

# Barrow's Goldeneye (*Bucephala islandica*)

## Conservation Status Rank Summary

January 23, 2025

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
<b>Rarity</b>					
Range Extent	2024-01-09	Y: 201210.7 km <sup>2</sup>	4.710	MTNHP Range Maps	None
Area of Occupancy	2024-01-09	2724   4km <sup>2</sup> cells	4.810	MTNHP Modeling	None
Number of Occurrences			-		Factor not used in ranking.
Population Size			-		Factor not used in ranking.
# of Occurrences in Good Condition			-		Factor not used in ranking.
% of Area Occupied in Good Condition			-		Factor not used in ranking.
Environmental Specificity	2009-01-14	Narrow	-	MTNHP Species Rank Data Table	Factor not used in ranking. Specialize on ponded habitats with large nest snags for nesting, both of which are widespread   Methodology: NS (2003)   Original Score: B
Rarity is calculated by averaging weighted factor scores: $((4.71 \times 1) + (4.81 \times 2)) / 3 = 4.78$					
<b>Trends</b>					
Short-term Trend	2009-01-14		-	MTNHP Species Rank Data Table	Factor not used in ranking. Breeding Bird Survey (BBS) data is very limited across their range. Trends are unknown, but likely stable. CBC data for Montana is relatively stable.   Methodology: NS (2003)   Original Score: U
Long-term Trend	2009-01-14		0.000	MTNHP Species Rank Data Table	Loss of some lentic habitats such as beaver ponds since European arrival, but stable within +/- 25%   Methodology: NS (2003)   Original Score: E
Trends score is calculated by summing weighted short and long-term trend scores: $((0.00 \times 1)) = 0.00$					

## Threats

Rank Factor	Date Assessed	Value	Score	Data Source	Comments
<b>Threats</b>					
<b>Overall Threat Impact</b>		High	1.830		Reduced pond habitat due to beaver loss, and altered hydrology. Also loss of big snags for nesting.
<b>Intrinsic Vulnerability</b>	2009-01-14	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: <b>( 1.83 ) = 1.83</b>					

### Individual Threats Data

Threat Category	Date Assessed	Impact Score	Scope	Severity	Immediacy	Comments
<b>Climate Change &amp; Severe Weather</b>	2025-01-23	High	Pervasive	Serious	Moderate	Audubon's Survival by Degrees Project predicts significant impacts to the species with 1.5c warming
Threat Tally: 0 - Very High, 1 - High, 0 - Medium, 0 - 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:  $(4.78 \times 70\%)$  + Threats:  $(1.83 \times 30\%)$  + Trends:  $(0.00) = 3.89$

Calculated Rank: S4

<b>Accepted Rank</b>	S4
<b>Date Approved</b>	Date Unknown
<b>Approval Authority</b>	Legacy Assessment: MTNHP Staff
<b>Rank Justification</b>	Species is uncommon across western Montana. Population trend is uncertain but it may be declining. Threats are poorly documented, but include habitat loss due to warming temperatures.

## 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](https://mtnhp.mt.gov/docs/Montana_State_Rank_Criteria_20211201.pdf)

Montana Field Guide Species Account:

<https://fieldguide.mt.gov/speciesDetail.aspx?elcode=ABNJB18020>

Predicted Suitable Habitat Model:

<https://mtnhp.mt.gov/resources/models/?elcode=ABNJB18020>

## 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

Threats are poorly characterized and trend for breeding individuals is not available.

### Summary of Information Needs

Understanding the current population status would provide data to calculate a robust status rank.

## 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
Climate Change & Severe Weather - 11.1 - Habitat Shifting & Alteration	2025-01-23	Dan Bachen	Audubon Survival by Degrees	Pervasive	Serious	Moderate	Audubon's Survival by Degrees Project predicts significant impacts to the species with 1.5c warming