

Management of Colonial Waterbirds at Tommy Thompson Park

Summary of the 2011 Double-crested Cormorant Strategic Approach

February 2012

The overall goal of the Double-crested Cormorant Strategic Approach, as established by the Cormorant Advisory Group in 2007, is to achieve a balance between the continued existence of a healthy, thriving cormorant colony and the other ecological, educational, scientific and recreational values of Tommy Thompson Park (TTP). The objectives of the Strategic Approach are to increase public knowledge, awareness, and appreciation of colonial waterbirds; deter cormorant expansion to Peninsula D; limit further loss of tree canopy on Peninsulas A, B and C; and continue research on colonial waterbirds in an urban wilderness context. To achieve these goals and objectives the five main management actions established in 2010 were carried throughout 2011 (Table 1). This report summarizes the actions taken to achieve these goals and objectives.

Table 1. 2011 Strategic Approach. Note: asterisks in orange were potential management activities; however, they were not carried out in 2011.

	Peninsula A	Peninsula B	Peninsula C	Peninsula D
Inactive Nest Removal (prior to 2011 breeding season)			*	
Pre-Nesting Deterrents		*	*	*
Post-Breeding Deterrents			*	*
Enhanced Ground Nesting	*	*		
Habitat Restoration	*	*	*	*

Enhanced Ground Nesting

Cormorant Conservation Zones have been established at the tip of Peninsula A, the existing ground nest area of Peninsula B and the adjacent attraction site. Ground nest enhancements occurred prior to the return of cormorants and in three strategic areas (Figure 1). The ground nest enhancement area on Peninsula A, a designated Cormorant Conservation Zone, received no alteration to the size or structure of the previous enhancement work undertaken in 2008-09. A portion of this enhancement area is included in the York University conspecific attraction study. The study involves two types of structural enhancements, tires and wood stakes, with straw for nest material. Cormorant decoys and attraction calls are applied to the study area. Herbaceous vegetation was cut from this site and the blind and tunnel system, created to limit human disturbance, was relocated further back toward the west side of the peninsula in an effort to improve cormorant sightlines to the water.

On Peninsula B, enhancements were undertaken to increase attraction to an area adjacent to the existing ground nest colony. Nests removed from trees on Peninsula C were relocated to this area, and with straw material were placed in accordance with best nest density measurements from the successful ground colony. Woody structures (fallen trees and limbs) as well as 110 nests and 37 cormorant decoys were added. A buffer area of herbaceous vegetation was cleared in order to improve sightlines and flushing areas to the water.

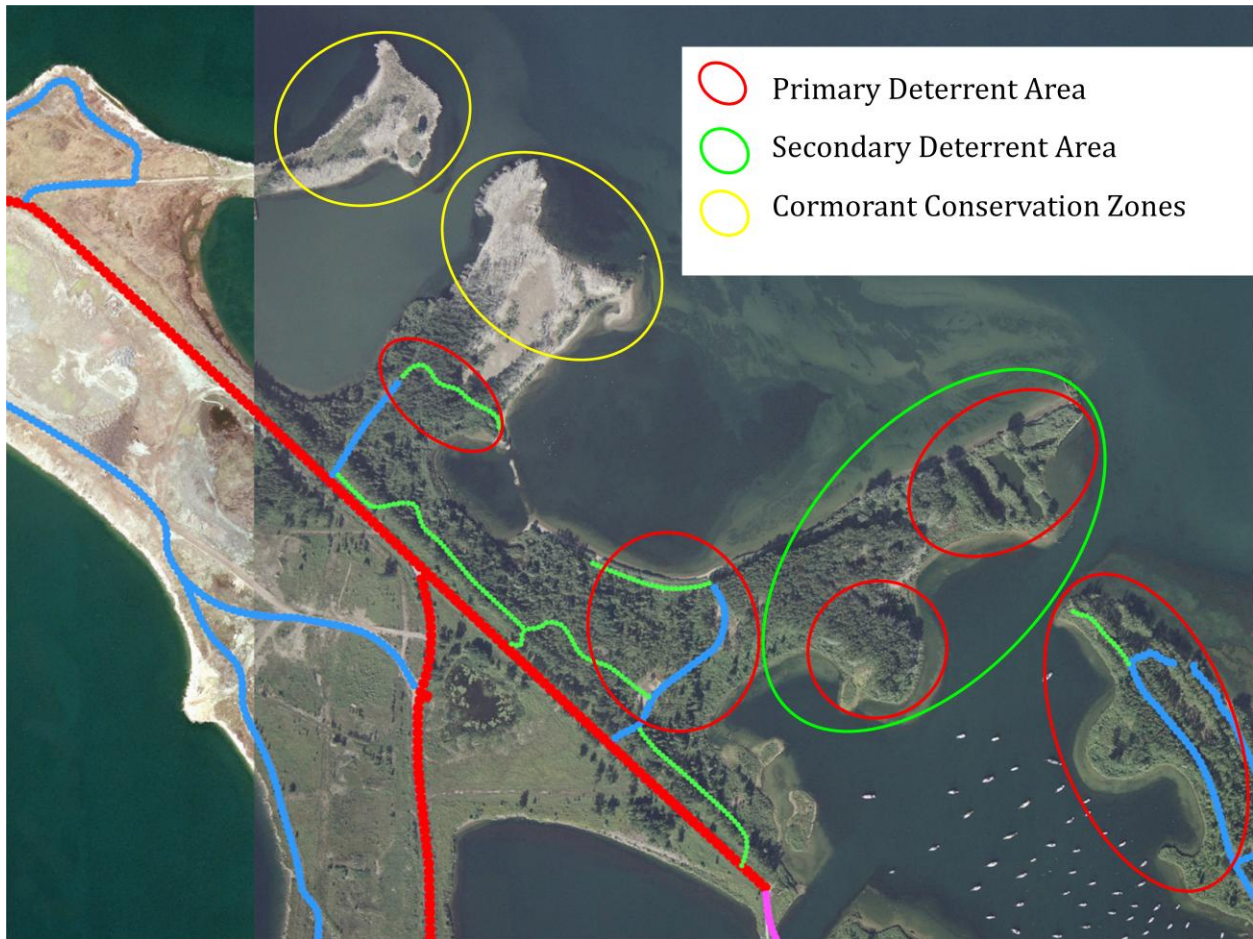


Figure 1. 2011 Cormorant Management Areas

Inactive Nest Removal

Staff removed nests from strategic areas of the tree colony over the winter, prior to the return of cormorants. The primary focus was on the high nest density areas of Peninsula C, and 236 nests were removed between January 25 and February 12, 2011. Nest removal methodologies were assessed to improve efficiencies and increase the number of nests removed. A tree service company was contracted in February to maximize the number of daily nests removed; however, it was determined through a follow-up evaluation that this was ineffective when compared to the existing nest removal methods.

Pre-Nesting and Active Deterrents

Deterrents were not undertaken on Peninsula B during the 2011 breeding season due to the potential for disturbance to the Black-crowned Night-Heron nesting area, the existing ground colony and the attraction site. A total of 32 days of deterrents on Peninsula C occurred between March 29 and May 30, 2011 following the approved escalation scale (Figure 2) in response to nesting attempts and loafing in deterrent areas.

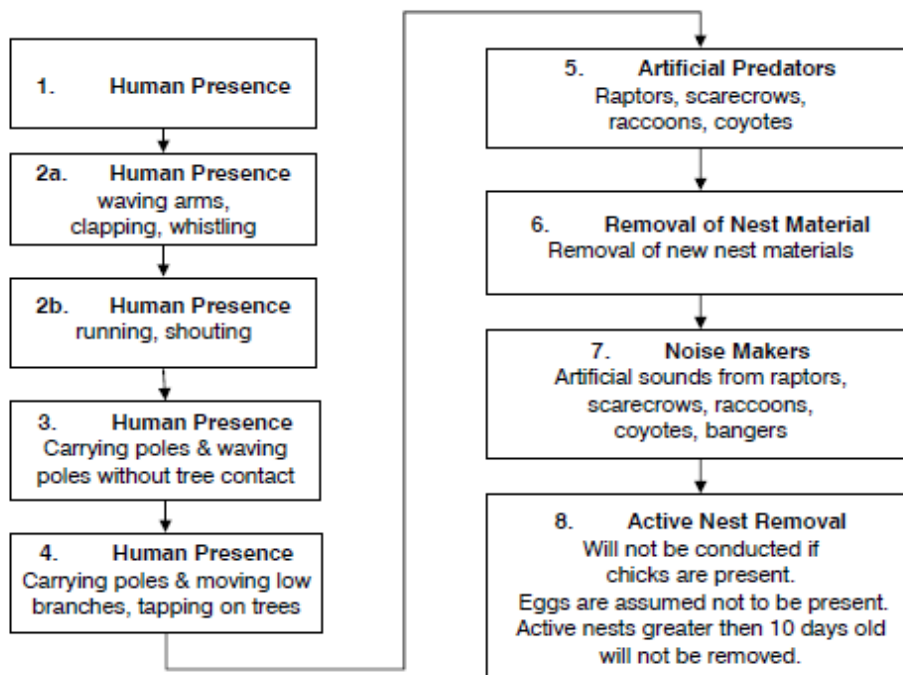


Figure 2. Deterrent Escalation Scale

Active Nest Removal

Active nest removal was used only when other deterrent activities failed to produce reaction from cormorants in the targeted area. The degree of deterrents escalated quickly due to habituation to lesser deterrent tools, and active nest removal was initiated after 12 days of deterrent activity. A total of 69 nests were removed and 93 eggs destroyed on Peninsula C in the deterrent area. Subsequent destruction of eggs within these nests was unavoidable; therefore targeted nests were monitored closely to provide a confident estimate of the age of the eggs. An effort was made to land the egg successfully without damage in order for float testing, and all eggs were examined to better understand the individual incubation period and colony as a whole. The 10 day incubation threshold followed is a conservative estimate based on current scientific literature on embryo development for altricial waterbirds (Humane Society of the United States, 2009). In the event that eggs older than 10 days or nestlings were discovered, deterrent activities focusing on that nest ceased and further monitoring occurred (Attachment 1).

Peninsula B Ground Colony

The ground nesting colony on Peninsula B is divided into two sub-colonies that continue to grow in size (Figure 3). In participation with York University efforts, TRCA staff assists in maintaining, monitoring, and collecting physical data from the ground colony during the breeding season. A total of 78 cormorant chicks were banded over two sessions in June and July. 2011 marked the first year that cormorants at TTP were banded with a unique colour band, white on black; these unique bands will help monitor the movements and behaviour of individuals as they mature and breed.

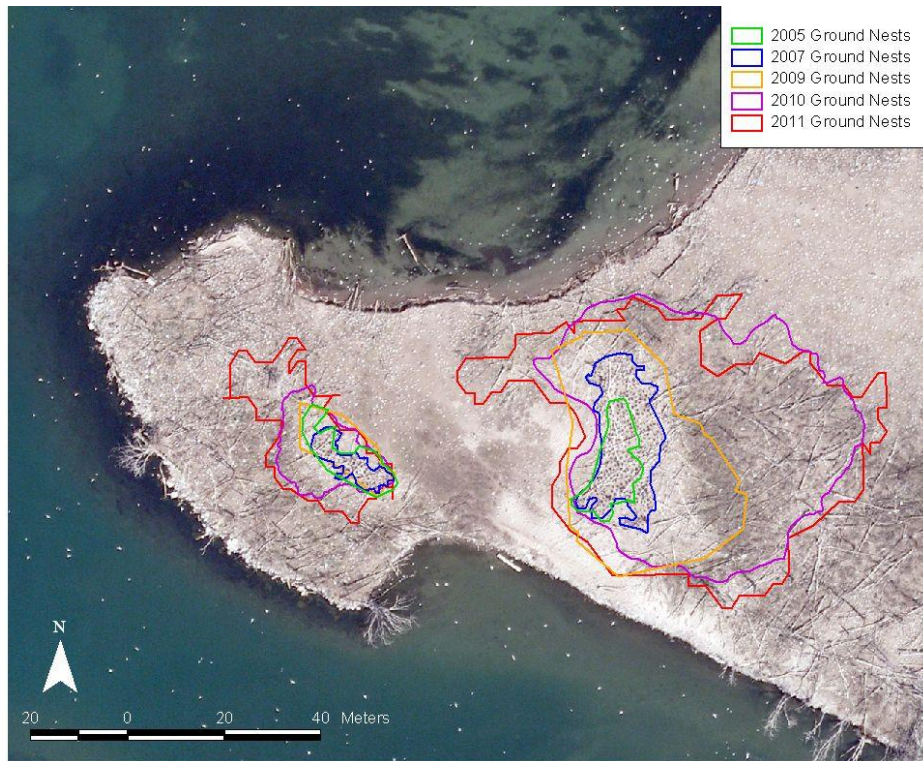


Figure 3. Peninsula B Ground Colony Perimeter 2005-2011

The ground nesting site was outfitted with a specialized camera that remotely uploaded pictures to the Tommy Thomson Park website. The camera was installed prior to the arrival of the cormorants to limit disturbance in this conservation zone. The camera provided both staff and the public a view of the colony over the course of the breeding season (Figure 4).



Figure 4. Ground nesting colony of Peninsula B from remote camera installation

Post Breeding Deterrents

Deterrent sessions occurred in September throughout Peninsula C following the fledging of chicks. The deterrents mainly took place within areas of heavy roosting to decrease further impacts to tree health and limit prospecting behaviour. Human presence and general contact with the tree proved to be sufficient to flush the majority of cormorants from their loafing positions and did not require further escalation.

Population

The cormorant population at TTP continues to rise. In 2011 the population numbered 11,374 nests on three of four peninsulas. The increase in nest numbers was mainly due to ground nesting on Peninsula B increasing from 3,310 nests to 4,547 nests in 2011, a 37 per cent increase from 2010. This is a positive trend showing that ground nest enhancements are working to help achieve the goal of the continued existence of a healthy, thriving DCCO colony. The significant increase in the number of ground nests means that 40 per cent of the TTP DCCO colony now nests on the ground, so their nests are not affecting the tree canopy. Tree nests decreased by 20 on Peninsula A, increased by 481 on Peninsula B and by 242 on Peninsula C; however, only 48 new trees were occupied on these Peninsulas. This increase in tree nesting was mostly sustained with denser nests (more nests per tree) as the nesting area did not expand into any new areas.

Attachment 1. 2011 Active nest removal situation and action flow chart

