Zakala O., Shydlovskyy I., Busse P. 2004. *Variation in body mass and fat reserves of the Sedge Warbler Acrocephalus schoenobaenus on autumn migration in the L'viv province (W Ukraine).* Ring 26, 2: 55-69.

Abstract

The aim of the paper is limited to a rough describing peculiarities of relations between fat deposit level and the body mass as well as a seasonal and diurnal dynamics of catching at an inland study site located far to the North from important geographical barriers on the Sedge Warbler migration to Central Africa. Material was collected in 1999 and 2000 from July (11 Jul. 1999 and 28 Jul. 2000) till 29 August in L'viv province (western Ukraine). In the present paper 1066 Sedge Warblers caught in 1999 and 407 ones caught in 2000 were taken under consideration. Their body mass and fat score were recorded according to rules published by Busse (1983, 2000). During elaboration of the data the idea of body mass standardisation for a defined fat score (T_2) was adopted (Busse 1970) and adequate correlation values (c_i) were calculated. Because of the obtained results a new procedure of the correction values defining - if the data allow - is proposed.

In both years adults were highly significantly heavier than immatures. This finding leads to conclusion that summarising data for adult and immature Sedge Warblers in calculation of body mass correction values would result in significant growth of variance. Having compared the body mass in years 1999 and 2000 a pronounced difference between immatures was found. In 1999 the first period of migration was characterised by relatively high representation of adults (16.8%) and a low fat level (average fat score T = 1.76 and relative fat load t = -0.12 g for adults, while T = 1.57 and t = -0.21 g for immatures). This time was probably pre-migration dispersion and gaining of fat before migration rather than real migration movements. The share of adults among Sedge Warblers migrating in second and third periods was very similar in both studied years (1999 - 9.43% and 2000 - 9.46%). The fat load of birds caught during these periods was higher than in the starting period but still rather low as for long-distance migrants (T = 2.06-2.42 and t = 0.03-0.21 g for adults, T = 1.90-2.30 and t = -0.05-0.16 g for immatures). Both the fat load and body mass was growing during a day. The most interesting here were the differences in the growth rate: the average fat load grew during a day by 0.27 g while direct values of the actual body mass differed by as much as 0.84 g (that is more than two times more). This relation was repeated in 2000. That could mean that visible fat deposit does not reflect all gained fuel, but it should be studied more deeply than even big samples, from two years only, allow.

Analysing changes of the fat load and the body mass one must keep in mind that observed differences in the fat scores of birds caught in different parts of a day could be caused by two separate processes: (1) feeding and accumulation of fuel reserves (passing borders set in a fat scoring procedure) and (2) possible differentiation of the diurnal activity of birds that already have different levels of stored fat.

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