

Northeast Avalon Times August 2021

The parental behaviour of murre

Birds I View

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Murre chicks departing Funk Island with their fathers [photo: Bill Montevecchi]

During my summer research visits to Funk Island in 2019 and 2020, Mohammad Fahmy and I attached light-sensor tracking devices to the leg bands of parental murre. We did this to learn where the murre migrate and where they spend the winter.

During this summer's recent research visit with a stalwart crew of daughters - Gioia and Marina – we spent considerable time attempting to recapture murre to retrieve the devices. In the process of waiting to see a murre with tracker on its leg then attempting to catch the bird

among a myriad of neighbors with a long noose pole, there was lots of time to watch their parental behaviour.

The two mates of each monogamous pair take turns sitting on their single egg for about 30 days. Following hatching, the parents devote all their time to caring for their chick. The chick's basic needs include warmth and protection, feeding, cleaning, and taking the chick to sea. Murre parents share in all aspects of offspring care, and it takes two parents to raise a chick successfully. Should one parent get entangled and drown in a gillnet or otherwise not return the chick will die.

The newly hatched chick needs to be warm and dry. During torrential downpours, which were frequent this summer, chicks of all ages can get soaked if not protected in warm down under a parent's wing.

Cleanliness is a survival necessity for murre chicks. Mud sticks to the feathers and underlying down. This compromises the chick's waterproofing and insulation needed to survive in the frigid North Atlantic. Mud on a murre like oil allows the cold water to penetrate through to the skin and body, resulting in hypothermia and death. Parents vary in their fastidiousness, and immaculately clean and dirty chicks are a common sight in the colony.

Feeding chicks is an energy demanding parental responsibility. The chick is fed about four capelin each day. On each foraging trip, a parental murre carries a single capelin back to the chick. This necessitates two trips by each parent each day.

Beyond the rigors of locating a fish then catching it, Funk Island is a difficult place from which to forage. The tiny rock island is about 50 km offshore, but the murre forage inshore on spawning aggregations of capelin. This often entails making two 80-100 km round trips twice each day for 3 weeks until the chick is ready to go to sea.

Factor into this parental effort that murre have the most expensive flight costs of any bird. A murre's wing is small compared to its body mass, as it is proportioned for both flight in the air and flight underwater. While the murre's aerial flight is labored and straight-lined, their underwater performance has the speed and agility to capture fish. As well, this morphological adaptation gives a 1 kilogram murre the ability to dive deeper than any bird, except penguins. Maximum dive depths can exceed 200m! Murres are Olympians in all abilities and aspects of their lives.

Feeding of a murre chick involves a magnificent coordination. When the parent returns with a fish, she/he calls and bows to alert the chick. She/he then spreads her/his wings around the chick, bows and lowers the fish to the chick. The other parent scans vigilantly to prevent a neighbor from interrupting the transfer and stealing the fish.

Parents carry the fish with its head in the bird's throat and the tail sticking out of the beak. So when the fish is passed to the chick, it gets it tail-first and must maneuver the fish to swallow it head-first. This is a critical transfer and unwary parents can have their feed stolen by a harassing neighbor, especially later in the season when failed breeders and pre-breeding immature murre are on the lookout.

The one key aspect of parental care that is the sole purview of the male is taking the chick to sea. Why this responsibility falls exclusively to the male is a matter of study and debate. When the chick is about 3 weeks old, it gets the urge for going. Up to this point in its life, the chick has only moved a few inches about the breeding site, though it now will make a long trek with its father over the island to the sea. It's an all or none rite of passage.

As the male parent and chick make their way to the sea often in a procession with other murre, they call constantly to one another maintaining a tight bond. After dark their individual vocal recognition and linkage is essential.

Once at sea, the parent and offspring swim northwards following the spawning capelin. At this time the male moults all of his outer wing feathers and like the chick is flightless. The pair remain together for about 2 months. The female remains at the colony for another week or two, possibly maintaining the breeding site for the following spring when the mates will meet again.

For the parental reunion to occur, the murre will have to surmount the challenges of winter storms, the murre hunt and oil pollution. If all goes well, the murre of Funk Island will be back next spring to engage and celebrate the creation of a new life.

Is the old "normal" making a showing in the ocean

What's going on! The capelin are on time. The fishery catches of lobster, crab and cod are strong and robust. And squid are abundant along the coasts. Signs of good reproductive success by kittiwakes and other seabirds are also evident. It is refreshing to see these signs of ecosystem resilience.

So while it's not all bad news for a change, we need to wait for the science to assess the state of the ocean and the sizes, distributions and abundance of the capelin. I am looking forward to evaluating the annual fate of the seabirds.

Birds in the area

About 200 pairs of double-crested cormorant have established a colony on North Penguin Island off Musgrave Harbour. Cormorant populations recovering from previous declines, much of which was due to persecution.

On 9 July, David Boyd photographed a male ring-necked pheasant at Tizzard's Harbour. The species is not native to Newfoundland and the bird is likely an escape from a farm in nearby Summerford. These pheasants have at times survived for a while in Newfoundland but usually cannot endure the winters.

On Ramea, Richard Northcott reported a great blue heron on 3 August and a snowy egret on 8 August. A pair of merlins nesting by Hughes Pond in Portugal Cove fared very well fledging three young birds (Rita Anderson).

The most exciting bird report of the month came from Ruth Bugden who captured some glorious photos of an albino robin at Bellevue Beach at the end of July. Ruth noted some downy feathers on the bird indicating was it likely a recently fledged juvenile.

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https://www.mun.ca/psychology/montavecchi/public_outreach/birds_i_view/