SPECIES ACCOUNT

Species Data

Common Name:	Spotted Bat
Scientific Name:	*Euderma maculatum*
Species Code:	M-EUMA
BC Status:	Blue-listed
Identified Wildlife Status:	Volume II
COSEWIC Status:	Special Concern

Project Data

Project Name:	Vernon Commonage Sensitive Ecosystems Inventory
Project Type:	Terrestrial Ecosystem Mapping
Area:	Central Okanagan
Ecoprovince:	Southern Interior
Ecoregions:	Thompson-Okanagan Plateau
Ecosections:	Northern Okanagan Basin (NOB)
BGC Units:	IDFxh1
Map Scale:	1:15 000

Distribution

Provincial Range

Spotted Bats occur in Canada only in the dry interior of BC, including the Okanagan, Similkameen, Thompson, Fraser and Chilcotin Valleys to the Williams Lake region (Nagorsen and Brigham 1993, Garcia et al. 1995). A suspected observation has been reported near Creston (T. Hill pers. comm.) The population is concentrated in the southern Okanagan Valley from Osoyoos to Penticton (Sarell and Haney 2000).

Elevation Range

300 to 900 m with most occurrences below 500 m in BC (Nagorsen and Brigham 1993).

Distribution in the Project Area

One Spotted Bat roost had been recorded within the Vernon Commonage study area, on the west side of Kalamalka Lake near the southern end of the Vernon military camp. Roosts have been located at Mission Creek near Kelowna as well (Ministry of Environment 2005).

Ecology and Habitat Requirements

Spotted Bat activity in BC begins in April and generally lasts until late October (Nagorsen and Brigham 1993), although occasional foraging bouts have been observed in early November (pers. obs.) It is suspected that mating occurs in the fall but fertilization is delayed until the following spring, as with most temperate bat species (Easterla 1973). A single young is born in late June or early July (van Zyll de Jong 1985, Nagorsen and Brigham 1993) in solitary roost sites. Young begin flying in late July (Sarell and Haney 2000).

Daylight hours are spent roosting in crevices in steep cliff faces. Roosting is solitary (Leonard and Fenton 1983), although a single cliff may support a number of roost sites, depending on the amount of suitable crevices. High site fidelity to specific roosts has been documented (Wai-Ping and Fenton 1987).

Foraging for insects occurs throughout the night, and night roosts are seldom used for resting and digesting. Foraging may extend up to 10 km from roosts, and while home ranges overlap, they tend to avoid other Spotted Bats while foraging (Wai-Ping and Fenton 1987). Spotted Bats are aerial insectivores, feeding almost exclusively on moths (Easterla 1973, van Zyll de Jong 1985) at heights of at least 5-15 m above the ground over a wide variety of habitats.

It is unknown whether Spotted Bats in BC migrate or hibernate for the winter. No hibernating individuals have been found in BC (Nagorsen and Brigham 1993), but there is no evidence supporting either migration or hibernation (Bryant 1989). Although populations decline throughout August and September (Wai-Ping and Fenton 1987), the late fall and early spring records may indicate that the species hibernates near its summer range (Bryant 1989, Sarell 2004).

Roosting / Reproducing (Security/Thermal Habitat)

Spotted Bats occur at low elevations in arid areas of BC. Reproducing (birthing) occurs in the same habitat as day roosts: inaccessible crevices of high, steep cliff faces. Roosts are typically at least 100 m high (Collard et al. 1990; Collard and Barclay 1991), but have been observed as low as 30 m above ground (Sarell and McGuinness 1993).

A preference for warm aspect cliffs has been reported (Garcia et al. 1995). However, Spotted Bats may change roosts seasonally, and one of the most productive roosting cliffs in the South Okanagan, McIntyre Bluff, is east-facing (Sarell and Haney 2000). It is assumed, therefore, that aspect has no effect on cliff suitability.

Foraging (Food)

Foraging occurs over a variety of habitats in areas of low human activity (Collard and Barclay 1991), including fields, ponderosa pine forest, grasslands, marshes and riparian habitat (Leonard and Fenton 1983, Wai-ping and Fenton 1989, Holroyd et al. 1994, Garcia et al. 1995). However, Spotted Bats have been observed foraging over rural and urban areas as well, and they generally forage high above the ground where habitat type is less significant. Foraging habitat will not be rated, as almost all habitats will have some suitability, and foraging preferences have not been quantified.

Ratings

This model employs a 4-class rating scheme because there is insufficient knowledge of habitat requirements to use a 6-class scheme yet there is sufficient knowledge to go beyond a 2-class rating scheme. This complies with the recommended rating scheme in the RIC (1999) standards manual.

Provincial Benchmark

Ecosection	Southern Okanogan Basin
Biogeoclimatic Units	BGxh1, PPxh1
Habitats	Large, steep cliffs

Map Themes

Habitat Use	Life Requisite	Season	Rating Code	Ecosystem Attributes
Reproducing	Security/ Thermal	Growing season	RB	• cliffs

Ratings Assumptions

Reproducing – Security/Thermal (RB)	
Site Series	• Cliff rated High; rock outcrop rated up to Moderate
Structural Stage	• No effect on rating
Shrub Density	• No effect on rating
Range Condition	• No effect on rating
Aspect	• No effect on rating
Slope	• Very steep rated High, steep rated up to Moderate
Soil Texture	• No effect on rating
Soil Depth	• No effect on rating

Map Interpretation

The model for Spotted Bat predicts suitability for one map theme: breeding (RB), which includes roosting habitat.

Breeding is rated using the highest value method, which portrays the rating for the highest suitability habitat occurring in the polygon.

Literature Cited

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Personal Communications

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Spotted Bat Suitability - Vernon Commonage