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## BIRD AND MAMMAL PREDATORS ON THE CATTLE EGRET IN FLORIDA

James N. Layne, Fred E. Lohrer, and Chester E. Winegarner

Despite the fact that the Cattle Egret (*Bubulcus ibis*) has been established in North America for over 20 years and is now abundant in many regions, there are surprisingly few records of its being preyed upon by native predators. Courser and Dinsmore (1971, *Auk* 88: 669) observed an adult Red-tailed Hawk (*Buteo jamaicensis*) capture an adult egret in northern Florida (Gilchrist Co.), and Knight (1976, *Fla. Field Nat.* 4: 14) saw an adult Bald Eagle (*Haliaeetus leucocephalus*) take one in the air near Lake Wales in central Florida (Polk Co.). Sargeant (1975, *Fla. Sportsman* 6(6): 18-20) witnessed the capture of an egret by a bobcat (*Lynx rufus*) in the vicinity of the Chassahowitzka National Wildlife Refuge along the Florida Gulf Coast (Citrus Co.). We have obtained additional records of bird and mammal predation on Cattle Egrets in southern Florida. In the case of the avian predators, the evidence suggests that they may be a significant source of mortality in egret populations of the region.

On 13 December 1973, 14.5 km southeast of Palmdale, Glades County, we watched an adult Bald Eagle capture a lone Cattle Egret after a persistent aerial chase. When first seen, the eagle was flying at an altitude of 70-80 m on a direct course over a broad expanse of improved pasture with scattered cabbage palms (*Sabal palmetto*) and small marshes. Shortly after, we noted the Cattle Egret approaching at right angles to the eagle's course and at the same altitude. When the birds were about 30 m apart, the eagle swerved sharply toward the egret and began to chase it. The eagle usually made shallow stoops at the egret, but several times attacked from the same level or from slightly below. Sometimes it slowed abruptly just before it came within striking distance, but at other times it tried to seize the egret without braking. The egret evaded the eagle by turning sharply at the last moment. The egret's flight path was erratic, but it remained at the same altitude. After an unsuccessful pass, the eagle would swing in a wide circle and come in for another attack. We have timed Cattle Egrets in normal flight at 48 km/h and maximum speed is probably greater, yet the eagle had no difficulty in catching up with the egret after an unsuccessful stoop. Toward the end of the chase it speeded up the tempo of its attacks. After about 10 passes, the eagle caught the egret, appearing to seize it from below. The eagle then went into a steep glide, leveled off just above the ground, and flew to a fence post where it proceeded to pluck its prey. The chase lasted about 7

min and covered about 0.5 km.

On 18 December 1974 near Lake Okeechobee, Glades County, we saw an adult eagle on the ground in a pasture feeding on a bird that appeared to be a Cattle Egret. Cattle Egrets were abundant in the vicinity at the time.

Two other observers have informed us of seeing eagles capturing Cattle Egrets. On 18 September 1974 along State Route 60 approximately 10 km west of Yeehaw Junction, Osceola County, in a stretch of open prairie and improved pasture with scattered hammocks, Woodward W. Miley II saw an egret flying erratically about 15 m above the ground with an eagle in hot pursuit. The eagle climbed to about 10 m above the egret, which then began to fly straighter and faster. The eagle dove, caught the egret, hovered a moment, then dropped to within 2 m of the ground and flew off with the bird in its talons. The portion of the chase observed by Miley lasted about 2 min. Jerry Peoples, while an employee of the Florida Game and Fresh Water Fish Commission some years ago, saw eagles taking Cattle Egrets on the wing on four or five separate occasions in Glades County. He noted that when an eagle was attacking egrets in a flock, it would concentrate on a single individual.

In the course of a study by one of us (Layne) of Audubon's Caracara (*Caracara cheriway audubonii*) in Florida, Cattle Egret remains have been found in the vicinity of 7 of 12 active caracara nests in Glades and Highlands counties examined during the period November - May. At one nest, a minimum number of 5 egrets had been fed upon during a two-week period in late April - early May. Although caracaras commonly feed on road-killed animals, we believe that egret remains around nests represent actual captures rather than carrion, as dead Cattle Egrets are rarely seen on roads in the areas of southcentral Florida where caracaras are most abundant.

We have also obtained eyewitness reports of caracaras killing Cattle Egrets. On two occasions Victor Landers watched a caracara capture an egret on the wing in Highlands County. Both times the birds "were flying along near each other when the caracara suddenly seized the egret." In March 1961, near Lakeport, Glades County, L.T. Stem and Dr. Leslie Severinghaus encountered a pair of adult caracaras attacking an egret on the ground in an open pasture. The caracaras circled the egret and struck at it with their claws and beaks, finally killing it. Mr. Stem allowed us to examine photographs taken by Dr. Severinghaus which show the egret closely flanked by the two caracaras.

Courser and Dinsmore (1971) concluded that avian predation on Cattle Egrets in northern Florida was rare because the buteos com-

monly found in the open areas where egrets forage do not usually take large birds and the accipiters and falcons that could potentially take egrets were scarce in such habitats. In contrast, our data suggest that the Cattle Egret may constitute a significant prey item of eagles and caracaras in southcentral Florida. Several factors probably account for this difference, including the presence and relative abundance of large raptors of open country habitat and versatile food habits, high population levels of Cattle Egrets, and man-induced habitat changes. Bald Eagles are infrequent in the part of northern Florida referred to by Courser and Dinsmore and caracaras occur there only as rare stragglers. In contrast, eagles are relatively common in the open grassland habitats of the Osceola, Okeechobee, and DeSoto Plains in the southern part of the state and this region is also the center of the Florida caracara population. Cattle Egrets are also abundant in this part of the state because of favorable conditions provided by large cattle ranches. In midsummer and midwinter roadside wading bird and raptor censuses conducted in this region in 1974, 1975, and 1976, we have recorded an over-all average of 2.1 Cattle Egrets/km and counts as high as 17.4/km in prairie-improved pasture habitats. Of those ardeids of roughly comparable size (Snowy Egret, Louisiana Heron, Little Blue Heron, Cattle Egret, Green Heron), Cattle Egrets comprised 87 percent of the total number of individuals counted during the three-year period.

An additional factor contributing to eagle and caracara predation on Cattle Egrets in south Florida may be the extensive drainage that has occurred in the region during the past 20 years or so. The resulting reduction of aquatic and wetland prey species may have forced eagles and, perhaps to a lesser degree, caracaras to shift to alternative food sources. Available data suggest that both species prey most heavily on Cattle Egrets during the winter and early spring months when conditions are driest. As this is also the peak of nesting of eagles and caracaras in the region, the high energy demands of feeding young may generate further pressure for these raptors to prey on Cattle Egrets during this period of the year.

In addition to caracaras and eagles, the red fox (*Vulpes vulpes*) can also be listed as a predator on the Cattle Egret in southcentral Florida. Emory Jones told us that while disking citrus groves in Highlands County about 18 km south of Lake Placid he has seen red foxes come into the grove to hunt egrets following the tractor. The typical hunting strategy of the foxes is to lie in wait behind a tree until an egret comes within range. Jones actually saw foxes capture 5 egrets in one day, and the next day observed a fox catch 1 and possibly 2 birds in the same grove. The Lake Wales Ridge section in which these

groves are located is not typical Cattle Egret habitat, being more heavily wooded. It should also be noted that the red fox is not native to the region. The species has appeared in the area as the result of introduction or spread from other artificially established populations within the past 10 years.

Because of their open country habitat preferences, flocking behavior, and diurnal activity, Cattle Egrets are probably less vulnerable to predation by mammals than diurnal raptors.

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