

## Pileated Woodpecker

**PROJECT NAME:** Sooke Hills Wilderness and Mount Wells Regional Parks

**Scientific Name:** *Dryocopus pileatus*

**Species Code:** B-PIWO

**Status:** Yellow-listed (Any indigenous species or subspecies (taxa) which is not at risk in British Columbia).

### **I. DISTRIBUTION**

#### Provincial Range

Pileated Woodpeckers are widely distributed in southern British Columbia, becoming relatively sparse across central BC, north through the Peace Lowlands to the northeastern regions of the province. Breeding likely occurs throughout their range (Campbell *et al.*, 1990).

#### Elevational Range

Sea-Level to Sub-Alpine

#### Provincial Context

Pileated Woodpeckers occur more commonly in southern BC than in northern parts of their range.

**Project Area:** CRD Parks Sooke Hills Watershed

Ecoprovince: Georgia Depression

Ecoregions: Eastern Vancouver Island

Ecosections: Nanaimo Lowlands (NAL)

Biogeoclimatic Zones: CDFmm, CWHxm1

**Project Map Scale:** 1:20,000

### **II. ECOLOGY AND KEY HABITAT REQUIREMENTS**

#### General

Pileated Woodpeckers are the largest woodpecker in North America (40-49 cm long; 250-350 g body mass). This species occurs in mature, coastal and interior Douglas-fir and western hemlock

forests, including adjacent logged and second growth areas, to the open deciduous and mixed woods of the Chilcotin-Cariboo Basin (Campbell *et al.*, 1990). Breeding occurs in a variety of different forest types from open deciduous forests to dense, mature coniferous stands (Campbell *et al.*, 1990). This species excavates its own nest cavities and nests occur mostly in deciduous trees, however conifers and man-modified structures (e.g., power poles) may also be used. Nests typically occur in the main trunk of large live trees (i.e., >25 cm DBH). The breeding period extends from April to early June. The Pileated Woodpecker feeds primarily on carpenter ants which it extracts from large diameter logs, stumps or standing dead trees. This species requires large territories and takes advantage of late successional stages of coniferous or deciduous forest, but also younger forests that have scattered, large, dead trees (Bull & Jackson, 1995).

Territory size can be variable. Studies in Oregon show that territory size of individual birds varies from 200 - 1586 ha, with pair territories slightly larger than either partner (Bull & Holthausen, 1993)

Pileated Woodpeckers are year-round residents, although growing season and winter behaviour can be distinguished.

### **III. HABITAT USE: LIFE REQUISITES**

- **Living Habitat (LI)**

The Living life requisite for Pileated Woodpeckers is satisfied by the presence of suitable feeding and security (roosting) habitat, which are described in detail below.

- **Feeding Habitat (FD)**

Wood-dwelling insects are the primary diet of Pileated Woodpeckers throughout the year, and carpenter ants are a major food item in all seasons (Beckwith and Bull, 1985; Bull *et al.*, 1992). Carpenter ants are particularly important in winter, when they form the majority of the diet. Diet can vary seasonally, with woodpeckers making excavations in fairly sound wood to access carpenter ant colonies in winter. Foraging in summer can be excavations in soft wood, surface gleaning and probing. Pileated Woodpeckers can be opportunistic taking advantage of outbreaks in western spruce budworm larvae, as well as berries, nuts and fruits. In winter Pileated Woodpeckers use deep excavations in sound wood, whereas summer food occurs near the wood surface precluding deep excavations. On southeastern Vancouver Island, Pileated Woodpecker used large snags and defective trees (mean dbh  $\pm$  SE;  $56 \pm 3$ cm), decayed snags, with less remaining bark ( $49\% \pm 4\%$  SE), and foraged in the upper and main canopy strata (Hartwig, 1999).

- **Security (Roosting/Reproduction) Habitat (SH)**

Eggs are laid in late April or early May and hatch after an 18 day incubation. Fledged young remain with the parents for most of the summer and leave in August or September. Reproductive habitat contains suitable trees for nesting. Pileated Woodpeckers almost always excavate their own cavity, and only trees with main trunks large enough to hold a large cavity high above the ground are used for nesting. In Alberta, minimum nest tree dbh ranges from 29 to 33 cm dbh

(Conner *et al.*, 1976, Bonar and Bessie, 1996). Recently, in southeastern Vancouver Island, Hartwig (1999) found Pileated Woodpeckers nesting in much larger (mean±SE; 82 ± 16 cm), taller trees (22 ± 5.2 m), with 91% (± 9%) remaining bark. Nests are usually located in high (≥ 4 m) branch-free portions of the main trunk. In coastal forests, most nest trees were western hemlock. Pileated Woodpeckers show a preference for trees with fungal-softened heartwood at the cavity location, as softer hardwood is easier to excavate, and fungal respiration may heat the cavity (Aubry & Raley, 1994).

Pileated Woodpeckers are closely associated with tree cover for nesting, roosting and foraging. In spring and summer, habitat use occurs in both open and closed canopied areas. In winter, use of open areas declines as logs and stumps are unavailable due to snow cover. Pileated Woodpecker habitat will be rated for the entire year only.

#### IV. SEASONS OF USE

Pileated Woodpeckers are year round residents of the project area. Table A5 summarizes the life requisites required for each month of the year, although for this project a habitat rating for security/thermal habitat and feeding habitat will be provided for the entire year.

Table A5. Monthly Life Requisites for Pileated Woodpecker

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

\*Seasons defined for Coast and Mountains Ecoprovinces per the Chart of Seasons by Ecoprovince (RIC, 1998, Appendix B).

A single rating, for the entire year (All season) will be assigned to Pileated Woodpecker habitat. In addition, a rating for the Reproducing Season will also be assigned.

Ratings will be assigned for feeding habitat (FD) and security/thermal (ST) habitat. For Pileated Woodpecker security/thermal habitat will be equivalent to roosting and reproducing habitat.

## V. HABITAT USE AND ECOSYSTEM ATTRIBUTES

Table A6 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 A6. Terrestrial Ecosystem Mapping (TEM) Relationships for each Life Requisite for Pileated Woodpecker.

Life Requisite	TEM Attribute
Living Habitat (Feeding, Security/Thermal)	<ul style="list-style-type: none"> <li>• site: structural stage</li> <li>• soil/terrain: flooding regime</li> <li>• vegetation: % cover by layer, coarse woody debris (CWD) (dbh, decay class, abundance)</li> <li>• tree species, dbh, height, wildlife tree characteristics</li> </ul>

## VI. RATINGS

A 6-class rating scheme will be used for Pileated Woodpecker habitat. Although the 'BC Wildlife Habitat Ratings Standards' (RIC, 1999) recommends a 4-class rating scheme, 1:5 000 mapping scale should allow habitat discrimination into 6 classes.

### Provincial Benchmark

Ecosection: Shuswap Highland (SHH); Nanaimo Lowland (NAL)

Biogeoclimatic Zone: ICHmw, CWHxm

Habitats: mature - old growth forests with high abundance of large diameter trees and high abundance of CWD on the forest floor.

### Ratings Assumptions

1. Units with large trees ( $\geq 70$  cm dbh), such as mature and old-growth coniferous forests will be rated high roosting and reproducing habitat (class = 1). Abundance and average suitable tree diameter will govern ratings lower than class 1.
2. Units without large diameter trees will generally be rated low ( $\leq 5$ ), and abundance of large diameter, usable nest and feeding trees will govern ratings  $>5$ .
3. Units with high coarse woody debris abundance will be rated as high feeding habitat.
4. Units with closed canopy will be rated higher than units with open canopy.

5. Units with high amounts of Pileated Woodpecker feeding sign will be rated as high feeding habitat.

**Table A7 summarizes the habitat requirements for Pileated Woodpeckers in the study area for the seasons and life requisites being modeled.**

Table A7. Summary of habitat requirements for Pileated Woodpeckers in the study area.

Season	Life Requisite	Structural Stage	Requirements
Growing Season/Winter Season	Feeding (FD)	2-3, 5-7	<ul style="list-style-type: none"> <li>• Mature and old-growth coniferous forests (high abundance of CWD)</li> <li>• Mixed conifer/deciduous mature forest. Shrub cover &gt;50% and canopy closure &gt;66%.</li> </ul>
Growing Season/Winter Season	Security/Thermal (TH)	2-3, 5-7	<ul style="list-style-type: none"> <li>• Mature and old-growth coniferous forests.</li> <li>• Mixed conifer/deciduous mature forest. Shrub cover &gt;50% and canopy closure &gt;66%.</li> </ul>

## VII. LITERATURE CITED

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