	68.9268	< 0.0001	1.029	no, +	0.914	-1.2525	0.0281	0.1208
popen_500						1.129	no, +			0.1217	
pmature_100						0.966	no, -			-0.0346	
canht	89.903	90.3154	16.1784	59.4594	< 0.0001	0.828	no, -	0.903	0.6	-0.1883	0.2026
popen_500						1.165	no, +			0.1528	
ppine_500						0.986	yes			-0.0136	
grasscov	93.951	94.1959	20.0589	53.4122	< 0.0001	1.034	no, +	0.878	-0.2994	0.0339	0.0600
pmature_100						0.967	no, -			-0.0331	
totalden	106.593	107.0054	32.8684	42.7701	< 0.0001	1.000	yes	0.843	-0.0231	-0.0003	0.1043
dmature						1.026	no, +			0.0253	
ED						0.454	yes			-0.7902	

Table H12. Hooded warbler was present at 72 sampling points (N=102). AICc from test models was compared to the AIC Intercept Only value of 125.58 to determine the best models.

variable	AIC	AICc	Δ AICc	LR X2	LR p-value	Odds estimate	CI include 1?	ROC	B0	B1	GOF p-val
grasscov	89.647	90.0594	0.0000	41.9356	< 0.0001	0.950	no, -	0.864	3.8258	-0.0515	0.4629
condenb						0.996	no, -			-0.00378	
dopen						1.016	yes			0.0156	
grasscov	94.592	95.0044	4.9450	36.9907	< 0.0001	0.954	no, -	0.848	4.3334	-0.0475	0.7418
condenb						0.998	yes			-0.00242	
dmature						0.996	yes			-0.00442	
hwdenmat	98.533	98.7779	8.7185	31.0494	< 0.0001	1.021	no, +	0.778	1.1639	0.0208	0.9110
popen_100						0.973	no, -			-0.0275	
canht	100.652	101.0644	11.0050	30.9311	< 0.0001	1.131	yes	0.800	-1.3178	0.1233	0.3431
mdstem						1.000	yes			0.000459	
dopen						1.011	yes			0.0113	
pmature_100	101.903	102.3154	12.2560	29.6794	< 0.0001	1.026	no, +	0.820	-0.9617	0.0261	0.4435
totalden						1.000	yes			0.000277	
dopen						1.020	no, +			0.0198	

Table H13. Indigo bunting was present at 93 sampling points (N=102). AICc from test models was compared to the AIC Intercept Only value of 62.88 to determine the best models.

variable	AIC	AICc	Δ AICc	LR X2	LR p-value	Odds estimate	CI include 1?	ROC	B0	B1	GOF p-val
cvstem ^{step}	21.347	21.7594	0.0000	47.5344	< 0.0001	1.251	no, +	0.992	3.9499	0.224	0.9998
cancov						0.905	no, -			-0.1004	
dopen						0.962	no, -			-0.0383	
cancov	33.961	34.3734	12.6140	34.9194	< 0.0001	0.912	no, -	0.964	4.013	-0.0924	0.9989
cvstem						1.077	no, +			0.0739	
popen_100						1.247	yes			0.2205	
cancov	34.859	35.2714	13.5120	34.0222	< 0.0001	0.954	yes	0.971	3.2817	-0.0474	0.8783
popen_100						1.242	yes			0.2164	
pshrub_100						1.085	no, +			0.0816	
denmat	35.694	36.1064	14.3470	33.1865	< 0.0001	0.981	yes	0.967	8.1094	-0.0189	0.9991
mdstem						1.000	yes			-0.00033	
pmature_100						0.950	yes			-0.0514	
denmat	36.643	37.0554	15.2960	32.2380	< 0.0001	0.986	yes	0.943	5.2434	-0.0137	0.5884
dshrub						0.987	yes			-0.0128	
dopen						0.990	no, -			-0.0101	

Table H14. Mourning dove was present at 44 sampling points (N=102). AICc from test models was compared to the AIC Intercept Only value of 141.47 to determine the best models.

variable	AIC	AICc	Δ AICc	LR X2	LR p-value	Odds estimate	CI include 1?	ROC	B0	B1	GOF p-val
mcstem ^{step}	124.311	124.7234	0.0000	23.1631	< 0.0001	0.984	no, -	0.753	1.9902	-0.0166	0.1073
dshrub						0.984	no, -			-0.0158	
edgeha_100						0.989	no, -			-0.0109	
mcstem	124.153	124.7780	0.0546	25.3218	< 0.0001	0.984	no, -	0.761	1.5923	-0.0163	0.9027
mdstem						1.000	yes			0.00015	
dshrub						0.984	no, -			-0.0162	
edgeha_100						0.990	yes			-0.00962	
totalden	126.608	127.4922	2.7688	24.8664	0.0001	0.999	yes	0.761	0.6499	-0.00053	0.9828
mcstem						0.986	no, -			-0.0142	
mdstem						1.000	yes			0.00025	
dopen						0.999	yes			-0.00052	
dshrub						0.989	no, -			-0.0112	
mcstem	131.322	131.7344	7.0110	16.1528	0.0011	0.986	no, -	0.675	-0.5138	-0.0141	0.1503
mdstem						1.000	yes			0.000103	
pshrub_500						1.026	yes			0.0253	
totalden	136.318	136.7304	12.0070	11.1566	0.0109	1.000	yes	0.701	1.4984	-0.00044	0.3593
dshrub						0.988	no, -			-0.012	
edgeha_100						0.992	yes			-0.00812	

Table H15. Northern cardinal was present at 75 sampling points (N=102). AICc from test models was compared to the AIC Intercept Only value of 119.9 to determine the best models.

variable	AIC	AICc	Δ AICc	LR X2	LR p-value	Odds estimate	CI include 1?	ROC	B0	B1	GOF p-val
cvb ^{step}	68.612	69.2370	0.0000	59.2844	< 0.0001	1.027	no, +	0.932	-3.257	0.0263	< 0.0001
cvtot						1.024	no, +			0.024	
dshrub						0.988	no, -			-0.0123	
pshrub_500						1.191	no, +			0.1749	
cvtot	90.762	91.1744	21.9374	35.1338	< 0.0001	1.025	no, +	0.849	-1.2471	0.0243	0.9323
popen_500						0.974	yes			-0.0262	
pshrub_500						1.110	no, +			0.1046	
cvtot	90.901	91.3134	22.0764	34.9952	< 0.0001	1.015	yes	0.823	2.0347	0.0145	0.5161
popen_1000						0.910	no, -			-0.0946	
dshrub						0.985	no, -			-0.015	
demat	93.747	94.1594	24.9224	32.1495	< 0.0001	0.990	yes	0.797	3.2003	-0.00956	0.0774
dshrub						0.988	no, -			-0.0119	
popen_1000						0.893	no, -			-0.1129	
cvstem	97.094	97.5064	28.2694	28.8025	< 0.0001	1.006	yes	0.810	1.0342	0.00646	0.5886
grasscov						1.024	no, +			0.0234	
popen_1000						0.870	no, -			-0.1392	

Table H16. Ovenbird was present at 26 sampling points (N=102). AICc from test models was compared to the AIC Intercept Only value of 117.8 to determine the best models.

variable	AIC	AICc	Δ AICc	LR X2	LR p-value	Odds estimate	CI include 1?	ROC	B0	B1	GOF p-val
grasscov	71.120	71.7450	0.0000	54.6821	< 0.0001	0.941	no, -	0.914	0.894	-0.0607	0.0406
mdstem						1.000	yes			-0.00035	
denmat						1.023	yes			0.0232	
pmature_100						1.011	yes			0.0112	
grasscov	71.921	72.5460	0.8010	53.8810	< 0.0001	0.942	no, -	0.913	1.475	-0.06	0.8543
mdstem						1.000	yes			-0.00034	
denmat						1.027	no, +			0.0263	
dmature						0.998	yes			-0.00209	
cancov	79.811	80.2234	8.4784	43.9914	< 0.0001	1.067	no, +	0.884	-5.1457	0.0646	0.5248
mdstem						1.000	yes			-0.00011	
pmature_100						1.016	yes			0.0159	
denmat	87.922	88.3344	16.5894	35.8804	< 0.0001	1.032	no, +	0.847	-1.0835	0.0312	0.1713
cvtot						0.994	yes			-0.00632	
dmature						0.992	yes			-0.00766	
canht	88.258	88.6704	16.9254	33.5439	< 0.0001	1.134	no, +	0.862	-2.7933	0.1255	0.3040
dmature						0.997	yes			-0.00316	

Table H17. Prairie warbler was present at 35 sampling points (N=102). AICc from test models was compared to the AIC Intercept Only value of 133.19 to determine the best models.

variable	AIC	AICc	Δ AICc	LR X2	LR p-value	Odds estimate	CI include 1?	ROC	B0	B1	GOF p-val
grasscov ^{step}	72.563	73.7545	0.0000	72.6286	< 0.0001	1.039	no, +	0.942	-1.4543	0.0378	0.6640
cvs						0.978	no, -			-0.0226	
mcstem						1.011	no, +			0.0113	
samepatch_500						2.420	no, +			0.8839	
pmature_100						0.957	no, -			-0.0442	
ppine_1000						0.801	no, -			-0.2222	
grasscov	89.435	89.8474	16.0929	51.7560	< 0.0001	1.040	no, +	0.897	-1.629	0.0394	0.9692
cvs						0.975	no, -			-0.0256	
dmature						1.013	no, +			0.0131	
popen_500						0.978	yes			-0.022	
grasscov	92.304	92.7164	18.9619	46.8876	< 0.0001	1.047	no, +	0.886	1.0921	0.0456	0.5790
cvs						0.971	no, -			-0.0299	
ED						0.249	yes			-1.3912	
cancov	97.247	97.6594	23.9049	41.9446	< 0.0001	0.976	yes	0.881	0.774	-0.0241	0.6877
cvs						0.979	no, -			-0.0214	
dmature						1.015	no, +			0.0154	
cancov	101.409	101.8214	28.0669	37.7825	< 0.0001	1.009	yes	0.846	0.8532	0.00883	0.3527
mdstem						1.000	yes			-0.00011	
pmature_100						0.951	no, -			-0.0504	

Table H18. Red-eyed vireo was present at 87 sampling points (N=102). AICc from test models was compared to the AIC Intercept Only value of 87.18 to determine the best models.

variable	AIC	AICc	Δ AICc	LR X2	LR p-value	Odds estimate	CI include 1?	ROC	B0	B1	GOF p-val
cancov ^{step}	45.474	45.8864	0.0000	47.7108	< 0.0001	1.156	no, +	0.955	-1.6528	0.1446	0.9980
cva						1.017	no, +			0.0169	
samepatch_500						0.445	no, -			-0.8095	
cancov	51.995	52.6200	6.7336	43.1896	< 0.0001	1.115	no, +	0.936	-2.7472	0.1089	0.1926
cva						1.017	no, +			0.0168	
dmature						1.001	yes			0.00106	
pdisturb_100						0.698	yes			-0.359	
cancov	54.878	55.2904	9.4040	38.3071	< 0.0001	1.096	no, +	0.924	-2.5675	0.0918	0.3418
cva						1.001	no, +			0.0119	
pmature_100						1.026	yes			0.0261	
canht	57.571	57.9834	12.0970	35.6137	< 0.0001	1.616	no, +	0.900	-3.302	0.4797	0.8560
cvstem						1.009	yes			0.00858	
dopen						1.029	yes			0.0288	
canht	59.937	60.1819	14.2955	31.2476	< 0.0001	1.478	no, +	0.887	-1.7391	0.3908	0.3680
pmature_100						1.026	yes			0.0252	

Table H19. Scarlet tanager was present at 31 sampling points (N=102). AICc from test models was compared to the AIC Intercept Only value of 127.29 to determine the best models.

variable	AIC	AICc	Δ AICc	LR X2	LR p-value	Odds estimate	CI include 1?	ROC	B0	B1	GOF p-val
grasscov	104.159	104.7840	0.0000	31.1279	< 0.0001	0.978	no, -	0.821	0.0171	-0.0221	0.4584
hwdena						0.995	yes			-0.00479	
hwdenb						1.015	no, +			0.0145	
dmature						0.999	yes			-0.00133	
hwdena	107.652	108.2770	3.4930	25.6352	< 0.0001	0.996	yes	0.806	-0.743	-0.00409	0.2201
hwdenb						1.015	no, +			0.0152	
dmature						0.992	yes			-0.00831	
grasscov	109.020	109.4324	4.6484	24.2668	< 0.0001	0.981	no, -	0.776	0.7226	-0.0196	0.8870
dmature						0.990	yes			-0.00978	
pdisturb_500						0.890	yes			-0.1163	
hwdena	109.634	109.8789	5.0949	23.6529	< 0.0001	0.995	yes	0.797	-1.6119	-0.00462	0.3370
hwdenb						1.018	no, +			0.0178	
pmature_100						1.007	yes			0.007	
hwdenmat	112.224	112.6364	7.8524	21.0626	0.0001	1.005	yes	0.785	-0.3	0.00526	0.5627
pdisturb_500						0.898	yes			-0.1073	
dmature						0.988	no, -			-0.0123	

Table H20. Tufted titmouse was present at 63 sampling points (N=102). AICc from test models was compared to the AIC Intercept Only value of 137.7 to determine the best models.

variable	AIC	AICc	Δ AICc	LR X2	LR p-value	Odds estimate	CI include 1?	ROC	B0	B1	GOF p-val
cvstem ^{step}	124.462	124.8744	0.0000	19.2395	0.0002	1.011	no, +	0.750	-1.7725	0.011	0.1123
pmature_100						1.029	no, +			0.0289	
ppine_100						1.030	no, +			0.0297	
cancov	125.828	126.2404	1.3660	17.8737	0.0005	1.020	yes	0.747	-2.129	0.02	0.6118
cvstem						1.014	no, +			0.0139	
pmature_100						1.015	yes			0.0154	
totalden	127.228	127.8530	2.9786	16.4735	0.0009	1.000	yes	0.731	-0.6111	-0.00043	0.1803
pmature_100						1.032	no, +			0.0312	
ppine_100						1.041	no, +			0.0402	
grasscov	130.884	131.2964	6.4220	12.8174	0.0050	0.990	yes	0.688	1.7431	-0.0103	0.9432
dmature						0.995	yes			-0.00485	
pshrub_100						0.987	yes			-0.0129	
canht	131.507	131.9194	7.0450	12.1952	0.0067	1.033	yes	0.688	0.7531	0.0325	0.1383
dmature						0.995	yes			-0.00503	
pshrub_100						0.989	yes			-0.0107	

Table H21. White-eyed vireo was present at 25 sampling points (N=102). AICc from test models was compared to the AIC Intercept Only value of 115.6 to determine the best models.

variable	AIC	AICc	Δ AICc	LR X2	LR p-value	Odds estimate	CI include 1?	ROC	B0	B1	GOF p-val
cvs	98.434	98.8464	0.0000	23.1708	< 0.0001	0.970	no, -	0.802	-0.2183	-0.03	0.4562
cvstem						1.018	no, +			0.0183	
popen_100						0.970	no, -			-0.0301	
cvs	99.904	100.3164	1.4700	21.7004	< 0.0001	0.971	no, -	0.778	-1.0898	-0.029	0.7384
cvstem						1.015	yes			0.0151	
pshrub_100						1.019	no, +			0.0192	
cvs ^{step}	101.310	101.5549	2.7085	18.2950	0.0001	0.981	no, -	0.775	-0.5447	-0.0189	0.1944
pshrub_100						1.021	no, +			0.0204	
cvs	101.456	101.8684	3.0220	20.1486	0.0002	0.969	no, -	0.752	-0.7129	-0.031	0.9049
cvstem						1.017	no, +			0.0171	
pdisturb_500						1.065	yes			0.0627	
canht	109.585	109.8299	10.9835	10.0199	0.0067	1.023	yes	0.712	-2.2313	0.0225	0.5021
pshrub_100						1.026	no, +			0.0258	

Table H22. Wood thrush was present at 37 sampling points (N=102). AICc from test models was compared to the AIC Intercept Only value of 135.61 to determine the best models.

variable	AIC	AICc	Δ AICc	LR X2	LR p-value	Odds estimate	CI include 1?	ROC	B0	B1	GOF p-val
cancov ^{step}	92.635	93.0474	0.0000	48.9815	< 0.0001	1.048	no, +	0.872	-4.4013	0.0472	0.4358
sumconden						1.001	yes			0.000731	
dpine						1.003	no, +			0.00298	
cancov	95.022	95.4344	2.3870	46.5944	< 0.0001	1.069	no, +	0.871	-4.0745	0.0666	0.8738
dpine						1.003	no, +			0.00264	
pmature_100						0.982	yes			-0.0181	
cancov	101.458	102.3422	9.2948	44.1582	< 0.0001	1.063	no, +	0.862	-4.4533	0.0606	0.7567
dpine						1.002	no, +			0.00248	
dmature						1.003	yes			0.0027	
dshrub						1.001	yes			0.000655	
dopen						0.997	yes			-0.00285	
cancov	112.749	113.1614	20.1140	28.8675	< 0.0001	1.045	no, +	0.795	-2.7075	0.044	0.5345
cvmat						1.006	yes			0.00603	
dshrub						1.000	yes			-0.00041	
canht	114.962	115.2069	22.1595	24.6539	< 0.0001	1.152	no, +	0.775	-1.8631	0.1417	0.1548
pmature_100						0.986	yes			-0.0144	

Table H23. Yellow-breasted chat was present at 64 sampling points (N=102). AICc from test models was compared to the AIC Intercept Only value of 136.7 to determine the best models.

variable	AIC	AICc	Δ AICc	LR X2	LR p-value	Odds estimate	CI include 1?	ROC	B0	B1	GOF p-val
dens ^{step}	86.355	86.9800	0.0000	58.3460	< 0.0001	1.004	no, +	0.909	-2.3159	0.00413	0.2916
areaha						0.880	no, -			-0.1273	
dmature						1.026	no, +			0.0257	
pshrub_500						1.069	no, +			0.0664	
cvs	110.447	111.0720	24.0920	32.2534	< 0.0001	0.988	no, -	0.822	0.9892	-0.0119	0.0888
pshrub_100						1.045	no, +			0.0437	
dopen						0.994	yes			-0.00586	
dens	110.873	111.2854	24.3054	31.8280	< 0.0001	1.005	no, +	0.817	-1.3963	0.00469	0.2900
dopen						0.991	no, -			-0.00881	
edgeha_500						1.014	yes			0.0142	
canht	113.917	114.3294	27.3494	28.7837	< 0.0001	0.959	yes	0.804	0.5772	-0.0423	0.8994
hwdens						1.004	no, +			0.00353	
pmature_100						0.990	yes			-0.00976	
dens	116.568	116.9804	30.0004	26.1328	< 0.0001	1.003	no, +	0.782	0.0718	0.00322	0.4713
dshrub						0.995	yes			-0.00541	
areaha						0.957	yes			-0.0443	

Appendix I. GPS coordinates for sampling points (N=102).

Point ID	Latitude	Longitude	Altitude (m)	Point ID	Latitude	Longitude	Altitude (m)
PA021	37.076500	-82.238983	211.23	PA080	37.072817	-82.249167	195.07
PA022	37.077050	-82.240183	207.26	PA081	37.080817	-82.245550	228.60
PA023	37.078717	-82.238600	198.73	PA082	37.040467	-82.197567	211.84
PA024	37.077967	-82.243483	201.17	PA083	37.042633	-82.199333	208.48
PA025	37.084433	-82.242150	187.15	PA084	37.043517	-82.200033	199.64
PA026	37.084367	-82.243233	194.46	PA085	37.044283	-82.201800	206.04
PA027	37.086117	-82.243083	192.02	PA086	37.046517	-82.203550	205.13
PA028	37.081167	-82.242133	187.76	PA087	37.047367	-82.201433	203.61
PA029	37.078650	-82.245117	225.86	PA088	37.048650	-82.199250	213.36
PA043	37.073533	-82.244133	191.72	PA089	37.047817	-82.199767	327.36
PA044	37.074467	-82.242333	187.45	PA090	37.046533	-82.197100	217.32
PA045	37.072650	-82.246383	187.76	PA091	37.049383	-82.202433	207.57
PA046	37.073967	-82.258800	178.00	PA092	37.064167	-82.195200	211.23
PA047	37.072833	-82.257833	182.88	PA093	37.061700	-82.197167	230.73
PA048	37.071750	-82.257033	182.58	PA094	37.060800	-82.200050	228.90
PA049	37.071283	-82.254917	182.58	PA095	37.060200	-82.202117	218.54
PA050	37.071883	-82.252517	178.00	PA096	37.058600	-82.201750	213.66
PA051	37.064167	-82.251683	190.20	PA097	37.056300	-82.199900	212.75
PA052	37.065483	-82.249567	193.24	PA098	37.055150	-82.202800	228.60
PA053	37.069017	-82.254300	195.07	PA099	37.056817	-82.204217	216.71
PA054	37.074767	-82.239967	213.06	PA100	37.057067	-82.206383	234.09
PA055	37.089783	-82.271200	177.39	PA101	37.048017	-82.243750	269.14
PA056	37.094650	-82.309767	213.06	PA102	37.069783	-82.250683	188.98
PA057	37.094867	-82.309117	212.75	PO001	37.010033	-82.673233	253.59
PA058	37.093217	-82.308183	215.49	PO002	37.011017	-82.672750	253.29
PA059	37.095583	-82.310700	222.20	PO003	37.009333	-82.672617	259.38
PA060	37.094633	-82.308417	212.14	PO004	37.009167	-82.674167	253.29
PA061	37.091433	-82.306483	212.14	PO005	37.012817	-82.694817	226.77
PA062	37.091967	-82.262850	212.14	PO006	37.013233	-82.697083	233.17
PA063	37.093367	-82.261083	213.36	PO007	37.012950	-82.685400	231.65
PA064	37.092483	-82.264083	225.25	PO008	37.009117	-82.692933	233.48
PA065	37.093867	-82.261167	215.19	PO009	37.008450	-82.692200	240.79
PA066	37.038167	-82.242167	268.53	PO010	37.010433	-82.692800	232.26
PA067	37.038683	-82.243567	267.00	PO011	37.031700	-82.682267	224.33
PA068	37.039983	-82.243100	270.97	PO012	37.031917	-82.682850	227.08
PA069	37.039933	-82.240517	265.79	PO013	37.016933	-82.685550	249.33
PA070	37.039100	-82.237450	270.97	PO014	37.018033	-82.687883	245.36
PA071	37.038983	-82.239017	270.36	PO015	37.018933	-82.686833	243.23
PA072	37.051117	-82.243817	270.36	PO016	37.019783	-82.686600	244.14
PA073	37.049967	-82.242950	269.44	PO017	37.021233	-82.683767	245.06
PA074	37.048200	-82.241650	269.75	PO018	37.015500	-82.670583	218.54
PA075	37.051533	-82.245150	268.53	PO019	37.017133	-82.670717	217.63
PA079	37.067817	-82.253883	178.61	PO020	37.014300	-82.671717	219.76

Appendix I. (continued)

Point ID	Latitude	Longitude	Altitude (m)
PO030	37.019967	-82.679283	226.47
PO031	37.018850	-82.679750	225.25
PO032	37.017917	-82.675767	231.65
PO033	37.018250	-82.673967	166.42
PO034	37.017067	-82.675783	231.34
PO035	37.015983	-82.676833	224.64
PO036	37.022933	-82.685133	248.41
PO037	37.028300	-82.684400	241.10
PO038	37.013967	-82.668167	224.33
PO039	37.014800	-82.682833	233.78
PO040	37.016150	-82.681850	233.48
PO041	37.017667	-82.681833	235.00
PO076	37.030233	-82.678083	221.59
PO077	37.021683	-82.685700	246.58
PO078	37.031700	-82.686367	235.61

Appendix J. Incidental observations of other wildlife on the study areas.

Species	Scientific name
American black bear	<i>Ursus americanus</i>
Barn owl	<i>Tyto alba</i>
Barred owl	<i>Strix varia</i>
Beaver	<i>Castor canadensis</i>
Black rat snake	<i>Elaphe obsoleta</i>
Eastern box turtle	<i>Terrapene carolina</i>
Eastern cottontail	<i>Sylvilagus floridanus</i>
Eastern coyote	<i>Canis latrans</i>
Eastern fence lizard	<i>Sceloporus undulatus</i>
Mallard	<i>Anas platyrhynchos</i>
Northern copperhead	<i>Agkistrodon contortix mokasen</i>
Northern flicker	<i>Colaptes auratus</i>
Ruffed grouse	<i>Bonasa umbellus</i>
Timber rattlesnake	<i>Crotalus horridus</i>
Turkey vulture	<i>Cathartes aura</i>
White-tailed deer	<i>Odocoileus virginianus</i>
Wood duck	<i>Aix sponsa</i>
Worm snake	<i>Carphophis amoenus</i>