

# Black Rosy-Finch (*Leucosticte atrata*)

## 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
<b>Rarity</b>					
Range Extent	2024-10-21	S: 76620.4 km <sup>2</sup>	3.930	MTNHP Range Maps	None
Area of Occupancy	2024-10-21	243   4km <sup>2</sup> cells	3.440	MTNHP Modeling	None
Number of Occurrences	2024-10-21	61	2.750	MTNHP Databases	None
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	2009-02-02	Narrow	-	MTNHP Species Rank Data Table	Factor not used in ranking. Nest in alpine cliffs and forage around alpine snowfields.   Methodology: NS (2003)   Original Score: B
Rarity is calculated by averaging weighted factor scores: $((3.93 \times 1) + (3.44 \times 2) + (2.75 \times 1)) / 4 = 3.39$					
<b>Trends</b>					
Short-term Trend	2024-10-21		[-0.220, -0.140]		BBS and IMBCR do not report credible trends for this species.
Long-term Trend	2024-10-21		[-0.500, -0.400]	Rosenberg et al. 2016	Rosenberg et al. Describes a 95% decline between 1970 and 2014
Trends score is calculated by summing weighted short and long-term trend scores: $((-0.22, -0.14) \times 2) + ((-0.50, -0.40) \times 1) = [-0.94, -0.68]$					

## Threats

Rank Factor	Date Assessed	Value	Score	Data Source	Comments
<b>Threats</b>					
<b>Overall Threat Impact</b>		High	1.830		Climate change impacts on snowfields through reduced winter precipitation and increased spring and summer temperatures are probably the greatest threat to the species since they are dependent on snow fields for foraging. Encroaching tree line may also alt
<b>Intrinsic Vulnerability</b>	2009-02-02	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: <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>	2024-10-21	High	Pervasive	Serious	High	Loss of snowpack and conifer encroachment in alpine habitat due to warming temperatures.
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:  $(3.39 \times 70\%)$  + Threats:  $(1.83 \times 30\%)$  + Trends:  $([-0.94, -0.68]) = [1.98, 2.24]$

Calculated Rank: S2

<b>Accepted Rank</b>	S2
<b>Date Approved</b>	2021-08-01
<b>Approval Authority</b>	Montana Species of Concern Committee
<b>Rank Justification</b>	Species is an alpine specialist and breeds in the mountain ranges of southwest Montana. Populations are generally limited. It has declined precipitously since the 19070s across its range and appears to have continued to decline in Montana in recent years. The primary threat facing the species is loss of alpine tundra and snowpack due to a warming climate.

## 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=ABPBY02010>

Predicted Suitable Habitat Model:

<https://mtnhp.mt.gov/resources/models/?elcode=ABPBY02010>

## 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

Species has some data available for assessment. Uncertainty exists in both trend and threats.

### Summary of Information Needs

Monitoring of the species within its breeding habitat to assess trend is necessary as inference is currently drawn from overwintering populations in urban areas (CBC data). Better assessment of climate impacts is also necessary.

## 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	2024-10-21	Dan Bachen	Rosenberg et al. 2016	Pervasive	Serious	High	Loss of snowpack and conifer encroachment in alpine habitat due to warming temperatures.