

Table S1

Summary of recordings of nightingale wren songs used in analyses

Individual	File code in library	Locality	Date	Source
CE1	M.philomela-09 Pista 9	Parque Nacional Braulio Carrillo, Sector El Ceibo, Costa Rica	4 Feb 2003	Gerardo Obando, personal collection
CE2	M.philomela-10 Pista 10	Parque Nacional Braulio Carrillo, Sector El Ceibo, Costa Rica	22 Feb 2003	Gerardo Obando, personal collection
CE3	M.philomela-11 pista 11	Parque Nacional Braulio Carrillo, Sector El Ceibo, Costa Rica	22 Feb 2003	Gerardo Obando, personal collection
CE4	M.philomela-13 Pista 13	Parque Nacional Braulio Carrillo, Sector El Ceibo, Costa Rica	31 Dec 2002	Gerardo Obando, personal collection
CR1	UCR2269	Cantarana, Sarapiquí, Heredia, Costa Rica	1 Jan 2006	UCR Bioacoustics Lab/TEAM project OTS
CR10	UCR2267	Cantarana, Sarapiquí, Heredia, Costa Rica	1 Oct 2005	UCR Bioacoustics Lab/TEAM project OTS
CR11	UCR2278	Cantarana, Sarapiquí, Heredia, Costa Rica	5 Nov 2008	UCR Bioacoustics Lab/TEAM project OTS
CR12	UCR2276	Cantarana, Sarapiquí, Heredia, Costa Rica	23 Apr 2008	UCR Bioacoustics Lab/TEAM project OTS
CR13	UCR2277	Cantarana, Sarapiquí, Heredia, Costa Rica	24 Apr 2008	UCR Bioacoustics Lab/TEAM project OTS

Individual	File code in library	Locality	Date	Source
CR2	UCR2271	Cantarana, Sarapiqui, Heredia, Costa Rica	1 Oct 2006	UCR Bioacoustics Lab/TEAM project OTS
CR3	UCR2275	Cantarana, Sarapiqui, Heredia, Costa Rica	1 Jan 2008	UCR Bioacoustics Lab/TEAM project OTS
CR4	UCR2272	Cantarana, Sarapiqui, Heredia, Costa Rica	1 Oct 2006	UCR Bioacoustics Lab/TEAM project OTS
CR5	UCR2273	Cantarana, Sarapiqui, Heredia, Costa Rica	1 Jan 2007	UCR Bioacoustics Lab/TEAM project OTS
CR6	UCR2300	Cantarana, Sarapiqui, Heredia, Costa Rica	1 Jul 2007	UCR Bioacoustics Lab/TEAM project OTS
CR7	UCR2274	Cantarana, Sarapiqui, Heredia, Costa Rica	1 Apr 2007	UCR Bioacoustics Lab/TEAM project OTS
CR8	UCR2312	Cantarana, Sarapiqui, Heredia, Costa Rica	1 Jan 2006	UCR Bioacoustics Lab/TEAM project OTS
CR9	UCR2270	Cantarana, Sarapiqui, Heredia, Costa Rica	1 Jul 2006	UCR Bioacoustics Lab/TEAM project OTS
LA1	Nightingale Wren chiapas1	Lacandon, Chiapas, Mexico	5 Aug 2003	David Bradley, personal collection
LS1	UCR2301	La Selva Biological Station, Sarapiqui, Heredia, Costa Rica	1 Sep 2007	UCR Bioacoustics Lab/TEAM project OTS
LS10	MphilomelaM1230C3	La Selva Biological Station, Sarapiqui, Heredia, Costa Rica	20 Feb 1981	Florida Museum of Natural History

Individual	File code in library	Locality	Date	Source
LS2	UCR2309	La Selva Biological Station, Sarapiquí, Heredia, Costa Rica	1 Mar 2006	UCR Bioacoustics Lab/TEAM project OTS
LS3	UCR2310	La Selva Biological Station, Sarapiquí, Heredia, Costa Rica	1 Mar 2004	UCR Bioacoustics Lab/TEAM project OTS
LS4	UCR2290	La Selva Biological Station, Sarapiquí, Heredia, Costa Rica	1 Sep 2005	UCR Bioacoustics Lab/TEAM project OTS
LS5	25923	La Selva Biological Station, Sarapiquí, Heredia, Costa Rica	13 Mar 1998	Borrer Laboratory of Bioacoustics
LS6	25924	La Selva Biological Station, Sarapiquí, Heredia, Costa Rica	14 Mar 1998	Borrer Laboratory of Bioacoustics
LS7	UCR2279	La Selva Biological Station, Sarapiquí, Heredia, Costa Rica	4 Mar 2008	UCR Bioacoustics Lab/TEAM project OTS
LS8	FL5744	La Selva Biological Station, Sarapiquí, Heredia, Costa Rica	20 Feb 1980	Borrer Laboratory of Bioacoustics
LS9	M. marginatus_28138	La Selva Biological Station, Sarapiquí, Heredia, Costa Rica	29 May 1981	Macaulay Library
MG1	UCR2293	Magsasay, Sarapiquí, Heredia, Costa Rica	1 Apr 2006	UCR Bioacoustics Lab/TEAM project OTS
MG10	UCR2311	Magsasay, Sarapiquí, Heredia, Costa Rica	1 Jun 2005	UCR Bioacoustics Lab/TEAM project OTS

Individual	File code in library	Locality	Date	Source
MG11	UCR2268	Magsasay, Sarapiqui, Heredia, Costa Rica	1 Jan 2006	UCR Bioacoustics Lab/TEAM project OTS
MG12	UCR2297	Magsasay, Sarapiqui, Heredia, Costa Rica	1 Oct 2007	UCR Bioacoustics Lab/TEAM project OTS
MG2	UCR2294	Magsasay, Sarapiqui, Heredia, Costa Rica	1 Jul 2006	UCR Bioacoustics Lab/TEAM project OTS
MG3	UCR2287	Magsasay, Sarapiqui, Heredia, Costa Rica	1 Sep 2004	UCR Bioacoustics Lab/TEAM project OTS
MG4	UCR2288	Magsasay, Sarapiqui, Heredia, Costa Rica	1 Dec 2004	UCR Bioacoustics Lab/TEAM project OTS
MG5	UCR2292	Magsasay, Sarapiqui, Heredia, Costa Rica	1 Jan 2006	UCR Bioacoustics Lab/TEAM project OTS
MG6	UCR2295	Magsasay, Sarapiqui, Heredia, Costa Rica	1 Jul 2006	UCR Bioacoustics Lab/TEAM project OTS
MG7	UCR2296	Magsasay, Sarapiqui, Heredia, Costa Rica	1 Oct 2006	UCR Bioacoustics Lab/TEAM project OTS
MG8	UCR2291	Magsasay, Sarapiqui, Heredia, Costa Rica	1 Sep 2005	UCR Bioacoustics Lab/TEAM project OTS
MG9	UCR2289	Magsasay, Sarapiqui, Heredia, Costa Rica	1 Sep 2005	UCR Bioacoustics Lab/TEAM project OTS
OC1	M. philomela_127302	Ocuilapa de Juarez, Chiapas, Mexico	28 Mar 2002	Macaulay Library

Individual	File code in library	Locality	Date	Source
PA1	MmarginatusM1652C6	Palenque, Chiapas, Mexico	27 Mar 1976	Florida Museum of Natural History
PA2	MphilomelaM1110C1	Palenque, Chiapas, Mexico	3 Mar 1982	Florida Museum of Natural History
PB1	M. marginatus_72867	Penas Blancas, Alajuela, Costa Rica	21 Mar 1991	Macaulay Library
PB2	M. philomela_1 noviembre 1995	Penas Blancas, Alajuela, Costa Rica	1 Nov 1995	Alex Villegas, personal collection
PB3	MphilomelaM1048BC6	Penas Blancas, Alajuela, Costa Rica	26 Apr 1987	Florida Museum of Natural History
PB4	MphilomelaM1323C2	Penas Blancas, Alajuela, Costa Rica	27 Feb 1990	Florida Museum of Natural History
PL1	UCR2299	Plastico, Sarapiqui, Heredia, Costa Rica	1 Mar 2007	UCR Bioacoustics Lab/TEAM project OTS
PL10	UCR2304	Plastico, Sarapiqui, Heredia, Costa Rica	13 Mar 2008	UCR Bioacoustics Lab/TEAM project OTS
PL11	MphilomelaM884BC16	Plastico, Sarapiqui, Heredia, Costa Rica	30 Mar 1986	Florida Museum of Natural History
PL12	MphilomelaM885AC17	Plastico, Sarapiqui, Heredia, Costa Rica	30 Mar 1986	Florida Museum of Natural History
PL2	UCR2302	Plastico, Sarapiqui, Heredia, Costa Rica	1 Sep 2007	UCR Bioacoustics Lab/TEAM project OTS
PL3	UCR2313	Plastico, Sarapiqui, Heredia, Costa Rica	1 Dec 2005	UCR Bioacoustics Lab/TEAM project OTS
PL4	UCR2314	Plastico, Sarapiqui, Heredia, Costa Rica	1 Sep 2007	UCR Bioacoustics Lab/TEAM project OTS

Individual	File code in library	Locality	Date	Source
PL5	UCR2298	Plastico, Sarapiqui, Heredia, Costa Rica	1 Jun 2006	UCR Bioacoustics Lab/TEAM project OTS
PL6	UCR2315	Plastico, Sarapiqui, Heredia, Costa Rica	1 Jul 2007	UCR Bioacoustics Lab/TEAM project OTS
PL7	UCR2316	Plastico, Sarapiqui, Heredia, Costa Rica	1 Mar 2007	UCR Bioacoustics Lab/TEAM project OTS
PL8	UCR2317	Plastico, Sarapiqui, Heredia, Costa Rica	1 Sep 2007	UCR Bioacoustics Lab/TEAM project OTS
PL9	UCR2303	Plastico, Sarapiqui, Heredia, Costa Rica	13 Mar 2008	UCR Bioacoustics Lab/TEAM project OTS
RA1	M. marginatus_74157	Rara Avis, Sarapiqui, Heredia, Costa Rica	9 Mar 1988	Macaulay Library
RA2	M. marginatus_74163	Rara Avis, Sarapiqui, Heredia, Costa Rica	10 Mar 1988	Macaulay Library
SJ1	MmarginatusM1361C2	La Lupe, Rio San Juan, Nicaragua	2 Sep 1990	Florida Museum of Natural History
SM1	M. marginatus_89407	San Miguel de los Altos, Chiapas, Mexico	17 Apr 1993	Macaulay Library
SN1	UCR2305	Selva Negra, Matagalpa, Nicaragua	28 Jul 2001	UCR Bioacoustics Lab
SN2	MphilomelaM1323C22	Selva Negra, Matagalpa, Nicaragua	12 May 1991	Florida Museum of Natural History
SO1	MmarginatusM1657C11	Santa Maria de Ostuma, Matagalpa, Nicaragua	24 Mar 1970	Florida Museum of Natural History
TO1	M. marginatus_71019	Columbia River Forest Reserve, Toledo, Belize	6 Apr 1992	Macaulay Library
TO2	M. marginatus_71047	Columbia River Forest Reserve, Toledo, Belize	7 Apr 1992	Macaulay Library

Individual	File code in library	Locality	Date	Source
TO3	M. philomela_70805	Columbia River Forest Reserve, Toledo, Belize	4 Apr 1992	Macaulay Library
TO4	M. philomela_70824	Columbia River Forest Reserve, Toledo, Belize	4 Apr 1992	Macaulay Library
TO5	M. philomela_71805	Columbia River Forest Reserve, Toledo, Belize	11 Apr 1992	Macaulay Library
TR1	UCR2281	La Tirimbina Biological Reserve, Sarapiquí, Costa Rica	1 Apr 2006	UCR Bioacoustics Lab
TR2	UCR2283	La Tirimbina Biological Reserve, Sarapiquí, Costa Rica	7 May 2006	UCR Bioacoustics Lab
TR3	UCR2280	La Tirimbina Biological Reserve, Sarapiquí, Costa Rica	31 Mar 2006	UCR Bioacoustics Lab
TR4	UCR2308	La Tirimbina Biological Reserve, Sarapiquí, Costa Rica	2 Apr 2006	UCR Bioacoustics Lab
TR5	UCR2282	La Tirimbina Biological Reserve, Sarapiquí, Costa Rica	2 Apr 2006	UCR Bioacoustics Lab
TR6	UCR2284	La Tirimbina Biological Reserve, Sarapiquí, Costa Rica	27 Feb 2007	UCR Bioacoustics Lab
TR7	UCR2285	La Tirimbina Biological Reserve, Sarapiquí, Costa Rica	27 Feb 2007	UCR Bioacoustics Lab
TR8	UCR2286	La Tirimbina Biological Reserve, Sarapiquí, Costa Rica	27 Feb 2007	UCR Bioacoustics Lab
VS1	M. philomela_57212	Virgen del Socorro, Heredia, Costa Rica	13 Dec 1991	Macaulay Library

Individual	File code in library	Locality	Date	Source
VS2	M. marginatus_74225	Virgen del Socorro, Heredia, Costa Rica	31 Mar 1988	Macaulay Library

UCR: University of Costa Rica; OTS: Organization for Tropical Studies.

Table S2

Summary of recordings of musical compositions used in analyses of nightingale wren songs

Source	Artist	Composition and composer	Instrument	Recording/link
Freely available online	Mischa Maisky	Cello Suite No.1 i-Prelude (Bach)	Cello	www.youtube.com/watch?v=S6yuR8efotI
Freely available online	Janos Starker	Cello Suite No.3 i-Prelude (Bach)	Cello	www.youtube.com/watch?v=dtLKjeEssAo
Freely available online	Carlos Prieto	Suite No. 3 for Cello Solo in C Major (Bach)	Cello	www.youtube.com/watch?v=50x5L1EKe-k
Freely available online	Inbal Segev	Cello Solo Sonata-1st Mvt (Kodály)	Cello	www.youtube.com/watch?v=MyAy6hxGirg
Freely available online	Inbal Segev	Cello Concerto-1st excerpt (Lutoslawski)	Cello	www.youtube.com/watch?v=U97ko6MEypU
Music Department Library, Universidad de Costa Rica	Carlos Fuentes	Unlabelled	Trombone	Carlos Fuentes: Trombon, Recital de Etapa Básica
Freely available online	David Gibson	Autumn leaves (Jazz standard)	Trombone	www.youtube.com/watch?v=medMXWkxUS0
Freely available online	Shannon Barnett	All and Sun-Dried (Shannon Barnett)	Trombone	www.youtube.com/watch?v=hTXit5tATRg
Freely available online	José Davila	Trombone Solo	Trombone	www.youtube.com/watch?v=PTxCtpZKzTk
Freely available online	David Gibson	Sissy Strut (the Meters)	Trombone	www.youtube.com/watch?v=B5peXGavomQ
Freely available online	Nick Ariondo	Fantasia for solo viola (John Acevedo)	Viola	www.youtube.com/watch?v=2u2ISm-MFZE

Source	Artist	Composition and composer	Instrument	Recording/link
Freely available online	Leung Kin Fung	Caprice No.3 for viola solo (B. Campagniole)	Viola	www.youtube.com/watch?v=c6lvsfuOkQY
Freely available online	Eddie Nicholson	Sospiri (Chopin)	Viola	www.youtube.com/watch?v=h3E4YDpCEJg
Freely available online	Mairead Nesbitt	Shenandoah (Popular song)	Viola	www.youtube.com/watch?v=5XmgOuVsPpk
Commercial recording	Eva Wengoborski-Sohni	Sonate für Violine solo: Fuga, Risoluto, non troppo vivo (Bartok)	Violin	Bela Bartok Sonate für Violine solo (1944), sonate für Violine und Klavier Nr. 1 (1921)
Commercial recording	Eva Wengoborski-Sohni	Sonate für Violine solo: Tempo di ciaccona (Bartok)	Violin	Bela Bartok Sonate für Violine solo (1944), sonate für Violine und Klavier Nr. 1 (1921)
Commercial recording	Eva Wengoborski-Sohni	Sonate für Violine solo: Melodia, Adagio (Bartok)	Violin	Bela Bartok Sonate für Violine solo (1944), sonate für Violine und Klavier Nr. 1 (1921)
Commercial recording	Eva Wengoborski-Sohni	Sonate für Violine solo: Presto (Bartok)	Violin	Bela Bartok Sonate für Violine solo (1944), sonate für Violine und Klavier Nr. 1 (1921)
Commercial recording	Eva Wengoborski-Sohni	Sonate für Violine und Klavier Nr1: Allegro appassionato (Bartok)	Violin	Bela Bartok Sonate für Violine solo (1944), sonate für Violine und Klavier Nr. 1 (1921)
Commercial recording	Jascha Heifetz	Sonata No. 1, BWV 1001, in G Minor: Adagio (Bach)	Violin	Bach: Sonatas & Partitas

Source	Artist	Composition and composer	Instrument	Recording/link
Commercial recording	Jascha Heifetz	Sonata No. 1, BWV 1001, in G Minor: Fugue: Allegro (Bach)	Violin	Bach: Sonatas & Partitas
Commercial recording	Jascha Heifetz	Sonata No. 1, BWV 1001, in G Minor: Siciliano (Bach)	Violin	Bach: Sonatas & Partitas
Commercial recording	Jascha Heifetz	Sonata No. 1, BWV 1001, in G Minor: Presto (Bach)	Violin	Bach: Sonatas & Partitas

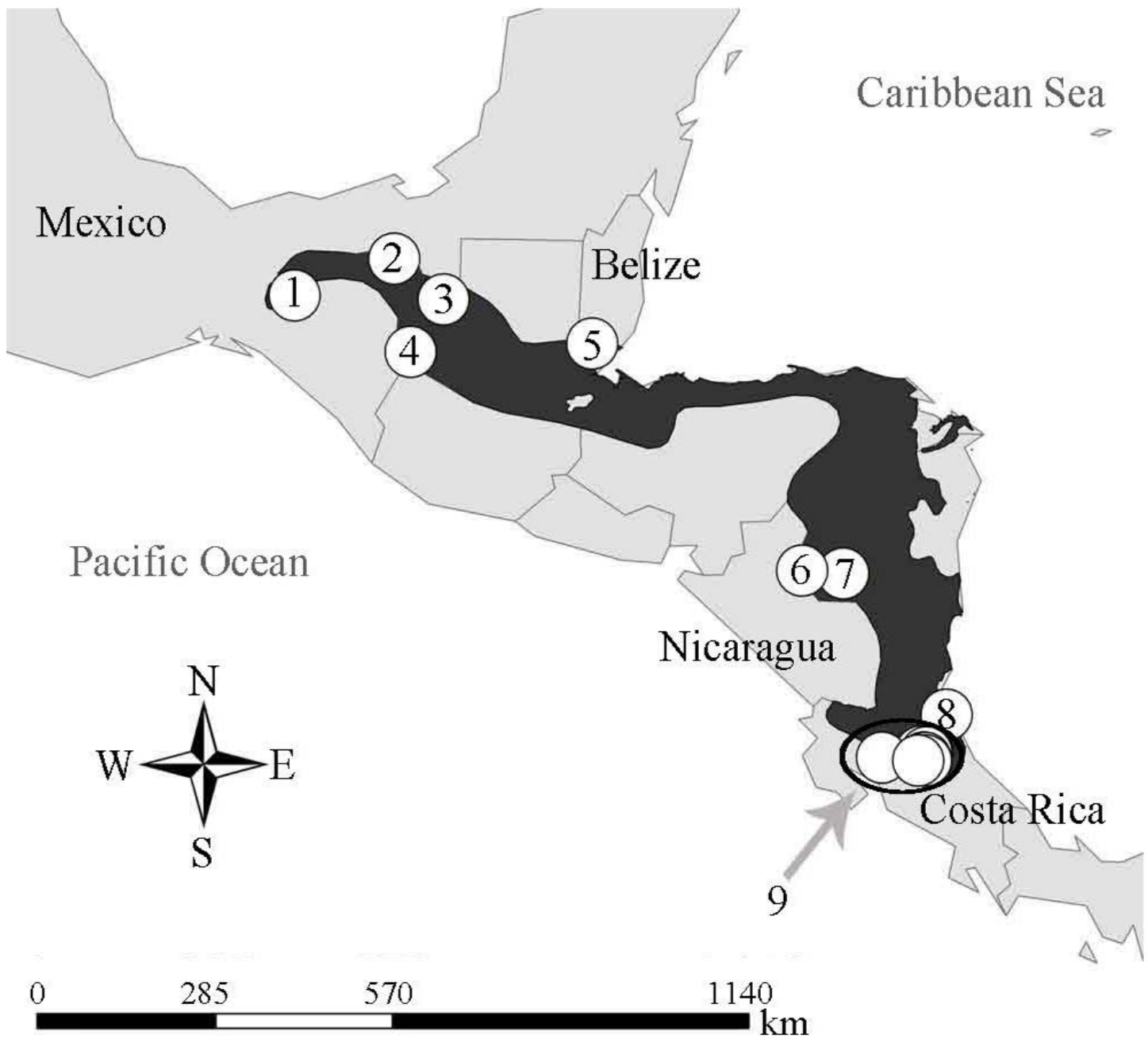


Figure S1. Geographical distribution of the nightingale wren (black areas; BirdLife-International & NatureServe 2011). Recording localities are shown in white circles: (1) Ocuilapa de Juarez, Chiapas, Mexico ($N = 1$); (2) Palenque, Chiapas, Mexico ($N = 2$); (3) Lacandon, Chiapas, Mexico ($N = 1$); (4) San Miguel delos Altos, Chiapas, Mexico ($N = 1$); (5) Columbia River Forest Reserve, Toledo, Belize ($N = 5$); (6) Selva Negra, Matagalpa, Nicaragua ($N = 2$); (7) Santa Maria de Ostuma, Matagalpa, Nicaragua ($N = 1$); (8) La Lupe, Rio San Juan, Nicaragua ($N = 1$); (9) Costa Rican sites (nine localities; $N = 67$, see Supplementary Table S1).

References

BirdLife-International & NatureServe 2011. *Bird Species Distribution Maps of the World*. Cambridge: BirdLife International; Arlington, Virginia: NatureServe.