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Note

Gimme shelter: anthropogenic structures as resting sites for American Marten (*Martes americana*)

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Abstract

Several species of martens (*Martes* spp.) are reported to use buildings as resting or den sites. However, such behaviour has not been attributed to American Marten (*Martes americana*). We report American Marten using occupied buildings and evidence of suspected use of an abandoned cabin, as resting sites in southern Yukon, Canada. These observations further highlight the behavioural flexibility of North American species of *Martes* with regard to using novel structures as resting sites.

Key words: Commensal; human–wildlife interactions; resting site; synurbic; urbanization; American Marten; *Martes americana*

Martens (*Martes* spp.) use resting sites daily between bouts of activity (Buskirk 1984; Brainerd *et al*. 1995; Birks *et al*. 2005; Robitaille *et al.* 2020). Suitable resting sites are a critical resource for martens, as they provide protection from predators and inclement weather, as well as thermoregulatory benefits and close access to prey (Buskirk 1984; Zalewski 1997; Larroque *et al*. 2015, 2017; Delheimer *et al*. 2018). Martens use various structures as resting sites: most are associated with live or dead trees, either standing or fallen, but also frequently include piles of rocks (Buskirk 1984; Spencer 1987; Buskirk *et al*. 1989; Bull and Heater 2000; Birks *et al*. 2005; Larroque *et al.* 2015). Several species of martens also use buildings as resting sites. In Europe, for example, Stone Marten (*Martes foina*) inhabit buildings almost exclusively, particularly barns (Rondinini and Boitani 2002; Larroque *et al.* 2015; Czernik *et al.* 2016). Pine Marten (*Martes martes*) in Europe also use buildings, but more occasionally and particularly where natural resting sites may be limited (Birks *et al*. 2005).

In western North America, Pacific Marten (*Martes caurina*) has been reported to use buildings as resting or denning sites, albeit rarely. Specifically, radio-tracked individuals have used three primitive cabins in Oregon (Holyan *et al*. 1998), two in California (Spencer 1987), and two others in Montana (Ruggerio *et al*. 1998). Several other incidental observations also exist, including those listed by Holyan *et al.* (1998) and two using an equipment shed and the crawl space of a house in New Mexico (J. Stuart pers. comm. 3 August 2015). In one observation, a Pacific Marten occupied the accommodations building of a busy tourist lodge outside Grand Teton National Park, Wyoming (E. Beever pers. comm. 4 August 2015). For more than a decade, more than one marten was reported to use the historic Cloud Cap Inn in Mount Hood National Forest, Oregon, as a resting or denning site (L. Ruedas pers. comm. 4 August 2015). Common among these reports is that the buildings occupied by Pacific Marten were in rural or remote areas, where few other buildings were available and natural resting sites were likely not limiting. However, in parts of California, natural cavities suitable as resting sites may be limiting (Delheimer *et al*. 2019), and artificial housing structures have been used successfully by Pacific Marten (Delheimer *et al*. 2018). Regardless, although use of anthropogenic structures by Pacific Martens has been observed, it appears to be rare.

Until recently, the resting sites noted above for Pacific Marten were attributed to American Marten (*Martes americana*) in the literature (i.e., Spencer 1987; Holyan *et al*. 1998; Ruggerio *et al*. 1998). Pacific Marten and American Marten are now con-

sidered separate species that differ genetically, morphologically, and by distribution (e.g., Lucid *et al*. 2020). All of the known instances of martens occupying buildings in North America can be attributed to Pacific Marten based on their distribution. Here, we report observations of American Marten occupying buildings in the Yukon.

For three months beginning in August 2015, two American Marten were reported by a homeowner to be entering a garage beside an occupied house (Figure 1). The martens had been resting in the fiberglass insulation where the walls met the roof (Figure 1). Martens had not previously been observed using the garage. On occasion, they were also heard chasing one another inside the roof of the occupied house. A year later, one marten also used the buildings as a resting site for about a week, but none have since then. The building used by martens was about 18 km north of Whitehorse, Yukon, Canada. Housing density there was low and the area was densely forested, with Lodgepole Pine (*Pinus contorta* Douglas ex Loudon), White Spruce (*Picea glauca* (Moench) Voss), and Trembling Aspen (*Populus tremuloides* Michaux) being common trees. Most of the trees were young, as much of the area burned in a severe forest fire in 1958. It is not known whether trees or downed logs suitable as resting sites were limited in the local area, but they may have been given the younger age class of much of the forest.

In another confirmed report, an American Marten was observed living in the roof of an unoccupied house during late March 2005 when the homeowners returned from vacation. The marten and her kits lived in the roof for about 10 days after the house was again occupied, but then relocated. They were observed repeatedly entering the roof during that time and a number of times on the property after they left the house. The rural property was about 14 km south of Whitehorse and surrounded by mature White Spruce forest. In both this instance, and that in 2015, martens were heard by property owners in the roofs of their homes.

Finally, on 8 September 2004, we visited an isolated and abandoned log cabin about 55 km northwest of Teslin, Yukon, to monitor a population of Little Brown Bat (*Myotis lucifugus*; Jung and Slough 2005). We observed four or five dismembered tails of Red Squirrel (*Tamiasciurus hudsonicus*) as well as numerous Spruce Grouse (*Falcopennis canadensis*) feathers in the cabin. Both species are prey of martens in the Yukon (Slough *et al*. 1989). Holyan *et al*. (1998) found similar prey remains in a cabin in Oregon that was used by Pacific Marten. We believe that our observations also indicated that an American Marten was using the cabin as a resting site. However, we could not confirm that a marten resided in the cabin.

FIGURE 1. Photographs of an American Marten (*Martes americana*) using a garage as a resting site near Whitehorse, Yukon, Canada. Photos: Gordon Settle.

It is not known why martens occasionally use buildings. They may be attracted to buildings that harbour other human commensals, such as small rodents, although some have disputed this (Holyan *et al*. 1998). In the case of the abandoned log cabin in the Yukon, the smell and noise of a maternity colony of Little Brown Bats may have been an attractant. A main driver for some species to use buildings rather than natural roosts is that they provide energy benefits (e.g., Lausen and Barclay 2006; Larroque *et al*. 2017) or protection from predators, such as Red Fox (*Vulpes vulpes*; Birks *et al*. 2005). Like other mustelids, martens are long and lean with limited fat reserves (Buskirk and Harlow 1989; Robitaille and Cobb 2003), and their body shape comes with high energy costs (Brown and Lasiewski 1972). Even though some of our observations are from August and September, nightly minimum temperatures are frequently <5°C in southern Yukon at that time of year. Thus, American Marten may have been using buildings largely for their thermoregulatory benefits.

Over the years, we have heard of a couple of other instances of American Marten living in buildings in the Whitehorse area, particularly during winter; however, we did not recognize the significance of these observations at the time or follow up with property owners. The frequency at which American Marten use anthropogenic structures as rest sites is unknown, but may be more common than reported. The implications of martens living commensally with humans are also unknown but may include human–wildlife conflicts related to property damage or transmission of parasites or pathogens to people or pets. Moreover, use of buildings may be an ecological trap for martens that may be killed by dogs or because of conflicts with humans. In southwestern Yukon, martens persist at low densities that have been augmented through translocations (Slough 1989). In recognition, the region has been designated as a marten conservation area to protect American Marten, with strict quotas for fur trappers (Jung and Slough 2011); however, martens have apparently increased in the region since the transplants in the 1980s, likely because of a natural increase in older forest.

In conclusion, the value of our confirmed and suspected observations of American Marten using buildings as resting sites is that these are apparently the first documented for the species. These observations demonstrate the flexibility that some individuals may have in selecting suitable resting sites, similar to that of other species of *Martes*.

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