Predation of Bank Swallow nestlings by Ring-billed Gull and Common Grackle

Tianna Burke

Introduction

The Bank Swallow (*Riparia riparia*) is a colonial bird species that breeds along vertical banks located along ocean coasts, rivers, streams, lakes and wetlands (Garrison and Turner 2020) (Figure 1). These banks are often subject to high levels of wind and wave erosion, ice scour and spring flooding, which help maintain the vertical face (Garrison and Turner 2020). Along with nesting in these natural sites, the development of sand and gravel pits has led to an increased availability of vertical faces and the establishment of Bank Swallow colonies inland at artificial sites.

Burrow height is a contributing factor to burrow use as it is deemed to be an important influence on reproductive success of a wide range of species including: Bank Swallows, Tree Swallows (*Tachycineta bicolor*); Rendell and Robertson 1989, Robertson and Rendell 1990), European

Figure 1. Bank Swallows at colony at Wilmot Creek near Bowmanville, Ontario on 31 May 2014.
Photo: Tianna Burke

Figure 2. Young Bank Swallows at burrow entrances waiting for food from foraging parents (July 2014). *Photo: Tianna Burke*

Starling (*Sturnus vulgaris*), Common Goldeneye (*Bucephala clangula*) and Wood Duck *(Aix sponsa)* (Evans *et al.* 2002). Many of these studies associate the preference of cavity height to a decrease in predation rates (Evans *et al.* 2002, Smalley *et al.* 2013, Falconer *et al.* 2016).

Commonly known predators of Bank Swallows include birds, mammals and snakes. Mammals typically prey on reachable burrows from either the top or bottom of the bank. While nesting relatively higher on a bank is preferable for Bank Swallows (Falconer *et al.* 2016), nesting close to the top of the bank can also increase predation of Bank Swallow nests by striped skunks (*Mephitis mephitis*) (Ghent 2001) and snakes (Hjertaas 1984).

Most avian predators will take individual Bank Swallows while they are in an aerial group or single out individual birds, such as recently fledged young (Garrison and Turner 2020). American Kestrels (*Falco sparverius*) have been observed taking nestlings from the edge of the burrow entrance (Windsor and Emlen 1975). Besides predation by American Kestrels and Merlin (*Falco columbarius*) (Falconer *et al.* 2016), few other species of avian predators are mentioned in literature.

Observation

During the summers of 2014 and 2015, I conducted nesting and occupancy surveys of Bank Swallow along the shore of Lake Ontario, near Bowmanville, Ontario. During this time, my field technicians and I observed multiple predation events by Ring-billed Gulls (*Larus*

delawarensis) at the edges of burrows. As nestling Bank Swallows were waiting to be fed at the burrow's edge (Figure 2), Ring-billed Gulls would fly along at burrow height and grab them before they could retreat further back into the nesting cavity (Figure 3). Some Ring-billed Gulls were even observed hovering in front of burrows before choosing which nestling to catch. When a nestling was caught, the gull would land nearby on the beach and either swallow the nestling whole or shake the nestling before consuming it. I watched the latter method of consumption closely and determined that some of the Ring-billed Gulls were

Figure 3. Ring-billed Gull in front of Bank Swallow colony at Wilmot Creek near Bowmanville, Ontario. Gull succeeded in depredating a young Bank Swallow from burrow entrance (28 June 2014).
Photo: Tianna Burke

striking the nestlings on the rocks to stun or kill them before consumption.

While these depredation events were visually observed during surveys, they were also captured on camera while filming occupancy surveys. A large nesting colony of Ring-billed Gulls was located at the Darlington Nuclear Generating Station, approximately 6 km southwest of these observations.

Ring-billed Gulls were not the only unusual avian predator observed feeding on nestling Bank Swallows at the burrow's edge. While reviewing an occupancy survey video on 2 July 2014, a Common Grackle (*Quiscalus quiscula*) was observed using similar behaviour by removing a nestling Bank Swallow from the burrow's edge. As this was not seen in person, we were not able to observe where the nestling was taken or if it was consumed.

During my review of predators known to Bank Swallows, I have not come across any literature that mentions either Ring-billed Gulls or Common Grackles as predators of nestling Bank Swallows.

Acknowledgements

Thank you to Dr. Erica Nol at Trent University, Ontario Power Generation, Environment and Climate Change Canada, and Ontario Ministry of Natural Resources and Forestry for support and funding assistance with this project. Thank you to Birds Canada and the Bank Swallow Working Group for additional support and a wealth of knowledge.

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Tianna Burke
625 Hudville Road
McKellar, Ontario P2A 0B5
E-mail: tiannaburke@gmail.com