Baird's Sparrow (*Centronyx bairdii*)
Conservation Status Rank Summary

Date Published: April 9, 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	2023-12-26	255690.9 km² G = 200,000-2,500,000 km²	4.710	MTNHP Range Maps	None
Area of Occupancy	2024-04-24	11324 | 4km² cells H = 2,501-12,500 4-km² grid cells	4.810	MTNHP Modeling	None
Number of Occurrences	2024-04-24	2847 E = >300	5.500	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	2011-12-19	Narrow B = Narrow; specialist or community with key requirements common	-	MTNHP Species Rank Data Table	**Factor not used in ranking.** Narrow Specialist. Species is dependent on moderately tall and dense grassland. | Methodology: NS (2003) | Original Score: B
Rarity is calculated by averaging weighted factor scores: **((4.71 × 1) + (4.81 × 2) + (5.50 × 1)) / 4 = 4.96**					
Trends					
Short-term Trend	2023-12-20	[-11.7, -0.8%] FG = Decline of 30% to relatively stable	[-0.070, 0.000]	IMBCR	IMBCR trend in population estimates for Montana. "- 95% CI"
Long-term Trend	2011-12-19	* E = Decline of 30 - 50%	-0.140	MTNHP Species Rank Data Table	Grassland cover types have been drastically reduced in Montana since European arrival. | Methodology: NS (2003) | Original Score: D
Trends score is calculated by summing weighted short and long-term trend scores: **(([-0.07, 0.00] × 2) + (-0.14 × 1)) = [-0.28, -0.14]**					

*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		Very High A = Very High	0.000		Habitat loss, grazing, and mowing all represent threats to Montana populations.
Intrinsic Vulnerability	2011-12-19	Not intrinsically vulnerable C = 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: **(0.00) = 0.00**					

Individual Threats Data

Threat Category	Date Assessed	Impact Score	Scope	Severity	Immediacy	Comments
Agriculture & Aquaculture	None	High	Large	Serious	High	Multiple Level 2 threats - see Additional Threat Details below.
Energy Production & Mining	2026-04-09	Low	Restricted	Moderate	High	Degradation, conversion, and fragmentation of grassland habitat due to oil and gas structures and activity associated with drilling can decrease breeding habitat. Baird's sparrows can be greatly affected by the infrastructure associated with oil and gas and the habitat fragmentation that it creates. Changes to the vegetation structure and non-native species encroachment due to oil and gas development may have a greater influence on the species then the gas wells themselves (Environment and Climate Change Canada 2021).
Invasive & Other Problematic Species, Genes & Diseases	2026-04-09	Low	Restricted	Slight	Moderate	Encroachment of non-native vegetative species (e.g. crested wheatgrass, smooth brome, annual bromes), particularly non-native grasses or forbs that tend to form monocultures within grasslands, create unfavorable habitat for grassland birds. Less sensitive than the other species to this but still might suffer from reduced forb and insect abundance associated with non-native monocultures.
Climate Change & Severe Weather	2024-12-03	High	Pervasive	Serious	Moderate	Audubon's Survival by Degrees project predicts significant loss of breeding habitat across various warming scenarios (1.5-3C).
Threat Tally: 0 - Very High, 2 - High, 0 - Medium, 2 - Low Overall Threat Impact* = Very 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: (4.96 × 70%) + Threats: (0.00 × 30%) + Trends: ([-0.28, -0.14]) = [3.19, 3.33]

Calculated Rank: S3

Accepted Rank	S3B
Author(s)	Dan Bachen
Rank Approved By	Montana Species of Concern Committee
State Rank Reason	Species is relatively common in steppe ecosystems across much of central and eastern Montana. It is declining and facing threats from habitat loss due to conversion of native habitat to agriculture and 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

Montana Field Guide Species Account:
https://fieldguide.mt.gov/speciesDetail.aspx?elcode=ABPBXA0010

Predicted Suitable Habitat Model:
https://mtnhp.mt.gov/resources/models/?elcode=ABPBXA0010

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 species status is generally sufficient. Trend appears to be negative with a moderate uncertainty associated with the estimate.

Summary of Information Needs

Monitoring of trend should continue to assess ongoing declines and threat impacts.

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
Agriculture & Aquaculture - 2.1 - Annual & Perennial Non-Timber Crops	2024-12-03	Dan Bachen	MTNHP Data WWF plow print tool	Large	Serious	Moderate	Significant areas of the species breeding habitat occur in areas under threat of converion to row-crops
Agriculture & Aquaculture - 2.3 - Livestock Farming & Ranching	2026-04-09	Dan Bachen	SWAP Assessment	Large	Moderate	High	Effect of livestock grazing (or lack thereof) depending on timing, intensity, and duration can create unsuitable habitat.Species prefers grazing systems that result in range conditions of moderate vegetative and litter cover and height with little encroachment of woody vegetation (Shaffer et al. 2020). Prolonged, heavy use by livestock or other ungulates can degrade habitat quality for BAIS.
Energy Production & Mining - 3.1 - Oil & Gas Drilling	2026-04-09	Dan Bachen	SWAP Assessment	Restricted	Moderate	High	Degradation, conversion, and fragmentation of grassland habitat due to oil and gas structures and activity associated with drilling can decrease breeding habitat. Baird's sparrows can be greatly affected by the infrastructure associated with oil and gas and the habitat fragmentation that it creates. Changes to the vegetation structure and non-native species encroachment due to oil and gas development may have a greater influence on the species then the gas wells themselves (Environment and Climate Change Canada 2021).
Invasive & Other Problematic Species, Genes & Diseases - 8.1 - Invasive Non-Native/Alien Species/Diseases	2026-04-09	Dan Bachen	SWAP Assessment	Restricted	Slight	Moderate	Encroachment of non-native vegetative species (e.g. crested wheatgrass, smooth brome, annual bromes), particularly non-native grasses or forbs that tend to form monocultures within grasslands, create unfavorable habitat for grassland birds. Less sensitive than the other species to this but still might suffer from reduced forb and insect abundance associated with non-native monocultures.
Climate Change & Severe Weather - 11	2024-12-03	Dan Bachen	Audubon Survival by Degrees Project	Pervasive	Serious	Moderate	Audubon's Survival by Degrees project predicts significant loss of breeding habitat across various warming scenarios (1.5-3C).