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ABSTRACT

During the 1983 breeding season experiments were carried out at a large colony of ring-billed gulls (*Larus delawarensis*) at the Eastern Headland of the Toronto Outer Harbour. At the beginning of the nesting season several 20 x 20 m plots were established in areas where gulls were starting to nest. The plots were covered by parallel monofilament lines with a spacing of 60 cm. The lines were installed at either 60 cm (Low Exclosures) or 120 cm (High Exclosures) above the ground. The lines were highly effective in preventing gulls from nesting in all experimental plots. On average there were 3.0, 3.8, and 224 nests in the High Exclosures, Low Exclosures and Control Plots, respectively. Advantages and disadvantages of the method are discussed.

INTRODUCTION

In recent years the ring-billed gull (*Larus delawarensis*) has increased its breeding population in the lower Great Lakes to the point where it has become a serious nuisance in several areas (Blokpoel, 1983). Since 1973 a large nesting concentration has developed at the Eastern Headland of the Toronto Outer Harbour on Lake Ontario. In 1983 an estimated 70,000-80,000 pairs nested at that site. The presence of these gulls in close proximity to Toronto has resulted in several complaints, mainly about befouling of park benches and aggressive food begging at outdoor restaurants and public parks.

Since 1981 monofilament lines and stainless steel wires have been used to exclude ring-billed gulls from Nathan Phillips Square (in front of Toronto's City Hall) and certain areas at Ontario Place (a park along Toronto's waterfront). Although the wires and lines were highly effective in keeping the gulls away from their favourite feeding sites (Blokpoel and Tessier, in press), the Canadian Wildlife Service was asked to develop a socially acceptable method to reduce (or at least prevent further growth of) the colonies at the Eastern Headland.

In this paper we report on experiments to use monofilament lines for excluding gulls from small portions of their nesting areas at the Headland.

STUDY AREA AND METHODS

The Eastern Headland consists of breakwalls (constructed from hard fill) and adjacent low-lying areas of dredged spoil (Figure 1). The dredged spoil areas, created in 1973-1975, have since been colonized by vegetation, gulls (mainly ring-billed gulls) and terns (for more details see Blokpoel and Fetterolf, 1978). The outer breakwall was still under construction in 1983; and its inner fingers A and B, constructed in 1981, were first colonized by gulls and terns in 1982.

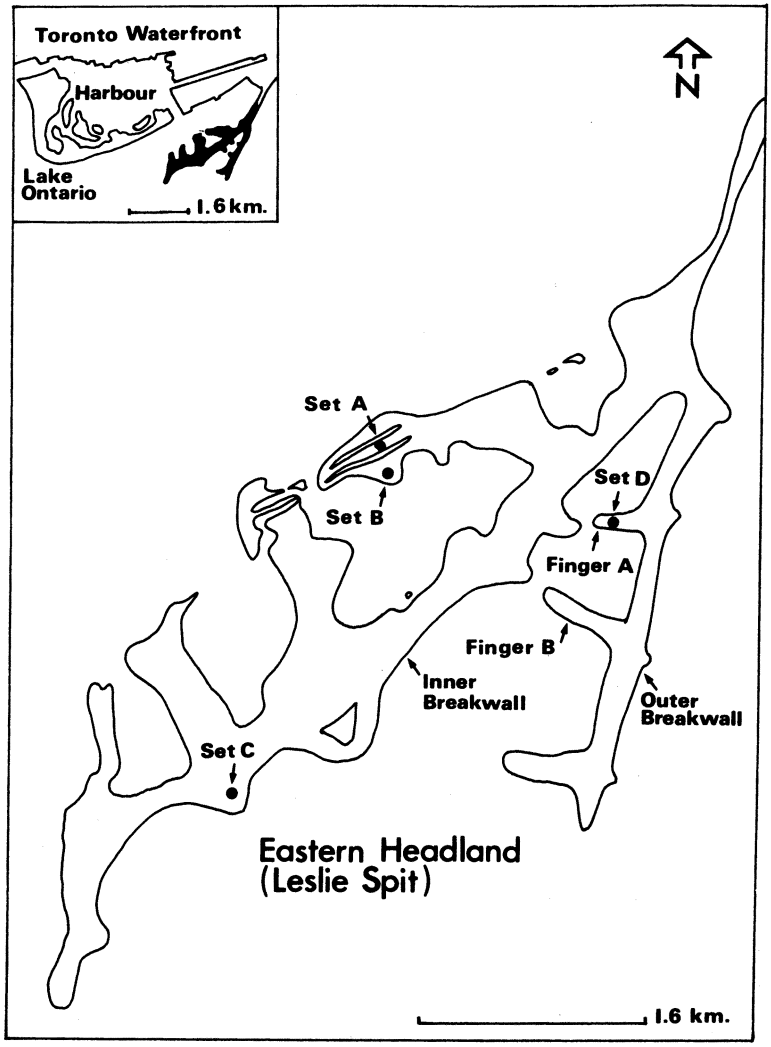

FIGURE 1. Map of the Eastern Headland of the Toronto Outer Harbour and locations of gull exclusion plots in 1983.

We established four sets of three plots each, in four different areas at the Headland. Each set consisted of two experimental plots and one control plot. All plots were 20 x 20 m square. The experimental plots were covered by taut monofilament lines that ran parallel at a spacing of about 60 cm and that were installed at either 60 cm (Low Exclosure) or 120 cm (High Exclosure) off the ground. We used iron rods to support a frame of metal wires, which in turn supported the monofilament lines (Figure 2). Along the sides of the High Exclosures, additional lines were installed to prevent the gulls from entering the exclosures from the sides. The metal wires were of multi-stranded stainless steel with a diameter of 2 mm. The 18 kg (40 lbs.) monofilament fishing lines had a diameter of 1 mm. The metal wires were attached to the rods using crimped loops and the monofilament lines were simply tied to the metal wires. The Control Plots had neither lines nor rods.

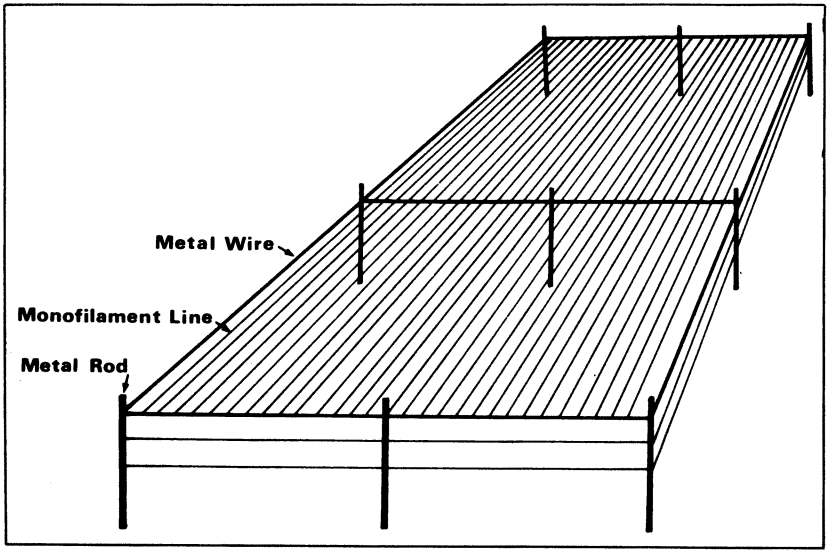

FIGURE 2. Gull exclosure as used at the Eastern Headland in 1983.

The areas for the four sets of plots were selected to include different conditions as follows (see Figure 1):

Set A: A high, dry sandy ridge; vegetation cover about 40%. Ring-billed gulls nesting since 1973.

Set B: A low area of hard-packed soil and rubble; vegetation cover about 70%. Ring-bills nesting since 1973.

Set C: A high area of hard packed soil and rubble; vegetation cover about 95%. Ring-bills nesting since 1978.

Set D: A very high area of hard packed soil and rubble; vegetation cover about 25%. Ring-bills nesting since 1982.

The plots were established between 12 to 21 April 1983. During that time the gulls were already on their territories. On 21 April, construction of the exclosures of Set A was completed. On that day there were already four nests with eggs in the High Exclosure of Set A and two nests with eggs in the Low Exclosure. Once the lines were installed, all plots were checked at least once daily until 4 July 1983, when all lines were removed.

RESULTS

After installation of the lines, a few birds attempted to return to their territories; but they struck the lines and behaved as if they were startled and left.

The six nests with eggs that were present when the exclosures of Set A were completed were deserted, and the eggs disappeared shortly thereafter (Table 1). Later on in the season, when nesting outside the exclosures was in full swing, a few gulls managed to build nests inside the exclosures. In total 22 new nests with eggs were found in the eight exclosures after the original six nests had been deserted. All these 22 nests were within 2 m of the edge of the exclosures. Of the 22 nests, 14 were deserted both before and after the end of incubation, and in total only 17 chicks hatched. We do not know how many of these 17 chicks fledged because we did not keep track of them after they left their nests, most of which were surrounded by dense vegetation.

Apart from these few exceptions, the lines were highly effective in excluding the gulls from their nesting areas. On average, there were 3.0, 3.8, and 224.0 nests in the High Exclosures, Low Exclosures, and Control Plots, respectively.

During our daily visits we infrequently found gulls entangled in the lines. During 84 visits to each of the eight exclosures we found in total 77 entangled gulls (on average 0.1 gull per plot per visit).

DISCUSSION

The use of monofilament lines had the following advantages: (1) high rate of success, (2) immediate results, (3) relatively low costs of materials, and (4) relatively humane and more socially acceptable than some alternative methods.

The lines were highly effective in keeping the gulls out of the exclosures, but this success may be due to the fact that unoccupied nesting habitat was available elsewhere on the Headland. We do not know how well the lines would work in a situation where all available nesting habitat is covered with lines. We believe that even in such cases the method would work; but the birds would probably be more persistent, resulting in a higher incidence of entanglement.

Compared to other control methods, such as poisoning of adults or spraying of eggs, the lines provided results much more quickly. The costs of materials were relatively low: $250.00 for the eight exclosures. Although the method did cause some harm to the birds, it is probably a more humane method (and hence socially more acceptable) than the poisoning of adults or the spraying of eggs with a kerosene/formaldehyde mixture.

Disadvantages of the method are as follows: (1) installation of lines is labour-intensive, (2) during the breeding season the lines need to be inspected for entangled birds at least once a day, and (3) after installation the lines need to be maintained (lines may break due to impact with birds, vandalism, etc.). A more basic shortcoming of the method is that the lines are a "band-aid" approach rather than a real solution. If it were decided to cover an entire colony site with lines or wires, the gulls would be forced to find other sites to nest and would probably create problems in the vicinity of their new colony sites. Gulls displaced from a traditional colony site are likely to move to the nearest colony where nest sites are still available (Blokpoel and Courtney, 1982).

In the lower Great Lakes area there are many ring-billed gull colonies (Blokpoel, 1977; Blokpoel and McKeating, 1978; Blokpoel and Weseloh, 1982; Blokpoel, unpublished data). Gulls displaced from Colony A would probably nest on nearby colony sites, thus providing some relief of the gull problem in the vicinity of Colony A *during the breeding season.* However, soon after the chicks have fledged, many gulls wander along the shores of the Great Lakes during the so-called post-breeding dispersal. If there are many attractions (fish piers, fast food outlets, picnic areas, etc.) in the vicinity of colony Site A, many of the wandering gulls will concentrate near those attractions, thus causing gull problems *after the breeding season.*

If there are no nearby colonies with unoccupied nesting habitat, the displaced gulls may attempt to start a new colony. This process usually takes a few years. Thus it is not very likely that ring-bills displaced from their traditional colony will start new colonies in the first year that they are excluded from their territories.

A more comprehensive approach to the gull nuisance would be to deal with the root of the problem, i.e., to reduce the size of the burgeoning ring-bill population. Any acceptable method to reduce the number of gulls should be carried out over a large area for many years in conjunction with the U.S. At present the gull problem is not considered serious enough to warrant such a costly and time-consuming effort (Blokpoel, 1983).

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LITERATURE CITED

Blokpoel, H. 1977. Gulls and terns nesting in northern Lake Ontario and the upper St. Lawrence River. Can. Wildlife Service Progress Notes No. 75. 12 pp.

Blokpoel, H. 1983. Gull problems in Ontario. Information Leaflet. Canadian Wildlife Service, Ottawa, Ontario, Canada. 9 pp.

Blokpoel, H. and P. A. Courtney. 1982. Immigration and recruitment of ring-billed gulls and common terns on the lower Great Lakes. Can. Wildlife Service Progress Notes No. 133. 13 pp.

Blokpoel, H. and P. M. Fetterolf. 1978. Colonization of gulls and terns of the Eastern Headland, Toronto Outer Harbour. Bird-Banding 49:59-65.

Blokpoel, H. and G. B. McKeating. 1978. Fish-eating birds nesting in Canadian Lake Erie and adjacent waters. Can. Wildlife Service Progress Notes No. 87. 12 pp.

Blokpoel, H. and G. D. Tessier. *In press.* Overhead wires and monofilament lines exclude ring-billed gulls from public places. Wildlife Society Bulletin.

Blokpoel, H. and D. V. Weseloh. 1982. Status of colonial waterbirds on Little Galloo Island, Lake Ontario. The Kingbird 32:149-157.

TABLE 1. Weekly numbers of nests of ring-billed gulls in four sets of plots at the Eastern Headland in 1983. HE-High Exclosure; LE-Low Exclosure; CP-Control Plot. Underlined numbers refer to nests scrapes (beginnings of a nest). Other numbers refer to nests with eggs and/or chicks.

		Set A			Set B			Set C			Set D		
Date		HE	LE	CP	HE	LE	CP	HE	LE	CP	HE	LE	CP
April	18	[a]	-	-	0	0	-	83	87	-	17	14	-
	25	4+66	2+38	-	0	0	-	0	8	-	0	0	-
May	2	2	0	-	0	0	-	0	3	-	0	0	-
	9	1	0	230+5	6	6+4	182+3	0	4	196+5	0	0	25+20
	16	0	0	-	7	4	-	0	4	-	0	0	-
	23	1	0	321	11	4	230	0	3	297	0	0	48
	30	1	0	-	10	3	-	0	2	-	0	0	-
June	6	1	0	-	7	3	-	0	2	-	0	0	-
	13	1	0	-	3	2	-	0	0	-	0	0	-
	20	0	0	-	2	2	-	0	0	-	0	0	-
	27	0	0	-	0	1	-	0	0	-	0	0	-
July	4	0	0	-	0	0	-	0	0	-	0	0	-

[a] not counted.