

ENEMY OR ECOSYSTEM ENGINEERS?

Why It's Good to Have Badgers on Your Land

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I recently attended a webinar on American badgers by Nikki Heim, a wildlife ecologist working with the Southern Alberta Land Trust Society (SALTS), where she highlighted the role badgers play in our prairie grasslands and the complex relationship that we have with this fossorial predator.

American badgers occur in Canada, United States, and the mountains of Northern Mexico. Badgers belong to the mustelid (weasel) family, along with mink, skunks, river otters, black-footed ferrets, fishers and wolverines.

They reproduce and overwinter in burrows, and are efficient diggers that specialize in hunting other burrowing mammals. Badgers rely on large populations of ground squirrels, and will reduce a population of gophers by 50 per cent before moving on to another squirrel community in their territory.

Badgers can dig quickly in pursuit of ground squirrels, and will eat two to three Richardson ground squirrels per day. Badgers are active through winter and will dig through frozen soil to hunt hibernating ground squirrels. If you have lots of gophers, it's likely that you will also have a badger hunting them.

The mouth of a badger's burrow has a distinctive elliptical shape that is 20 to 30 centimetres wide and 15 to 25 centimetres high, with claw marks that may be seen along the sides and top, three to five centimetres apart (Badgers in BC 2023). However, when a badger is hunting for a meal, their excavations can sometimes leave much larger holes, which are often seen as hazards to livestock and machinery.

In a 2016 study in British Columbia,



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131 cattle ranchers were surveyed with questions about damage to livestock and machinery. Of the respondents with badgers on their land, 66 per cent felt either positive or neutral about badger presence, 21 per cent found them a nuisance, and 13 per cent were unsure. In the same study, reports of damage to machinery from mammal burrows were more frequent than injury to livestock, with only one out of 131 respondents

attributing injury specifically to a badger hole (Weir et al. 2016).

Preliminary findings of another ongoing land owner survey

conducted by SALTS in 2023, indicate that most people saw badgers hunting on native grasslands and 51 per cent of respondents were more interested in watching badgers than trying to shoot them. Although the number of respondents in this survey is still low (n=7), data keeps trickling in, and shows the

appreciation of badger activity is growing.

In Canada, there are three subspecies of badgers. The subspecies in British Columbia and Ontario are both listed as endangered, while the subspecies in Alberta, Saskatchewan and Manitoba is a species of special concern. Badgers are a species at risk for a number of reasons.

They are prone to collisions with vehicles while crossing roads, which intersect much of their habitat. In addition to road hazards, their habitat availability has been reduced by conversion of grasslands to crops, making the habitat unsuitable for badgers and their main prey source, ground squirrels. Targeted hunting (i.e., pest eradication, trapping), and non-target poisoning from rodenticide, also contribute to badger mortality.

Because badgers are considered a species at risk, there is a growing body of scientific studies focused on badger ecology and the role they play in grassland habitats. These studies have found that badgers

are more than just voracious predators of ground squirrels; they also hold the distinction of being "ecosystem engineers." This means their burrowing activity shapes the grassland landscape in a way that provides resources used by many other species living there.

In Wyoming, a group of graduate students collected video footage of animals at 23 badger burrows to document the abundance and diversity of species using the burrows. Across one summer season, they observed 31 species other than badgers at burrow entrances, including 12 mammals, 18 birds, and one reptile.

Their findings support the conclusion that "burrowing animals are often ecosystem engineers that provide access to subterranean habitat for non-fossorial species, which is analogous to woodpeckers providing nesting and resting habitat within trees for many other species" (Anderson et al. 2021).

Research on badgers has shined a light on some very interesting behaviour. Researchers and wildlife photographers have observed badgers and coyotes forming hunting associations (Minta et al. 1992, Thornton et al. 2018).

This partnership includes non-aggressive interactions and collaborative hunting between the two predators, with the badger digging at one end of a squirrel tunnel while a coyote snaps up escapees running out the "back door."

The benefit of co-hunting is returned to the badger, when the coyote's presence sends the rest of the squirrels running back into the jaws of the badger.

Despite the reputation of being exceptionally aggressive, badgers are more likely to run away from a threat than to stand and face it. This desire to avoid interactions with humans, the habitat they provide for other wildlife, and their ability to reduce a population of ground squirrels drastically, makes a badger a fairly good neighbour.

As our native prairies become fewer and farther between, we are realizing the need

to share what is left of this important ecosystem with the creatures that have been living on it for thousands of years.

Next time you see a badger on your land, think of its function on the landscape and the work it is doing to control ground squirrel populations.

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