

RECENT BREEDING OF CASPIAN TERNS IN NORTHWEST FLORIDADOUGLAS B. MCNAIR¹ AND JEFFREY A. GORE²¹*Tall Timbers Research Station, 13093 Henry Beadel Drive,
Tallahassee, Florida 32312-0918*²*Florida Fish and Wildlife Conservation Commission, 3911 Highway 2321,
Panama City, Florida 32409*

Caspian Terns (*Sterna caspia*) were first confirmed to breed in Florida in 1962 (Woolfenden and Meyerriecks 1963) and they have nested only rarely in the state since then (Stevenson and Anderson 1994, Paul 1996). Nesting has occurred annually since at least 1974 on several islands of dredged-material in Tampa Bay (Paul 1996), but elsewhere nesting last occurred on dredged-material islands near East Point, Franklin Co., in 1979 (Stevenson 1979, Stevenson and Anderson 1994) and along the Banana River, Brevard Co., in 1980 (one pair defending territory, Schroeder 1980; also see Salata 1979). Caspian Terns also reportedly bred during five consecutive years (1979-1983) in Apalachicola Bay at a diked dredged-material island (called Drake Wilson or Two-Mile island) just southwest of Apalachicola, Franklin Co. (Landin et al. 1989:121), but no confirming data were reported. We document herein a new colony site of the Caspian Tern at Apalachicola.

As part of a channel-dredging operation, an island of undiked dredged-material was created early in 1995 in Apalachicola Bay, 1 km south of the Gorrie Bridge at the mouth of the Apalachicola River. The island remained nearly barren through 1995, perhaps due to the erosion caused by three tropical cyclones that year. During late spring and summer of 1996, we found 13 species of herbaceous plants covering <5% of the 5 ha island. The diversity of species was lower than expected for an undiked dredged-material island in its second year, but the area covered by vegetation was typical of such sites (Soots and Parnell 1975). Vegetation grew primarily along the lower swale facing the nearby mainland and was dominated by 15 large patches of seaside panicum (*Panicum amarum* var *amaralum*). This grass grew rapidly in summer and by 5 August 1996 many stems were >1.5 m high and patches were up to 4 m wide.

By 1997, the island had eroded to an area of about 3.5 ha and a height of about 3 m on the bare dome. The dense vegetation on the lower and upper swales, which was dominated by seaside panicum >2 m tall, formed an ellipse around the northern half of the island. We estimated that the island was about 15% vegetated by late summer. In March of 1998, most vegetation was cleared from the island and newly-dredged material was deposited on the island. The new material enlarged the island to approximately the height and area recorded in 1995.

American Oystercatcher (*Haematopus palliatus*) and three species of seabirds (Gull-billed Tern [*S. nilotica*], Least Tern [*S. antillarum*], and Black Skimmer [*Rynchops niger*]) nested on the island in 1995. We first observed Caspian Terns nesting on the island in 1996 and they nested again in 1997 and 1998. The birds nested adjacent to Gull-billed Terns and Black Skimmers, which are frequent nesting associates of Caspian Terns in the southeastern United States (Spendelov and Patton 1988). In 1998, a small group of Royal (*S. maxima*) and Sandwich (*S. sandvicensis*) terns also nested among the Caspian Terns (McNair and Gore 1999).

In 1996, Caspian Terns nested on the north side of the island on and just above the second storm or drift ridge (see Soots and Parnell 1975) and 0.4-0.6 m above the mean high tide line. In 1997, the dense vegetation intruded on the second drift ridge and Cas-

pian Terns nested on the upper slope about 2.5 m above the tideline. In 1998 the birds nested across a wide area on the north side of the island from just above the tide line to high on the slope.

All nests were scrapes in bare sand and some were ringed by shell or driftwood. In 1996, we found four nests with eggs on 5 June and 29 active nests (in groups of 14, 10, and 5) on 29 June. Almost all nests contained eggs or nonvagile chicks on 15 July, but we also found one vagile downy young (>7-days post hatch; Dunstan et al. 1975). We counted 75-80 adults on each of these three dates. On 5 August we found 11 young of all ages and surmised that many eggs and young did not survive a severe 3-day storm in late July that flooded most of the nests. The maximum fledgling rate possible was 0.38 young/nest.

In 1997, we found four Caspian Tern nests with single eggs on May 11 and 39 nests with eggs on 5 June. On 15 July, 11 nests were still occupied; four contained eggs and the remainder held nonvagile chicks and one vagile young. On 5 August we recorded 19 juveniles and 2 large flightless young being fed by adults.

The colony increased greatly in size in 1998 and we counted 105 nests with eggs on June 1. Nests were not clearly segregated into separate groups. As late as 19 August, large chicks were still being fed by adults. This is currently the largest nesting colony of Caspian Terns in Florida, larger than the persistent colonies in Tampa Bay (R. T. Paul, pers. comm.).

In Florida all colony sites for Caspian Terns have been on dredged-material islands, which require active management to retard vegetative succession (Schreiber 1978, Paul 1996, this study). Caspian Terns select bare or sparsely vegetated substrates for nesting and do not tolerate intrusion of high, clumped vegetation on colony sites (Soots and Parnell 1975, Parnell and Soots 1976, Schreiber and Schreiber 1978, Spendelow and Patton 1988).

Nesting records from Florida suggest that Caspian Terns will use dredged-material islands only temporarily if vegetation is not controlled to provide open nesting substrate. For example, Caspian Terns abandoned nesting sites used from 1973-1980 in the Banana River Lagoon (Salata 1979, Schroeder 1980) apparently because the dredged-material islands became overgrown with vegetation (Smith and Alvear 1997). In Franklin County, Stevenson (1979) observed a dredged-material island near East Point annually for >30 years, but Caspian Terns did not use the site until new dredged-material was deposited in 1978. A small colony then nested on the highest part of the barren area for two years (Stevenson 1979, Stevenson and Anderson 1994). Despite these examples, suitable nesting substrate is not the sole determinant of nesting effort. Caspian Terns in Tampa Bay occasionally switch colony sites between years even though the dredged-material islands are actively managed to retain breeding terns (Paul 1996).

Caspian Terns will likely continue to breed in Franklin County as long as suitable nesting habitat is available. The county supports a year-round population of Caspian Terns, presumably because prime foraging habitat exists in the large estuary of Apalachicola Bay. We have counted as many as 150 Caspian Terns roosting at the Apalachicola dredged-material island during winter (29 Dec 1995). Even prior to 1996, we routinely observed Caspian Terns in the area in summer (maximum count: 38 birds on 3 July 1990). We believe that the formation of the Caspian Tern nesting colony at Apalachicola was a consequence of the presence of optimal foraging habitat, suitable nesting habitat (new dredged-material island), and an existing local population of birds.

In summary, Caspian Terns nested at a new dredged-material island near Apalachicola, Franklin County from 1996-1998. The birds nested later and lower on the island in 1996 (29 nests) than in 1997 (39 nests) and the number of nests increased greatly in 1998 (105 nests). This is currently the only breeding site for Caspian Terns in Florida outside of Tampa Bay.

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