Cirsium pulcherrimum (Wyoming Thistle)
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	2025-12-01	58126.0 km² F = 20,000-200,000 km²	3.930	MTNHP Range Maps	None
Area of Occupancy	2025-12-01	18 | 4km² cells D = 6-25 4-km² grid cells	2.060	MTNHP databases	Of the approximate 96,004 2km x 2km grid cells that cover Montana, 18 cells contain observations of the species.
Number of Occurrences	2025-12-01	16 B = 6 - 20	1.380	MTNHP Databases	None
Population Size	2025-12-01	* DE = 1000 - 10,000 individuals	[2.360, 3.140]	MTNHP databases/ Expert Opinion	Only two occurrences have population estimates: 10 plants and 50 plants. The size of other populations is unknown though some have qualitative descriptors ranging from uncommon to common. Total statewide population size is likely in the low thousands.
# of Occurrences in Good Condition	2025-12-01	* U = Unknown	-		**Factor not used in ranking.**
% of Area Occupied in Good Condition			-		**Factor not used in ranking.**
Environmental Specificity	2025-03-01	Narrow to moderate BC = Narrow to moderate	-	Expert Opinion	**Factor not used in ranking.** Assessed by Scott Mincemoyer
Rarity is calculated by averaging weighted factor scores: **((3.93 × 1) + (2.06 × 2) + (1.38 × 1) + ([2.36, 3.14] × 2)) / 6 = [2.36, 2.62]**					
Trends					
Short-term Trend	2025-12-01	* FH = Decline of 30% to increase of 25%	[-0.070, 0.070]	Expert Opinion	Actual short term trends are unknown, though it appears that much of the species habitat has been relatively stable in the recent past. However, livestock grazing, non-native species, and weed spraying may have impacted the species in some areas.
Long-term Trend	2025-12-01	* U = Unknown	-	Expert Opinion	**Factor not used in ranking.** Long term trends are unknown. Livestock grazing, non-native species, and weed spraying may have impacted populations in the past.
Trends score is calculated by summing weighted short and long-term trend scores: **(([-0.07, 0.07] × 2)) = [-0.14, 0.14]**					

*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		None
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: **(5.50) = 5.50**					

Individual Threats Data

Threat Category	Date Assessed	Impact Score	Scope	Severity	Immediacy	Comments
Invasive & Other Problematic Species, Genes & Diseases	2025-12-01	Low	Restricted -Small	Moderate-Slight	High-Moderate	Invasive species, including non-native perennial and annual grasses may be problematic in or near some of the occurrences.
Pollution	2025-12-01	Low	Small	Slight	High	Threat of herbicide application reported for at least 1 out of 10 Species Occurrences.
Threat Tally: 0 - Very High, 0 - High, 0 - Medium, 2 - 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: ([2.36, 2.62] × 70%) + Threats: (5.50 × 30%) + Trends: ([-0.14, 0.14]) = [3.16, 3.62]

Calculated Rank: S3S4

Accepted Rank	S3
Author(s)	Scott Mincemoyer
Rank Approved By	Andrea Pipp
State Rank Reason	*Cirsium pulcherrimum* is relatively rare and sparsely distributed in the state, where it is known from many counties in southeastern Montana. However, the extent of populations and the number of plants are poorly documented, and trends are largely unknown. Habitat has appeared to remain intact. Surveys that bring forth current information on known occurrences, including the extent of populations, number of plants, habitat conditions, and threats is greatly needed. In addition, surveys in areas modelled as predicted suitable habitat is needed to improve our understanding of Wyoming Thistle's distribution 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=PDAST2E2D0

Predicted Suitable Habitat Model:
https://mtnhp.mt.gov/resources/models/?elcode=PDAST2E2D0

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 known occurrences, including the extent of populations and number of plant, habitat condition, and threats are greatly needed. In addition, surveys in areas modelled as predicted suitable habitat is greatly needed to improve our understanding of Wyoming Thistle's distribution 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	Imme-diacy	Comments
Invasive & Other Problematic Species, Genes & Diseases - 8.1 - Invasive Non-Native/Alien Species/Diseases	2025-12-01	S. Mincemoyer	Expert Opinion	Restricted -Small	Moderate-Slight	High-Moderat e	Invasive species, including non-native perennial and annual grasses may be problematic in or near some of the occurrences.
Invasive & Other Problematic Species, Genes & Diseases - 8.7 - Biological Control Organisms	2025-12-01	S. Mincemoyer	Expert Opinion	Pervasive	Serious-Slight	Low	The introduced rhinocyllus weevil has not been documented yet on this species but it may eventually pose a threat by reducing seed production.
Pollution - 9.7 - Pesticide/Herbicide/Insecticide Application	2025-12-01	S. Mincemoyer	MTNHP Threat Ranking 2021	Small	Slight	High	Threat of herbicide application reported for at least 1 out of 10 Species Occurrences.