



## **Reasons for Population Growth**

The increase in North American cormorant populations can be explained by a combination of factors, more often closely related to human activities:

- abundance of small forage fish on which cormorants feed-as a result of overharvesting of predator species;
- arrival of human-introduced fish species (e.g. smelt, alewife and goby);
- huge open-pen catfish farms in cormorant wintering areas along the Mississippi River;
- decline in contaminant levels in cormorant habitat;
- better nesting conditions thanks to the protection of sites by conservation or other agencies;
- new, human-created habitats (rock islands in the seaway, hydroelectric towers);
- relatively few natural predators.

In Québec, the recent increase in the cormorant population in the river section of the St. Lawrence may be partly due to an overflow of birds from nearby colonies (Lower Estuary, Ontario, United States).

Disturbance triggered by control measures, such as shooting or harassment, causes cormorants to seek new nesting sites.

## **Cormorant Diet**

Cormorants are opportunistic predators, feeding primarily on small fish (5-15 cm) and invertebrates such as molluscs and crustaceans. Their diet varies with prey availability. In the St. Lawrence Estuary, cormorants feed on capelan, herring and lance, whereas in Lake Saint-Pierre, they feed on yellow perch, pumpkinseed, rock bass, brown bullhead, minnows, pike and walleye. In inland lakes, the cormorant's diet consists of suckers, fallfish, yellow perch, brook trout and other salmonids. Adult cormorants eat an estimated 400-500 grams (about one pound) of food per day, although the daily intake can fluctuate. Cormorants normally catch just enough fish to survive or feed their nesting young.

## **What are the real impacts?**

Other bird colonies, such as blue herons and night-herons, are often abandoned following a cormorant invasion due to interspecies competition and habitat degradation. Accumulation of cormorant guano kills vegetation and nesting trees. In the past, the negative effects of guano on islands in the St. Lawrence Estuary, which are also used by the Common Eider, were so great that a cormorant control program was implemented. However, it is now thought that this habitat disturbance is part of a natural vegetation renewal cycle, similar to what occurs following forest fires. Cormorants have the potential to significantly affect fish stocks and, consequently, fishing quality. However, most of the time, cormorants adapt their diet to the quantity and diversity of available prey without endangering fish species. Given that the natural mortality rate of the cormorant's prey is already very high, it is hard to attribute the decline in fish numbers solely to the presence of cormorants. In Lake Saint-Pierre, for example, some have attributed part of the decrease in yellow perch stocks to cormorants. However, fishing success rates had already started to decline a few years before a colony of cormorants arrived on the lake. Cormorants are also abundant in Lake Saint-François, where yellow perch population rose 70% between 1996 and 2004 while the nesting population of cormorants grew from a few individuals to nearly 800 breeding pairs.

The arrival of any new predator in an already fragile environment can be more problematic, especially because it can create an imbalance. It can also compromise the survival of species at risk. In addition, whether justified or not, the impression that cormorants significantly affect fish populations can lead to a decline in interest in fishing and, consequently, in the associated economic benefits.

On the other hand, a region can use the presence of cormorants to develop a major tourist attraction.

The actual impact of cormorants on fishing quality is therefore very difficult to evaluate and varies from one body of water to another.

## How and When to Take Action

Various factors (ecological, environmental, social, economic, etc.) must be taken into account when deciding whether or not to initiate control measures. The actions taken will vary depending on needs and anticipated results: every situation is different. The methods used to control cormorants can be very costly and entail long-term action. One option could be to let nature take its course: in this case, doing nothing (status quo) is considered a management decision. While it is possible that the colony will self-regulate if left alone, there is also a risk that "excess birds" will move to sensitive sites (e.g. a colony already occupied by other species of concern).

For all of these reasons, control programs must be carefully planned and based on scientific data, which first requires a study of the actual impacts and anticipated net benefits. Poorly planned or unwarranted control is neither desirable nor beneficial in the medium or long term. In fact, it may even exacerbate the problem by promoting population growth, or lead the birds to move to more sensitive sites. Any cormorant control action should be implemented in consultation with neighbouring provinces and states and decided by experts.

## Hunting or Killing as a Control Strategy

Killing cormorants is rarely a desirable solution, as it can have widely varying effectiveness in controlling the species. Some killing operations do not appear to have been successful in actually decreasing cormorant numbers; in other cases, frightened birds left the area only to return a few weeks later. Shooting the birds may merely create room that cormorants from surrounding areas will be quick to fill. Shooting as a means of ridding a site of cormorants should therefore be supported by similar efforts in other parts of the bird's range. Steps must also be taken to make an area less attractive to cormorants. Enough birds must be killed to have an actual effect on numbers. In itself, killing is a not an acceptable solution; it solves the problem locally, but moves it elsewhere. However, in specific cases, such as where there is a real and urgent need to control cormorants, killing them is the most effective solution.

## Options

- Self-regulation (no human action) by letting the natural balance of the ecosystem restore itself.
- Oiling (egg sterilization).
- Frightening the birds away to another site that can receive them. However, since it is impossible to control cormorant movement, the birds could move to a site where their presence would be more problematic.
- Disturbing or destroying nests during breeding.
- Killing adult cormorants (to be used as a last resort).

Some of these methods result in cormorants moving to another site and taking the problem with them; hence the need for cooperative action with neighbouring jurisdictions.

## Government Involvement

Between 1989 and 1993, the Québec government implemented a control program to reduce the Double-Crested Cormorant population in the estuary. The population decreased by 46%; however, after the program ended, cormorant numbers began increasing again, although less rapidly. The program did not reduce the proportion of colonies in trees, which are the hardest to control. In fact, this proportion increased.



**Egg oiling**

A number of studies have been undertaken in recent years to determine the diet of cormorants in various colonies as well as the origin and movement of cormorants that stage in Québec. Thousands of cormorants in Ontario, Québec and the United States have been banded and efforts continue in this regard. Moreover, the public is invited to report any sightings of banded birds to the Ministère des Ressources naturelles et de la Faune (see contact information).



**Banded cormorant**

Furthermore, action (egg sterilization) has been taken to control the Lake Saint-Pierre cormorant population and prevent the birds from moving to other sites.

Various task forces have also been set up so that Québec can share information and harmonize its actions with those of neighbouring provinces and states to ensure more effective cormorant monitoring.

### **How You Can Help**

Do not disturb colonies. It can cause the cormorants to move to other sites where their presence may be more problematic (e.g. a heronry).

Do not disturb or destroy nests, because these actions may reduce the effectiveness of control programs if such measures have been conducted. Report any relevant sightings (new colony, banded cormorants, etc.) to the Ministère des Ressources naturelles et de la Faune.

Share this information with friends and family. It will help enhance knowledge of cormorants and reduce some of the prejudices against them.

## **For Further Information**

Visit our Web site:

[www.mrnf.gouv.qc.ca/english/home.jsp](http://www.mrnf.gouv.qc.ca/english/home.jsp) or contact the regional office of the Ministère des Ressources naturelles et de la Faune.

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