

PREDATION BY A BROWN PELICAN AT A MIXED-SPECIES HERONRY¹

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California Brown Pelicans (*Pelecanus occidentalis californicus*) are plunge-diving, fish-eating birds (Palmer 1962, Ashmole 1971). In some cases, they may be largely dependent on only one species of fish at certain times of the year. For example, about 90% of their diet in southern California during the breeding season consists of northern anchovies, *Engraulis mordax* (Anderson et al. 1980). In other cases, however, the diet is more diverse (consisting of more than 40 species of fish and invertebrates in the Gulf of California, for example; Anderson et al. 1982). Brown Pelicans have also been reported as scavengers and as occasional cannibals on young (Palmer 1962, p. 279). In extreme situations, starving pelicans have also been observed searching for fish scraps and other waste food around cities (Leck 1973). One recent scavenging case was observed in December 1987 in Monterey, California, when a juvenile Brown Pelican consumed the fleshy pectoral portions and wings of an Eared Grebe (*Podiceps nigricollis*) carcass (D. W. Anderson, pers. comm.). One particular incident of predation by a Brown Pelican on living birds also occurred during the fall in 1986 along the coast at Point Reyes, California, when a single Brown Pelican (young-of-the-year) preyed upon six live young Common Murres (*Uria aalge*) during a period of 3 hr (A. Quintero, pers. comm.). Here I report a highly unusual case of natural predation by a single California Brown Pelican which fed extensively on ardeid eggs and nestlings at a heronry in the Mexicali Valley, 42 km southeast of the city of Mexicali, Baja California, Mexico.

This heronry (32°15'N, 115°08'W) was located centrally within an agricultural valley and was established on a small island (5,000 m²) formed by an agricultural waste water canal that ran through cotton and asparagus fields. A mixed-species breeding colony here consisted mostly of Cattle Egrets, *Bubulcus ibis* (98%), Snowy Egrets, *Egretta thula* (1%), and Great Egrets, *Casmerodius albus* (1%). The nesting sites were built on a dense stand of salt cedar (*Tamarix* spp.) and some scattered mesquite (*Prosopis* spp.). No published information on breeding egrets existed for the Mexicali Valley, but interviews with farm workers and village residents indicated that this colony had been established since 1972.

When the Brown Pelican (probably a male about 4 months postfledging, D. W. Anderson, pers. comm.; Schreiber et al. 1989) was first observed at the heronry on 27 July 1988, a considerable number of birds had left their nests, were flying in circles above the colony, and were calling. The Brown Pelican was first observed swallowing two eggs from a Cattle Egret nest, breaking them in its pouch, then regurgitating the shells. It then moved to a mesquite between nests of a Cattle Egret and a Great Egret and took one young from the Cattle Egret and three young from the Great Egret nests, one by one (Fig. 1). These young were about 1 week old and probably weighed near 100 g (Telfair 1983, p. 73). The Brown Pelican tried to simultaneously swallow all four, but after several attempts was unsuccessful. It finally regurgitated three of the chicks and then ate and swallowed them singly. Both the Great Egret and the Cattle Egret parents stood nearby watching, but did not deter the Brown Pelican.

The Brown Pelican was again observed feeding on chicks in the same area on 2 August 1988. Most of the Cattle Egrets did not leave their nests as before; instead, they pecked at and injured the Brown Pelican's bill as it approached their nests. I observed blood marks on the distal 10 cm of the Brown Pelican's bill. Great Egrets, on the other hand, tended to leave their nests when the Brown Pelican approached (Fig. 2). During this incident, the Brown Pelican displaced a pair of Cattle Egrets from their nest and ate two young about 1 week old. It then took another young from another Cattle Egret nest. The parents whose nests had been preyed upon returned to their empty nests after the Brown Pelican was gone, and a few stayed there for several days following the predation.

One week after the first predation event by the Brown Pelican was recorded, I observed fewer nests around the tree where the pelican loafed regularly. Some Cattle Egrets had also dismantled previous nests (probably for nest materials but perhaps exacerbated by the pelican's disturbances). In early August, about half of the nesting population of Cattle Egrets had young ready to fledge, and only 25-30% of the breeding adults remaining had young less than 2 weeks old or were still incubating eggs. All predation seen occurred within a short distance of this Brown Pelican's roosting location near the middle of the ardeid colony.

I saw the Brown Pelican at the heronry a total of 12 times in the period 27 July-29 August. The Brown Pelican usually stood at the same perch on the top of a mesquite. My intermittent sightings indicate that the Brown Pelican was probably at the colony for at least 34 days during the breeding season.

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FIGURE 1. A juvenile Brown Pelican engaging in a meal at a heronry in the Mexicali Valley, Mexico. The pouch contains four young egrets.

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FIGURE 2. A juvenile Brown Pelican preying on young Cattle Egrets and Great Egrets. One Great Egret observes from a distance.

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