

When Fish- Eating Birds Become a Nuisance

by Gerald Dickie

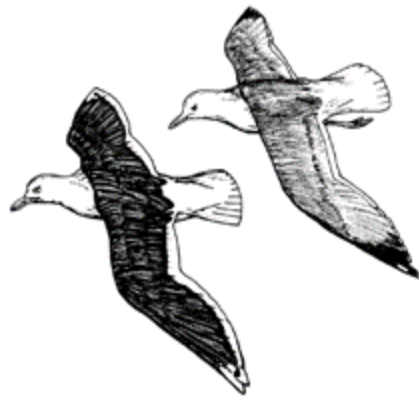
More people are starting their own fish farms for personal use or to raise and sell fish. Fish-eating birds come into conflict with pond owners when they focus on this new and often convenient and attractive source of food. The following fish-eating birds can sometimes cause problems in Nova Scotia.

Double-crested Cormorants (*Phalacrocorax auritus*) and **Great Cormorants** (*Phalacrocorax carbo*) are colony nesters found along the coast of Nova Scotia, especially along the eastern shore and in Cape Breton. They build flimsy nests of sticks and seaweed in trees and on the ground. These goose-sized birds are mostly black, with long hooked bills and webbed feet. They actively pursue fish that range in size from minnows to large gaspereau. Cormorants are daylight feeders. **Provincially protected.**



Great Blue Herons (*Ardea herodias*) are colony nesters, usually on coastal islands, and are often found nesting in the same area with double-crested cormorants. Herons build bulky nests of sticks in trees. They are very large birds, greyish-blue in color, and have a long, yellow bill. Herons fly with their neck folded in a s-shape and their long legs trailing behind. They stand motionless in shallow water when hunting, striking quickly with their bill to catch tadpoles, frogs, salamanders, large insects, and fish up to 20 cm long. Great blue herons are primarily daytime feeders, but occasionally feed at night. **Federally protected.**

Great Black-backed Gulls (*Larus marinus*) and **Herring Gulls** (*Larus argentatus*) are ground-nesting, colonial birds. Their nests are mounds of grass hollowed in the center and found on coastal islands and occasionally on islands of large lakes. The black-backed gull is larger than the herring gull. The adult's black back and top of the wings contrast sharply with the white plumage on its head and remainder of the body. The adult herring gull is light grey on the back and wings, while the rest of the body is white. Immature birds of both species are mottled brown and white. Both species have a slightly hooked bill and webbed feet. They are daytime predators that feed on the surface of the water and on land. Gulls prey on fish that are slow enough to be captured, but they usually eat dead and dying



fish or fish parts. They also prey on small mammals and eider ducklings. As scavengers, gulls clean our beaches of dead fish that have washed ashore. **Federally Protected.**

Common (*Mergus merganser*), **Hooded** (*Lophodytes cucullata*) and **Red-breasted** (*Mergus serrator*) **Mergansers** nest individually throughout Nova Scotia. Common and hooded mergansers often nest in tree cavities, while red-breasted mergansers have their nests on the ground. They all have a slender, spike-like bill with a



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hooked tip and jagged edges. Common mergansers are also known as shell ducks. All except the male common merganser have crested heads. The plumage of males is black and white, while females are grey and brown. Mergansers dive to catch fish below the water surface. They are daytime feeders and prey on minnows to smolt-size (20 cm) fish. **Federally**



Ospreys (*Pandion haliaetus*) nest near water on islands along the coast or inland. The nest is a bulky mass of sticks built in trees or other suitable nesting platforms such as power transmission poles. They use the same nest site year after year. Commonly known as fish hawks, ospreys are brown on the back and white underneath, with a white head and dark brown line through the eye and side of the face. They have specialized feet for catching and holding fish. When hunting for food, they will hover before plunging vertically into the water to catch fish with their feet. Ospreys feed primarily on flounders, eels, and harbor pollack, fish that usually weigh less than 400 grams. The osprey is the provincial bird emblem. **Provincially protected.**

Legal Status

All fish-eating birds are protected under the provincial Wildlife Act or the federal Migratory Birds Convention Act. However, mergansers can be shot during hunting season. If problems exist with any of these birds, the Department of Natural Resources should be contacted for assistance. Only after all options to reduce or prevent the problem have failed will a special permit be issued by Natural Resources or the Canadian Wildlife Service to the operator or owner to kill the birds **at the site**.

Damage Identification

Open ponds and aquaculture facilities holding large concentrations of fish attract fish-eating birds. These birds do not catch all the fish they pursue. Some fish escape unharmed, while others are wounded and may die. Deep gouges on the back and sides, scrape marks, or puncture wounds in the fish suggest a predator is in the area. White excrement, bird feathers, or bird foot prints are other signs of bird predation. Fish-eating birds feed in the daytime and can usually be seen and identified. When concentrations of fish are high, the loss of fish may not be noticed for some time.

Preventing bird problems should be a major consideration when planning and building a new fish pond. Owners should expect and prepare for depredation problems because they typically occur.

Management Options

Several factors affect the vulnerability of fish to predation, such as the habitat surrounding the fish culture operation, the size of the fish, and the density, size, and number of holding structures. Fish culture establishments should be located well away from known breeding sites of herons, cormorants, gulls, and ospreys. Obtain information on migratory concentrations and regular flyways of these species from biologists with the Department of Natural Resources and the Canadian Wildlife Service. The facility should also incorporate structures that exclude or deter birds and prevent problems from arising. It is more difficult to reduce or stop an established problem than it is to prevent it from starting.

Holding facilities should be constructed to minimize bird access to the fish. The size and shape of ponds influence the effectiveness of some control methods. Ponds should be a minimum of 1m deep, while banks should be steep-sided and clear of any tall vegetation that could provide cover for birds.

Concrete raceways with straight vertical walls are more easily protected from birds than earthen systems. Water depth should be at least 1 m and the water level maintained at 1 m below the wall surface to prevent feeding.

When choosing an option to deter fish-eating birds, you must consider the degree of the problem and financial loss, the expected cost of control, the type of facility, the bird species involved, and the long-term effects on facility operations.

1. Exclusion

When fish depredation problems occur, use methods that physically exclude the birds. Problems vary with individual species, their abundance, the proximity to nearby nesting or roosting sites, the availability of alternate feeding sites, and the time of year. Consequently, control methods vary and a combination of methods is frequently required.



Ponds and raceways can be completely or partially enclosed using overhead wire, line, net, or screen secured to posts and frames. It should be constructed high enough for staff to move about within the enclosure. Netting should have a 3 to 5 cm mesh. Completely enclosing a facility in screening or netting is the most expensive method, but it effectively excludes all predatory birds. The cost may be justified over time by reducing loss and the need for active control measures. A partial enclosure is less expensive, but may not exclude all fish-eating birds. For

example, overhead wires will deter gulls, ospreys, cormorants, mergansers, and possibly herons, but not smaller birds like the kingfisher.

It may be practical to enclose large ponds, but a degree of protection can be obtained by using overhead wires and lines, and wires and mesh on the sides. The wires may run in one direction or in a grid-mesh arrangement. Spacing of the wires depends on the bird species. Gulls and ospreys will be deterred with 125 cm spacing, mergansers with 65 cm spacing, herons with 30 cm spacing, and cormorants with 5 m spacing.

The sides should be wire or mesh covering to prevent birds from walking or swimming into the facility. Wading birds need to be excluded from stocked ponds by perimeter fencing. Because herons hunt by wading slowly through shallow water areas, the pond must be steep-sided and at least 1 m deep at the edge. If the pond is not steep-sided, a fence must be placed to keep the birds from successfully feeding in water less than 1 m deep. The fence must extend at least 1 m above the water and reach to the pond bottom. The mesh must be small enough to prevent fish from getting to the outside.

Losses to fish-eating birds can be reduced with preventive measures. If loss rates are significant, the cost of total exclusion may be realized within three or four years. However, before embarking on any bird control program, evaluate the cost-effectiveness of such actions. Costs may be greater than the value of fish lost to predators.

2. Scaring Devices

Many types of audio and visual bird-scaring devices are available. They have been used alone or in combination. Consideration should be made of the possible disturbance to adjacent residential areas before embarking on a program.

Loud sounds, alarm calls, and other noise-producing devices (e.g., gas-operated exploders, fireworks or bird distress calls) are of limited value. If used, these devices should be automatic or require a minimum amount of labor, emit noises at irregular intervals, and come from changing directions. Frightening devices are not effective unless used aggressively in a carefully-planned program. Visual devices include foil and cloth strips, flags, balloons with or without eyespots, flashing lights, model aircraft, scarecrows, and artificial hawks or owls. Results from using these scare techniques have varied depending on the species, the time of year, and the location.

If deterrents are used when the birds first appear, they are more successful than if you wait until the birds have established a regular feeding pattern. It is difficult to deter fish-eating birds if ponds are heavily stocked. Several scare methods should be used so that birds do not have the opportunity to get used to any one method.

3. Removal

The Department of Natural Resources or the Canadian Wildlife Service may issue permits to remove some fish-eating birds from a problem area. If a problem occurs, contact the nearest Natural Resources office. Changing public attitudes and current laws means killing to reduce predator problems will only be considered as a last resort. No permits will be issued to kill ospreys.

Parasites and Disease

Fish-eating birds have the potential to spread parasites and disease. They may pollute the water with fecal droppings if they concentrate in great numbers at ponds. One example of a parasite is the immature stage of the flatworm, which causes black spot disease. The flatworms are passed from the mouths of fish-eating birds into the water. The immature stages grow in snails before attaching to fish. Once on a fish, the flukes attach and burrow just under the skin close to the underside of the scales and form thin cysts around themselves. The tissue of the fish encases these cysts. Black pigment accumulates in the outer layer of this tissue, resulting in black spots. If the fish is heavily infected, it may be rough to the touch.

Black spot disease will not infect humans. Freezing, skinning or cooking will destroy these organisms. Having black spot disease in fish rearing ponds will lower the value of the fish and could cause a substantial economic loss to the owner. For more information on this disease or others, contact the Department of Fisheries and Oceans office in Halifax.

Conservation

Fish-eating birds are an integral part of the ecosystem and have great aesthetic value. Bird watching and photography create indirect economic benefits. Scientists monitor these bird species to check the health of the environment.

