SPECIES ACCOUNT

Species Data

Common Name:	**Lewis' Woodpecker**
Scientific Name:	*Melanerpes lewis*
Species Code:	B-LEWO
BC Status:	Blue-listed
Identified Wildlife Status:	Version II
COSEWIC Status:	Special Concern

Project Data

Project Name:	Central Okanagan Terrestrial Ecosystem & Wildlife Habitat Mapping Project
Project Type:	Terrestrial Ecosystem Mapping
Area:	Central Okanagan
Ecoprovince:	Southern Interior
Ecoregions:	Thompson-Okanagan Plateau
Ecosections:	Northern Okanagan Basin (NOB)
BGC Units:	IDFxh1, PPxh1
Map Scale:	1:20 000

Distribution

Provincial Range

Lewis' Woodpeckers breed across southern BC from the Similkameen Valley to the east Kootenays, and north to Williams Lake and Revelstoke; abundance is centered in the Okanagan Valley (Campbell *et al.* 1990). Their breeding distribution appears to be closely related to ponderosa pine (Tolbaske 1997). Although most are migratory, small numbers winter in the Okanagan Valley, particularly from Vaseux Lake to Summerland (Cannings *et al.* 1987, Campbell *et al.* 1990). Lewis' Woodpeckers formerly bred and wintered in small numbers on Vancouver Island and the Lower Mainland, but are now only a casual visitors (Cooper *et al*. 1998).

Elevation Range

Campbell *et al.* (1990) report records from sea level to 1150 meters, and breeding records ranging from 275 to 950 meters. Nests up to 1160m have been reported from the east Kootenays (Cooper and Beauchesne 2000).

Distribution in the Project Area

Although few breeding records exist in the study area (CDC 2002), they are widespread in the Okanagan valley in the breeding season, and will winter in small numbers at least as far north as Vernon (Cannings *et al*. 1987).

Ecology and Habitat Requirements

Although a few remain in the Okanagan over winter, most Lewis' Woodpeckers migrate to southern wintering areas. They arrive in BC from mid-April to mid-May (Campbell *et al*. 1990). The autumn movement begins in late summer, with large flocks of up to over 40 birds wandering throughout the feeding range, and most are gone by the end of September (Cannings *et al*. 1987, Campbell *et al*. 1990, Cooper *et al*. 1998).

Clutch size in BC ranges from 2-8 eggs, with most from 4-6 (Campbell *et al*. 1990), which is smaller than the average of 6-7 reported throughout its range (Cooper *et al*. 1998). Hatching occurs from early May to early August (Campbell *et al.* 1990) and peaks between mid-June and mid-July (Cannings *et al.* 1987). Brood size is usually 2-4 young (Campbell *et al*. 1990).

Typical breeding habitat consists of open ponderosa pine forest or cottonwood stands. Lewis' Woodpeckers are cavity nesters, and will excavate their own cavities, but also uses natural cavities or those excavated by other woodpeckers (Rodrick and Milner 1991). Although entire feeding areas are defended in the winter, only the immediate area around the nest is defended in the breeding season (Bock 1970). They may breed in loose colonies in some regions, including the South Okanagan (Cannings *et al*. 1987). Lewis' Woodpeckers appear to show some site fidelity, as nest cavities are often reused in subsequent years (Cooper and Beauchesne 2000, Linder 1994).

The Lewis' Woodpecker eats a variety of insects, fruit, and seeds. Invertebrate prey taken are generally flying insects, or those caught on the ground or gleaned from vegetation (Cannings *et al.* 1987), and include beetles, ants, bees, wasps, grasshoppers, true bugs, and spiders (Cooper. 1998). Fruits and berries are an important part of the diet in summer and fall. Surplus food is often stores in cache sites, including cracks in trees or telephone poles (Cooper *et al*. 1998). Wintering birds in the Okanagan are restricted to orchard or residential areas, where they feed on unharvested fruits or nuts (Cannings *et al*. 1987).

Predators of this woodpecker are mainly avian, and include American Kestrels, Merlins, Cooper's Hawks, Red-tailed Hawks, and Prairie Falcons (Cooper *et al*. 1998).

Reproducing

Security/Thermal Habitat

The distribution of Lewis' Woodpeckers is closely related to ponderosa pine forests (Tolbaske 1997), but it is likely the open structure rather than the tree species that is important (Cooper *et al*. 1998). They have three primary types of breeding habitat: open ponderosa pine forest, open riparian woodland, and logged or burned Douglas-fir or mixed forest (Tolbaske 1997), but will also use grasslands with scattered trees, farmland, orchards and urban areas (Cannings *et al*. 1987, Campbell *et al*. 1990).

Open or park-like ponderosa pine forest is the major breeding habitat, except at low elevations, where riparian habitat is the main breeding habitat, particularly cottonwood groves since they are open and usually have dead trees and abundant insect populations (Rodrick and Milner 1991).

Closed-canopy deciduous stands are sometimes used, but only trees at the edge of a stand next to open areas are used (Cooper *et al*. 1998).

They also frequent selectively logged or burned coniferous forest that is structurally similar to open ponderosa pine forest (Rodrick and Milner 1991). Selectively logged or burned areas are suitable for only 10 to 40 years after disturbance (Cooper. 1998). Lewis' Woodpeckers were common in the Vancouver area from about 1920 to 1940, where they used burned forest, but disappeared from the area as the habitat disappeared due to snag-cutting for firewood, maturing of second-growth forest, and land development (Cooper *et al*. 1998).

Most nests in BC have been located in ponderosa pine (35%) and cottonwood (33%) trees (Campbell *et al*. 1990). Higher breeding densities appear to occur in cottonwood groves, but this may be due to observer bias, and the majority of breeding likely occurs in ponderosa pine (Cannings *et al*. 1987). Productivity is apparently higher in open ponderosa pine forests than cottonwood habitats (Cooper et al. 1998).

While all breeding habitats are open, which is related to the foraging methods of hawking and gleaning, some trees are needed for perches and nesting (Rodrick and Milner 1991). An important component of the habitat is brushy undergrowth that supports abundant insect populations (Rodrick and Milner 1991). Optimum habitats have canopy closure <30% and shrub cover >50% (Sousa 1983). However, Lewis' Woodpeckers studied in Wyoming, California and the east Kootenays used sites with much lower shrub densities, ranging from 13.4 to 16.5% (Gebauer 2002).

Snags or trees with heartrot are required for nesting and roosting. Multiple cavities are required, as the male will brood at night while the female roosts in another cavity (Cooper *et al*. 1998). In Washington and Oregon, one 30.5 cm dbh snag/0.4 ha provided maximum nesting density (Sousa 1983). Reported heights of nests in BC range from 1.0m (fallen pine) to 30.5m, with most nests recorded between 3.5 and 9 m (Campbell *et al*. 1990, Cannings *et al.* 1987).

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 standards manual (1999).

Provincial Benchmark

Ecosection	Southern Okanogan Basin
Biogeoclimatic Zones	PPxh, and PP/BG ecotone
Habitats	Mature open or burned Py or cottonwood stands

Map Themes

Life Requisite	Habitat Use	Season	Rating Code	Ecosystem Attributes
Reproducing	Security/ Thermal	Growing season	RE_G	• open, mature pine or cottonwood stands

Ratings Assumptions

Reproducing – Security/Thermal	
Site Series	• Open Py forest and cottonwoods stands rated up to High. • Open Fd forest, grassland/shrub-steppe, rock outcrop and talus rated up to Mod. • Pastures, agricultural and urban areas rated up to Low. • Cliffs rated Nil.
Structural Stage	• Stages 6 and 7 rated up to High; 5 up to Moderate.
Canopy closure	• Open (< 20% canopy closure) rated up to High. • Closed canopy (> 40 %) rated Nil.
Aspect	• No effect.
Slope	• No effect.

Map Interpretation

Only one layer will be mapped for the Lewis' Woodpecker: breeding habitat (*security/thermal habitat for reproducing during the growing season,* RE_G).

The highest-value method will be used to display suitability ratings, so the highest rating of any of the ecosystem units occurring will be used to color the entire polygon.

Gebauer (2002) suggests a Wildlife Habitat Area (WHA) size for Lewis' Woodpecker of 5 to 50 ha, depending on area of suitable habitat, and that wildlife tree patches may be as small as 1 ha. Also, cottonwood groves used for nesting are often quite small. Therefore, size of habitat patches does not appear to have a large influence on habitat suitability for breeding. However, small areas of nesting habitat that are surrounded by unsuitable habitat (e.g. dense forest) are unlikely to be used. Large areas of suitable nesting habitat, or those adjacent to open habitats, are the most valuable to this species.

Management Recommendations

Developers should confirm that suitable habitat actually exists or can be recovered, as there is some uncertainty about whether the predicted habitats are actually used. Management of Lewis' Woodpecker habitat requires the retention of wildlife trees. Recruits for wildlife trees should be maintained or planted, while maintaining the openness required by this species. Developers should try to link these areas with other portions of the property that will not be developed to provide suitable buffers. Inadequate buffers around developed lands, including recreational trails, may require the removal of wildlife trees due to safety reasons.

Literature Cited

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Lewis' Woodpecker Suitability Map