

# The Status of Colonial Waterbirds Nesting at Hamilton Harbour, Lake Ontario, 1959-1987

by

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Hamilton Harbour, Regional Municipality of Hamilton-Wentworth, located at the western end of Lake Ontario, is home to what may be the most diverse colony of waterbirds on the Canadian Great Lakes. Seven species of colonial waterbirds, the Double-crested Cormorant (*Phalacrocorax auritus*), Snowy Egret (*Egretta thula*), Black-crowned Night-Heron (*Nycticorax nycticorax*), Ring-billed Gull (*Larus delawarensis*), Herring Gull (*L. argentatus*), Caspian Tern (*Sterna caspia*) and Common Tern (*S. hirundo*), nested there in 1986. The purpose of this paper is to document the numbers of these species which have nested at Hamilton Harbour in recent

years.

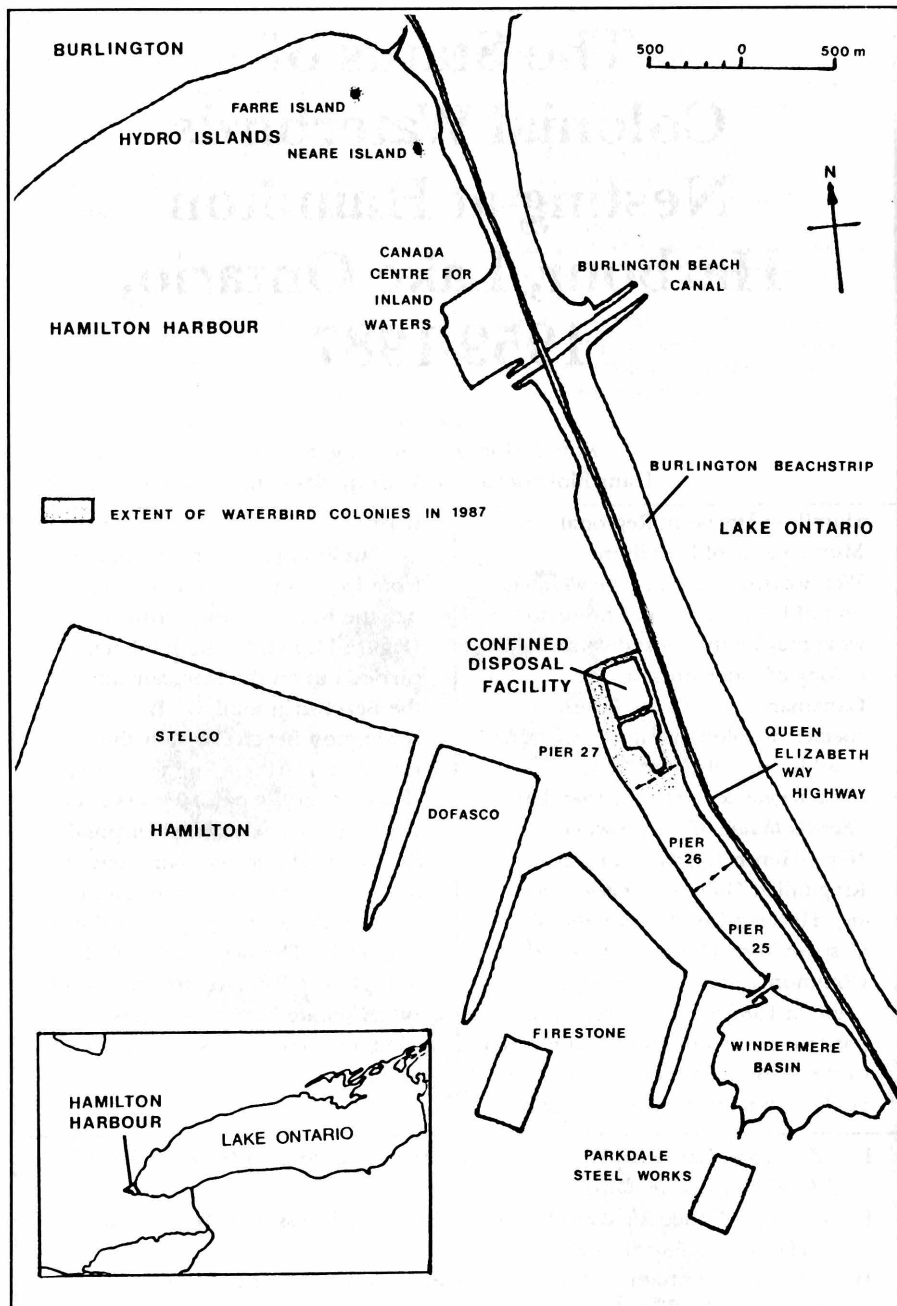
Hamilton Harbour is separated from Lake Ontario by a large sandbar, the Burlington Beachstrip (Figure 1). Landfilling has been carried out on the Harbour side of the Beachstrip south of the Burlington Beach Canal by the Hamilton Harbour Commissioners (HHC) over the past 30 years to create the present Confined Disposal Facility (CDF), for containment of harbour dredged sediments, and the Pier 25, 26 and 27 port facilities (Figure 1). The berms and filled cells of the CDF have provided a relatively isolated site for the nesting of colonial waterbirds since the mid-1970s.

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*Figure 1:* Location of waterbird colony site on Hamilton Harbour, Lake Ontario

The flat earth and rubble substrate which is largely unvegetated has proven suitable for the nesting of Herring and Ring-billed Gulls and Common and Caspian Terns. A small grove of Eastern Cottonwood (*Populus deltoides*) trees on the northwest end of the site has supported a colony of Black-crowned Night-Herons, Double-crested Cormorants and the first known nesting of the Snowy Egret in Canada (Curry and Bryant 1987).

Two small islands in the north-east corner of the harbour, which are 3 km distant from the CDF and are known locally as the Hydro Islands (also referred to as Neare and Farre Islands by Morris *et al.* [1976]), each support a colony of Common Terns and a few Herring and Ring-billed Gulls (Figure 1). These artificially created rock piles were the supports for hydro towers which have since been removed. Both the Pier 27 and Hydro Islands sites have been designated as Environmentally Sensitive Areas within the Hamilton-Wentworth Region's Official Plan (Ecologistics 1976).

This paper summarizes all records for colonial waterbirds nesting at the Pier 27 and Hydro Islands sites during the period 1959-1987.

### Species Composition

An annual summary of the number of nests of each colonial waterbird species on Hamilton Harbour, from 1959 to 1987, is provided in Table 1. A species by species discussion is presented below.

#### *Double-crested Cormorant*

Double-crested Cormorants (DCC) first nested in Hamilton Harbour in 1984, when one nest was found on the ground. The number has since risen to 51 nests in 1987, all in trees (Table 1). The cormorants nested in the upper branches of the cottonwoods (Figure 2). These birds have yet to exploit the ground nesting habitat available to them.

At present, Hamilton harbour is the only cormorant colony on western Lake Ontario. In size, it ranks as the sixth largest among the 9 active colonies on Lakes Ontario and Erie (Weseloh, in prep.). Since the mid-1970s, when numbers were at a low due to toxic chemical induced reproductive failure (Price and Weseloh 1986), the nesting populations of DCCs has increased markedly on all the Great Lakes.

#### *Snowy Egret*

Snowy Egrets nested for the first time in Canada at Hamilton harbour in 1986, as described in detail by Curry and Bryant (1987); the species did not nest there in 1987. However, one bird, believed to be a second summer Snowy Egret, was observed at the colony throughout the summer of 1987.

#### *Black-crowned Night-Heron*

Black-crowned Night-Herons (BCNH) were first recorded nesting at the Pier 27 colony in 1975, with five nests reported (Table 1). The number has grown steadily to 212 nests in 1987 (Table 1). The BCNHs nest mostly in the lower

Table 1: Colonial waterbird populations nesting on Hamilton Harbour, 1959–1987

| Year | Double-crested Cormorant | Snowy Egret    | Black-crowned Night-Heron | Ring-billed Bull   | Herring Gull     | Caspian Tern     | Common Tern      |
|------|--------------------------|----------------|---------------------------|--------------------|------------------|------------------|------------------|
| 1959 | 0                        | 0              | 15 <sub>c</sub>           | 0                  | 0                | 0                | —                |
| 1961 | 0                        | 0              | —                         | 2 <sub>f</sub>     | 0                | 0                | 3 <sub>f</sub>   |
| 1966 | 0                        | 0              | —                         | 0                  | 0                | 0                | 66 <sub>f</sub>  |
| 1967 | 0                        | 0              | —                         | 0                  | 0                | 0                | 83 <sub>f</sub>  |
| 1968 | 0                        | 0              | —                         | 0                  | 0                | 0                | 79 <sub>f</sub>  |
| 1970 | 0                        | 0              | —                         | 0                  | 0                | 0                | + <sub>k</sub>   |
| 1971 | 0                        | 0              | —                         | 0                  | 0                | 0                | 95 <sub>m</sub>  |
| 1972 | 0                        | 0              | —                         | 0                  | 0                | 0                | 150 <sub>n</sub> |
| 1973 | 0                        | 0              | —                         | 0                  | 0                | 0                | 42 <sub>n</sub>  |
| 1975 | 0                        | 0              | 6 <sub>d</sub>            | 0                  | 0                | 0                | 0                |
| 1976 | 0                        | 0              | —                         | 0                  | 7 <sub>j</sub>   | 0                | 0                |
| 1977 | 0                        | 0              | —                         | 0                  | 14 <sub>e</sub>  | 0                | 0                |
| 1978 | 0                        | 0              | —                         | 17 <sub>h</sub>    | —                | 0                | 0                |
| 1980 | 0                        | 0              | 1 <sub>e</sub>            | 329 <sub>i</sub>   | 102 <sub>e</sub> | 0                | 0                |
| 1981 | 0                        | 0              | 19 <sub>e</sub>           | 2400 <sub>i</sub>  | 130 <sub>e</sub> | 0                | 0                |
| 1982 | 0                        | 0              | 13 <sub>f</sub>           | 5000 <sub>f</sub>  | 50 <sub>f</sub>  | 0                | + <sub>g</sub>   |
| 1984 | 1 <sub>a</sub>           | 0              | 51 <sub>a</sub>           | 11224 <sub>i</sub> | 202 <sub>e</sub> | 0                | + <sub>g</sub>   |
| 1985 | 2 <sub>a</sub>           | 0              | 98 <sub>g</sub>           | 13778 <sub>e</sub> | 150 <sub>g</sub> | 0                | 225 <sub>g</sub> |
| 1986 | 14 <sub>a</sub>          | 1 <sub>b</sub> | 183 <sub>a</sub>          | 16000 <sub>e</sub> | 106 <sub>e</sub> | 48 <sub>e</sub>  | + <sub>a</sub>   |
| 1987 | 51 <sub>a</sub>          | 0              | 212 <sub>a</sub>          | 21207 <sub>e</sub> | 225 <sub>e</sub> | 134 <sub>e</sub> | 553 <sub>e</sub> |

— No data available  
+ Nesting, but not censused  
a L. Simser, pers. comm.  
b Curry and Bryant (1987)  
c North (1959)  
d North (1975)  
e CWS census  
f Ontario Nest Record Scheme  
g Lamond (1985)  
h North (1978)  
i Blokpoel and Tessier (1986)  
j Blokpoel (1977)  
k Gilbertson (1975)  
m Morris et al. (1976)  
n Morris and Hunter (1976)

branches of the cottonwood trees (Figure 2). Sufficient nesting sites appear to be available for future increases in nesting birds. However, BCNHs are known to desert their colony site if large numbers of DCCs nest above them in the same trees (e.g., at Pigeon Island,

Frontenac County, Lake Ontario). Such a situation could also occur at the Hamilton Harbour colony.

The earliest record of BCNHs nesting in the Hamilton Harbour area was of three nests in 1936 at Van Wagner's Beach, just east of the harbour (Sheppard 1944).

Another BCNH colony was located in a grove of trees on an old inlet on the southeast shore of the harbour behind the Firestone factory. Fifteen nests were reported there in 1959 (Table 1). This colony was substantially larger before this time and was believed to have numbered over 100 nests during the 1950s (R. Curry, pers. comm.).

The Hamilton Harbour BCNH colony was the second largest on western Lake Ontario in 1987. A colony at Tommy Thompson Park (Leslie Street Spit), Metropolitan Toronto, numbered 591 nests in 1987 (Blokpoel, unpubl. data). A colony on a small island in the Niagara River directly above the Horseshoe Falls, Regional Municipality of Niagara, had 155 nests in 1987, while a colony at Mugg's Island in Toronto Harbour, Metropolitan Toronto, had more than 50 nests in 1986, but was deserted in 1987 (E. Machell, pers. comm.). Data from the *Ontario Breeding Bird Atlas* (Cadman *et al.* 1987) indicate that only five colonies in Ontario had more than 100 nests during the period 1981-85, those being at Middle Island and East Sister Island, Essex County, in western Lake Erie, Nottawasaga Island, Simcoe County, in southern Georgian Bay and Mugg's Island and Tommy Thompson Park, Metropolitan Toronto (Goodwin 1987). The BCNH population has fluctuated considerably in Ontario over the last 50 years. It has recovered from low numbers during the 1960s and

early 1970s and at present the species appears to be expanding its range within the province (Goodwin 1987).

#### *Ring-billed Gull*

The Ring-billed Gull (RBG) was first reported nesting on Hamilton Harbour in 1961, with nests being found along the south shore of Windermere Basin, behind the Parkdale Steel Works (ONRS 1961a). It was not recorded again until 1978, when 17 nests were recorded at the CDF (Table 1). Numbers increased rapidly to approximately 2,400 in 1981, 11,224 in 1984 and 21,207 in 1987 at the CDF site (Table 1). RBG's have experienced rapid population growth throughout the entire Great Lakes. The Great Lakes RBG population has more than doubled from 1976 to 1984, with an average annual growth rate of 11% (Blokpoel and Tessier 1986). On Lake Ontario, the saturation of nesting sites at several colonies, successional increases in vegetation (reducing the amount of available nesting habitat) and control programs to deter nesting at the Tommy Thompson Park and Mugg's Island colonies in Toronto most likely contributed to the rapid increase at the Hamilton colony. Available nesting sites are still abundant on the filled cells of the CDF, depending on plans by the HHC to develop the site (Figure 3).

The Hamilton Harbour RBG colony was the fifth largest on all of Lake Ontario in 1984. Colonies at

Little Galloo Island, Tommy Thompson Park, Gull Island and High Bluff Island, Northumberland County, as well as at the Port Colborne mainland, Regional Municipality of Niagara, (the largest on Lake Erie and within close proximity to Hamilton Harbour) were larger than the Hamilton Harbour colony in 1984 (Blokpoel and Tessier 1986).

#### *Herring Gull*

Herring Gulls were first recorded nesting at Hamilton Harbour in 1976, when 7 nests were counted (Table 1). By 1980 the number had risen to 102 (Table 1). Since 1984 the number of nests has remained fairly stable, with 225 nests counted in 1987 (Table 1). The Herring Gulls nest mostly at the northern end of the waterbird colony, along the connecting dykes and along the

periphery of the RBGs.

The Herring Gull has been shown to be the most widespread breeding species in Ontario (Cadman *et al.* 1987). In recent years, its population has been slowly increasing on Lakes Ontario and Huron (Weseloh *et al.* 1987). The Hamilton Harbour colony is one of the largest on western Lake Ontario, with other large colonies being located at Tommy Thompson Park in Toronto, Scotch Bonnet Island and Gull Island near Brighton, above the Horseshoe Falls on the Niagara River, and on the Port Colborne breakwall.

#### *Common Tern*

The first reported nestings of Common Terns in the Hamilton area were in 1946 (15 nests) and 1949 (two nests) (North 1972). The first record of Common Terns nest-

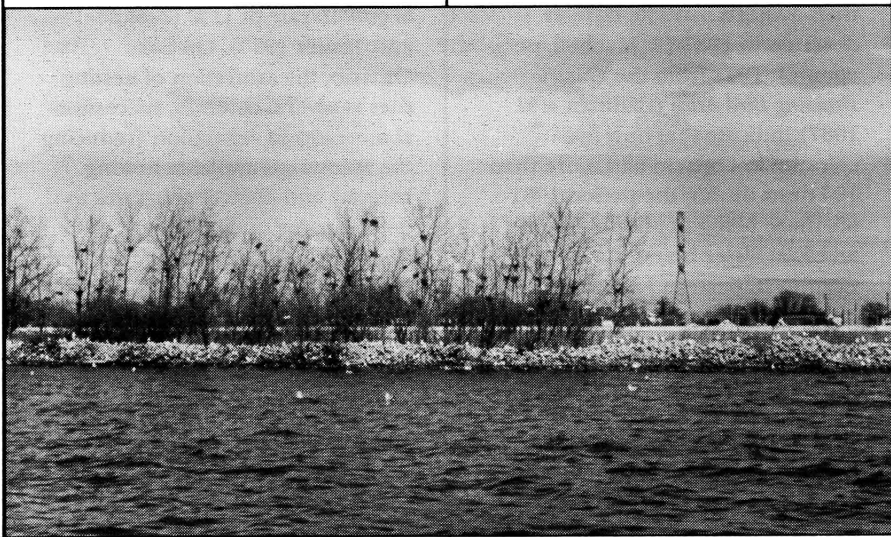
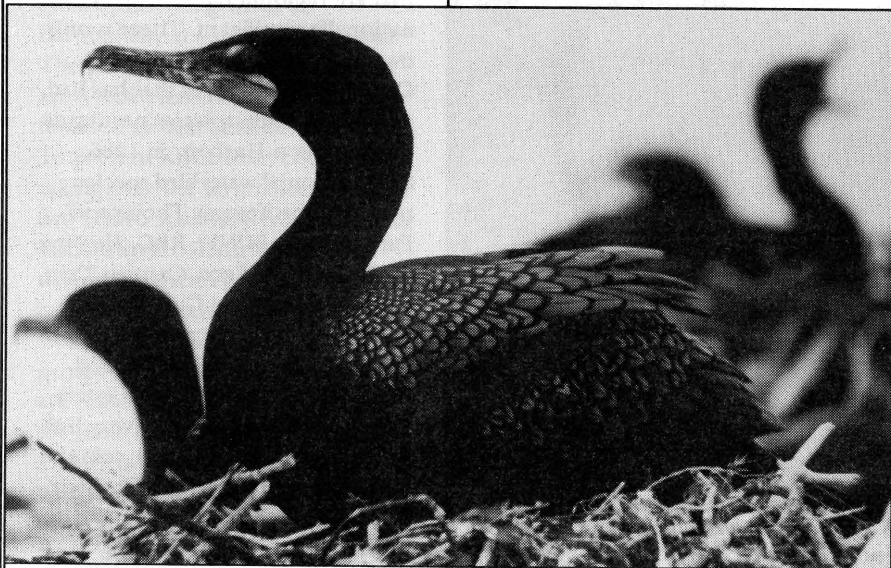


Figure 2: Double-crested Cormorant and Black-crowned Night-Heron nests, Tollgate Ponds, Hamilton Harbour. Photo courtesy CWS.

ing specifically on the Harbour was in 1961, when three nests were found on the south shore of Windermere Basin behind the Parkdale Steel Works (ONRS 1961a). Nesting was first reported at the Hydro Islands in 1966, with 66 nests recorded (ONRS 1966). Nesting occurred at the Hydro Islands up to 1972 inclusive (ONRS 1967; ONRS 1968; Gilbertson 1975; Morris *et al.* 1976). In 1971 one Common Tern nest was also found at the Pier 27 CDF site (ONRS 1971). In 1973 the terns nested (42 nests) on the mainland shoreline adjacent to the islands due to inundation of the islands resulting from record high water levels (Morris and Hunter 1976). A year later this colony was deserted, probably due to the combined effects of the loss of nesting habitat and several years of reduced reproductive success

induced by toxic chemical bioaccumulation (Morris and Hunter 1976). Common Terns did not subsequently nest on the Harbour until 1982 (Lamond 1985). Numbers have since increased to a total of 553 nests in 1987 (Table 1). Of these, 151 were located at the Pier 27 site adjacent to the RBG colony.

The only other Common Tern colony on western Lake Ontario is at Toronto's Tommy Thompson Park, which historically supported over 1000 nests, but in 1987 had only 332 nests. Data from the *Atlas of the Breeding Birds of Ontario* indicate that less than 5% of the 123 10x10 km squares in which Common Tern breeding was confirmed had more than 100 nests (Blokpoel 1987b). Hamilton Harbour is, therefore, a major nesting area for Common Terns in the province. Other Common Tern



Double-crested Cormorant. Photo by John Mitchell

colonies in the vicinity of Hamilton and the number of nests at each in 1987 were as follows: 1331 at Port Colborne breakwall (R.D. Morris, pers. comm.); 157 on the Niagara River [Tower Island, Far Crib, Near Crib and Buckhorn Weir] (G. Batcheller, pers. comm.); and 496 at Buffalo, New York [Donnelly's Pier, Reef Lighthouse and Short Breakwater] (G. Batcheller, pers. comm.).

#### *Caspian Tern*

Caspian Terns have nested at Hamilton Harbour since 1986, when 48 nests were counted. In 1987, the number increased substantially to 134 nests (Table 1). These birds nest in an area within

the RBG colony. All Caspian Tern colonies in Ontario are associated with nesting RBGs (Blokpoel 1987a). The only other Caspian Tern colony on western Lake Ontario is at the Tommy Thompson Park, which has decreased from 197 nests in 1985 to 45 nests in 1987. The rapid growth of the Hamilton colony may be attributed to immigration of displaced birds from the Toronto colony. The Caspian Tern is considered rare in Ontario and Canada (Blokpoel 1987a), thus the Hamilton colony is significant provincially and nationally.

#### **Future of the Pier 27 colonies**

Over the last decade, the colonial waterbird nesting area at Pier 27 has become one of the most important nesting sites on the Great Lakes, with populations of birds that are regionally, provincially or nationally significant. There is only one other colony site on the Canadian Great Lakes that has had as many as seven species nesting as did Hamilton Harbour in 1986. Seven colonial waterbird species nested at the Tommy Thompson Park in 1982: BCNH, RBG, Herring Gull, Common Tern, Caspian Tern, Great Black-backed Gull (*Larus marinus*) and California Gull (*L. californicus*) (Fraser 1983). Both of these colonies have become established on man-made sites. Very little suitable nesting habitat for colonial waterbirds existed on the Harbour prior to the 1970s. However, the future of the Pier 27 site is not



Figure 3. Ring-billed Gull nesting habitat, Pier 27, Hamilton Harbour.  
Photo by Hans Blokpoel.



secure, due to eventual development plans for port and industrial facilities by the HHC.

The HHC has recognized the ecological significance of the site to some degree, by allowing most of the nesting area to remain undisturbed until it is required for development in approximately 15 years. Thus, the short-term prospects for the colonies look promising. In fact, it is likely that Ring-billed Gulls will continue to increase rapidly in numbers, and in the process are likely to encroach upon, or completely usurp the nesting areas of Common and Caspian Terns. The RBGs arrive several weeks before the terns do, and their burgeoning numbers are likely to overtake the nesting areas of the terns. One technique to prevent this encroachment and to maintain nesting habitat for Common Terns is to exclude gulls by installing wires or monofilament early in the season. The gulls tend to avoid the 'wired' area, while terns can sometimes be induced to nest beneath the wires. To prevent RBGs from completely taking over the tern colonies at the two Hydro Islands, CWS has already discouraged colonizing gulls by destroying their eggs (under CWS permit) in recent years.

Although the short-term prospects for the Pier 27 colonies are reasonably good, the colonies are most likely to disappear once Pier 27 is further developed into an operational harbour facility. The displaced birds would probably move out of Hamilton Harbour

because, apart from the two small Hydro Islands, there are presently no other suitable nesting sites in the Harbour. In order to prevent this loss of valuable and interesting waterbird colonies, alternative nesting habitat in Hamilton Harbour could be built and maintained for optimal use by a diversity of colonial waterbird species. HHC might be interested in greatly enlarging the Hydro Islands or in constructing new islands in Hamilton Harbour. Those islands could then be managed for colonial waterbirds by a local naturalist group (e.g., the Hamilton Naturalists' Club with assistance from CWS). In fact, the Hamilton Harbour Remedial Action Plan (RAP) for the clean-up of Hamilton Harbour is at present considering a proposal to encourage the birds now nesting at the CDF to move to an expanded Hydro Island site.

### Acknowledgements

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