

Eupatorium maculatum (Spotted Joepy-weed)

Conservation Status Rank Summary

Date Published: August 13, 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	2025-12-16	7000.0 km ² E = 5,000-20,000 km ²	3.140	MTNHP Range Maps	The 2026 MTNHP range map encompasses 18,288 square kilometers which is likely an over-estimates the species actual range when based on documented occurrences. Regardless, both estimates fall within the same categorical option for assessing Range Extent.
Area of Occupancy	2025-12-16	8 4km ² cells D = 6-25 4-km ² grid cells	2.060	MTNHP Databases	Of the approximate 96,004 2km x 2km grid cells that cover Montana, 8 cells contain observations of the species.
Number of Occurrences	2025-12-16	9 B = 6 - 20	1.380	MTNHP Databases	Current observation data groups into 9 occurrences.
Population Size	2025-12-16	* DE = 1000 - 10,000 individuals	[2.360, 3.140]	MTNHP Databases	One population encompassing 6 subpopulations (occurrences) was estimated at 500-1,000 stems. Another population composed of 2 subpopulations was estimated at over 1,000 stems. 2 other occurrences each had over 100 stems/plants. The distinction between genets and ramets confuses the population estimates. However, it would appear that populations numbers are likely in the range of several thousand plants.
# of Occurrences in Good Condition	2025-12-16	* BC = Very few to few (1-12) occurrences with good viability	[1.100, 2.200]	MTNHP Databases/ Expert Opinion	None
% 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: $((3.14 \times 1) + (2.06 \times 2) + (1.38 \times 1) + ([2.36, 3.14] \times 2) + ([1.10, 2.20] \times 2)) / 8 = [1.95, 2.42]$					
Trends					
Short-term Trend	2025-12-16	* U = Unknown	-	Expert Opinion	Factor not used in ranking. Short term trends are unknown. It is also unknown if the species'

					riparian habitat is in good condition or if weeds or other issues have negatively impacted it.
Long-term Trend	2025-12-16	* U = Unknown	-	Expert Opinion	Factor not used in ranking. Long term trends are unknown
No trend data used in this rank					

*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]		Occurrences have not been visited in 25-30 years, so it is unclear if they are being threatened. However, invasive weeds and increases in the frequency and severity of droughts may be or likely will impact the species in the future.
Intrinsic Vulnerability	2025-03-01	Not intrinsically vulnerable C = 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: $([1.95, 2.42] \times 70\%) + \text{Threats: } ([3.67, 5.50] \times 30\%) + \text{Trends: } (0.00) = [2.46, 3.34]$

Calculated Rank: S3

Accepted Rank	S2?
Author(s)	Scott Mincemoyer
Rank Approved By	Andrea Pipp
State Rank Reason	<i>Eupatorium maculatum</i> is rare in Montana where it is known from less than 20 occurrences in Carbon and Big Horn Counties. Occurrences have not been visited for at least 20 years, which means the population trend is unknown. Threats have not been reported though climate change poses a potential risk to the state's population. Due to the species overall rarity in the state, combined with a lack of current information, <i>Eupatorium maculatum</i> remains likely-imperiled in Montana. Surveys that bring forth current information on distributions, population counts and viability, habitat conditions, and threats is greatly needed. Additional surveys on lands modelled as predicted suitable habitat are also needed to better inform on the species' distribution and status in 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=PDAST3P140>

Predicted Suitable Habitat Model:

<https://mtnhp.mt.gov/resources/models/?elcode=PDAST3P140>

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 information on distributions, population counts and viability, habitat conditions, and threats is greatly needed. Additional surveys on lands modelled as predicted suitable habitat are also needed to better inform on the species' distribution and status in Montana.

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
Invasive & Other Problematic Species, Genes & Diseases - 8.1 - Invasive Non-Native/Alien Species/Diseases	2025-12-16	S. Mincemoyer	Expert Opinion	Unknown	Unknown	High-Low	It is unknown if invasive species including non-native grasses have negatively impacted any occurrences though impacts are expected at some point in the species' riparian habitat.
Climate Change & Severe Weather - 11	2025-12-16	S. Mincemoyer	Expert Opinion	Pervasive	Serious-Slight	Unknown	Climate change including increased temperatures and increases in the frequency and severity of drought may negatively impact the species.