Cormorant Defenders International

Liz White, Director
Animal Alliance of Canada

Barry Kent MacKay, Canadian Representative
The Animal Protection Institute

Ainslie Willock, Director
Canadians for Snow Geese

Melissa Tkachyk, Campaigner
Earthroots

Dr. John Grandy, Senior Vice President
Humane Society of the United States

Rebecca Aldworth, Wildlife Campaigner
Humane Society International, Canada

Doug McRae, Naturalist
Presqu'ile Important Bird Area
Former Head Naturalists, Presqu'ile Provincial Park

Glenn Coady, Naturalist
Toronto Othnithological Club

Julie Woodyer, Campaigns Director
Zoocheck Canada

DATE: March 24, 2006

SUBJECT: Critique of the David Moore, Chip Weseloh and Richard Joos January 24, 2006 report titled The Management of Double-crested Cormorants (Phalacrocorax auritus) and its effect on Great Blue Herons (Ardea herodias) and Great Egrets (Ardea albus) at High Bluff Island (Lake Ontario) in 2005. – Final Draft.

Recommendations:

1. Suspend the current cormorant management programme, which includes egg oiling, culling, chick and nest destruction and post-breeding disturbances which is based on a flawed report;

2. Impose a moratorium on all management activities including culling, chick and nest destruction, egg oiling and all post-breeding disturbances for a three year period and use that time to collect data on the colony;

3. Establish a broader consultation committee which includes representation from interest groups with different perspectives to discuss cormorants and their role in the ecosystem and to review all the available cormorant literature and report to the Minister;

4. Study the impact of mercury, selenium and other toxins found in the HBI cormorants and the prevalence of these toxins in Lake Ontario fish and collect biometric data, including stomach contents on birds shot should the cull proceed;

5. Include independent observers for any data collection and management activities;

6. Promote the HBI waterbird colony as a tourist attraction, complete with education seminars, observation opportunities and closed circuit television of the colony, and

7. Include observers from the Cormorant Defenders International should the cull take place this year.

Introduction:

The Ministry of Natural Resources (MNR) will be making a decision about whether to cull cormorants on High Bluff Island in Presqu'ile Provincial Park this year. Ministry staff may be influenced by the recommendations set out in the Canadian Wildlife Service Report, titled "The Management of Double-crested Cormorants (*Phalacrocorax auritus*) and its effect on Great Blue Herons (*Ardea herodias*) and Great Egrets (*Ardea albus*) at High Bluff Island (Lake Ontario) in 2005. – Final Draft" (hereafter, the "CWS Report").

We have serious concerns about the information contained in the report and the resulting recommendations. In this document, we critique the CWS report and present alternative information and recommendations. We hope that MNR Minister Ramsay will review this paper and consider an alternative management strategy.

Three Over-arching Problems: There are three overarching problems with the CWS Report.

1. Since 2000, there has been no clearly articulated goal for High Bluff Island (HBI). In May 2000, the Ministry's goal was to implement "a five-year cormorant program to monitor the potential negative impact of the growing population of double-crested

cormorants on local fish stocks, wildlife populations, habitat and vegetation." (Cormorant Research and Monitoring, OMNR, May 2000. pg 1).

In 2002, the Ministry of Natural Resources goal was to "limit the negative impacts that have been identified at the western woodlot of High Bluff Island by preventing the nesting of cormorants by destroying their nests." (Management Strategy for Cormorants at Presqu'ile, April 2002, pg 2) The Ministry failed to provide any target numbers for the reduction of cormorants.

In 2003, the Ministry decided to expand the management programme into the eastern woodlot to reduce the cormorant population in order "to protect significant park values." (Annual Report of the Management of Double-crested Cormorants at Presqu'ile Provincial Park, 2003, pg 1).

In 2004, the Ministry states, "Maintaining the woodland habitat is not possible without ensuring the survival of the trees and shrubs themselves and maintaining the trees and shrubs on the islands is not possible without removing nesting cormorants from all areas of woody vegetation." (Proposed Amendments of the Management Strategy for Double-crested Cormorants at Presqu'ile Provincial Park, 2004, pg 2).

The 2005 MNR Operations Plan notes as its goal the following: "to protect representative woodland flora and fauna of High Bluff Island, Presqu'ile Provincial Park, while retaining maximum diversity of nesting colonial bird species." And states the objectives associated with this goal as: "to prevent cormorant use of trees for nesting on HBI; to reduce cormorant use of trees for roosting on HBI; to reduce recruitment from ground nesting cormorants on GI and HBI and; to minimize impacts of cormorant management on other colonial bird species nesting on GI & HBI." This would mean killing every bird and destroying every nest cormorants build on HBI.

The 2006 CWS Report states that "The goal of cormorant management on High Bluff Island was not to eliminate cormorants, but rather to reduce the breeding population to a level that sustains healthy vegetation and maintains colonial waterbird diversity. Consequently, any steps taken to reduce the number of breeding cormorants should have minimal impact on other nesting species." (The CWS Report, pg 24).

None of the documents cited above have clearly articulated goals and each document's goal is different. This raises the following questions -- Is HBI to be maintained in its current state? Is it to be maintained for Great Blue Herons, Black-crowned Night-Herons and Great Egrets? How many cormorants are acceptable? Must all cormorants nest on the ground in order to remain on HBI? Are any tree nesting cormorants acceptable and if so how many and under what circumstances? What does minimal impact on other species mean? None of these questions are clearly answered.

2. There is no stated objective. How far is the Ministry prepared to go to "protect" HBI from the cormorants? Nothing short of eradication of cormorants will protect the tallest trees in their current state, and even then, mature trees do die. Put another way, to prevent Double-crested Cormorants from nesting in the tall trees on HBI, it will be necessary to render HBI trees uninhabitable to cormorants which will also make them uninhabitable to other tree-nesting large birds such as Great Blue Herons and Presqu'ile's only nesting pair of Red-tailed Hawks. If the cormorants are pressured into lower, younger, healthier vegetation currently favoured by Great Egrets and Black-crowned Night-Herons will that be unacceptable to the state the Ministry has decided must prevail on HBI?

3. The CWS Report presents a clear anti-cormorant bias, inappropriate justification of Ministry actions and the dissemination of inaccurate information. The Minister ought to be extremely cautious in accepting this report for anything other than it is – the presentation of wildlife management as science and the use of data to justify pre-determined management decisions that are vague, arbitrary and subjective.

Below is a more detailed critique of the CWS Report.

Critique of the CWS Report:

CWS Recommendation #1:

"Continued DCCO management – The most important factor related to the long term preservation of colonial waterbird bio-diversity on HBI, and with Presqu'ile Provincial Park, is preventing the further degradation of available tree-nesting habitat and promoting the growth of young trees. Despite ongoing management of cormorants since 2003, DCCO tree-nest density remains high. We recommend that management of cormorants (egg oiling, removal of nests, culling of adults) continue as planned, during the 2006 breeding season. The protocols and cautionary approach adopted during 2005 resulted in minimal impact to nesting GBHEs and GREGs and should be implemented in any future management program. Priority should be continued to be placed on the removal of adults and nests located in live trees or above areas of live shrubby vegetation. Post-breeding disturbances of roosting cormorants should continue." (The CWS Report, pg 30)

Critique of CWS Recommendation #1:

Presqu'ile Provinicial Park (PPP) has a recorded history of waterbird biodiversity that demonstrates that the only constant is change. In the 1960s PPP hosted the largest Common tern colony in North America, in the 1980s, the largest Ring-billed Gull colony and in the last decade, one of the largest Double crested Cormorant colonies.

Despite a history of huge fluctuations in migratory and breeding bird populations, the Ministry is now attempting to arrest the change by imposing a steady state environment. This is not possible. The management activities will fail to achieve a steady state

environment but thousands of cormorants will be shot in the process of trying to achieve that goal.

The information provided in the CWS Report is sufficiently flawed to challenge the efficacy of the recommendations. The report provides little or no evidence that further "degradation" of available tree-nesting habitat will undermine colonial waterbird bio-diversity. Neither does the report provide any evidence that the preservation of existing trees and vegetation, if this was even possible, will maintain current the diversity. In fact, the Report fails to take into account or minimizes the impact of the management programme on the colony. The disruption has already reduced biodiversity on the island and threatens loss of at least one more species, the Great Blue Heron, as a part of the breeding fauna of the park.

1. **The negative effect of MNR activities on the colony and the failure of the CWS Report to acknowledge and measure the impacts:**

   An evaluation of the effects of stressors associated with management activities on both target and non-target species is largely absent from the report. The report does not evaluate what the effects of killing such large numbers of birds will have on the whole waterbird colony. It does not assess the impacts of related management activities including the removal of nests, and the nesting materials, the apparent cutting of dead trees after the study period, the constant disruption by MNR staff walking, shooting, building, composting and driving ATVs and the introduction and subsequent removal of introduced non-native flora.

2. **The CWS uses Chantry Island (CI) as a "control site" even as it acknowledges significant differences between Chantry Island and High Bluff Island:**

   The CWS used Chantry Island as a "control site" even though it acknowledges that "Despite our efforts to select a control site that was similar to HBI in species composition and numbers of nesting pairs, there was no mixed-species breeding colony in the lower Great Lakes region with a comparable density of tree-nesting DCCOs. There were twice as many cormorant nests on HBI compared to CI, and almost ten times as many tree-nesting DCCOs." (Moore, Weseloh, and Joos, The CWS Report, pg 26)

   Differences between CI and HBI:

   - **Public Access to Chantry Island – No Public Access to High Bluff Island:** CI is located in Lake Huron just offshore of the town of Southampton. The general public accesses the island daily through the breeding season and comes close to the heronry located on the island. Presqu'ile's HBI, and the area adjacent to it is protected as a bird sanctuary and is off-limits to the general public during the nesting season. There is no assessment of how these differences might affect the outcome

of the study. On the contrary, we are simply assured that although CI was visited by a tour group, "Tourists were limited to the immediate area of the lighthouse, and did not enter the waterbird nesting areas."

- **Other factors affecting the two colonies:** The similarity between HBI and CI seems to be predicated in the CWS Report only on the presence of the bird species in question, without reference to other factors that could affect nesting successes. For example, there is no comparison of food availability. If one site has more fish in adjoining waters it might be fair to assume a potentially higher rate of fledged cormorants per nest for that site than the one with less food available. Greater access to marshes, or to herptiles or shallow water hunting grounds, could create different results for fledgling success of herons and egrets. Storm and other weather situations may be different in the two locations, and could also influence nest success.

3. **Anti-cormorant bias in the report:**

The report would be far less biased against cormorants were the CWS and the MNR to acknowledge that before cormorant management began and cormorants were at or near their peak in numbers, so to were the Great Blue Herons, the Black-crowned Night-Herons and the Great Egrets. Subsequently, only the egrets have managed to maintain this high level, the others, particularly the Great Blue Herons, having fallen off. Postulating a cause and effect relationship between the unprecedented degree of disturbance caused by the MNR and the decline in nesting Great Blue Herons, as well as the loss of the only breeding pair of Red-tailed Hawks in the Park, is entirely valid. The CWS Report, however, seems biased in ignoring or down-playing the deleterious effect MNR activity had on nesting success of other bird species on HBI and nearby Gull Island (GI).

Whatever the CWS and MNR rationale is for managing cormorants, the effect of the management activity has caused a decline in the in the recruitment of Great Blue Herons and quite probably BCNH and therefore continues to threaten the diversity of the colony.

There is documentation that Black-crowned Night-Herons have been nesting on either Gull Island, (GI) or HBI since at least the early 1960s, and have displayed population fluctuations in numbers during the decades they have been observed and recorded. However, after a long period of a robust PPP breeding population of night-herons, including birds breeding on Sabastapol Point, on GI, there has been a population drop, precisely commencing both with MNR culling activity.

It is more reasonable to conclude that this decline has been a direct result of MNR activity than to the activity of cormorants.

In the interest of avoiding anti-cormorant bias, the CWS Report would be better served if it acknowledged that the Great Blue Heron and Great Egret nesting activity began in PPP only after Double-crested Cormorants became firmly established as a nesting species. Prior to MNR's disturbance, the establishment of the nesting cormorants did not trigger any decline in night-herons, including those on Sabastapol Point.

It is at least fair to postulate that in PPP the herons and egrets preferentially chose to breed in the presence of the cormorants, given that there are other forest areas in PPP, particularly in the "fingers" region, where it would appear that the Great Blue Herons could have nested, but did not.

Given that it is common for Great Blue Herons to nest in mixed colonies in the presence of nesting cormorants, it seems reasonable to suggest that cormorants or even the effect cormorants were having on trees, were deciding factors in the choice of the Great Blue Herons to nest on HBI. It is therefore valid to be concerned about whether they will continue to nest on HBI if cormorants are being harassed, killed and driven away.

4. **No data to support assertions:**

   a. High Bluff Island:

   Cormorant movement: The CWS Report indicates a concern that Double-crested Cormorants who nest on the ground, may move into tree nesting sites as they become available but no data are presented to suggest that the CWS has studied the movement of the cormorants in a disturbed colony. It is assumed that cormorants will preferentially choose suitable tree nesting sites over suitable ground nesting sites when both are available but neither the Ministry nor the CWS provide any proof that this assumption is accurate, and the situation at CI, where there are ground nesting cormorants in the presence of apparently suitable, but unoccupied, trees, suggests it may not be. In fact, in the mid and late 1980s cormorants were nesting both on the ground and in the trees when their numbers were still low.

   The point was made by opponents of the cormorant management programme that oiling the eggs of ground nests could cause either selection against ground nesting, or encourage ground-nesting cormorants to seek to choose to nest in trees, to escape "predation" on the ground. This possibility has been ignored by the MNR and not addresses in the CWS report.

   The MNR contends that the concern about cormorants nesting at PPP is not fish consumption. Culling was done in the interest of habitat protection, specifically the woodlands on HBI, in order to preserve viable heron and egret nesting habitat. This is an important distinction as it begs the question -- why the MNR then

proceeded to neutralize eggs of ground-nesting cormorants, since the ground-nesting birds were not involved in the habitat of concern, regardless of the validity, or lack thereof, of that concern?

Justification for the cull based on wrong Ministry information: The initial proposal by the MNR was designed to discourage Double-crested Cormorants from nesting in the western woodlot of HBI because Ministry staff argued that the woodlot was significant. We know that the Ministry was incorrect. The woodlot does not contain the Park's only Black Maples (*Acer* (*saccharum*) *nigrum*), as originally claimed since Black Maples are common throughout the Park and Southern Ontario. Nor is the woodlot Carolinian as now claimed. Nevertheless, for what ever reason the programme was soon expanded to included both woodlots on HBI and to oil eggs in ground nests on both HBI and GI. The oiling of eggs on GI was done as a "minor amendment" to the original strategy.

Also, at the time the cormorants moved in, followed by the herons, the tallest Red Oaks (*Quercus rubra*) were 200 years plus and were dying from the top down. Such trees are preferentially chosen for nesting by both Double-crested Cormorants and Great Blue Herons. There was also no significant understory, due to grazing by cattle initially, and then deer following the removal of cattle in the early 1900s. While this contributed to a park-like esthetic it was and is an anthropocentric condition preceding the arrival of cormorants. The reason that there is no egg-oiling planned for the Leslie Street Spit in Toronto is that by itself it would “select against” ground-nesting to a degree that could encourage tree-nesting. It seems unlikely that ground-nesting birds would switch to tree-nesting mid-season in response to unhatched eggs, unless they were otherwise, or additionally, under active persecution.

It is at least likely that to the degree that Double-crested Cormorants hastened the inevitable loss of the oldest trees, they contributed the attractiveness of the woodlot for Great Blue Herons, which often select dying mature trees for nesting over fully-foliated shorter, younger and healthier trees. It is why there are presently no Great Blue Herons nesting at the Leslie Street Spit.

Trees in the eastern woodlot are still mostly alive, even though cormorants have nested there longer than they have in the western woodlot. The more robust nature of the trees in the eastern woodlot owes much to the fact that their roots are in water that dilutes the damage done by feces. We point to shared cormorant/heron colonies that continue indefinitely in mangrove (*Rhizophora* spp) stands with no loss to numbers of birds or trees, as mangroves grow in water.

However, the MNR, as reflected in the CWS Report, continually, and misleadingly, suggest that the eastern woodlot trees are in the same shape and impacted by cormorants to the same degree, as the western woodlot.

b. **Gull Island:**

On page 5 of the CWS Report, it is stated, "All trees and shrubs on GI have been killed by cormorant nesting activity and the subsequent accumulation of guano."

This is very misleading. GI has hosted large numbers of gulls and terns and has never had a forest that in any way resembled those of HBI. There were 18 poplars and willows as visible on arial photographs. Such natural conditions as human activity, wind, ice action, erosion, storm surges – and birds – have influenced the vegetation of GI, but always it has been different from that of HBI. When GI ceased being used as a road to HBI, it became open to colonization by colonial waterbirds. This happened at a time when cormorants were at extreme low numbers. The actions of gulls and terns and the guano load influenced the nature of the vegetation on GI. This natural process continues as the composition of the colony evolves. GI never had nor could have had the degree or type of tree cover found on HBI, and it is misleading to imply otherwise.

The reason given by the MNR for oiling eggs in ground nests was that young cormorants produced in ground nests might some day choose to nest in trees. But we suggest that before such an assumption is made, it would be valid to first ascertain whether young produced in ground nests are subsequently more or less likely to nest in trees. We suggest that nest choice could either be heritable or learned, but in either case it does not make sense to target ground nesting on the bases of an untested, and possibly counter-intuitive, assumption. It is at least as likely to guess that pressure against ground nesting could encourage tree-nesting.

5. **Protocols and cautionary approaches were not followed: Log book and observer information contradicts the information provided in the CWS Report:**

Since it is difficult to obtain concise information regarding the cormorant management programme at Presqu'ile. We requested an extensive search of records pertaining to the culling activities of 2005. Cross referencing our own observations and MNR field notes released through the Access to Information, we can see that the CWS report contains a variety of statistical errors that call into question the accuracy of the observations in the first place. The CWS Report was doubtless reviewed by many individuals at CWS and Ontario parks, yet the errors persist, indicating that the data were not adequately scrutinized. Observers from various Canadian animal protection organizations witnessed, as best they could, actual culling activities from the waters surrounding HBI. They have noted factual errors in the CWS Report.

On pages 21 and 22 the CWS Report states, "Six changes in nest occupancy occurred prior to the start of culling (< week 3), one during the cull period (week 3) and three occurred *after culling had ended on HBI (> week 3*)." (Emphasis ours.) In fact, culling had not ended on HBI after week 3. MNR staff shot and killed cormorants on June 1, 2005, and began a cull on June 2, although it was shut down after a few

minutes with no dead birds recorded. Both these culls fall within week 4. The Weekly Update prepared by PPP Superintendent, Tom Mates, for week 4 reports 323 birds killed on June 1.

On page 29 of the CWS Report, it is stated, "Finally, shooting was limited to one cull per day and completed in under an hour, to avoid having birds of the nest for prolonged periods." A similar comment is on page 10. But independent observers noted that on at least 2 culling days, May 24, and again on May 27, MNR staff shot birds in the mornings, and then again later in the afternoon. The afternoon cull was recorded by the observers to be in excess of one hour by more than 20 minutes.

The CWS Report claims that the birds' behavior was monitored by MNR 45 minutes prior to each cull. The field notes of Don Tyreman on May 31, 2005, indicate that John Immerseel had given authorization for shooters to, "…go ahead with culling if a window of opportunity presents itself under the following conditions: 1. safety of staff; 2. safety of protestors; 3. minimal disturbance of non-target species". There was no requirement given to observe the birds for the prescribed amount of time. Consistent with this direction, on June 2, 2005, a communication was overheard by observers on the MNR radio indicating that there were "no protestors" at HBI. Shortly afterward, the larger of the two MNR boats raced out to HBI with what appeared to the observers to be only one crew member and no passengers. The observers went out to see what was happening and reported that a number of MNR staff, who had apparently been crouched down out of sight during the boat trip to HBI, were unpacking weapons.

The MNR staff fired between 5 and 10 rounds into the western woodlot, and then quit shooting. That cull began within 10 minutes of the MNR landing on HBI and lasted only a few minutes. No bird observation was done by the MNR or CWS staff prior to the shots being fire, and records now indicate that no birds were killed on that day.

It should be obvious, and was certainly verified by observation and recorded on videotape, that shooting into a population of nesting birds is likely to cause immense disruption. Given that, on HBI, the two woodlots are in close proximity to each other, it should be equally obvious, again as verified by observation, that disturbance of the birds would have been caused primarily by shooting, not by the coincident presence of boats.

Observers' boats would, generally speaking, move only after shooting had commenced, otherwise being stationary, at anchor the vast majority of the time they were on the water in the vicinity of HBI. During those times observers were watching and documenting the birds' behaviour, both on videotape and in written notes. Neither the video tapes nor the written notes give any indication of the nesting birds exhibiting any stress-related behaviour at times when observers' boats were stationery on the water.

6. **Report provides inaccurate information:**

   Date of first nest: The CWS Report errs in claiming that the cormorant breeding population commenced with a single nest in 1982; in fact they first nested in 1985, with over 100 nests. It is a small point, but worth our mentioning as it is continually perpetuated in the literature. That alluded to first single nest of 1982, which has been reported as both a tree and ground nest, however, it was more likely the nest of a Great Black-backed Gull. (*Larus marinus*).

   When cormorants first did unquestionably nest in PPP, there were only 116 pairs, and even then unknown persons killed dozens of young cormorants and threw them into the lake stuffed in grain sacs, which washed up on shore and were subsequently photographed by McRae. Even small numbers of cormorants seem to be unacceptable to special interests such as fishermen.

   Location of first GBH nest: Similarly, there is an error in Table one. (McRae, pers. comm.). The Great Blue Herons first nested in the eastern woodlot of HBI in 1998, and then moved to the western woodlot the following year, not the other way around as stated in the CWS Report. This only indicates that the GBHEs chose to move to the dying woodlot.

7. **The report fails to address any of the issues of cruelty, such as wounding and loss rates, killing parents with young and destroying nests with young:**

   The cruelty of the cull is simply not addressed in the CWS Report. Wounded birds who fell to the ground on HBI were left to suffer until the day's cull was complete. Neither the Ministry nor the CWS addressed if or how these injured birds are euthanized and whether it is humane. In fact, the volunteers who attended the cull last year saw and video recorded MNR officials picking up dead birds and leaving the injured behind both on shore and in the water. In addition, observers documented and reported wounded birds flying out over the water and dying in the water, many of them taking more than 20 minutes to die.

   Wounding and loss rates: According to the only experiment conducted to determine kill/wounding rates, CWS recovered only 46 of 71 cormorants shot. Such a low recovery rate is unacceptable.

   If the retrieval rate was so poor why was only one “experiment” conducted? Why would they not run additional tests in the interest of better refining the accuracy of their estimate, by increasing sample size, and possibly learning ways to better refine either shooting accuracy or retrieval techniques?

   Cormorants are heavy birds who tend to fall straight down when killed or rendered unconscious. Therefore, the recovery of cormorants who were shot and killed outright on High Bluff Island should have been relatively easy since their fall would have been on ground with sparse vegetation.

The low recovery in fact indicates a very high rate of wounded birds who escaped HBI. This is in keeping with observations of dead, dying and injured birds retrieved by the MNR as they washed up on the mainland beach each morning.

Nest Destruction: The knocking down of cormorant nests, following the shooting, is particularly problematical. We challenge the assertion that it is possible, when seen from below, to determine if a cormorant nest has eggs or young. Knocking young birds to the ground is cruel.

Although the 2005 operations plan on page 11 mentions checking Great Blue Heron nests with a mirror there is no mention of doing the same with the cormorant nests. Nor is comment to this effect in the CWS report.

Cormorant eggs hatch over a period of several days, and the young are born without any feathers, making them vulnerable to cold, heat, sun and rain. Both parents care for the chicks, with one or the other always present. By the end of the first week, thick down appears. Brooding continues until the end of the second week, with both parents attending to their babies. Because it is a little more than a week from hatching until the young are active, there is no way to discern the difference between a nest with eggs and a nest with chicks, unless feeding behaviour is observed. Given the number of nests, it would be impossible to do the necessary observation to determine the presence of chicks. In the later stages of the culling period, there can be no reasonable doubt that many young died of hunger or exposure to the elements, even if there was a surviving parent.

CWS Recommendation #2:

"Continued monitoring of colonial waterbird species – The continued monitoring of HBI's tree-nesting, colonial waterbird species is essential to any adaptive management approach. The number of adult DCCOs killed in 2005 was less than previous years and lower than recommended in the 2005 Management Plan. As a result, the effects of cormorant management on other tree-nesting species may have been reduced in 2005. The effect of future management activity on the breeding behaviour of GBHEs and GREGs and other colonial species (including DCCOs) may vary depending on the type and magnitude of management practices employed. Continuous monitoring of potentially affected species will allow for real-time assessment of management effects and alteration of management actions if necessary." (The CWS Report, pg 30)

Critique of CWS Recommendation #2:

It is important to collect data. It is equally important to make sure that the data collected are evaluated independently and are not misrepresented to fit the management outcome.

At present, data do not support the conclusions but is nonetheless used to justify the Ministry's cormorant management programme.

1. **The report lacks pre-culling to post-culling data on HBI:**

   A significant failing of the CWS Report is the lack of data from the HBI, and indeed all of the Presqu'ile Provincial Park (PPP) island-nesting colonial birds, from before the management programme was implemented.

   All assumptions made about fledgling success rates are based on the unproved and perhaps unlikely belief that they would, in an otherwise undisturbed condition, be the same as those at CI. The real effect of the MNR disturbance cannot be compared to what the real situation was at PPP or on HBI.

   Direct observation by non-participants from the PPP Beach clearly indicated that the first (non-lethal) year of MNR culling of cormorants was, in fact, hugely disturbing to most colonially nesting birds, as would be expected, and resulted in many Great Blue Herons and some Great Egrets shifting their principal nesting areas. Chasing the herons and egrets off their respective nests facilitates the takeover of those nests by cormorants, which are subsequently "blamed" by the MNR for usurping the heron and egret nests. The MNR activities contributed to such appropriation.

   The CWS Report says that herons returned to their nests in approximately eleven minutes after shooting stopped, but could be away much longer. Normally, during incubation and early care for young, one or both of the pair of herons is at the nest. The question that the report neither asks nor answers is how long can both parents be absent from the nest before the chances of egg or nestling survival is compromised? As well, the CWS report does not address the impact of the destruction of GBHE nests which were occupied by cormorants.

   The removal of any nests may contribute to the need for increased branch removal from trees by cormorants and herons. This is counterproductive to the stated objective of protecting vegetation from cormorants.

   The actions of the MNR also reduced biodiversity on HBI when it caused the desertion of PPP's only nesting pair of Red-tailed Hawks (*Buteo jamaicensis*). The hawks had bred there annually since at least 1986 and were chased off by MNR activity. The cormorants subsequently moved in to occupy the nest. In the absence of human disturbance the hawks had been able to nest and defend their nest against cormorants for well over a decade. Prior to the MNR's disturbance, the various bird species cohabited HBI through the duration of the hawks' successive nesting seasons. PPP staff have indicated, through personal communication with McRae, that they are not sure if the Red-tailed Hawks ever were successful in producing young in previous years. However, various competent observers, including McRae, observed young

Red-tailed Hawk fledglings during various years when the cormorants were nesting nearby.

This unwillingness of the MNR to seek information outside a very narrow range of opinion from individuals with vested interest in the process of wildlife management is disturbing to us, and leads to misrepresentation to the degree it ignores information outside its self-imposed restrictions on research.

2. **Data Collection:**

Lack of data collection: Given the magnitude of the sacrifice of birds, there is an appalling lack of biometric data gathered by MNR staff. Why were many more birds not weighed, sexed or aged to determine general health and age and sex ratios? Did the kill selectively remove females from the population? Such data are routinely collected in PPP White-tailed Deer (*Odocoileus virginianus*) culling, as it is understood that such data can contribute to better understanding the nature of the population and the subsequent effect of the cull. So why not do the same with cormorants? The 2005 operations plan, Section 1.4.4, Ministry staff note they should: "investigate the impacts of culling near dawn and dusk on the sex ratio of birds taken". Was this ever done?

Further, the CWS Report does not mention the effects of botulism on waterbird populations at HBI for the last two years. These data are particularly important since the cormorants are impacted doubly, by the cull and the botulism. Failure to account for this in the CWS report can only be described as sloppy work.

Finally, the report does not address the levels of pollutants such as mercury and selenium found in the cormorants and the long term effects of those pollutants on the population.

Inaccurate data: Even within the CWS Report nest numbers do not agree, a chronic problem with the MNR since the start of the cormorant control exercise, with numbers given of nests of the various species of colonial nesting birds not agreeing from report to report, or, as is true here, even within a single report.

Misleading data: To illustrate the kind of bias inherent to the CWS Report, we turn your attention to Page 23, near the end of the second paragraph. It states, in reference to nesting herons, "For parents that successfully raised offspring to the end of the study, nesting success was similar between the two colonies." Yes, of course: the issue we have is with the herons that were *not* successful. The data were collected, raising the question of why these data were not referenced in the CWS Report. They are important as they show the disruptive nature of the cormorant culling to Great Blue Herons nest success rate. Concluding that successfully fledged herons were successfully fledged does not mean that therefore the culling of cormorants did not

impact on heron fledgling success rates, and yet such seems to be tacitly implied whether or not such implication is intended or accidental.

And two pages further on, on page 25, the CWS Report indicates that at PPP nest success for Great Blue Herons and Great Egrets actually increased since the various forms of harassment and culling of cormorants began. Shooting is probably less disturbing to birds than the use of fire hoses, as was done in 2003, and therefore when shooting replaced use of fire hoses we would naturally expect better successes in herons and egrets fledging young. But the report could be seen to imply that the increase in herons and egrets was absolute from a time before MNR interference began. Whether this is a deliberate obfuscation or not, we would prefer to see it clarified.

The CWS Report claims that "post-breeding disturbance of [Double-crested Cormorants] should continue" to discourage or eliminate the presence of cormorants on HBI. The report ignores the role of the cormorants in attracting herons to the same trees for nesting. Marshy wetlands that might have provided viable food to inexperienced, recently fledged herons and egrets are not found at HBI. The attraction, as witnessed by observers in the years prior to the culling, when herons, egrets and cormorants were co-existing in this large and diverse breeding colony, was the food in the form of regurgitated fish from the cormorant nests overhead. As well, all three species of herons continue to roost on HBI, after the nesting season. Our concern is that continued harassment of cormorants the birds will result in further disturbance to herons, potentially impacting their post-fledging survival.

CWS Recommendation #3:

Establishment of buffer zones – Published recommended buffer zones for breeding GBHEs and GREGs…" (The CWS Report, pg 30)

Critique of Recommendation #3:

Buffer zones are important for breeding Great Blue Herons and Great Egrets. In fact the Ministry has established buffer zones for Great Blue Heron specifically. However, it is Ministry staff who are violating the buffer zones. Further, most of this report is an attempt to justify why entering the buffer zone with motor boats, ATVs, guns, camping equipment, composting activity and post-breeding nest disturbance does not impact Great Blue Heron and Great Egret chick recruitment.

CWS Recommendation #4:

"Minimizing disturbance to nesting birds by the public – The presence and activities of protesters during the 2005 breeding season caused undue disturbance to nesting birds…" (The CWS Report, pg 31)

Critique of Recommendation #4:

The CWS Report suggests that the "protesters" in canoes, kayaks and small motor boats caused undue disturbance of nesting birds while Ministry activity such as the use of motor boats, ATVs, the collection of dead and dying birds, the operation of the composter, the use of guns and the construction of work sites did not disturb the birds to the same, or a far greater, degree.

The fact is that both the CWS and the Ministry require independent observers to hold them accountable since both have failed to provide accurate, unbiased information and both have failed to keep the commitments made when the management programme began.

The Ministry provided assurances that upon the first sign that cormorant control was reducing diversity, or disturbing the herons, it will stop. Clearly this has not been the case. When the pair of nesting Red-tailed Hawks abandoned HBI, the Ministry blamed the cormorants. Now the CWS report fails to address the fact that the data demonstrate the negative impact of cormorant culling on HBI Great Blue Herons.

Ministry staff said the cull would stop when there were live chicks in the cormorant nests. The Ministry continued to shoot even though the film taken by the observers (referred to as "protesters" by the CWS) showed cormorant parents feeding their young. The Ministry stopped only when a press release was issued charging the Ministry of broken promises and orphaning young cormorants.

After the observers left, the Ministry continued to destroy nests through the breeding season when live chicks were in the nests.

The Ministry only acknowledged the enormous wounding and loss rate when the observers brought this to the attention of the Minister and the public.

It is important for the Minister and the public to get open and transparent information. This has not been provided by the MNR to date. If the cull is implemented this year, the MNR should invite a representative from the observers to witness and document the cull and report back on the activity.

Conclusions:

The CWS report is seriously flawed and therefore the recommendations that flow out of the report are suspect. We urge you to adopt our seven recommendations as set out at the beginning of the report. We urge you to take a precautionary approach to the HBI colony and to a provincial wide approach to cormorants in Ontario.