

Appendix B. Test statistics and sample sizes for individual species trends. Change = annual percent change. N = number of stands analyzed. Individual species graphs are in Appendix A.

	Chequamegon NF				Chippewa NF				Superior NF				St. Croix, MN				Regional			
	change	P	R ²	N	change	P	R ²	N	change	P	R ²	N	change	P	R ²	N	change	P	R ²	N
Yellow-bellied Sapsucker	0.025	0.068	0.322	57	-0.062	0.000	0.928	45	-0.020	0.132	0.663	52	0.030	0.232	0.696	18	-0.022	0.008	0.522	154
Downy Woodpecker					0.027	0.260	0.093	5												
Hairy Woodpecker	0.015	0.308	0.184	14	-0.063	0.040	0.280	5												
Olive-sided Flycatcher					-0.030	0.252	0.449	5												
Eastern Wood-Pewee	-0.069	0.000	0.937	48	-0.053	0.000	0.858	57	-0.120	0.000	0.946	14	-0.049	0.000	0.833	49	-0.067	0.000	0.965	119
Yellow-bellied Flycatcher	0.027	0.068	0.288	23	-0.011	0.260	0.087	20	0.022	0.076	0.559	49	-0.062	0.052	0.659	10	0.021	0.040	0.370	92
Alder Flycatcher	0.040	0.036	0.645	15	0.006	0.348	0.119	11	0.004	0.500	0.039	20	-0.010	0.416	0.146	6	0.024	0.072	0.589	46
Least Flycatcher	-0.005	0.400	0.045	59	0.032	0.000	0.941	70	0.002	0.472	0.015	54	0.059	0.000	0.821	61	0.016	0.016	0.760	183
Great Crested Flycatcher	-0.010	0.360	0.189	24	-0.089	0.012	0.751	20					-0.082	0.020	0.894	12				
Eastern Kingbird	0.044	0.048	0.754	6																
Yellow-throated Vireo	0.041	0.380	0.081	5	0.000	0.480	0.000	21					0.054	0.092	0.674	17				
Blue-headed Vireo	-0.046	0.116	0.507	15	0.051	0.048	0.958	18	0.020	0.232	0.326	13					0.016	0.204	0.394	46
Red-eyed Vireo	0.023	0.000	0.859	115	0.017	0.000	0.294	118	0.023	0.000	0.829	144	0.030	0.000	0.878	143	0.021	0.000	0.705	377
Gray Jay					-0.032	0.248	0.203	5	-0.069	0.144	0.854	6								
Blue Jay	0.021	0.172	0.306	65	0.003	0.416	0.009	39	0.028	0.088	0.931	61	-0.038	0.116	0.314	24	0.021	0.052	0.536	165
Black-capped Chickadee	-0.021	0.096	0.646	72	0.054	0.000	0.831	55	0.122	0.000	0.806	39	0.040	0.032	0.694	42	0.038	0.000	0.780	166

	Chequamegon NF				Chippewa NF				Superior NF				St. Croix, MN				Regional			
	change	P	R ²	N	change	P	R ²	N	change	P	R ²	N	change	P	R ²	N	change	P	R ²	N
Red-breasted Nuthatch	-0.013	0.288	0.318	29	0.011	0.280	0.124	34	0.011	0.236	0.256	47	0.110	0.008	0.726	8	0.007	0.264	0.124	110
White-breasted Nuthatch	0.000	0.492	0.000	16	0.081	0.000	0.399	15					0.057	0.044	0.623	29				
Brown Creeper	-0.038	0.036	0.682	40	-0.035	0.020	0.941	30	-0.012	0.296	0.122	23	0.087	0.004	0.769	5	-0.029	0.004	0.876	93
House Wren	0.043	0.188	0.437	5																
Winter Wren	-0.121	0.000	0.997	40	-0.093	0.000	0.926	40	-0.084	0.000	0.995	64	-0.088	0.000	0.489	10	-0.092	0.000	0.979	144
Golden-crowned Kinglet	-0.046	0.036	0.283	8	-0.034	0.192	0.429	14	-0.007	0.368	0.139	34	0.009	0.420	0.038	8	-0.019	0.132	0.589	56
Ruby-crowned Kinglet									-0.101	0.016	0.979	8								
Veery	-0.071	0.000	0.700	55	-0.016	0.012	0.286	77	-0.042	0.000	0.832	102	-0.002	0.368	0.006	127	-0.039	0.000	0.716	234
Swainson's Thrush									0.011	0.316	0.098	29								
Hermit Thrush	-0.075	0.000	0.986	78	-0.073	0.000	0.979	68	-0.017	0.096	0.392	67	-0.005	0.344	0.023	35	-0.056	0.000	0.968	213
Wood Thrush	0.012	0.360	0.035	12									0.041	0.276	0.404	10				
American Robin	0.002	0.408	0.003	82	-0.002	0.436	0.001	48	-0.011	0.216	0.196	90	-0.060	0.024	0.730	22	-0.002	0.420	0.003	220
Gray Catbird					0.089	0.000	0.492	8					-0.046	0.236	0.930	10				
Brown Thrasher	-0.004	0.436	0.042	10																
Cedar Waxwing					0.163	0.000	0.906	16	0.115	0.000	0.831	7	0.110	0.040	0.633	6				
Golden-winged Warbler	-0.016	0.348	0.062	9	0.017	0.260	0.291	20	-0.036	0.280	0.680	10	0.002	0.472	0.001	16	0.000	0.492	0.000	39
Tennessee Warbler									-0.166	0.000	0.801	8								
Nashville Warbler	-0.019	0.024	0.853	85	-0.028	0.000	0.712	78	-0.004	0.204	0.247	144	-0.026	0.008	0.408	72	-0.016	0.000	0.750	307

	Chequamegon NF				Chippewa NF				Superior NF				St. Croix, MN				Regional			
	change	<i>P</i>	R ²	N	change	<i>P</i>	R ²	N	change	<i>P</i>	R ²	N	change	<i>P</i>	R ²	N	change	<i>P</i>	R ²	N
Northern Parula	0.007	0.400	0.641	26	0.013	0.336	0.587	26	0.046	0.008	0.718	54					0.029	0.012	0.762	106
Yellow Warbler	0.172	0.000	0.835	5	-0.095	0.008	0.957	8												
Chestnut-sided Warbler	0.030	0.060	0.908	66	0.061	0.000	0.919	89	0.001	0.432	0.002	131	0.022	0.016	0.776	100	0.022	0.000	0.461	286
Magnolia Warbler					0.020	0.292	0.481	8	0.044	0.000	0.946	89								
Black-throated Blue Warbler									0.078	0.016	0.837	6								
Yellow-rumped Warbler	-0.012	0.292	0.066	46	0.017	0.120	0.508	45	0.013	0.200	0.115	62	0.020	0.244	0.259	15	0.010	0.084	0.100	153
Black-throated Green Warbler	-0.014	0.092	0.722	89	0.006	0.352	0.063	46	-0.031	0.000	0.886	62	0.020	0.196	0.504	28	-0.009	0.072	0.367	197
Blackburnian Warbler	0.049	0.004	0.683	55	-0.031	0.024	0.906	50	0.018	0.048	0.749	100	0.099	0.000	0.854	9	0.011	0.108	0.336	205
Pine Warbler	0.001	0.460	0.002	18	-0.001	0.500	0.017	42	0.061	0.032	0.756	7					0.002	0.404	0.038	67
Palm Warbler					0.064	0.040	0.539	7												
Black-and-white Warbler	-0.056	0.000	0.923	43	0.040	0.008	0.699	47	-0.015	0.056	0.627	117	-0.064	0.000	0.915	36	-0.010	0.080	0.715	207
American Redstart	0.114	0.000	0.930	19	0.045	0.004	0.843	56	0.034	0.004	0.688	48	0.061	0.000	0.947	45	0.047	0.000	0.864	123
Ovenbird	-0.034	0.000	0.920	114	-0.062	0.000	0.794	109	-0.021	0.000	0.658	141	-0.015	0.004	0.288	138	-0.035	0.000	0.853	364
Northern Waterthrush	0.072	0.004	0.653	10					-0.038	0.008	0.172	7								
Connecticut Warbler					-0.151	0.000	0.997	13												
Mourning Warbler	-0.031	0.132	0.304	37	-0.036	0.052	0.658	51	-0.023	0.032	0.558	105	-0.052	0.008	0.913	41	-0.029	0.000	0.618	193
Common Yellowthroat	-0.048	0.004	0.865	37	-0.030	0.012	0.846	61	-0.062	0.040	0.978	35	-0.046	0.000	0.931	87	-0.039	0.000	0.947	133
Canada Warbler	-0.001	0.432	0.004	21	0.030	0.168	0.350	6	-0.014	0.156	0.299	73	0.106	0.016	0.903	8	-0.012	0.156	0.266	100

	Chequamegon NF				Chippewa NF				Superior NF				St. Croix, MN				Regional			
	change	P	R ²	N	change	P	R ²	N	change	P	R ²	N	change	P	R ²	N	change	P	R ²	N
Scarlet Tanager	-0.019	0.148	0.785	43	-0.038	0.012	0.595	61	-0.077	0.024	0.584	9	0.068	0.000	0.875	45	-0.035	0.004	0.768	113
Eastern Towhee	0.031	0.120	0.569	14																
Chipping Sparrow	-0.016	0.256	0.455	19	-0.004	0.416	0.016	47	-0.044	0.020	0.968	34	0.017	0.328	0.261	5	-0.015	0.108	0.565	100
Clay-colored Sparrow	-0.016	0.240	0.160	11																
Vesper Sparrow	0.024	0.224	0.224	8																
Song Sparrow	-0.051	0.048	0.977	22	-0.075	0.016	0.942	35	-0.012	0.332	0.560	23	-0.011	0.236	0.431	29	-0.051	0.012	0.968	80
Swamp Sparrow	-0.026	0.228	0.810	13	0.011	0.364	0.032	19	0.062	0.112	0.418	7	-0.031	0.028	0.336	17	0.007	0.352	0.025	39
White-throated Sparrow	-0.048	0.012	0.764	40	-0.080	0.000	0.857	50	-0.058	0.000	0.740	126	-0.050	0.016	0.783	25	-0.066	0.000	0.769	216
Rose-breasted Grosbeak	0.016	0.220	0.391	59	-0.007	0.376	0.041	31	-0.074	0.000	0.916	61	0.031	0.196	0.268	9	-0.028	0.004	0.600	151
Indigo Bunting	0.054	0.240	0.312	11	0.078	0.016	0.859	12					-0.022	0.276	0.180	16				
Red-winged Blackbird	-0.148	0.000	0.883	5																
Brewer's Blackbird	0.066	0.124	0.611	5																
Brown-headed Cowbird	-0.008	0.384	0.056	29	-0.098	0.020	0.752	16					-0.078	0.000	0.868	22				
Purple Finch					0.030	0.112	0.135	8												
American Goldfinch	-0.062	0.064	0.636	8																
Evening Grosbeak	-0.141	0.004	0.812	6																

Appendix C. Common and scientific name, abbreviation, migration strategy, and typical nest site of each species tested.

Common Name	Scientific Name	Abbrev.	Migration Strategy	Nest Site	Vegetation-type
Yellow-bellied Sapsucker	<i>Sphyrapicus varius</i>	YBSA	Short-distance	Cavity	Deciduous Forest
Downy Woodpecker	<i>Picoides pubescens</i>	DOWO	Permanent Resident	Cavity	Deciduous Forest
Hairy Woodpecker	<i>Picoides villosus</i>	HAWO	Permanent Resident	Cavity	Deciduous Forest
Olive-sided Flycatcher	<i>Contopus cooperi</i>	OSFL	Long-distance	Canopy	Early Successional
Eastern Wood-Pewee	<i>Contopus virens</i>	EAWP	Long-distance	Canopy	Mixed Forest
Yellow-bellied Flycatcher	<i>Empidonax flaviventris</i>	YBFL	Long-distance	Ground	Lowland Coniferous
Alder Flycatcher	<i>Empidonax alnorum</i>	ALFL	Long-distance	Shrub or Subcanopy	Early Successional
Least Flycatcher	<i>Empidonax minimus</i>	LEFL	Long-distance	Shrub or Subcanopy	Deciduous Forest
Great Crested Flycatcher	<i>Myiarchus crinitus</i>	GCFL	Long-distance	Cavity	Deciduous Forest
Eastern Kingbird	<i>Tyrannus tyrannus</i>	EAKI	Long-distance	Shrub or Subcanopy	Fields and Meadows
Yellow-throated Vireo	<i>Vireo flavifrons</i>	YTVI	Long-distance	Canopy	Deciduous Forest
Blue-headed Vireo	<i>Vireo solitarius</i>	BHVI	Long-distance	Shrub or Subcanopy	Coniferous Forest
Red-eyed Vireo	<i>Vireo olivaceus</i>	REVI	Long-distance	Shrub or Subcanopy	Deciduous Forest
Gray Jay	<i>Perisoreus canadensis</i>	GRAJ	Permanent Resident	Shrub or Subcanopy	Lowland Coniferous
Blue Jay	<i>Cyanocitta cristata</i>	BLJA	Permanent Resident	Canopy	Deciduous Forest
Black-capped Chickadee	<i>Poecile atricapillus</i>	BCCH	Permanent Resident	Cavity	Deciduous Forest
Red-breasted Nuthatch	<i>Sitta canadensis</i>	RBNU	Permanent Resident	Cavity	Coniferous Forest
White-breasted Nuthatch	<i>Sitta carolinensis</i>	WBNU	Permanent Resident	Cavity	Deciduous Forest
Brown Creeper	<i>Certhia americana</i>	BRCR	Short-distance	Cavity	Deciduous Forest
House Wren	<i>Troglodytes aedon</i>	HOWR	Short-distance	Cavity	Urban
Winter Wren	<i>Troglodytes troglodytes</i>	WIWR	Short-distance	Ground	Lowland Coniferous
Golden-crowned Kinglet	<i>Regulus satrapa</i>	GCKI	Short-distance	Canopy	Coniferous Forest
Ruby-crowned Kinglet	<i>Regulus calendula</i>	RCKI	Short-distance	Canopy	Coniferous Forest
Veery	<i>Catharus fuscescens</i>	VEER	Long-distance	Ground	Deciduous Forest
Swainson's Thrush	<i>Catharus ustulatus</i>	SWTH	Long-distance	Shrub or Subcanopy	Lowland Coniferous

Appendix C (continued).

Common Name	Scientific Name	Abbrev.	Migration Strategy	Nest Site	Vegetation-type
Hermit Thrush	<i>Catharus guttatus</i>	HETH	Short-distance	Ground	Mixed Forest
Wood Thrush	<i>Hylocichla mustelina</i>	WOTH	Long-distance	Shrub or Subcanopy	Deciduous Forest
American Robin	<i>Turdus migratorius</i>	AMRO	Short-distance	Shrub or Subcanopy	Fields and Meadows
Gray Catbird	<i>Dumetella carolinensis</i>	GRCA	Long-distance	Shrub or Subcanopy	Early Successional
Brown Thrasher	<i>Toxostoma rufum</i>	BRTH	Short-distance	Shrub or Subcanopy	Early Successional
Cedar Waxwing	<i>Bombycilla cedrorum</i>	CEDW	Short-distance	Shrub or Subcanopy	Ponds, Lakes, Streams
Golden-winged Warbler	<i>Vermivora chrysoptera</i>	GWWA	Long-distance	Ground	Early Successional
Tennessee Warbler	<i>Vermivora peregrina</i>	TEWA	Long-distance	Ground	Lowland Coniferous
Nashville Warbler	<i>Vermivora ruficapilla</i>	NAWA	Long-distance	Ground	Lowland Coniferous
Northern Parula	<i>Parula americana</i>	NOPA	Long-distance	Canopy	Lowland Coniferous
Yellow Warbler	<i>Dendroica petechia</i>	YWAR	Long-distance	Shrub or Subcanopy	Shrub Swamp
Chestnut-sided Warbler	<i>Dendroica pensylvanica</i>	CSWA	Long-distance	Shrub or Subcanopy	Early Successional
Magnolia Warbler	<i>Dendroica magnolia</i>	MAWA	Long-distance	Shrub or Subcanopy	Coniferous Forest
Black-thr. Blue Warbler	<i>Dendroica caerulescens</i>	BTBW	Long-distance	Shrub or Subcanopy	Deciduous Forest
Yellow-rumped Warbler	<i>Dendroica coronata</i>	MYWA	Short-distance	Canopy	Coniferous Forest
Black-thr. Green Warbler	<i>Dendroica virens</i>	BTNW	Long-distance	Canopy	Mixed Forest
Blackburnian Warbler	<i>Dendroica fusca</i>	BLBW	Long-distance	Canopy	Coniferous Forest
Pine Warbler	<i>Dendroica pinus</i>	PIWA	Short-distance	Canopy	Coniferous Forest
Palm Warbler	<i>Dendroica palmarum</i>	WPWA	Long-distance	Ground	Lowland Coniferous
Black-and-white Warbler	<i>Mniotilta varia</i>	BAWW	Long-distance	Ground	Mixed Forest
American Redstart	<i>Setophaga ruticilla</i>	AMRE	Long-distance	Shrub or Subcanopy	Early Successional
Ovenbird	<i>Seiurus aurocapilla</i>	OVEN	Long-distance	Ground	Deciduous Forest
Northern Waterthrush	<i>Seiurus noveboracensis</i>	NOWA	Long-distance	Ground	Lowland Coniferous
Connecticut Warbler	<i>Oporornis agilis</i>	CONW	Long-distance	Ground	Lowland Coniferous
Mourning Warbler	<i>Oporornis philadelphia</i>	MOWA	Long-distance	Ground	Early Successional

Appendix C (continued).

Common Name	Scientific Name	Abbrev.	Migration Strategy	Nest Site	Vegetation-type
Common Yellowthroat	<i>Geothlypis trichas</i>	COYE	Short-distance	Ground	Shrub Swamp
Canada Warbler	<i>Wilsonia canadensis</i>	CAWA	Long-distance	Ground	Mixed Forest
Scarlet Tanager	<i>Piranga olivacea</i>	SCTA	Long-distance	Canopy	Deciduous Forest
Eastern Towhee	<i>Pipilo erythrophthalmus</i>	EATO	Short-distance	Ground	Early Successional
Chipping Sparrow	<i>Spizella passerina</i>	CHSP	Short-distance	Canopy	Coniferous Forest
Clay-colored Sparrow	<i>Spizella pallida</i>	CCSP	Short-distance	Ground	Fields and Meadows
Vesper Sparrow	<i>Pooecetes gramineus</i>	VESP	Short-distance	Ground	Fields and Meadows
Song Sparrow	<i>Melospiza melodia</i>	SOSP	Short-distance	Ground	Fields and Meadows
Swamp Sparrow	<i>Melospiza georgiana</i>	SWSP	Short-distance	Ground	Early Successional
White-throated Sparrow	<i>Zonotrichia albicollis</i>	WTSP	Short-distance	Ground	Early Successional
Rose-breasted Grosbeak	<i>Pheucticus ludovicianus</i>	RBGR	Long-distance	Shrub or Subcanopy	Deciduous Forest
Indigo Bunting	<i>Passerina cyanea</i>	INBU	Long-distance	Shrub or Subcanopy	Fields and Meadows
Red-winged Blackbird	<i>Agelaius phoeniceus</i>	RWBL	Short-distance	Shrub or Subcanopy	Ponds, Lakes, Streams
Brewer's Blackbird	<i>Euphagus cyanocephalus</i>	BRBL	Short-distance	Ground	Fields and Meadows
Brown-headed Cowbird	<i>Molothrus ater</i>	BHCO	Short-distance	Brood Parasite	Fields and Meadows
Purple Finch	<i>Carpodacus purpureus</i>	PUFI	Permanent Resident	Canopy	Mixed Forest
American Goldfinch	<i>Carduelis tristis</i>	AMGO	Short-distance	Shrub or Subcanopy	Fields and Meadows
Evening Grosbeak	<i>Coccothraustes vespertinus</i>	EVGR	Permanent Resident	Canopy	Mixed Forest