

# Unusual mortality of a juvenile Double-crested Cormorant

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Figure 1. The head of the dead juvenile Double-crested Cormorant (determined to be female) found near Middle Island, Lake Erie, 2 August 2012. Photo: Barry Kent MacKay

**A juvenile Double-crested Cormorant** (*Phalacrocorax auritus*) was found dead, floating in shallow water 10 – 20 m from the south shore of Middle Island, western Lake Erie, Ontario (41° 40' 54" N, 82° 40' 54" W) on 2 August 2012 (by BKM). It was very freshly dead, with the eye and colouring of the soft parts appearing normal, rigor mortis only just setting in (Fig. 1). The bird was fully feathered, but with bases of the contour and wing feathers still showing sheaths. Based on the feathering, the bird was estimated to be about 7 weeks of age,

and appeared capable of flight based on the size and development of the wing feathers. The bird was emaciated; the wasted flight muscles and prominent sternum were noted immediately.

The bird was prepared as a study skin the following day, and the body was dissected (by BKM) to try to determine why it was so rigid from end to end. Astonishingly, within the gut, extending from the clavicles to the vent, was a 27 cm long partially digested and probably previously desiccated outer wing of another cormorant.



Figure 2. The tightly folded, 27 cm long, outer wing of a Double-crested Cormorant, removed from the gut of a freshly dead Double-crested Cormorant, found near Middle Island, Lake Erie, 2 August 2012.

It consisted of the radius and ulna (now bare of muscle tissue) and the primary wing feathers and at least some secondary feathers and wing coverts, still attached to the bones, all tightly folded together (Fig. 2). The wrist of this outer wing was at the anterior end of the gut (near the clavicles), while the tips of the primary feathers were barely visible at the vent. This swallowed part of a wing was only about 1 cm shorter than the wing of the now dead bird.

### Discussion

The cormorant colony on Middle Island had been subjected to a major cull of birds in late April of 2012, in the final year of a five year cull by Parks Canada. Middle Island is part of Point Pelee National Park. Dead cormorants littered the ground at the time this juvenile bird was found. When birds decompose and dry in the sun, wings often separate at the joints, but at least some wing feathers, particularly the longer primaries, typically remain strongly attached to the end of the wings (pers. obs.). A number of such desiccated outer cormorant wings were seen on Middle Island when BKM boated near the island on 2 August. They would certainly have been

available to the juvenile bird. Inexperienced and probably hungry, this bird apparently found and consumed one of the desiccated partial wings. As the desiccated wing part was probably already fairly tightly compressed, the bird managed to get it down, but was unable to subsequently regurgitate it, filling and blocking its digestive system, and subsequently dying of starvation or by drowning.

Double-crested Cormorants are readily able to swallow intact elongate objects, although they would ordinarily be flexible. Prey lengths of 30.5 cm and 41.5 cm have been reported (Hatch and Weseloh 1999). They do not seem to be bothered by swallowing things that may be rather rough on the surface, such as various crustaceans or fish with spiny fins. It is perhaps not too surprising that this bird undertook to swallow a longer object. However, that it was able to force this unusual item through and apparently straighten out the entire digestive system seems remarkable.

Cormorants usually eat almost entirely fish, taking a wide variety, though they will opportunistically take aquatic insects, amphibians and crustaceans in small numbers. Almost all their prey is obtained in

the water, usually under water and in shallower water closer to shore. Only very rarely have they been known to take such things as a snake or a vole (Hatch and Weseloh 1999). The choice of a desiccated outer wing is certainly unusual, but may have been facilitated by availability of the object, possibly floating in the water, and motivated by hunger. But, why was the wing not regurgitated, even if it was retained for a time to digest any remaining meat on the bones? Cormorants routinely regurgitate fish to feed their young and to be rid of pellets of fish bones and crustacean exoskeletons. And, if disturbed, easily regurgitate food. Regurgitation is generally easy for birds (Terres 1980). However, the stomach would normally act to contain any indigestible parts, or partially digested food, that is readily emitted from there. But, in this cormorant, the swallowed stiff outer wing was forced right through the entire digestive tract. The long primary wing feathers forced to the very end of the digestive tract were not apparently removable through regurgitation, something that would normally be a reflex of only the stomach and oesophagus.

There may have been some desiccated meat remaining on the bones of the partial wing. Any remaining such digestible parts would have been toward the bend of the wing, swallowed in such a way as to be at the front end of the living bird. When swallowed far enough for the bend of the wing to reach the stomach, the bird was apparently unable to reverse the process and eject the remains. Had the wing been swallowed the other way around with the thick end first and not forced beyond the stomach, perhaps this

young bird might have ejected this peculiar attempt at a meal.

Survival of first year cormorants tends to be rather low (Hatch and Weseloh 1999). Starvation probably is a significant cause of mortality in young cormorants as it is among many species of birds (Newton 1980). Scavenging is apparently not ordinarily found among Double-crested Cormorants. The abundance of decomposing fish in colonies, for example, suggests that regurgitated prey is seldom, if ever, reswallowed. However, to a starving young bird such a thing may become an option, and a very hungry bird with no other options apparently considered a very unusual sort of meal, one that ended its life.

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#### Acknowledgements

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#### Literature Cited

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