Appendix 2. Comparison of avian abundance between old-growth pine stands (>130 years old) and younger pine stands, controlling for spatial autocorrelation. Each territorial male was originally counted as two individuals. As this may not be valid, all counts were divided by two and rounded to whole integers. Light shade shows species significantly more abundant in old-growth stands. Dark shade shows species significantly more abundant in younger stands.

	Old growth stands[1]	Younger stands	Model[2]	Coefficient[3]	s.e.	Z	P > /Z/	IRR[4]	Trend surface[5]
American robin *Turdus migratorius* (AMRO)	0.36 ± 0.17	1.03 ± 0.29	nb	-0.53	0.69	-0.76	0.44		lglat, lgcorr
Black-and-white warbler *Mniotilta varia* (BAWW)	2.50 ± 0.45	1.68 ± 0.28	l	0.76	0.55	1.39	0.17		lat2
Bay-breasted warbler *Setophaga castanea* (BBWA)	0.64 ± 0.27	0.53 ± 0.26	p	0.90	0.55	1.63	0.10		latcorr, lg2
Black-capped chickadee *Poecile atricapillus* (BCCH)	0.57 ± 0.25	1.53 ± 0.26	nb	-1.06	0.45	-2.34	0.02	0.34	Lglat
Blue-headed vireo *Vireo solitarius* (BHVI)	1.43 ± 0.31	1.21 ± 0.26	l	0.16	0.46	0.35	0.73		latcorr, lgcorr
Blackburnian warbler *Setophaga fusca* (BLBW)	8.86 ± 0.78	6.26 ± 0.66	l	1.94	1.07	1.82	0.08		lg2, lgcorr
Blue jay *Cyanocitta cristata* (BLJA)	1.50 ± 0.37	1.18 ± 0.24	nb	0.20	0.32	0.62	0.54		lg2
Brown creeper *Certhia americana* (BRCR)	2.71 ± 0.65	1.61 ± 0.22	p	*0.42*	*0.21*	*2.00*	*0.05*	*1.52*	lat2
Black-throated blue warbler *Setophaga caerulesecens* (BTBW)	1.79 ± 0.66	1.71 ± 0.31	nb	0.12	0.30	0.41	0.69		lg2
Black-throated green warbler *Setophaga virens* (BTNW)	6.07 ± 0.74	4.37 ± 0.60	l	1.52	1.06	1.44	0.16		lg2, lgcorr
Canada warbler *Cardellina canadensis* (CAWA)	0.71 ± 0.27	0.68 ± 0.18	nb	0.04	0.48	0.09	0.93		-
Cedar waxwing *Bombycilla cedrorum* (CEDW)	0.21 ± 0.11	0.66 ± 0.23	nb	-0.53	0.86	-0.62	0.54		lglat,lg2,lat2
Chipping sparrow *Spizella passerina* (CHSP)	0.43 ± 0.20	0.79 ± 0.26	p	-1.12	0.45	-2.50	0.01	0.32	lgcorr
Common raven *Corvus corax* (CORA)	0.64 ± 0.57	0.42 ± 0.14	p	0.51	0.42	1.21	0.23		lglat
Chestnut-sided warbler *Setophaga pensylvanica* (CSWA)	0.64 ± 0.37	1.16 ± 0.41	nb	-0.02	0.83	-0.02	0.98		lg2
Downy woodpecker *Picoides pubescens* (DOWO)	0.29 ± 0.16	0.34 ± 0.12	p	-0.18	0.61	-0.29	0.77		lglat, lgcorr,lat2,lg2
Eastern wood-pewee *Contopus virens* (EWPE)	0.86 ± 0.31	1.34 ± 0.38	nb	-0.18	0.74	-0.24	0.81		-
Evening grosbeak *Coccothraustes vespertinus* (EVGR)	1.43 ± 0.76	0.61 ± 0.13	nb	0.60	0.45	1.33	0.18		lglat
Golden-crowned kinglet *Regulus satrapa* (GCKI)	2.14 ± 0.50	1.87 ± 0.27	l	0.17	0.50	0.35	0.73		lglat

Hairy woodpecker *Picoides villosus* (HAWO)	0.57 ± 0.31	0.61 ± 0.14	nb	-0.06	0.51	-0.11	0.91		-
Hermit thrush *Catharus guttatus* (HETH)	1.36 ± 0.63	2.84 ± 0.49	nb	-0.36	0.40	-0.89	0.37		lglat, lg2, lat2
Least flycatcher *Empidonax minimus* (LEFL)	2.79 ± 0.57	2.16 ± 0.59	nb	0.40	0.45	0.89	0.37		latcorr, lgcorr, lg2
Magnolia warbler *Setophaga magnolia* (MAWA)	4.79 ± 0.77	4.61 ± 0.69	nb	-0.19	0.19	-1.03	0.31		latcorr, lglat, lat2, lg2
Nashville warbler *Oreothlypis ruficapilla* (NAWA)	2.64 ± 0.63	3.47 ± 0.43	nb	-0.26	0.23	-1.12	0.26		latcorr, lgcorr
Northern flicker *Colaptes auratus* (NOFL)	0.29 ± 0.16	0.47 ± 0.12	p	-0.46	0.58	-0.79	0.43		lg2, lgcorr, lat2
Northern parula *Setophaga americana* (NPWA)	1.50 ± 0.54	0.18 ± 0.08	p	1.52	0.44	3.48	0.00	4.58	lgcorr
Ovenbird *Seiurus aurocapilla* (OVEN)	13.00 ± 1.31	13.34 ± 0.71	l	-0.25	1.37	-0.18	0.86		lg2, lglat, lat2
Pine warbler *Setophaga pinus* (PIWA)	3.07 ± 0.79	2.21 ± 0.34	nb	0.43	0.28	1.52	0.13		latcorr, lat2
Pileated woodpecker *Dryocopus pileatus* (PIWO)	1.21 ± 0.39	0.95 ± 0.22	nb	0.25	0.41	0.60	0.55		-
Purple finch *Carpodacus purpureus* (PUFI)	0.21 ± 0.11	0.47 ± 0.15	nb	-0.79	0.76	-1.04	0.30		-
Rose-breasted grosbeak *Pheucticus ludovicianus* (RBGR)	0.29 ± 0.16	0.82 ± 0.20	nb	-0.54	0.66	-0.83	0.41		lg2, lgcorr
Red-breasted nuthatch *Sitta canadensis* (RBNU)	3.07 ± 0.37	2.74 ± 0.32	p	-0.14	0.19	-0.76	0.45		lat2, lgcorr
Ruby-crowned kinglet *Regulus calendula* (RCKI)	0.57 ± 0.25	0.82 ± 0.34	p	0.03	0.43	0.08	0.94		latcorr, lgcorr
Red-eyed vireo *Vireo olivaceus* (REVI)	8.93 ± 0.68	8.00 ± 0.52	p	*0.11*	*0.11*	*1.03*	*0.30*		-
Ruffed grouse *Bonasa umbellus* (RUGR)	0.86 ± 0.23	0.84 ± 0.23	nb	-0.02	0.41	-0.04	0.97		latcorr, lg2
Scarlet tanager *Piranga olivacea* (SCTA)	1.07 ± 0.35	0.58 ± 0.15	p	0.99	0.42	2.34	0.02	2.69	latcorr, lglat, lat2, lg2
Swainson's thrush *Catharus ustulatus* (SWTH)	7.21 ± 0.50	5.89 ± 0.76	l	-0.23	0.95	-0.25	0.81		lgcorr,lg2
Veery *Catharus fuscescens* (VEER)	1.29 ± 0.46	2.74 ± 0.49	nb	-0.61	0.43	-1.42	0.16		lgcorr
Winter wren *Troglodytes hiemalis* (WIWR)	5.00 ± 0.62	3.21 ± 0.49	l	1.30	0.78	1.68	0.10		latcorr, lglat, lat2, lg2
White-throated sparrow *Zonotrichia albicollis* (WTSP)	4.00 ± 0.75	3.50 ± 0.49	nb	0.03	0.25	0.11	0.91		lat2
Yellow-bellied flycatcher *Empidonax flaviventris* (YBFL)	0.36 ± 0.20	0.89 ± 0.31	nb	-0.63	0.63	-1.01	0.31		latcorr, lgcorr
Yellow-bellied sapsucker *Sphyrapicus varius* (YBSA)	1.36 ± 0.49	2.45 ± 0.37	nb	-0.28	0.33	-0.85	0.39		lg2, lglat

Yellow-rumped warbler *Setophaga coronata* (MYWA)	4.36 ± 0.81	4.42 ± 0.37	nb	-0.01	0.18	-0.08	0.93	-
Total species richness								
Plus raptors	26.64 ± 0.87	26.55 ± 0.62	l	0.090	1.15	0.08	0.94	-
Minus raptors	26.50 ± 0.85	26.03 ± 0.59	l	0.47	1.10	0.43	0.67	-
Total species abundance								
Plus raptors	101.07 ± 4.71	94.18 ± 3.18	l	4.39	5.58	0.79	0.44	latcorr, lg2
Minus raptors	100.43 ± 4.58	93.29 ± 3.20	l	4.97	5.49	0.90	0.37	latcorr, lg2
Migratory status								
Short distance migrants	7.71 ± 0.42	8.74 ± 0.31	l	-1.02	0.57	-1.80	0.08	-
Neotropical migrants	14.93 ± 0.55	13.50 ± 0.44	l	1.43	0.80	1.78	0.08	-
Resident	3.43 ± 0.39	3.71 ± 0.25	l	-0.58	0.47	-1.23	0.23	lg2, lglat, lat2
Nomadic	0.57 ± 0.23	0.68 ± 0.13	p	-0.22	0.43	-0.52	0.61	lglat, lgcorr, lat2

[1]Numbers shown mean ± SE
[2]Poisson (p), negative binomial (nb) or linear regressions (l)
[3]Positive or negative coefficients indicate higher or lower abundances in old growth than younger stands, respectively.
[4]Incidence rate ratios (IRR) for probability distributions are shown for significant relationships between species abundance and old growth stands.
[5]Significant trend surface variables derived from forward selection.