General Field Notes

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An Unprecedented Wave of Brown Boobies (*Sula leucogaster*) in North Carolina

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During the summer of 1994 one or both of the authors observed single Brown Boobies on 9 and 24 July, 15 and 21 August, and 9 and 17 September. In chronological order, the observations occurred 40 miles ESE of Oregon Inlet, and 6, 30, 11, 30, and 28 miles SE of Cape Hatteras. A minimum of one subadult and two juveniles was seen.

Sightings of birds in subadult plumage occurred in locations 25 to 50 miles apart, in both deep Gulf Stream and shallow Continental Shelf waters. Given the conspicuousness of offshore boobies, the potential relocation of a particular individual (of an unusual age class) does not seem unlikely. However, based on the plumage differences described below, at least one subadult and two juveniles were individually identified.

With the exception of bill color, we noted the following identical field marks either during the encounter or after examination of photographs or video images of each subadult (videotape in North Carolina State Museum Photo Collection #433). The head, upperwings, and tail appeared uniformly brown, although the shade varied with the lighting conditions. The dark brown of the head and neck extended to the upper breast and terminated along a sharp line. This line was continuous with the posterior

margin of the thin, dark leading edge of the underwings. The breast and belly appeared white, although photos revealed a few indistinct dusky areas. The region from the lower belly through the undertail coverts was light, but not as light as the breast. These areas were separated by a vague line that was continuous with the anterior margin of the wide, dark trailing edge of the wings. The wing linings were white with an indistinct dusky bar along the median underwing coverts. No plumages of any other sulid combine a similar underwing pattern with a dark dorsal surface and a well-defined demarkation between the neck and upper breast. The tail was brown and deeply wedge-shaped. The legs and feet were seen on two occasions and appeared pale yellow. When compared to Cory's Shearwaters (*Calonectris diomedea*) seen nearby, the Brown Booby appeared 25% longer in both wing and body. In both July encounters the bill (and facial area around the eyes) was blue-gray along its entire length. The subadults(s) seen on 15 August and 17 September possessed a pale yellow base to the bill. Since fairly rapid transitions in adult bill color occur during the breeding season (Nelson 1978), the differences in bill color between sub-adults seen early and late in the summer could be consistent with changes in a single individual.

The first juvenile Brown Booby was discovered as it perched on the Diamond Shoals Tower. The bill was light blue-gray, and the upperparts were brown. The breast and belly were brown and exhibited a slight contrast with the dark brown neck. The off-white color of the underwing coverts extended to the carpal joint, while the rest of the underwing appeared dark. The tail was dark and neatly wedge-shaped. The combination of all-dark underparts and light underwing coverts is inconsistent with similar plumages of immature Northern Gannets (*Morus bassanus*) and Red-footed Boobies (*Sula sula*). The second juvenile Brown Booby showed similar plumage, but exhibited a ragged, worn tail.

At some point during each of the first four encounters, the booby made one or more plunges into the water and then lingered at the surface, catching small fish on at least two occasions. During two encounters a fresh bait-fish was tossed behind the boat and the booby immediately plunged into the water after it. Such behavior is not unusual. Stallcup (1990) reported that individuals can frequently be "chummed" to boats, and some have even been hand-fed from launches off western Mexico.

Coincident with the booby invasion was a string of tropicbird sightings. Between 9 July and 25 September, twelve offshore trips recorded a total of nine White-tailed Tropicbirds (*Phaethon lepturus*) and two Red-billed Tropicbirds (*Phaethon aethereus*). In addition, during this period several observers described a distant booby seen from the Hatteras-Ocracoke ferry to be similar to subadults seen on offshore trips (Maurice Barnhill pers. comm.).

Brown Boobies are principally resident near their breeding areas and do not perform regular migrations. Some individuals (principally immatures) exhibit long distance dispersals within tropical and subtropical seas (Cramp and Simmons 1977). Although the origin of Brown Boobies occurring off the Atlantic coast of Florida and states to the north is unknown, Masked Boobies in this region presumably originate from the Greater Antilles (Lee and Haney 1984). Colonies in the Caribbean support 17,000 pairs of Brown Boobies, making them the most widespread sulid in that region (van Halewyn and Norton 1984). The two known colonies in the Bahamas are within 900 miles of Hatteras, and support 1,150 pairs (van Halewyn and Norton 1984). In contrast, Masked Boobies have been extirpated from the Bahamas, and are generally rare in the Caribbean

(Palmer 1962). We agree with Lee and Haney (1984) that the rare but regular appearance of Masked Boobies at our latitudes may reflect the local rarity of the species rather than aberrations in dispersal. Given the greater relative abundance of Brown Boobies in the Bahamas and Greater Antilles, and the species' capacity for dispersal, the lack of prior onshore and offshore records in North Carolina is surprising.

These are the first records of Brown Booby in North Carolina to be conclusively documented with photographs or videotape. Lee and Haney (1984) described three unverified reports of this species in North Carolina: an apparent adult 15 miles off Cape Hatteras on 10 May 1979; an immature on a dune at Ocracoke, 25 April 1983; and an adult near the beach at South Nags Head, 30 December 1981. Photos of a sulid present on 9 July 1993 near Morehead City were recently submitted to the North Carolina Bird Records Committee and inconclusively support Brown Booby as the specific identity (fide Harry LeGrand).

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