

resulted in two significant reverse trends: a positive relationship for shore meadow breeders and a negative relationship for birds breeding on ploughed cereal fields. Due to the small sample size it is doubtful if the last trend ($n=6$) is a casual relationship: if the habitats are treated separately the correlation is non-significant for the birds breeding on arable land. There were no significant correlations between egg size and the other body measurements. It should be noted that laying date did not influence egg size in this study. Our results confirm that the variation in egg size is only partly explained by female body size and they also indicate differences between female Lapwings breeding in various habitats. The possible lack of correlation for females breeding on arable land implies that small females are capable of laying large eggs. It is possible that the explanation of this can be found in differences in food resources between nest site habitats or in age/experience-related factors.

Long-term number fluctuations of Curlew Sandpiper on southern Baltic

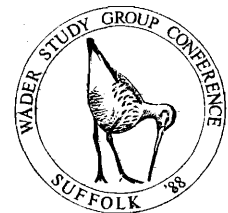
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Curlew Sandpipers *Calidris ferruginea* appear regularly at the Baltic during their autumn migration, although this region is on the periphery of their main migration route. Underhill (1987) and Summers & Underhill (1987) have studied long-term fluctuations in the age structure of Curlew Sandpipers wintering in Southern Africa and from that have estimated breeding success.

Study area. For many years Curlew Sandpipers have been ringed in the area of southern Baltic in Sweden on the Oland Island (Ottenby, 56°22' N, 16°24' E) and in Poland at the Gulf of Gdansk (Vistula mouth, 54°20' N, 18°56' E). Birds have been caught in walk-in traps almost every year. In the years 1969-86 1 450 Curlew Sandpipers were ringed at Ottenby and 1 476 at the Vistula mouth.

Main question: do results of trapping at any site on the migration route reflect fluctuations in the age structure of the wintering population?

Results. The percentage of juvenile Curlew Sandpipers trapped during autumn in Poland and Sweden varies between years. The pattern of these changes is similar to that recorded in South Africa for most years ($r = 0.48$, $p = 0.07$ for Poland-S.Africa and $r = 0.79$, $p = 0.003$ for Sweden-S.Africa). In some years, however, estimates for these three localities differ greatly. The percentage of juveniles at migration sites is usually higher than at the wintering site. Why? Perhaps this reflects different preference for migration routes by juveniles and adults?



KNOT GAINS WEIGHT DURING FLIGHT FROM WEST AFRICA TO EUROPE

Theunis Piersma

On 1 May 1988 Piet Duiven and Meinte Engelman captured a Siberian Knot *Calidris canutus canutus* with a clapnet in the village of Iouik, Banc d'Arguin, Mauritania. The bird weighed 154 g and was ringed with Paris M6050. On 14 May, before departure from the Banc d'Arguin, it weighed 99 g. After the flight to the Netherlands, where it arrived on 19 May it weighed 121 g. It had gained more than 20 g! There surely have been few Knots, or indeed other migrant waders, who gained 20 g during a 4 500 km long flight (see Figure 1)!

Of course, the weight pattern of this Knot was exceptional for good reasons. After capture it was taken into captivity (in a cage measuring 1.5 x 3 x 1.5 m, which it shared with 6 Turnstones *Arenaria interpres*), and it initially lost more than 50 g while adapting to the new food (trout pellets) and life in confinement. Before departure from Iouik, it had reached a weight as low as 99 g, and therefore it was decided to feed the birds en route. During the actual transport in especially adapted, well aerated, wooden bird-boxes the birds were not fed. However (unbeknown to the hotel managers!), the birds spent the nights in bathrooms at the stopover sites. One night was spent in Sabah Nouadhibou (3 cm water in the bath, with an *ad lib* food supply), another night in a hotel in Las Palmas! Having safely arrived in The Netherlands the Knot was weighed again: 121 g! It is now living with conspecifics in a large cage at the Zoological Laboratory in Haren. Figure 1 makes clear that the weight gain during transport nicely parallels a corresponding weight increase of free-living con-specifics in the Wadden Sea.

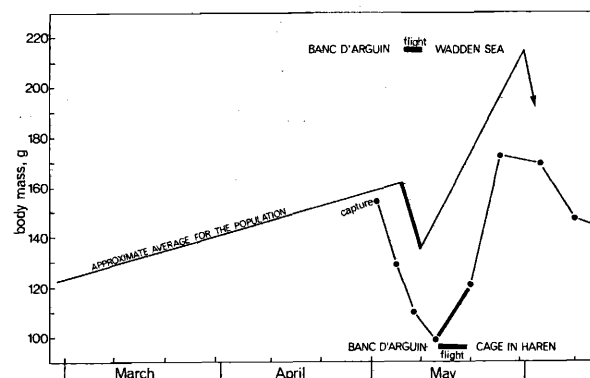


Figure 1. Weight changes of a captive Siberian Knot (dots) during its simulated migration from Mauritania to The Netherlands in spring 1988. For comparison the approximate weight changes of the free-living Siberian Knots on the Banc d'Arguin and in the Wadden Sea are also shown (data from Piersma, Bredin & Prokosch in prep.).

(This work is part of the research carried out by Theunis Piersma of the Zoological Laboratory, University of Groningen, on the feeding ecology, energetics and migrations of the two subspecies of Knots visiting the Wadden Sea. The work is carried out with the required (e.g. transport) licenses.)

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