

## HOARY MARMOT

**Scientific Name:** *Marmota caligata*

**Species Code:** M-MACA

**Status:** Yellow-listed

### **Distribution**

- **Provincial Range**

In British Columbia the Hoary Marmot occupies most of the mainland except for the northeast and low elevations in the dry interior.

- **Elevational Range:** Timberline to Alpine

- **Provincial Context**

The Hoary Marmot is common in the high elevation, mountainous areas of the province.

- **Project Area:**

**Ecoprovince:** Southern Interior Mountains

**Ecoregions:** Columbia Mountains and Highlands, Southern Rocky Mountain Trench

**Ecoregions:** Eastern Purcell Mountains, East Kootenay Trench

**Biogeoclimatic Zones:** ESSFdk; ESSFdkp; ESSFdku; ESSFwm; ESSFwmu; ESSFwmp; AT

### **Ecology and Key Habitat Requirements**

The Hoary Marmot inhabits high elevation meadows and talus slopes near timberline. They feed on a variety of herbaceous plants found in alpine and subalpine meadows. They can also be found in habitats with large boulders which they use to watch for danger and stretch out and sun themselves (Banfield 1981).

They spend the majority of the year in hibernation in burrows beneath the ground surface. These burrows are also used for security cover and cover from thermal extremes. Their dens may be found under the edge of a rock slide or in open hilly ground under a large boulder or in loose talus. They also use these dens as a nest for young which are born in late May or June. The dens are lined with grasses which are replaced every spring with fresh grasses.

### **Habitat Use and Life Requisites**

The life requisites that will be rated for Hoary Marmot are: living and hibernating which are described in detail below.

- **Living**

Hoary Marmots live in open sites with lush plant growth and good visibility to see one another or detect predators. They are found in habitats with deep soils suitable for burrows and in areas of scattered boulders and rock ledges which are used for loafing and lookouts. Hoary Marmots are grazers and feed on a variety of lush alpine grasses and forbs. They feed in the areas immediately around their dens and will travel up to 100m around their dens to feed (Banfield 1981).

- **Hibernating**

Hoary Marmots hibernate in deep burrows from September to April. Their burrows are located at high elevations in the alpine and subalpine meadows deep in the soil, often under a large boulder which provides protection from digging predators such as Grizzly Bears. During hibernation they live on stored body fat.

### **Seasons of Use**

Table 1 summarizes the life requisites required for each month of the year.

Table 1. Monthly Life Requisites for Hoary Marmot.

Life Requisite	Month	Season
Hibernating	January	Winter
Hibernating	February	Winter
Hibernating	March	Winter
Hibernating	April	Winter
Living	May	Growing
Living	June	Growing
Living	July	Growing
Living	August	Growing
Hibernating	September	Winter
Hibernating	October	Winter
Hibernating	November	Winter
Hibernating	December	Winter

### Habitat Use and Ecosystem Attributes

Table 2 outlines how each life requisite relates to specific ecosystem attributes (e.g., site series/ecosystem unit, plant species, canopy closure, age structure, slope, aspect, terrain characteristics).

Table 2. Terrestrial Ecosystem Mapping (TEM) Relationships for each Life Requisite for Hoary Marmot.

Life Requisite	TEM Attribute
Living Habitat	- site: elevation, slope, aspect, structural stage - soil/terrain: terrain texture, deep soils - vegetation: % cover by layer, plant species - boulder fields, talus, rock slides
Hibernating Habitat	- site: elevation, slope, aspect, structural stage - soil/terrain: terrain texture, deep soils - vegetation: % cover by layer, plant species - boulder fields, talus, rock slides

### Ratings

There is an intermediate level of knowledge on the habitat requirements of Hoary Marmot in British Columbia and thus, a 4-class rating scheme will be used.

#### • Provincial Benchmark

Ecosection:

Biogeoclimatic Zone:

Habitats

#### • Ratings Assumptions

1. Alpine and subalpine meadows (structural stage 2) with deep soils (for burrow excavation) and moderate warm aspects (<30% slope, 135-185° aspect, used more commonly because these are areas of early snowmelt and green-up) will rate high.
2. Cool aspects and shallow soils will rate down one.
3. Wet areas will be rated down one.
4. Very shallow soils rate nil.

Table 3. Summary of habitat requirements for Hoary Marmot in the study area.

Season	Life Requisite	Structural Stage	Requirements
Growing	Living (LI)	2-3	Alpine and subalpine meadows with deep soils, talus, boulder fields
Winter	Hibernating (HI)	2-3	Alpine and subalpine meadows with deep soils, talus,

			boulder fields
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- **Ratings Adjustment Considerations**

Final capability and suitability map products may incorporate 1) landscape heterogeneity and connectivity; 2) habitats adjacent to significant anthropogenic disturbance regimes (e.g. settlements); 3) interspersed of different structural stages within the landscape.

**Literature Cited**

Banfield, A.W.F. 1981. The Mammals of Canada. University of Toronto Press. Canada.

Stevens, V. 1993. Wildlife Diversity in British Columbia: Distribution and Habitat Use in Biogeoclimatic Zones Draft Report. Wildlife Interpretations Subgroup. B.C. Ministry of Environment, Lands, and Parks. B.C. Ministry of Forests. Victoria B.C.

Stevens, V. and S. Lofts. 1988. Wildlife Habitat Handbooks for the Southern Interior Ecoprovince. Volume 1: Species Notes for Mammals. Wildlife Report No. R-15. Ministry of Environment, Wildlife Branch. Victoria, B.C.