Cirsium undulatum (Wavyleaf Thistle)
Conservation Status Rank Summary

Date Published: September 29, 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	2026-09-29	380530.8 km² G = 200,000-2,500,000 km²	4.710	MTNHP Range Maps	None
Area of Occupancy	2026-09-29	35216 | 4km² cells I = > 12,500 4-km² grid cells	5.500	MTNHP Modeling	The estimated number of occupied grid cells based on suitable habitat modeling is an overestimate, though the number of occupied grid cells is very likely greater than 12,500 placing it in the same class code.
Number of Occurrences			-		**Factor not used in ranking.**
Population Size	2026-09-29	* H = >1,000,000 individuals	5.500	Expert Opinion	None
# 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	Broad D = Broad; generalist or community with all key requirements common	-	Expert Opinion	**Factor not used in ranking.** Assessed by Scott Mincemoyer
Rarity is calculated by averaging weighted factor scores: **((4.71 × 1) + (5.50 × 2) + (5.50 × 2)) / 5 = 5.34**					
Trends					
Short-term Trend	2026-09-29	* FG = Decline of 30% to relatively stable	[-0.070, 0.000]	Expert Opinion	Populations have likely been relatively stable or experienced minor declines in the recent past.
Long-term Trend	2026-09-29	* F = Decline of 10 - 30%	-0.070	Expert Opinion	Estimated decline due to losses from agricultural conversion, development and habitat degradation.
Trends score is calculated by summing weighted short and long-term trend scores: **(([-0.07, 0.00] × 2) + (-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		Invasive species, development and weed control efforts all negatively impact the species and its habitat but the magnitude of impacts is low.
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	2026-09-29	Low	Small	Serious-Slight	High	Invasive species occur in some of the species' habitat, degrading the habitat and potentially resulting in mostly minor population declines.
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: (5.34 × 70%) + Threats: (5.50 × 30%) + Trends: ([-0.21, -0.07]) = [5.18, 5.32]

Calculated Rank: S5

Accepted Rank	S5
Author(s)	Scott Mincemoyer
Rank Approved By	Scott Mincemoyer
State Rank Reason	*Cirsium undulatum* is common and widespread across the state, occurring in low elevation grasslands and sagebrush steppe habitats. Invasive species, development and weed control efforts all negatively impact the species and its habitat but the magnitude of impacts is low. Overall, populations remain very robust.

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=PDAST2E2Y0

Predicted Suitable Habitat Model:
https://mtnhp.mt.gov/resources/models/?elcode=PDAST2E2Y0

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
Residential & Commercial Development - 1	2026-09-29	S. Mincemoyer	Expert Opinion	Negligible	Extreme	High	Development negatively impacts some habitat and populations though ithis impact is minor in scope.
Invasive & Other Problematic Species, Genes & Diseases - 8.1 - Invasive Non-Native/Alien Species/Diseases	2026-09-29	S. Mincemoyer	Expert Opinion	Small	Serious-Slight	High	Invasive species occur in some of the species' habitat, degrading the habitat and potentially resulting in mostly minor population declines.
Pollution - 9.7 - Pesticide/Herbicide/Insecticide Application	2026-09-29	S. Mincemoyer	Expert Opinion	Negligible	Extreme	High	The species is occasionally sprayed during weed control efforts as it is mistaken for an invasive thistle.