

ATTACHMENT SS2

REGION 2 SENSITIVE SPECIES EVALUATION FORM

Species: Flammulated owl ( <i>Otus flammeolus</i> )			
Criteria	Rank	Rationale	Literature Citations
1 Distribution within R2	B	<p>Flammulated owls occur from the northern to southern extent of Region 2 in montane forest habitats. Therefore the species has a broad geographic distribution in the Region. Throughout this range the species occurs in a patchy distribution as a consequence of the distribution of habitat and the common characteristic of this species to occur patchily even in suitable habitat. Relatively high site tenacity likely results in limited dispersal of adults among subpopulations.</p> <p>Confidence in Rank <del>High or Medium or Low</del></p>	<ul style="list-style-type: none"> <li>• McCallum 1994a</li> <li>• McCallum 1994b</li> </ul>
2 Distribution outside R2	B	<p>Flammulated owls have a broad distribution outside Region 2 that extends southward to Central America and Northward to southern British Columbia. Despite this broad distribution, it is unclear how frequently flammulated owls disperse to or from populations in Region 2. In any case, however, the species has a broad distribution outside the central Rocky Mountains which buffers populations in the region from threats that are short term.</p> <p>Confidence in Rank <del>High or Medium or Low</del></p>	<ul style="list-style-type: none"> <li>• Friedman et al. 1950</li> <li>• Howie and Ritcey 1987</li> <li>• Marshall 1939</li> <li>• McCallum 1994a</li> <li>• McCallum 1994b</li> <li>• Friedmann, Griscom, and Moore. 1950</li> </ul>
3 Dispersal Capability	C	<p>As a migratory bird, flammulated owls are expected to show greater capacity for dispersal than year-round residents. However, the degree to which migratory habit facilitates dispersal is unknown and dispersal has not been well documented. In general, flammulated owls display high site tenacity as adults. Evidence shows both males and females returning to the same or neighboring territories. Males show especially high site tenacity. Site tenacity by young owls (or the degree of natal dispersal) is less frequently documented. Based on the biology of the owl and current evidence, the capacity for dispersal appears high but realized dispersal is likely limited due to relatively high adult site fidelity.</p> <p>Confidence in Rank <del>High or Medium or Low</del></p>	<ul style="list-style-type: none"> <li>• Balda et al. 1975</li> <li>• McCallum 1994a</li> <li>• McCallum 1994b</li> <li>• Reynolds and Linkhart. 1987a</li> <li>• Reynolds and Linkhart. 1990a</li> </ul>

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<p><b>4</b> Abundance in R2</p>	<b>C</b>	<p>As an insectivore, flammulated owls can occur at relatively high densities compared to other owls. Some authors have speculated that flammulated owls may be the most abundant owl of western pine forests. However, good estimates of density are rare. Estimates range from 0.7 to 1.09 territories per 40 ha in occupied habitat.</p> <p>Abundance across Region 2 is high enough that stochastic events do not threaten population persistence.</p> <p>Confidence in Rank <del>High</del> or <del>Medium</del> or <del>Low</del></p>	<ul style="list-style-type: none"> <li>Goggans. 1986</li> <li>Reynolds and Linkhart. 1987a</li> <li>McCallum 1994b</li> </ul>
<p><b>5</b> Population Trend in R2</p>	<b>B-A</b>	<p>Based on the limited inferential evidence available, the suspected population trend for flammulated owl could not be characterized as STABLE, however, it could also not be characterized as a SIGNIFICANT downward trend. The perceived trend in flammulated owl is confounded by increased interest in the owl and more sophisticated approaches to surveying for the owl (employing playback). Prior to the 1980's few flammulated owl populations had been recorded, however, playback surveys demonstrated that the owl occurs in many areas where it was not formally identified.</p> <p>Trends in abundance have likely been downward during the past 150 to 200 years, potentially more significantly during the mid 1900's than recently. Declines in the extent of mature and older ponderosa pine due to timber harvest and fires (fires during the settlement and mining periods) would have led to likely declines in this species.</p> <p>The owl migrates to the southern United States, Mexico, and Central America. Little is known of its habitat use or ecology on the wintering grounds or during migration. However, habitats suspected to be important to the owl during winter, are declining.</p> <p>Confidence in Rank <del>High</del> or <del>Medium</del> or <del>Low</del></p>	<ul style="list-style-type: none"> <li>McCallum 1994b</li> <li>Morgan 1994</li> </ul>

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6 Habitat Trend in R2	B-A	<p>Flammulated owl is recognized as a strong ponderosa pine associated species although it also uses aspen forests in the montane life-zone. Evidence suggests that breeding flammulated owls occur in older serial stages of pine forests. These forests have declined in extent over the past 200 years due to timber harvest and fire. However during the past 50 years, fire exclusion may have partially reversed this trend and the extent of stand-replacement timber harvest in these forests have declined during the past 2 decades.</p> <p>Confidence in Rank <del>High</del> or Medium or <del>Low</del></p>	<ul style="list-style-type: none"> <li>• Marti 1997</li> <li>• Reynolds and Linkhart. 1992</li> <li>• Linkhart and Reynolds 1997</li> <li>• Wright et al. 1997</li> <li>• McCallum 1994b</li> <li>• Linkhart 1984</li> <li>• McCallum and Gehlbach. 1988</li> </ul>
7 Habitat Vulnerability or Modification	A	<p>Primary habitat for flammulated owl in the central Rocky Mountains and forest habitats presumed to be used by the owls in wintering areas are vulnerable to habitat change for a number of reasons. Because more is known about the habitats in the breeding grounds I will focus on these. Fire suppression has changed the disturbance regime of these forests substantially. With this change, mature and older habitats are vulnerable to stand replacement disturbances. Furthermore, because forests in this life-zone are accessible, they are particularly vulnerable as sources of fiber through timber harvest. Finally, these forests occur frequently in areas of private land ownership and are vulnerable to type conversion as human development increases (housing and other development).</p> <p>Confidence in Rank <del>High</del> or Medium or <del>Low</del></p>	<ul style="list-style-type: none"> <li>• Morgan 1994</li> <li>• Covington and Sackett 1984</li> <li>• McCallum 1994a</li> <li>• Veblen, and Lorenz 1991</li> </ul>
8 Life History and Demographics	A	<p>Several demographic factors increase the vulnerability of flammulated owls. As neotropical migrants, flammulated owls are vulnerable to environmental change in non-breeding range, along their migratory corridor, or in the breeding range. They arrive in their breeding range early in spring when availability of primary prey, insects, is variable and generally low. Unlike many owls, flammulated owls appear to have a relatively non-plastic reproductive rate and lay a small clutch. Therefore, there is little potential for rapid population increase following declines. As a secondary cavity nester the owl is dependent on specific forest conditions and populations of primary cavity excavators for breeding sites.</p> <p>Confidence in Rank <del>High</del> or Medium or <del>Low</del></p>	<ul style="list-style-type: none"> <li>• McCallum 1994a</li> <li>• McCallum 1994b</li> <li>• Linkhart and Reynolds 1987</li> <li>• Reynolds and Linkhart. 1987a</li> <li>• Reynolds and Linkhart. 1990b</li> </ul>

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Evaluator(s): Gregory D. Hayward, Regional Wildlife Ecologist, USDA Forest Service			Date: 16 July 2001

National Forests in the Rocky Mountain Region where species is KNOWN (K) or LIKELY (L)<sup>1</sup> to occur:

<u>Colorado NF/NG</u>	Known	Likely	<u>Kansas NF/NG</u>	Known	Likely	<u>Nebraska NF/NG</u>	Known	Likely	<u>South Dakota NF/NG</u>	Known	Likely	<u>Wyoming NF/NG</u>	Known	Likely
Arapaho-Roosevelt NF	K		Cimmaron NG			Samuel R. McKelvie NF			Black Hills NF	K		Shoshone NF		
White River NF	K					Halsey NF			Buffalo Gap NG			Bighorn NF	K	
Routt NF	K					Nebraska NF			Ft. Pierre NG			Black Hills NF	K	
Grand Mesa, Uncompahgre, Gunnison NF	K					Ogalala NG						Medicine Bow NF	K	
San Juan NF	K											Thunder Basin NG		
Rio Grande NF	K													
Pike-San Isabel NF	K													
Comanche NG														

“Known” does not necessarily mean that a breeding population occurs.

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<sup>1</sup> Likely is defined as more likely to occur than not occur on the National Forest or Grassland. This generally can be thought of as having a 50% chance or greater of appearing on NFS lands.

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