Caspian Tern (*Hydroprogne caspia*)
Conservation Status Rank Summary

October 21, 2024

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	Score	Data Source	Comments
Rarity					
Range Extent	2024-10-21	S: 179618.4 km²	3.930	MTNHP Range Maps	None
Area of Occupancy			-		**Factor not used in ranking.**
Number of Occurrences	2024-10-21	14	1.380	MTNHP Databases	None
Population Size			-		**Factor not used in ranking.**
# of Occurrences in Good Condition	2024-10-21		2.200		None
% of Area Occupied in Good Condition			-		**Factor not used in ranking.**
Environmental Specificity	2009-01-26	Very narrow	-	MTNHP Species Rank Data Table	**Factor not used in ranking.** Species dependent on isolated islands or artificial floating platforms for nesting. | Methodology: NS (2003) | Original Score: A
Rarity is calculated by averaging weighted factor scores: **((3.93 × 1) + (1.38 × 1) + (2.20 × 2)) / 4 = 2.43**					
Trends					
Short-term Trend	2024-10-21		-		**Factor not used in ranking.**
Long-term Trend	2009-01-26		0.000	MTNHP Species Rank Data Table	North American breeding range has expanded since 1900 as a result of creation of large marshes with islands. Breeding population in U.S. was around 9,500 pairs in 1970, but has since doubled. Probably overall stable since European arrival +/- 25% | Methodology: NS (2003) | Original Score: E
Trends score is calculated by summing weighted short and long-term trend scores: **((0.00 × 1)) = 0.00**					

Threats

Rank Factor	Date Assessed	Value	Score	Data Source	Comments
Threats					
Overall Threat Impact		High	1.830		Altered hydrology, nest site disturbance, nest competition with more common species, and contaminants probably represent threats.
Intrinsic Vulnerability	2009-01-26	Moderately vulnerable	-	MTNHP Species Rank Data Table	**Factor not used in ranking.** Methodology: NS (2003) | Original Score: B
Threat score is calculated from Overall Threat Impact when available or Intrinsic Vulnerability if not: **(1.83) = 1.83**					

Individual Threats Data

Threat Category	Date Assessed	Impact Score	Scope	Severity	Immediacy	Comments
Human Intrusions & Disturbance	2026-03-19	Low	Restricted	Moderate	High	Sensitive to human disturbance, especially early in breeding. Sensitive to human disturbance, especially early in breeding cycle and incubation period. During early stages of breeding, before eggs are laid, sudden deserting flights of entire colonies in response to human disturbances are typical. Human disturbance at colonies facilitates egg predation by gulls when more wary terns are flushed from nests. People and boats can cause disturbance by walking around nesting islands and causing nesting failure (gulls disrupted, then gulls destroy tern nests).
Invasive & Other Problematic Species, Genes & Diseases	2024-10-21	High	Pervasive	Serious	High	Bird flu has caused severe impacts (64% mortality in Wisconsin, Wiisconson Department of Natural Resources 2022) to the species in the midwest. Montana impacts are possible
Climate Change & Severe Weather	2024-10-21	Medium	Pervasive	Moderate	High	Climate-mediated increase in spring temperatures and storms during the nesting season.
Threat Tally: 0 - Very High, 1 - High, 1 - Medium, 1 - Low Overall Threat Impact* = High						

*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: (2.43 × 70%) + Threats: (1.83 × 30%) + Trends: (0.00) = 2.25

Calculated Rank: S2

Accepted Rank	S2B
Date Approved	2024-10-21
Approval Authority	Montana Species of Concern Committee
Rank Justification	Species is uncommon across portions of northern Montana, but breeding is restricted to few sites, predominately on National Wildlife Refuges. Short-term trend is not studied. Threats include nest failure from increased spring temperatures and increasing storm severity in the spring due to climate change. Additionally Avian influenza has caused significant impacts elsewhere in the country and is a substantial threat to Montana's population.

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=ABNNM08020

Predicted Suitable Habitat Model:
https://mtnhp.mt.gov/resources/models/?elcode=ABNNM08020

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

Rarity and threats have data available for assessment. Short-term trend is unknown as there is no recent monitoring data.

Summary of Information Needs

Surveys of breeding colonies following similar protocols to the colonial waterbird surveys conducted by Audubon should be performed at regular intervals to track trend of this species.

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
Human Intrusions & Disturbance - 6.3 - Work & Other Activities	2026-03-19	Dan Bachen	SWAP Assessment	Restricted	Moderate	High	Sensitive to human disturbance, especially early in breeding. Sensitive to human disturbance, especially early in breeding cycle and incubation period. During early stages of breeding, before eggs are laid, sudden deserting flights of entire colonies in response to human disturbances are typical. Human disturbance at colonies facilitates egg predation by gulls when more wary terns are flushed from nests. People and boats can cause disturbance by walking around nesting islands and causing nesting failure (gulls disrupted, then gulls destroy tern nests).
Invasive & Other Problematic Species, Genes & Diseases - 8.2 - Problematic Native Species/Diseases	2024-10-21	Dan Bachen	Expert Opinion	Pervasive	Serious	High	Bird flu has caused severe impacts (64% mortality in Wisconsin, Wiisconson Department of Natural Resources 2022) to the species in the midwest. Montana impacts are possible
Climate Change & Severe Weather - 11.4 - Storms & Flooding	2024-10-21	Dan Bachen	Expert Opinion	Pervasive	Moderate	High	Climate-mediated increase in spring temperatures and storms during the nesting season.