Song Thrush
Turdus philomelos

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Range

The Song Thrush breeds throughout most of Europe and westwards to Lake Baikal (Cramp, 1988; Hagemeijer & Blair, 1997). It is a partial migrant and its northern and eastern populations mostly winter in the Mediterranean region (Cramp, 1988). Individuals from further north, especially first-year birds, winter further south in N Africa and the Canary Islands (Cramp, 1998).

This species does not breed at any of the study sites, but is a common wintering species in sites such as the wet Balearics, N Morocco, Catalonia and on the larger islands of the dry Balearics (Cabrera, Formentera). In S Morocco and on the smallest islands no or very few wintering birds are present (L'Illa de l'Aire, Conillera, Els Columbrets, L'Illa Grossa and Las Chafarinas).

Migratory route

There are a fairly good number of recoveries in the study zone, although only one is direct (fig. 1). The main migratory route follows a clear SW-NE axis, with most birds originating from C and N Europe. Birds captured in S Spain originate from further north than those from the Balearics, which mostly involve birds from C Europe (mainly Germany, Switzerland and N Italy). The few recoveries of British origin have taken place in S and SE Spain in accordance with the longitudinal distribution of the different populations found on wintering grounds (Telleria et al., 1999).

Frequencies and number of captures show that most captures occur either on the islands that hold a good number of wintering birds (*e.g.* at Albufera d'Es Grau) or on tiny islands that attract a lot of migrants (fig. 2).

Phenology

Passage through the W Mediterranean begins mostly in February (Telleria et al., 1999; Thévenot et al., 2003), outside the study period. Passage, however, is most intense in March and then decreases and finishes in late April or early May (fig. 3). The two peaks in number of captures are due largely to a methodological artefact and reflect the fact that it is much easier to capture wintering birds in Catalonia and the Balearics at the beginning of the ringing campaigns (begun on 2 March in Catalonia and 17 March on the islands). This overall pattern of passage is similar to that reported in Gibraltar (Finlayson, 1992), La Camargue (Blondel & Isenmann, 1981) and the C Mediterranean (Petterson et al., 1990; Spina et al., 1993). The median date of passage occurs three days earlier in adults than in second-year birds (fig. 2).

Biometry and physical condition

Mean third primary length varies between 88.3 in the wet Balearics and 90.6 in N Morocco; the average wing length varies between 116.2 and 118.1 at the same sites, although without any significant differences between regions. These means are within the values recorded in spring in the C Mediterranean (mean 89.1, n = 355; Spina et al., 1993) and, in general, are similar to those reported all year round for C and N Europe (Cramp 1998) and NE Spain (ICO, 2010). In fact, this species does not show any appreciable variation in size throughout its distribution in the W Palearctic (Cramp, 1988). The third primary length decreases significantly over time (fig. 6), a trend that could be indicative of the differential migration of age/sex groups.

Mean body mass varies from 63.5 in the dry Balearics to 68.7 in Catalonia; fat scores range from 1.0 on Els Columbrets and in the wet Balearics to 2.3 in Catalonia. Birds are significantly heavier and fatter and in better physical condition in Catalonia than on Els Columbrets and in the Balearics; birds from the dry Balearics have more fat than on Els Columbrets. Otherwise, differences are inappreciable (table 1, figs. 7-9). Fat tends to increase significantly with time, particularly in Catalonia.

Available data from Gibraltar indicates somewhat higher figures than in N Morocco and Catalonia (mean 70.5, n = 14; Finlayson, 1981) and further confirms the fact that mass is clearly higher in continental areas than on insular sites, apparently reflecting the greater energetic demands made on birds undertaking sea-crossings. Further support for this view is the fact that mean body mass in the Tyrrhenian islands (mean 59.7, n = 355; Spina et al., 1993) is distinctly lower than in the Balearics/Els Columbrets, which lie closer to the important wintering grounds in N Africa.

Stopover

The number of retraps is very low in all study areas (fig. 5) and fuel deposition rates tend to be negative, but not significantly so (table 2). Available retraps indicate that the minimum stopover length is similar in all three areas, although the sample size is too small to be conclusive.

Table 1. Mean (± SD), range and sample size of main biometric parameters according to area.

	n	Wing	Third primary	Body mass	Fat score
Catalonia	244	117.1 ± 2.7 (106.0-125.0)	89.4 ± 2.3 (82.0-95.5)	68.7 ± 7.0 (54.5-87.4)	2.3 ± 1.2 (0-5)
Columbrets	79	116.5 ± 2.9 (108.0-124.0)	88.6 ± 2.1 (82.0-93.0)	65.0 ± 7.3 (46.6-80.0)	1.0 ± 1.0 (0-4)
Balearics (dry)	379	116.6 ± 2.9 (104.0-127.5)	88.7 ± 2.3 (82.0-95.0)	63.5 ± 6.7 (47.7-88.1)	1.5 ± 1.1 (0-6)
Balearics (wet)	16	116.2 ± 1.8 (111.5-119.0)	88.3 ± 1.3 (86.0-91.0)	64.9 ± 6.4 (50.9-75.9)	1.0 ± 0.6 (0-2)
Chafarinas	0				
N Morocco	4	118.1 ± 4.1 (114.0-123.0)	90.6 ± 3.6 (87.0-94.0)	67.9 ± 8.3 (56.5-74.0)	2.0 ± 0.8 (1-3)
S Morocco	0				

Table 2. Variation in fuel deposition rate (g/day) according to area and type of retraps involved (mean ± 95% CI and sample size are given).

	Catalonia	Columbrets	Balearics (dry)	Balearics (wet)	Chafarinas	N Morocco
All retraps	-1.98 ± 3.13 (6)		-0.25 ± 1.03 (9)	-2.31 ± 3.69 (2)		
Retraps >1 day	0.16 ± 0.43 (4)		-0.25 ± 1.03 (9)			

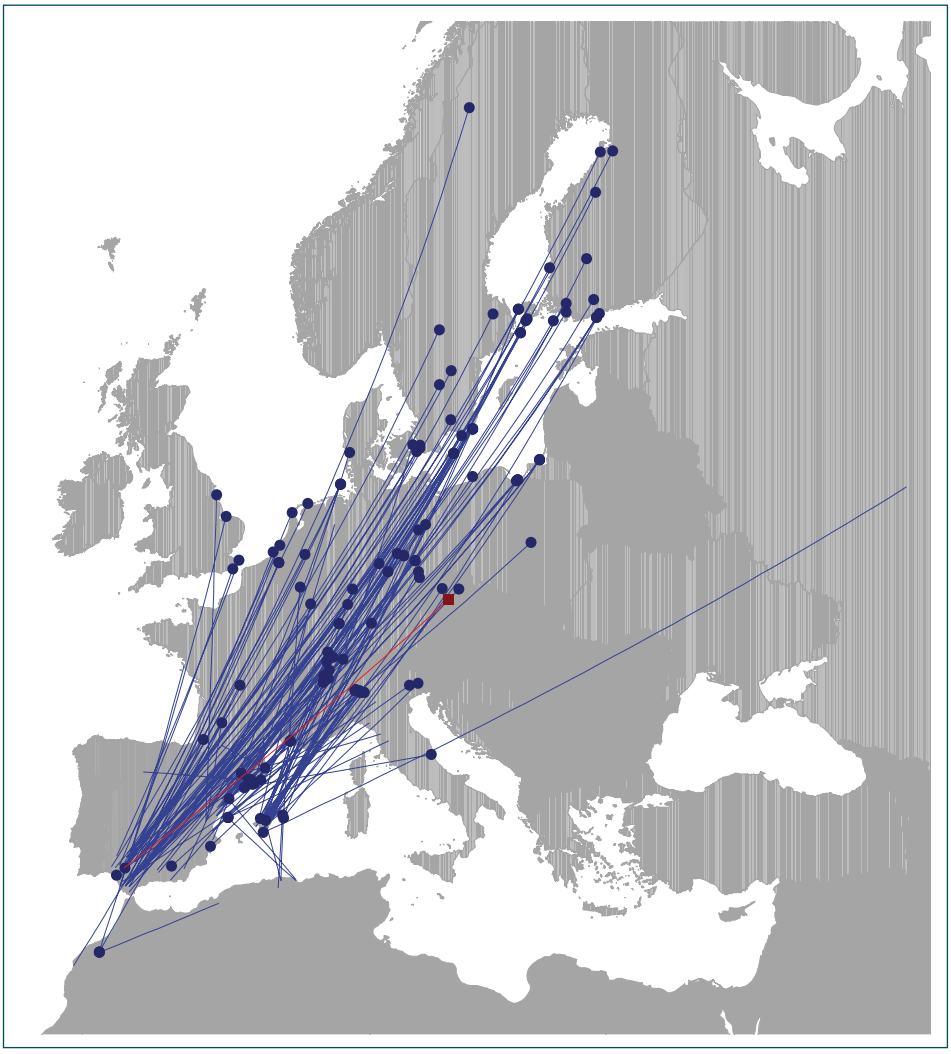

Figure 1. Map of recoveries of birds captured in the study area during the study period (March to May).

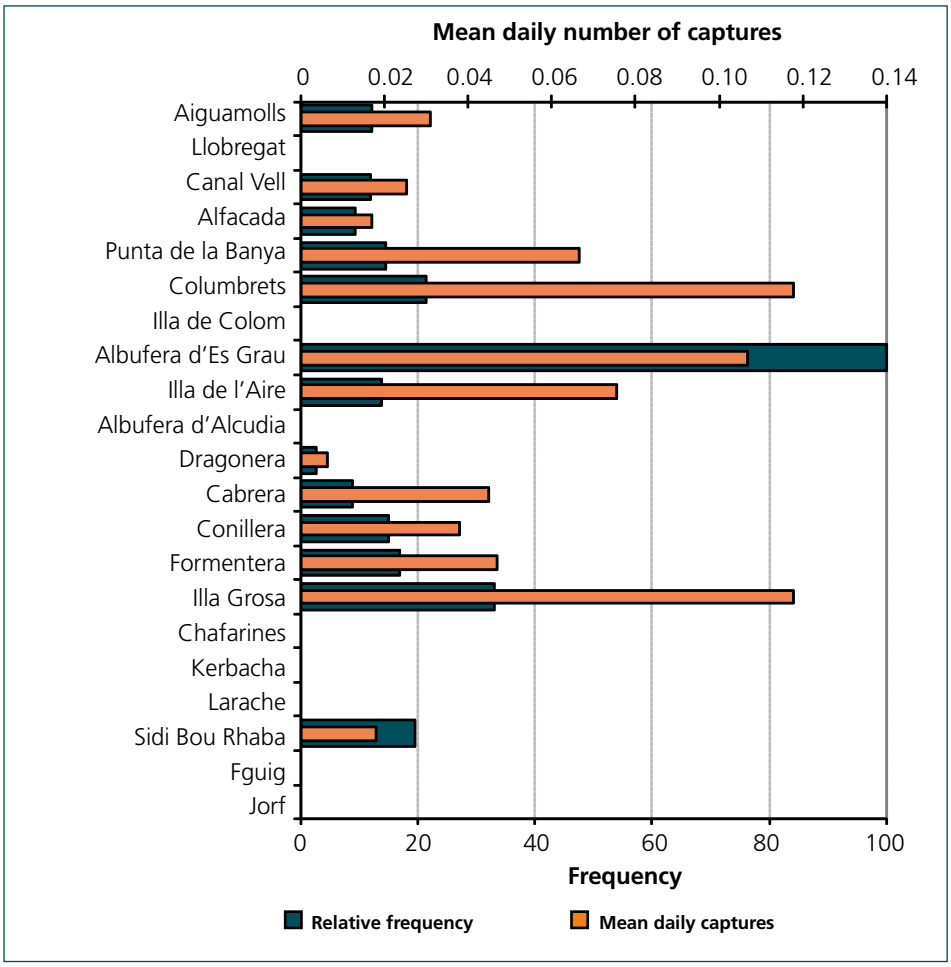

Figure 2. Relative frequency of captures and mean daily numbers according to site during the standard period (16 April to 15 May).

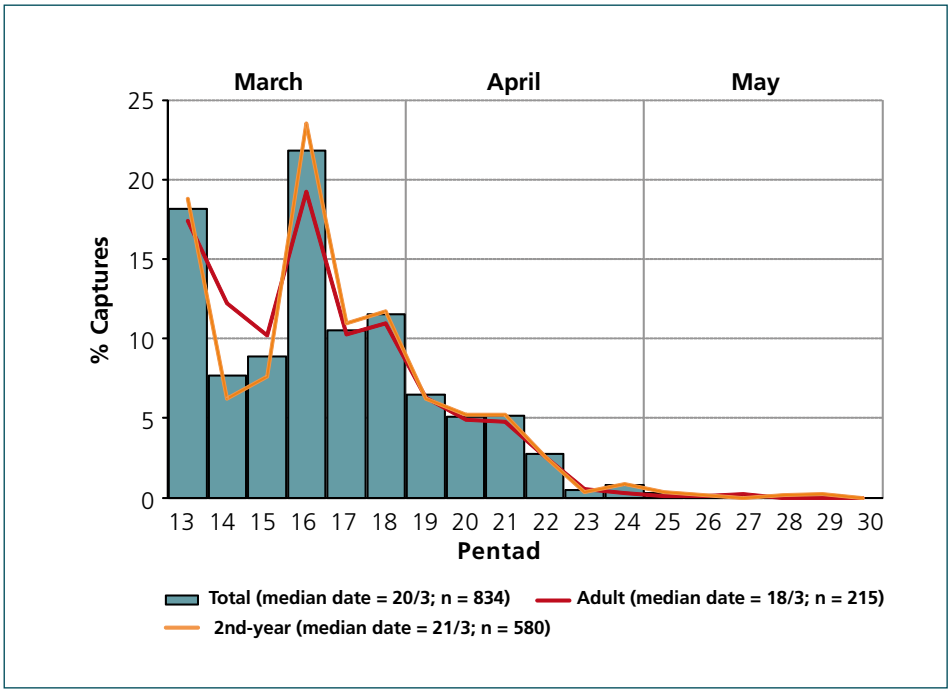

Figure 3. Frequency of captures during the study period.

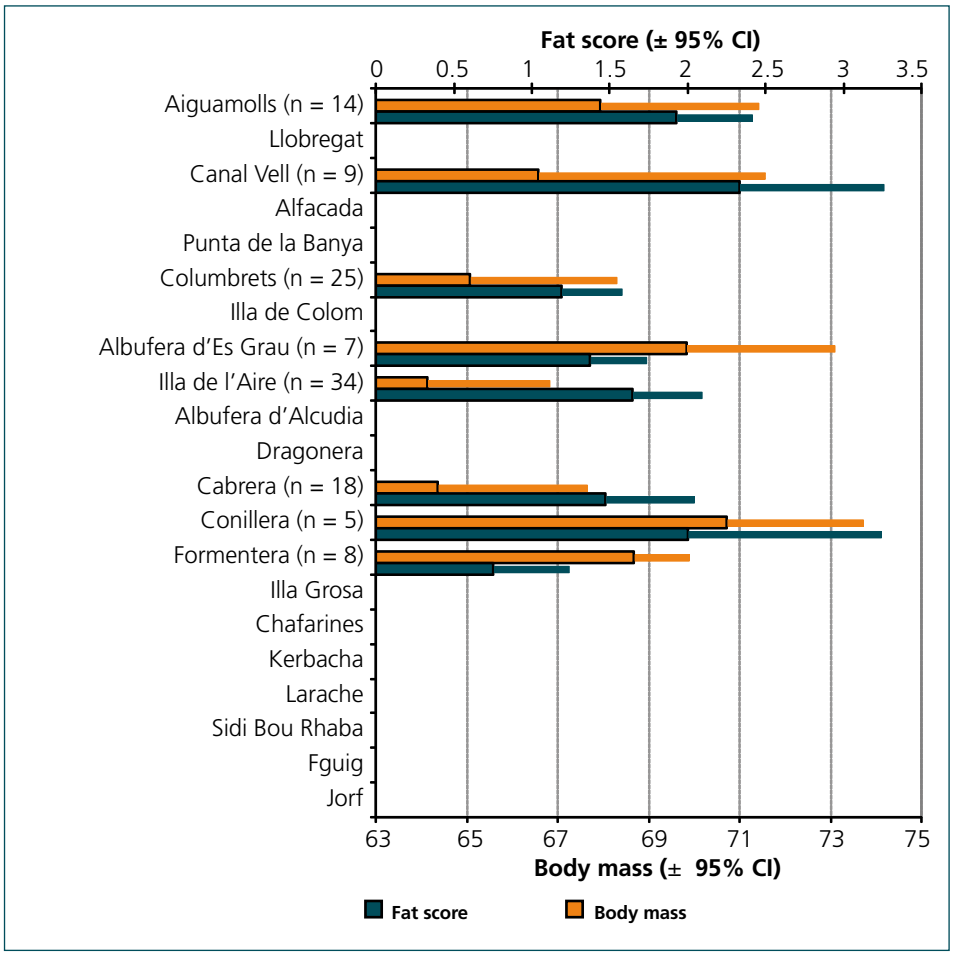

Figure 4. Variation in body mass and fat score according to site during the standard period (16 April to 15 May).

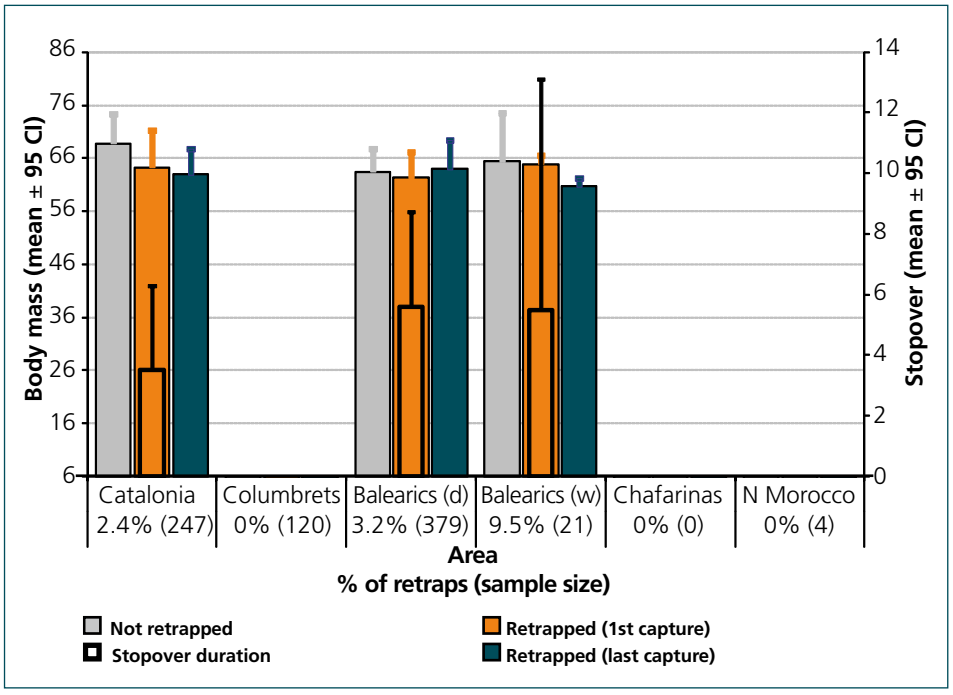

Figure 5. Variation in body mass by trapping status, minimum stopover length and frequency of retraps according to area.

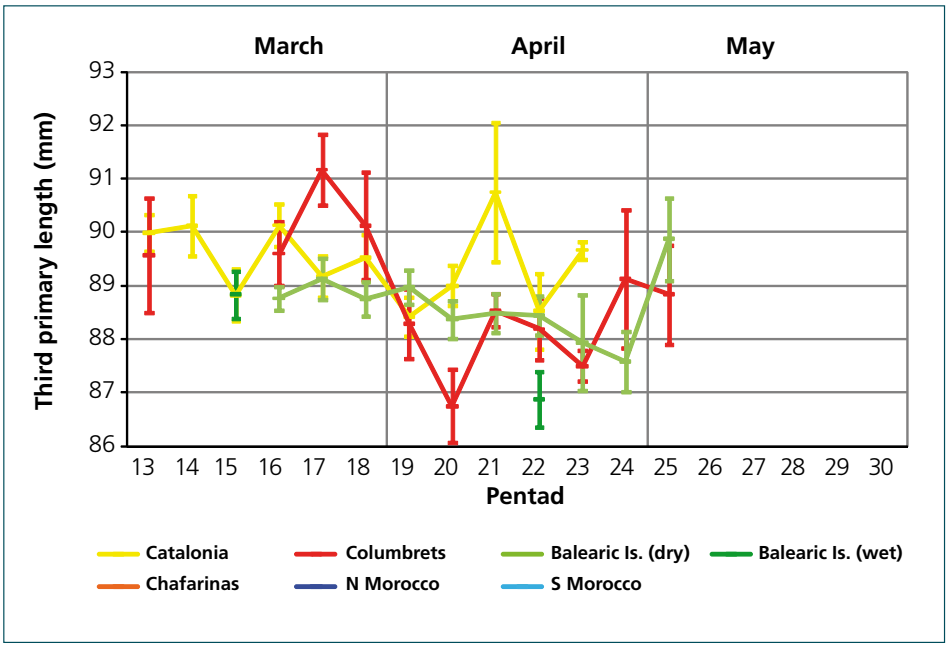

Figure 6. Temporal variation of third primary length according to area.

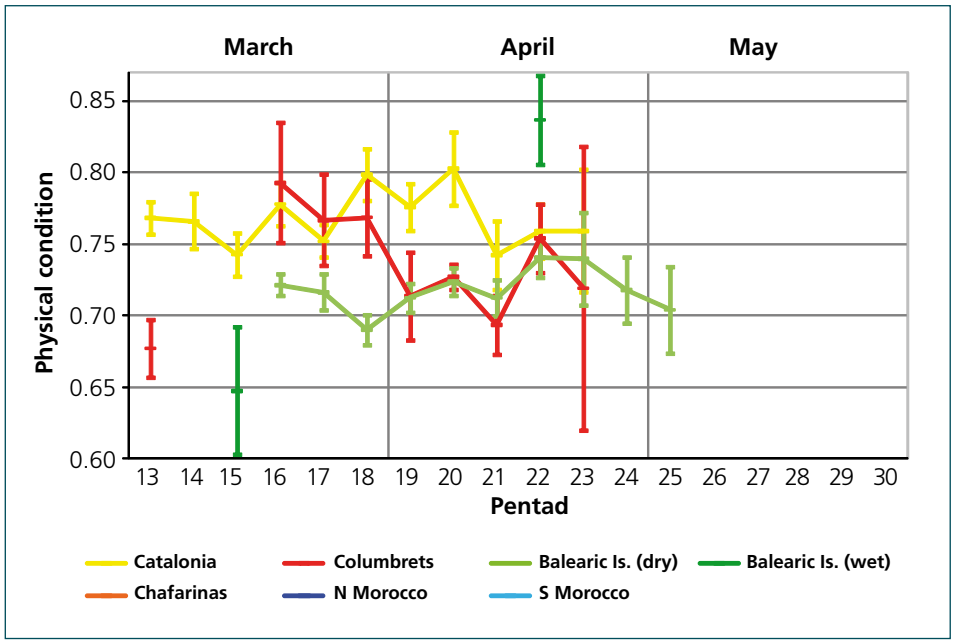

Figure 7. Temporal variation of physical condition according to area.

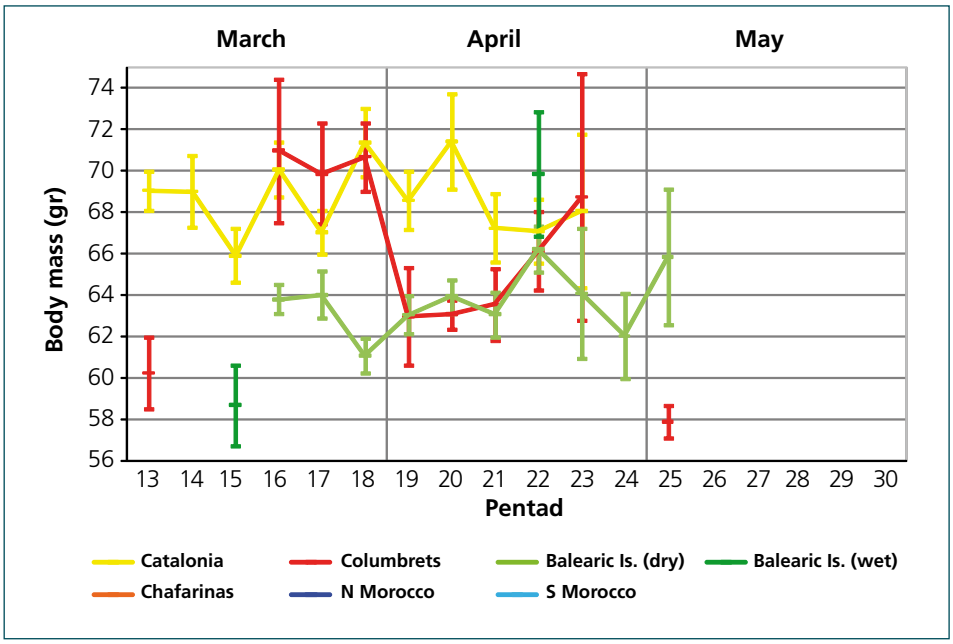

Figure 8. Temporal variation in body mass according to area.

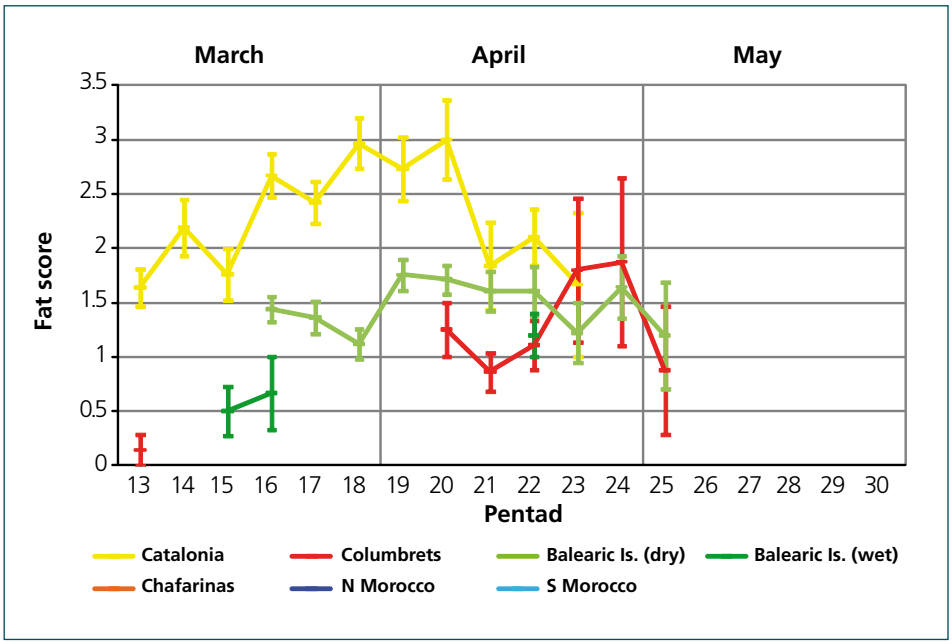

Figure 9. Temporal variation in fat score according to area.