Physaria saximontana var. dentata (Rocky Mountain Twinpod) 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	2026-02-24	97534.0 km² F = 20,000-200,000 km²	3.930	MTNHP Range Maps	None
Area of Occupancy	2026-02-24	30 | 4km² cells E = 26-125 4-km² grid cells	2.750	MTNHP Databases	Of the approximate 96,004 2km x 2km grid cells that cover Montana, known occurrences of the species occupy 30 grid cells.
Number of Occurrences	2026-02-24	37 C = 21 - 80	2.750	MTNHP Databases	Known observations support at least 37 occurrences.
Population Size	2026-02-24	* EF = 2500 - 100,000 individuals	[3.140, 3.930]	MTNHP Databases	Many observations lack quantitative estimates of population size. However, statewide populations appear to number at least a few thousand and may be over 10,000 plants.
# of Occurrences in Good Condition	2026-02-24	* U = Unknown	-		**Factor not used in ranking.**
% of Area Occupied in Good Condition			-		**Factor not used in ranking.**
Environmental Specificity	2025-03-01	Moderate C = Moderate; generalist or community with some key requirements scarce	-	Expert Opinion	**Factor not used in ranking.** Assessed by Scott Mincemoyer
Rarity is calculated by averaging weighted factor scores: **((3.93 × 1) + (2.75 × 2) + (2.75 × 1) + ([3.14, 3.93] × 2)) / 6 = [3.08, 3.34]**					
Trends					
Short-term Trend	2026-02-24	* FG = Decline of 30% to relatively stable	[-0.070, 0.000]	Expert Opinion	Data to determine short-term trends are unavailable, though the species has likely been relatively stable in the recent past or experienced only minor declines.
Long-term Trend	2026-02-24	* FG = Decline of 30% to relatively stable	[-0.070, 0.000]	Expert Opinion	Data to determine long-term trends are unavailable. However, the species occurs primarily at higher elevations in habitats that are relatively remote and largely intact, so populations have likely been relatively stable or experienced only minor declines.
Trends score is calculated by summing weighted short and long-term trend scores:					

(([-0.07, 0.00] × 2) + ([-0.07, 0.00] × 1)) = [-0.21, 0.00]

*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		Medium - Low CD = Medium - Low	[3.670, 5.500]		No significant or likely threats to the species are known. Climate change poses a potential risk to the state's populations. The MTNHP conducted a species-level assessment using the Climate Change Vulnerability Index (CCVI) in 2021, which resulted in an Extremely Vulnerable rating to climate change. Climate change including increased ambient temperatures, decreased snowpacks, and increased frequencies and severities of drought could have negative impacts on this species; however, field-based data on the timing and magnitude are not available. Therefore, the potential threat from climate change is not used in the calculation of the overall threat rank, score, or final subnational rank.
Intrinsic Vulnerability	2026-02-24	Moderately vulnerable to not intrinsically vulnerable BC = Moderately vulnerable to not intrinsically 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: **([3.67, 5.50]) = [3.67, 5.50]**					

Individual Threats Data

Threat Category	Date Assessed	Impact Score	Scope	Severity	Immediacy	Comments
No individual threats data used in this rank						

Conservation Status Rank Calculation

Raw score

Rarity: ([3.08, 3.34] × 70%) + Threats: ([3.67, 5.50] × 30%) + Trends: ([-0.21, 0.00]) = [3.05, 3.99]

Calculated Rank: S3S4

Accepted Rank	S3
Author(s)	Scott Mincemoyer
Rank Approved By	Andrea Pipp
State Rank Reason	*Physaria saximontana* variety *dentata* is presumed to be endemic to Montana, though it may occur in the adjacent mountains of Idaho and Wyoming. Plants usually occur on rocky slopes in relatively remote, montane to alpine habitats. Population counts are poorly documented, and trends are unknown. However, it is presumed that occurrences have been relatively stable or experienced only minor declines because the species' habitat is remote and largely intact. Threats have not been identified though changes in climate patterns may pose a potential risk to the state's population. *Physaria saximontana* var. *dentata* remains vulnerable to extirpation due to the species' limited range and relative rarity in Montana. Surveys that bring forth current data on population parameters, habitat conditions, mapping, and potential threats are needed. Monitoring at a subset of populations is necessary to track population trends and assign a timely and accurate state conservation status rank.

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=PDBRA220L1

Predicted Suitable Habitat Model:
https://mtnhp.mt.gov/resources/models/?elcode=PDBRA220L1

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

Surveys that bring forth current data on population parameters, habitat conditions, mapping, and potential threats are needed. Monitoring at a subset of populations is necessary to track population trends and assign a timely and accurate state conservation status rank.

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 threats data available for this species							