North American Porcupine (*Erethizon dorsatum*)
Conservation Status Rank Summary

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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	2024-09-24	380530.8 km² G = 200,000-2,500,000 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			-		**Factor not used in ranking.**
# of Occurrences in Good Condition			-		**Factor not used in ranking.**
% of Area Occupied in Good Condition			-		**Factor not used in ranking.**
Environmental Specificity	2018-09-26	Broad D = Broad; generalist or community with all key requirements common	5.500	MTNHP Species Rank Data Table	Species can be found across a diversity of habitats statewide | Methodology: NS (2003) | Original Score: D
Rarity is calculated by averaging weighted factor scores: **((4.71 × 1) + (5.50 × 1)) / 2 = 5.11**					
Trends					
Short-term Trend	2012-01-04	* U = Unknown	-	MTNHP Species Rank Data Table	**Factor not used in ranking.** No data on trends available. | Methodology: NS (2003) | Original Score: U
Long-term Trend	2024-09-24	* F = Decline of 10 - 30%	-0.070	Expert Opinion	Much of the state is still occupied, but species appears to be extripated from the conifer forests of much of western Montana
Trends score is calculated by summing weighted short and long-term trend scores: **((-0.07 × 1)) = -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		Very High - High AB = Very High - High	[0.000, 1.830]		None
Intrinsic Vulnerability	2018-09-26	Moderately vulnerable B = Moderately vulnerable	-	MTNHP Species Rank Data Table	**Factor not used in ranking.** Species produced one young each year starting their second year, will disperse across most habitats | Methodology: NS (2003) | Original Score: B
Threat score is calculated from Overall Threat Impact when available or Intrinsic Vulnerability if not: **([0.00, 1.83]) = [0.00, 1.83]**					

Individual Threats Data

Threat Category	Date Assessed	Impact Score	Scope	Severity	Immediacy	Comments
Transportation & Service Corridors	2024-09-25	Low	Large	Slight	High	Road Mortality
Biological Resource Use	2024-09-25	Medium	Large	Moderate	High	Pericution and unregulated hunting/ shooting as encountered
Natural System Modifications	2024-09-25	Medium - Low	Restricted	Serious-Moderate	High	Fragmentation of forested habitat benefits the speices, but reduction in cover has the potential to increase mortality through increased predation rates
Invasive & Other Problematic Species, Genes & Diseases	2024-09-25	High - Low	Pervasive	Serious-Slight	High	Obsevations of declines in other regions may be the result of unknown disease
Threat Tally: 0 - Very High, [0,1] - High, [1,2] - Medium, [1,3] - Low Overall Threat Impact* = Very High - 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: (5.11 × 70%) + Threats: ([0.00, 1.83] × 30%) + Trends: (-0.07) = [3.50, 4.05]

Calculated Rank: S4

Accepted Rank	S3S4
Author(s)	Dan Bachen
Rank Approved By	Montana Species of Concern Committee
State Rank Reason	Species is common and widespread across much of central and eastern Montana where sufficient security cover and den sites exists. It has declined precipitously and is possibly extirpated from the conifer forests of western Montana for reasons that are not entirely clear. It faces threats from disease, road mortality and unrestricted shooting. Fire may have both positive and negative impacts on the species. The Montana Species of Concern Committee assigned a rank of S3S4 instead of the calculated rank of S4 to emphasize the declines in western Montana.

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=AMAFJ01010

Predicted Suitable Habitat Model:
https://mtnhp.mt.gov/resources/models/?elcode=AMAFJ01010

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 on rarity are of good quality. Threats and trend are poorly characterized, particularly for populations west of the Continental Divide.

Summary of Information Needs

Research is needed to establish the cause of declines in western Montana and better characterize population dynamics in this area and help determine if the eastern population is vulnerable.

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	2024-09-25	Dan Bachen	Wasstrom et al. 2020	Large	Slight	High	Road Mortality
Biological Resource Use - 5.1 - Hunting & Collecting Terrestrial Animals	2024-09-25	Dan Bachen	Expert Opinion	Large	Moderate	High	Pericution and unregulated hunting/ shooting as encountered
Natural System Modifications - 7.1 - Fire & Fire Suppression	2024-09-25	Dan Bachen	Band 1996	Restricted	Serious-Moderate	High	Fragmentation of forested habitat benefits the speices, but reduction in cover has the potential to increase mortality through increased predation rates
Invasive & Other Problematic Species, Genes & Diseases - 8	2024-09-25	Dan Bachen	Expert Opinon	Pervasive	Serious-Slight	High	Obsevations of declines in other regions may be the result of unknown disease