

Flammulated Owl

Otus flammeolus



Photo by Fred Petersen

Habitat Use Profile

Habitats Used in Nevada	
Coniferous Forest Aspen	
Key Habitat Parameters •	
Plant Composition	Ponderosa and Jeffrey pines, white fir, mix of other coniferous species, aspen; prefers well-developed shrub understory in forest stands ^{1, 4, 6}
Plant Density & Size	At nest sites, 138-1040 trees/ha [56 – 420 / ac]; canopy closure 35-75%; trees present with dbh > 50 cm [20 in]; shrub density 182-776 shrubs/ha [74–315 / ac] ⁶
Mosaic	Mature forest with large-diameter (dbh 44-87 cm [17 – 34 in]) snags, forest openings, clumps of saplings and shrubs, multiple canopy layers, aspen groves ⁶
Slope	16 – 30% ⁶
Response to Vegetation Removal	Negative ^{EO}
Area Requirements •	
Minimum Patch Size	Estimated at 50 ha [125 ac] ^{6, EO}
Recommended Patch Size	> 150 ha [370 ac] ^{EO}
Home Range / Territory Size	3 - 16 ha [7 - 40 ac] ⁶

Conservation Profile

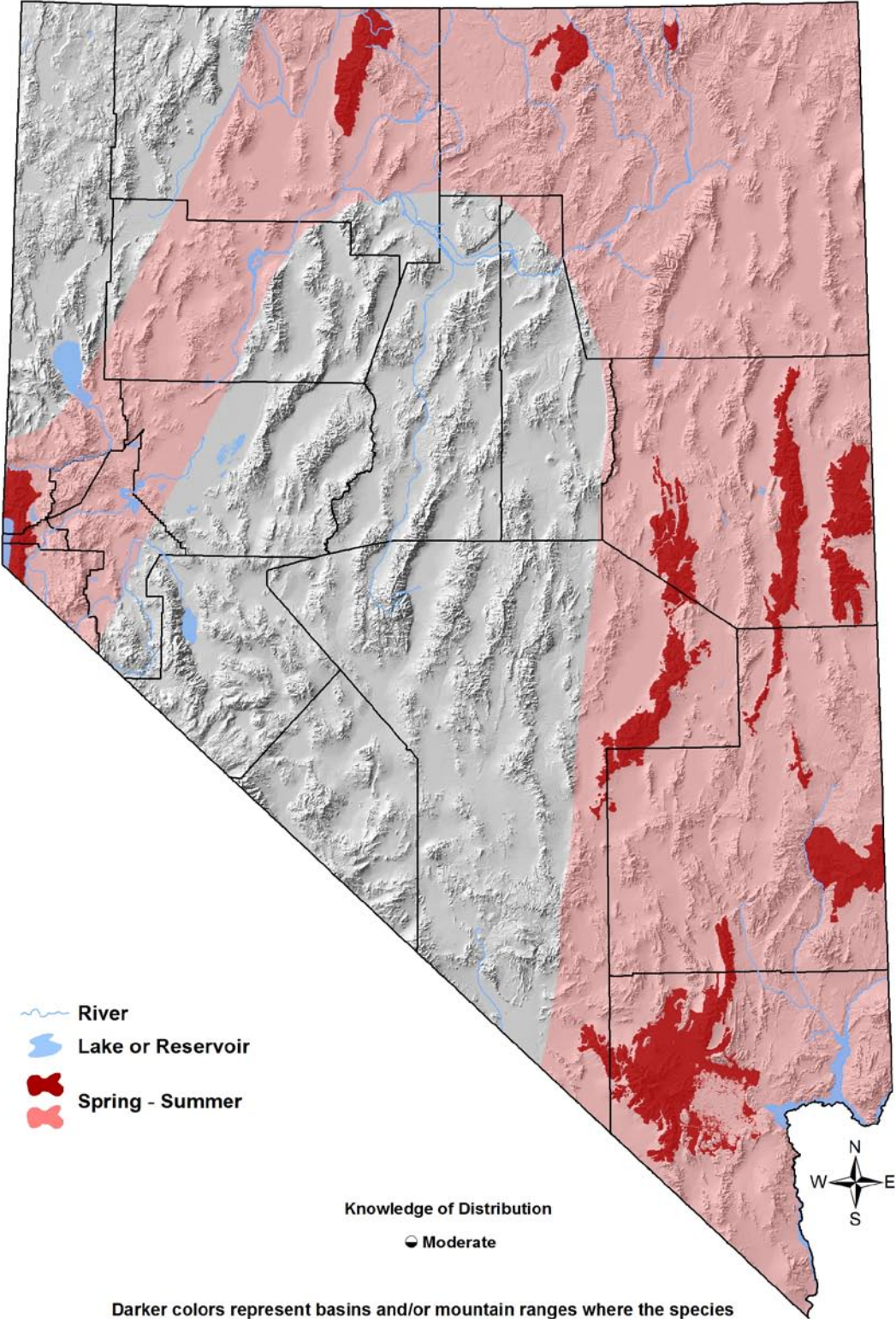
Priority Status	
Conservation Priority Species	
Species Concerns	
Small population size Habitat threats Unknown population trend	
Other Rankings	
Continental PIF Audubon Watchlist NV Natural Heritage USFWS BLM USFS NDOW	Watch List Yellow S4B Bird of Conservation Concern, Migratory Bird Sensitive Species Sensitive Species Stewardship
Trends	
Historical ◦	Unknown
Recent ◦	Unknown
Population Size Estimates	
Nevada ◦	Uncertain; < 2,500 ^{EO}
Global •	29,000 ⁹
Percent of Global	Unknown
Population Objective	
Maintain / Increase ^{EO}	
Monitoring Coverage	
Source	No systematic monitoring
Coverage in NV	Poor
Key Conservation Areas	
Protection	Spring Mountains, Carson, Schell Creek and Snake Ranges
Restoration	Unknown

Natural History Profile

Seasonal Presence in Nevada	
Spring – Summer	
Known Breeding Dates in Nevada	
Late May – early August ^{3, EO}	
Nest and Nesting Habits	
Nest Placement	Large woodpecker cavity in large snag ⁶
Site Fidelity	High for breeding territory ⁶
Other	Nest within 30-100 m [100 – 330 ft] of forest opening ⁶
Food Habits	
Basic	Aerial insectivore
Primary Diet	Nocturnal flying insects, especially moths ⁶
Secondary Diet	n/a

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Darker colors represent basins and/or mountain ranges where the species has been recorded within the past 12 years. Lighter colors represent the broader area within which the species is presumed to occur in appropriate habitat types.

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Overview

Although its habitat needs are relatively well characterized, much less is known about the Flammulated Owl's numbers, distribution, or conservation status in Nevada. Records have come from the Santa Rosa, Jarbidge, Spring, Schell Creek, Quinn Canyon, White Pine, Sheep, Clover, Snake, Highland, Bull Run, and Carson ranges, but this small owl could potentially occur in other ranges as well.² Recent inventories in the central Nevada ranges, however, suggest that it may be absent there, as it may be more generally absent from large landscapes where suitable habitat is sparsely scattered.¹⁰ The Flammulated Owl's preference for a varied forest mosaic would seem to suggest that they occupy only in the larger forested patches that can provide this structural diversity, but in reality they have been found in forest patches of < 50 ha [125 ac].² All of these factors suggest that Flammulated Owl distribution may be affected not only by local habitat factors, but by the spatial arrangement of suitable habitat patches across large landscapes.

Flammulated Owls are most often associated with ponderosa pine, but populations in southeastern Idaho and northern Utah are known to nest in large aspen stands with no pine in the area.^{5,8} Several of the species' known locations in Nevada also lack ponderosa pine.² Natural openings in the forest (for foraging) are apparently critical, as are clumps of understory vegetation for roosting. Perhaps the key management factor for this bird is managing forests to ensure the presence of large-diameter snags. Flammulated Owls often breed in loose clusters comprised of multiple pairs, making targeted protection of nesting areas easier.¹

Abundance and Occupancy by Habitat

No information

Nevada-Specific Studies and Analyses

Arsenault et al.,¹ Dunham et al.,² and Mika⁷ have conducted detailed studies of various aspects of Flammulated Owl biology in Nevada.

Main Threats and Challenges

Habitat and Other Threats

- Loss of large snags to fuel gathering, fuels reduction activities, or large, high-severity fires^{EO}
- Simplification of the forest mosaic as a result of large, high-severity fires (although smaller, patchy fires may be beneficial by creating forest openings and increasing stand diversity)
- Recent genetic studies suggest that Nevada populations may be smaller, more isolated, and less stable than others in the West⁷

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Research, Planning, and Monitoring Challenges

- Current population trends in Nevada are not known
- Factors controlling distribution patterns are poorly understood

Conservation Strategies

Habitat Strategies

- Coniferous Forest (p. Hab-5-1) and Aspen (p. Hab-3-1) habitat conservation strategies benefit this species
- Manage fuels reduction and harvesting activities to conserve large-diameter snags
- In occupied ranges, manage forests to encourage a mosaic of older trees (especially ponderosa and Jeffrey pine), younger-aged trees, and forest openings with a well-developed shrub layer
- Fire management strategies should generally encourage smaller-scale patchy fires that increase diversity of the forest mosaic, and actively discourage large-scale stand-replacing fires

Research, Planning, and Monitoring Strategies

- Conduct additional study and monitoring to determine population trends and conservation status of Flammulated Owls
- A Western network of Flammulated Owl monitoring programs is being considered (<http://sites.google.com/site/pifwesternworkinggroup/projects/flammulated-owl-monitoring>); Nevada should seek to become involved in such a program if it is implemented
- Additional study of occupancy patterns in Nevada mountain ranges (and their possible controlling factors) would be beneficial

Public Outreach Strategies

- None identified

References: ¹Arsenault et al. (2003); ²Dunham et al. (1996); ³GBBO unpublished. Atlas data; ⁴Herron et al. (1985); ⁵Marti (1997); ⁶McCallum (1994); ⁷Mika (2010); ⁸Powers et al. (1996); ⁹Rich et al. (2004); ¹⁰Wright (1996); ^{E0} Expert opinion