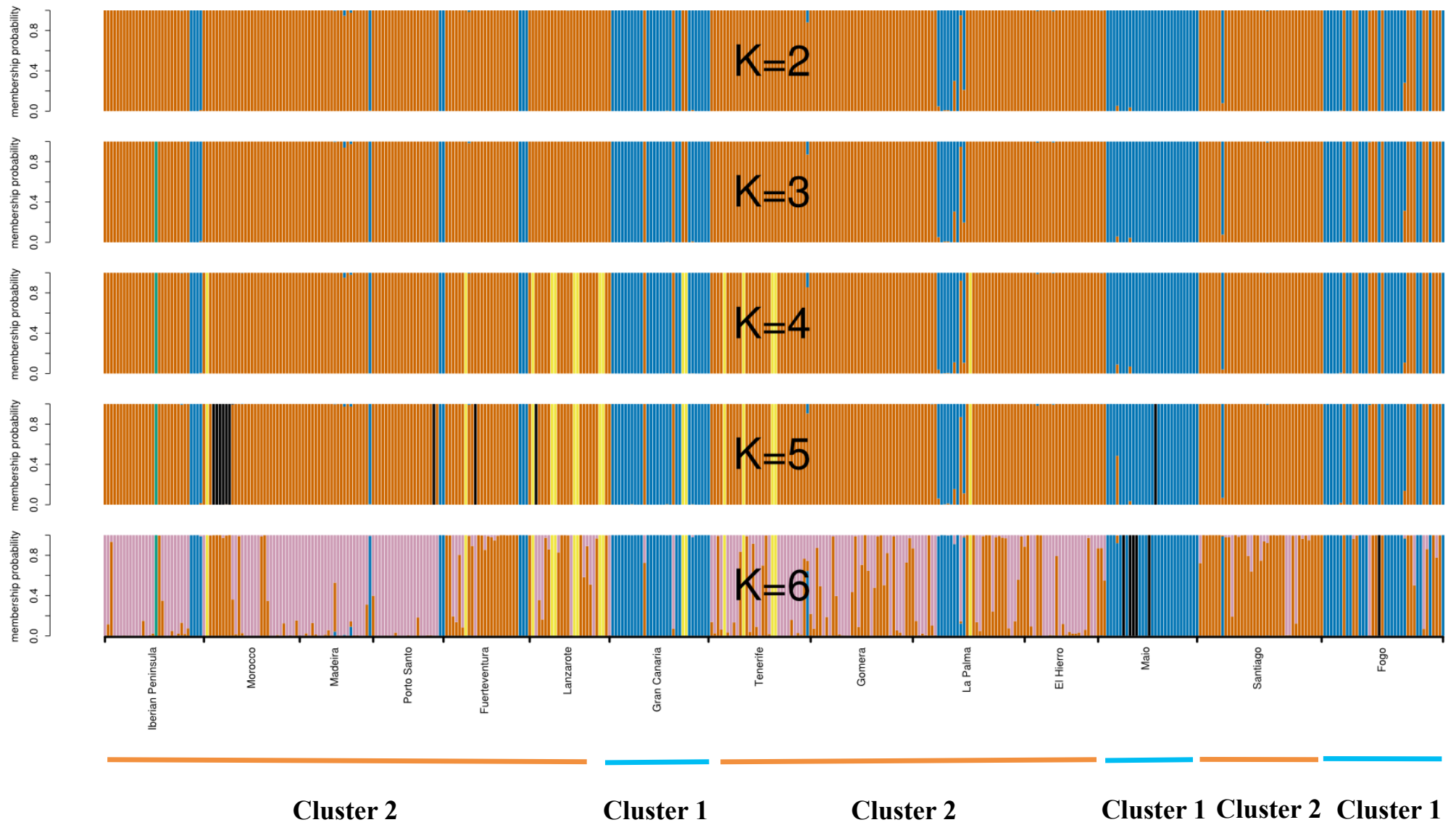
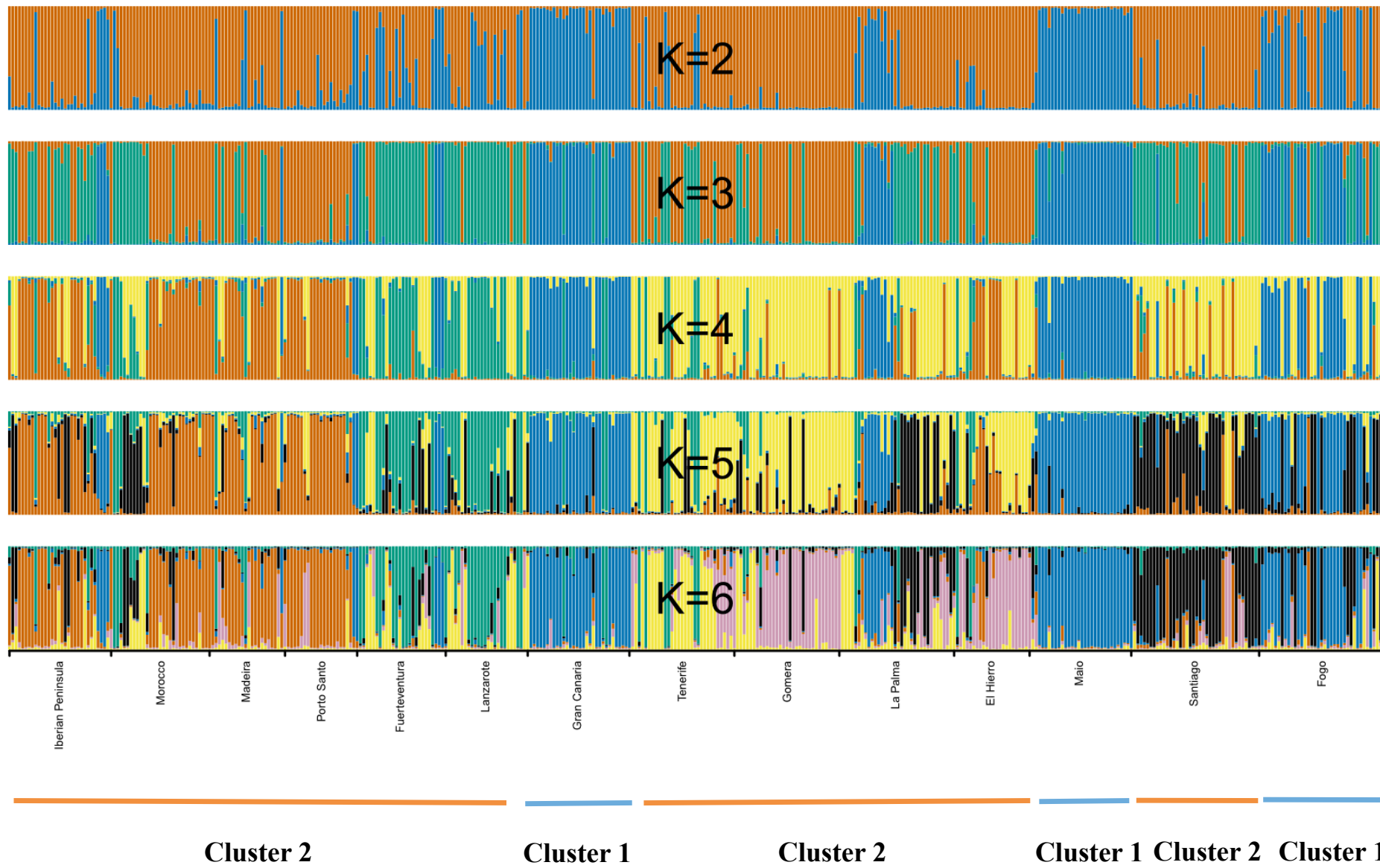
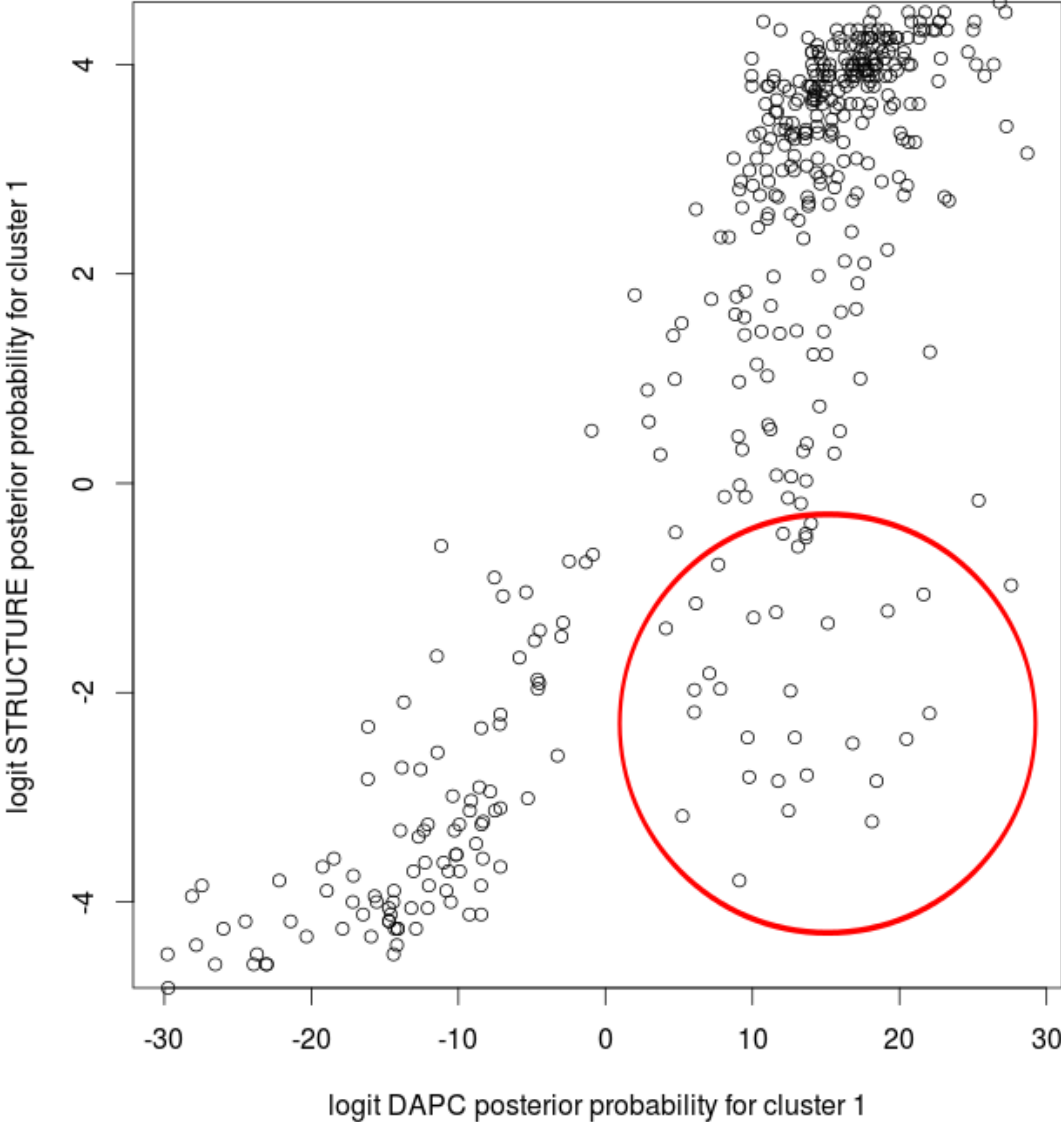
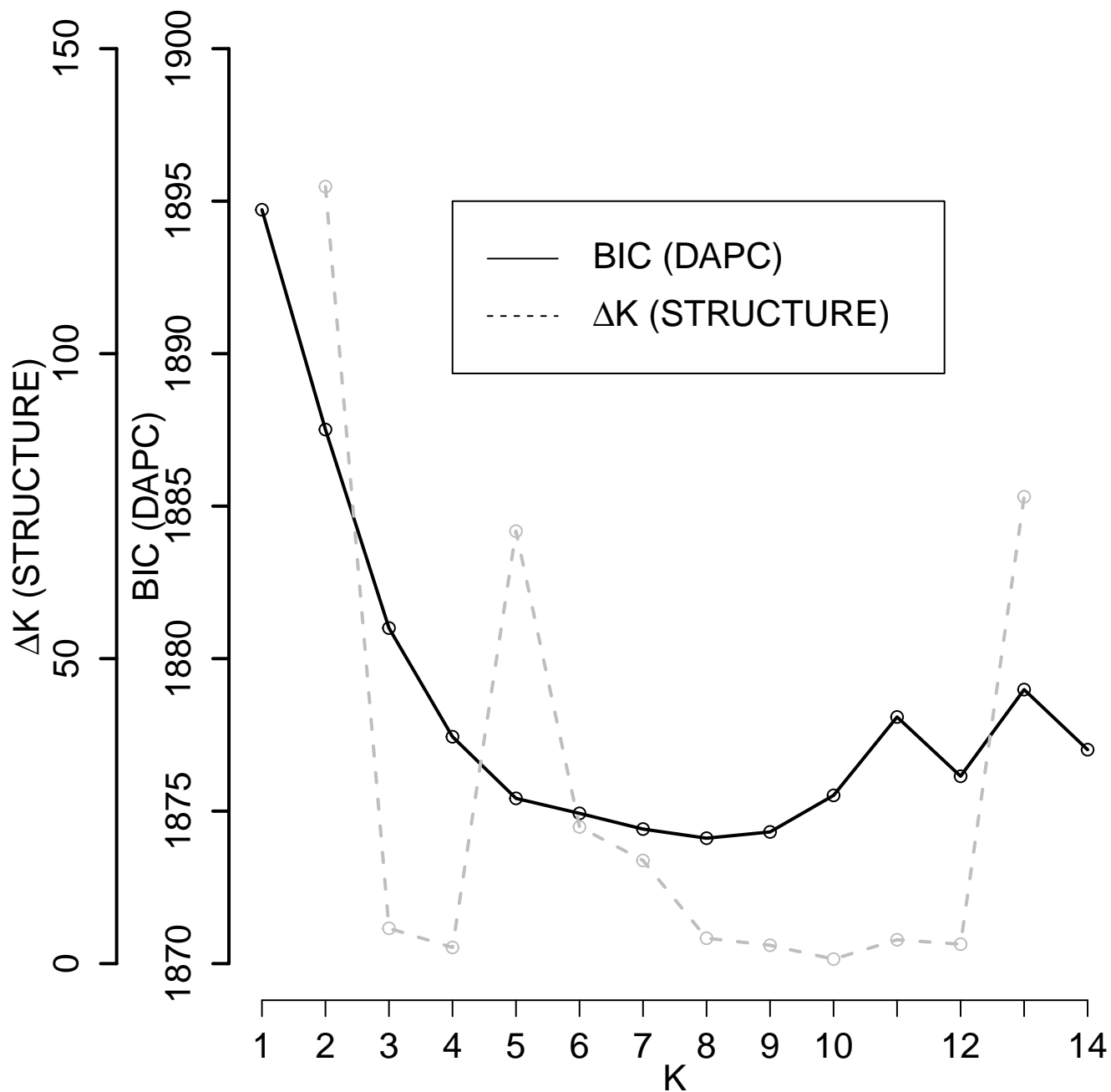


S-Figure 1

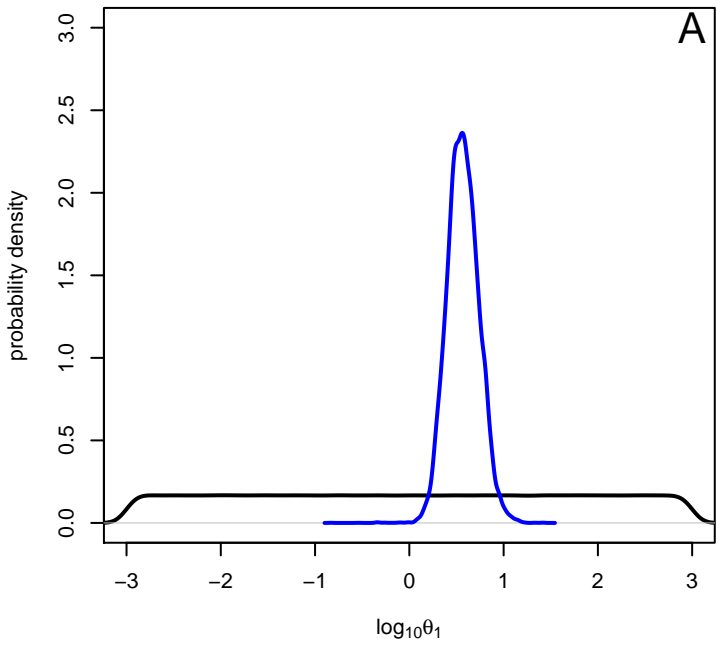




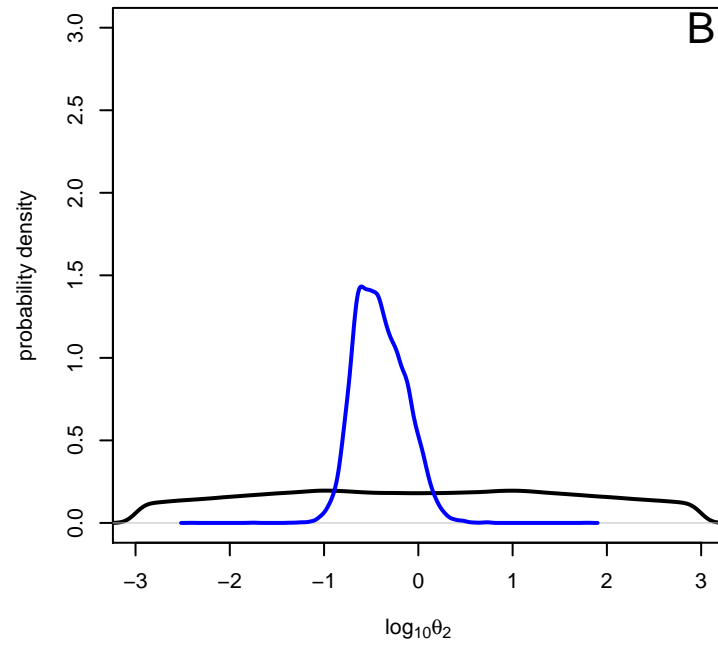




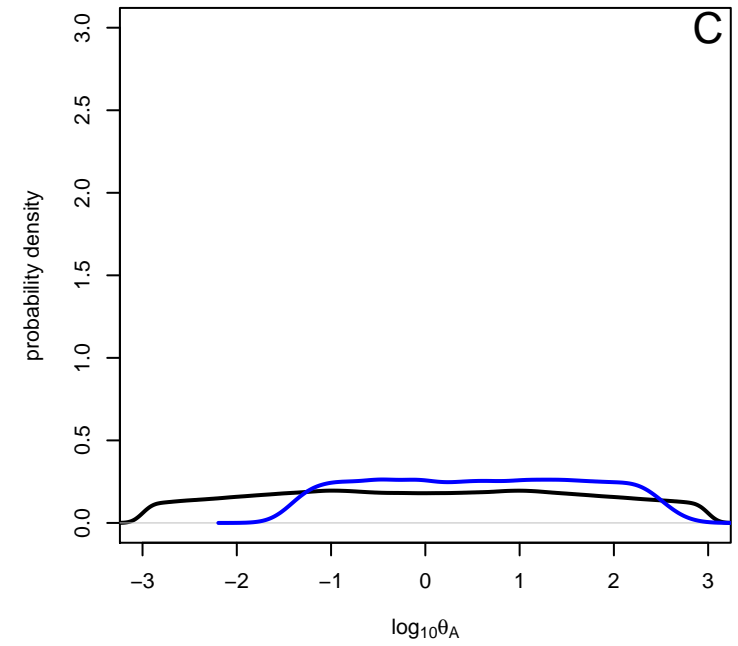
Effective mutation rate (cluster 1)



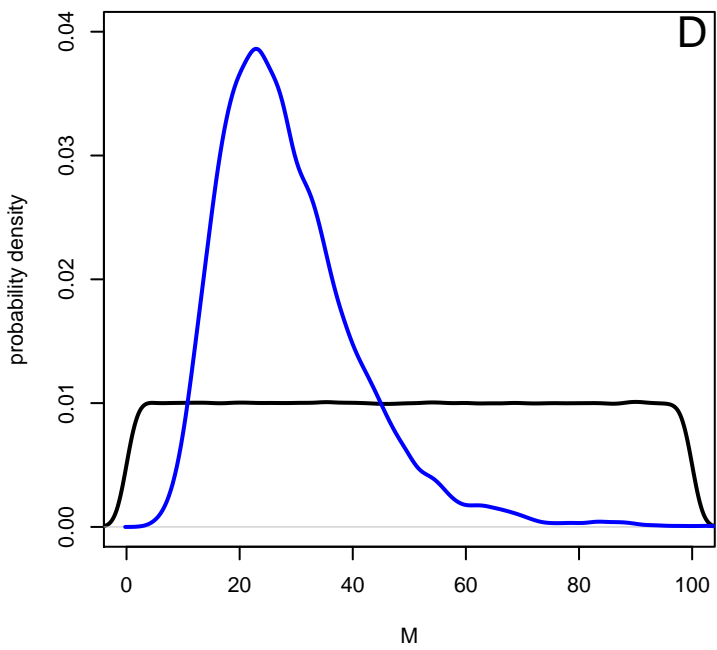
Effective mutation rate (cluster 2)



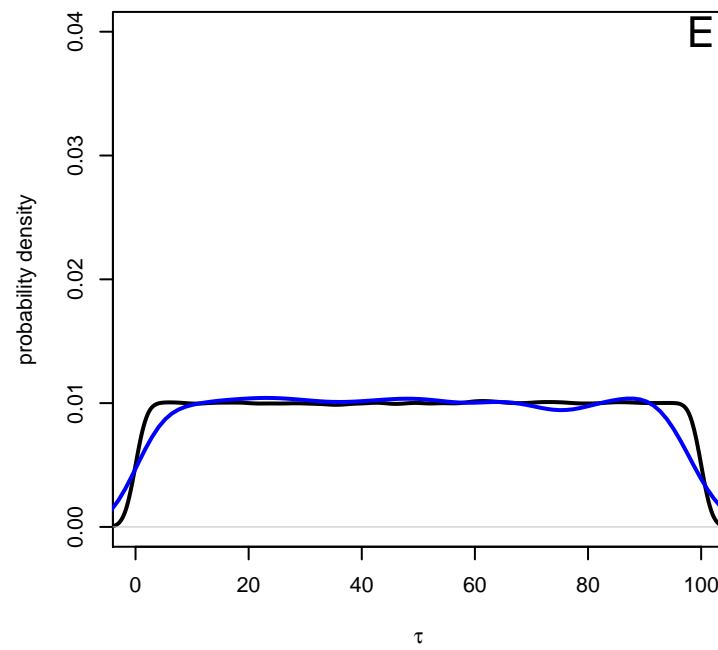
Effective mutation rate (ancestral population)



Effective migration rate



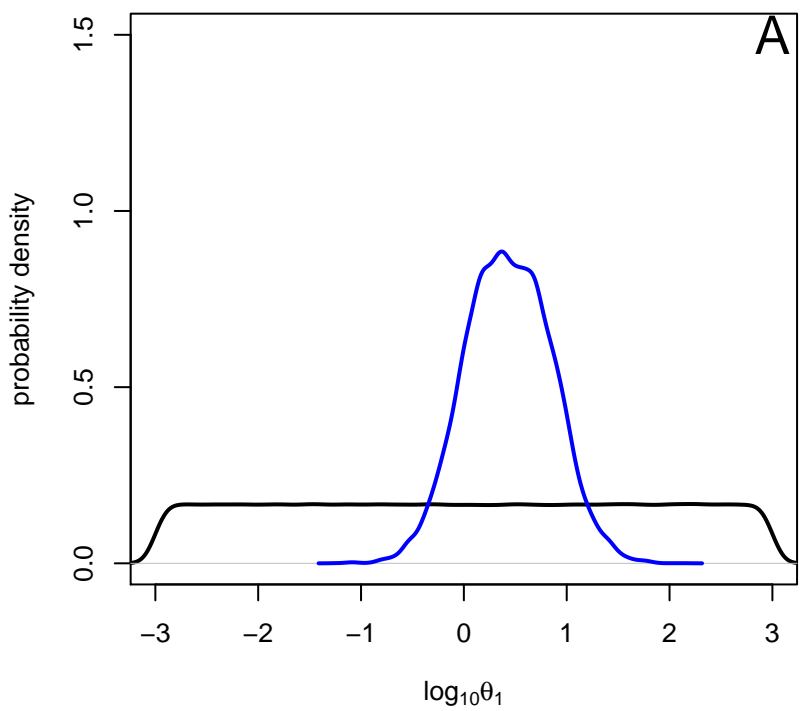
Divergence time (4Ngenerations)



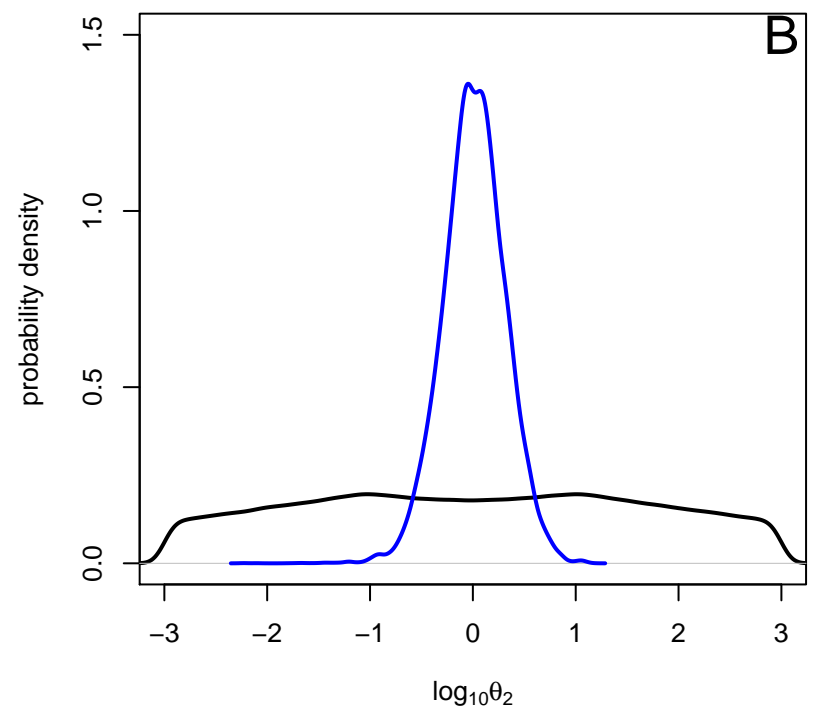
S-Figure 5

LACK OF DIVERSIFICATION IN A MACARONESIAN
BIRD_Evolution doi:10.1111/evo.12429

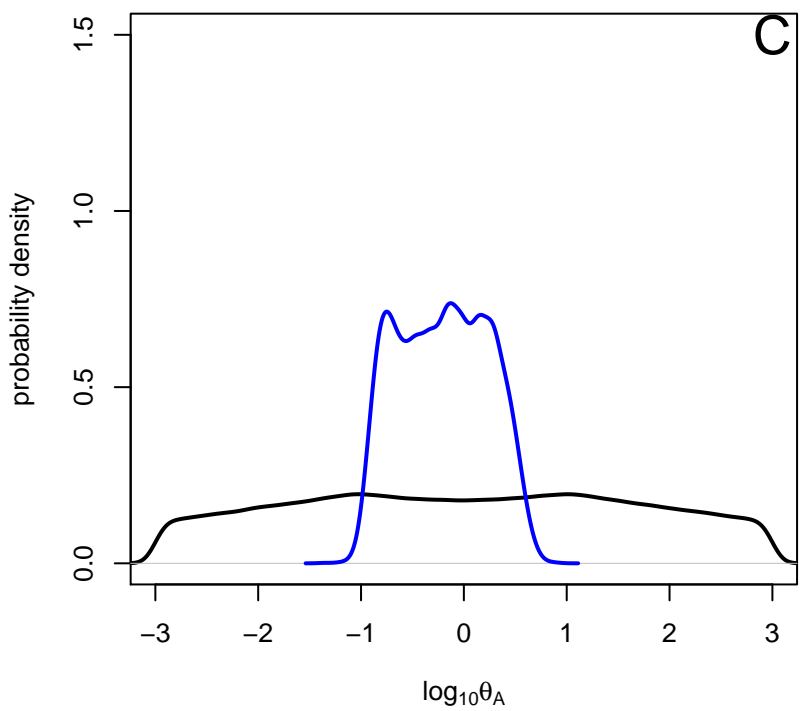
Effective mutation rate (cluster 1)



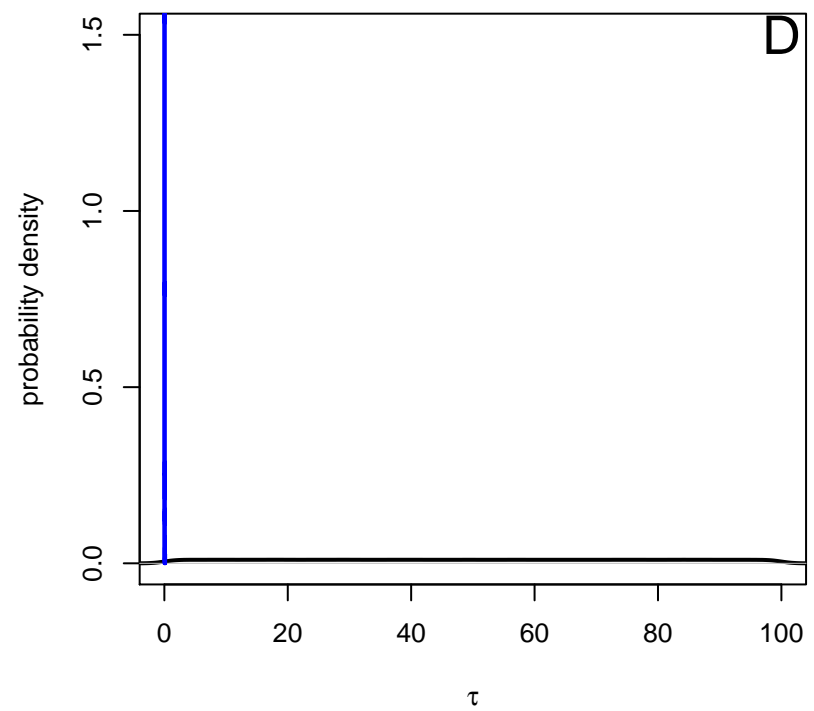
Effective mutation rate (cluster 2)



Effective mutation rate (ancestral population)



Divergence time (4Ngenerations)



S-Table 1. Microsatellite loci used with the spectacled warbler. AR: Allelic richness per locus. NA: number of alleles sampled. H_O: observed heterozygosity. H_E: expected heterozygosity.

Locus	AR	NA	H_O	H_E	Reference
TG01-040	6.61	8	0.55	0.73	Dawson et al., (2010)
TG01-077	4.14	6	0.09	0.53	Dawson et al., (2010)
TG02-078	7.20	14	0.41	0.65	Dawson et al., (2010)
TG02-088	6.04	10	0.29	0.61	Dawson et al., (2010)
TG02-120	2.81	3	0.47	0.47	Dawson et al., (2010)
TG03-031	1.82	3	0.01	0.06	Dawson et al., (2010)
TG03-034	3.79	6	0.15	0.26	Dawson et al., (2010)
TG04-041	3.24	7	0.07	0.22	Dawson et al., (2010)
TG06-009	2.36	4	0.45	0.41	Dawson et al., (2010)
SYL4	14.09	31	0.58	0.82	Segelbacher et al., (2008)
TG05-030	3.04	8	0.21	0.26	Dawson et al., (2010)
TG11-011	5.33	9	0.66	0.72	Dawson et al., (2010)
TG04-061	6.81	11	0.48	0.79	Dawson et al., (2010)
PCA8	5.20	12	0.452	0.539	Dawson et al., (2000)

FHU2	3.34	8	0.173	0.184	Primmer et al., (1996)
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Dawson DA, Hanotte O, Greig C, Stewart IRK, Burke T (2000) Polymorphic microsatellites in the blue tit *Parus caeruleus* and their cross-species utility in 20 songbird families. *Molecular Ecology*, **9**, 1941-1944.

Dawson DA, Horsburgh GJ, Küpper C, Stewart IRK, Ball AD, Durrant KL, Hansson B, Bacon I, Bird S, Klein Á, Krupa AP, Lee JW, Martín-Gálvez D, Simeoni M, Smith G, Spurgin LG, Burke T (2010) New methods to identify conserved microsatellite loci and develop primer sets of high cross-species utility - as demonstrated for birds. *Molecular Ecology Resources*, **10**, 475-494.

Primmer CR, Møller AP, Ellegren H (1996) A wide-range survey of cross-species microsatellite amplification in birds. *Molecular Ecology*, **5**, 365-378.

Segelbacher G, Rolshausen G, Weis-Dootz T, Serrano D, Schaefer HM (2008) Isolation of 10 tetranucleotide microsatellite loci in the blackcap (*Sylvia atricapilla*). *Molecular Ecology Resources*, **8**, 1108-1110.

S-Table 2. Mean values (\pm SE) to each morphological trait in the spectacled warbler per population. The sample size is shown in brackets. Wing: length wing; HeadL: head length; BillL: bill to skull length; BillW: bill width; BillH: bill height.

	Wing	Tail	HeadL	Tarsus	BillL	BillW	BillH	Weight
Mainland								
Iberian Peninsula	57.37 \pm 0.25 (28)	54.45 \pm 0.37 (28)	28.34 \pm 0.13 (28)	18.73 \pm 0.13 (28)	12.57 \pm 0.15 (28)	2.99 \pm 0.02 (28)	2.67 \pm 0.03 (28)	8.89 \pm 0.08 (28)
Morocco	56.94 \pm 0.31 (26)	54.65 \pm 0.35 (26)	28.33 \pm 0.10 (26)	18.12 \pm 0.10 (26)	12.76 \pm 0.08 (26)	2.88 \pm 0.03 (26)	2.59 \pm 0.02 (26)	8.89 \pm 0.09 (26)
Canary Islands								
Fuerteventura	54.89 \pm 0.28 (19)	50.92 \pm 0.36 (19)	28.12 \pm 0.12 (19)	18.30 \pm 0.12 (19)	12.51 \pm 0.08 (19)	2.94 \pm 0.02 (19)	2.59 \pm 0.03 (19)	8.55 \pm 0.11 (19)
Lanzarote	55.67 \pm 0.39 (21)	52.07 \pm 0.48 (21)	28.22 \pm 0.11 (21)	18.44 \pm 0.11 (21)	12.50 \pm 0.09 (21)	2.92 \pm 0.01 (21)	2.58 \pm 0.02 (21)	8.76 \pm 0.16 (21)
Gran Canaria	55.83 \pm 0.27 (18)	51.53 \pm 0.36 (18)	28.37 \pm 0.08 (17)	18.25 \pm 0.09 (18)	12.35 \pm 0.05 (18)	3.14 \pm 0.03 (17)	2.70 \pm 0.03 (17)	9.23 \pm 0.10 (17)
Tenerife	55.87 \pm 0.30 (24)	52.58 \pm 0.31 (24)	28.23 \pm 0.09 (24)	18.13 \pm 0.08 (24)	12.59 \pm 0.06 (24)	2.91 \pm 0.01 (24)	2.56 \pm 0.02 (24)	8.55 \pm 0.09 (24)
La Gomera	56.02 \pm 0.38 (22)	52.11 \pm 0.55 (22)	28.58 \pm 0.13 (22)	18.08 \pm 0.09 (22)	12.70 \pm 0.11 (22)	2.85 \pm 0.02 (22)	2.64 \pm 0.02 (22)	8.63 \pm 0.08 (22)
La Palma	55.12 \pm 0.41 (12)	52.00 \pm 0.45 (12)	27.87 \pm 0.16 (12)	18.13 \pm 0.16 (12)	12.35 \pm 0.15 (12)	2.77 \pm 0.03 (12)	2.53 \pm 0.03 (12)	8.69 \pm 0.14 (12)
Hierro	54.65 \pm 0.31 (20)	51.02 \pm 0.45 (20)	28.37 \pm 0.10 (20)	18.02 \pm 0.14 (20)	12.53 \pm 0.07 (20)	2.88 \pm 0.03 (20)	2.62 \pm 0.02 (20)	8.5 \pm 0.08 (20)
Cape Verde								
Fogo	56.05 \pm 0.20 (36)	52.67 \pm 0.26 (37)	28.60 \pm 0.08 (37)	18.39 \pm 0.09 (37)	12.88 \pm 0.05 (37)	2.92 \pm 0.02 (37)	2.60 \pm 0.01 (37)	8.62 \pm 0.08 (37)
Maio	55.42 \pm 0.18 (31)	51.42 \pm 0.24 (31)	28.47 \pm 0.06 (31)	18.16 \pm 0.07 (31)	12.78 \pm 0.06 (31)	2.90 \pm 0.02 (31)	2.61 \pm 0.02 (31)	8.71 \pm 0.07 (31)
Santiago	55.79 \pm 0.20 (29)	52.25 \pm 0.26 (29)	28.37 \pm 0.07 (29)	18.21 \pm 0.10 (29)	12.80 \pm 0.06 (29)	2.93 \pm 0.02 (29)	2.64 \pm 0.02 (29)	8.64 \pm 0.07 (29)
Madeira Islands								
Madeira	56.59 \pm 0.27 (22)	53.64 \pm 0.49 (22)	28.19 \pm 0.11 (22)	18.19 \pm 0.09 (22)	12.52 \pm 0.08 (22)	2.88 \pm 0.01 (22)	2.62 \pm 0.02 (22)	8.66 \pm 0.09 (22)
Porto Santo	57.13 \pm 0.38 (17)	53.70 \pm 0.41 (17)	28.72 \pm 0.10 (17)	18.08 \pm 0.13 (17)	12.97 \pm 0.11 (17)	2.86 \pm 0.01 (17)	2.68 \pm 0.01 (17)	8.95 \pm 0.12 (17)

S-Table 3. Mean values (\pm SE) to each acoustic feature measured in the spectacled warbler per population (data not standardized). The sample size is shown in brackets. DurPhr: song phrase duration; the lowest (Fmin) and maximum (Fmax) frequency of the song phrase; Fdom: the dominant frequency in the song phrase; the duration of the first syllable (DurSyl); the lowest (FminSyl) and maximum (FmaxSyl) frequency of the first syllable; trill syllable duration (DurSylTr); trill syllable dominant frequency (FdomTr); number of original syllables per phrase (OrSyl) and number of syllables per phrase (TotSyl).

	DurPhr	Fmin	Fmax	Fdom	DurSyl	FminSyl	FmaxSyl
Mainland							
Iberian Peninsula (23)	1.71 \pm 0.29	2,175.62 \pm 216.76	6,187.98 \pm 199.39	4,198.54 \pm 250.13	0.19 \pm 0.04	3,220.43 \pm 255.39	4,308.55 \pm 411.96
Canary Islands							
Fuerteventura (17)	1.58 \pm 0.31	2,019.59 \pm 123.86	6,729.23 \pm 375.53	4,104.69 \pm 259.84	0.18 \pm 0.04	3,027.92 \pm 311.42	4,466.88 \pm 480.40
Lanzarote (15)	1.56 \pm 0.29	2,213.44 \pm 154.91	6,283.83 \pm 357.55	4,133.88 \pm 394.03	0.16 \pm 0.05	3,077.68 \pm 390.63	4,542.52 \pm 457.16
Gran Canaria (12)	1.77 \pm 0.34	2,180.10 \pm 172.62	6,411.91 \pm 231.84	3,994.54 \pm 232.87	0.16 \pm 0.05	2,887.98 \pm 358.74	4,213.57 \pm 620.72
Tenerife (23)	1.66 \pm 0.39	2,109.74 \pm 164.62	6,459.24 \pm 350.49	4,113.05 \pm 302.66	0.18 \pm 0.05	2,761.94 \pm 489.34	4,073.73 \pm 699.65
La Gomera (18)	1.83 \pm 0.31	2,139.55 \pm 207.07	6,410.59 \pm 400.63	4,013.70 \pm 337.30	0.19 \pm 0.03	2,939.35 \pm 410.77	4,097.72 \pm 686.26
La Palma (17)	1.86 \pm 0.34	1,893.13 \pm 170.23	6,270.06 \pm 265.80	3,782.14 \pm 233.44	0.18 \pm 0.02	2,807.49 \pm 418.39	4,285.41 \pm 494.99
El Hierro (12)	2.07 \pm 0.52	2,087.11 \pm 186.89	6,590.33 \pm 254.46	4,151.49 \pm 308.59	0.20 \pm 0.04	2,704.54 \pm 265.71	3,941.50 \pm 544.66
Cape Verde							
Fogo (32)	2.03 \pm 0.56	2,032.64 \pm 203.26	6,332.73 \pm 338.05	4,141.53 \pm 285.79	0.15 \pm 0.05	2,771.12 \pm 432.79	3,727.17 \pm 605.17
Maio (34)	1.79 \pm 0.52	2,093.04 \pm 235.64	6,417.76 \pm 301.52	4,158.43 \pm 339.36	0.18 \pm 0.05	3,125.22 \pm 397.58	4,333.63 \pm 536.72
Santiago (28)	1.85 \pm 0.62	2,052.02 \pm 206.34	6,170.76 \pm 210.32	4,139.23 \pm 385.89	0.15 \pm 0.07	3,064.56 \pm 469.66	4,547.88 \pm 602.20
Madeira Islands							
Madeira (17)	2.12 \pm 0.56	2,012.48 \pm 212.31	6,282.59 \pm 240.73	3,899.87 \pm 301.81	0.17 \pm 0.06	3,085.42 \pm 466.36	4,458.78 \pm 606.03
Porto Santo (21)	1.60 \pm 0.37	2,185.59 \pm 206.87	6,207.76 \pm 299.19	4,177.69 \pm 324.62	0.23 \pm 0.05	2,724.90 \pm 439.79	4,139.13 \pm 590.82

	DurSylTr	FdomTr	OrSyl	TotSyl
Mainland				
Iberian Peninsula (23)	0.03 ± 0.00	4,415.25 ± 254.47	10.25 ± 1.66	21.86 ± 3.66
Canary Islands				
Fuerteventura (17)	0.02 ± 0.00	4447.46 ± 462.75	8.95 ± 1.62	17.45 ± 3.59
Lanzarote (15)	0.03 ± 0.00	4,493.62 ± 341.98	9.86 ± 1.80	20.21 ± 4.56
Gran Canaria (12)	0.03 ± 0.00	4,254.53 ± 523.97	10.00 ± 1.20	22.78 ± 3.97
Tenerife (23)	0.03 ± 0.00	4,405.63 ± 301.34	10.20 ± 2.18	19.42 ± 3.56
La Gomera (18)	0.03 ± 0.00	4,234.97 ± 484.86	11.50 ± 2.14	22.52 ± 4.74
La Palma (17)	0.03 ± 0.00	3,805.06 ± 309.14	12.18 ± 1.76	23.54 ± 5.80
El Hierro (12)	0.03 ± 0.01	4,354.33 ± 317.02	11.19 ± 1.68	24.96 ± 4.79
Cape Verde				
Fogo (32)	0.03 ± 0.00	4,684.16 ± 322.22	13.61 ± 3.28	25.75 ± 7.56
Maio (34)	0.03 ± 0.00	4,547.58 ± 373.16	12.47 ± 2.72	19.62 ± 4.77
Santiago (28)	0.03 ± 0.00	4,523.71 ± 327.20	11.76 ± 2.75	23.60 ± 7.31
Madeira Islands				
Madeira (17)	0.03 ± 0.00	4,075.70 ± 419.82	12.16 ± 2.42	28.92 ± 7.46
Porto Santo (21)	0.03 ± 0.00	4,568.44 ± 388.47	9.21 ± 1.68	18.16 ± 4.50

S-Table 4. Microsatellite pairwise F_{ST} (below the diagonal) and Jost's D_{EST} (above diagonal) values obtained in the spectacled warbler. All F_{ST} values were significant.

	Spain	Morocco	Madeira	Porto Santo	Fuerteventura	Lanzarote	Gran Canaria	Tenerife	La Gomera	La Palma	El Hierro	Maio	Santiago	Fogo
Spain		0.005	0.016	0.055	0.054	0.033	0.045	0.041	0.053	0.048	0.049	0.072	0.053	0.056
Morocco	0.025		0.020	0.071	0.038	0.019	0.049	0.046	0.035	0.047	0.040	0.109	0.042	0.058
Madeira	0.028	0.038		0.087	0.060	0.037	0.032	0.027	0.031	0.057	0.042	0.072	0.079	0.086
Porto Santo	0.102	0.120	0.138		0.091	0.104	0.087	0.082	0.094	0.068	0.097	0.088	0.072	0.070
Fuerteventura	0.095	0.078	0.100	0.158		0.006	0.060	0.038	0.070	0.042	0.055	0.067	0.027	0.065
Lanzarote	0.067	0.037	0.082	0.177	0.027		0.051	0.023	0.047	0.040	0.043	0.093	0.022	0.058
Gran Canaria	0.109	0.128	0.119	0.169	0.112	0.129		0.049	0.072	0.082	0.073	0.026	0.092	0.058
Tenerife	0.075	0.075	0.078	0.156	0.060	0.058	0.140		0.018	0.032	0.026	0.088	0.036	0.059
La Gomera	0.111	0.090	0.094	0.208	0.113	0.096	0.186	0.040		0.041	0.018	0.112	0.047	0.079
La Palma	0.098	0.089	0.100	0.185	0.095	0.094	0.136	0.086	0.084		0.029	0.104	0.030	0.041
El Hierro	0.088	0.078	0.079	0.180	0.084	0.086	0.140	0.054	0.055	0.075		0.117	0.036	0.062
Maio	0.162	0.185	0.161	0.194	0.137	0.169	0.055	0.175	0.221	0.180	0.183		0.097	0.057
Santiago	0.101	0.069	0.113	0.181	0.066	0.057	0.168	0.074	0.088	0.079	0.075	0.196		0.046
Fogo	0.093	0.110	0.126	0.186	0.113	0.120	0.085	0.115	0.128	0.108	0.103	0.113	0.109	

S-Table 5. Proportion of spectacled warbler individuals per population assigned to each of the two clusters indentified by DAPC without using prior information.

	Microsatellites	
Population	Cluster 1	Cluster 2
El Hierro	0.01	0.99
Fogo	0.60	0.40
Fuerteventura	0.11	0.89
Gran Canaria	0.87	0.13
La Gomera	0.01	0.99
Iberian Peninsula	0.13	0.87
La Palma	0.22	0.78
Lanzarote	0.01	0.99
Madeira	0.05	0.95
Maio	0.97	0.03
Morocco	0.01	0.99
Porto Santo	0.09	0.91
Santiago	0.03	0.97
Tenerife	0.01	0.99