

### 3. A Nest of a Flammulated Owl

#### 1) Definition

A *nest of a Flammulated Owl* (*Otus flammeolus*) means the nest and its supporting structure that either (1) is currently occupied by a Flammulated Owl to hold its eggs or offspring, or (2) is habitually occupied and still capable of holding eggs or offspring of a Flammulated Owl (Figure 9).



**Figure 9. Flammulated Owl in nest cavity.** (Photo: Michael Woodruff)

#### 2) Species Description

The Flammulated Owl is a tiny, dark-eyed owl with small, indistinct ear tufts (Figure 10). Its red and gray variegated plumage resembles tree bark. This owl is strictly nocturnal; it is best identified at night by its call—a long series of low-pitched, single or paired hollow hoots.

The Flammulated Owl is a *Species at Risk* under the *Forest and Range Practices Act* and is Blue-listed in British Columbia. It is designated as a species of *Special Concern* by COSEWIC.



**Figure 10. Flammulated Owl.** (Photo: Michael Woodruff)

### **3) What to Look For**

Flammulated Owls nest mainly in mature, open ponderosa pine–Douglas-fir forests that are characterized by multi-layered canopies, some shrub or sapling thickets in the understory, and an abundance of old or veteran trees used for nesting and roosting. The Flammulated Owl is a secondary cavity nester that uses natural cavities or those excavated by Pileated Woodpeckers (*Dryocopus pileatus*) or Northern Flickers (*Colaptes auratus*). Alternative cavities have been used for nesting in the same tree in successive years and alternative trees have been used within the same foraging areas. Small forest openings are important for foraging.

Pairs re-mate in the previous year's territory, if both birds return; alternatively, the male will return and find a new mate. Territory size varies with time of year and habitat quality. Average breeding season territory size ranges from 15.9 ha during incubation to 3.6 ha during fledging.

Table 11 summarizes what to look for when identifying a Flammulated Owl nest. Table 12 provides information to consider when conducting primary forest activities near a nest.

**Table 11. Flammulated Owl nests: what to look for.**

<b>Flammulated Owl Nest Description</b>
<ul style="list-style-type: none"> <li>• Owls prefer to nest in mature, open stands of ponderosa pine–Douglas-fir.</li> <li>• Nests are usually located in ponderosa pine (preferred) or Douglas-fir snags &gt; 30 cm dbh.</li> <li>• Nest trees are typically softer snags (wildlife tree classes 4–6, and sometimes class 7).</li> <li>• Nest trees are often located within, or near, small forest openings (&lt; 1 ha) that are adjacent to thickets of regenerating conifers and shrubs or large trees with heavy branching, which provides security cover.</li> <li>• Flammulated Owls use natural cavities and abandoned woodpecker (usually Northern Flicker or Pileated Woodpecker) cavities for nesting and roosting.</li> <li>• Pileated Woodpecker cavities are oblong or oval in shape rather than the circular shape of most woodpecker holes.</li> <li>• The entrance diameters of Northern Flicker cavities range from 6 to 11 cm (average 8.3 cm).</li> <li>• Nests can occur from 1.5 to 14 m above the ground.</li> </ul>

**Table 12. Information to consider when conducting primary forest activities near a nest of a Flammulated Owl.**

<b>Information to Consider</b>
<ul style="list-style-type: none"> <li>• Establish a windfirm forested retention area centred around the nest tree. If this spatial configuration is not practical for operational, topographic, safety, or other reasons, then maintain forest connectivity (where possible) between the retention patch and adjacent forested habitat. Ensure this corridor is as wide as possible to minimize edge effects (e.g., predation, windthrow risk), and to provide additional security cover, perching, and hunting opportunities.</li> <li>• Retain large-diameter, decayed ponderosa pine and Douglas-fir (especially with existing woodpecker cavities) that are near thick cover, such as shrub thickets, dense regeneration, or large conifers with dense crowns (see Table 11).</li> <li>• Maintain some vegetation cover (where available) around the nest tree for security cover, and perching and roosting sites, if the nest tree is a single tree within an existing opening (i.e., meadow, clearing, or cutblock). This cover may include:             <ul style="list-style-type: none"> <li>○ advance regeneration,</li> <li>○ shrub cover and (or) dense thickets,</li> <li>○ non-crop trees (deciduous species), or</li> <li>○ non-merchantable trees (especially standing dead trees or trees with existing cavities and [or] evidence of internal decay).</li> </ul> </li> <li>• Avoid constructing roads, trails, or other structures within a wildlife tree patch or other forested retention patch that is located around the nest tree.</li> <li>• Dead or decayed trees are often targeted by firewood cutters. Place a “Wildlife Tree Sign” on nest trees to educate the public and others about their high ecological value.</li> <li>• <b>Note:</b> Because of potential worker safety concerns, dead and defective trees that are considered for retention must either be located within a suitable-sized retention patch or have a danger tree assessment conducted by a certified wildlife/danger tree assessor. Consult the Wildlife Tree Committee of British Columbia website for information and links relevant to dangerous tree assessment (see Section 5).</li> </ul>

#### 4) Regional Information – Kootenay Boundary

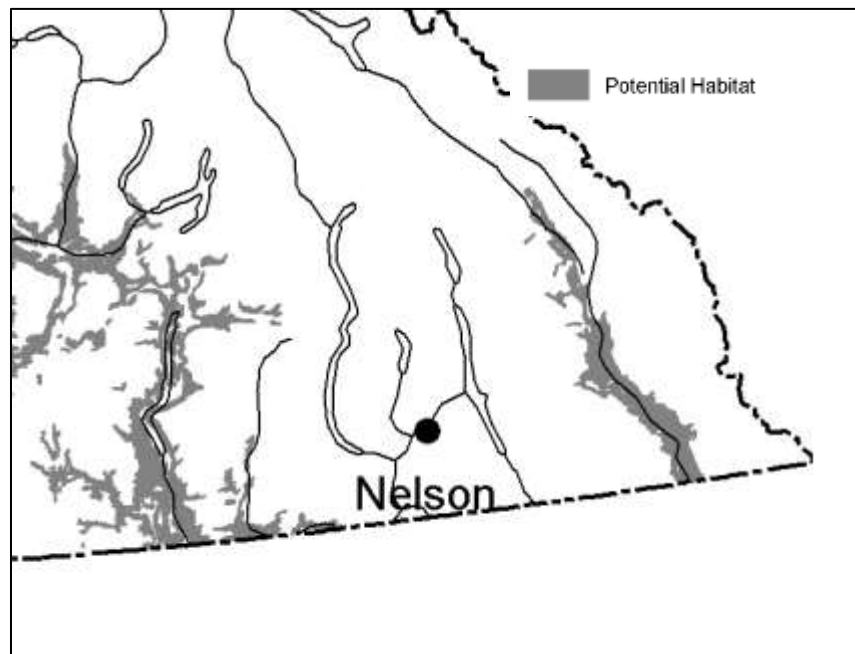
In this section, we provide specific timing windows and guidance on disturbance buffers for the Kootenay Boundary Region. This information may vary from provincial guidance and may not be applicable outside of the Kootenay Boundary Region because of regional specificity.

The Flammulated Owl is a migratory species. It arrives in British Columbia in early May and departs by mid-October. This species has a fairly narrow habitat range (Figure 11, Table 13). In the Thompson Region, nests have been observed at elevations of 400–1375 m. Flammulated Owl sensitivity to disturbance varies with their existing exposure to disturbance and the level of disturbance from the proposed activity. Figure 12 provides suggested minimum buffer sizes. Table 14 supplies additional guidance on protection or alternative measures that may be needed, depending on the nature of disturbance, existing landscape and cover, or other factors.

Flammulated Owls are most sensitive during the breeding season, which includes territory establishment and courtship stages. Each breeding season stage requires protection because this disturbance-sensitive raptor could abandon a site at any time during the entire breeding period. Please note that the following dates offer a general guide of when you might expect to see breeding season activities in the Kootenay Boundary Region; actual breeding season length will depend on the year and area.

- Courtship and nest initiation: April 1–April 30
- Eggs present: April 30–July 31
- Young present: May 31–August 31

This creates a potential *sensitive period of April 1–August 31*, which encompasses courtship (month before nesting), nesting, and fledging.<sup>1</sup> Based on observations of nest stage, the length of this sensitive period can be refined. The period of *least risk is September 1–March 31*.



**Figure 11. Distribution of Flammulated Owl habitat in the Kootenay Boundary Region.<sup>2</sup>**

<sup>1</sup> Modified from Develop with Care 2014: Environmental Guidelines for Urban and Rural Land Development in British Columbia.

*Wildlife Habitat Features Field Guide (Kootenay Boundary Region)*

**Table 13. Habitat and biogeoclimatic associations of Flammulated Owls in the Kootenay Boundary Region.**<sup>3,4,5</sup>

Habitat	Biogeoclimatic Zone <sup>6</sup>	Biogeoclimatic Subzone/Variant
Ponderosa Pine	PP	dh1, dh2
Interior Douglas-fir	IDF	dk5, dm1, dm2, xk
Interior Cedar–Hemlock	ICH	dm, dw1, mk5, mw2, mw4, xw
Montane Spruce	MS	dk1, dk2

		Existing Exposure to Disturbance			
NEST SITE BUFFER		NIL Isolated site, little or no prior access	LOW Undeveloped area with occasional human use	MODERATE Near secondary logging road or minor recreation site	HIGH Near primary road, major recreation site, or human development
Disturbance Level of Proposed Activity	LOW Activities on foot. Small group, visual screening present. Livestock attractants. Examples: layout, cruising, salt licks.	100–200 m	1.5 × tree length	1.5 × tree length	1.5 × tree length
	MODERATE Light mechanized activities. Larger group/duration, no visual screening. Examples: spacing, planting, fence construction.	200–500 m	100–200 m	100–200 m	1.5 × tree length
	HIGH Mechanized activities. Examples: road construction, falling and yarding, landing sites.	200–500 m	200–500 m	200–500 m	100–200 m
	VERY HIGH Blasting, helicopter logging.	1000 m+	1000 m+	1000 m+	1000 m+

**Figure 12. Recommended disturbance buffers around a Flammulated Owl’s nest, depending on existing disturbance and the disturbance level of the proposed activity.**<sup>7</sup>

<sup>2</sup> Modified from the Identified Wildlife Management Strategy – Species Accounts and Measures (2004).

<sup>3</sup> Adapted from BC Species and Ecosystems Explorer – Species Summary.

<sup>4</sup> Atlas of the Breeding Birds of British Columbia (2015).

<sup>5</sup> M. Machmer, Registered Professional Biologist, Pandion Ecological Research Ltd., pers. comm. (2018).

<sup>6</sup> A Field Guide for Site Identification and Interpretation for the Nelson Forest Region (1992).

<sup>7</sup> Modified from Develop with Care 2014: Environmental Guidelines for Urban and Rural Land Development in British Columbia.

**Table 14. Additional guidance on disturbance buffers for a Flammulated Owl's nest.<sup>8</sup>**

<b>A Nest of a Flammulated Owl – Guidance on Buffers</b>
<ul style="list-style-type: none"><li>• Increase buffer, or delay activities, if the nest is active and the bird constantly flushes away when using minimum buffers.</li><li>• Consider the sight lines between the activity and the nest; in more open forests or terrain, a larger buffer may be required for these visually acute species.</li><li>• During breeding season, consider adding a “quiet” buffer of an extra 100 m to the no disturbance buffer in which no unusual or sudden loud activities will occur (e.g., blasting, tree felling, chain saws, trucking, etc.).</li></ul>

### **5) Additional Information**

A Field Guide for Site Identification and Interpretation for the Nelson Forest Region, Land Management Handbook No. 20:

<https://www.for.gov.bc.ca/hfd/pubs/docs/lmh/lmh20.htm>

Atlas of the Breeding Birds of British Columbia – Flammulated Owl Species Account:

<https://www.birdatlas.bc.ca/accounts/speciesaccount.jsp?sp=FLOW&lang=en>

BC Species and Ecosystems Explorer – Species Summary for Flammulated Owl:

<http://a100.gov.bc.ca/pub/eswp/speciesSummary.do?id=18697>

Develop with Care 2014: Environmental Guidelines for Urban and Rural Land Development in British Columbia:

<https://www2.gov.bc.ca/gov/content/environment/natural-resource-stewardship/natural-resource-standards-and-guidance/best-management-practices/develop-with-care>

Flammulated Owl COSEWIC Status Report:

[http://www.sararegistry.gc.ca/virtual\\_sara/files/cosewic/sr\\_Flammulated%20Owl\\_0810\\_e.pdf](http://www.sararegistry.gc.ca/virtual_sara/files/cosewic/sr_Flammulated%20Owl_0810_e.pdf)

Guidelines for Raptor Conservation during Urban and Rural Development Land Development in British Columbia:

<https://www2.gov.bc.ca/assets/download/E3DEB5DA9E2A4FFA8F24F8E10FDD4C47>

Identified Wildlife Management Strategy – Flammulated Owl Species Account:

[http://www.env.gov.bc.ca/wld/frpa/iwms/documents/Birds/b\\_flammulatedowl.pdf](http://www.env.gov.bc.ca/wld/frpa/iwms/documents/Birds/b_flammulatedowl.pdf)

Wildlife Tree Committee of British Columbia website:

<https://www2.gov.bc.ca/gov/content/environment/plants-animals-ecosystems/wildlife/wildlife-habitats/wildlife-tree-committee>

<sup>8</sup> Guidelines for Raptor Conservation During Urban and Rural Development Land Development in British Columbia (2013).