

## **ABSTRACT**

The variability of egg-size within a bird species reflects different reproductive investments and, besides the intrinsic constraints and particular female quality, it can be affected by environmental factors, too. Moreover, the egg-size predetermines the chick performance. The knowledge of factors influencing precocial chick survival is crucial for better understanding of life-history strategies as well as for endangered species conservation.

The Northern Lapwing (*Vanellus vanellus*) represents a suitable model species for investigation of climate variables effects on egg-size and also to study factors influencing chick survival. Eggs in a total of 714 nests were measured during 13 breeding seasons over period 1988–2014 in South Bohemia and 293 lapwing chicks from 100 broods in 37 localities were monitored in 2013–2014.

The mean egg-size through the whole season is positively affected by March precipitation, March clutches also negatively by minus temperatures in March. The higher intensity of rainfall there is during March, the bigger eggs are laid in March and the steeper is slope of decline in mean egg-size during season. This decline is more profound with lower rainfall in April. The effect of habitat is not significant.

The body mass and condition of hatchlings is positively correlated with the egg-size and this condition advantage is apparent also in older chicks. Chicks are in better condition at water-logged sites and in families attended by male. The average condition is highest at pond bottoms, fallows, meadows and muckheaps. Family transfer does not influence chick condition. Daily growth rate of chick is highest around the age of 20 days and it is positively affected by marsh presence.

The brood sex ratio was different from unity, female chick dominance was observed both years. This unexpected pattern could have fundamental effect on adult sex ratio and create selection pressure for maintaining polygynous mating systems and prevalent female parental care.

## **KEY WORDS**

body-condition, chick, climate factors, conservation, egg-size, food supply, growth, predation, precociality, survival, life-history strategy, Northern Lapwing sex ratio, Shorebirds