

# Habitat Preferences of the Endangered Badger of South-eastern British Columbia



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# **Habitat Preferences of the Endangered Badger of South Eastern British Columbia**

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## **Background**

The subspecies of the American badger (*Taxidea taxus jeffersonii*) occurring in British Columbia is a federally endangered wildlife species. Badgers are endangered due to habitat loss (agriculture and urban development of natural grasslands) and loss of prey species (Columbian ground squirrel - *Spermophilus columbianus*) (Ministry of Water, Land and Air Protection, 2002). Humans are a main cause of badger mortality as many badgers are killed on highways and railways. Continuing development from agriculture and housing is a concern for badger survival especially in parts of south western and south eastern British Columbia. Very little badger habitat is being protected in Parks or Reserves (Ministry of Water, Land and Air Protection, 2002).

In 2002, the estimated number of badgers in parts of southern British Columbia was less than 200 breeding adults (Ministry of Water, Land and Air Protection, 2002). Badgers and their activities are important for biodiversity; for example, their burrows are used by a number of other wildlife species including some that are threatened or endangered such as the burrowing owl (Ministry of Water, Land and Air Protection, 2002).

## **Purpose:**

The primary purpose of the present study was to discover if badger habitat preferences reported by Apps et al, (2002) are the same in an area not mapped in the 2002 study. The intent is that the results of the current study will help with badger recovery initiatives in British Columbia by providing information on badger habitat preferences at a specific location not previously studied.

**Hypothesis:** Badgers prefer the same habitat characteristics throughout their present range in south-eastern British Columbia.

**Procedure:**

1. Selected a study site out approximately thirty Kilometres south of the town of Cranbrook in south eastern British Columbia based on recommendations from biologist Trevor Kinley<sup>1</sup>.
2. Derived habitat assessment features based on the report: *Habitat Associations of American Badgers in South-eastern British Columbia* (Apps et al, 2002). Refer to raw data table in results section for the list of habitat features that were measured in the field.
3. Conducted a random walk-through-type survey looking for evidence of badger burrows. At each badger burrow habitat, characteristics around the immediate area of the burrow were assessed and the UTM coordinates of the burrow were recorded. Badger burrows were identified using the document: Badger Burrow ID ([www.badgers.bc.ca/pubs/Badger\\_burrow\\_ID.pdf](http://www.badgers.bc.ca/pubs/Badger_burrow_ID.pdf))
4. Determined the occurrence of each habitat feature and expressed it as a percentage of the total number of burrows found. Percentages greater than seventy percent (70%) were assumed to represent habitat characteristics that badgers prefer.

**Results:**

The 2002 research (Apps et al, 2002) and the present study show that badgers are strongly associated with fine textured soils, soils with a low percentage of rocks, well-drained soils, linear disturbances<sup>2</sup> and southerly aspects (Table 1). The 2002 study conducted by Apps et al stated that badgers

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<sup>1</sup> Trevor Kinley. Biologist, badger researcher and badger recovery team member.

<sup>2</sup> Gas lines, power lines and road right-of-ways

had no preference for particular slopes or terrain ruggedness but the present study showed that the badger burrows were associated with gentle slopes and gentle terrain.

**Table 1 Comparison of the present research to the 2002 badger research**

Habitat Features	Habitat Features Important to Badgers	
	2002 Apps <i>et al</i> Study	2010 Present Study
Fine Textured Soil	Yes	Yes
Low % of Rock in Soil	Yes	Yes
High % Rock in Soil	No	No
Southerly Aspect	Yes	Yes
Well-Drained Soils	Yes	Yes
Forested Habitat	No	Yes <sup>3</sup>
Open Range Habitat	Yes	Yes
Linear Disturbances (road right of way, gas lines, powerlines)	Yes	Yes <sup>4</sup>
Flat Slopes	No	Yes
Gentle Terrain	No	Yes

### Conclusions & Recommendations

The hypothesis of this study was correct – the American badger prefers the same habitat characteristics in the study area as it does elsewhere in the present range in south-eastern British Columbia.

There was abundant evidence of ground squirrel activity in the study area (i.e., burrows). It is most likely that the badgers are more strongly associated with ground squirrel colonies than specific

<sup>3</sup> Badger burrows were located in open forest habitat but they were directly adjacent to open habitat

<sup>4</sup> Badger burrows were not located near a busy road but were directly adjacent to a linear disturbance (low traffic secondary road)

habitat features, and it is likely that ground squirrels are more strongly associated with the habitat features discussed in this study (i.e., fine textured soils, low rock percentage, well drained soils and open range/grassland habitat.)

According to Scudder (2004), the majority of British Columbia's biodiversity hotspots (i.e., areas where species richness and species diversity overlap) are associated with grassland habitat. Scudder also states that most of these hotspots are not contained within any of the province's current parks or protected areas.

In order for Canada to maintain its commitments under the Convention on Biological Diversity, the province of British Columbia and the Federal government should create new parks or protected areas for B.C.'s biodiversity hotspots which include the badger. In addition these areas must be enhanced to ensure the habitat features required by badgers are created and maintained. Outside of these parks and protected areas, sites with critical badger habitat characteristics should also be enhanced. Primarily this would involve creating and maintaining grassland habitat in association with fine textured soils. This will mean managing habitats that are small in scale (i.e., < 1 hectare). When it comes to an endangered species such as the badger whose habitat coincides with areas of intense human development and settlement, the management of habitat at a micro scale is critical to their continued existence.

### **Acknowledgements**

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## References:

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