Calochortus macrocarpus (Green-band Mariposa Lily)
Conservation Status Rank Summary

Date Published: June 12, 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	2026-06-11	12000.0 km² E = 5,000-20,000 km²	3.140	GIS Analysis	The current range of the species in Montana covers about 12,000 sq. km. based on the known observations.
Area of Occupancy	2026-06-11	* DE = 6-125 4-km² grid cells	[2.060, 2.750]	MTNHP Databases, Expert Opinion	The currently known observations occupy 25 grid cells. However, additional occurrences likely exist and some of the reported observations may no longer be extant, leading to some uncertainty in the actual value.
Number of Occurrences	2026-06-11	23 C = 21 - 80	2.750	MTNHP Databases	The currently documented observations group into 23 occurrences.
Population Size	2026-06-11	* U = Unknown	-		**Factor not used in ranking.** Population levels are unknown.
# 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 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: **((3.14 × 1) + ([2.06, 2.75] × 2) + (2.75 × 1)) / 4 = [2.50, 2.85]**					
Trends					
Short-term Trend	2026-06-11	* FG = Decline of 30% to relatively stable	[-0.070, 0.000]	Expert Opinion	Data to determine short-term trends are unavailable. However, populations have likely been relatively stable or experienced minor declines as a result of on-going development and habitat loss in portions of its range and from habitat degredation primarily from noxious weeds.
Long-term Trend	2026-06-11	* EF = Decline of 10 - 50%	[-0.140, -0.070]	Expert Opinion	Actual long-term trends are unknown. However, some of the species' habitat and some of the areas where historical collections were made, including the Tobacco Plains and the Flathead Valley have experienced significant development. Additionally, habitat degradation primarily from invasive species, livestock grazing and other land uses practices have resulted in

					less favorable conditions for the species. As a result, the species has almost certainly experienced some long-term declines in population levels.
Trends score is calculated by summing weighted short and long-term trend scores: **(([-0.07, 0.00] × 2) + ([-0.14, -0.07] × 1)) = [-0.28, -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		Medium / C = Medium	3.670		None
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: **(3.67) = 3.67**					

Individual Threats Data

Threat Category	Date Assessed	Impact Score	Scope	Severity	Immediacy	Comments
Residential & Commercial Development	2026-06-11	Low	Small	Extreme	High-Moderate	Development of the species' habitat continues in some portions of its range.
Agriculture & Aquaculture	2026-06-11	Low	Large	Slight	High-Moderate	Livestock grazing occurs within some of the species' habitat. However, the magnitude of any impacts is unknown.
Invasive & Other Problematic Species, Genes & Diseases	2026-06-11	High - Low	Large	Serious-Slight	High-Moderate	Various noxious weeds and invasive species occur within or adjacent to the species' habitat, leading to habitat degradation and direct loss of habitat as weedy species dominate the site. The magnitude of impacts is uncertain.
Threat Tally: 0 - Very High, [0,1] - High, 0 - Medium, [2,3] - Low Overall Threat Impact* = Medium						

*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: ([2.50, 2.85] × 70%) + Threats: (3.67 × 30%) + Trends: ([-0.28, -0.07]) = [2.57, 3.03]

Calculated Rank: S3

Accepted Rank	S3S4
Author(s)	Scott Mincemoyer
Rank Approved By	Montana Natural Heritage Program Staff
State Rank Reason	**DRAFT: Requesting feedback on the 2026 revised rank, factors, and State Rank Reason outlined below and in the Conservation Status Rank Report.** *Calochortus macrocarpus* occurs in low-elevation habitats in northwest Montana, where it has been documented at roughly two dozen sites. These habitats are often affected by development, invasive species, livestock grazing, and other land-use practices. Current population levels are unknown, as are trend, though it is likely that the species has experienced long-term declines, particularly from habitat loss. As targeted surveys for the species have not been conducted, the species may be somewhat more abundant than the relatively few collections and observations would indicate, leading to uncertainty in its conservation status. Surveys are needed at known sites to document population size and condition. Additional surveys in areas of potentially suitable habitat are also necessary to identify any new populations.

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=PMLIL0D0U0

Predicted Suitable Habitat Model:
https://mtnhp.mt.gov/resources/models/?elcode=PMLIL0D0U0

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 are needed at known sites to document population size and condition. Additional surveys in areas of potentially suitable habitat are also necessary to identify any new populations.

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	2026-06-11	S. Mincemoyer	Expert Opinion	Small	Extreme	High-Moderate	Development of the species' habitat continues in some portions of its range.
Agriculture & Aquaculture - 2.3 - Livestock Farming & Ranching	2026-06-11	S. Mincemoyer	Expert Opinion	Large	Slight	High-Moderate	Livestock grazing occurs within some of the species' habitat. However, the magnitude of any impacts is unknown.
Invasive & Other Problematic Species, Genes & Diseases - 8.1 - Invasive Non-Native/Alien Species/Diseases	2026-06-11	S. Mincemoyer	Expert Opinion	Large	Serious-Slight	High-Moderate	Various noxious weeds and invasive species occur within or adjacent to the species' habitat, leading to habitat degradation and direct loss of habitat as weedy species dominate the site. The magnitude of impacts is uncertain.