



A Forked Tail of Fidelity and Underground Parking

How the barn swallow is navigating habitat loss in Canada.

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The barn swallow would appear to be a common species in Canada, as we can find them in all provinces and territories. Thus, the idea that its population and survival may be under threat can come as a surprise. But in Ontario alone, the barn swallow's population between 1966 and 2009 plummeted by 65 percent, and reports in the past 40 years have shown a 76 percent decline.

These enormous drops have resulted in the barn swallow (*Hirundi rustica*) being listed as "threatened" in Canada, and its global population numbers are on a decreasing trend.

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graceful imagery, which has also been a symbol of hope. But the aerodynamically forked tail and pointed wings of the swallow's body allow this bird to perform airborne manoeuvres of acrobatic agility and reach record speeds of up to 74 km per hour. Hence, this aerial insectivore, with its fluid wingbeats, is well designed for sharp turns, dive-bombs or even low-level flying. It can hug a surface to catch insects, or tip its beak for a drink when soaring above a body of water.

By the end of August, this neotropical long-distance traveller's migration is well underway, and by early September, the remaining migrant stragglers will have followed suit. Western populations will travel a shorter

distance — from Oregon to northern Colombia — than the eastern populations, which winter in South America (south of the Amazon Basin), only to cross the border into our Canadian expanses about 6 months later in late March and early April.

I remember my first year at the University of Victoria, and the wide green space of the quadrangle between the library and the McLaurin Building, where students would gather for lunch in the warm spring air among the bunnies while the swallows would fly across the greenway's breadth, foraging for insects. The excitement of the upcoming summer was in the air, and the fervour of students completing the semester's learning expedition



was contagious. But university students weren't the only ones learning new things over the semester.

The campus barn swallows — just like the propensity for habitual behaviour that we may have for returning to a favourite restaurant — have a fidelity to their nesting areas. And on an expanding campus that is ever changing, barn swallows have had to learn how to adjust to the continuous shift of a campus under constant development. One such obstacle they overcame was learning how to engage motion sensors to come and go from their secured nesting areas in campus underground parking garages. Now, while the urban lifestyle of the university's barn swallow communities has

the safety of a motion-activated door, there are other, less urban communities that may nest near osprey for protection. But don't underestimate these little birds: Although they may cohabitate with osprey for security, they have a fierce nature when nesting. Barn swallows have chased off larger predators, calling out with a warning cheep to signal a threat, while the *churee* whistle will alert surrounding adult swallows to mob a predator. They will even mount a solo attack if they feel their nest is under threat.

When we think of how to respond to the encroachment of human development that affects wildlife, even attempts at recreating replacement structures for swallow nesting sites can have a low success rate for these

high-fidelity nesters. On the other side of the country, in Nova Scotia, the Maritime barn swallow population has seen a staggering decline. There has yet to be a direct causal link for their drop in numbers, but researchers purport that it is related to the bird's food sources and availability; this has sparked a 5-year recovery plan by the province's Department of Lands and Forestry.

Meanwhile, moving back inland from the coast, Ontario has erected new structures along Highway 401 and launched a habitat compensation project in Townsend to compensate for lost swallow habitats. It's a noble intention, but there are a lot of considerations to address when recreating nesting habitats that will meet the needs of these birds to ensure their acceptance. Larger habitat compensation structures, multiple structures in the same location, and nesting cups seem to be the most effective. One Saskatchewan couple near the Qu'Appelle Valley discovered this first hand when they had splendid success with artificial nesting cups fashioned from partial coconut shells.

With barn swallows, some mating pairs will restore and reoccupy their own nests. This led scientists to monitor nesting areas along the Algonquin corridor for almost 15 years, beginning in the late '90s, through banding

projects to survey the barn swallow's population.

The common obstacles to the barn swallow's survival that come to mind are climate change, urbanization resulting in the loss of habitat, and the use of insecticides or neonicotinoids that render their food sources lethal. Although barn swallows can adjust their seasonal migrations based on clues and information offered by their wintering sites, they cannot predict the climate perturbations that make them vulnerable. And so their habitat is the big issue that is within human control. As the degradation and demolition of the structures that they used to nest are disappearing, the use of pesticides and the infilling or draining of wetlands for further urbanization also eradicates their foraging sites.

Learning how to compensate for these losses — to make life hospitable for the barn swallow in our increasingly urbanized landscape — is of great concern. Otherwise, many of these birds will be left too vulnerable to overcome the far loftier obstacles created by climate change and the scarcity of safe food sources. Although some swallows have learned to adapt within our environments, like triggering a motion-activated door, these aerial insectivores need our help to thrive. **H**