

## FLAMMULATED OWL IN UNUSUAL HABITAT IN THE CARIBOO-CHILCOTIN, BRITISH COLUMBIA

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**Abstract** -- I heard a Flammulated Owl (*Otus flammeolus*) on 14 and 15 May 1995 in a Douglas-fir (*Pseudotsuga menziesii* var. *glauca*) forest near Williams Lake, British Columbia. The owl was assumed to be a male, based on the singing frequency and pitch of its characteristic low-pitched advertising hoot. The topography of the area is a relatively flat plateau with gradual relief, approximately 4.5 km. from the nearest steep, semi-open coniferous forest (estimated canopy closure <30%), the habitat normally occupied by this species in British Columbia.

This observation suggests that Flammulated Owl inventories should encompass high plateau forests adjacent to side slopes.

**Keywords:** Cariboo-Chilcotin region, Flammulated Owl, habitat, *Otus flammeolus*.

Flammulated Owls (*Otus flammeolus*) are small, nocturnal insectivorous forest owls (McCallum 1994). Their North American range is generally associated with dry forest stands (Howie and Ritcey 1987; Johnsgard 1988; McCallum 1994). Here, I describe a Flammulated Owl occurrence in the Chilcotin area of British Columbia in a habitat differing in physiognomy from that reported previously.

On 14 May 1995 the author and one other observer heard a Flammulated Owl at 23:19 Pacific Daylight Time along the Meldrum Creek Road (51° 59'N, 122° 22'W) 5.3 km. north of Highway 20 (approximately 35 km. west of Williams Lake), British Columbia (Figure 1) during an informal owl survey. I heard the owl again on 15 May 1995 at the same location. On both occasions, the owl was broadcasting the characteristic

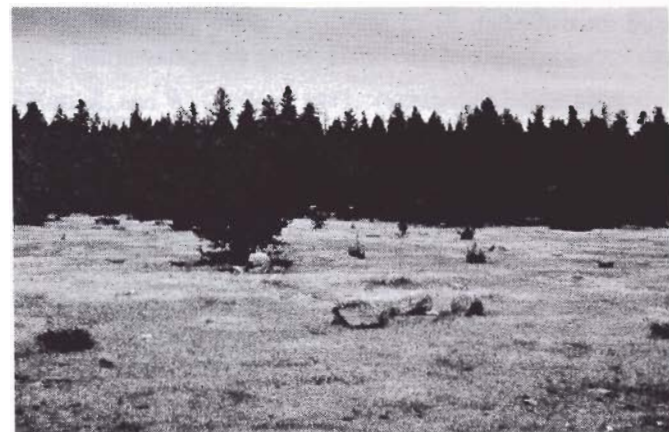


Figure 1. Meldrum Creek Road, where Flammulated Owl was heard.

Photo 20 May 1997 by Kenneth G. Wright.

two-noted hoot frequently (McCallum 1994). The dates of these observations appear to be early for this species' arrival in the area (M. J. Waterhouse, personal communication).

Interestingly, this occurrence is 4.5 km. from the nearest sloping, semi-open coniferous forest (<30% canopy closure) that is normally used by this species (Howie and Ritcey 1987; McCallum and Gehlbach 1988). Topographically, the area is relatively featureless, with some gradual relief (~ 5% slope) (Figure 2). The observation occurred at an elevation of 900 m. in the Interior Douglas-fir very dry, mild biogeoclimatic zone (Meidinger and Pojar 1991). Predominant overstorey vegetation in the area consisted of Douglas-fir (*Pseudotsuga menziesii* var. *glauca*, climax species), Lodgepole Pine (*Pinus contorta latifolia*) and Trembling Aspen (*Populus tremuloides*, pioneer stand). However, Douglas-fir was the only tree species at the observation site (Figure 3). The understory was relatively simple and open, dominated by Pinegrass (*Calamagrostis rubescens*) and Bunchgrass Wheatgrass (*Elymus spicatus*) with a moderately-developed shrub layer of juniper (*Juniperus* sp.). Exposed, lichen-covered boulders were scattered over the site. The estimated mean overstorey height was 20 m., with a maximum of 40 m.



**Figure 2.** Flat, relatively open habitat along Meldrum Creek Road in which Flammulated Owl occurred. Photo 20 May 1997 by Kenneth G. Wright.

My observations were made in a Douglas-fir stand containing some old veteran trees adjacent to open grasslands used for cattle ranching. The owl was singing from the top of one of the older firs near the edge of the stand. Flammulated Owls can be located fairly accurately by their hoots when fairly close (Astrid van Woudenberg personal communication).

The habitat in which the owl was heard is atypical for this species in British Columbia. Although slope has not been quantified as a habitat correlate, valley sides and sloped topography are typically found in primary habitat used by this species (Cannings *et al.* 1987; Howie and Ritcey 1987; Campbell *et al.* 1990; van Woudenberg 1992; McCallum 1994). The tree composition and understory features at the site where I heard the owl were similar to those found at other documented



**Figure 3.** Douglas-fir stand used by Flammulated Owl along Meldrum Creek Road. Photo 20 May 1997 by Kenneth G. Wright.

sites of Flammulated Owls in British Columbia, but elsewhere in British Columbia, these features are restricted to slopes (Howie and Ritcey 1987; R. Howie personal communication). Requisite habitat components in North America include: semi-arid climate, open physiognomy, high diversity and density of nocturnal arthropod prey (e.g. Noctuidae, Coleoptera, Orthoptera), and presence of natural cavities for nesting (McCallum 1994).

Recent research on the distribution and ecology of Flammulated Owls in the Chilcotin revealed only three locations, including one 3 km. away from the ridge line parallel to the Fraser River.

Gill (1995) identified three major stages of habitat occupation in birds: 1) primary habitat is filled; 2) "surplus" birds unable to find vacancies use sub-optimal habitats; 3) any extra birds are floaters that must wait for vacancies in the aforementioned habitat types. The habitat used in the Chilcotin, at the northern limit of the Flammulated Owl range (M. J. Waterhouse personal communication) may consist largely of unproductive "sink" habitat with little or no productivity and act as a repository for "surplus" birds. If so, this area could contain primarily inexperienced birds unlikely to breed successfully, if at all. Owls detected in this area may show considerable inter-annual variation in numbers, and may be absent in some years. Little is known about the habitat preferences and productivity at the northern fringe of the species' range.

The Flammulated Owl is classified currently as "vulnerable" in British Columbia (B. Harper personal communication 1996), and is therefore of special concern. Inventories of the population of this species should not exclude areas such as the one described herein, and future census efforts should include the Interior Douglas-fir biogeoclimatic zone near valley sides to determine the extent of use. If use is found to be significant, annual production and other population dynamics parameters should be gathered in these habitats. Currently, logging and ranching activities threaten to fragment and degrade the Cariboo-Chilcotin forests considerably.

Prior to 1980, only six records existed of Flammulated Owl in British Columbia (Howie and Ritcey 1987; Campbell *et al.* 1990). Subsequently, more rigorous attempts have been made to locate the owls and gain a better understanding of their habits in British Columbia (van Woudenberg 1992), including unpublished research by Anna Roberts (R. Howie personal communication). A large population of Flammulated Owls in the Chilcotin (M. J. Waterhouse personal communication), including 114 territories documented west to Alexis Creek and north to Soda Creek (R. Howie personal communication), is at the most northerly extent of the species' range, where the habitat preferences and ecological breadth of this population may differ from those in other regions. I hope that my observation, combined with more recent findings (mentioned by R. Howie, personal communication), will help stimulate further studies on the distribution, ecology, reproductive success, and survival of Flammulated Owls in the Chilcotin forests.

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