

CASPIAN TERN NESTING AT LITTLE GALLOO ISLAND: A NEW NESTING SPECIES FOR NEW YORK STATE

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Since at least the days of Eaton (1910), in New York State the Caspian Tern (*Sterna caspia*) has been described as a transient or migrant on its way to breeding or wintering grounds. More recently, Bull (1974) listed it as a non-breeding species of the "cosmopolitan element" along with such species as the Northern Gannet (*Sula bassanus*), the Black-necked Stilt (*Himantopus mexicanus*) and the Gull-billed Tern (*Sterna nilotica*). However, since this species historically nested on Salmon Island (Merriman 1932), and since at least the 1960s in good numbers on Pigeon Island, both on the Ontario side of eastern Lake Ontario (Blokpoel and Scharf 1991), nesting attempts in the New York portion of Lake Ontario would not be totally unexpected.

On 21 June 1986, during the course of contaminant related studies of colonial birds breeding on Little Galloo Island, DVW observed 160 adult Caspian Terns on the westsouthwest portion of the island. On closer inspection, he found that the terns were nesting. At the time, this constituted a new nesting species for New York state. Mike Peterson, who visited the tern colony with him on 7 July 1986, has given a brief synopsis of this nesting record (Peterson, 1988). This note, albeit several years after the discovery, provides details of that first nesting and comments on its significance.

LITTLE GALLOO ISLAND

Little Galloo Island is located in the United States portion of eastern Lake Ontario, off Sacketts and Henderson Harbors, Jefferson County. Belknap (1968) described the island as follows:

Little Galloo Island, about 43 acres in extent, lies near the eastern end of Lake Ontario some 5 1/2 miles from the mainland. Roughly oval, it is three-sevenths of a mile in the longer dimension. The island is composed of rock with a thin covering of soil. Grass and weeds constitute much of the vegetation. The number of trees is limited and these are mainly around the perimeter. The interior resembles a level, grassy meadow.

This description was still valid for 1986, except that most of the trees

had died and toppled. The few trees left standing at the time of this writing (1992) included a few ashes (*Fraxinus* sp.) and Manitoba Maples (*Acer negundo*) on the south and southwest shore, a distinctive clump of four oaks (*Quercus* sp.) on the southsoutheast shore and 2-3 dozen Hackberry Trees (*Celtus occidentalis*) on the east end of the island.

The island has a long history of nesting by colonial water birds including Black-crowned Night-Heron (*Nycticorax nycticorax*), Cattle Egret (*Bubulcus ibis*), Double-crested Cormorant (*Phalacrocorax auritus*), Ring-billed Gull (*Larus delawarensis*), Herring Gull (*L. argentatus*), Great Black-backed Gull (*L. marinus*) and Common Tern (*Sterna hirundo*) (Blokpoel and Weseloh 1982). A complete nest census, carried out in 1981 showed that the Ring-billed Gull (almost 74,000 nests) was by far the most common breeder, as all other species had fewer than 500 nests (Blokpoel and Weseloh 1982).

Between 1979 and 1985 DVW visited Little Galloo Island 14 times during the 1 May - 31 July period in six of seven years. In each year, he and at least one other observer walked the entire perimeter of the island at least once and the island was completely censused in 1981 (Blokpoel and Weseloh 1982). During that time he never observed Caspian Terns on the island.

RESULTS IN 1986

In 1986, DVW visited Little Galloo Island on nine dates: 17 and 23 April, 14 May, 19, 21, 22 and 26 June and 2 and 7 July. Caspian Tern was not noticed on the island until 21 June but the specific area in which they nested had not been visited until that date. At all times the terns were extremely quiet and their presence was not noticed until the observer was within about 100 m of the nesting area.

The terns nested on the extreme west southwest side of the island, approximately 50 m inland from a stone beach ridge and 55-60 m from the water's edge. The substrate was firm, but not dried, soil/mud (see below) with some vegetative plant growth, *e.g.*, mustard (Cruciferae). Ring-billed Gull nested loosely along the perimeter of the tern nesting area on the east side. Double-crested Cormorant nested quite densely on the ground 20 m to the northwest. Other nesting colonial water birds on the island were Herring and Great Black-backed Gulls, Black-crowned Night-Heron and Cattle Egret. In DVW's estimation, the numbers of these other colonial water birds in 1986 had not changed dramatically from the census of 1981, except the cormorant numbers had increased from 461 to 1468 nests.

Table 1. Results of counts of nests and contents of Casplan Tern nests on Little Galloo Island, 1986.

Nest Contents	22 June	7 July*
0 eggs	2	3
1 egg	26	36
2 eggs	55	69
3 eggs	4	2
1 chick	5	2
2 chicks	4	0
Total	96	112

* On 2 July, 109 nests were counted

Caspian Tern nests were not counted on 21 June but DVW returned on 22 June and on 7 July and counted all Caspian Tern present, their nests and contents (Table 1). A total of 160 adults were recorded on the colony site on 22 June. The average clutch size of nests with eggs was 1.74 on 22 June ($N = 85$) and 1.68 on 7 July ($N = 107$). There were already small chicks (up to about one week old) present on 22 June, suggesting that the first eggs had been laid about 23 May (*cf.* Peck and James 1983). The maximum number of Caspian Tern nests recorded on Little Galloo Island in 1986 was 112 on 7 July.

DISCUSSION

A few aspects of the colonization of Little Galloo Island by the Caspian Tern deserve further comment. Regarding nest chronology, in 1986 Caspian Terns nested later (first eggs laid about 23 May) at Little Galloo Island than at Pigeon Island, 8 km to the north, where eggs were in evidence on 7 May (DVW, pers. obs.). New or first time colonies often show delayed breeding phenology compared to more established colonies (Gochfeld 1980; Ryder 1980).

The number of Caspian Tern at Little Galloo Island in its initial year (112) is much greater than that for other new colonies. For five other colonies on Lakes Ontario and Huron where the number of nests in the colony's first year was known, the average colony size was 21 nests with a range 4 to 48 (Table 2). The large number of Caspian Tern could perhaps be explained as birds displaced from another colony and resettled en masse, or that a large group of new recruits (presumably

Table 2. Numbers of nests at six Caspian Tern colonies on the Great Lakes during the colonies' first years.

Site	Lake*	Year	Nests	Source
Eastern Headland	O	1976	7	Fetterolf and Blokpoel 1983
Goose Island	H	1982	4	Scharf and Shugart 1983
Black River Island	H	1982	6	Scharf and Shugart 1983
Channel-Shelter Island	H	1982	38	Scharf and Shugart 1983
Hamilton Harbour	O	1986	48	Dobos <i>et al.</i> 1988
Little Galloo Island	O	1986	112	This study

*O = Lake Ontario, H = Lake Huron

largely born on Lake Ontario) was ready to breed but could not establish territories at known colonies in Lake Ontario or that pre-1986 nesting was not noted because the terns stayed put during DVW's earlier visits (an unlikely scenario).

It is also remarkable that a large number of terns was able to colonize an island that, to our eyes, was already "saturated" with nesting gulls. In 1981, we counted over 73,000 Ring-billed Gull nests at Little Galloo Island. That number did not appear to have changed much between then and 1986. The island's entire surface area was occupied by nesting colonial birds at various densities. In a dense Ring-billed Gull colony at the Eastern Headland at Toronto, the increasing numbers of Ring-billed Gull appear to have simply taken over a Caspian Tern colony site with nearly 200 nests and eventually forced the terns to go elsewhere (Blokpoel and Scharf 1991). One might, therefore, ask how could Caspian Tern establish a foothold in such a dense Ring-billed Gull colony at Little Galloo Island? This potential problem seems to have been circumvented by opportunistic timing and placement of the tern nests. The nesting colony was located primarily along the north shore of a small shallow pond, where the water level had been dropping as the summer progressed. Hence, there were few (if any) Ring-billed Gull nesting in the immediate vicinity of the lagoon because dry ground had not been available earlier in the season. Also, although the first Caspian Tern eggs were probably laid about 23 May, the majority of clutches were probably not laid until some time, perhaps at least a week, later, *i.e.*, 30 May, based

on the age of the few young and the clutch size distribution observed on 22 June. Most Caspian Tern nests were on recently dried out mud. By late May many of the Ring-billed Gull that may have been nesting in or close to the area had hatched their young. After hatch, territories of Ring-billed Gull become somewhat "mobile" and defense of nests and territories is less intense. Hence, it may have been through a combination of the terns' nest site selection at the area of receding water and their delayed egg laying, which coincided with the hatching of Ring-billed Gull eggs, that allowed Caspian Tern to become established.

Since 1986 the colony has been active each year (DVW, pers. obs.). In 1990 there were 640 adults present in the colony and in 1991 there were 576 adults (Gerry Smith and Bob Miller, pers. comm.). If we assume that all adults were nesting and that both mates of all nests were present, there were 320 and 288 nests in 1990 and 1991, respectively, a large increase since 1986. On 3 June 1992, J. Neuman (pers. comm.) counted 555 active Caspian Tern nests on Little Galloo Island and 523 nests on Pigeon island. The Little Galloo colony is now one of the largest on Lake Ontario.

Little Galloo Island site was not the only new Caspian Tern colony to be established on Lake Ontario in 1986. A second new colony, bringing the lake's total then to four, was discovered at Hamilton Harbour at the west end of Lake Ontario (R. Curry, pers. comm.; Dobos *et al.* 1988). The other sites active in 1986 were The Eastern Headland at Toronto (Fetterolf and Blokpoel 1983; Blokpoel and Scharf 1991) and Pigeon Island off Kingston (Weir 1989; DVW, pers. obs.).

As a noteworthy aside, in 1986 the water bird colonies at both Little Galloo Island and Hamilton Harbour each supported seven species of nesting colonial water birds. Five species nested at both sites: Double-crested Cormorant, Black-crowned Night-Heron, Ring-billed and Herring Gulls and Caspian Tern. At Little Galloo there were also Great Black-backed Gull and Cattle Egret. At Hamilton Harbour, Common Tern and Snowy Egret (*Egretta thula*) also nested (DVW, pers. obs.; Dobos *et al.* 1988). To the best of our knowledge, this is the greatest number of colonial water bird species to nest on any single island/peninsula on the Great Lakes in one year. Little Galloo Island, with its longstanding and diverse assemblage of colonial water birds, is a regionally important site and deserves protection.

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