Cassiope mertensiana (Western Bell-heather)
Conservation Status Rank Summary

Date Published: October 1, 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	2026-10-01	108129.1 km² F = 20,000-200,000 km²	3.930	MTNHP Range Maps	None
Area of Occupancy	2026-10-01	* EF = 26-500 4-km² grid cells	[2.750, 3.440]	Expert Opinion, MTNHP Databases	The available observations occupy approximately 70 grid cells. Many additional grid cells are likely occupied based on the amount of suitable habitat that is avaiable.
Number of Occurrences			-		**Factor not used in ranking.**
Population Size	2026-10-01	* F = 10,000 - 100,000 individuals	3.930	Expert Opinion	Population levels are poorly documented but are believed to at least be in the tens of thousands.
# of Occurrences in Good Condition			-		**Factor not used in ranking.**
% of Area Occupied in Good Condition			-		**Factor not used in ranking.**
Environmental Specificity	2025-03-01	Narrow B = Narrow; specialist or community with key requirements common	-	Expert Opinion	**Factor not used in ranking.** Assessed by Scott Mincemoyer
Rarity is calculated by averaging weighted factor scores: **((3.93 × 1) + ([2.75, 3.44] × 2) + (3.93 × 2)) / 5 = [3.46, 3.73]**					
Trends					
Short-term Trend	2026-10-01	* FG = Decline of 30% to relatively stable	[-0.070, 0.000]	Expert Opinion	None
Long-term Trend	2026-10-01	* FH = Decline of 30% to increase of 25%	[-0.070, 0.070]	Expert Opinion	None
Trends score is calculated by summing weighted short and long-term trend scores: **(([-0.07, 0.00] × 2) + ([-0.07, 0.07] × 1)) = [-0.21, 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		Low / D = Low	5.500		The species' habitat is often remote with many areas within designated wilderness or roadless areas. No significant and widespread threats to the species are known. Localized impacts to populations may occur from various activities and land uses, but these are not believed to be significant in scope and/or severity.
Intrinsic Vulnerability	2025-03-01	Moderately vulnerable / B = Moderately vulnerable	-	Expert Opinion	**Factor not used in ranking.** Assessed by Scott Mincemoyer
Threat score is calculated from Overall Threat Impact when available or Intrinsic Vulnerability if not: **(5.50) = 5.50**					

Individual Threats Data

Threat Category	Date Assessed	Impact Score	Scope	Severity	Immediacy	Comments
No Threat Identified	2026-10-01	Low	None	None	None	The species' habitat is often remote with many areas within designated wilderness or roadless areas. No significant and widespread threats to the species are known. Localized impacts to populations may occur from various activities and land uses, but these are not believed to be significant in scope and/or severity.
Threat Tally: 0 - Very High, 0 - High, 0 - Medium, 1 - Low Overall Threat Impact* = Low						

*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: ([3.46, 3.73] × 70%) + Threats: (5.50 × 30%) + Trends: ([-0.21, 0.07]) = [3.86, 4.33]

Calculated Rank: S4

Accepted Rank	S4
Author(s)	Scott Mincemoyer
Rank Approved By	Scott Mincemoyer
State Rank Reason	*Cassiope mertensiana* is an occasional component of upper subalpine woodlands and alpine turf and slopes across the higher mountain ranges of western and central Montana. Population levels are poorly documented but are believed to be fairly robust, such that its viability is not a concern. The species' habitat is often remote with many areas within designated wilderness or roadless areas. No significant and widespread threats to the species are known.

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=PDERI07030

Predicted Suitable Habitat Model:
https://mtnhp.mt.gov/resources/models/?elcode=PDERI07030

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

Summary of Information Needs

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
No Threat Identified - 0	2026-10-01	S. Mincemoyer	Expert Opinion	None	None	None	The species' habitat is often remote with many areas within designated wilderness or roadless areas. No significant and widespread threats to the species are known. Localized impacts to populations may occur from various activities and land uses, but these are not believed to be significant in scope and/or severity.
Climate Change & Severe Weather - 11	2026-10-01	S. Mincemoyer	Expert Opinion	Unknown	Unknown	Unknown	Climate change, including increases in temperature, decreases in snowpack and increases in the frequency and severity of drought may negatively impact the species. However, the timing and magnitude of impacts is uncertain, therefore it does not affect the threat rank.