

Mule Deer (*Odocoileus hemionus*) Conservation Status Rank Summary

October 4, 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	2024-10-03	Y: 380530.8 km ²	4.710	MTNHP Range Maps	None
Area of Occupancy			-		Factor not used in ranking.
Number of Occurrences			-		Factor not used in ranking.
Population Size	2024-10-04	255989	4.710	MTFWP	255989 individuals from MTFWP population estimates
# of Occurrences in Good Condition			-		Factor not used in ranking.
% of Area Occupied in Good Condition			-		Factor not used in ranking.
Environmental Specificity	2024-10-03	Broad	5.500	MTNHP data	Species is found across the majority of habitat types in Montana with lower densities occurring in valley bottoms. It readily uses urban areas.
Rarity is calculated by averaging weighted factor scores: $((4.71 \times 1) + (4.71 \times 2) + (5.50 \times 1)) / 4 = 4.91$					
Trends					
Short-term Trend	2024-10-03		-0.070	MTNFWP	Populations are currently 17% below long-term average
Long-term Trend	2024-10-03		0.000	MTFWP	Species was almost extirpated in the state due to unregulated hunting in the late 1800s. It has since recovered.
Trends score is calculated by summing weighted short and long-term trend scores: $((-0.07 \times 2) + (0.00 \times 1)) = -0.14$					

Threats

Rank Factor	Date Assessed	Value	Score	Data Source	Comments
Threats					
Overall Threat Impact		Medium	3.670		None
Intrinsic Vulnerability	2024-10-03	Not intrinsically vulnerable	-	MTNHP data	Factor not used in ranking. Species breed annually with 1-2 fawns produced. Readily disperses between suitable habitat
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
Transportation & Service Corridors	2024-10-03	Low	Large	Slight	High	Vehicle collision causes mortality, but probably has low impacts on total populations
Invasive & Other Problematic Species, Genes & Diseases	2024-10-03	Medium	Pervasive	Moderate	High	Chronic Wasting Disease has caused 20-40% declines in other states. Density and management may reduce these impacts
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: $(4.91 \times 70\%)$ + Threats: $(3.67 \times 30\%)$ + Trends: (-0.14) = 4.40

Calculated Rank: S4

Accepted Rank	S4
Date Approved	2024-12-18
Approval Authority	MTNHP
Rank Justification	Species is widespread and common across Montana. Population estimates are below long-term average and it faces threats from Chronic Wasting Disease

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=AMALC02010>

Predicted Suitable Habitat Model:

<https://mtnhp.mt.gov/resources/models/?elcode=AMALC02010>

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 status are available

Summary of Information Needs

No additional information are needed at this time.

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	Immediacy	Comments
Transportation & Service Corridors - 4.1 - Roads & Railroads	2024-10-03	Dan Bachen	Expert Opinion	Large	Slight	High	Vehicle collision causes mortality, but probably has low impacts on total populations
Biological Resource Use - 5.1 - Hunting & Collecting Terrestrial Animals	2024-10-03	Dan Bachen	Montana FWP	Pervasive	Extreme	Insignificant	Unregulated hunting caused severe declines of the species. Regulated hunting has allowed recovery from this past threat
Invasive & Other Problematic Species, Genes & Diseases - 8.1 - Invasive Non-Native/Alien Species/Diseases	2024-10-03	Dan Bachen	Montana FWP	Pervasive	Moderate	High	Chronic Wasting Disease has caused 20-40% declines in other states. Density and management may reduce these impacts