White-tailed Deer (*Odocoileus virginianus*)
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 km²	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	193475	4.710	MTFWP	193475 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	2024-10-04	Broad	5.500		None
Rarity is calculated by averaging weighted factor scores: **((4.71 × 1) + (4.71 × 2) + (5.50 × 1)) / 4 = 4.91**					
Trends					
Short-term Trend	2024-10-04	-6.0%	0.000	MTNHP	White-tailed Deer population estimates are 6% below long term average for the 2013-2023 period
Long-term Trend	2024-10-04		0.140	Expert Opinion	Although there was significant loss of individuals due to over-hunting in the late 1800s and early 1900s, the population has recovered and increased
Trends score is calculated by summing weighted short and long-term trend scores: **((0.00 × 2) + (0.14 × 1)) = 0.14**					

Threats

Rank Factor	Date Assessed	Value	Score	Data Source	Comments
Threats					
Overall Threat Impact		Medium	3.670		None
Intrinsic Vulnerability	2024-10-04	Not intrinsically vulnerable	-		Factor not used in ranking.
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	2024-10-04	Low	Pervasive	Slight	High	Mortality from vehicle collisions
Invasive & Other Problematic Species, Genes & Diseases	None	Medium	Pervasive	Moderate	High	Warning: Auto-rolled multiple Level 2 threats to Level 1
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 × 70%) + Threats: (3.67 × 30%) + Trends: (0.14) = 4.68

Calculated Rank: S5

Accepted Rank	S5
Date Approved	2024-12-18
Approval Authority	MTNHP
Rank Justification	Species is common, widespread in suitable habitat and populations are stable. It faces threats from Chronic Wasting Disease, which may cause moderate declines in the coming decades.

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=AMALC02020

Predicted Suitable Habitat Model:
https://mtnhp.mt.gov/resources/models/?elcode=AMALC02020

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	Imme-diacy	Comments
Transportation & Service Corridors - 4.1 - Roads & Railroads	2024-10-04	Dan Bachen	Expert opinion	Pervasive	Slight	High	Mortality from vehicle collisions
Biological Resource Use - 5.1 - Hunting & Collecting Terrestrial Animals	2024-10-04	Dan Bachen	Expert Opinion	Pervasive	Extreme	Insignificant	Over-hunting in the late 1800s and early 1900s caused the near exterpation of this species. Managed hunting has lead to recovery
Invasive & Other Problematic Species, Genes & Diseases - 8.1 - Invasive Non-Native/Alien Species/Diseases	2024-10-04	Dan Bachen	MTFWP	Pervasive	Moderate	High	Chronic Wasting Disease has caused 20-40% decines in other states where it has been endemic for the last 20 years
Invasive & Other Problematic Species, Genes & Diseases - 8.2 - Problematic Native Species/Diseases	2024-10-04	Dan Bachen	MTFWP	Large	Slight	High	"In Montana, outbreaks of EHD and BTV have historically occurred east of the continental divide, and while most deer and pronghorn mortality in Montana resulting from hemorrhagic disease infection still occurs in the eastern part of the state, EHD was documented west of the continental divide in Montana for the first time in 2013. While mortality rates vary from year to year, they can be quite high, however, most EHD outbreaks have not been considered to have long term negative impacts on white-tailed deer populations."