Eastern Screech-Owl (*Megascops asio*)
Conservation Status Rank Summary

Date Published: May 6, 2026

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 Factor Rating	Score	Data Source	Comments
Rarity					
Range Extent	2024-11-14	216328.8 km² G = 200,000-2,500,000 km²	4.710	MTNHP Range Maps	None
Area of Occupancy	2024-11-14	5348 | 4km² cells H = 2,501-12,500 4-km² grid cells	4.810	MTNHP Modeling	None
Number of Occurrences	2024-11-14	63 C = 21 - 80	2.750	MTNHP Point Observation Database	Approximately 60 sites with evidence of Breeding in the MTNHP database
Population Size			-		**Factor not used in ranking.**
# of Occurrences in Good Condition	2024-11-14	* D = Some (13-40) occurrences with excellent or good viability or ecological integrity	3.300		None
% of Area Occupied in Good Condition			-		**Factor not used in ranking.**
Environmental Specificity	2009-01-20	Narrow B = Narrow; specialist or community with key requirements common	-	MTNHP Species Rank Data Table	**Factor not used in ranking.** Uses a broad variety of mature deciduous forests, but rely on relatively large nest cavities. | Methodology: NS (2003) | Original Score: B
Rarity is calculated by averaging weighted factor scores: **((4.71 × 1) + (4.81 × 2) + (2.75 × 1) + (3.30 × 2)) / 6 = 3.95**					
Trends					
Short-term Trend	2024-11-14	* U = Unknown	-	MTNHP Data	**Factor not used in ranking.** Although baseline surveys have been conducted in the mid 2010's no trend data are available
Long-term Trend	2024-11-14	* EF = Decline of 10 - 50%	[-0.140, -0.070]		None
Trends score is calculated by summing weighted short and long-term trend scores: **(([-0.14, -0.07] × 1)) = [-0.14, -0.07]**					

*Values may be absent if not precisely estimated; factors may still be assessed for rank if a Factor Rating can be assigned.

Threats

Rank Factor	Date Assessed	Value / Factor Rating	Score	Data Source	Comments
Threats					
Overall Threat Impact		High / B = High	1.830		None
Intrinsic Vulnerability	2009-01-20	Not intrinsically vulnerable / C = Not intrinsically vulnerable	-	MTNHP Species Rank Data Table	**Factor not used in ranking.** Methodology: NS (2003) | Original Score: C
Threat score is calculated from Overall Threat Impact when available or Intrinsic Vulnerability if not: **(1.83) = 1.83**					

Individual Threats Data

Threat Category	Date Assessed	Impact Score	Scope	Severity	Immediacy	Comments
Residential & Commercial Development	2026-03-23	Low	Restricted	Moderate	High	Encroachment of development into cottonwood riparian areas increases human-caused sources of mortality (e.g., outdoor cats, European starlings, corvids, window strikes, vehicle collisions, poisoning from pesticide use).
Agriculture & Aquaculture	None	Medium	Large	Moderate	High	Multiple Level 2 threats - see Additional Threat Details below.
Biological Resource Use	2026-03-23	Low	Small	Slight	High	Forest Management practices, such as dead and dying tree/snag removal, reduces nesting habitats for the species
Natural System Modifications	2024-11-14	Medium	Large	Moderate	High	Lack of cottonwood recruitment due to altered hydrology due to damming and diversion of water on the Missouri and tributaries
Climate Change & Severe Weather	2026-03-23	Medium	Large	Moderate	Moderate	Increasing severity of spring storms likely poses a threat to the species through direct mortality.
Threat Tally: 0 - Very High, 0 - High, 3 - Medium, 2 - Low Overall Threat Impact* = High						

*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: (3.95 × 70%) + Threats: (1.83 × 30%) + Trends: ([-0.14, -0.07]) = [3.17, 3.24]

Calculated Rank: S3

Accepted Rank	S3
Author(s)	Dan Bachen
Rank Approved By	Montana Species of Concern Committee
State Rank Reason	Species is uncommon within deciduous forest across central and eastern Montana. Current population trend is unknown, and it faces threats from loss of riparian habitat. Specifically impacts on cottonwood recruitment from damming and diverting water in river systems and conversion of forested areas to agriculture.

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=ABNSB01030

Predicted Suitable Habitat Model:
https://mtnhp.mt.gov/resources/models/?elcode=ABNSB01030

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

Status is uncertain due to uncertainty of threat impacts and lack of recent trend information. Habitat is well documented.

Summary of Information Needs

Baseline monitoring was conducted across the state in the mid-2010's. Repeated nocturnal calling surveys should provide estimates of occupancy through time. More study on the impacts of hydrologic changes on cottonwood recruitment as well as the risk of agricultural conversion in proximity to major rivers would provide increased certainty in threat ranking.

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
Residential & Commercial Development - 1.1 - Housing & Urban Areas	2026-03-23	Dan Bachen	Swap Assessment	Restricted	Moderate	High	Encroachment of development into cottonwood riparian areas increases human-caused sources of mortality (e.g., outdoor cats, European starlings, corvids, window strikes, vehicle collisions, poisoning from pesticide use).
Agriculture & Aquaculture - 2.1 - Annual & Perennial Non-Timber Crops	2024-11-14	Dan Bachen	Expert Opinion	Large	Moderate	High	Loss of riparian forest on private lands due to clearing for agriculture
Agriculture & Aquaculture - 2.3 - Livestock Farming & Ranching	2026-03-23	Dan Bachen	SWAP assessment	Large	Moderate	High	Overgrazing in deciduous riparian forests introduces/favors invasive plant species that can reduce prey base, require more herbicide use, and/or result in shifting fire regimes. Historic and current grazing in riparian habitats reduces cottonwood forest regeneration and may facilitate stream channel incision, which alters stream hydrology and facilitates a shift to shrub/grassland type ecosystems
Biological Resource Use - 5.3 - Logging & Wood Harvesting	2026-03-23	Dan Bachen	SWAP Assessment	Small	Slight	High	Forest Management practices, such as dead and dying tree/snag removal, reduces nesting habitats for the species
Natural System Modifications - 7.2 - Dams & Water Management/Use	2024-11-14	Dan Bachen	Expert Opinion	Large	Moderate	High	Lack of cottonwood recruitment due to altered hydrology due to damming and diversion of water on the Missouri and tributaries
Climate Change & Severe Weather - 11.4 - Storms & Flooding	2026-03-23	Dan Bachen	SWAP Assessment	Large	Moderate	Moderate	Increasing severity of spring storms likely poses a threat to the species through direct mortality.