

months and further suggests that some of the previously published nondescriptive reports of White-tailed Tropicbirds may have been *P. aethereus*.

## Expansion of White Ibis Nesting in North Carolina

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Since the first nesting by the White Ibis (*Eudocimus albus*) in the Carolinas was recorded in 1922 at Fairlawn Plantation, Charleston County, S.C. (Sprunt and Chamberlain 1949), the ibis breeding population has increased and spread northward. The species was first recorded as a breeding bird in North Carolina in 1950 when 1200 White Ibis nested at Lennons Marsh, Robeson County (Stephans 1950). However, a permanent colony was not established at this site (Potter et al. 1980). In 1963, an estimated six pairs of White Ibis nested at Battery Island, Brunswick County (Adams 1963). The breeding population at Battery Island has increased over the past two decades to 3737 pairs in 1983

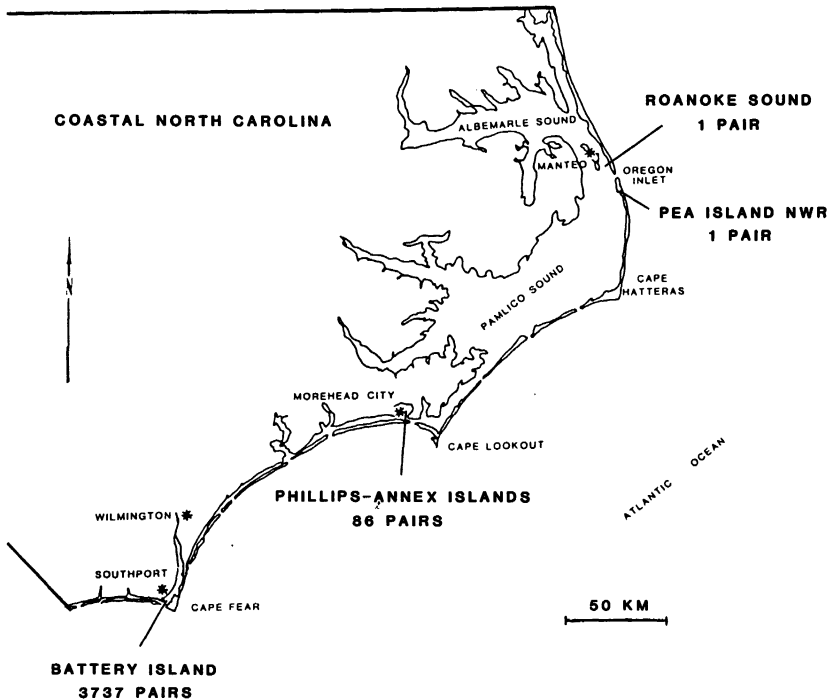


Fig. 1. Distribution of White Ibis breeding population in North Carolina, 1983.

(pers. obs.). In 1971, two pairs of White Ibis were reported nesting at the Phillips Island heronry near Morehead City, Carteret County (Teulings 1971), approximately 150 km NE of Battery Island. The ibis population at Phillips Island (and nearby Annex Island) increased to 51 pairs in 1976 (Parnell and Soots 1979) and 86 pairs in 1983 (D. A. McCrimmon Jr., pers. comm.). The Phillips Island colony was the most northern breeding site of the White Ibis in North America until 1977 when a single White Ibis nest was discovered approximately 270 km NNE in a heronry on Fishermans Island, Virginia (Frohning and Beck 1978).

From 18 to 28 May 1983 the authors were involved in a census of colonial waterbird colonies along the North Carolina coast. On 27 May we discovered the nest of a White Ibis in a mixed-species heronry at Pea Island National Wildlife Refuge, Dare County. The nest was about 2.5 m above the ground in a Wax Myrtle (*Myrica cerifera*) shrub and contained one chick 10 to 15 days old and one apparently infertile egg. Two adult ibises were seen circling overhead and perched in nearby trees. The White Ibis is considered a permanent resident at Pea Island (LeGrand 1983), but breeding at the Refuge was never previously confirmed. On 28 May a White Ibis nest containing two eggs was found in heronry on a dredged-material island in Roanoke Sound, Dare County, about 15 km NNW of the Pea Island heronry. Four adult White Ibis were present in the heronry, and several other large nests resembling those of the White Ibis were observed. The contents of these nests could not be seen owing to the heights of the nests; therefore, we could not confirm nesting by a second pair of White Ibis at this site. We visited the island a second time on 14 June, but we were unable to examine the known ibis nest to determine its fate.

Breeding by White Ibis at the two northeastern North Carolina sites reported in this note represents a northeastward extension of the breeding range in North Carolina of nearly 150 km (Fig. 1). With a steadily increasing breeding population of White Ibis in North Carolina, continued range expansion may be expected.

#### ACKNOWLEDGMENTS

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## Ingestion of Grit by Wood Warblers

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Use of grit as an aid to digestion by granivorous and herbivorous birds is widely reported in the general literature. Ingestion of grit apparently begins quite early in life. Crook (1975) observed a parent Chipping Sparrow (*Spizella passerina*) feeding grit to fledglings, one of which began pecking grit for itself.

Hauser (1962) examined pellets cast by a captive Blue Jay (*Cyanocitta cristata*) received when about 2 weeks old, with "no feather tufts protruding from the sheaths of the tail feathers." The first pellet, composed of food provided by the parent birds, contained iridescent bits of beetle wings, a few small flat reddish seeds, and three small, sharp-edged pebbles, two of flint-like stone and one of quartz.

Only recently have bird students begun to report ingestion of grit by insectivorous birds as anything more than unusual behavior. Jenkinson and Mengel (1970) found ingestion of stones to be widespread among goatsuckers. Brown (1976) watched Purple Martins (*Progne subis*) gathering bits of gravel and slivers of glass from an urban roadside during April, May, and June of 1975. Barlow and Klass (1963) observed swallows picking up gravel or sand. Barrentine (1980) found grit in the stomachs of 80% of the nestling Barn Swallows (*Hirundo rustica*) he examined at 1 to 16 days of age. He suggests grit may be used as an aid to the digestive processes, as a mineral supplement, or both.

From January through early June 1982 I conducted a systematic study of the birds of mainland Dare County, N.C., for the North Carolina State Museum in cooperation with the U.S. Fish and Wildlife Service. Thus I was observing the same birds from the time they established breeding territories through the fledging of first broods. Some of the early nesters had begun second nests before the study ended. While wood warblers were feeding young, I noticed adults of several species pecking at the sandy roadways. Birds engaged in this behavior were quite fearless and allowed me to approach within 10 feet before moving a short distance and resuming the pecking. Brown (1976) reported similar behavior for Purple Martins. Careful examination of the ground at each site revealed no insects, seeds, or other food items. I concluded that the birds were picking up grit.

Onset of nesting by the Pine Warbler (*Dendroica pinus*) was noted on 31 March when a female was seen carrying nesting material. A female Pine Warbler was seen pecking sand on Long Curve Road on 1 May. I was present at this stop no more than 10 minutes on any one date.

Black-throated Green Warblers (*D. virens*) arrived on the nesting grounds on or about 30 March. Nest construction was noted on 18 April. On 16 May a male and a female of this species were seen carrying food and pecking in sand at the edge of Sawyer Lake Road. Prairie Warblers (*D. discolor*) also arrived on the nesting grounds about 30 March. On 16 May two adults of this species were carrying food and pecking sand on Sawyer Lake Road.