

FIRST ATTEMPTED NESTING OF DOUBLE-CRESTED CORMORANT ON THE NIAGARA FRONTIER

WILLIAM W. WATSON

Between 8 and 28 May 1992, Double-crested Cormorant were observed attempting to nest on a water diversion weir island in the Niagara River off Buckhorn Island State Park, Grand Island, New York. Although the nesting terminated unsuccessfully between 28 May and 9 June, this is the first nesting attempt of this species in the Niagara Frontier Region of New York State. The only other nesting of Double-crested Cormorant in the Buffalo Ornithological Society territory occurred on the north shore of Lake Erie at Mohawk Island, Ontario, Canada, which is located 35 miles due west of Buffalo. On 18 May 1983, A. R. Clark and Arthur Schaffner documented 12 cormorant nests, 8 of which contained eggs. On 15 June 1983, the Canadian Wildlife Service counted a total of 16 nests, 34 eggs and 9 young. Unfortunately by 3 August 1983, the colony was abandoned and it has not been re-established (Clark *et al.* 1983).

According to *The Atlas of Breeding Birds in New York State* the closest colony to the Buckhorn Island site in New York State is located on Little Galloo Island in eastern Lake Ontario (Andrle and Carroll 1988). The New York State Department of Environmental Conservation conducted its annual census there during third week in June, finding 5400 nests on Little Galloo Island in 1992. Slightly more distant than the Little Galloo Island colony is the Wantry Island colony on Oneida Lake. Starting with one nest in 1984 (Claypoole 1988), this colony currently has 40 to 60 active nests.

DESCRIPTION OF NESTING SITE

The nesting site is located on a water diversion weir island off Buckhorn Island State Park which is at the north tip of Grand Island in the Niagara River. This man-made island is 3 1/2 miles upstream from Niagara Falls at 78°59' 55" W longitude and 43°03' 30" N latitude. The island has an elongate axis that runs NNW and SSE with a length of 1060 feet and a width of 100 feet. It is mostly composed of boulder size fill overlain by cobbles and pebbles (smoothed Udorthents according to Owens 1986). Most of the island is covered with grasses with a few

shrubs and deciduous trees. The cormorants nested in two cottonwood trees at its NNW end.

The water diversion weir island at Buckhorn Island State Park is presently a thriving Ring-billed Gull colony. These gulls not only nest on the entire length of the 1060 foot island, but also attempt to nest on the adjacent mainland. A few breeding Herring Gull also are present most years. Previously there was a colony of Common Tern. However, the author has not seen any breeding Common Tern on this island since May 1987.

In June 1990 William D'Anna alerted the author to the possibility of Double-crested Cormorant nesting on the water diversion island, and on 12 June 1990, this research project commenced to measure their abundance and monitor any breeding activity of cormorants at this site. Each year from May to October cormorant counts and breeding activities were recorded. Observations were made with an 8 inch Celestron telescope (50x) from the water intakes 1 1/4 miles WNW of the island or with a Bushnell Space Master telescope (45x) from Buckhorn Island State Park 1000 feet SSE of the nesting trees (hereafter Buckhorn). Times are all Eastern Standard Time.

OBSERVATIONS

- 8 May 1992.* At 6:00 PM three Double-crested Cormorant on three nests were observed from the water intakes. It could not be determined if they were sitting low enough on the nests to be incubating. A total of 23 cormorants was counted on the island.
- 9 May 1992.* From Buckhorn between 8:30 and 8:40 PM, three cormorants were observed at the first nest, one cormorant at the second nest, while the third nest was vacant. No cormorants appeared to be in an incubating position. A total of 181 cormorants was counted on the island. The increase was because the observation time was closer to sunset, when more cormorants come to roost.
- 13 May 1992.* Observing from the water intakes, four or five nests could be seen. Adults were possibly incubating on three of the nests. The nesting tree foliage was starting to obscure both nests and cormorants. The count of cormorants on the island was 34.
- 16 May 1992.* In the evening 158 cormorants were counted on the island from the water intakes.

- 28 May 1992. Between 5:30 and 5:40 PM possibly five and definitely four nests were observed at a distance of 1000 feet from Buckhorn. On four of the nests a Double-crested Cormorant sat very low with only their heads showing. These cormorants were definitely in incubating position. A total of 39 cormorants was counted on the water diversion island.
- 10 June 1992. Observing from Buckhorn between 4:50 and 5:10 PM, the nesting tree and the nests appeared to be abandoned. Although there were no Double-crested Cormorant on the water diversion island, a total of 74 cormorants was found on two Niagara Mohawk electrical towers 1800 feet and 2000 feet east of the island. During May these towers had been vacant. One day earlier, John Curtis, a senior wildlife technician for the New York State Department of Environmental Conservation, also noticed that the cormorants had deserted the water diversion island, and visited the nesting site. A total of nine nests was counted. He was able to look into two of the lower nests and found that one was empty and the other contained a broken gull egg.
- 7 November 1992. The nesting trees had lost enough leaves to make it possible to study the nests from Buckhorn. Between 10:50 and 11:10 AM two nesting trees could be seen about 20 feet apart on the east side of the north end of the island. The northern most tree had three well constructed nests, while the southern tree had four well constructed nests, one flimsy nest and possibly two remnants of nests. Four Double-crested Cormorant were observed upstream from the colony.

DISCUSSION

There are several possible reasons for the premature abandonment of the colony some time between 28 May and 9 June. It certainly is not unusual for first attempted nestings to be unsuccessful. In the attempted nesting of Double-crested Cormorant at Mohawk Island in 1983, Weseloh "felt that such poor success was consistent with a new colony and the number of visits the island had probably received from boaters (and biologists)" (Clark *et al.* 1983). At the water diversion weir island, conditions appear to have been similar.

Through the spring and summer human activity increases on and around the water diversion island. Although the presence of the

thriving Ring-billed Gull colony discourages most people from landing on the island, fishermen and pleasure boaters frequent the surrounding waters. The LaSalle Yacht Club is only 6000 feet west of the nesting site. Any boater taking the shortest route around the north end of Grand Island would pass close to the water diversion weir island. Most of these boaters pass through the narrow channel between the land and the SSE end of this island. Workers from the New York Power Authority also frequent the area. A barge is sunk in the narrow channel between the mainland and the water diversion weir island in late November to divert ice over Niagara Falls and prevent an ice build up near the water intakes during the winter months. In the spring, usually about mid April, water is pumped out of the barge and it is removed. This year it was removed on 10 April. Other workmen painting the north Grand Island bridge used the peninsula next to the water diversion island to unload supplies from boats.

The New York State Department of Environmental Conservation has been studying Common Tern that have small colonies at the base of the electrical towers, and have been attempting to reestablish the Common Tern colony at the SSE end of the water diversion island. This year in conjunction with the State University College at Buffalo, a monofilament grid was placed at the SSE end of the island on 14 and 15 April to discourage Ring-billed Gull from nesting. The island was visited 9 May and again on 23 May to remove the monofilament grid. On 13 June a census of Ring-billed Gull on the island recorded 2232 nests. Since none of these intrusions on the water diversion island occurred between 28 May and 9 June, it could be deduced that they were not a direct cause of the abandoning of the Double-crested Cormorant colony.

Over the past three years there has been a pattern of cormorants roosting on the water diversion island during the spring and switching to roosting on the nearby Niagara Mohawk electrical towers in the late summer and fall. Did the few birds that were nesting simply follow the flock to the towers and abandon their nests? However, 24 cormorants were counted on the island as late as 2 July in 1990, demonstrating that cormorants may remain on the island much later into the summer.

The abundance of young birds in the Ring-billed Gull and Common Tern colonies attracts predators. Although the swift current of the Niagara River thwarts predation by mammals such as raccoons, there is evidence of predation by Great Horned Owls on the Common Tern colonies at the base of the electrical towers. Although a Peregrine Falcon

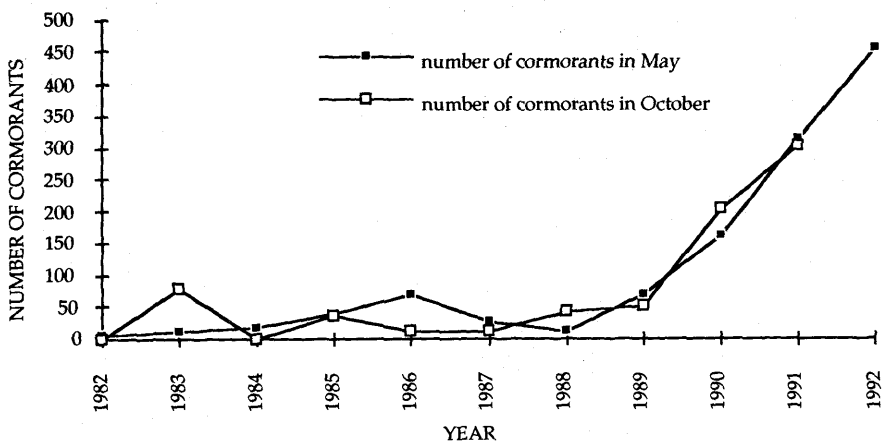


Figure 1. Number of Double-crested Cormorant on Buffalo Ornithological Society Counts.

that roosted on the electrical towers was not verified until 16 August 1992, it was probably present earlier. Both of these birds could have stressed the breeding adult cormorants. Four miles downstream from the nesting site is a colony of Black-crowned Night-Heron. This species has been documented taking Common Tern eggs.

Finally, the cormorants that roost at this site are mostly immature and probably represent a young population of birds that are inexperienced breeders. The disruption of humans, the urge to change roosting locations, predatory birds and the inexperience of these young birds all may have contributed to the abandonment of the Double-crested Cormorant colony.

There has been a dramatic increase in the number of Double-crested Cormorant in the Buffalo Ornithological Society's territory during the last five years. This trend is demonstrated in the May Counts and October Counts of the Buffalo Ornithological Society (Fig. 1). This chart shows nearly identical trends for both the May and October counts. The annual May Counts show an increase from 11 Double-crested Cormorants in 1988 to 453 in 1992. The October Counts show a five year increase from 13 cormorants in 1987 to 303 cormorants 1991. Yearly maximum counts of Double-crested Cormorants within a two mile radius of the breeding site indicate that their number has more than doubled each of the last three years. A maximum of 149 cormorants was recorded on 20 September 1990. In 1991 the cormorants peaked at 386 birds on 25 September, representing a 259% increase. In 1992 there was a 214% increase as the cormorants reached a maximum of 827 birds on 1 September.

The establishment of the Double-crested Cormorant colony off Buckhorn in Region 1 was not unique. At the same time the Region 1 colony was being established a similar colony was being established in Braddock Bay in the neighboring Genesee Region (Griffith 1992). The increase in migrating Double-crested Cormorant and the establishment of two new colonies in New York during 1992 indicates that observers on the Niagara Frontier and in much of the rest of New York State should expect to find new cormorant colonies and should be actively monitoring potential nesting sites. The Buckhorn Island site should continue to be monitored. The water diversion island not only has suitable nesting habitat but also is surrounded by an increasing cormorant population. It is very likely that cormorants will successfully breed at this site in the near future.

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