Observations of the 2008 Cormorant Cull on Middle Island in Point Pelee National Park

Cormorant Defenders International
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Cormorant Defenders International Observations of the 2008 Cull of Cormorants on Middle Island, Point Pelee National Park, Ontario Canada

As part of a larger campaign to dispel the myths and misinformation about cormorants and advocate for their protection, Cormorant Defenders International (CDI) has documented cormorant culling in Ontario and reported on their findings in reports and in a documentary-style film available on their web site at www.cormorants.ca

Between April 30th and May 5th, 2008, Point Pelee National Park staff conducted a cull of Double-crested Cormorants on Middle Island in Lake Erie. CDI representatives were present in a boat near the island to observe and document the cull and its effects on individual birds and on both cormorants and other species nesting in the colony. The following report outlines CDI's activities and findings regarding the Middle Island cormorant cull, discusses the protocol used by Parks Canada staff to carry out the cull and outlines the disturbance levels to both cormorants and non-target birds in the colony during the cull. Given that Parks Canada does not desire the natural return of this native species, this report offers suggestions for non-lethal techniques for soil rehabilitation being considered in other colonial waterbird management plans.

Cormorant Defenders International

Cormorant Defenders International (CDI) is a collective of animal protection and environmental organizations representing more than 15 million people in Canada and the United States. These organizations work collectively to educate the public about Double-crested Cormorants and other waterbirds, their role in the environments they inhabit and to correct the misinformation that has resulted in the needless slaughter of thousands of these birds.

In addition to observing and documenting the Middle Island cormorant cull, CDI representatives were also present on the water around Presqu'ile Provincial Park's High Bluff Island on Lake Ontario during that park's 2005 and 2006 cormorant management activities. Video taken at the Presqu'ile culls and other research indicates that as many as 1/3 of the birds shot were not mortally wounded and were left to die from their wounds over a period of hours or days. Sample video clips of the cruelty involved in the Presqu'ile cull can be viewed on the CDI web site at www.cormorants.ca.

History of Middle Island

Middle Island was purchased in 1999 by the Nature Conservancy on behalf of a number of non-profit organizations and subsequently turned over to Point Pelee National Park in 2000. At the time the park acquired the island there were 5202 cormorant pairs already nesting on the island. The number of cormorant nests fluctuated over the next few years and then began to decline gradually after 2004. In 2007, there were reportedly 4688 cormorant nests on Middle Island. While records of nesting birds on Middle Island start in the early 20th Century (when none of the current colonial species were found) DCCOs were documented as breeding in the southern end of Lake Erie, on islands, that presumably these would have included Middle Island. The re-establishment of the species in the Great Lakes is relatively well-documented.

Documents obtained through Freedom of Information legislation reveal that staff at the park began discussions about cormorant management with other government agencies in the spring of 2006. These plans were not released to the public until the fall of 2007. The reason given for the proposed cull was to protect the island's vegetation, including several so-called "at risk" plant species, all of them globally common, and to protect the other birds nesting on the island, including herons and egrets.

Middle Island has also been inhabited by various people since the 1800s and has been used for various purposes, including as a stopover point for escaped slaves, prisoners of war, army deserters and even as a base for a rum-running operation during Prohibition. During these years, the island ecosystem was altered drastically and substantial physical changes were made to the island topography. Some examples include dredging out a channel to provide a protected area for boats, erecting buildings, constructing an air strip for landing small private planes and there are still remnants of an automobile from the early 1900s. As a result of the activities, the island ecosystem did not evolve naturally, resulting in the current unnatural makeup of flora and fauna.

The Pelee Island Archipelago, including Middle Island, has been designated as an Important Bird Area (IBA) because it supports one of the richest assemblages of nesting colonial birds in Lake Erie. At least 5 species are present in numbers of national significance, including more than 1% of the estimated northeast North American Double-crested Cormorant population, and greater than 1% of the estimated North American Herring Gull population. In particular, the heronry on West Sister Island is significant, with a combined estimate of about 500 pairs of Great Blue Berons, Black-crowned Night-Herons and Great Egrets. It is one of the largest heronries in Canada, and supports the largest population of nesting Great Egrets in Canada. In 1997, the IBA bird records indicated that the archipelago had 7431 nesting pairs of cormorants which it identified as a globally significant population.

History of Double-crested cormorants

Double-crested Cormorants are native to the Great Lakes, including the Pelee Island Archipelago and Middle Island. There is very little data available about the historic numbers of cormorants nesting on the Great Lakes. However, there is a growing body of evidence indicating that, in the past, these birds existed in numbers equal to, or possibly even exceeding, their current population in the Great Lakes Basin. And there are specific historic references to nesting cormorants on Lake Erie in the late 1800s. Regardless of the historic numbers of cormorants nesting on Middle Island, cormorants are a native species, part of the Great Lakes ecosystem and their colony on Middle island has evolved as part of a natural process.

After World War II, the use of pesticides resulted in the reduction or virtual elimination of many species in the Great Lakes including significant declines in waterbird populations. This, combined with more than a century of human persecution, nearly eradicated Double-crested Cormorants from the Great Lakes Basin.

In the late 1980s cormorants began to return to the Great Lakes, and gradually increased in population. In the past few years, their numbers have been declining, which is likely a sign they have reached their peak and may be leveling off, a pattern consistent with the recovery of a species to their natural habitat.

While the population of cormorants has increased in the Great Lakes Basin in the past couple of decades, they may still be at risk. Due to the introduction of invasive species and other factors, botulism has resulted causing the death of large numbers of waterbirds over the past few years. It remains an ongoing threat to cormorants and other fish-eating birds. In addition, governmental agencies in the US and Canada have initiated ongoing culls and egg oiling programs over the past few years in response to pressure by fish-farm operators and extremist angling groups, who want to dramatically reduce the number of birds. As well, there are numerous cases where "vigilantes" have gone into cormorant colonies illegally killing and maiming the birds.

The Canadian Wildlife Service has surveyed cormorants on Middle island and has reported that their number has been decreasing naturally over the past few years, which is consistent with other areas of the Great Lakes. Therefore it is reasonable to postulate that the population of birds on the island has stabilized and may even be declining as part of a natural process.

CDI's activities Re: the Middle Island cormorants

In the fall of 2007, representatives of the CDI member organizations met with Point Pelee National Park's Superintendant and her staff to discuss the proposed cormorant management on Middle Island and to advise them of the cruelty inherent in past culls of tree nesting cormorants in other areas in the Great Lakes Basin.

During the following months CDI submitted written reports and other documents criticizing the park's plans to cull cormorants on Middle Island. Copies of these documents can be viewed on the CDI web site at www.cormorants.ca . Information was widely distributed to the public advising people about the proposed plan to slaughter thousands of cormorants in the park. In addition, CDI representatives provided relevant information to Canada's Environment Minister to assist him in making a decision on the proposed cull, as he eventually had to sign off on it.

On March 6, 2008, a Notice of Commencement was posted on the Canadian Environmental Assessment Registry indicating an intent to conduct a cull of Double-crested Cormorants on Middle Island in Point Pelee National Park.

The notification of the cull sparked a public consultation process which began on or about April 3, 2008. This consultation generated a widespread public response. Of the 2,234 responses received, more than 2,000 respondents were reportedly opposed to any management of cormorants on Middle Island. In the summary of the consultation, park staff apparently discounted these responses, presumably because they supported the position of CDI and were therefore assumed to have been generated by the collective. Whether those favouring the cull were similarly discounted as having been generated by the Ontario Federation of Anglers and Hunters is not known.

On March 31, 2008 CDI member organizations Zoocheck Canada and Animal Alliance of Canada initiated a legal action asking the federal court to grant an injunction to stop the 2008 cull of cormorants on Middle Island, stating that the park's statutory requirement to file a management plan, which includes Middle Island, had not been completed prior to a decision being made to cull. The attorney representing Parks Canada admitted that there was no management plan relevant to Middle Island and that the park had not met their statutory requirement to file a plan for the park every 5 years as required by law, but insisted, with the help of government "experts", that if the bird population was not drastically reduced a catastrophic ecosystem flip could result. On April 28, 2008, Justice Zinn (the judge presiding over the action) opined that while he agreed that there was a serious issue to be reviewed by the court he would allow the 2008 cull to proceed for fear of the "catastrophic flip".

During the weeks leading up to the court date, Point Pelee National Park posted a number of documents, part of their Environmental Assessment, a process required when culling in a National Park. One of those documents was a review by Parks Canada's Animal Care Task Force of the park's plan to cull. The document contained operational details of the planned cull and concerns raised by the task force. The Task Force's concerns included the following:

1. A need to develop strict qualification standards for the shooting of the birds, so that they can accurately target an area of approximately the size of a cormorant's neck at the base of the thoracic inlet (approximately 5 cm diameter circle) to reduce the number of injuries and non-lethal bullet wounds.
2. Significant concern was voiced about the practicality of realistically observing hatchlings (especially very young ones) in the nest prior to shooting the adults to ensure that chicks and eggs of less than 50% gestation are not left in the nests.
3. The task force felt strongly that some form of independent observer should be utilized to oversee the operation and ensure transparency and public satisfaction that the project was being carried out as specified in the operation plan and conservation plan. It was suggested the observer be a veterinarian or other health professional with a background in humane euthanasia standards.
4. Concern was also raised about ensuring that targeted adult birds were truly dead and that any eggs with chicks that are mostly developed and >50% through incubation should be euthanized by cervical dislocation and that all birds that fly out of the nest after being shot be checked to ensure that they are truly dead and not lying wounded on the ground.
5. Disturbance to the birds was also noted as a concern. Specifically, it was noted that they should restrict the amount of time that shooters (and related staff) are on the island in order to decrease the disturbance to the non-target colonial nesting species on the island.
6. The task force felt that only collecting the carcasses of cormorants shot on the periphery of the island would not give a valid sample for toxicological analysis. These samples should include those shot on the interior of the island to fairly represent the entire colony.

7. Finally, several issues were raised about the environmental effects of leaving thousands of cormorant carcasses on the island. These concerns included effects on predators, and other species on the island, soil pH and the effect of lead contamination from the large number of bullets expended and potentially ingested by scavengers such as eagles and gulls.

As a result of these concerns, the park staff altered their operation plan to address the issues raised by the Task Force.

In consultation with the Ontario Provincial Police, Major Events Liaison Team, Parks Canada agreed to allow CDI representatives to observe and document the cull from a boat near Middle Island in accordance their constitutional right to observe.

Culling took place on 3 days (2 half day culls and one full day cull) between April 30th and May 5th, 2008. A report issued in June 2008 by park staff indicated that 211 cormorants were killed, with only 5 birds reported injured and later euthanized. The report also said the protocol as amended by the Animal Care Task Force was followed closely.

Three CDI representatives were present near the island on culling days to document its effects on Middle Island's mixed bird colony and to report any injured birds to park staff if necessary. The culling took place in the interior of the island, so it was not possible for CDI to film the shooting techniques or the actual killing of the birds. For this reason, the observers focused the majority of their time on documenting the disruption to the island's bird population.

In order to understand the changes in level of disturbance to the colony, the observers began documenting the bird's behaviour prior to Parks Canada staff arriving on the island and continued observing and documenting the colony from the time staff arrived, throughout the culling until shortly after the culling activities had ended.

Prior to park staff arriving on the island, the observers did not see any Great Blue Heron nests without at least one bird on or next to the nest and there was no apparent disturbance to the bird colony as a whole. Shortly after arriving on the island, the culling staff began to walk through the colony from the west end of the island to the east end, reportedly to ensure that no one was present on the island before shooting commenced. The CDI observers documented a significant increase in disturbance to cormorants, herons and egrets while park staff were walking under the trees where birds were nesting. Upon hearing the first shots, observers documented birds flying off in every direction in what can only be described as an apparent state of panic.

The following photos were taken on May 5, 2008 showing bird activity prior to shooting and the disturbance levels during culling activities later that morning

This photo shows the undisturbed bird colony prior to culling activities
North Shore Middle Island – May 5, 2008

This photo shows disturbance to bird colony during management activities
Small section of the North Shore Middle Island – May 5, 2008

This photo shows disturbance to the bird colony shortly after shooting began
West end of Middle Island – May 5, 2008

On all three shooting days, park staff began culling activities at the west end of the island and moved eastward down its entire length. The duration of culling lasted anywhere from 1.5 hours to 2.5 hours and shooting was consistent throughout that time, not allowing time for the birds to settle during the culling period. The most extreme disturbance to the birds was recorded in the immediate area that the shooting was taking place; however there were moderate levels of disturbance recorded throughout the entire colony at all times during shooting and disturbance was recorded for up to a half hour after the shooting was reportedly finished for the day.

Significant disturbance to the birds was recorded on all three culling days. The total duration of disturbance was recorded at just under 11 hours compared with the actual duration of culling of 8 hours. A summary of the duration of shooting as reported by Parks Canada and the duration of significant disturbance observed by the CDI observers is recorded below.

Date	Disturbance Begins	Cull start Time per PC	Cull end Time per PC	Disturbance Declines	Duration of Cull per PC	Duration of Disturbance
30-Apr-08	13:36	13:58	16:30	16:49	2:32	3:13
1- May-08	9:57	10:14	11:40	11:53	1:26	1:56
5-May-08	9:11	10:05	11:35	11:49	1:30	2:38
5-May-08	13:40	13:52	16:27	16:46	2:35	3:06
TOTAL					8:03	10:53

Particular attention was focused on Great Blue Heron nests to see how long the birds vacated their nest once disturbed. On April 30, 2008, the CDI observers contacted the park staff to report one particular nest where the heron(s) had evacuated the nest after shooting began and did not return for more than 15 minutes. The park staff indicated that they would look into it and there was no further response. In a telephone conference call later that evening, the Park Superintendent confirmed that the Great Blue Herons had arrived on Middle Island in advance of the cormorants and therefore there is a high likelihood that the majority of Great Blue Herons were incubating eggs by April 30th. This information would seem consistent with the bird's natural tenacity to return to the nest and data from prior years for incubation periods for the species.

Competition for nesting sites has been documented in mixed waterbird colonies, especially during times when the birds are away from the nests. Normally, particularly in early stages of incubation and nurturing of the young, one of the two herons making up a pair would always be present. When both herons evacuate a nest, it is prone to being taken over by other birds putting the eggs/chicks at significant risk of injury or death. In addition, desertion of a nest or an entire colony has been documented due to human disturbance in a colony.

According to the Ontario Ministry of Natural Resources *Management Guidelines for the Protection of Heronries in Ontario*:

> "Herons of all species are unpredictable in their response to the disruption of a colony. The severity of the response does not always correspond to the magnitude of the disturbance, since even seemingly "innocuous" activities can produce serious results."
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> "Abandonment is most likely to occur in the pre-nesting (courtship) period and up to hatching time. Adult herons do not develop a strong attachment to the nest until young are present (Adams et al., 1973)."
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> "Disturbances causing even the temporary absence of adults from the nest may result in significant increase in predation on eggs and young (Bent, 1963; Teal, 1965; Wolford, 1966; Wolford and Boag, 1971)."
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> "Disturbances which prevent adults from attending the nest contribute to mortality of embryos and young due to exposure (Teal, 1965; Wolford, 1966; Pratt, 1970; Adams et al., 1973; Tremblay and Ellison, 1976)."
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> "Disturbances cause interruptions in the feeding routine, which result in the loss of food by young. In addition, the young tend to regurgitate means when frightened (Cottrille and Cottrille, 1958; Bent, 1963; Teal, 1965; McVaugh, 1972)."
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> "Alarming older young causes them to leave the nest and many fall to their deaths or become entangled in branches while scrambling through the vegetation (Bent, 1963; Teal, 1965; Wolford, 1966, Wiese and Smith-Kenneally, 1977). "
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> "All colonies which contribute significantly to regional populations of heron species should be given full protection and managed, if necessary, to ensure their continuance, and to minimize the disturbances.
>
> Larger, denser colonies tend to supply more young to the population than do smaller, less dense colonies. Dunn et al (1981) found 44 colonies with more than 50 active nests in Ontario and these colonies contained 37% of the provinces total estimated population of great blue herons."

In 2007, Middle Island was host to more than 300 Great Blue Heron nests, as well as 27 Great Egret nests and 15 Black-crowned Night-Heron pairs. Furthermore, the island is closed to the public during the nesting season so the bird colony remains undisturbed. Therefore, the level of disturbance caused by the culling activities is significant because the birds have not acclimated to virtually any level of human activity in or near their colony.

One of the reasons given by park staff for justifying the cull of cormorants on Middle Island is to protect the other species of birds nesting on the island in order to protect the long-term viability of nest production. However, the level of disruption imposed on the colony by culling cormorants is clearly counter-productive to this goal, risks the safety of the heron offspring and may put the heron population at risk of deserting the island altogether as has been experienced in other areas. Given that there is a relatively large population of Great Blue Herons on Middle Island and the fact that this population has continued to rise in tandem with the cormorant colony, it would seem that culling cormorants puts the heron population (possibly regionally) at risk, while leaving the colony without disruption is likely to result in stability or growth. Ontario breeding bird surveys show that overall Great Blue Herons are in decline in Ontario as a breeding species.

Cruelty

CDI observers did not see any birds left injured or suffering during the Middle Island cull. In the report provided by park staff summarizing the 2008 culling activities, 5 injured birds, euthanized shortly after being shot, were reported. While it is not possible to know for sure that no other birds were wounded but escaped detection after being shot, we are content that the percentage of birds injured (approximately 2% recorded) was low relative to other culling operations (some as high as 30%). We attribute this reduced injury rate to the protocol developed in consultation with Parks Canada's Animal Care Task Force wherein the culling staff took time to ensure that they had killed each targeted bird and stopped the culling when it was deemed that the majority of birds were more than 50% through the incubation of their eggs.

Birds that are nesting in trees as high as 9 – 12 m (30 - 40 ft) can be very difficult to kill with one shot, particularly given that the target to ensure an immediate death (the brain) is about the size of a dime. Therefore, in order to ensure that birds are killed quickly and are not left to suffer, it is critical that time be taken to ensure that the target can likely be hit, but if birds are injured, that the culling stop so they can be located and killed as quickly as possible to reduce suffering. Furthermore, it is critical to ensure that birds are not shot more than 50% through the egg incubation period to ensure that young birds are not left to suffer in the nests.

CDI is not aware of any other government agency in Canada or the United States developing and utilizing a culling protocol aimed at ensuring the"humane" (as defined by various veterinary associations) death of cormorants. While following this protocol may mean that fewer birds can be shot each day, they are essential to ensure that birds are not cruelly treated and left to suffer, as has happened in most other culling operations.

We strongly recommend that all government agencies embarking on the culling of tree-nesting cormorants follow the guidelines developed by Point Pelee National Park in consultation with the Parks Canada Animal Care Task Force so that cruelty and suffering are minimized and culls are conducted in a fashion consistent with that expected of a hunter under provincial or state law.

Future plans for the Middle Island cormorants

2008 was only the first year of culling in a 5-year cormorant management plan for Middle Island. Point Pelee National Park has confirmed that they intend to continue culling Double-crested Cormorants until the end of the management plan in 2012.

During the court proceedings in April 2008, the attorney for Parks Canada stated that the target number of birds to be killed in 2008 was 4,000. However, based on the experience of culling operations this year, the total number of birds killed each year is likely to be much lower than originally expected.

The greatest number of cormorants killed on any day during the 2008 Middle Island cull was 139, while the average number of birds killed each day was 105 (factoring in the fact that two days were only 1/2 day culls).

Weather is also a limiting factor in being able to shoot birds as the spring conditions are unpredictable and often windy or rainy, neither of which are adequate conditions for culling.

In addition, an OPP vessel is required to be in the vicinity to ensure that boat traffic does not enter into areas where shots are being fired, so the days that culling can be conducted are also dependant on the availability of the OPP marine unit.

In 2008, Point Pelee National Park staff were restricted from culling cormorants during the court action initiated by CDI. They were only able to proceed after the judge rendered his decision on April 28th. This left PPNP with nearly two weeks to perform the cull, which they had originally planned to conduct over a five week period. Similar plans are in place for 2009 – 2012 culls.

Culls are expected to start at the beginning of April, when the first birds begin incubating eggs and end around May 10th. Given that the park's protocol does not permit shooting to take place two days in a row, so that birds are given at least one disturbance-free day between culling; that no culling takes place on weekends; and that the average number of birds killed each day is 105, a five week cull would likely result in a maximum of 1,600 birds killed each year. This number is likely to be significantly lower (probably 800 – 1,000 per year) given that weather conditions in April often make transportation to the island and shooting dangerous.

In addition, if culling begins when the first birds begin nesting as planned, the birds that are shot will likely be replaced by others arriving later. Removing these numbers would reduce competition for resources, including nest sites, among survivors, and it is unknown how many "bachelor" birds might move in to take advantage of the decline in early nesting adults.

An additional concern is that herons will be at greater risk of abandoning the island as they will not be nearly as site or nest-tenacious early in the season.

PPNP staff have indicated they intend to fly over the colony in early April in an effort to identify which cormorants have laid eggs early, so they can target these birds first. CDI has serious concerns about this plan.

First, it is unclear how clearly one can see eggs in a cormorant nest from an airplane flying over the island, particularly with the birds on the nests and therefore may be a waste of time and financial resources. Second, over flights may be another disturbance factor and a potential cause of non-target birds vacating their nesting sites. The Nova Scotia Special Management Practices for Herons specifically recommends against flying aircraft over a heron colony stating, "Any low-flying aircraft should be prohibited during the breeding season."

The cost of the cormorant management on Middle Island has been budgeted by PPNP at approximately $380,000 over five years. However, this figure does not include the staff time required to initiate the process, prepare materials, defense of the legal issue raised in 2008, costs associated with having OPP boats and staff on the water during the culls and numerous other related costs. Therefore, the actual cost will be significantly higher than has been budgeted. In addition, there is no way to accurately estimate the loss of park revenues resulting from visitors boycotting the park as a result of the culling activities.

Conclusion

By following the guidelines developed with the Animal Care Task Force, Parks Canada staff were able to reduce the percentage of injured birds. However, it is also clear that in order to do this, it is not possible to kill the large numbers of birds that were planned when the 5 year management plan was conceived. Clearly, the culls are not going to have the effects desired by the park, while putting the colony overall at risk.

The 2008 Middle Island cull also revealed that no matter how careful the culling staff are, it is not possible to conduct a cull of cormorants in a mixed colony without causing significant disruption to the entire colony, including non-target species. Disturbance is likely to have negative impacts on both cormorants and the other colonial waterbirds. For example, Great Blue Herons are known to be particularly sensitive to disturbance and have deserted nesting sites because of human activities. Therefore it is reasonable to postulate that the cormorant cull may have a negative effect on the heron population on Middle Island and could have regional implications as well.

The risk that culling poses to herons and other non-target birds; the reduced efficacy of culling, since the number of cormorants that can reasonably be killed "humanely" in a season is much lower than originally anticipated; the added potential for recruitment of other birds if culling begins early in the season; and the true cost of the operation leaves one wondering how an ongoing cull can be justified on Middle Island. It is unlikely that the PPNP culling plan will achieve the results desired; instead, CDI believes it will result in the further degradation of the island's natural ecosystem.

CDI continues to hold the opinion that Middle Island, including its cormorant colony, should be left to evolve naturally. However, if PPNP is adamant in its desire to maintain a particular, artificial complement of vegetation on the island, and if officials believe that this vegetation is being depleted significantly by the bird colony (which has not been proven to date), there are other measures that should be tested before any more birds are killed.

Stanley Park in Vancouver has developed a *Great Blue Heron Management Plan* which outlines similar issues to Middle Island with guano impacts on plants and concerns about human disturbance to the bird colony. This plan outlines non-lethal options that should be considered for soil rehabilitation that could also be tested at Middle Island. These include:

- Wash foliage of nest trees and landscape vegetation after the bird colony has been vacated at the end of the season.
- De-acidify the soil with lime or other non-toxic substance.
- Put a liner down under the colony. Cover with wood chips and remove at the end of the nesting season. Remove debris after the season is concluded.
- Mulch areas underneath the bird colony – cover ground with 6-8" of mulch to intercept most of the guano before it reaches the ground; remove it at the end of each season.

Some of these suggestions were raised with PPNP staff at a meeting in Windsor in 2007, but were never included in any of the options being considered by the park. While these mitigation activities are relatively new to waterbird colony management, they deserve to be tested as an alternative to culling.

Finally, CDI does not condone the oiling of cormorant eggs, since we believe there is no reason to control a native species in its own ecosystem and any human presence in waterbird colonies causes disturbance to all bird species resulting in distress and suffering.

However, in cases where parties are determined to take action to artificially maintain an ecosystem in a particular static state, as is being proposed on Middle Island, CDI considers egg oiling, properly done, to be a less cruel management technique. Modified fruit sprayers have reportedly been used to spray eggs in tree-nesting cormorant colonies elsewhere on the Great Lakes, including at Tommy Thompson Park in Toronto.

Cormorant Defenders International is continuing its campaign to correct the myths and misinformation about Double-Crested Cormorants, including those nesting on Middle Island, and to oppose the widespread persecution of these birds. As part of this process, CDI hopes to continue discussions with PPNP and other official agencies to share ideas and opinions about colonial waterbird management issues. Should culling, or other management, continue on Middle Island, CDI will place observers to document these activities and will provide this information to the public in various ways.