

# Inter-nest Infanticide in Ardeids

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**Abstract.**—A case of intra-specific infanticide is recorded in the Great Egret (*Ardea alba*) and two cases of inter-nest infanticide are reported for the Black-crowned Night Heron (*Nycticorax nycticorax*). Received 28 November 2003, accepted 10 December 2004.

**Key words.**—*Ardea alba*, Black-crowned Night Heron, brood reduction, Great Egret, intraspecific predation, nest mortality, nest predation, *Nycticorax nycticorax*.

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Infanticide, the act making a direct and significant contribution to the immediate death of an embryo or newly hatched member of a conspecific individual (Mock 1984), was once thought to be rare but is now recognized as pervasive among many species (Polis 1981; Hrdy and Hausfater 1984). Most of the observed infanticide among egrets and herons has been siblicidal (Mock 1984). Several instances of inter-nest infanticide have been reported in ardeids (Blaker 1969; Siegfried 1972; Miller 2000).

## STUDY AREA AND METHODS

Nesting pairs of Great Egret (*Ardea alba*), Great Blue Heron (*Ardea herodias*), and Snowy Egret (*Egretta thula*) have been studied at Audubon Canyon Ranch (37 deg 56 min N, 122 deg 41 min W) on the coast of central California since 1967 (Pratt and Winkler 1985). The vast majority of nesting pairs at this site are Great Egret. Nest contents and bird behavior were recorded twice per week during the nesting season.

## OBSERVATIONS

On 2 June 2003, I was continuing regular observations on this heronry. A pair of adult Great Egrets was at their nest which contained three nestling, the eldest being 28-30 days old. One of the adults walked from its nest to the next closest nest, about 1.5 m away, which contained a single nestling that was 31-34 d old, but no adult was present. On reaching the neighboring nest, the adult hesitated for about 1 s, then used its bill to grab the solitary nestling by the neck. After

handling the nestling for about 2 s, the adult threw it out of the nest. The nestling fell about 36 m from the top of a Coast Redwood (*Sequoia sempervirens*) to the ground. I observed a red streak on the back of the chick's neck as it fell from the nest. This chick was a long-time singleton in the nest and a parent had been present on all previous observations, including earlier that day.

After tossing the chick from the nest, the adult hesitated for a few seconds before moving 2 m away. Its mate remained close to their own chicks and showed no apparent response to these events. After about 1 minute, the infanticidal adult returned to the neighboring nest, picked up a piece of nest material about 20 cm in length and returned to its own nest, where it presented it to its own nestlings. No further nest material was removed in the next 30 minutes.

Forty-five minutes after the nestling fell from the nest, I found a Great Egret chick on the forest floor. It was alive and ambulatory, with a shallow wound on the neck. No adult Great Egrets were ever observed under the heronry during the breeding season and the fallen nestling is presumed to have died.

During the next three observation days an adult Great Egret occupied the now empty nest, occasionally performing stretch displays. On 16 June I observed two adults copulating at the nest and one egg was present. On 20 June an adult was incubating a single egg. On 24 June, the nest was empty and it remained inactive for the rest of the

breeding season. The pair, one of which had ejected the chick, fledged three chicks and was one of only three pairs which fledged a brood of this large size out of 43 successful Great Egret nests at this colony in 2003.

I am also aware of two instances of inter-nest infanticide in the Black-crowned Night Heron (*Nycticorax nycticorax*). The first occurred on 1 June 2000 on Great Captains' Island, Connecticut, when an adult walked to a Black-crowned Night Heron nest and grabbed one nestling by the neck. The nestling called and struggled for about 30 s then went limp before being carried away to an unknown location (Parkes and Heath 2002). In a second instance, on 30 April 2003 at Napa State Hospital, California, an adult Black-crowned Night Heron was seen flying under the canopy of a nesting tree carrying a downy Black-crowned Night Heron nestling in its bill (Audubon Canyon Ranch, unpubl. data). The adult landed on a branch, crushed the chick's bones with its beak, before consuming it whole, headfirst.

#### DISCUSSION

In nesting colonies, the close proximity of nests and vulnerable offspring, combined with opportunities for cannibalism, and extra-pair copulations and potential fitness costs related to increased resource competition or adoptions or feeding of non-familial progeny, might result in higher rates of infanticide than are likely in solitary nesting birds (Hrady and Hausfater 1984; Mock 1984; Pierotti 1991; Ramos 2003). Although inter-nest infanticide is observed infrequently in

ardeids, it should not be overlooked when considering causes of nestling mortality.

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