Appendix 1. List of 305 species included in the analysis, along with their habitat guild classification, latitudinal distances moved, change in average distance from the coast, and continental population trend estimates.

Part	.,	,	Ü			Mean latitude	9	Lat.	F-value	p-value	Mean dist. from coast (40-yr ave.	Change in mean dist.	Shifted	F-value slope	p-value slope	# state or	40-year Median Trend (%	95%	95%	% of hemispheric
SECURITY PROPERTY OF COLUMN Property of Security Property of S	_				_	_				_						•	•	-		•
See Section Descriptions Section Secti							<u> </u>		•	•							<u> </u>			
Band Content																				
Property											_									
Hear Sum	Brant	Branta bernicla	coastal	coastal	rarely/never	41.90	193.4	N		<0.0001							3.8			
Typing from Signature Si																				
Contact Cont		, , ,																		
Wind Prof. Air section		-,,,				-					_									
Entered Name Continuation Cont		, ,																		
Part of the Part	Gadwall	Anas strepera	wetland/aquatic	wetland/aquatic	rarely/never	33.91	148.9	N	383.38	<0.0001	272.3	20.0	inland	8.18	0.0069	53	5.1	4.2	6	72.1
Miller organisat Anne socion September Anne socion September Septe																	1			
Creation Floor		•				-					_									
Martin Nominal Anna Opposite Anna Opposi																				
General part Anna 20000 A						-					_									
Chamadroin Agring anisotropy Agring anis	Northern Pintail	Anas acuta	wetland/aquatic	wetland/aquatic	rarely/never	-							inland				-2.39	-3.3	-1.6	
Section of Market Programmer Agriculture																				
Processed Duck Aphyles colleges Aphyles colleges Aphyles colleges Aphyles		, , ,																		
Contract South Applys armine Amelina A						-					_									
Force Common Figure Control																				
Common Refer Somewhater Common Refer Common Register Com	Lesser Scaup	Aythya affinis	wetland/aquatic	wetland/aquatic	rarely/never		61.0	N	3.64		191.3	85.9	inland	73.59	<0.0001	54	0.4		1.5	51.5
Hefergan Duck Printments International constal constal constal professor Method page 200 14 13 3 20 3 3 3 4 5 3 3 3 4 5 3 3 3 4 5 3 3 3 4 5 3 3 3 4 5 3 3 3 4 5 3 3 3 4 5 3 3 3 4 5 3 3 3 4 5 3 3 3 4 5 3 3 3 4 5 3 3 3 4 3 3 3 3 4 3 3						-														
Suff Scoter Melevinis parage expension Constant C																				
Whete-independent forms of the selection shapes of the selection of the selection shapes of the selection of						-														
Black Soler Melevanta ngma coasial coa											81.1	-13.8	to coast	64.16	<0.0001					
Bullished Bucophable depole Bucophable d		Melanitta nigra		<u>.</u>				S												
Common Registration Succeptable Standards Succeed Standards Succeptable Standards Succeptabl		<u> </u>	wetland/aquatic			-					_									
Berrow Busephase Sucephase Sucepha		<u> </u>				-					_									
Hooded Merganser Laphooptes cuculinas wellandisqualis well		, ,																		
Cammon Merganser Merganser merganser wetlandisquarts wetla						-														
Ruddy Ouck Oxford jamainensis wetland/aquate wetland/aquate carely/newer 88.35 13.5 N 4.35 0.04370 161.9 37.1 inland 186.13 40.0001 45 0.4 1.1 1.5 56.1 Chuker Individual occasionally 46.75 2.44.5 S 208.14 40.001 180.2 180.001 18								N												
Chukar Alectoric bulkar Al			wetland/aquatic	wetland/aquatic	rarely/never															
Gray Partridge		· · ·																		
Phasamus colichicus Indo-based grassland occasionally 43.71 110.8 N 33.38 40.0001 73.03 24.67 inland 131.23 40.0003 46 40.97 2 0.3 96.3 96.3 Phasamus colichicus						-					_									
Ruffed Grouse Bands Band																				
Flue		Bonasa umbellus				-		N												
Sharp-tailed Grouse Tymparuchus phashenellus Iand-based grassland Farely/never 45.51 -140.1 S 109.25 -0.0001 818.1 18.7 inland 5.40 -0.0001 15 1.2 -0.7 3.2 38.8 Greater Prairie Chicken Tymparuchus cupilo Iand-based grassland	Spruce Grouse	Falcipennis canadensis	land-based	woodland	rarely/never	50.63	316.1	N	750.25	<0.0001	341.2	-409.7	to coast	500.79	<0.0001	10	0.4	-3.3	2.9	22.0
Greater Prairie-Chicken Tympanuchus cupido Iand-based grasiled rarely/never (Mole Turkey Melegrig galigopsov land-based woodland coasionally 40.05 40.76 N 229.01 \$ 41.00 26.6 N 16.02 0.00030 813.1 18.7 inland 6.44 0.0154 8 8.8.13 -16 1.3 10.00 10.00 15.00 1		- , , , , , ,																		
Wild Turkey Melegyris gallopavo Iand-based woodland cocasionally 40.05 407.6 N 229.16 co.0001 555.8 173.4 inland 115.28 co.0001 51 14.3 2.7 16.7 90.0						-					_									
California Quali Califopeja gambelii land-based shrubland occasionally and decay of the control		, ,				-					_									
Northern Bobwhite Colinus virginianus land-based shrubland occasionally 36.31 85.7 N 34.1 < 0.0001 454.0 154.3 inland 12.9.3 < 0.0001 38 -7.52 -8.3 -6.6 84.1		<u> </u>									_									
Red-throated Loon Gavia stellata wetland/aquatic coastal		, , ,																		
"Arctic" Loon (lumped) coastal coastal (manual) (aquatic coastal) rarely/never (4.93) -58.9 \$ 23.96 <0.0001 133.7 12.5 inland (3.28) <0.0001 49 1 0.5 1.48 2 3.0 Fled-billed Grebe Podilymbus podiceps wettand/aquatic wettand/aquatic rarely/never 44.93 -58.9 \$ 70.93 -0.0001 133.7 112.5 inland 57.9 40.0001 49 1 0.5 1.6 2.6 Horned Grebe Podiceps auritus wettand/aquatic vettand/aquatic vettand/aquatic vettand/aquatic varely/never 47.40 50.5 N 12.1 0.0012 126.8 17.4 inland 214.82 <0.0001		Ŭ									_									
Common Loon Gavis immer wetland/aquatic		Gavia stellata									120.4	1.5	inland	1.58	0.21/1					
Ped-billed Grebe Podilymbus podiceps Wetland/aquatic Wetla		Gavia immer									133.7	12.5	inland	25.8	<0.0001		1			
Red-necked Grebe Podiceps grisegena wetland/aquatic wetland/aquatic wetland/aquatic wetland/aquatic rarely/never 51.34 -73.7 S 119.61 <0.0001 106.5 -9.8 to coast 51.13 <0.0001 30 0.2 -0.8 1.4 6.1																	1.2			
Eared Grebe Podiceps nigricollis Wetland/aquatic Wetland/aquatic Wetland/aquatic Wetland/aquatic Wetland/aquatic rarely/never 36.97 -13.2 S 0.64 0.42770 188.1 -30.4 to coast 16.53 0.0002 35 -0.12 -1.2 0.9 34.4	Horned Grebe	Podiceps auritus	wetland/aquatic	wetland/aquatic	rarely/never		50.5	N		0.00120	126.8	17.4	inland			48	-1.18		-0.4	67.2
"Western" Grebe (lumped) wetland/aquatic Gannet wetland/aquatic Gannet wetland/aquatic Gannet wetland/aquatic Gannet setland/aquatic Ganne																				
Northern Gannet Morus bassanus coastal coastal rarely/never 35.00 83.3 N 15.13 0.00040 Image: Common to the policy of		Podiceps nigricollis									_									
American White Pelican Pelecanus erythrorhynchos wetland/aquatic wetland/aquatic rarely/never 31.38 0.4 N 0 0.94520 189.2 -63.9 to coast 117.35 <0.0001 29 15.1 13 18 43.0 Double-crested Cormorant Phalacrocorax auritus wetland/aquatic wetland/aquatic rarely/never 31.92 117.4 N 1318.58 <0.0001		Morus hassanus									130.5	24.0	iniand	123.03	<0.0001					
Double-crested Cormorant Phalacrocorax auritus wetland/aquatic vetland/aquatic rarely/never 31.92 117.4 N 1318.58 <0.0001 121.3 146.3 inland 223.3 <0.0001 5.6 8.2 57.4 Great Cormorant Phalacrocorax carbo coastal coastal rarely/never 44.88 -24.9 S 8.22 0.00670 14 1.4 -0.8 6.4 11.1 Pelagic Cormorant Phalacrocorax pelagicus coastal coastal rarely/never 52.10 -60.3 S 80.57 <0.0001 5 -0.06 -1.2 1 53.6 American Bittern Botaurus lentiginosus wetland/aquatic wetland/aquatic rarely/never 35.66 36.8 N 11.49 0.00160 154.0 -3.8 to coast 1.99 0.1669 31 -2.73 -3.4 -2.1 42.4 Least Bittern Ixobrychus exilis wetland/aquatic wetland/aquatic rarely/never <th< td=""><td></td><td></td><td></td><td></td><td></td><td>-</td><td></td><td></td><td></td><td></td><td>189.2</td><td>-63.9</td><td>to coast</td><td>117.35</td><td><0.0001</td><td></td><td></td><td></td><td></td><td></td></th<>						-					189.2	-63.9	to coast	117.35	<0.0001					
Pelagic Cormorant Phalacrocorax pelagicus coastal coastal rarely/never 52.10 -60.3 S 80.57 <0.0001 -0.06 -1.2 1 53.6 American Bittern Botaurus lentiginosus wetland/aquatic wetland/aquatic rarely/never 35.66 36.8 N 11.49 0.00160 154.0 -3.8 to coast 1.99 0.1669 31 -2.73 -3.4 -2.1 42.4 Least Bittern Ixobrychus exilis wetland/aquatic wetland/aquatic rarely/never 31.60 179.5 N 209.79 <0.0001		· · · · · · · · · · · · · · · · · · ·					117.4			<0.0001								5.6	8.2	
American Bittern Botaurus lentiginosus wetland/aquatic wetland/aquatic rarely/never 35.66 36.8 N 11.49 0.00160 154.0 -3.8 to coast 1.99 0.1669 31 -2.73 -3.4 -2.1 42.4 Least Bittern Ixobrychus exilis wetland/aquatic wetland/aquatic rarely/never 31.60 179.5 N 209.79 <0.0001																			6.4	
Least Bittern Ixobrychus exilis wetland/aquatic wetland/aquatic rarely/never 31.60 179.5 N 209.79 <0.0001 130.9 115.3 inland 61.42 <0.0001 10 0.5 -2.9 3.4 3.7 Great Blue Heron Ardea herodias wetland/aquatic wetland/aquatic rarely/never 36.02 -1.5 S 0.04 0.84790 209.7 54.1 inland 590.3 <0.0001		, ,									4540	0.0	40 1	4.00	0.4000				1	
Great Blue Heron Ardea herodias wetland/aquatic wetland/aquatic rarely/never 36.02 -1.5 S 0.04 0.84790 209.7 54.1 inland 590.3 <0.0001 53 2.6 2.4 2.9 69.2		<u> </u>				-					_									
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Appendix 1. List of 305 species included in the analysis, along with their habitat guild classification, latitudinal distances moved, change in average distance from the coast, and continental population trend estimates.

										Mean dist.						40-year			
					Mean latitude (40-yr ave	9	Lat.	F-value	p-value	from coast (40-yr ave.	Change in mean dist.	Shifted	F-value slope	p-value slope	# state or	Median Trend (%	95%	95%	% of hemispheric
		Habitat Guild	Habitat Guild		from	Latitudinal distance	Direction	latitude	latitude	from	from coast	inland or	dist. to	dist. to	province	change	LCI	UCI	range in CBC
Species	Scientific_name	(3 classes)	(5 classes)	Feeder use	regression)	moved (miles)	Moved	slope	slope	regression)	(miles)	to coast	coast	coast	strata	per year)	Trend	Trend	survey area
Snowy Egret	Egretta thula	wetland/aquatic	wetland/aquatic	rarely/never	31.07	43.3	N	135.99	<0.0001	98.6	2.2	inland	0.34	0.5652	19	4	3.3	4.9	2.4
Little Blue Heron	Egretta caerulea	wetland/aquatic	wetland/aquatic		29.31	-24.5	S	27.84	<0.0001	42.6	-5.5	to coast	3.62	0.0648	15	0.5	0	1.1	5.5
Tricolored Heron	Egretta tricolor	wetland/aquatic	wetland/aquatic		30.06	-13.6	S	11.21	0.00180	81.0	-22.1	to coast	68.29	<0.0001	13	0.3	-0.4	0.9	16.1
Cattle Egret	Bubulcus ibis Butorides virescens	wetland/aquatic	wetland/aquatic		29.44 31.79	33.8 61.9	N N	9.4 43.21	0.00400 <0.0001	48.1 94.0	19.8 25.0	inland inland	9.12 41.82	0.0045 <0.0001	19 30	-1.48 -0.51	-2.6 -1	-0.5 0	28.3 18.6
Green Heron Black-crowned Night-Heron	Nycticorax nycticorax	wetland/aquatic wetland/aquatic	wetland/aquatic wetland/aquatic		33.96	-34.1	S	7.1	0.01120	156.4	29.0	inland	156.02	<0.0001	37	3	2.3	3.8	9.9
Yellow-crowned Night-Heron	Nyctanassa violacea	wetland/aquatic	wetland/aquatic		29.62	35.8	N	116.1	<0.0001	74.4	42.1	inland	78.8	<0.0001	11	0.4	-0.8	1.3	2.6
White Ibis	Eudocimus albus	wetland/aquatic	wetland/aquatic	rarely/never	29.38	99.8	N	632.09	<0.0001	39.1	52.6	inland	543.44	<0.0001	10	5.6	4	7.7	22.3
Glossy Ibis	Plegadis falcinellus	wetland/aquatic	wetland/aquatic		29.26	-68.9	S	233.39	<0.0001	25.1	-17.4	to coast	156.02	<0.0001	10	8.5	5.6	10.1	34.6
Black Vulture	Coragyps atratus	land-based	generalist	rarely/never	31.89	51.9	N N	220.39	<0.0001	181.5	69.6	inland	899.14	<0.0001	25	6.7	6	7.3	8.8
Turkey Vulture Osprey	Cathartes aura Pandion haliaetus	land-based wetland/aquatic	generalist wetland/aquatic	rarely/never	31.83 29.99	53.2 10.7	N N	93.22 8.28	<0.0001	142.0 68.9	15.4 30.2	inland inland	33.13 201.46	<0.0001	42 39	4.9 6.7	4.4 6.1	5.3 7.2	7.8 2.8
White-tailed Kite	Elanus leucurus	land-based	generalist	rarely/never	36.25	-0.4	S	0.20	0.98130	154.9	20.8	inland	12.11	0.0013	7	2.6	1.7	3.6	4.1
Bald Eagle	Haliaeetus leucocephalus	wetland/aquatic	wetland/aquatic	rarely/never	47.83	-47.1	S	21.22	<0.0001	340.4	74.2	inland	174.55	<0.0001	55	6	5.5	6.4	89.7
Northern Harrier	Circus cyaneus	land-based	grassland	rarely/never	37.15	76.8	N	51.66	<0.0001	392.0	-14.4	to coast	2.77	0.1046	55	0.1	-0.1	0.4	71.6
Sharp-shinned Hawk	Accipiter striatus	land-based	woodland	regularly	38.74	37.6	N	13.99	0.00060	323.4	57.0	inland	62.14	<0.0001	54	3	2.8	3.3	47.2
Cooper's Hawk	Accipiter cooperii	land-based	woodland	regularly	38.46	-3.0	S	0.53	0.47090	340.5	21.7	inland	83.71	<0.0001	53	3.6	3.4	3.9	76.1
Northern Goshawk Red-shouldered Hawk	Accipiter gentilis Buteo lineatus	land-based land-based	woodland woodland	occasionally rarely/never	45.99 33.17	71.9 76.2	N N	91.92 361.3	<0.0001	524.2 170.5	8.1 25.7	inland inland	0.32 60.31	0.5743 <0.0001	49 40	-0.08 3	-0.6 2.7	3.2	54.4 82.9
Red-tailed Hawk	Buteo jamaicensis	land-based	woodland	rarely/never	37.86	82.4	N	117.81	<0.0001	380.9	60.5	inland	95.88	<0.0001	55	2.4	2.3	2.6	75.2
Ferruginous Hawk	Buteo regalis	land-based	grassland	rarely/never	36.81	62.8	N	71.53	<0.0001	487.3	31.7	inland	18.19	0.0001	18	1.9	1.1	2.6	71.0
Rough-legged Hawk	Buteo lagopus	land-based	grassland	rarely/never	42.88	178.7	N	308.62	<0.0001	575.0	102.4	inland	90.55	<0.0001	54	-0.06	-0.7	0.5	98.2
Golden Eagle	Aquila chrysaetos	land-based	grassland	rarely/never	41.33	58.3	N	218.21	<0.0001	584.8	17.4	inland	28.17	<0.0001	46	-0.2	-0.7	0.3	78.4
American Kestrel	Falco sparverius	land-based	grassland	rarely/never	36.40	54.5	N	79.79	<0.0001	345.0	105.7	inland	530.51	<0.0001	55	0.3	0.1	0.5	32.3
Merlin Gyrfalcon	Falco columbarius Falco rusticolus	land-based land-based	woodland grassland	occasionally	42.32 48.92	-81.5 -80.2	S S	139.91 30.88	<0.0001	382.6 488.5	-18.1 121.1	to coast inland	20.97 136.47	<0.0001	55 21	3.3 2.9	2.9 -0.5	3.6 4.5	46.4 43.3
Peregrine Falcon	Falco rusticolus Falco peregrinus	land-based	generalist	rarely/never	40.87	-189.6	S	373.72	<0.0001	249.0	-58.3	to coast	137.31	<0.0001	53	4.9	4.2	5.5	13.3
Prairie Falcon	Falco mexicanus	land-based	grassland	rarely/never	40.37	5.8	N	1.01	0.32070	506.7	-11.3	to coast	4.02	0.0523	25	0.9	0.4	1.4	78.6
Black Rail	Laterallus jamaicensis	wetland/aquatic	wetland/aquatic	rarely/never	34.17	64.3	N	81.56	<0.0001	227.9	24.0	inland	15.32	0.0004	6	1.6	-1.6	4.4	45.0
Clapper Rail	Rallus longirostris	wetland/aquatic	wetland/aquatic		32.66	27.8	N	61.19	<0.0001	128.0	14.7	inland	321.16	<0.0001	15	0.6	-1	2	22.7
King Rail	Rallus elegans	wetland/aquatic	wetland/aquatic		31.26	14.3	N N	42.74	<0.0001	112.2	-29.7	to coast	129.62	<0.0001	13	-2.69	-4.5	-1.1	68.7
Virginia Rail Sora	Rallus limicola Porzana carolina	wetland/aquatic wetland/aquatic	wetland/aquatic wetland/aquatic		38.43 33.69	231.6 130.7	N N	952.96 106.66	<0.0001	243.5 191.1	63.9 53.7	inland inland	162.57 150.54	<0.0001	37 32	3	0.3	3.7 1.8	<u>45.8</u> 23.4
Common Moorhen	Gallinula chloropus	wetland/aquatic	wetland/aquatic		30.50	-75.7	S	28.97	<0.0001	76.8	-26.0	to coast	14.55	0.0005	20	2.4	0.1	3.4	9.8
American Coot	Fulica americana	wetland/aquatic	wetland/aquatic		35.52	12.4	N	0.79	0.37950	182.7	67.2	inland	313.42	<0.0001	49	-0.05	-0.9	0.8	63.6
Sandhill Crane	Grus canadensis	wetland/aquatic	wetland/aquatic	rarely/never	32.02	37.8	N	6.18	0.01740	307.0	36.3	inland	11.2	0.0018	35	4.5	2.7	6.1	68.5
Black-bellied Plover	Pluvialis squatarola	coastal	coastal	rarely/never	35.42	114.2	N	95.79	<0.0001						20	-0.22	-1.2	1.2	29.8
Snowy Plover	Charadrius alexandrinus	wetland/aquatic	<u>.</u>	rarely/never	35.20	-66.5	S	28.89	<0.0001	160.8	16.2	inland	276.77	<0.0001	6	0.2	-1.3	1.4	34.5
Semipalmated Plover Piping Plover	Charadrius semipalmatus Charadrius melodus	coastal coastal	coastal	rarely/never	31.59 32.14	90.1 1.3	N N	713.86 0.05	<0.0001						18 10	1.7 -2.03	0.2 -4	4.5 -0.4	26.0 77.5
Killdeer	Charadrius vociferus	land-based	generalist	rarely/never	33.77	-78.0	S	59.58	<0.0001	177.3	-14.3	to coast	12.48	0.0011	50	-0.14	-0.6	0.3	60.4
American Oystercatcher	Haematopus palliatus	coastal	coastal	rarely/never	33.07	0.2	N	0.01	0.93050	-		10 00001		0.00	12	2.3	0.7	3.6	24.4
Black-necked Stilt	Himantopus mexicanus	wetland/aquatic	wetland/aquatic		32.66	-70.6	S	67.81	<0.0001	114.5	15.4	inland	23.36	<0.0001	5	11.8	9	14.9	3.2
American Avocet	Recurvirostra americana		wetland/aquatic		33.74	12.7	N	2.12	0.15320	158.9	10.7	inland	17.99	0.0001	12	1.7	-0.6	3.9	18.2
Spotted Sandpiper	Actitis macularius	wetland/aquatic			33.38	-34.3	S	25.39	<0.0001	184.3	22.2	inland	153.75	<0.0001	30	0.9	0.5	1.4	6.3
Greater Yellowlegs Willet	Tringa melanoleuca Tringa semipalmata	wetland/aquatic wetland/aquatic	wetland/aquatic wetland/aquatic		33.20 33.06	124.1 -67.2	N S	481.69 294.49	<0.0001	168.8 114.8	38.3 8.4	inland inland	168.46 34.31	<0.0001	33 15	-0.11	2.4 -1.1	3.7 0.8	5.1 34.5
Lesser Yellowleas	Tringa sernipalmata Tringa flavipes		wetland/aquatic		30.83	45.0	N	293.86	<0.0001	121.1	41.2	inland	344.33	<0.0001	26	-0.11	-1.7	0.8	34.5
Whimbrel	Numenius phaeopus	coastal	coastal	rarely/never	36.51	-121.8	S	92.99	<0.0001				000	10.000.	12	-1.22	-4.4	0.6	16.0
Marbled Godwit	Limosa fedoa	wetland/aquatic	wetland/aquatic	rarely/never	36.31	-69.6	S	233.16	<0.0001	134.5	14.0	inland	214.03	<0.0001	12	0.3	-0.9	1.8	53.6
Ruddy Turnstone	Arenaria interpres	coastal	coastal	rarely/never	30.95	17.1	N	27.5	<0.0001						19	0.9	0.1	2	4.7
Black Turnstone	Arenaria melanocephala	coastal	coastal	rarely/never	48.40	177.7	N	96.82	<0.0001						5	1	-0.5	2.5	16.4
Surfbird Red Knot	Aphriza virgata Calidris canutus	coastal coastal	coastal	rarely/never	45.14 32.03	61.1 97.2	N N	5.1 29.13	0.02980 <0.0001						5 17	-0.23 0.1	-3 -9.1	2.3 5.5	19.0 12.2
Sanderling	Calidris candius Calidris alba	coastal	coastal coastal	rarely/never rarely/never	37.55	-168.8	S	407.61	<0.0001						21	-1.19	-3.1	0.5	13.9
Least Sandpiper	Calidris minutilla		wetland/aquatic	rarely/never	34.22	57.4	N	9.08	0.00460	166.1	0.3	inland	0	0.9646	30	-0.22	-1.2	0.9	21.1
Purple Sandpiper	Calidris maritima	coastal	coastal	rarely/never	45.18	-48.5	S	211.51	<0.0001						16	-1.79	-6.9	1.6	78.7
Rock Sandpiper	Calidris ptilocnemis	coastal	coastal	rarely/never	58.59	93.9	N	67.13	<0.0001						5	-0.57	-4.8	3.7	31.1
Dunlin	Calidris alpina	wetland/aquatic	wetland/aquatic		43.87	71.1	N	20.25	<0.0001	116.1	9.1	inland	195.28	<0.0001	35	-0.78	-2.3	0.8	23.4
Short-billed Dowitcher	Limnodromus griseus	coastal	coastal	rarely/never	31.66	147.7	N N	58.64	<0.0001	450.0	00.0	40 1	40.5	0.0005	11	3.3	-0.5	8.2	8.1
Long-billed Dowitcher Wilson's Snipe	Limnodromus scolopaceus Gallinago delicata	!	wetland/aquatic wetland/aquatic		35.23 35.48	5.7 18.0	N N	0.05 2.13	0.82380 0.15250	159.2 233.2	-22.9 6.3	to coast inland	10.5 2.81	0.0025	23 53	4.4 -1.43	-0.1 -2	7.3 -0.9	38.5 57.8
American Woodcock	Scolopax minor	wetland/aquatic			33.48	52.7	N N	44.78	<0.0001	163.2	23.3	inland	75.05	<0.0001	29	-0.99	- <u>-</u> ∠ -1.8	-0.9	98.9
Laughing Gull	Larus atricilla	coastal	coastal	rarely/never	29.88	69.0	N	205.78	<0.0001		20.0	manu	70.00	~0.000 I	17	5.9	4.2	7.8	7.4
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Appendix 1. List of 305 species included in the analysis, along with their habitat guild classification, latitudinal distances moved, change in average distance from the coast, and continental population trend estimates.

					Maan latitud	_				Mean dist.	Ob :		E			40-year			0/ - f
					Mean latitude (40-yr ave	9	Lat.	F-value	p-value	from coast (40-yr ave.	Change in mean dist.	Shifted	F-value slope	p-value slope	# state or	Median Trend (%	95%	95%	% of hemispheric
		Habitat Guild	Habitat Guild		from	Latitudinal distance	Direction	latitude	latitude	from	from coast	inland or	dist. to	dist. to	province	change	LCI	UCI	range in CBC
Species	Scientific_name	(3 classes)	(5 classes)	Feeder use	regression)	moved (miles)	Moved	slope	slope	regression)	(miles)	to coast	coast	coast	strata	per year)	Trend	Trend	survey area
Black-headed Gull	Larus ridibundus	coastal	coastal	rarely/never	44.98	33.4	N	135.54	<0.0001						12	2.9	-1.3	5.5	23.6
Bonaparte's Gull	Larus philadelphia	wetland/aquatic		rarely/never	36.91	-238.2	S	63.13	<0.0001	179.2	185.4	inland	179.88	<0.0001	43	1.9	-0.5	4.2	62.1
Mew Gull	Larus canus	coastal	coastal	rarely/never	50.36	-96.7	S	82.71	<0.0001	470.0	447.4		05.55	0.0004	8	0.5	-0.8	1.7	97.6
Ring-billed Gull California Gull	Larus delawarensis Larus californicus	wetland/aquatic		rarely/never	34.02 38.19	355.8 -38.7	N S	174.42 31.38	<0.0001	170.0 141.2	147.4 23.8	inland inland	85.55 65.26	<0.0001	51 15	3.6 4.5	2.4 3.5	4.5 5.6	57.6 6.4
Herring Gull	Larus camornicus Larus argentatus	wetland/aquatic wetland/aquatic	wetland/aquatic wetland/aquatic	rarely/never	43.40	23.8	 N	9.48	0.00390	134.2	97.3	inland	39.32	<0.0001	50	-0.61	-1.4	0.2	58.4
"Iceland" Gull (lumped)	Larao argornatao	wetland/aquatic		rarely/never	46.23	-0.1	S	0	0.98890	134.6	-14.2	to coast	1.45	0.2364	21	4.7	2.6	6.4	31.4
Glaucous-winged Gull	Larus glaucescens	coastal	coastal	rarely/never	52.75	-28.2	S	42.77	<0.0001						5	1.1	0	2.2	19.5
Glaucous Gull	Larus hyperboreus	wetland/aquatic	wetland/aquatic	rarely/never	47.59	-98.9	S	169.99	<0.0001	274.4	89.7	inland	568.55	<0.0001	37	0.9	-0.7	2.5	14.8
Great Black-backed Gull	Larus marinus	wetland/aquatic	wetland/aquatic	rarely/never	43.85	-23.5	S	12.61	0.00100	88.1	76.6	inland	195.11	<0.0001	26	1.9	0.9	3	79.8
Caspian Tern	Hydroprogne caspia	coastal	coastal	rarely/never	31.27	-9.2	S	37.3	<0.0001						9	-0.04	-1.6	1.1	12.0
Forster's Tern	Theteeres		wetland/aquatic	rarely/never	31.09	44.4	N N	75.99	<0.0001	128.8	77.6	inland	127.53	<0.0001	22	3.6	2.5	4.8	12.9
Royal Tern Common Murre	Thalasseus maximus Uria aalge	coastal coastal	coastal coastal	rarely/never	31.26 48.02	1.2 22.4	N N	0.14	0.71180 0.81080						10	0.9 -6.75	-0.2 -13.6	2.2 -3	5.7 1.9
Marbled Murrelet	Brachyramphus marmoratus	coastal	coastal	rarely/never rarely/never	54.71	361.9	N	726.44	<0.0001						5	-0.75	-3.4	1.7	2.7
Band-tailed Pigeon	Patagioenas fasciata	land-based	woodland	regularly	38.93	69.5	N	4.18	0.04780	127.1	0.6	inland	0.73	0.3993	8	-0.39	-2.5	1.6	23.8
White-winged Dove	Zenaida asiatica	land-based	generalist	regularly	32.76	-171.2	S	315.24	<0.0001	313.6	-49.8	to coast	24.2	<0.0001	8	18.3	14.4	22	25.0
Mourning Dove	Zenaida macroura	land-based	generalist	regularly	36.68	147.3	N	180.05	<0.0001	289.8	26.7	inland	13.67	0.0007	54	2.5	2.2	2.8	73.1
Inca Dove	Columbina inca	land-based	shrubland	regularly	32.40	-46.7	S	200.87	<0.0001	290.4	-33.1	to coast	317.84	<0.0001	9	4	3	5.1	32.9
Common Ground-Dove	Columbina passerina	land-based	shrubland	occasionally	30.15	89.6	N	105.87	<0.0001	94.6	75.7	inland	68.14	<0.0001	12	-4.14	-5	-3.3	17.5
Greater Roadrunner	Geococcyx californianus	land-based	shrubland	occasionally	34.15	-3.0	S	0.38	0.54370	375.5	17.9	inland	16.68	0.0002	11	0.1	-0.5	0.6	62.2
Barn Owl "Screech" Owl (lumped)	Tyto alba	land-based land-based	grassland	rarely/never	37.34 37.70	107.1 75.2	N N	205.18 84.58	<0.0001	211.9 370.7	38.9 36.5	inland inland	84.25 47.3	<0.0001	37 50	1.3	0.5	1.6 1.7	23.1 86.5
Great Horned Owl	Bubo virginianus	land-based	woodland woodland	rarely/never	40.38	-43.1	S	108.8	<0.0001	536.4	-86.5	to coast	609.88	<0.0001	55	0.4	0.9	0.7	37.2
Snowy Owl	Bubo scandiacus	land-based	grassland	rarely/never	49.10	-9.9	S	0.37	0.54820	675.2	114.8	inland	10.16	0.0029	33	-2.12	-3.2	-1.1	62.0
Northern Hawk Owl	Surnia ulula	land-based	woodland	rarely/never	50.75	-155.0	S	13.98	0.00060	412.8	89.8	inland	5.8	0.021	10	3.3	-0.4	6.1	18.1
Northern Pygmy-Owl	Glaucidium gnoma	land-based	woodland	rarely/never	45.87	163.6	N	23.59	<0.0001	290.6	-1.9	to coast	0.01	0.9131	14	0.1	-1.3	1.2	68.4
Burrowing Owl	Athene cunicularia	land-based	grassland	rarely/never	35.11	-80.4	S	165.96	<0.0001	224.5	49.8	inland	171.77	<0.0001	10	-0.95	-1.8	-0.2	9.8
Barred Owl	Strix varia	land-based	woodland	rarely/never	36.23	103.8	N	528.74	<0.0001	363.7	53.5	inland	452.25	<0.0001	47	1.5	1.2	1.8	77.8
Great Gray Owl	Strix nebulosa	land-based	woodland	rarely/never	49.35	-63.2	S	3.16	0.08340	546.4	-35.6	to coast	0.59	0.446	10	3	-1.5	6.2	27.2
Long-eared Owl Short-eared Owl	Asio otus Asio flammeus	land-based land-based	woodland	rarely/never	41.36 43.23	9.8	N S	2.31 45.03	0.13680 <0.0001	624.5 481.4	-52.8 -58.1	to coast	64.43 12.78	<0.0001	44 54	-0.91 -3.46	-2.1 -4.5	-2.3	71.7 48.7
Northern Saw-whet Owl	Asio nammeus Aegolius acadicus	land-based	grassland woodland	rarely/never	43.23	168.3	 N	73.34	<0.0001	342.2	-36.1 -43.1	to coast to coast	20.39	<0.001	44	2.1	-4.5	3.8	87.2
Anna's Hummingbird	Calypte anna	land-based	woodland	regularly	37.25	2.2	N	0.24	0.62460	143.6	20.9	inland	269.09	<0.0001	10	3	2.4	3.6	83.7
Belted Kingfisher	Megaceryle alcyon	wetland/aquatic	wetland/aquatic	rarely/never	36.90	98.2	N	119.11	<0.0001	263.5	31.8	inland	103.14	<0.0001	53	0.8	0.6	0.9	70.6
Lewis's Woodpecker	Melanerpes lewis	land-based	woodland	rarely/never	38.69	-230.8	S	183.89	<0.0001	455.4	41.2	inland	2.82	0.1013	12	-3.17	-5.1	-1.7	92.9
Red-headed Woodpecker	Melanerpes erythrocephalus	land-based	woodland	occasionally	37.00	-170.3	S	99.35	<0.0001	455.0	-163.3	to coast	86.05	<0.0001	40	-1.25	-1.9	-0.7	99.5
Acorn Woodpecker	Melanerpes formicivorus	land-based	woodland	occasionally	37.17	-5.0	S	5.43	0.02520	155.0	-3.7	to coast	1.65	0.2073	5	0.5	0	1	29.8
Red-bellied Woodpecker	Melanerpes carolinus	land-based	woodland	regularly	36.19	59.7	N N	212.95	<0.0001	367.8	18.7	inland	34.48	<0.0001	42	1.8	1.6	2	99.4
Williamson's Sapsucker "Yellow-bellied" Sapsucker (lumped)	Sphyrapicus thyroideus	land-based land-based	woodland	rarely/never occasionally	35.70 34.25	50.5 50.1	N N	97.4 25.64	<0.0001	394.6 217.3	65.0 13.5	inland inland	24.63 9.05	<0.0001	7 50	0.3	-1.3 -0.1	1.9 0.4	47.2 53.2
Ladder-backed Woodpecker	Picoides scalaris	land-based	woodland woodland	occasionally	33.14	14.9	N	72.21	<0.0001		15.5	inland	26.55	<0.0040	8	0.2	-0.1	0.4	36.1
Downy Woodpecker	Picoides pubescens	land-based	woodland	regularly	40.86	29.3	N	51.8	<0.0001	493.7	13.1	inland	13.45	0.0007	55	1	0.8	1.1	69.6
Hairy Woodpecker	Picoides villosus	land-based	woodland	regularly	43.14	135.2	N	803.56	<0.0001	535.0	16.8	inland	10.48	0.0025	55	0.5	0.3	0.6	64.1
Red-cockaded Woodpecker	Picoides borealis	land-based	woodland	rarely/never	32.63	78.2	N	2073.5	<0.0001	127.1	-28.4	to coast	459.96	<0.0001	8	-5.4	-7.7	-3.5	98.6
American Three-toed Woodpecker	Picoides dorsalis	land-based	woodland	rarely/never	50.84	203.1	N	59.96	<0.0001	348.1	-127.0	to coast	68.5	<0.0001	16	0.4	-15.4	2	26.3
Black-backed Woodpecker	Picoides arcticus	land-based	woodland	rarely/never	47.78	100.9	N	138.99	<0.0001	491.6	134.4	inland	84.98	<0.0001	20	-0.25	-1.9	1.2	36.3
Northern Flicker	Colaptes auratus	land-based	woodland	regularly	38.45 37.36	192.5	N N	437.12 772.74	<0.0001	354.3	54.6	inland	132.98	<0.0001	55	-0.24	-0.4	0	88.5
Pileated Woodpecker Black Phoebe	Dryocopus pileatus Sayornis nigricans	land-based wetland/aquatic	woodland wetland/aquatic	regularly rarely/never	36.51	125.3 40.6	N N	152.27	<0.0001	286.5 190.7	39.0 -38.4	inland to coast	193.98 73.45	<0.0001	45 7	1.5 3.8	1.3 3.3	1.7 4.2	76.1 14.7
Eastern Phoebe	Sayornis highcans Sayornis phoebe	land-based	welland/aqualic	rarely/never	31.97	47.9	N N	62.62	<0.0001	159.3	35.8	inland	82.93	<0.0001	35	3.0	2.7	3.4	66.7
Say's Phoebe	Sayornis saya	land-based	generalist	rarely/never	35.37	29.9	N	40.03	<0.0001	323.8	-24.4	to coast	13.8	0.0007	13	1.4	0.9	1.9	37.9
Vermilion Flycatcher	Pyrocephalus rubinus	land-based	shrubland	rarely/never	33.02	22.4	N	3.46	0.07070	309.2	9.8	inland	1.76	0.1925	10	0.5	-0.3	1.4	3.5
Loggerhead Shrike	Lanius Iudovicianus	land-based	shrubland	occasionally	33.00	-46.5	S	121.71	<0.0001	256.0	-32.5	to coast	186.08	<0.0001	44	-2.7	-3	-2.5	70.2
Northern Shrike	Lanius excubitor	land-based	shrubland	occasionally	45.37	11.8	N	1.87	0.17910	565.9	74.4	inland	50.81	<0.0001	46	-0.79	-1.2	-0.4	83.4
White-eyed Vireo	Vireo griseus	land-based	shrubland	rarely/never	30.04	67.6	N	177.94	<0.0001	89.8	78.9	inland	123.71	<0.0001	17	0.3	-0.3	0.9	46.0
"Solitary" Vireo (lumped)	Virgo buttoni	land-based	woodland	rarely/never	31.54	19.4	N N	28.18	<0.0001	135.5	-0.4	to coast	0.02	0.8885	17	3.5	2.9	4	38.5
Hutton's Vireo Gray Jay	Vireo huttoni Perisoreus canadensis	land-based land-based	woodland woodland	rarely/never	40.55 49.89	44.5 15.1	N N	11.72 2.87	0.00150	164.0 326.0	21.2 13.0	inland inland	81.68 1.09	<0.0001	7 25	<u>2</u> -1.12	1.3 -2.1	-0.3	37.5 26.4
Steller's Jay	Cyanocitta stelleri	land-based	woodland	regularly regularly	49.89	264.4	N N	25.66	<0.0001	266.3	-83.1	to coast	16.09	0.0003	16	2.2	1.4	2.9	78.6
Blue Jay	Cyanocitta cristata	land-based	woodland	regularly	39.55	89.1	N	76.76	<0.0001	400.5	55.6	inland	60.58	<0.0003	52	0.6	0.4	0.7	85.1
"Scrub" Jay (lumped)	,	land-based	shrubland	regularly	37.23	45.8	N	57.07	<0.0001	244.2	34.4	inland	6.74	0.0134	12	0.4	0	1.1	74.9
Pinyon Jay	Gymnorhinus cyanocephalus	land-based	woodland	regularly	38.54	41.6	N	26.01	<0.0001	518.7	-106.0	to coast	358.52	<0.0001	11	0.3	-3.2	4.5	99.3
Clark's Nutcracker	Nucifraga columbiana	land-based	woodland	occasionally	45.02	123.6	N	44.06	<0.0001	492.7	-44.9	to coast	22.21	<0.0001	15	0.8	-0.8	2.3	99.1

Appendix 1. List of 305 species included in the analysis, along with their habitat guild classification, latitudinal distances moved, change in average distance from the coast, and continental population trend estimates.

Appendix 1. List of 300 species inclu	ided in the analysis, along with their habi	Habitat Guild	Habitat Guild	nices moved, ci	Mean latitude (40-yr ave		Lat. Direction	F-value	p-value latitude	Mean dist. from coast (40-yr ave. from	Change in mean dist. from coast	Shifted inland or	F-value slope dist. to	p-value slope dist. to	# state or province	40-year Median Trend (% change	95% LCI	95% UCI	% of hemispheric range in CBC
Species	Scientific_name	(3 classes)	(5 classes)	Feeder use	regression)	moved (miles)	Moved	slope	slope	regression)	(miles)	to coast	coast	coast	strata	per year)	Trend	Trend	survey area
Black-billed Magpie	Pica hudsonia	land-based	woodland	regularly	44.83	85.6	N	247.63	<0.0001	621.2	-25.1	to coast	62.29	<0.0001	22	0.4	0	0.7	72.8
American Crow	Corvus brachyrhynchos	land-based	generalist	regularly	39.41	88.8	N N	650.15	<0.0001	397.0	31.5	inland	96.92	<0.0001	54	2.4	2.1	2.7	97.4
Fish Crow	Corvus ossifragus	wetland/aquatic	<u> </u>	rarely/never	29.66	15.1	N S	6.86	0.01260	33.0	5.0	inland	5.63	0.0228	21	1.1	0	2.2	98.9
Common Raven Horned Lark	Corvus corax Eremophila alpestris	land-based land-based	generalist grassland	regularly occasionally	46.74 39.57	-135.7 4.8	S N	347.1 0.07	<0.0001 0.79410	310.1 613.5	110.8 53.8	inland inland	1461.88 6.94	<0.0001 0.0121	38 54	3.9 -2.8	3.5 -4.9	4.4 -1.1	31.5 87.4
Tree Swallow	Tachycineta bicolor	land-based	generalist	rarely/never	29.25	59.1	N	63.94	<0.0001	30.0	23.0	inland	61.1	<0.00121	22	0.6	-1.6	2.8	14.6
Carolina Chickadee	Poecile carolinensis	land-based	woodland	regularly	35.13	-14.4	S	36.93	<0.0001	273.7	-3.6	to coast	4.78	0.035	22	0.8	0.5	1	99.7
Black-capped Chickadee	Poecile atricapillus	land-based	woodland	regularly	45.36	90.3	N	342.22	<0.0001	517.3	-9.4	to coast	1.46	0.2348	45	2.1	1.9	2.4	66.2
Mountain Chickadee	Poecile gambeli	land-based	woodland	regularly	41.96	67.0	N	5.79	0.02110	574.9	28.7	inland	4.14	0.0489	15	-0.66	-1.8	0.3	95.8
Chestnut-backed Chickadee	Poecile rufescens	land-based	woodland	regularly	48.20	123.2	N	80.23	<0.0001	130.3	0.4	inland	0.03	0.8593	7	1.7	1	2.4	93.3
Boreal Chickadee	Poecile hudsonica	land-based	woodland	regularly	49.77 37.11	279.4 4.3	N N	1120.61	<0.0001 0.13050	260.6 218.5	116.7	inland inland	93.29 5.77	<0.0001	21 9	-1.73 0	-3.7 -0.6	-0.5 0.5	18.3 97.8
"Plain" Titmouse (lumped) "Tufted" Titmouse (lumped)		land-based land-based	woodland woodland	regularly regularly	36.84	27.0	N N	2.39 37.28	<0.0001	334.1	12.6 -33.2	to coast	74.14	<0.0013	35	0.8	0.6	1	54.3
Verdin	Auriparus flaviceps	land-based	shrubland	occasionally	34.26	12.8	N	12.68	0.00100	368.4	31.1	inland	189.49	<0.0001	5	1.4	0.5	2.4	42.3
Bushtit	Psaltriparus minimus	land-based	generalist	regularly	39.04	-30.9	S	19.55	<0.0010	203.5	11.9	inland	2.14	0.152	12	0.6	-0.3	1.6	71.3
Red-breasted Nuthatch	Sitta canadensis	land-based	woodland	regularly	44.84	244.4	N	50.51	<0.0001	408.1	51.9	inland	9.73	0.0035	55	3.7	3.3	4.1	78.1
White-breasted Nuthatch	Sitta carolinensis	land-based	woodland	regularly	41.83	-16.8	S	14.4	0.00050	560.2	17.0	inland	4.23	0.0467	54	1.8	1.7	2	88.1
Pygmy Nuthatch	Sitta pygmaea	land-based	woodland	regularly	41.70	265.5	N N	220.68	<0.0001	443.6	-64.5	to coast	51.54	<0.0001	13	0	-2.3	1.9	80.6
Brown-headed Nuthatch	Sitta pusilla	land-based	woodland	regularly	33.22	23.0	N N	114.04	<0.0001	134.2	2.6 25.2	inland	3.88 14.61	0.0562	14	0.7	-0.1	1.4	99.1 78.2
Brown Creeper Cactus Wren	Certhia americana Campylorhynchus brunneicapillus	land-based land-based	woodland shrubland	regularly regularly	40.79 33.86	103.8 49.9	N N	84.39 36.09	<0.0001	422.8 347.4	39.1	inland inland	91.32	0.0005 <0.0001	55 5	-0.07	0.1 -1.1	0.6	78.2 42.8
Rock Wren	Salpinctes obsoletus	land-based	generalist	rarely/never	35.19	10.6	N	5.01	0.03110	370.7	31.7	inland	56.96	<0.0001	13	0.07	-0.6	0.7	54.6
Canyon Wren	Catherpes mexicanus	land-based	generalist	rarely/never	36.12	94.0	N	120.83	<0.00110	399.3	55.4	inland	127.47	<0.0001	14	0.1	-0.6	0.8	67.8
Carolina Wren	Thryothorus Iudovicianus	land-based	woodland	regularly	34.55	57.0	N	18.6	0.00010	220.1	34.0	inland	9.41	0.004	36	2.2	1.9	2.5	88.6
Bewick's Wren	Thryomanes bewickii	land-based	shrubland	regularly	37.68	54.8	N	17.89	0.00010	259.2	28.7	inland	50.1	<0.0001	25	0	-0.3	0.4	70.0
House Wren	Troglodytes aedon	land-based	woodland	occasionally	31.97	34.1	N	28.72	<0.0001	166.2	11.8	inland	5.07	0.0303	40	0.7	0.2	1.2	6.6
Winter Wren	Troglodytes troglodytes	land-based	woodland	occasionally	43.65	138.8	N N	41.19	<0.0001	189.1	-6.5	to coast	1.79	0.189	52	1.4	1	1.8	96.8
Sedge Wren	Cistothorus platensis	wetland/aquatic		rarely/never	31.60	5.1	N N	2.06	0.15940	151.6	34.0	inland	43.29	<0.0001	19	1.8	0.8	2.8	17.2
Marsh Wren American Dipper	Cistothorus palustris Cinclus mexicanus	wetland/aquatic		rarely/never	37.45 46.96	25.2 37.2	N N	6.62 11.5	0.01410	268.1 417.6	12.7 -20.3	inland to coast	6.52 8	0.0148	44 14	1.7 0.6	0.1	2.3	61.5 54.9
Golden-crowned Kinglet	Regulus satrapa	wetland/aquatic land-based	welland/aqualic	rarely/never occasionally	42.88	87.3	N	5.76	0.00100	211.8	-20.3 -7.1	to coast	0.83	0.3683	55	1.2	0.7	1.6	92.7
Ruby-crowned Kinglet	Regulus calendula	land-based	woodland	regularly	34.23	45.0	N	26.02	<0.0001	200.0	14.0	inland	20.59	<0.0001	50	1.1	0.8	1.4	73.5
Blue-gray Gnatcatcher	Polioptila caerulea	land-based	woodland	rarely/never	30.16	-8.7	S	2.32	0.13620	89.1	-6.9	to coast	1.47	0.2321	26	1.2	0.6	1.8	23.6
Eastern Bluebird	Sialia sialis	land-based	woodland	regularly	35.13	114.5	N	137.31	<0.0001	294.8	37.1	inland	13.54	0.0007	38	3.6	3.1	4	73.6
Western Bluebird	Sialia mexicana	land-based	woodland	occasionally	36.16	2.3	N	0.06	0.80980	318.5	93.4	inland	41	<0.0001	11	1.4	0.3	2.4	47.9
Mountain Bluebird	Sialia currucoides	land-based	shrubland	occasionally	35.39	-71.0	S	15.8	0.00030	539.8	180.2	inland	41.81	<0.0001	17	-0.25	-6.3	3.1	68.7
Townsend's Solitaire Hermit Thrush	Myadestes townsendi Catharus guttatus	land-based land-based	woodland woodland	occasionally	39.52 34.61	99.2 91.4	N N	6.31 35.89	0.01640 <0.0001	603.5 197.8	42.3 24.7	inland inland	19.97 26.5	<0.0001	28 48	0.6 1.3	-0.6 0.8	1.6 1.8	86.4 66.0
American Robin	Turdus migratorius	land-based	woodland	occasionally occasionally	35.59	206.0	N	38.93	<0.0001	250.5	137.2	inland	55.42	<0.0001	55	0.5	-0.3	1.1	85.0
Varied Thrush	Ixoreus naevius	land-based	woodland	regularly	47.26	229.9	N	13.86	0.00060	133.5	-4.9	to coast	3.57	0.0664	28	0.3	-1.4	1.8	92.4
Gray Catbird	Dumetella carolinensis	land-based	shrubland	occasionally	30.34	21.2	N	5.5	0.02430	56.3	6.1	inland	3.43	0.0718	43	1.1	0.5	1.7	38.1
Northern Mockingbird	Mimus polyglottos	land-based	shrubland	occasionally	33.37	13.5	N	5.75	0.02150	208.6	1.9	inland	0.3	0.5864	50	-0.61	-0.8	-0.4	81.0
Sage Thrasher	Oreoscoptes montanus	land-based	shrubland	occasionally	34.03	67.7	N	82.84	<0.0001	504.7	148.1	inland	30.15	<0.0001	8	2.4	0	4.8	52.2
Brown Thrasher	Toxostoma rufum	land-based	shrubland	occasionally	32.91	34.3	N	57.2	<0.0001	185.7	14.1	inland	27.06	<0.0001	45	-2.45	-2.8	-2.1	99.0
European Starling	Sturnus vulgaris	land-based	generalist	regularly	39.56	85.6	N	187.62	<0.0001	395.8	77.4	inland	203.62	<0.0001	55	0.7	0.4	1	65.7
American Pipit Sprague's Pipit	Anthus rubescens Anthus spragueii	land-based land-based	grassland grassland	rarely/never rarely/never	34.69 31.62	-86.2 7.8	S N	51.44 16.7	<0.0001 0.00020	209.0 243.2	-34.4 37.5	to coast inland	67.27 387.52	<0.0001	9	-0.97 -3.23	-1.8 -5.6	-0.1 -1.5	57.2 43.3
Bohemian Waxwing	Bombycilla garrulus	land-based	woodland	occasionally	47.63	111.2	N	9.16	0.00020	588.3	-28.9	to coast	1.75	0.1936	33	-3.23 -1.01	-3.6 -4.5	2.1	66.7
Cedar Waxwing	Bombycilla cedrorum	land-based	woodland	occasionally	36.00	189.2	N	49.43	<0.0001	328.2	162.9	inland	56.46	<0.0001	55	2.4	1.3	3.2	74.8
Orange-crowned Warbler	Vermivora celata	land-based	generalist	occasionally	32.11	32.2	N	41.92	<0.0001	198.7	20.5	inland	28.79	<0.0001	36	2.7	2.2	3.3	51.1
Nashville Warbler	Vermivora ruficapilla	land-based	woodland	rarely/never	33.53	79.3	N	31.31	<0.0001	210.9	-38.7	to coast	112.67	<0.0001	18	0.8	-0.7	2.3	8.3
Yellow-rumped Warbler	Dendroica coronata	land-based	woodland	occasionally	32.76	6.7	N	0.24	0.62600	145.9	15.0	inland	8.61	0.0056	51	2.5	2	2.9	58.7
Townsend's Warbler	Dendroica townsendi	land-based	woodland	occasionally	40.64	-11.8	S	0.28	0.59900	144.2	-21.0	to coast	62.99	<0.0001	8	6.1	4.8	7.3	16.2
Yellow-throated Warbler Pine Warbler	Dendroica dominica Dendroica pinus	land-based land-based	woodland woodland	occasionally occasionally	29.50 32.42	-25.6 -32.3	S S	37.81 177.2	<0.0001	42.5 136.8	-14.2 5.3	to coast inland	18.77 5.3	0.0001	11 31	-1.01 3.2	-1.7 2.6	-0.4 3.8	27.5 92.1
Prairie Warbler	Dendroica pinus Dendroica discolor	land-based	shrubland	rarely/never	29.11	-52.5 17.3	 N	23.27	<0.0001	25.7	2.9	inland	3.78	0.0269	14	-0.93	-1.8	-0.1	25.5
Palm Warbler	Dendroica discolor Dendroica palmarum	land-based	generalist	rarely/never	29.19	4.8	N	1.46	0.23370	26.6	4.4	inland	9.42	0.0039	32	1.6	0.7	2.5	47.9
Black-and-white Warbler	Mniotilta varia	land-based	woodland	occasionally	30.00	22.7	N	21.02	<0.0001	63.7	20.5	inland	43.52	<0.0001	18	-0.09	-0.7	0.5	9.3
Ovenbird	Seiurus aurocapilla	land-based	woodland	rarely/never	29.25	23.6	N	79.15	<0.0001	36.4	11.3	inland	30.02	<0.0001	16	-0.81	-1.9	0.2	5.3
Common Yellowthroat	Geothlypis trichas	land-based	shrubland	rarely/never	31.08	109.3	N	759.56	<0.0001	94.0	46.1	inland	258.16	<0.0001	39	-0.22	-0.8	0.3	24.9
Wilson's Warbler	Wilsonia pusilla	land-based	shrubland	rarely/never	32.36	-46.9	S	14.36	0.00050	172.9	-61.8	to coast	42	<0.0001	18	1.1	-0.5	2.5	5.2
Green-tailed Towhee	Pipilo chlorurus	land-based	shrubland	occasionally	34.05	13.3	N N	6.2	0.01730	403.5	36.1	inland	19.93	<0.0001	7	1.4	-0.3	3.1	39.4
"Rufous-sided" Towhee (lumped)		land-based	shrubland	occasionally	36.16	215.0	N N	1678.67	<0.0001	203.0	22.7	inland	42.11	<0.0001	53	-1.05	-1.4	-0.7	86.1
"Brown" Towhee (lumped)		land-based	shrubland	occasionally	35.90	15.0	N	7.4	0.00980	282.4	-20.5	to coast	3.18	0.0823	6	-0.63	-1	-0.2	44.3

Appendix 1. List of 305 species included in the analysis, along with their habitat guild classification, latitudinal distances moved, change in average distance from the coast, and continental population trend estimates.

										Mean dist.						40-year			
					Mean latitude)				from coast	Change in		F-value	p-value		Median			% of
					(40-yr ave		Lat.	F-value	p-value	(40-yr ave.	mean dist.	Shifted	slope	slope	# state or	Trend (%	95%	95%	hemispheric
		Habitat Guild	Habitat Guild		from	Latitudinal distance	Direction	latitude	latitude	from	from coast	inland or	dist. to	dist. to	province	change	LCI	UCI	range in CBC
Species	Scientific_name	(3 classes)	(5 classes)	Feeder use	regression)	moved (miles)	Moved	slope	slope	regression)	(miles)	to coast	coast	coast	strata	per year)	Trend	Trend	survey area
Bachman's Sparrow	Aimophila aestivalis	land-based	woodland	rarely/never	31.02	15.6	N	18.49	0.00010	106.2	-25.9	to coast	34.85	<0.0001	7	-7.45	-10.5	-5	99.6
Rufous-crowned Sparrow	Aimophila ruficeps	land-based	shrubland	occasionally	33.93	63.8	N	64.03	<0.0001	367.2	-48.6	to coast	17.96	0.0001	7	-1.73	-3	-0.7	54.1
American Tree Sparrow	Spizella arborea	land-based	shrubland	regularly	41.03	54.3	N	45.61	<0.0001	659.5	10.1	inland	1.16	0.2887	53	-2.16	-21.1	-1.6	99.6
Chipping Sparrow	Spizella passerina	land-based	woodland	occasionally	32.72	11.4	N	7.79	0.00820	189.0	-18.7	to coast	12.73	0.001	51	4.3	3.4	5.1	33.9
Field Sparrow	Spizella pusilla	land-based	shrubland	occasionally	34.65	11.7	N	3.89	0.05600	253.0	64.8	inland	889.3	<0.0001	40	-3.16	-3.6	-2.7	94.6
Vesper Sparrow	Pooecetes gramineus	land-based	grassland	rarely/never	32.55	-8.3	S	1.48	0.23140	281.8	25.5	inland	15.08	0.0004	40	-2.03	-3	-1	57.9
Lark Sparrow	Chondestes grammacus	land-based	generalist	occasionally	35.78	44.5	N	14.78	0.00040	187.9	3.9	inland	0.29	0.5908	26	-2.69	-3.7	-1.5	35.4
Sage Sparrow	Amphispiza belli	land-based	shrubland	rarely/never	37.64	-115.6	S	565.18	<0.0001	384.5	45.5	inland	73.56	<0.0001	7	-5.08	-7.5	-2.9	74.9
Savannah Sparrow	Passerculus sandwichensis	land-based	grassland	occasionally	33.05	-32.1	S	30.64	<0.0001	183.2	27.9	inland	68.5	<0.0001	47	1.3	0.6	1.8	58.7
Grasshopper Sparrow	Ammodramus savannarum	land-based	grassland	rarely/never	31.62	23.0	N	10.27	0.00270	217.2	48.4	inland	36.21	<0.0001	21	-0.65	-1.9	0.6	37.0
Henslow's Sparrow	Ammodramus henslowii	land-based	grassland	rarely/never	31.67	-2.2	S	0.12	0.73210	151.5	28.6	inland	13.22	0.0008	9	0.8	-1.6	3.6	99.3
Le Conte's Sparrow	Ammodramus leconteii	wetland/aquatic	wetland/aquatic	rarely/never	32.78	-25.6	S	9.83	0.00330	267.9	5.4	inland	1.08	0.305	19	0.5	-0.8	1.6	99.6
"Sharp-tailed" Sparrow (lumped)		coastal	coastal	rarely/never	32.71	37.3	N	168.29	<0.0001						15	-1.43	-3.9	0.9	96.1
Seaside Sparrow	Ammodramus maritimus	coastal	coastal	rarely/never	31.95	43.0	N	154.75	<0.0001						14	-2.77	-5.5	0.6	95.1
Fox Sparrow	Passerella iliaca	land-based	shrubland	regularly	39.13	286.8	N	210.53	<0.0001	227.2	19.5	inland	8.97	0.0048	52	-0.37	-0.9	0.1	94.1
Song Sparrow	Melospiza melodia	land-based	shrubland	regularly	38.32	74.5	N	83.25	<0.0001	281.8	-10.9	to coast	5.55	0.0237	54	0.4	0.1	0.6	91.7
Lincoln's Sparrow	Melospiza lincolnii	land-based	shrubland	occasionally	33.69	165.3	N	279.81	<0.0001	265.5	-23.0	to coast	12.77	0.001	42	-0.08	-0.7	0.6	48.5
Swamp Sparrow	Melospiza georgiana	wetland/aquatic	wetland/aquatic	occasionally	33.44	-1.7	S	0.1	0.75910	188.6	1.7	inland	0.15	0.7053	48	-0.03	-0.6	0.5	77.1
White-throated Sparrow	Zonotrichia albicollis	land-based	woodland	regularly	34.89	109.1	N	127.54	<0.0001	200.7	59.8	inland	253.64	<0.0001	55	-0.17	-0.6	0.2	95.3
Harris's Sparrow	Zonotrichia querula	land-based	shrubland	regularly	38.17	-49.7	S	242.3	<0.0001	608.3	-55.5	to coast	386.98	<0.0001	39	-2.13	-3.1	-1.2	99.7
White-crowned Sparrow	Zonotrichia leucophrys	land-based	shrubland	regularly	36.33	21.7	N	12.46	0.00110	316.2	12.4	inland	2.55	0.1188	55	-0.48	-1.1	0.1	81.7
Golden-crowned Sparrow	Zonotrichia atricapilla	land-based	shrubland	regularly	38.92	155.0	N	158.2	<0.0001	131.7	3.9	inland	29.69	<0.0001	12	1.1	0.4	1.8	93.3
Dark-eyed Junco	Junco hyemalis	land-based	woodland	regularly	39.43	116.1	N	274.62	<0.0001	440.3	14.6	inland	7.06	0.0115	55	-0.12	-0.4	0.2	91.3
Lapland Longspur	*Calcarius lapponicus	land-based	grassland	rarely/never	39.54	36.6	N	1.08	0.30510	678.2	15.0	inland	0.38	0.5431	50	0.4	-3.3	3.9	97.8
Snow Bunting	*Plectrophenax nivalis	land-based	grassland	occasionally	48.54	-35.5	S	5.46	0.02490	605.6	-61.3	to coast	10.83	0.0022	43	-0.93	-3.2	0.9	71.4
Northern Cardinal	Cardinalis cardinalis	land-based	shrubland	regularly	36.60	58.9	N	58.82	<0.0001	369.6	46.2	inland	77.95	<0.0001	44	-0.08	-0.3	0.1	77.6
Red-winged Blackbird	Agelaius phoeniceus	land-based	generalist	regularly	34.06	99.3	N	276.39	<0.0001	274.6	118.5	inland	369.71	<0.0001	55	0.1	-0.7	1.1	82.4
Eastern Meadowlark	Sturnella magna	land-based	grassland	occasionally	33.85	-34.1	S	65.22	<0.0001	236.4	13.0	inland	14.7	0.0005	37	-3.27	-3.7	-2.8	58.0
Western Meadowlark	Sturnella neglecta	land-based	grassland	occasionally	37.51	-25.4	S	22.65	<0.0001	259.5	-42.0	to coast	35.4	<0.0001	30	-2.78	-3.4	-2.2	75.3
Yellow-headed Blackbird	Xanthocephalus xanthocephalus	wetland/aquatic	wetland/aquatic	rarely/never	35.45	-108.1	S	22.07	<0.0001	407.3	-2.6	to coast	0.17	0.6812	36	-0.55	-5.5	2.6	25.0
Rusty Blackbird	Euphagus carolinus	wetland/aquatic	wetland/aquatic	rarely/never	35.06	100.9	N	181.56	<0.0001	294.2	123.6	inland	237.9	<0.0001	52	-5.46	-7.1	-4.1	99.6
Brewer's Blackbird	Euphagus cyanocephalus	land-based	generalist	regularly	37.69	13.6	N	53.32	<0.0001	177.8	-14.7	to coast	174.58	<0.0001	46	-2.46	-3.2	-1.7	75.0
Common Grackle	Quiscalus quiscula	land-based	generalist	regularly	33.12	-46.3	S	77.35	<0.0001	183.1	-42.9	to coast	78.58	<0.0001	48	-4.24	-6.1	-2.6	99.5
Brown-headed Cowbird	Molothrus ater	land-based	generalist	regularly	32.86	-18.5	S	11.64	0.00150	227.7	-2.3	to coast	1.35	0.2527	51	-3.05	-4.2	-2	68.4
"Northern" Oriole (lumped)		land-based	woodland	occasionally	34.42	21.1	N	7.31	0.01020	108.9	-8.0	to coast	1.73	0.1963	33	-2.72	-3.9	-1.7	5.3
Pine Grosbeak	Pinicola enucleator	land-based	woodland	regularly	49.79	148.3	N	7.65	0.00870	461.8	-127.2	to coast	6.87	0.0125	38	-0.78	-4.1	2.1	45.3
Purple Finch	Carpodacus purpureus	land-based	woodland	regularly	40.11	433.0	N	89.13	<0.0001	389.7	229.7	inland	121.43	<0.0001	53	-2.27	-3.2	-1.5	98.8
Cassin's Finch	Carpodacus cassinii	land-based	woodland	regularly	40.65	12.5	N	0.06	0.81120	523.6	-42.9	to coast	2.62	0.1137	13	-1.4	-4.2	1.7	77.9
House Finch	Carpodacus mexicanus	land-based	generalist	regularly	39.54	269.8	N	2388.68	<0.0001	290.3	172.5	inland	129.94	<0.0001	54	2.6	2	3.1	78.8
Red Crossbill	Loxia curvirostra	land-based	woodland	occasionally	48.94	38.8	N	0.22	0.63890	317.6	1.2	inland	0	0.9845	48	-1.51	-5.2	1.5	74.9
White-winged Crossbill	Loxia leucoptera	land-based	woodland	occasionally	51.37	27.2	N	0.09	0.76980	328.2	-50.7	to coast	0.27	0.6074	34	-0.32	-5.1	3.8	50.7
Common Redpoll	Carduelis flammea	land-based	shrubland	regularly	49.37	19.1	N	0.1	0.75160	611.7	-257.9	to coast	16.18	0.0003	41	0.6	-3.3	3.9	51.3
Hoary Redpoll	Carduelis hornemanni	land-based	shrubland	regularly	50.82	-26.9	S	0.78	0.38300	657.7	-119.4	to coast	3.47	0.0703	18	-4.97	-9.1	-1.5	43.8
Pine Siskin	Carduelis pinus	land-based	woodland	regularly	46.56	288.2	N	11.19	0.00190	346.0	26.5	inland	0.27	0.6052	55	1	-0.9	2.6	78.7
Lesser Goldfinch	Carduelis psaltria	land-based	generalist	regularly	37.12	-6.3	S	0.92	0.34280	194.9	61.4	inland	53.02	<0.0001	9	1.2	-0.1	2.6	30.5
American Goldfinch	Carduelis tristis	land-based	generalist	regularly	38.56	219.1	N	143.14	<0.0001	425.1	94.9	inland	89.82	<0.0001	54	1.5	1.2	1.7	93.7
Evening Grosbeak	Coccothraustes vespertinus	land-based	woodland	regularly	46.81	68.7	N	2.28	0.13900	351.3	-71.1	to coast	4.26	0.0459	54	-5.08	-7.2	-3.2	88.3
House Sparrow	Passer domesticus	land-based	generalist	regularly	42.34	77.4	N	352.52	<0.0001	630.1	16.1	inland	9.79	0.0034	54	-2.21	-2.5	-2	40.9
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