Flammulated Owl (*Psiloscops flammeolus*)
Conservation Status Rank Summary

December 5, 2024

For details on assessment and ranking methodology, see: *Conservation Status Assessment Definitions, Process, Rank Factors, and Calculation of State Ranks for Montana Species*

Rarity and Trends

Rank Factor	Date Assessed	Value	Score	Data Source	Comments
Rarity					
Range Extent	2024-12-04	S: 122838.5 km²	3.930	MTNHP Range Maps	None
Area of Occupancy	2024-12-04	5031 | 4km² cells	4.810	MTNHP Modeling	None
Number of Occurrences	2024-12-04	811	5.500	MTNHP Databases	None
Population Size			-		**Factor not used in ranking.**
# of Occurrences in Good Condition	2024-12-05		1.100	MTNHP Data	Due to historic forest management almost all of the area occupied by the species lacks ecological integrity
% of Area Occupied in Good Condition			-		**Factor not used in ranking.**
Environmental Specificity	2009-01-27	Narrow	-	MTNHP Species Rank Data Table	**Factor not used in ranking.** Uses mature conifer forest which is widespread, but not common. | Methodology: NS (2003) | Original Score: B
Rarity is calculated by averaging weighted factor scores: **((3.93 × 1) + (4.81 × 2) + (5.50 × 1) + (1.10 × 2)) / 6 = 3.54**					
Trends					
Short-term Trend	2024-12-04		-	MTNHP Data	**Factor not used in ranking.** Populations are not monitored and trend data are not available
Long-term Trend	2009-01-27		-0.140	MTNHP Species Rank Data Table	Mature Douglas Fir and Ponderosa Pine Forests have declined since European arrival so probably >25% of this habitat has been lost. | Methodology: NS (2003) | Original Score: D
Trends score is calculated by summing weighted short and long-term trend scores: **((-0.14 × 1)) = -0.14**					

Threats

Rank Factor	Date Assessed	Value	Score	Data Source	Comments
Threats					
Overall Threat Impact		Medium	3.670		Stand replacing fire, timber harvest that removes preferred nest habitat and forest structure, and pesticide application (they are insectivorous) are probably the biggest threats of concern.
Intrinsic Vulnerability	2009-01-27	Moderately vulnerable	-	MTNHP Species Rank Data Table	**Factor not used in ranking.** Methodology: NS (2003) | Original Score: B
Threat score is calculated from Overall Threat Impact when available or Intrinsic Vulnerability if not: **(3.67) = 3.67**					

Individual Threats Data

Threat Category	Date Assessed	Impact Score	Scope	Severity	Immediacy	Comments
Biological Resource Use	2024-12-04	Low	Restricted	Moderate	High	Removal of snags for firewood along roads. This is a significant threat where roads intersect suitable habitat, but is probably limited in scope as this activity only impacts trees within immediate proximity to roads where extraction of the wood is feasible. Removal of snags due to forest management practices such as salvage logging and thinning. This is more widespread
Natural System Modifications	2024-12-05	Medium	Pervasive	Moderate	High	Suppression of high severity fires leading to lower numbers of nesting snags
Threat Tally: 0 - Very High, 0 - High, 1 - Medium, 1 - Low Overall Threat Impact* = Medium						

*See Conservation Status Assessment Definitions, Process, Rank Factors, and Calculation of State Ranks for Montana Species for calculation of Overall Threat Impact based on the number and impact of individual threats.

Conservation Status Rank Calculation

Raw score

Rarity: (3.54 × 70%) + Threats: (3.67 × 30%) + Trends: (-0.14) = 3.44

Calculated Rank: S3

Accepted Rank	S3B
Date Approved	Date Unknown
Approval Authority	Legacy Assessment: MTNHP Staff
Rank Justification	Species is uncommon across mountainous areas of western Montana. It generally inhabits forests with larger diameter trees and nests in snags. There are currently no trend data available for this species. It faces threats due to habitat degradation due to historic fire suppression efforts and removal of standing dead trees.

Supplementary Information

Montana Natural Heritage Program. 2021. Conservation Status Assessment Definitions, Process, Rank Factors, and Calculation of State Ranks for Montana Species. 18 p.
https://mtnhp.mt.gov/docs/Montana_State_Rank_Criteria_20211201.pdf

Montana Field Guide Species Account:
https://fieldguide.mt.gov/speciesDetail.aspx?elcode=ABNSB01020

Predicted Suitable Habitat Model:
https://mtnhp.mt.gov/resources/models/?elcode=ABNSB01020

Information Needs

Information needs are assessed by considering the availability of factors used to assess species status as well as the quality of these assessments. Current information availability and quality to inform Conservation Status Rank for this species are highlighted.

Rank Factor	Assessment Category	Value	Criteria
General Status	Status Quality	Adequate	Calculated rank has low uncertainty and is represented by a single rank (e.g. S3); accepted rank may be adjusted to a range rank (e.g. S2S3)
		Poor	Rank assessed as SU or calculated rank has notable uncertainty and corresponds to a range rank with 2 or more values (e.g. S2?, S1S3, or S4S5)
Rarity	Range Quality	Adequate	Range polygon adequately represents area of probable occupancy and does not include substantial unoccupied areas; range may be adequately defined and still include areas of unsuitable habitat (e.g. mountain ranges for plains species)
		Marginal	Range polygon defined, but may include or exclude notable areas where the species may or may not occur on the landscape
		Poor	Range polygon not defined
	Habitat Quality	Adequate	Species-habitat relationship is well-defined (e.g. relevant literature or robust habitat model available)
		Marginal	Understanding of species-habitat relationship is adequate among some but not all habitats (e.g. literature covers similar habitats outside of Montana or habitat model performance is only somewhat adequate)
		Poor	Species-habitat relationship is not well understood
Threats	Threat Quality	Adequate	Threat Impact is a single value (including "Unthreatened")
		Marginal	Threat Impact assessed at more than one value (e.g. "High - Medium")
		Poor	Threat Impact is Unknown but Intrinsic Vulnerability is assessed
		Unknown	Threat Impact is Unknown and Intrinsic Vulnerability is not assessed
Trends	Recency	Current	Short-term Trend assessment date less than 10 years old
		Out of Date but Adequate	Short-term Trend assessment date is more than 10 years old or Unknown, but species is Unthreatened
		Out of Date	Short-term Trend assessment date more than 10 years old
		Not Available	Short-term Trend data are not available
	Trend Quality	Sufficient	Short-term Trend assessed at a single value or multiple values with a minimum trend greater than -10% (stable or increasing)
		Unknown but Sufficient	Short-term Trend is Unknown, but species is Unthreatened
		Poor	Short-term Trend is less than -10% (in decline) with two or more values selected
		Unknown	Short-term Trend is Unknown

Summary of Information Availability

Data to assess species status are generally available, but short-term trend is not.

Summary of Information Needs

General avian monitoring programs are insufficient to characterize population changes for this species. Species specific monitoring is needed to determine population trend and explore impacts of threats. A stable or positive trend might elevate status to S4.

Additional Threat Details

The table below contains the complete threats assessment for this species. While the Conservation Status Rank Calculation is based on cumulative, broadly categorized (Level 1) threats data, threats are assessed and tracked for more specifically categorized (Level 2) threats when available.

Threat Category	Date Assessed	Assessed By	Data Source	Scope	Severity	Imme-diacy	Comments
Biological Resource Use - 5.3 - Logging & Wood Harvesting	2024-12-04	Dan Bachen	Expert Opinion	Restricted	Moderate	High	Removal of snags for firewood along roads. This is a significant threat where roads intersect suitable habitat, but is probably limited in scope as this activity only impacts trees within immediate proximity to roads where extraction of the wood is feasable. Removal of snags due to forest management practices such as salvage logging and thinning. This is more widespread
Natural System Modifications - 7.1 - Fire & Fire Suppression	2024-12-05	Dan Bachen	Hutto and DellaSala 2024, Expert Opinion	Pervasive	Moderate	High	Suppression of high severity fires leading to lower numbers of nesting snags
Climate Change & Severe Weather - 11	2024-12-04	Dan Bachen	Walsh and Hudiberg 2021	Pervasive	Negligible	Moderate	Modeling of habitat suitability in Northern Idaho did not show negative impacts of warming temperatures for this species