Synanthropic characteristics of the cattle egret *Bubulcus ibis* (Linnaeus, 1758) in the Brazilian semiarid

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Cattle egret *Bubulcus ibis* (Linnaeus, 1758) is a highly synanthropic species, which has been benefitted by the increase of livestock in recent decades (Sick, 1997). The species originates from the Old World and spread to all the continents, with the exception of Antarctica (Martínez-Vilalta and Moltis, 1992). Three current concerns of this expansion and population growth are: competition for resources or predation of endemic species (Barbosa-Filho et al., 2009), transmission of diseases to the human population and the livestock (Silva et al., 2010) and collision with aircrafts (Nunes et al., 2010). The objective of this study was to characterize a cattle egret breeding colony in a semiarid area of Rio Grande do Norte (RN), northeast Brazil, from the: (i) estimate of individuals in the colony, (ii) descriptive parameters of the nest, (iii) estimates of the number of eggs and live and dead nestlings at the beginning and near of end of the breeding season and (iv) analysis of synanthropic characteristics of the species in the Brazilian semiarid.

This study investigated a cattle egret breeding colony established at the margin of the BR-304 in the municipality of Assú, RN, Brazil (5°37' S; 36°52' W). Data samplings were conducted in four tours in April and May of 2012. We performed censuses to estimate the total number of birds present in the breeding colony (see Gregory et al., 2004) between 04:40 and 06:00 PM (arrival time of adults and sub-adults to overnight). We used a graduated stick of 6 m with a mirror fixed at one end to measure the height of trees and nests and to verify the presence of eggs in the nests. The major diameter of the nests and the shortest distance between them were estimated with a measuring tape. The study area was divided into 10 sectors and its area was estimated using a measuring tape of 50 m. On the first and last day of sampling we performed the count of all the eggs and live and dead nestlings in the nests from a sample of 300 nests.

The total number of cattle egret increased over the breeding season (census 1st day = 3113, 2nd day = 3326, 3rd day = 4400 and 4th day = 4448, mean ± SD = 3821 ± 701 individuals). We recorded 2195 cattle egret nests distributed in 316 trees (mean = 6.9 ± 6.1 nests/tree) in an area of 2744 m^2 (density = 0.8 nest/m^2). Most of the nests were registered in invasive plant mesquite, *Prosopis juliflora,* Swartz (n = 306), and only a minority in native plants such as *Copernicia prunifera*, Miller (n = 8) and *Cereus jamacaru*, DC (n = 2). Mesquites with cattle egret nests had a mean height of 3.6 ± 0.9 m and the smallest distance between two nests was approximately 35 cm. Nests had a mean height of 1.9 ± 0.5 m and presented major diameters from 25 to 78 cm (Table 1). We obtained a positive correlation between tree heights and number of nests per tree (Spearman correlation r = 0.49, p = 0.002). The number of eggs and live and dead nestlings were higher near at the end of the breeding season (224, 649 and 179, respectively) than at the beginning of the season (188, 187 and 64, respectively). On June 10, cattle egret left the reproductive colony (end of breeding season).

Cattle egret was first recorded in the Brazilian northeastern in 1985 (Teixeira et al., 1987) and its population estimates have increased exponentially, mainly due to favorable feeding promoted by the expansion of livestock (e.g. Bella and Azevedo-Júnior, 2004). The results of this study suggest that the invasion and rapid expansion of mesquite in the Brazilian semiarid from 1942 (Lorenzi et al., 2003) have provided suitable sites for expansion of the cattle egret in this region. Cattle egret management in

Table 1 - Descriptive parameters of a breeding colony of cattle egret, *Bubulcus ibis*, in the semiarid of Rio Grande do Norte.

Parameters	N	Min.	Max.	Mean ± SD
Trees height (m)	39	1.30	5.30	3.6 ± 0.9
Number of nests per tree	316	0	32.00	6.9 ± 6.1
Height of nests (m)	207	0.35	3.00	1.9 ± 5.0
Nest diameters (cm)	207	25.00	78.00	45.0 ± 10.8
Distance between nests (cm)	198	0.00	300.00	35.3 ± 40.7

anthropic areas of the Brazilian semiarid should consider birth control in their breeding colonies and the expansion of the mesquite.

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