

Horned Grebe (*Podiceps auritus*)

Conservation Status Rank Summary

December 3, 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	2024-12-02	S: 170002.9 km ²	3.930	MTNHP Range Maps	None
Area of Occupancy	2024-12-02	4052 4km ² cells	4.810	MTNHP Modeling	None
Number of Occurrences	2024-12-02	28	2.750	MTNHP Databases	None
Population Size			-		Factor not used in ranking.
# of Occurrences in Good Condition	2024-12-02		2.200		None
% of Area Occupied in Good Condition			-		Factor not used in ranking.
Environmental Specificity	2009-01-20	Narrow	-	MTNHP Species Rank Data Table	Factor not used in ranking. Dependent on wetland habitats Methodology: NS (2003) Original Score: B
Rarity is calculated by averaging weighted factor scores: $((3.93 \times 1) + (4.81 \times 2) + (2.75 \times 1) + (2.20 \times 2)) / 6 = 3.45$					
Trends					
Short-term Trend	2009-01-20		-0.070	MTNHP Species Rank Data Table	No Montana trend data, but declining in all adjacent areas to the north. Only 46 breeding records for Montana, the last of which was 2002. So, they appear to be declining across the region. Methodology: NS (2003) Original Score: D
Long-term Trend	2024-12-02		0.000	MTNHP Species Rank Data Table	Larger water bodies they are dependent on were probably stable since European arrival. Methodology: NS (2003) Original Score: E
Trends score is calculated by summing weighted short and long-term trend scores: $((-0.07 \times 2) + (0.00 \times 1)) = -0.14$					

Threats

Rank Factor	Date Assessed	Value	Score	Data Source	Comments
Threats					
Overall Threat Impact		High	1.830		Unstable hydrology and nest site disturbance
Intrinsic Vulnerability	2009-01-20	Not intrinsically vulnerable	-	MTNHP Species Rank Data Table	Factor not used in ranking. Methodology: NS (2003) Original Score: C
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
Agriculture & Aquaculture	2026-03-03	Low	Pervasive	Slight	High	Livestock grazing within riparian areas damages vegetation and degrades banks.
Human Intrusions & Disturbance	2026-03-03	Low	Restricted	Moderate	High	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 grebes are flushed from nests.
Natural System Modifications	2026-03-03	Medium	Pervasive	Moderate	High	<p>The Horned Grebe selects small ponds and lake inlets containing a mixture of emergent vegetation and open water, which are used to good advantage: its cryptic, floating nest is usually concealed in the vegetation, and its intraspecific visual signals, including stereotyped breeding displays are presented in the open water. Monogamous and intensely territorial, the Horned Grebe usually nests solitarily or in loose aggregations, occasionally in small colonies.</p> <p>In North America, breeds in small (minimum about 0.05 ha) to moderately sized (1-10 ha), fairly shallow freshwater ponds and marshes with beds of emergent vegetation, especially sedges (<i>Carex</i> spp.), rushes (<i>Equisetum</i> spp.), and cattails (<i>Typha</i> spp.), and substantial areas of open water.</p>

Pollution	2026-03-03	Low	Restricted	Slight	High	Discarded fishing line, nets, ropes, plastic containers, and other waste can cause fatal entanglement, can reduce foraging and brood-rearing abilities, and if ingested can cause plastic toxicity or reduced nutrition uptake.
Climate Change & Severe Weather	2024-12-03	High	Pervasive	Serious	Moderate	Audubon's Survival by Degrees project predicts a severe loss of habitat under both the 1.5 and 3C temperature increase scenarios
Threat Tally: 0 - Very High, 1 - High, 1 - Medium, 3 - 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: $(3.45 \times 70\%)$ + Threats: $(1.83 \times 30\%)$ + Trends: $(-0.14) = 2.82$

Calculated Rank: S3

Accepted Rank	S3B
Date Approved	2009-05-01
Approval Authority	Montana Species of Concern Committee
Rank Justification	Species is a rare breeder across northern Montana. It appears to be declining and faces threats from warming temperatures, which are predicted to significantly decrease breeding habitat in the state.

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=ABNCA03010>

Predicted Suitable Habitat Model:

<https://mtnhp.mt.gov/resources/models/?elcode=ABNCA03010>

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

Data to assess status are generally good, but species lacks recent and state-specific trend information.

Summary of Information Needs

Regular monitoring of breeding populations is necessary to explore trend, both within protected areas on wildlife refuges as well as those that occur on unprotected lands.

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
Agriculture & Aquaculture - 2.3 - Livestock Farming & Ranching	2026-03-03	Dan Bachen	SWAP Assessment	Pervasive	Slight	High	Livestock grazing within riparian areas damages vegetation and degrades banks.
Human Intrusions & Disturbance - 6	2026-03-03	Dan Bachen	SWAP Assessment	Restricted	Moderate	High	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 grebes are flushed from nests.
Natural System Modifications - 7.2 - Dams & Water Management/Use	2026-03-03	Dan Bachen	SWAP Assessment	Pervasive	Moderate	High	<p>The Horned Grebe selects small ponds and lake inlets containing a mixture of emergent vegetation and open water, which are used to good advantage: its cryptic, floating nest is usually concealed in the vegetation, and its intraspecific visual signals, including stereotyped breeding displays are presented in the open water. Monogamous and intensely territorial, the Horned Grebe usually nests solitarily or in loose aggregations, occasionally in small colonies.</p> <p>In North America, breeds in small (minimum about 0.05 ha) to moderately sized (1-10 ha), fairly shallow freshwater ponds and marshes with beds of emergent vegetation, especially sedges (<i>Carex</i> spp.), rushes (<i>Equisetum</i> spp.), and cattails (<i>Typha</i> spp.), and substantial areas of open water.</p>
Invasive & Other Problematic Species, Genes & Diseases - 8.5 - Viral/Prion-induced Diseases	2026-03-03	Dan Bachen	SWAP Assessment	Pervasive	Unknown	Moderate	Avian influenza can result in mortality.
Pollution - 9.4 - Garbage & Solid Waste	2026-03-03	Dan Bachen	SWAP Assessment	Restricted	Slight	High	Discarded fishing line, nets, ropes, plastic containers, and other waste can cause fatal entanglement, can reduce foraging and brood-rearing abilities, and if ingested can cause plastic toxicity or reduced nutrition uptake.
Climate Change & Severe Weather - 11	2024-12-03	Dan Bachen	Audubn Survival by Degrees	Pervasive	Serious	Moderate	Audubon's Survival by Degrees project predicts a severe loss of habitat under both the 1.5 and 3C temperature increase scenarios