

# FIFTEEN YEARS OF THE COMMON SNIPE (*Gallinago gallinago*) STUDY AT THE JEZIORSKO RESERVOIR WITH SOME NOTES ABOUT WEIGHT AND MOULT

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## ABSTRACT

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The Students's Section from University of Łódź organises ringing camp at the dam reservoir every year. The aim of the camp is wader and duck ringing. One of the most numerous species of bird ringed is the Common Snipe. During 15 years (1989-2003) of studies 4142 individuals of this species were ringed. Age ratio differed among years, but every year young birds represented more than 80% of all ringed individuals. Snipes caught in September caused problems with age identification and that impeded to obtain correct age ratio each year. Analysis of weight of caught birds revealed between-years variation in juvenile birds, adults were excluded from analysis due to small sample size. Throughout the autumn months the increase in mean body mass in young birds was observed. Data about moult suggest that adult birds show two main strategies of primary moult: traditional moult and suspended moult. Both of them are of the same frequency. Tail feathers are moulted by juveniles as well as by adults simultaneously.

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**Key words:** *Gallinago gallinago*, autumn migration, age ratio, weight difference, moult

## INTRODUCTION

The Common Snipe is a common migrant throughout central Europe (Snow and Perrins 1998). In Poland during spring and autumn migration it is the most numerous species of *Gallinago* genus. It is observed in small flocks even on small water bodies or marshes inland the country. Larger flocks of up to few hundreds individuals are not common (Tomiałoć and Stawarczyk 2003).

Jeziorsko dam reservoir is one of the most important stopover site for migrating Common Snipes in Poland (Janiszewski *et al.* 1998, Tomiałoć and Stawarczyk

2003). Due to specific water level management, reservoir serves excellent feeding conditions for migrating waders and ducks (Włodarczyk *et al.* 2002). Ringing activity at the reservoir started in 1989, three years after completion of dam construction (Janiszewski *et al.* 1993). It allowed to collect large and long-term database about autumn migration of the species. The aim of the paper is to describe results of ringing during autumn migration at the Jeziorsko reservoir with some additional information about the weight and moult of the Common Snipe.

## MATERIAL AND METHODS

Data were collected at the Jeziorsko reservoir (51°40'N, 18°40'E) during 1989-2003. Every year birds were caught in walk-in traps, which number varied between years (from 4 in 1989-1991 up to 28 in 2000-2003). Mist-nets were used only occasionally. Birds were aged according to Prater *et al.* (1977) and ringed. The following measurements were taken: wing length, total head length, tarsus length, bill length according to standards described by Busse (2000). Individuals were also weighed to the nearest 0.5 g. The ringing and measuring procedure was described in detail in a previous paper (Włodarczyk *et al.* 2002). Ringing activity was constrained to summer months. Although it varied between years, it was mainly focused on July and August – two months at the beginning of Common Snipe autumn migration. Because of relatively poor ringing results in first years of studies only data from 1998-2003 were taken into account during statistical analysis. Weight of birds was analysed in two aspects: differences among years and differences during the course of migration season. Comparisons of mean birds weight among years were done for young birds caught in the standard period (10 August – 31 August), for which the highest number of birds was recorded. The seasonal weight change within a season was described using data from period 20 July – 23 September (data from 1998-1999 and 2003). Analysis of difference in weight was made using one-way ANOVA and *t*-test (Sokal and Rohlf 1995). Unfortunately, the number of ringed adult birds was too low to perform any analysis of weight change. Wing and tail feathers of adult birds being in moult were described using BTO scale (Busse 2000).

## RESULTS

During 1989-2003, altogether 4142 Common Snipes were ringed. The number of caught birds was low in 1989-1993 due to low number of traps used. In 1994-2003 it reached the level of more than 200 birds ringed every year (Fig. 1). Results of catching from 1999 were extremely good. Juvenile birds were more numerous than adults (Fig. 2). Unfortunately, in September it was not always possible to determine the age of a bird because of advanced postjuvenile moult. It resulted in the presence of fraction of birds that were not aged. Especially during 1989-1993 this group of birds was numerous. Despite this problem the annual percentage of adult birds did not exceed 20%.

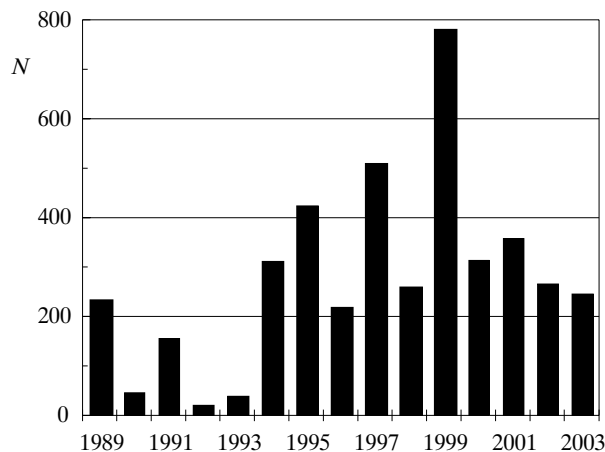


Fig. 1. Numbers of Common Snipes ringed at the Jeziorsko reservoir. Note that because of changing number of traps this is not a pattern of long-term number dynamics.

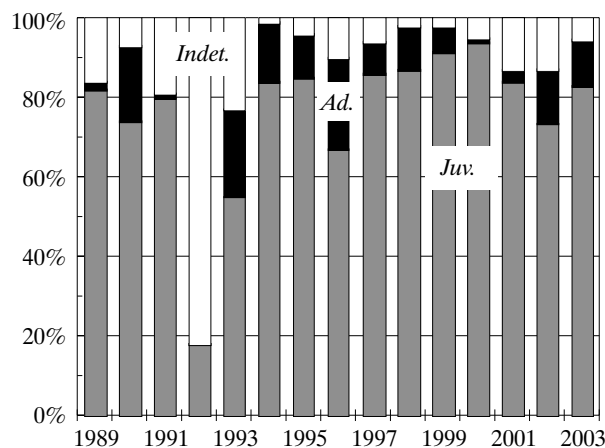


Fig. 2. Age ratio in Common Snipes ringed at the Jeziorsko reservoir

There was no significant difference between weight of juvenile and adult birds ( $t = 0.47, p = 0.3$ ). Weight of juvenile birds differed significantly among years (ANOVA:  $F_{5,613} = 12.9, p = 0.001$ ; Fig. 3). Juvenile Common Snipes caught in subsequent pentades showed a general increase in body mass, but the correlation between mean weight and date (pentade) was weak, however statistically significant ( $r = 0.28, p < 0.05$ ; Fig. 4). There was significant variation in weight of birds among pentades (ANOVA:  $F_{10,1082} = 15.23, p = 0.001$ ). This suggests that it could be a non-linear relationship and the pattern is rather complicated – thus worth a more detailed study.

Data about twenty eight adult birds showing moult of wing feathers were collected during 2000-2003. Moult description of each individual showed that birds could be separated into two main groups. Snipes of the first group moulted prima-

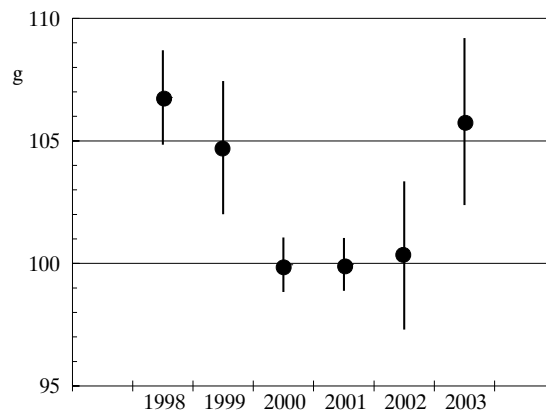


Fig. 3. Mean weight of juvenile Common Snipes caught at the Jeziorsko reservoir in the following years. Mean and 95% confidence limits are shown.

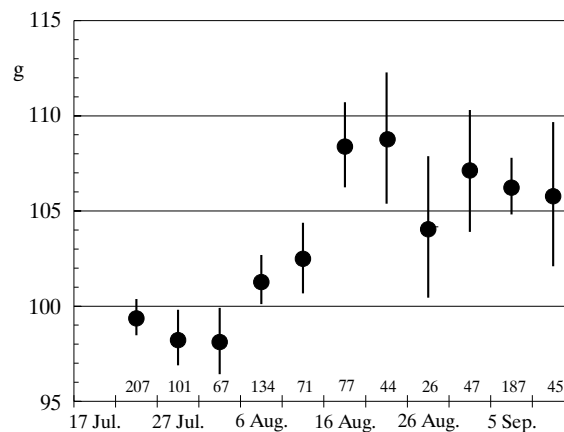


Fig. 4. Mean weight of juvenile Common Snipes ringed in the subsequent pentades at the Jeziorsko reservoir. Mean and 95% confidence limits as well as numbers of weighed birds are given.

ries in a “typical way”: feathers were changed descendently and gradually (Fig. 5, group “*Normal moult*”). Birds from the second group showed suspended moult (Fig. 5, group “*Suspended moult*”). They changed 7-8 (9) internal primaries and left three or two (exceptionally one) outermost old feathers. Two groups of birds were observed with similar frequency (16 and 12 individuals, respectively). Two individuals that had nearly completed moult of primaries started moult of secondaries and they lost these feathers completely. Data about tail feathers moult showed that adult and juvenile birds started moult with two innermost feathers (centrifugally). Later they lost all other feathers almost simultaneously and then, for some time, they have all tail feathers growing (Fig. 6).

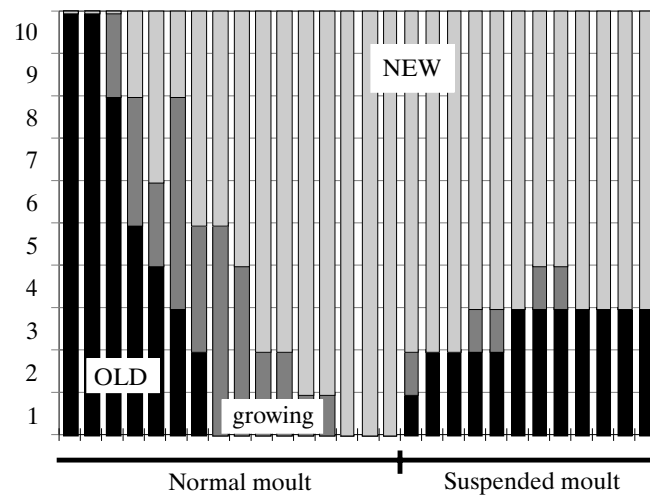


Fig. 5. Percentage of changed primaries during moult in adult individuals Common Snipes ringed at the Jeziorsko reservoir (primaries numbered ascendently).

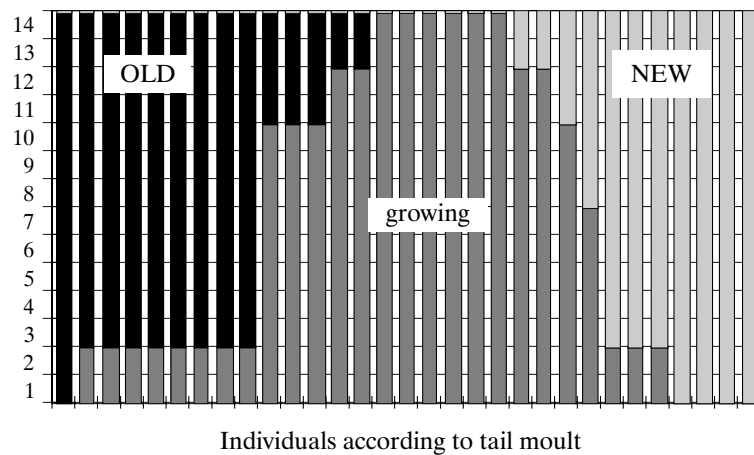


Fig. 6. Moult of tail feathers in Common Snipes ringed at the Jeziorsko reservoir (feathers numbered centrifugally)

## DISCUSSION

The Jeziorsko reservoir is among the most important catching places of the Common Snipe not only in Poland but on the central European scale (Seeger *in litt.*). For example for 1991-2001 as much as 50-90% of all snipes ringed in Poland were caught at this reservoir (according to Polish Ringing Centre). Proportion of adult and juvenile birds recorded at Jeziorsko was similar to data obtained from Polish coast, France and Denmark (Devort 1997, Meissner 2003).

Differences in weight of juvenile birds between years can be caused by feeding conditions during breeding season and at stopover sites during migration. Similar differences were also found at the Polish Baltic coast (Meissner 2003). The increase in body mass in the course of season was observed by other authors in Germany and Poland (Greve and Gloe 1974, Meissner 2003). Nevertheless, the pattern of body mass change during the season can be more complicated with periods of increase and decrease of body mass (Meissner 2003). Fluctuating average body mass among pentades can be a result of different sex ratio in following periods of ringing (with males being smaller than females), differences in the origin of birds or changes in feeding conditions at the reservoir (Snow and Perrins 1998, Meissner 2003).

There is a shortage of data about moult of Common Snipes during migration. Nevertheless, suspended moult within primaries was observed in Germany (OAG Münster 1975). Also data from wintering grounds in France suggest that suspended moult is a common phenomenon in the Common Snipe. About 57% of females and 45% of males shot in winter in France showed such pattern of moult (Devort 1997). Sudden change of all secondaries was also described in birds caught in Germany (OAG Münster 1975). Quick removal of all tail feathers is typical for this species (Snow and Perrins 1998). Tail feathers play a role mainly in display performed in spring and lack of tail in autumn does not handicap the bird. Therefore snipes can change their tail feathers nearly simultaneously.

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