

General Field Notes

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Double-crested Cormorant and Anhinga Nesting in the Croatan National Forest

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Double-crested Cormorants (*Phalacrocorax auritus*) are extremely rare as breeding residents in North Carolina. They are common nesters inland in the northern U. S. and Canada, and along the eastern coast from Long Island, N. Y. northwards. There is a disjunct subspecies that breeds in Florida (*P. auritus floridanus*), and the few that breed in the mid-Atlantic Region are thought to belong to this subspecies (Clapp and Buckley, 1984).

Around the turn of the century, 120-160 pairs of Double-crested Cormorants nested at Great Lake, Craven County, in the Croatan National Forest (Pearson, Brimley and Brimley, 1959). That breeding population subsequently declined (Grant, 1970), and by the mid-1970's, Great Lake no longer supported any nesting Cormorants. However, there were about a dozen pairs nesting at Lake Ellis Simon, located 0.8 km southeast of Great Lake during this period (Clapp & Buckley, 1984; Fig. 1).

Post (1988) recently reported that Double-crested Cormorants are currently expanding their breeding range inland in the Southeast. In North

Carolina, a few pairs now breed at Jordan Lake in Chatham County (Chat 51:79). However, there has been no recent information about the status of the coastal breeding population in North Carolina. In this paper we document a recent increase in the size of the colony of nesting Double-crested Cormorants at Lake Ellis Simon.

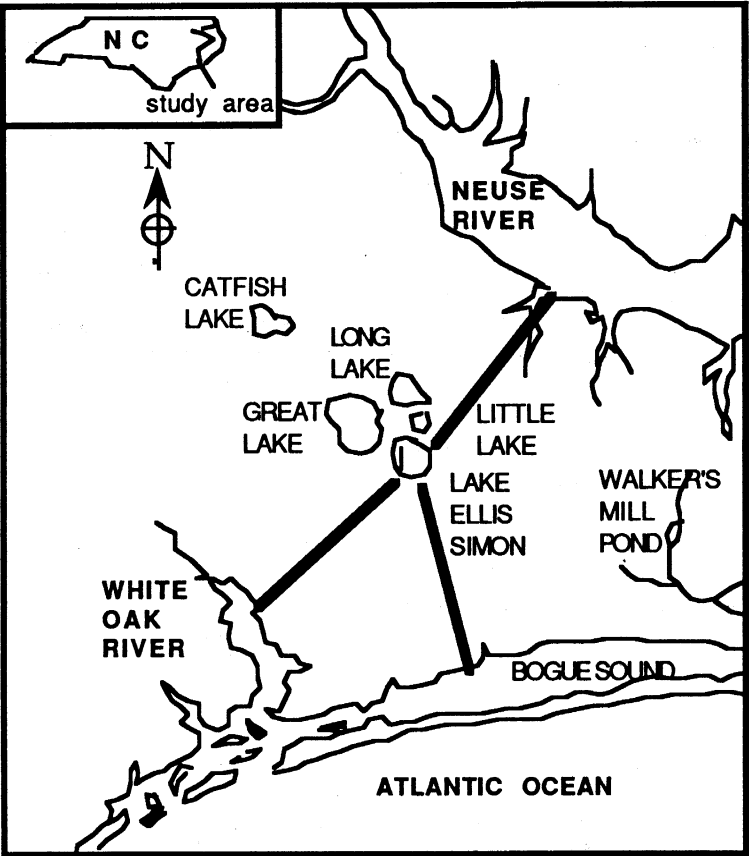


Figure 1. Map of the study area showing Lake Ellis Simon and the other lakes in the region of the Croatan National Forest. Shortest distances to sounds in which Double-crested Cormorants feed are indicated by dark lines.

In addition, we report on a growing population of breeding Anhingas (*Anhinga anhinga*) at Lake Ellis Simon. Anhingas are also rare breeders in North Carolina. They regularly breed from South Carolina to Florida, along the Gulf coast, and up the Mississippi Valley (A. O. U., 1957). In North

Carolina, Anhingas have been known to nest sporadically at Lake Ellis Simon and farther south in Brunswick County (Pearson, et al., 1959). Recently, Anhingas have nested at Lennon's Marsh in Robeson County (Chat 49:102), and at Jessup's Mill Pond in Cumberland County (Crutchfield and Whitfield, 1987). The nests at Lake Ellis Simon and in Cumberland County are the northernmost recorded for the species.

RECENT NESTING AT LAKE ELLIS SIMON

We had the opportunity to observe cormorants and Anhingas nesting at Lake Ellis Simon while studying the lake's Osprey (*Pandion haliaetus*) colony. The lake was visited at least once a week from March through August, 1983–1988. During this period, cormorants and Anhingas nested together in one large colony in a dense clump of live Bald Cypress (*Taxodium distichum*) in the middle of the lake. Nests were between 25 and 35 feet above water level, and the Anhinga nests were clumped together on the south side of the colony. Both Anhingas and cormorants were observed on the nests from late April/early May to July. Reproductive success appeared to be high as fledglings of both species were commonly observed on the lake.

Both species have increased in numbers during the observation period. In 1984, 32 cormorant nests were noted, whereas in 1987 there were 44 nests. After an absence of at least five years, Anhingas bred at Lake Ellis Simon in 1985, when three pairs nested there. In that same year, an additional three pairs also nested at Great Lake. In 1987, there were 12 Anhinga nests at Lake Ellis Simon. During the 1988 breeding season, there were 46 cormorant nests and 14 Anhinga nests in the colony. In 1988 we also located two abandoned nests away from the colony that were suspected to belong to Anhingas. Neither cormorants nor Anhingas nested at Great Lake in 1987 or 1988.

DISCUSSION

Anhingas were a common sight during the 1988 breeding season on lakes throughout the Croatan Forest region, and although additional nests were not located, we suspect that they may be nesting elsewhere in the vicinity. They were particularly common around Long Lake, 2.5 km north of Lake Ellis Simon, and around Walker's Mill Pond, near Newport, N.C. (Fig. 1).

It is interesting to note that cormorants nesting at Lake Ellis Simon actually do the majority of feeding in estuarine areas 10–15 km away (Fig. 1). Anhingas, preferring freshwater habitats, forage on the lakes.

It has been suggested that the rarity of nesting of both of these species in coastal North Carolina may be associated with the abundance of Fish Crows (*Corvus ossifragus*) in this region (Grant, 1970). There is a large population of Fish Crows around Lake Ellis Simon, and in 1988 the crows were observed feeding on Osprey eggs frequently. That numbers of Anhingas and cormorants on the lake are increasing despite the presence of Fish Crows suggests that other factors may be involved in limiting their distribution in North Carolina.

We would like to express our sincere appreciation to the members of Camp Bryan for permitting us to conduct research at Lake Ellis Simon. We thank G. San Julian, P. D. Doerr, and G. Grant for helpful reviews of previous drafts of this manuscript. Funding for our studies at Lake Ellis was provided by Weyerhaeuser Corporation, Union Camp Corporation, The North Carolina Wildlife Federation, The Chapman Fund of the American Museum of Natural History, The Wake County Audubon society, the North Carolina State University Department of Zoology Harkema Fund, The Eastern Bird Banding Association and the Agricultural Research Service, North Carolina State University. Paper No. 11864 of the Journal Series of the North Carolina Agricultural Research Service, Raleigh, NC 27695-7601.

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Egg-turning by Northern Cardinal Prior to Onset of Incubation

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In mid-July 1983, a pair of Northern Cardinals (*Cardinalis cardinalis*) began visiting the *Pieris japonica* beside my house, which is 4.5 miles N of Zebulon, Wake County, N.C. On 28 July, I discovered a nest foundation consisting of a few dried pine needles. The location of the bush, about 3 m