

Year-to-year variation in clutch size and breeding success of the Little Egret, *Egretta garzetta* Linnaeus, 1766, in Turkey

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Abstract. Clutch size and breeding success in Little Egrets *Egretta garzetta* nesting colonially at Lake Poyrazlar, northwest Turkey, were monitored between 2002 and 2005. The mean clutch size in the Little Egret was 3.17 (n = 100) and during four successive years it varied from 2.76 to 3.36. The annual variations were, however, not statistically significant. The hatching success was high and varied annually from 84.1% to 97.4%, while fledging success varied from 74.3% to 88.5%, but these variations were not statistically significant. Nesting success varied from 92 to 100%. Hatching success was not correlated with clutch size, while fledging and reproductive success was much higher in smaller (2-3 eggs) than in larger (4-5 eggs) clutches.

Key words. Little Egret, clutch size, breeding biology, reproduction, hatching success, fledging success, Turkey, Middle East.

Introduction

The reproductive ecology of the Little Egret, *Egretta garzetta* Linnaeus, 1766, has been extensively studied e.g. in East and South Africa, Spain, France, Italy, Croatia, Greece and Israel (e.g. BROWN et al. 1982, HAFNER et al. 1993, 1994, FASOLA & ALIERI 1992, TSA-CHILIDIS 1990, KAZANTZIDIS et al. 1996, ASHKENAZI & YOM-TOW 1996, PROSPER & HAFNER 1996, HOCKEY et al. 2005). These studies focused on reproductive performance, the effect of the clutch size on breeding success, and on the duration of the pair-bond. Little emphasis has so far been given to annual fluctuations in the clutch size and in reproductive performance. In this paper we describe the year-to-year variation in reproductive parameters, based on a four-year study conducted in Western Turkey.

Study site and methods

The study was carried out at Lake Poyrazlar, northwestern Turkey (40°50'N, 30°28'E) during 2002-2005. The surface of the lake is c. 600 ha. Little Egrets breed in a c. 4 ha large area (mean water depth c. 1 m), located in the north-east of the lake, together with Black-crowned Night Heron, *Nycticorax nycticorax*, Cattle Egret, *Bubulcus ibis*, Squacco Heron, *Ardeola ralloides* and Pygmy Cormorant, *Phalacrocorax pygmaeus*. There are a few hundred occupied nests of Little Egret and Night Heron, and only 10-15 nests of Cattle Egret, Squacco Heron and Pygmy Cormorant (Table 1).

The heronry was divided into five different regions (A, B, C, D and E) in the form of a four-leaved clover, with one region at the centre and the other regions situated around it. Five nests were selected in each region in each year for monitoring. In order not to confuse the observations,