

Responses to climate change in avian migration time— microevolution versus phenotypic plasticity

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Appendix 1. Data set used for meta-analysis. For every species: continent (AME: North America, AUSTR: Australia, EUR: Europe) in which the study was conducted; analysed variable (NAO: North Atlantic Oscillation index, TEMP: local temperature, YEAR: time trend); and measure of migration time (FAD: first arrival date at breeding area, FSP: first spring passage at bird observatory, MSP: median/mean spring passage at bird observatory); the midpoint of the study/studies used; and the effect size and variance or their means when more than 1 study was averaged are given, respectively. Effect size is the correlation coefficient (r) between the given variables, weighted by their sample size. Additionally, the species-specific migration distance, and age at first reproduction (AFR) are given. n gives the number of populations/locations over which data were averaged, this is not necessarily consistent with the number of studies analysed since some studies analysed presented data from more than one population/location. Sources are given at the end of the table

Species	Continent	Variable	Measure of migration time	n	Effect size	Variance	Migration distance	AFR	Study midpoint	Source
<i>Archilochus colubris</i>	AME	TEMP	MSP	1	-1.0317	0.0286	long	1	1999	12
<i>Catharus fuscescens</i>	AME	TEMP	MSP	1	-0.4086	0.0357	long	1	1992	12
<i>Catharus ustulatus</i>	AME	TEMP	MSP	2	-0.3788	0.0302	long	1	1997	12
<i>Contopus virens</i>	AME	TEMP	MSP	1	-0.5890	0.0385	long	1	1990	12
<i>Dendroica caerulescens</i>	AME	TEMP	MSP	1	-0.4086	0.0769	long	1	1977	12
<i>Dendroica castanea</i>	AME	TEMP	MSP	1	-0.4812	0.1429	long	1	1971	12
<i>Dendroica fusca</i>	AME	TEMP	MSP	1	0.0000	0.1111	long	1	1973	12
<i>Dendroica magnolia</i>	AME	TEMP	MSP	2	-0.5086	0.0300	long	1	1997	12
<i>Dendroica palmarum</i>	AME	TEMP	MSP	1	-0.5758	0.0625	long	1	1980	12
<i>Dendroica pensylvanica</i>	AME	TEMP	MSP	2	-0.2067	0.0612	long	1	1981	12
<i>Dendroica petechia</i>	AME	TEMP	MSP	2	-0.1849	0.0301	long	1	1997	12
<i>Dendroica virens</i>	AME	TEMP	MSP	1	-0.2274	0.0625	long	1	1980	12
<i>Dumetella carolinensis</i>	AME	TEMP	MSP	2	-0.2225	0.0318	long	1	1995	12
<i>Empidonax flaviventris</i>	AME	TEMP	MSP	2	-0.4856	0.0362	long	1	1992	12
<i>Empidonax minimus</i>	AME	TEMP	MSP	2	-0.3256	0.0606	long	1	1986	12
<i>Empidonax traillii</i>	AME	TEMP	MSP	1	0.0000	0.0278	long	1	2000	12
<i>Empidonax virescens</i>	AME	TEMP	MSP	1	-0.3775	0.0769	long	1	1977	12
<i>Geothlypis trichas</i>	AME	TEMP	MSP	2	-0.3421	0.0301			1997	12
<i>Hirundo rustica</i>	AME	TEMP	MSP	1	-0.2500	0.0455	long	1	1986	12
<i>Hylocichla mustelina</i>	AME	TEMP	MSP	2	-0.1752	0.0375	long	1	1991	12
<i>Icteria virens</i>	AME	TEMP	MSP	1	-0.2027	0.0588	long	1	1981	12
<i>Icterus galbula</i>	AME	TEMP	MSP	2	-0.3691	0.0717	long	2	1984	12
<i>Mniotilta varia</i>	AME	TEMP	MSP	1	-0.1424	0.0625	long	1	1980	12
<i>Oporornis formosus</i>	AME	TEMP	MSP	1	-0.2027	0.1250	long		1972	12
<i>Oporornis philadelphia</i>	AME	TEMP	MSP	2	-0.5750	0.0585	long		1983	12
<i>Passerina cyanea</i>	AME	TEMP	MSP	2	-0.4268	0.0377	long	1	1993	12
<i>Pheucticus ludovicianus</i>	AME	TEMP	MSP	2	-0.3315	0.0707	long	1	1985	12
<i>Piranga olivacea</i>	AME	TEMP	MSP	1	-0.7455	0.0769	long	1	1977	12
<i>Polioptila caerulea</i>	AME	TEMP	MSP	1	-0.4384	0.0278			2000	12
<i>Seiurus aurocapillus</i>	AME	TEMP	MSP	2	-0.3817	0.0728	long		1983	12
<i>Seiurus noveboracensis</i>	AME	TEMP	MSP	2	-0.1542	0.0460	long	1	1989	12
<i>Setophaga ruticilla</i>	AME	TEMP	MSP	2	0.0000	0.0369	long	1	1992	12
<i>Vermivora chrysoptera</i>	AME	TEMP	MSP	1	-0.5493	0.0500	long	1	1984	12
<i>Vermivora peregrina</i>	AME	TEMP	MSP	2	-1.0533	0.0871	long	1	1983	12
<i>Vermivora pinus</i>	AME	TEMP	MSP	1	-0.2710	0.1250	long	1	1972	12
<i>Vermivora ruficapilla</i>	AME	TEMP	MSP	2	-0.6409	0.0349	long	1	1993	12
<i>Wilsonia canadensis</i>	AME	TEMP	MSP	2	-0.3002	0.0402	long	1	1991	12
<i>Wilsonia citrina</i>	AME	TEMP	MSP	1	0.1003	0.0625	long	1	1980	12

Appendix 1 (continued)

Species	Continent	Variable	Measure of migration time	n	Effect size	Variance	Migration distance	AFR	Study midpoint	Source
<i>Wilsonia pusilla</i>	AME	TEMP	MSP	2	-0.4035	0.0339	long	1	1993	12
<i>Vireo gilvus</i>	AME	TEMP	MSP	1	-0.8258	0.1111	long	1	1973	12
<i>Vireo griseus</i>	AME	TEMP	MSP	1	-0.1424	0.0476	long	1	1985	12
<i>Vireo olivaceus</i>	AME	TEMP	MSP	2	-0.2680	0.0318	long	1	1996	12
<i>Acrocephalus stentoreus</i>	AUSTR	YEAR	FAD	1	-0.1003	0.0667	long		1995	2
<i>Cacomantis variolosus</i>	AUSTR	YEAR	FAD	2	0.0000	0.0644	long		1995.5	2
<i>Calidris acuminata</i>	AUSTR	YEAR	FAD	1	-0.4086	0.0714			1999	2
<i>Calidris canutus</i>	AUSTR	YEAR	FAD	1	-0.7323	0.0714			2002	2
<i>Calidris ferruginea</i>	AUSTR	YEAR	FAD	1	-0.5890	0.0833			1993	2
<i>Charadrius bicinctus</i>	AUSTR	YEAR	FAD	1	0.3933	0.0476			2001	2
<i>Coracina tenuirostris</i>	AUSTR	YEAR	FAD	3	0.1170	0.0640	long		1988.7	2
<i>Cuculus pallidus</i>	AUSTR	YEAR	FAD	2	-0.3558	0.0435	long		1995	2
<i>Eudynamis scolopacea</i>	AUSTR	YEAR	FAD	3	-0.2082	0.0449	long		1994	2
<i>Eurystomus orientalis</i>	AUSTR	YEAR	FAD	3	-0.0140	0.0594	long		1987.7	2
<i>Gallinago hardwickii</i>	AUSTR	YEAR	FAD	1	-0.1003	0.0556			1996	2
<i>Gerygone olivacea</i>	AUSTR	YEAR	FAD	1	-0.7062	0.0909	short		1990	2
<i>Hirundapus caudacutus</i>	AUSTR	YEAR	FAD	2	-0.4061	0.0593			1995.5	2
<i>Lalage sueurii</i>	AUSTR	YEAR	FAD	1	0.4951	0.0667	short		1989	2
<i>Lathamus discolor</i>	AUSTR	YEAR	FAD	1	-0.3275	0.0769			1990	2
<i>Merops ornatus</i>	AUSTR	YEAR	FAD	4	-0.2990	0.0690	long		1988.5	2
<i>Monarcha melanopsis</i>	AUSTR	YEAR	FAD	3	-0.2749	0.0624	long		1995	2
<i>Myiagra cyanoleuca</i>	AUSTR	YEAR	FAD	1	-0.3095	0.0455	long		1995	2
<i>Myiagra rubecula</i>	AUSTR	YEAR	FAD	3	-0.3353	0.0575	short		1996	2
<i>Pachycephala rufiventris</i>	AUSTR	YEAR	FAD	1	-0.6671	0.0435	short		1997	2
<i>Pluvialis fulva</i>	AUSTR	YEAR	FAD	1	-0.2274	0.0769			1999	2
<i>Rhipidura rufifrons</i>	AUSTR	YEAR	FAD	2	-0.3002	0.0663	short		1995	2
<i>Scythrops novaehollandiae</i>	AUSTR	YEAR	FAD	4	-0.6403	0.0646	long		1990.3	2
<i>Todiramphus sanctus</i>	AUSTR	YEAR	FAD	2	-0.7951	0.0481	long		1994	2
<i>Ammodramus henslowii</i>	AME	YEAR	FAD	1	-0.4084	0.0250	short		1975	5
<i>Ammodramus savannarum</i>	AME	YEAR	FAD	1	-0.4040	0.0213	short	1	1982	5
<i>Archilochus colubris</i>	AME	YEAR	FAD	1	-0.1044	0.0185	long	1	1989	5
<i>Bartramia longicauda</i>	AME	YEAR	FAD	1	-0.3055	0.0370	long		1962	5
<i>Buteo platypterus</i>	AME	YEAR	FAD	1	-0.0553	0.0204	long	2	1984	5
<i>Butorides virescens</i>	AME	YEAR	FAD	1	-0.3292	0.0196	short	2	1986	5
<i>Calidris melanotos</i>	AME	YEAR	FAD	1	-0.7708	0.0357	long	1	1963	5
<i>Calidris minutilla</i>	AME	YEAR	FAD	1	-0.0916	0.0213	short	1	1982	5
<i>Calidris pusilla</i>	AME	YEAR	FAD	1	0.0780	0.0313	long	3	1967	5
<i>Caprimulgus vociferus</i>	AME	YEAR	FAD	1	0.1212	0.0196	long		1986	5
<i>Catharus fuscescens</i>	AME	YEAR	FAD	1	-0.0476	0.0182	long	1	1990	5
<i>Catharus minimus</i>	AME	YEAR	FAD	1	-0.0428	0.0294	long	1	1969	5
<i>Catharus ustulatus</i>	AME	YEAR	FAD	1	-0.0934	0.0189	long	1	1988	5
<i>Chaetura pelagica</i>	AME	YEAR	FAD	1	-0.1020	0.0189	long	1	1988	5
<i>Cistothorus platensis</i>	AME	YEAR	FAD	1	0.2163	0.0370	short	1	1962	5
<i>Coccyzus americanus</i>	AME	YEAR	FAD	1	-0.0904	0.0294	long	1	1969	5
<i>Coccyzus erythrophthalmus</i>	AME	YEAR	FAD	1	-0.0601	0.0192	long	1	1987	5
<i>Contopus cooperi</i>	AME	YEAR	FAD	1	-0.1325	0.0256	long	1	1974	5
<i>Contopus virens</i>	AME	YEAR	FAD	1	-0.1379	0.0182	long	1	1990	5
<i>Dendroica caerulescens</i>	AME	YEAR	FAD	1	-0.0447	0.0182	long	1	1990	5
<i>Dendroica castanea</i>	AME	YEAR	FAD	1	-0.1691	0.0222	long	1	1980	5
<i>Dendroica discolor</i>	AME	YEAR	FAD	1	0.0574	0.0189	short	1	1988	5
<i>Dendroica pensylvanica</i>	AME	YEAR	FAD	1	0.0057	0.0179	long	1	1991	5
<i>Dendroica pinus</i>	AME	YEAR	FAD	1	-0.0026	0.0196	short	1	1986	5
<i>Dendroica striata</i>	AME	YEAR	FAD	1	0.0195	0.0189	long	1	1988	5
<i>Dendroica tigrina</i>	AME	YEAR	FAD	1	-0.1947	0.0238	long	1	1977	5
<i>Empidonax alnorum</i>	AME	YEAR	FAD	1	-0.1359	0.0303	long	1	1968	5
<i>Empidonax flaviventris</i>	AME	YEAR	FAD	1	-0.0015	0.0385	long	1	1961	5
<i>Gallinago gallinago</i>	AME	YEAR	FAD	1	-0.6997	0.0278	short	1	1971	5
<i>Helmitheros vermivorus</i>	AME	YEAR	FAD	1	-0.1267	0.1111	long	1	1944	5
<i>Hylocichla mustelina</i>	AME	YEAR	FAD	1	-0.0990	0.0179	long	1	1991	5
<i>Icteria virens</i>	AME	YEAR	FAD	1	0.1264	0.0303	long	1	1968	5
<i>Icterus spurius</i>	AME	YEAR	FAD	1	0.0466	0.0385	long	1	1961	5
<i>Melospiza lincolni</i>	AME	YEAR	FAD	1	-0.2271	0.0278	short	1	1971	5
<i>Myiarchus crinitus</i>	AME	YEAR	FAD	1	-0.1994	0.0182	short	1	1990	5
<i>Oporornis philadelphia</i>	AME	YEAR	FAD	1	-0.3039	0.0400	long		1960	5
<i>Pandion haliaetus</i>	AME	YEAR	FAD	1	0.1535	0.0196	short	2.5	1986	5
<i>Parula americana</i>	AME	YEAR	FAD	1	0.0885	0.0192	long	1	1987	5

Appendix 1 (continued)

Species	Continent	Variable	Measure of migration time	n	Effect size	Variance	Migration distance	AFR	Study midpoint	Source
<i>Passerculus sandwichensis</i>	AME	YEAR	FAD	1	-0.4276	0.0185	short	1	1989	5
<i>Passerina cyanea</i>	AME	YEAR	FAD	1	-0.0840	0.0185	long	1	1989	5
<i>Petrochelidon pyrrhonota</i>	AME	YEAR	FAD	1	0.0186	0.0196	long	1	1986	5
<i>Pheucticus ludovicianus</i>	AME	YEAR	FAD	1	-0.0552	0.0182	long	1	1990	5
<i>Piranga olivacea</i>	AME	YEAR	FAD	1	-0.0664	0.0182	long	1	1990	5
<i>Polioptilla caerulea</i>	AME	YEAR	FAD	1	-0.1659	0.0370			1962	5
<i>Protonotaria citrea</i>	AME	YEAR	FAD	1	0.0905	0.0476	long	1	1956	5
<i>Rallus limicola</i>	AME	YEAR	FAD	1	-0.7049	0.0286	short		1970	5
<i>Riparia riparia</i>	AME	YEAR	FAD	1	-0.2596	0.0213	long		1982	5
<i>Scolopax minor</i>	AME	YEAR	FAD	1	-0.2058	0.0179	short	1	1991	5
<i>Seiurus aurocapillus</i>	AME	YEAR	FAD	1	-0.0370	0.0179	short		1991	5
<i>Seiurus motacilla</i>	AME	YEAR	FAD	1	-0.3665	0.0233	long	1	1978	5
<i>Seiurus noveboracensis</i>	AME	YEAR	FAD	1	-0.1624	0.0182	long	1	1990	5
<i>Sialia sialis</i>	AME	YEAR	FAD	1	-0.4225	0.0189	short	1	1988	5
<i>Sphyrapicus varius</i>	AME	YEAR	FAD	1	-0.4343	0.0196	short	1	1986	5
<i>Spizella passerina</i>	AME	YEAR	FAD	1	-0.0090	0.0185	short	1	1989	5
<i>Spizella pusilla</i>	AME	YEAR	FAD	1	NA	NA	short	1	1989	5
<i>Stelgidopteryx serripennis</i>	AME	YEAR	FAD	1	-0.5355	0.0250	short	1	1975	5
<i>Sterna hirundo</i>	AME	YEAR	FAD	1	0.0719	0.0588	long	3	1952	5
<i>Tringa solitaria</i>	AME	YEAR	FAD	1	-0.3215	0.0185	long		1989	5
<i>Vermivora celata</i>	AME	YEAR	FAD	1	-0.0370	0.0526	short	1	1954	5
<i>Vermivora chrysoptera</i>	AME	YEAR	FAD	1	-0.0678	0.0185	long	1	1989	5
<i>Vermivora peregrina</i>	AME	YEAR	FAD	1	-0.2600	0.0233	long	1	1978	5
<i>Vermivora pinus</i>	AME	YEAR	FAD	1	-0.2971	0.0263	long	1	1973	5
<i>Vermivora ruficapilla</i>	AME	YEAR	FAD	1	-0.1125	0.0182	long	1	1990	5
<i>Wilsonia canadensis</i>	AME	YEAR	FAD	1	-0.0120	0.0185	long	1	1989	5
<i>Wilsonia citrina</i>	AME	YEAR	FAD	1	-0.1032	0.0400	long	1	1960	5
<i>Vireo flavifrons</i>	AME	YEAR	FAD	1	-0.2120	0.0213	short	1	1982	5
<i>Vireo gilvus</i>	AME	YEAR	FAD	1	-0.1577	0.0182	long	1	1990	5
<i>Vireo olivaceus</i>	AME	YEAR	FAD	1	0.0701	0.0182	long	1	1990	5
<i>Vireo philadelphicus</i>	AME	YEAR	FAD	1	-0.1124	0.0370	long	1	1962	5
<i>Vireo solitarius</i>	AME	YEAR	FAD	1	-0.0594	0.0192	short	1	1987	5
<i>Acrocephalus schoenobaenus</i>	EUROP	NAO	MSP	1	-0.5075	0.0286	long	1	1998	8
<i>Acrocephalus schoenobaenus</i>	EUROP	TEMP	MSP	1	-0.0708	0.0286	long	1	1998	8
<i>Acrocephalus schoenobaenus</i>	EUROP	YEAR	MSP	1	-0.1658	0.0286	long	1	1998	8
<i>Acrocephalus scirpaceus</i>	EUROP	TEMP	MSP	1	-0.2298	0.0263	long	1	2001	8
<i>Erithacus rubecula</i>	EUROP	TEMP	MSP	1	-0.3614	0.0263	short	1	2001	8
<i>Fringilla montifringilla</i>	EUROP	TEMP	MSP	1	0.2079	0.0278	short	1	1999	8
<i>Fringilla coelebs</i>	EUROP	TEMP	MSP	1	-0.3886	0.0263	short	1	2001	8
<i>Hippolais icterina</i>	EUROP	TEMP	MSP	1	-0.1424	0.0278	long	1	1999	8
<i>Muscicapa striata</i>	EUROP	TEMP	MSP	1	-0.3743	0.0263	long	1	2001	8
<i>Parus major</i>	EUROP	TEMP	MSP	1	-0.5994	0.0345	short	1	1992	8
<i>Phoenicurus phoenicurus</i>	EUROP	TEMP	MSP	1	-0.4147	0.0263	long	1	2001	8
<i>Phylloscopus collybita</i>	EUROP	NAO	MSP	1	-0.4992	0.0263	long	1	2001	8
<i>Phylloscopus collybita</i>	EUROP	TEMP	MSP	1	-0.4770	0.0263	long	1	2001	8
<i>Phylloscopus trochilus</i>	EUROP	TEMP	MSP	1	-0.4132	0.0263	long	1	2001	8
<i>Prunella modularis</i>	EUROP	TEMP	MSP	1	-0.7907	0.0263	short	1	2001	8
<i>Scolopax rusticola</i>	EUROP	NAO	MSP	1	-0.4514	0.0345	short	1.5	1992	8
<i>Scolopax rusticola</i>	EUROP	TEMP	MSP	1	-0.7297	0.0345	short	1.5	1992	8
<i>Scolopax rusticola</i>	EUROP	YEAR	MSP	1	-0.5184	0.0345	short	1.5	1992	8
<i>Sylvia atricapilla</i>	EUROP	TEMP	MSP	1	-0.6373	0.0263			2001	8
<i>Sylvia borin</i>	EUROP	TEMP	MSP	1	-0.1350	0.0263	long	1	2001	8
<i>Sylvia communis</i>	EUROP	TEMP	MSP	1	-0.2628	0.0263	long	1	2001	8
<i>Sylvia curruca</i>	EUROP	TEMP	MSP	1	-0.4992	0.0286	long	1	1998	8
<i>Troglodytes troglodytes</i>	EUROP	TEMP	MSP	1	-0.4882	0.0278	short		1999	8
<i>Turdus iliacus</i>	EUROP	TEMP	MSP	1	-0.5732	0.0263	short	1	2001	8
<i>Turdus merula</i>	EUROP	TEMP	MSP	1	-1.0173	0.0323	short	1	1994	8
<i>Turdus philomelus</i>	EUROP	TEMP	MSP	1	-0.4442	0.0263	short	1	2001	8
<i>Turdus pilaris</i>	EUROP	TEMP	MSP	1	-0.3663	0.0294	short	1	1997	8
<i>Turdus torquatus</i>	EUROP	NAO	MSP	1	-0.2412	0.0263	short	1	2001	8
<i>Turdus torquatus</i>	EUROP	TEMP	MSP	1	-0.4428	0.0263	short	1	2001	8
<i>Turdus torquatus</i>	EUROP	YEAR	MSP	1	-0.2274	0.0263	short	1	2001	8
<i>Ficedula hypoleuca</i>	EUROP	TEMP	FAD	1	-0.6671	0.0313	long	1	2004	3
<i>Streptopelia turtur</i>	EUROP	YEAR	FAD	1	0.2432	0.0286	long	1	2001	4
<i>Streptopelia turtur</i>	EUROP	YEAR	FSP	6	-0.0227	0.0381	long	1	1999.3	4
<i>Delichon urbica</i>	EUROP	YEAR	FAD	1	-0.0250	0.0500	long	1	1975	6

Appendix 1 (continued)

Species	Continent	Variable	Measure of migration time	n	Effect size	Variance	Migration distance	AFR	Study midpoint	Source
<i>Upupa epops</i>	EUROP	YEAR	FAD	1	0.3175	0.0333	long		1985	6
<i>Ciconia ciconia</i>	EUROP	YEAR	FAD	1	-1.0391	0.0175	long	4	2004	7
<i>Ficedula hypoleuca</i>	EUROP	YEAR	FAD	1	-0.4135	0.0250	long	1	2003	9
<i>Alauda arvensis</i>	EUROP	NAO	FAD	1	-0.1841	0.0062	short	1	1985	11
<i>Alauda arvensis</i>	EUROP	YEAR	FAD	1	-0.2833	0.0294	short	1	1999	11
<i>Apus apus</i>	EUROP	NAO	FAD	1	-0.1542	0.0085	long	2	1941	11
<i>Fringilla coelebs</i>	EUROP	NAO	FAD	1	-0.1511	0.0088	short	1	1937	11
<i>Fringilla coelebs</i>	EUROP	YEAR	FAD	1	-0.9309	0.0278	short	1	2001	11
<i>Motacilla alba</i>	EUROP	NAO	FAD	1	0.0490	0.0063	short	1	1982	11
<i>Motacilla alba</i>	EUROP	YEAR	FAD	1	-0.4356	0.0286	short	1	2000	11
<i>Acrocephalus schoenobaenus</i>	EUROP	YEAR	FAD	1	-0.2986	0.0222	long	1	1990	13
<i>Anthus trivialis</i>	EUROP	TEMP	FAD	1	-0.3884	0.0217			1991	13
<i>Anthus trivialis</i>	EUROP	YEAR	FAD	1	0.4001	0.0217			1991	13
<i>Oenanthe oenanthe</i>	EUROP	TEMP	FAD	1	-0.3316	0.0217	long	1	1991	13
<i>Phylloscopus collybita</i>	EUROP	TEMP	FAD	1	-0.6328	0.0217	short	1	1991	13
<i>Phylloscopus collybita</i>	EUROP	YEAR	FAD	1	-0.3654	0.0217	short	1	1991	13
<i>Phylloscopus trochilus</i>	EUROP	TEMP	FAD	1	-0.5361	0.0222	long	1	1990	13
<i>Riparia riparia</i>	EUROP	YEAR	FAD	1	-0.4599	0.0217	long	1	1991	13
<i>Sylvia atricapilla</i>	EUROP	YEAR	FAD	1	-0.6328	0.0217		1	1991	13
<i>Sylvia borin</i>	EUROP	TEMP	FAD	1	-0.5101	0.0222	long	1	1990	13
<i>Sylvia borin</i>	EUROP	YEAR	FAD	1	0.3316	0.0222	long	1	1990	13
<i>Sylvia communis</i>	EUROP	TEMP	FAD	1	-0.5361	0.0217	long	1	1991	13
<i>Sylvia communis</i>	EUROP	YEAR	FAD	1	0.4356	0.0217	long	1	1991	13
<i>Sylvia curruca</i>	EUROP	TEMP	FAD	1	-0.3541	0.0217	long	1	1991	13
<i>Catharus guttatus</i>	AME	YEAR	FSP	1	-0.3933	0.0500	short	1	1998	14
<i>Catharus guttatus</i>	AME	YEAR	MSP	1	0.2274	0.0500	short	1	1998	14
<i>Catharus ustulatus</i>	AME	YEAR	FSP	1	-0.2027	0.0455	long	1	2000	14
<i>Catharus ustulatus</i>	AME	YEAR	MSP	1	-0.2710	0.0455	long	1	2000	14
<i>Certhia americana</i>	AME	YEAR	FSP	1	-0.3775	0.0625	short	1	1994	14
<i>Certhia americana</i>	AME	YEAR	MSP	1	-0.6541	0.0625	short	1	1994	14
<i>Dendroica coronata</i>	AME	YEAR	FSP	1	-0.2500	0.0476	short	1	1999	14
<i>Dendroica coronata</i>	AME	YEAR	MSP	1	-0.2908	0.0476	short	1	1999	14
<i>Dendroica magnolia</i>	AME	YEAR	FSP	1	-0.2908	0.0476	long	1	1999	14
<i>Dendroica magnolia</i>	AME	YEAR	MSP	1	-0.1003	0.0476	long	1	1999	14
<i>Dendroica petechia</i>	AME	YEAR	FSP	1	-0.4529	0.0476	long	1	1999	14
<i>Dendroica petechia</i>	AME	YEAR	MSP	1	-0.1003	0.0476	long	1	1999	14
<i>Empidonax minimus</i>	AME	YEAR	FSP	1	-0.3275	0.0435	long	1	2001	14
<i>Empidonax minimus</i>	AME	YEAR	MSP	1	-0.7062	0.0435	long	1	2001	14
<i>Geothlypis trichas</i>	AME	YEAR	FSP	1	-0.4384	0.0455			2000	14
<i>Geothlypis trichas</i>	AME	YEAR	MSP	1	-0.2908	0.0455			2000	14
<i>Regulus calendula</i>	AME	YEAR	FSP	1	-0.6801	0.0476	short	1	1999	14
<i>Regulus calendula</i>	AME	YEAR	MSP	1	0.1750	0.0476	short	1	1999	14
<i>Seiurus aurocapillus</i>	AME	YEAR	FSP	1	-0.3933	0.0476	long		1999	14
<i>Seiurus aurocapillus</i>	AME	YEAR	MSP	1	-0.2710	0.0476	long		1999	14
<i>Setophaga ruticilla</i>	AME	YEAR	FSP	1	-0.2908	0.0476	long	1	1999	14
<i>Setophaga ruticilla</i>	AME	YEAR	MSP	1	0.0000	0.0476	long	1	1999	14
<i>Vermivora ruficapilla</i>	AME	YEAR	FSP	1	-0.1003	0.0500	long	1	1998	14
<i>Vermivora ruficapilla</i>	AME	YEAR	MSP	1	0.3447	0.0500	long	1	1998	14
<i>Zonotrichia albicollis</i>	AME	YEAR	FSP	1	-0.4529	0.0455	short	1	2000	14
<i>Zonotrichia albicollis</i>	AME	YEAR	MSP	1	0.0000	0.0455	short	1	2000	14
<i>Accipiter cooperii</i>	AME	TEMP	FAD	1	-0.0633	0.0217		2	1988	15
<i>Accipiter cooperii</i>	AME	YEAR	FAD	1	0.1311	0.0217		2	1988	15
<i>Accipiter striatus</i>	AME	TEMP	FAD	1	0.0000	0.0189		2	1995	15
<i>Accipiter striatus</i>	AME	YEAR	FAD	1	-0.0448	0.0189		2	1995	15
<i>Actitis macularia</i>	AME	TEMP	FAD	1	-0.2129	0.0250	short	1.5	1982	15
<i>Aechmophorus occidentalis</i>	AME	TEMP	FAD	1	-0.2344	0.0222		2	1987	15
<i>Aechmophorus occidentalis</i>	AME	YEAR	FAD	1	-0.4207	0.0222		2	1987	15
<i>Agelaius phoeniceus</i>	AME	TEMP	FAD	1	-0.4742	0.0189		2	1995	15
<i>Agelaius phoeniceus</i>	AME	YEAR	FAD	1	-0.1387	0.0189		2	1995	15
<i>Anas acuta</i>	AME	TEMP	FAD	1	-0.3743	0.0175		1	1999	15
<i>Anas acuta</i>	AME	YEAR	FAD	1	-0.1003	0.0175		1	1999	15
<i>Anas americana</i>	AME	TEMP	FAD	1	-0.3775	0.0196		1	1993	15
<i>Anas americana</i>	AME	YEAR	FAD	1	-0.1562	0.0196		1	1993	15
<i>Anas clypeata</i>	AME	TEMP	FAD	1	-0.6788	0.0179	short	1	1998	15
<i>Anas crecca</i>	AME	TEMP	FAD	1	-0.5586	0.0182		1	1997	15
<i>Anas crecca</i>	AME	YEAR	FAD	1	-0.3021	0.0182		1	1997	15

Appendix 1 (continued)

Species	Continent	Variable	Measure of migration time	n	Effect size	Variance	Migration distance	AFR	Study midpoint	Source
<i>Anas discors</i>	AME	TEMP	FAD	1	-0.7920	0.0179	short	1	1998	15
<i>Anas platyrhynchos</i>	AME	TEMP	FAD	1	-0.8589	0.0179		1	1998	15
<i>Anas platyrhynchos</i>	AME	YEAR	FAD	1	-0.1627	0.0179		1	1998	15
<i>Anas strepera</i>	AME	TEMP	FAD	1	-0.4457	0.0179		1	1998	15
<i>Anas strepera</i>	AME	YEAR	FAD	1	-0.2649	0.0179		1	1998	15
<i>Anser albifrons</i>	AME	TEMP	FAD	1	-0.1658	0.0270		3	1979	15
<i>Anser albifrons</i>	AME	YEAR	FAD	1	-0.1053	0.0270		3	1979	15
<i>Ardea herodias</i>	AME	TEMP	FAD	1	-0.2129	0.0196		2	1993	15
<i>Ardea herodias</i>	AME	YEAR	FAD	1	-0.2500	0.0196		2	1993	15
<i>Asio flammeus</i>	AME	TEMP	FAD	1	-0.1100	0.0270		2	1979	15
<i>Asio flammeus</i>	AME	YEAR	FAD	1	0.0448	0.0270		2	1979	15
<i>Aythya affinis</i>	AME	TEMP	FAD	1	-0.5480	0.0179		1.5	1998	15
<i>Aythya affinis</i>	AME	YEAR	FAD	1	-0.3630	0.0179		1.5	1998	15
<i>Aythya americana</i>	AME	TEMP	FAD	1	-0.5850	0.0182		1	1997	15
<i>Aythya americana</i>	AME	YEAR	FAD	1	-0.1189	0.0182		1	1997	15
<i>Aythya collaris</i>	AME	TEMP	FAD	1	-0.5981	0.0196		1	1993	15
<i>Aythya collaris</i>	AME	YEAR	FAD	1	-0.3614	0.0196		1	1993	15
<i>Aythya valisineria</i>	AME	TEMP	FAD	1	-0.6451	0.0182		1	1997	15
<i>Aythya valisineria</i>	AME	YEAR	FAD	1	-0.3077	0.0182		1	1997	15
<i>Botaurus lentiginosus</i>	AME	TEMP	FAD	1	-0.4671	0.0208		1	1990	15
<i>Botaurus lentiginosus</i>	AME	YEAR	FAD	1	-0.0839	0.0208		1	1990	15
<i>Branta canadensis</i>	AME	TEMP	FAD	1	-0.8109	0.0175		3	1999	15
<i>Branta canadensis</i>	AME	YEAR	FAD	1	-0.4162	0.0175		3	1999	15
<i>Bucephala albeola</i>	AME	TEMP	FAD	1	-0.6008	0.0192		2	1994	15
<i>Bucephala albeola</i>	AME	YEAR	FAD	1	-0.3711	0.0192		2	1994	15
<i>Bucephala clangula</i>	AME	TEMP	FAD	1	-0.4671	0.0179		3	1998	15
<i>Bucephala clangula</i>	AME	YEAR	FAD	1	-0.1562	0.0179		3	1998	15
<i>Buteo jamaicensis</i>	AME	TEMP	FAD	1	0.1053	0.0227		2	1986	15
<i>Buteo jamaicensis</i>	AME	YEAR	FAD	1	-0.0316	0.0227		2	1986	15
<i>Buteo lagopus</i>	AME	TEMP	FAD	1	-0.0633	0.0233			1985	15
<i>Buteo lagopus</i>	AME	YEAR	FAD	1	-0.1750	0.0233			1985	15
<i>Carpodacus purpureus</i>	AME	TEMP	FAD	1	-0.3870	0.0217		1	1988	15
<i>Carpodacus purpureus</i>	AME	YEAR	FAD	1	-0.3150	0.0217		1	1988	15
<i>Catharus guttatus</i>	AME	TEMP	FAD	1	-0.2927	0.0200	short	1	1992	15
<i>Catoptrophorus semipalmatus</i>	AME	TEMP	FAD	1	-0.2479	0.0250		2	1982	15
<i>Catoptrophorus semipalmatus</i>	AME	YEAR	FAD	1	-0.3186	0.0250		2	1982	15
<i>Certhia americana</i>	AME	TEMP	FAD	1	-0.0708	0.0238	short	1	1984	15
<i>Certhia americana</i>	AME	YEAR	FAD	1	-0.4514	0.0238	short	1	1984	15
<i>Ceryle alcyon</i>	AME	TEMP	FAD	1	-0.3327	0.0192		1	1994	15
<i>Ceryle alcyon</i>	AME	YEAR	FAD	1	-0.2434	0.0192		1	1994	15
<i>Charadrius vociferus</i>	AME	TEMP	FAD	1	-0.6308	0.0179	short	1	1998	15
<i>Chen caerulescens</i>	AME	TEMP	FAD	1	-0.1424	0.0213		2	1989	15
<i>Chen caerulescens</i>	AME	YEAR	FAD	1	-0.5157	0.0213		2	1989	15
<i>Chlidonias niger</i>	AME	TEMP	FAD	1	0.2607	0.0222		2	1987	15
<i>Chlidonias niger</i>	AME	YEAR	FAD	1	-0.1424	0.0222		2	1987	15
<i>Chordeiles minor</i>	AME	TEMP	FAD	1	0.2888	0.0270	long		1979	15
<i>Circus cyaneus</i>	AME	TEMP	FAD	1	-0.6451	0.0182		2	1997	15
<i>Circus cyaneus</i>	AME	YEAR	FAD	1	-0.0548	0.0182		2	1997	15
<i>Cistothorus palustris</i>	AME	TEMP	FAD	1	-0.2344	0.0270			1979	15
<i>Colaptes auratus</i>	AME	TEMP	FAD	1	-0.4486	0.0185		1	1996	15
<i>Colaptes auratus</i>	AME	YEAR	FAD	1	0.0448	0.0185		1	1996	15
<i>Cygnus columbianus</i>	AME	TEMP	FAD	1	-0.3663	0.0189		3	1995	15
<i>Cygnus columbianus</i>	AME	YEAR	FAD	1	-0.0448	0.0189		3	1995	15
<i>Dendroica coronata</i>	AME	TEMP	FAD	1	-0.0316	0.0196	short	1	1993	15
<i>Dendroica palmarum</i>	AME	TEMP	FAD	1	-0.1350	0.0222		1	1987	15
<i>Dendroica petechia</i>	AME	TEMP	FAD	1	-0.1893	0.0196	long	1	1993	15
<i>Dolichonyx oryzivorus</i>	AME	TEMP	FAD	1	-0.0316	0.0263	long	2	1980	15
<i>Dumetella carolinensis</i>	AME	TEMP	FAD	1	-0.1387	0.0208		1	1990	15
<i>Empidonax minimus</i>	AME	TEMP	FAD	1	-0.1145	0.0233	long	1	1985	15
<i>Eremophila alpestris</i>	AME	TEMP	FAD	1	-0.1689	0.0256		1	1981	15
<i>Eremophila alpestris</i>	AME	YEAR	FAD	1	-0.0316	0.0256		1	1981	15
<i>Falco sparverius</i>	AME	TEMP	FAD	1	0.0000	0.0179		1	1998	15
<i>Falco sparverius</i>	AME	YEAR	FAD	1	-0.2628	0.0179		1	1998	15
<i>Fulica americana</i>	AME	TEMP	FAD	1	-0.4500	0.0189		1	1995	15
<i>Fulica americana</i>	AME	YEAR	FAD	1	-0.2607	0.0189		1	1995	15
<i>Gallinago delicata</i>	AME	TEMP	FAD	1	-0.4086	0.0204		1	1991	15

Appendix 1 (continued)

Species	Continent	Variable	Measure of migration time	n	Effect size	Variance	Migration distance	AFR	Study midpoint	Source
<i>Gallinago delicata</i>	AME	YEAR	FAD	1	0.0000	0.0204		1	1991	15
<i>Geothlypis trichas</i>	AME	TEMP	FAD	1	-0.2771	0.0263			1980	15
<i>Grus canadensis</i>	AME	TEMP	FAD	1	-0.2154	0.0204		5	1991	15
<i>Grus canadensis</i>	AME	YEAR	FAD	1	-0.6060	0.0204		5	1991	15
<i>Hirundo rustica</i>	AME	TEMP	FAD	1	0.0316	0.0204	long	1	1991	15
<i>Icterus galbula</i>	AME	TEMP	FAD	1	-0.4251	0.0263	long	2	1980	15
<i>Icterus galbula</i>	AME	YEAR	FAD	1	-0.3901	0.0263	long	2	1980	15
<i>Junco hyemalis</i>	AME	TEMP	FAD	1	-0.7337	0.0182		1	1997	15
<i>Junco hyemalis</i>	AME	YEAR	FAD	1	-0.1424	0.0182		1	1997	15
<i>Larus argentatus</i>	AME	TEMP	FAD	1	-0.1494	0.0192		5	1994	15
<i>Larus argentatus</i>	AME	YEAR	FAD	1	0.1100	0.0192		5	1994	15
<i>Larus delawarensis</i>	AME	TEMP	FAD	1	-0.2500	0.0263		3	1980	15
<i>Larus delawarensis</i>	AME	YEAR	FAD	1	-0.4442	0.0263		3	1980	15
<i>Larus pipixcan</i>	AME	TEMP	FAD	1	-0.0448	0.0196		2	1993	15
<i>Larus pipixcan</i>	AME	YEAR	FAD	1	0.1053	0.0196		2	1993	15
<i>Limosa fedoa</i>	AME	TEMP	FAD	1	0.3994	0.0250			1982	15
<i>Limosa fedoa</i>	AME	YEAR	FAD	1	0.2027	0.0250			1982	15
<i>Lophodytes cucullatus</i>	AME	TEMP	FAD	1	-0.4116	0.0270		2	1979	15
<i>Lophodytes cucullatus</i>	AME	YEAR	FAD	1	-0.5850	0.0270		2	1979	15
<i>Melospiza melodia</i>	AME	TEMP	FAD	1	-0.1350	0.0185		1	1996	15
<i>Melospiza melodia</i>	AME	YEAR	FAD	1	-0.0448	0.0185		1	1996	15
<i>Mergus merganser</i>	AME	TEMP	FAD	1	-0.2690	0.0182		3	1997	15
<i>Mergus merganser</i>	AME	YEAR	FAD	1	-0.1272	0.0182		3	1997	15
<i>Mergus serrator</i>	AME	TEMP	FAD	1	-0.4222	0.0222		3	1987	15
<i>Mergus serrator</i>	AME	YEAR	FAD	1	-0.0952	0.0222		3	1987	15
<i>Molothrus ater</i>	AME	TEMP	FAD	1	-0.0316	0.0233	short	1	1985	15
<i>Nycticorax nycticorax</i>	AME	TEMP	FAD	1	0.1562	0.0208		2	1990	15
<i>Nycticorax nycticorax</i>	AME	YEAR	FAD	1	0.1053	0.0208		2	1990	15
<i>Oxyura jamaicensis</i>	AME	TEMP	FAD	1	-0.7284	0.0192		1.5	1994	15
<i>Oxyura jamaicensis</i>	AME	YEAR	FAD	1	-0.1921	0.0192		1.5	1994	15
<i>Passerella iliaca</i>	AME	TEMP	FAD	1	-0.3581	0.0200	short		1992	15
<i>Pelecanus erythrorhynchos</i>	AME	TEMP	FAD	1	-0.0633	0.0189		3	1995	15
<i>Pelecanus erythrorhynchos</i>	AME	YEAR	FAD	1	-0.4296	0.0189		3	1995	15
<i>Phalacrocorax auritus</i>	AME	TEMP	FAD	1	-0.3058	0.0208		3	1990	15
<i>Phalacrocorax auritus</i>	AME	YEAR	FAD	1	-0.2434	0.0208		3	1990	15
<i>Phalaropus tricolor</i>	AME	TEMP	FAD	1	-0.0776	0.0244		1	1983	15
<i>Phalaropus tricolor</i>	AME	YEAR	FAD	1	-0.2154	0.0244		1	1983	15
<i>Podiceps auritus</i>	AME	TEMP	FAD	1	-0.3711	0.0238		1	1984	15
<i>Podiceps auritus</i>	AME	YEAR	FAD	1	-0.1003	0.0238		1	1984	15
<i>Podiceps grisegena</i>	AME	TEMP	FAD	1	-0.1003	0.0222		2	1987	15
<i>Podiceps grisegena</i>	AME	YEAR	FAD	1	0.1003	0.0222		2	1987	15
<i>Podilymbus podiceps</i>	AME	TEMP	FAD	1	-0.3839	0.0204			1991	15
<i>Podilymbus podiceps</i>	AME	YEAR	FAD	1	-0.2412	0.0204			1991	15
<i>Pooecetes gramineus</i>	AME	TEMP	FAD	1	-0.1459	0.0263	short	1	1980	15
<i>Porzana carolina</i>	AME	TEMP	FAD	1	-0.2203	0.0238	short		1984	15
<i>Progne subis</i>	AME	TEMP	FAD	1	0.2390	0.0222	long	1	1987	15
<i>Quiscalus quiscula</i>	AME	TEMP	FAD	1	-0.5533	0.0204			1991	15
<i>Quiscalus quiscula</i>	AME	YEAR	FAD	1	-0.4384	0.0204			1991	15
<i>Regulus calendula</i>	AME	TEMP	FAD	1	-0.3901	0.0227	short	1	1986	15
<i>Sayornis phoebe</i>	AME	TEMP	FAD	1	-0.1865	0.0200	short	1	1992	15
<i>Setophaga ruticilla</i>	AME	TEMP	FAD	1	-0.3447	0.0238	long	1	1984	15
<i>Spizella arborea</i>	AME	TEMP	FAD	1	-0.4686	0.0196		1	1993	15
<i>Spizella arborea</i>	AME	YEAR	FAD	1	-0.1975	0.0196		1	1993	15
<i>Spizella pallida</i>	AME	TEMP	FAD	1	0.1145	0.0263			1980	15
<i>Spizella pallida</i>	AME	YEAR	FAD	1	-0.0548	0.0263			1980	15
<i>Sterna forsteri</i>	AME	TEMP	FAD	1	-0.2154	0.0227		2	1986	15
<i>Sterna forsteri</i>	AME	YEAR	FAD	1	0.0316	0.0227		2	1986	15
<i>Sturnella neglecta</i>	AME	TEMP	FAD	1	-0.2888	0.0179		1	1998	15
<i>Sturnella neglecta</i>	AME	YEAR	FAD	1	-0.2001	0.0179		1	1998	15
<i>Tachycineta bicolor</i>	AME	TEMP	FAD	1	-0.2298	0.0204	short	1	1991	15
<i>Toxostoma rufum</i>	AME	TEMP	FAD	1	-0.3221	0.0222	short	1	1987	15
<i>Tringa flavipes</i>	AME	TEMP	FAD	1	-0.1424	0.0233		3	1985	15
<i>Tringa flavipes</i>	AME	YEAR	FAD	1	0.4826	0.0233		3	1985	15
<i>Tringa melanoleuca</i>	AME	TEMP	FAD	1	0.0633	0.0200		2	1992	15
<i>Tringa melanoleuca</i>	AME	YEAR	FAD	1	0.2965	0.0200		2	1992	15
<i>Troglodytes aedon</i>	AME	TEMP	FAD	1	-0.2344	0.0213	short	1	1989	15

Appendix 1 (continued)

Species	Continent	Variable	Measure of migration time	n	Effect size	Variance	Migration distance	AFR	Study midpoint	Source
<i>Turdus migratorius</i>	AME	TEMP	FAD	1	-0.3257	0.0189		1	1995	15
<i>Turdus migratorius</i>	AME	YEAR	FAD	1	-0.2984	0.0189		1	1995	15
<i>Tyrannus tyrannus</i>	AME	TEMP	FAD	1	-0.2227	0.0213	long	1	1989	15
<i>Tyrannus verticalis</i>	AME	TEMP	FAD	1	0.3077	0.0196		1	1993	15
<i>Tyrannus verticalis</i>	AME	YEAR	FAD	1	-0.0548	0.0196		1	1993	15
<i>Wilsonia pusilla</i>	AME	TEMP	FAD	1	-0.4101	0.0270	long	1	1979	15
<i>Xanthocephalus xanthocephalus</i>	AME	TEMP	FAD	1	0.0633	0.0189		1	1995	15
<i>Xanthocephalus xanthocephalus</i>	AME	YEAR	FAD	1	-0.1528	0.0189		1	1995	15
<i>Zenaida macroura</i>	AME	TEMP	FAD	1	-0.1948	0.0179			1998	15
<i>Zenaida macroura</i>	AME	YEAR	FAD	1	-0.3021	0.0179			1998	15
<i>Zonotrichia albicollis</i>	AME	TEMP	FAD	1	-0.2079	0.0189	short	1	1995	15
<i>Zonotrichia albicollis</i>	AME	YEAR	FAD	1	-0.0316	0.0189	short	1	1995	15
<i>Zonotrichia leucophrys</i>	AME	TEMP	FAD	1	-0.1272	0.0238	short	1	1984	15
<i>Zonotrichia querula</i>	AME	TEMP	FAD	1	-0.1231	0.0213		1	1989	15
<i>Zonotrichia querula</i>	AME	YEAR	FAD	1	-0.1528	0.0213		1	1989	15
<i>Hirundo rustica</i>	EUROP	TEMP	FAD	1	-0.2661	0.0057	long	1	1915	16
<i>Acrocephalus palustris</i>	EUROP	NAO	MSP	1	0.2298	0.0323	long	1	2002	17
<i>Anthus trivialis</i>	EUROP	NAO	MSP	1	-0.2412	0.0256			1997	17
<i>Carduelis cannabina</i>	EUROP	NAO	MSP	1	-0.1865	0.0345	short	1	1993	17
<i>Carduelis chloris</i>	EUROP	NAO	MSP	1	0.2027	0.0476	short	1	1995	17
<i>Emberiza citrinella</i>	EUROP	NAO	MSP	1	-0.1387	0.0476	short	1	1995	17
<i>Emberiza schoeniclus</i>	EUROP	NAO	MSP	1	0.3743	0.0526	short	1	1993	17
<i>Ficedula parva</i>	EUROP	NAO	MSP	1	-0.3679	0.0278	long	1	1994	17
<i>Ficedula parva</i>	EUROP	YEAR	MSP	1	-0.7036	0.0278	long	1	1994	17
<i>Hirundo rustica</i>	EUROP	NAO	MSP	1	-0.2367	0.0313	long	1	1990	17
<i>Lanius collurio</i>	EUROP	NAO	MSP	1	0.0897	0.0238	long	1	1997	17
<i>Luscinia luscinia</i>	EUROP	NAO	MSP	1	-0.1387	0.0256	long	1	1994	17
<i>Luscinia svecica</i>	EUROP	NAO	MSP	1	-0.0897	0.0286	long	1	1997	17
<i>Motacilla alba</i>	EUROP	NAO	MSP	1	0.1779	0.0345	short	1	2003	17
<i>Parus caeruleus</i>	EUROP	NAO	MSP	1	-0.3275	0.0526	short	1	2003	17
<i>Phoenicurus ochrurus</i>	EUROP	NAO	MSP	1	-0.1921	0.0333	short	1	1994	17
<i>Phoenicurus ochrurus</i>	EUROP	YEAR	MSP	1	-0.1424	0.0333	short	1	1994	17
<i>Regulus regulus</i>	EUROP	NAO	MSP	1	-0.2412	0.0476	short	1	1995	17
<i>Saxicola rubetra</i>	EUROP	NAO	MSP	1	-0.2227	0.0323	long	1	1986	17
<i>Dendroica virens</i>	AME	YEAR	FAD	2	0.0423	0.0221	long	1	1988	18
<i>Seiurus aurocapillus</i>	AME	YEAR	FAD	2	-0.0992	0.0210	long		1988	18
<i>Hirundo rustica</i>	EUROP	YEAR	FAD	2	0.3365	0.0216	long	1	1999	6, 7
<i>Luscinia megarhynchos</i>	EUROP	YEAR	FAD	2	0.4821	0.0216	long	1	1999	6, 7
<i>Apus apus</i>	EUROP	YEAR	FAD	3	-0.1643	0.0230	long	2	2000.7	6, 7, 11
<i>Cuculus canorus</i>	EUROP	YEAR	FAD	3	0.4206	0.0214	long	1	1997	6, 7, 13
<i>Luscinia megarhynchos</i>	EUROP	TEMP	FAD	2	0.2048	0.0172	long	1	1924	6, 16
<i>Cuculus canorus</i>	EUROP	TEMP	FAD	2	-0.3776	0.0137	long	1	1953	13, 16
<i>Actitis macularia</i>	AME	YEAR	FAD	2	-0.0823	0.0225	short	1.5	1983.5	5, 15
<i>Anas clypeata</i>	AME	YEAR	FAD	2	-0.1164	0.0268	short	1	1980.5	5, 15
<i>Anas discors</i>	AME	YEAR	FAD	2	-0.7615	0.0209	short	1	1987.5	5, 15
<i>Catharus guttatus</i>	AME	YEAR	FAD	2	0.1115	0.0195	short	1	1989.5	5, 15
<i>Charadrius vociferus</i>	AME	YEAR	FAD	2	-0.3438	0.0186	short	1	1992.5	5, 15
<i>Chordeiles minor</i>	AME	YEAR	FAD	2	-0.0563	0.0246	long		1979.5	5, 15
<i>Cistothorus palustris</i>	AME	YEAR	FAD	2	-0.3567	0.0260			1977.5	5, 15
<i>Dendroica petechia</i>	AME	YEAR	FAD	2	-0.0976	0.0191	long	1	1991.5	5, 15
<i>Dolichonyx oryzivorus</i>	AME	YEAR	FAD	2	-0.0903	0.0223	long	2	1985.5	5, 15
<i>Dumetella carolinensis</i>	AME	YEAR	FAD	2	-0.1696	0.0197	short	1	1989.5	5, 15
<i>Empidonax minimus</i>	AME	YEAR	FAD	2	-0.0742	0.0206	long	1	1987.5	5, 15
<i>Geothlypis trichas</i>	AME	YEAR	FAD	2	-0.2530	0.0224			1984.5	5, 15
<i>Hirundo rustica</i>	AME	YEAR	FAD	2	-0.1731	0.0216	long	1	1985.5	5, 15
<i>Molothrus ater</i>	AME	YEAR	FAD	2	-1.1132	0.0209	short	1	1987.5	5, 15
<i>Passerella iliaca</i>	AME	YEAR	FAD	2	-0.3630	0.0195	short		1989.5	5, 15
<i>Poocetes gramineus</i>	AME	YEAR	FAD	2	-0.1590	0.0234	short	1	1981.5	5, 15
<i>Porzana carolina</i>	AME	YEAR	FAD	2	-0.3724	0.0347	short		1970.5	5, 15
<i>Progne subis</i>	AME	YEAR	FAD	2	-0.5713	0.0230	long	1	1981.5	5, 15
<i>Regulus calendula</i>	AME	YEAR	FAD	2	0.0906	0.0208	short	1	1987.5	5, 15
<i>Sayornis phoebe</i>	AME	YEAR	FAD	2	0.0136	0.0193	short	1	1990.5	5, 15
<i>Tachycineta bicolor</i>	AME	YEAR	FAD	2	-0.0612	0.0197	short	1	1989.5	5, 15
<i>Toxostoma rufum</i>	AME	YEAR	FAD	2	-0.0633	0.0222	short	1	1987.5	5, 15
<i>Troglodytes aedon</i>	AME	YEAR	FAD	2	-0.1162	0.0201	short	1	1988.5	5, 15
<i>Tyrannus tyrannus</i>	AME	YEAR	FAD	2	-0.1480	0.0199	long	1	1989.5	5, 15

Appendix 1 (continued)

Species	Continent	Variable	Measure of migration time	n	Effect size	Variance	Migration distance	AFR	Study midpoint	Source
<i>Wilsonia pusilla</i>	AME	YEAR	FAD	2	-0.1446	0.0239	long	1	1981.5	5, 15
<i>Zonotrichia leucophrys</i>	AME	YEAR	FAD	2	-0.2053	0.0238	short	1	1985.5	5, 15
<i>Dendroica coronata</i>	AME	YEAR	FAD	4	-0.5537	0.0195	short	1	1991.8	5, 15, 18
<i>Dendroica palmarum</i>	AME	YEAR	FAD	4	0.0533	0.0205	short	1	1989.8	5, 15, 18
<i>Setophaga ruticilla</i>	AME	YEAR	FAD	4	-0.0400	0.0213	long	1	1987.8	5, 15, 18
<i>Dendroica fusca</i>	AME	YEAR	FAD	3	-0.0683	0.0198	long	1	1989	5, 18
<i>Dendroica magnolia</i>	AME	YEAR	FAD	3	0.0342	0.0197	long	1	1991	5, 18
<i>Mniotilta varia</i>	AME	YEAR	FAD	3	-0.0578	0.0196	short	1	1990	5, 18
<i>Acrocephalus scirpaceus</i>	EUROP	NAO	MSP	2	-0.1386	0.0251	long	1	1999	8, 17
<i>Erithacus rubecula</i>	EUROP	NAO	MSP	2	-0.1919	0.0288	short	1	1998.5	8, 17
<i>Ficedula hypoleuca</i>	EUROP	NAO	MSP	2	-0.5447	0.0251	long	1	1999	8, 17
<i>Fringilla montifringilla</i>	EUROP	NAO	MSP	2	-0.1365	0.0306	short	1	1996.5	8, 17
<i>Fringilla coelebs</i>	EUROP	NAO	MSP	2	-0.1444	0.0370	short	1	1997.5	8, 17
<i>Hippolais icterina</i>	EUROP	NAO	MSP	2	-0.3105	0.0258	long	1	1998	8, 17
<i>Muscicapa striata</i>	EUROP	NAO	MSP	2	-0.3626	0.0251	long	1	1999	8, 17
<i>Parus major</i>	EUROP	NAO	MSP	2	-0.4343	0.0411	short	1	1993.5	8, 17
<i>Phoenicurus phoenicurus</i>	EUROP	NAO	MSP	2	-0.5967	0.0251	long	1	1999	8, 17
<i>Phylloscopus trochilus</i>	EUROP	NAO	MSP	2	-0.6067	0.0251	long	1	1999	8, 17
<i>Prunella modularis</i>	EUROP	NAO	MSP	2	-0.4201	0.0370	short	1	1997.5	8, 17
<i>Sylvia atricapilla</i>	EUROP	NAO	MSP	2	-0.4304	0.0251	long	1	1999	8, 17
<i>Sylvia borin</i>	EUROP	NAO	MSP	2	-0.3003	0.0251	long	1	1999	8, 17
<i>Sylvia communis</i>	EUROP	NAO	MSP	2	-0.5105	0.0251	long	1	1999	8, 17
<i>Sylvia curruca</i>	EUROP	NAO	MSP	2	-0.4693	0.0262	long	1	1998	8, 17
<i>Troglodytes troglodytes</i>	EUROP	NAO	MSP	2	-0.2678	0.0377	short	1	1997.5	8, 17
<i>Turdus iliacus</i>	EUROP	NAO	MSP	2	-0.5229	0.0370	short	1	1997.5	8, 17
<i>Turdus merula</i>	EUROP	NAO	MSP	2	-0.6034	0.0400	short	1	1994.5	8, 17
<i>Turdus philomelus</i>	EUROP	NAO	MSP	2	-0.1917	0.0370	short	1	1997.5	8, 17
<i>Turdus pilaris</i>	EUROP	NAO	MSP	2	-0.2323	0.0332	short	1	1994.5	8, 17
<i>Turdus pilaris</i>	EUROP	YEAR	MSP	2	0.2062	0.0332	short	1	1994.5	8, 17
<i>Phylloscopus collybita</i>	EUROP	YEAR	MSP	5	-0.4714	0.0447	long	1	2003	8, 10
<i>Ficedula hypoleuca</i>	EUROP	YEAR	MSP	7	-0.0392	0.0441	long	1	2000.3	8, 9, 10, 17
<i>Acrocephalus scirpaceus</i>	EUROP	YEAR	MSP	5	-0.3338	0.0525	long	1	1999.4	8, 10, 17
<i>Erithacus rubecula</i>	EUROP	YEAR	MSP	4	-0.1581	0.0372	short	1	2002.3	8, 10, 17
<i>Fringilla montifringilla</i>	EUROP	YEAR	MSP	5	-0.0221	0.0494	short	1	1995.2	8, 10, 17
<i>Fringilla coelebs</i>	EUROP	YEAR	MSP	5	0.0588	0.0421	short	1	2002.2	8, 10, 17
<i>Hippolais icterina</i>	EUROP	YEAR	MSP	5	-0.2235	0.0428	long	1	2000.4	8, 10, 17
<i>Muscicapa striata</i>	EUROP	YEAR	MSP	6	-0.2181	0.0502	long	1	2000	8, 10, 17
<i>Parus major</i>	EUROP	YEAR	MSP	4	-0.0972	0.0451	short	1	1998.8	8, 10, 17
<i>Phoenicurus phoenicurus</i>	EUROP	YEAR	MSP	6	-0.2047	0.0421	long	1	2002	8, 10, 17
<i>Phylloscopus trochilus</i>	EUROP	YEAR	MSP	6	-0.3958	0.0390	long	1	2003	8, 10, 17
<i>Prunella modularis</i>	EUROP	YEAR	MSP	5	-0.0875	0.0447	short	1	2001.2	8, 10, 17
<i>Sylvia atricapilla</i>	EUROP	YEAR	MSP	6	-0.3808	0.0413	long	1	2002	8, 10, 17
<i>Sylvia borin</i>	EUROP	YEAR	MSP	6	-0.4052	0.0399	long	1	2002	8, 10, 17
<i>Sylvia communis</i>	EUROP	YEAR	MSP	5	-0.2559	0.0387	long	1	2002.4	8, 10, 17
<i>Sylvia curruca</i>	EUROP	YEAR	MSP	6	-0.2436	0.0391	long	1	2002	8, 10, 17
<i>Troglodytes troglodytes</i>	EUROP	YEAR	MSP	4	-0.2071	0.0416	short	1	2000.8	8, 10, 17
<i>Turdus iliacus</i>	EUROP	YEAR	MSP	5	-0.1323	0.0856	short	1	1997.2	8, 10, 17
<i>Turdus merula</i>	EUROP	YEAR	MSP	4	-0.2112	0.0427	short	1	1999.8	8, 10, 17
<i>Turdus philomelus</i>	EUROP	YEAR	MSP	6	-0.1350	0.0449	short	1	2002.2	8, 10, 17
<i>Ficedula hypoleuca</i>	EUROP	TEMP	MSP	2	-0.6330	0.0304	long	1	2001	1, 8
<i>Acrocephalus palustris</i>	EUROP	YEAR	MSP	3	-0.1714	0.0586	long	1	1999	10, 17
<i>Anthus trivialis</i>	EUROP	YEAR	MSP	5	-0.2659	0.0645	long	1	1999	10, 17
<i>Carduelis cannabina</i>	EUROP	YEAR	MSP	3	0.0306	0.0496	short	1	1997.7	10, 17
<i>Carduelis chloris</i>	EUROP	YEAR	MSP	3	0.4002	0.0462	short	1	2002	10, 17
<i>Emberiza citrinella</i>	EUROP	YEAR	MSP	2	0.0870	0.0476	short	1	1999.5	10, 17
<i>Emberiza schoeniclus</i>	EUROP	YEAR	MSP	4	0.0522	0.0758	short	1	1995.8	10, 17
<i>Hirundo rustica</i>	EUROP	YEAR	MSP	4	-0.3138	0.0501	long	1	1997.8	10, 17
<i>Lanius collurio</i>	EUROP	YEAR	MSP	5	-0.1483	0.0513	long	1	1999.4	10, 17
<i>Luscinia luscinia</i>	EUROP	YEAR	MSP	3	-0.3422	0.0500	long	1	1997.7	10, 17
<i>Luscinia svecica</i>	EUROP	YEAR	MSP	3	0.0625	0.0476	long	1	2000	10, 17
<i>Motacilla alba</i>	EUROP	YEAR	MSP	5	-0.0585	0.0709	short	1	1999.2	10, 17
<i>Parus caeruleus</i>	EUROP	YEAR	MSP	3	0.0779	0.0661	short	1	1999.3	10, 17
<i>Regulus regulus</i>	EUROP	YEAR	MSP	4	-0.0544	0.0494	short	1	2001.8	10, 17
<i>Saxicola rubetra</i>	EUROP	YEAR	MSP	5	-0.0942	0.1960	long	1	1991.4	10, 17

Appendix 1 (continued)

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