

B.C.'s Double-crested Cormorant Reserves

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T. Ovanin

The eight Ecological Reserves located in the Trust area were introduced in the first issue of *The Islands*. Reserve No. 37, established to protect an undisturbed stand of Garry Oaks on Mount Maxwell, was highlighted in the second issue. In this issue, the focus is on two marine Ecological Reserves, established to protect two colonies of Double-crested Cormorants (*Phalacrocorax auritus*), a species that has a very limited distribution in B.C.

Who are the cormorants?

The world's cormorants have been assigned to an order of birds, the *Pelecaniformes*, which as the name implies also includes the pelicans. These are large aquatic fish-eating birds with all four toes webbed (ducks and geese have three webbed toes).

Birds of the cormorant family, *Phalacrocoracidae*, are large distinctive water birds whose throat pouch is very small compared to that of pelicans. Adults appear largely black at a distance and are commonly seen flying low over the water, perched in an upright position (at times assuming a "spread eagle" stance), or diving for fish. The sexes are similar in appearance and are silent except on nesting grounds. Often confused with loons, cormorants have longer tails and slender bills with hooked tips. In flight, the head is generally held higher than the body, while a loon's head is held lower; the wingbeats of loons are uninterrupted by gliding, but this is a common characteristic of the flight of cormorants. Take-off from the water seems to require a substantial effort, involving a running start and considerable paddling and slapping with the wings.

Although their food is mainly fish, captured by underwater pursuit and by probing under rocks on the ocean floor, research has confirmed that there is little competition between cormorants and fishermen. Herring, sandlance, sculpins, and blennies are the species most commonly eaten. Dives are generally of 20 to 30 seconds duration. Underwater propulsion is usually by the feet alone, but the wings may also be used.

All three species of B.C. cormorants may be seen in the Trust area, Brandt, Pelagic, and Double-crested Cormorants. Adults are the most easily distinguished, especially in the spring while in breeding plumage. The *Double-crested*, which measures up to 36 inches (91.4 cm) in total length, is readily identified by a bright yellow naked throat pouch. Ironically, its double crest is seldom apparent. Although it has a wide range in North America, including fresh water habitat in the Prairies, it is only known to nest in B.C. within the Trust area. The largest known colony is on Mandarte Island in Haro Strait. In our area, this year-round resident usually nests in colonies on level or gently sloping portions of isolated rocky islets, although nests in snags (such as on the Ballingall Islets) are not uncommon. The large stick nests range up to 2 feet in diameter and appear to be reused year after year. Eggs are laid in April and May and are incubated for 28 days. The young are fed by regurgitation until six or seven weeks old, when they begin fishing on their own.

The *Brandt* is a crestless cormorant, about the same size as the Double-crested, but differs in having a dull blue naked throat pouch during the breeding season and nesting only sporadically on the west coast of Vancouver Island. A large northward migration of thousands of these birds from the U.S. west coast occurs in the autumn. Brandt Cormorants are common winter visitors to the Trust area. They are known to concentrate in the vicinity of Active Pass from November to April, where up to 7,000 individuals have been counted at one time. Winter roosts have been identified throughout the southern Gulf Islands.

The *Pelagic Cormorant* is the smallest of B.C.'s cormorants, measuring up to 26 inches (66 cm) in total length. It differs from the previous two in having a dull red naked throat pouch and, in the breeding season (February to July), large white flank patches and conspicuous crests on the forehead and crown. This permanent resident of the B.C. coast (including the Trust area) is B.C.'s most abundant cormorant. Pelagics are not particularly colonial and prefer to build their nests on the narrow ledges of relatively predator-proof precipitous cliffs, at numerous sites along the coast.

Protection of Breeding Colonies in the Trust Area

As summarized above, Double-crested and Pelagic are the only cormorants nesting in the Trust area. Concentrations of Pelagic Cormorant nests have been found at many locations, including sites on Gabriola, De Courcy, Galiano, Prevost and Saturna Islands, as well as on Indian Reserve land on Kuper, Tent and Mandarte Islands.

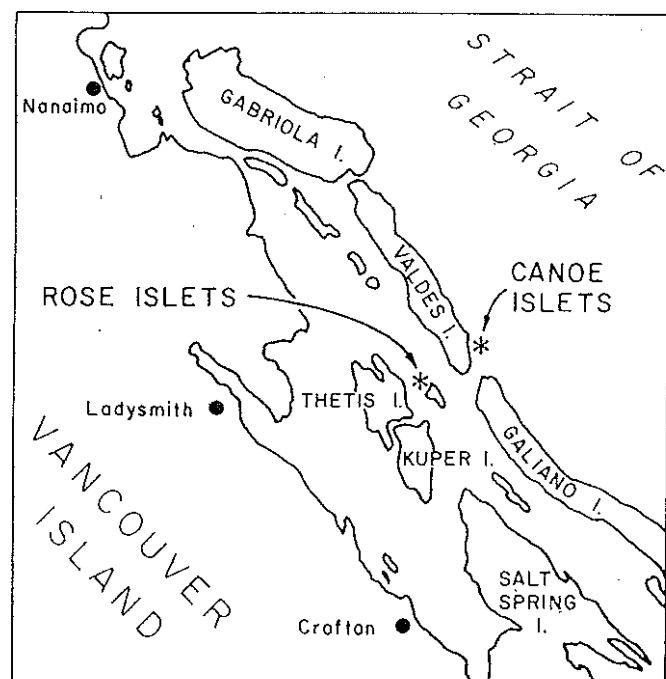


Figure 1. Location of the Cormorant Reserves.



Figure 2. Double-crested Cormorants on the Rose Islets.
(Photo credit: B.C. Provincial Museum)

In 1969, when Rudolf Drent appealed to the Provincial Government to protect the very limited breeding grounds of the Double-crested Cormorant in B.C., he stated that only four colonies of any size existed at that time in the Province: Mandarte Island, Ballingall Islets (Provincial park west of Galiano), Rose Islets (east of Thetis), and Canoe Islets (near Porlier Pass). Citing the disappearance of several other colonies in recent years, from both the Gulf Islands and the San Juans, he proposed that the Rose Islets, with the second largest colony, be designated an Ecological Reserve.

On May 4, 1971, two Ecological Reserves were created to protect Double-crested Cormorant colonies: Reserve No. 17 on the Canoe Islets, and Reserve No. 18 on the Rose Islets (Figure 1). The Canoe Islets (covering 1.5 acres) are low, rocky and lichen-covered, without vascular plants. The Rose Islets (roughly 2 acres in size) are similar, but support some growth of herbs, grasses, and shrubs. Other marine birds, such as Pigeon Guillemots, Black Oystercatchers and Glaucous-winged Gulls, also use these islets for nesting.

Besides protecting important marine bird breeding habitat, these two Ecological Reserves have already proven to be useful in the study of bird behaviour, particularly the co-existence of competing species. Observers have noted competition for nest sites between the Double-crested Cormorants and Glaucous-winged Gulls, and other problems have come to light.

Problems on the Cormorant Reserves

Records of the Provincial Museum show that the mere establishment of Ecological Reserves does not necessarily insure that wildlife populations or important habitat will be protected. Drent noted 182 breeding pairs of Double-crested Cormorants on the Rose Islets in 1968, and about 30 pairs on the Canoe Islets. The cormorants have declined markedly since then. In 1981 Wayne Campbell of the Museum reported finding only 33 nests on Rose and none on the Canoe Islets.

What has happened? Both groups of islets are situated in an area of relatively high use by recreational boaters

(near Porlier Pass) and are subject to human disturbance. Although Ecological Reserve designation prevents development of the islets, it cannot prevent disturbance by people who are either unaware or unconcerned. Ill-timed visits to marine bird colonies can cause disruption which delays nesting. When adults are frightened off their nests, unhatched eggs and defenceless young are exposed to swift predation by crows or hovering gulls (Figure 2). An observer who disturbed the Rose Islets colony twice in one day to recount eggs and young in 1981 found that 10 cormorant eggs were destroyed by gulls during the first brief disturbance.

Apparently the Canoe Islets colony was disrupted when the cormorant nests were destroyed by humans in 1976. The cormorants have not re-colonized the Ecological Reserve since then, but the gulls certainly have. In 1981, 62 Glaucous-winged Gull nests were noted, covering about 50% of the available nesting habitat.

In general, although reference has been made to the persecution and shooting of cormorants in the San Juan area in the past, hopefully marine birds in B.C. are not being exposed to this fate. Other species are subject to astonishing losses at the hand of gill-net fishing, but it is not known to what extent cormorants are affected in this way. An oil spill in Georgia Strait could, of course, play havoc with critical marine bird habitat and endanger the lives of thousands of birds.

An Appeal to Common Sense

There is no longer any doubt that, although most Ecological Reserves will withstand light use, some are so fragile that even casual use can cause severe damage. Sea bird colonies are so sensitive at critical times of the year that simply a walk through the area or even just approaching by boat can cause destruction. When startled birds leave their nests, even momentarily, the contents are exposed to predation.

In recognition of this potential for serious and long term damage, in 1977 an Order in Council was passed closing Ecological Reserves Nos. 17, 18 and others established to protect seabird colonies, to all uses or entry without the issuance of a permit from the Ecological Reserves Unit.

Islanders and visitors are both urged to heed this regulation, to avoid disturbing all seabird colonies in every way possible, and to focus their attention on the recreational opportunities present at the hundreds of more durable sites around the Trust area.

THOMAS OVANIN
Staff Research Officer

