DECLINE OF THE DOUBLE-CRESTED CORMORANT AS A BREEDING BIRD IN NORTH CAROLINA

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The Florida subspecies *(Phalacrocorax auritus floridanus)* of the Double-crested Cormorant has declined steadily as a breeding bird in North Carolina since first discovered in 1898 by Pearson (1926). The AOU *Check-list* (1957, p. 36) gives the breeding range of this subspecies as ". . . Great Lake, Craven County, North Carolina, probably in South Carolina, and from Florida . . . . " It gives the southernmost Atlantic coast nesting record for *P.a. auritus* as Massachusetts. Palmer (1962) states that no nest or colonies are known from Georgia or South Carolina. Therefore, the North Carolina colonies are the only known nesting sites on the Atlantic seaboard between Massachusetts and Florida. Palmer (1962, p. 330) suggests that colonies outside the present main range are "probably relict of former more extensive regular range. Some colonies shown on map probably now defunct." The Craven County nesting sites at Great Lake and Lake Ellis seem to substantiate this statement.

GREAT LAKE

Pearson (1926) found 151 occupied cormorant nests on 25 May 1898 in the stunted cypress trees of Great Lake. In June 1904 Pearson (1905) found only 121 nests there. P.B. Philipp (1910) and Bowdish (1910) visited Great Lake in 1909 and found 123 occupied nests. H.H. Brimley (Pearson, Brimley, and Brimley, revised 1959) discovered 159 nests there in 1911. Great Lake was visited by Royal, Davis, and Pearson (Pearson et al., 1959) on 11 June 1939, and they counted 41 nests, with birds sitting on only 33 nests. According to *Birds of North Carolina* (Pearson et al., 1959), Borden and Gower found 35 nests there on 28 June 1948, but no nests were found at Great Lake in June 1956. Bob Simpson (Field Director of the N.C. Wildlife Federation), Ed Grushinski (District Ranger at Croatan National Forest), and I visited Great Lake on 28 July 1969. No cormorants were seen and no nests were found. Although 28 July was a late date to observe cormorants in nests, I believe recently used nests would have been visible from the boat using binoculars. Mr. and Mrs. Fred Conderman (pers. com.) said it had been fully 10 years since they last saw cormorants in Great Lake.

Great Lake has apparently changed in some way since Pearson and others visited it in the early 1900s. Philipp (1910) recorded Great Blue Herons *(Ardea herodias)*, Little Blue Herons *(Florida caerulea)*, Black-crowned Night Heron *(Nycticorax nycticorax)*, and Ospreys *(Pandion haliaetus)* as breeders in 1909. He counted 30 Osprey nests and 16 Little Blue Heron nests. When Davis, Pearson, and Royal (Pearson et al., 1959) visited the lake on 11 June 1939, no colony of nesting Ospreys was found. I found only 3 Osprey nests in 1969, two of which were very old and not being used and a third which may have been used within the last year or two. Several Barn Swallows *(Hirundo rustica)* and one Common Tern *(Sterna hirundo)* were the only birds seen over Great Lake on 28 July 1969.

The water level was dropped about 2 feet at Great Lake during the summer of 1968 by the Forest Service (Ed Grushinski, pers. com.). This partial drainage exposed the shoreline about 100 yards farther toward the center of the lake than prior to 1968. However, this partial drainage occurred at least 12 years after the last cormorant was recorded nesting in Great Lake and thus had no effect on its breeding decline.

LAKE ELLIS

Nesting was recorded for the first time in Lake Ellis in 1953, and 9 nests were counted in June 1956 (Pearson et al., 1959). The Brimleys, Philipp, S.E. Simpson, Thompson, Holmes, and Joyner (Pearson et al., 1959) visited Lake Ellis between 1906

and 1953, and none recorded seeing cormorants there prior to 1953. When Mr. Haywood guided me into Lake Ellis on 5 July 1969, we saw two adult cormorants flying together low over the lake but found no nests. We searched the lake by boat and scanned the shore with 7x35 binoculars. Mr. and Mrs. Fred Conderman (pers. com.) said it has been 3 or 4 years since cormorants nested on the back side of Lake Ellis.

Lake Ellis today seems to have changed little since Philipp (1910) visited it in 1909. He found Pied-billed Grebes *(Podilymbus podiceps),* Wood Duck *(Aix sponsa),* Least Bittern *(Ixobrychus exilis),* King Rail *(Rallus elegans),* and Florida Gallinule *(Gallinula chloropus)* breeding there. On 5 July 1969 I found Least Bittern, Black Duck *(Anas rubripes),* and 17 Osprey nests (12 active) at Lake Ellis in addition to observing the two cormorants mentioned earlier in this paper. All kinds of wildlife are strictly protected here, making it unclear as to why the cormorants have ceased nesting at Lake Ellis.

DISCUSSION

The Fish Crow *(Corvus ossifragus)* may have contributed the most toward destroying the Great Lake and Lake Ellis colonies of Florida Cormorants. H.H. Brimley (Pearson et al., 1959) stated that every egg of 16 nests in a colony of Little Blue Herons was destroyed while he visited Great Lake on 15 June 1909. Pearson (Pearson et al., 1959) stated that two Fish Crows were seen to alight on cormorant nests and fly off with an egg each during their short visit on 11 June 1939. Perhaps an additional factor contributing to the decline is the distance the cormorants must travel to their food source in Bogue Sound, which is fully 10 miles from Great Lake and Lake Ellis. The initial nesting decrease cannot be attributed to pesticides because the decreasing trend was quite evident by 1939 and the adverse effect of DDT on eggshells began after 1945 according to Radcliffe (1967).

Florida Cormorants still roost during the summer in the coastal counties near Great Lake and Lake Ellis. I saw 6 immature cormorants near New River, Onslow County, on many occasions during the summer of 1969; and John Fussell (pers. com.) has observed cormorants in decreasing numbers in Bogue Sound, Carteret County, during the past several summers.

Note: An error was discovered in the Florida Cormorant plates in Bent (1964, Dover ed.). The caption under plate 47, showing Florida Cormorants on nests in trees, gives the location as Lake Ellis while the same picture appears in the *Auk* (1910, between p. 310 and 311) and the location given is Great Lake. Great Lake is the correct location since the first cormorant nesting record for Lake Ellis was in 1953, as stated earlier.

ACKNOWLEDGEMENTS

I am deeply indebted to Mr. Pugh for permission to enter Lake Ellis, to Mr. King for use of his boat, and to Mr. Haywood for guiding me into Lake Ellis. I also wish to thank Mr. Grushinski for his assistance in entering Great Lake. Special thanks go to Mr. Simpson for use of his boat and his assistance in entering both Great Lake and Lake Ellis.

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Route 1, Box 363, Sneads Ferry, N.C., 23 February 1970

East Coast Tern Watch

This summer volunteers from Nova Scotia to South Carolina will band young Common and Roseate Terns with a colored plastic band in addition to the US Fish and Wildlife Service band. The plastic band will be placed on the leg opposite the aluminum. Each province and state will use a different color so that observers can recognize birds from different areas.

Through observations of these color banded birds we hope to gain information regarding the following questions. How far do birds banded from different areas along the coast as well as inland range from their breeding colonies during their post breeding dispersal? Do birds from different areas along the coast concentrate at particular places in the fall? How late are these species seen at different points along the coast?

The following people will participate in color banding this summer, using the listed colors: Nova Scotia-I.A. McLaren-yellow; Maine-Libby, Hatch, Gobeil-red and white horizontal stripe; Massachusetts-Howard-orange; Connecticut-Procter-green and white horizontal stripe; Lake Erie, New York-Clarke-Light blue; Western Long Island, N.Y.-Heath, Gochfeld-royal blue; Eastern Long Island, N.Y.-Wilcox-black and white horizontal stripe; New Jersey-Savell-green; Maryland-Van Velzen-white; Virginia-Byrd-black; North Carolina-Davis, Fussell-green and brown horizontal stripe; Great Gull Island, N.Y.-Hays-color combinations using US Fish and Wildlife Service band and three color bands, two bands on each leg.

Please watch for color banded terns and send observations to the bander in your area or to: Miss Helen Hays
Great Gull Island Project
American Museum of Natural History
Central Park West at 79th St.
New York, N.Y. 10024

We would also like to compile a list of places along the coast where concentrations of Common and/or Roseate Terns can be seen in late summer and early fall. If you know of any such places send them to Miss H. Hays at the above address. Any information you can supply on color banded terns or concentration points along the coast would be of great help.

American Birding Association

CBC members, particularly those who make birding trips to other states, may be interested in joining the American Birding Association, P.O. Box 4335, Austin, Texas 78751. Founded less than two years ago, this club offers a lively magazine called *Birding*, sends members file sheets with tips for planning birding trips, and publishes annually the names of members having the longest lists for the A.O.U. area, world, or home states. In other words, ABA is devoted to promoting the recreational aspects of bird watching. One of its most useful projects is encouraging birders to keep accurate records of what was seen, when, and where. ABA makes the record keeping fun . . . a competitive sport!