

# Biometrics and moult of breeding Eurasian Golden Plovers *Pluvialis apricaria*

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Eurasian Golden Plovers are rarely handled during their breeding season, and there is little published data on breeding biometrics and condition. The biometrics of 20 males and 8 females trapped during incubation at Snake Summit in the Peak District, UK (Yalden & Pearce-Higgins 2002) are summarised in Table 1. The effects of sex and date upon biometrics were examined using the procedure GENMOD in SAS 6.12 (SAS Institute 1996), employing a normal error distribution for all measures, apart from moult score, which was treated as having a binomial error distribution. Significance was tested by treating the change in deviance associated with the insertion of either age or date into the null model as an F-ratio for normally distributed variables, or  $\chi^2$  for binomial distributions (Crawley 1993).

Females were significantly heavier than males, by an average of 11 g ( $F_{1,26} = 4.522$ ,  $p = 0.043$ ), but did not differ in the other biometric measurements. A number of birds caught were in active wing moult, the extent of which was positively correlated with date ( $\chi^2 = 19.261$ , d.f. = 2,  $p < 0.0001$ ; Fig. 1) and differed between sexes, with females moulting later ( $\chi^2 = 32.486$ , d.f. = 1,  $p < 0.0001$ ).

**Table 1.** Mean ( $\pm 1$ SE) biometrics of adult Eurasian Golden Plovers caught using the cage-trap

	Female (n=8)	Male (n=20)
Weight (g)	213.3 $\pm$ 4.9	202.3 $\pm$ 2.7
Wing length (mm)	193.7 $\pm$ 2.2	192.2 $\pm$ 1.3
Bill length (mm)	23.1 $\pm$ 0.2	23.2 $\pm$ 0.2
Total head length (mm)	59.66 $\pm$ 0.5	60.48 $\pm$ 0.3
Tarsus length (mm)	43.4 $\pm$ 0.3	42.7 $\pm$ 0.3

The similarity in linear dimensions of the two sexes matches the data in Cramp & Simmons (1983), as do the slightly higher weights of females during the breeding season (but not during the rest of the year). However, Parr (1980) found males to be slightly heavier. The early start to the moult, while the birds are still incubating, is rather unusual among waders, but is as mentioned in Cramp & Simmons (1983) and Byrkjedal & Thompson (1998), although without identifying the difference between the sexes. This early moult may reflect the prolonged breeding season in this species, or be related to the short migration distance to the wintering grounds of British breeding birds. The latter is exemplified by two colour-ringed birds from our Snake Summit population that were re-sighted only 91 km north-west on the Lune Estuary, Lancashire on 30 July 1997 (a juvenile) and 14 September 1997 (an adult) (Marsh 1997).

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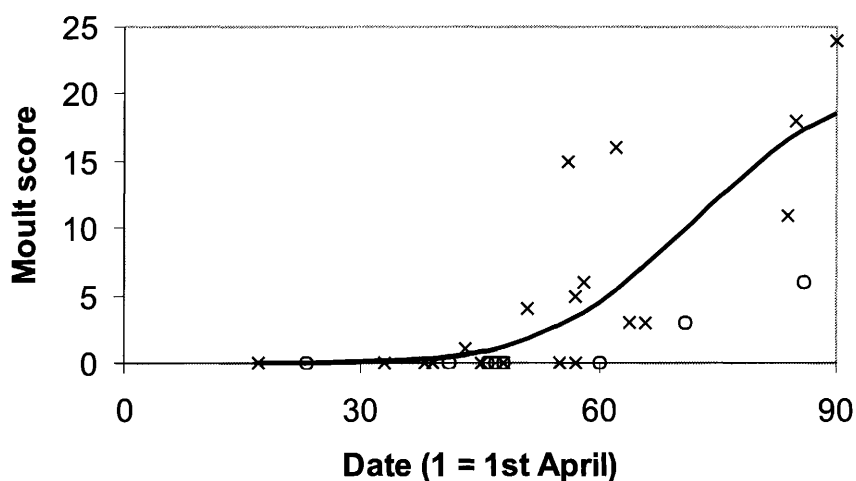
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**Fig. 1.** Primary moult score of breeding Golden Plovers plotted against date of capture. Crosses represent males, and circles, females.

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