

# Ferruginous Hawk (*Buteo regalis*) 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
<b>Rarity</b>					
Range Extent	2024-10-07	S: 314410.4 km <sup>2</sup>	4.710	MTNHP Range Maps	None
Area of Occupancy	2024-12-03	12561   4km <sup>2</sup> cells	5.500	MTNHP Modeling	None
Number of Occurrences	2024-10-07	1355	5.500	MTNHP Databases	None
Population Size			-		Factor not used in ranking.
# of Occurrences in Good Condition	2024-10-07		3.300	MTNHP Data	Species occurs across areas likely to be impacted by habitat loss and in proximity to current and future wind energy sites.
% of Area Occupied in Good Condition			-		Factor not used in ranking.
Environmental Specificity	2011-12-22	Moderate	-	MTNHP Species Rank Data Table	Factor not used in ranking. Moderate Generalist. Prey broadly distributed, but nest sites more limited.   Methodology: NS (2003)   Original Score: C
Rarity is calculated by averaging weighted factor scores: $( (4.71 \times 1) + (5.50 \times 2) + (5.50 \times 1) + (3.30 \times 2) ) / 6 = 4.64$					
<b>Trends</b>					
Short-term Trend	2023-12-20	-13.4%	-0.070	IMBCR	IMBCR trend in population estimates for Montana. "-Point Estimate"
Long-term Trend	2011-12-22		-0.140	MTNHP Species Rank Data Table	Populations are largely dependent on ground squirrels, which have been greatly reduced since European arrival.   Methodology: NS (2003)   Original Score: D
Trends score is calculated by summing weighted short and long-term trend scores: $( (-0.07 \times 2) + (-0.14 \times 1) ) = -0.28$					

## Threats

Rank Factor	Date Assessed	Value	Score	Data Source	Comments
<b>Threats</b>					
Overall Threat Impact		Very high	0.000		None
Intrinsic Vulnerability	2011-12-22	Moderately vulnerable	-	MTNHP Species Rank Data Table	Factor not used in ranking. Moderately Vulnerable. Species exhibits moderate age of maturity, frequency of reproduction, and/or fecundity such that populations generally tend to recover from decreases in abundance within 5-20 years or 2-5 generations. Species has good dispersal capabilities such that extirpated populations generally become reestablished through natural recolonization.   Methodology: NS (2003)   Original Score: B
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
Residential & Commercial Development	2026-03-10	Low	Small	Slight	High	Land use conversion from traditional rangeland to subdivision and urban development.
Agriculture & Aquaculture	2024-10-07	High	Large	Serious	High	Threat of conversion of native steppe habitats to row crops with a decrease in prey abundance
Energy Production & Mining	None	Low	Restricted	Moderate	High	Multiple Level 2 threats - see Additional Threat Details below.
Transportation & Service Corridors	2026-03-10	Low	Small	Slight	High	Collision with power lines and cellphone towers which are increasing across the landscape due to an influx of development.
Biological Resource Use	2026-03-10	Low	Small	Slight	High	Illegal persecution by landowners and secondary poisoning (anticoagulants, lead) (Colorado SWAP). Young being fed poisoned food sources. Possible bioaccumulation with them eating meadowlarks.
Invasive & Other Problematic Species, Genes & Diseases	2026-03-10	Medium	Large	Moderate	High	Loss of prairie dog colonies due to sylvatic plague and targeted removal for perceived livestock competition and indirect livestock damage and loss of general prey species like jack rabbits. Possible impacts from rabbit hemorrhagic disease in jack rabbits.
Climate Change & Severe Weather	2024-12-03	Medium	Pervasive	Moderate	Moderate	Audubon's Survival by Degrees project predicts minor habitat loss due to warming temperatures

Threat Tally: 0 - Very High, 1 - High, 2 - Medium, 4 - 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:  $(4.64 \times 70\%)$  + Threats:  $(0.00 \times 30\%)$  + Trends:  $(-0.28) = 2.97$

Calculated Rank: S3

<b>Accepted Rank</b>	S3B
<b>Date Approved</b>	Date Unknown
<b>Approval Authority</b>	Legacy Assessment: MTNHP Staff
<b>Rank Justification</b>	Species is distributed across steppe habitats in central and eastern Montana. It is currently declining and faces threats from loss of habitat due to conversion to agriculture and to a lesser degree, a warming climate. It is also impacted by wind energy production due to collision with turbines.

## 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=ABNKC19120>

Predicted Suitable Habitat Model:

<https://mtnhp.mt.gov/resources/models/?elcode=ABNKC19120>

## 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

No additional data are needed to assess status for this species.

### Summary of Information Needs

Monitoring of the species should continue as it is declining and to assess 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	Immediacy	Comments
<b>Residential &amp; Commercial Development - 1.1 - Housing &amp; Urban Areas</b>	2026-03-10	Dan Bachen	SWAP Assessment	Small	Slight	High	Land use conversion from traditional rangeland to subdivision and urban development.
<b>Agriculture &amp; Aquaculture - 2.1 - Annual &amp; Perennial Non-Timber Crops</b>	2024-10-07	Dan Bachen	Expert Opinion	Large	Serious	High	Threat of conversion of native steppe habitats to row crops with a decrease in prey abundance
<b>Energy Production &amp; Mining - 3.1 - Oil &amp; Gas Drilling</b>	2026-03-10	Dan Bachen	SWAP Assessment	Small	Slight	High	Oil and gas extraction: Reduction in quantity and quality of connected habitat for grassland bird species.
<b>Energy Production &amp; Mining - 3.3 - Renewable Energy</b>	2024-10-07	Dan Bachen	Differforfer et al. 2021	Restricted	Moderate	High	Species is sensitive to mortality caused by wind turbine strikes. Predicted population growth rates for future build out scenarios fall below 1, indicating moderate to severe declines are possible.
<b>Transportation &amp; Service Corridors - 4.2 - Utility &amp; Service Lines</b>	2026-03-10	Dan Bachen	SWAP Assessment	Small	Slight	High	Collision with power lines and cellphone towers which are increasing across the landscape due to an influx of development.
<b>Biological Resource Use - 5.1 - Hunting &amp; Collecting Terrestrial Animals</b>	2026-03-10	Dan Bachen	SWAP Assessment	Small	Slight	High	Illegal persecution by landowners and secondary poisoning (anticoagulants, lead) (Colorado SWAP). Young being fed poisoned food sources. Possible bioaccumulation with them eating meadowlarks.
<b>Invasive &amp; Other Problematic Species, Genes &amp; Diseases - 8.4 - Problematic Species/Diseases of Unknown Origin</b>	2026-03-10	None	None	Large	Moderate	High	Loss of prairie dog colonies due to sylvatic plague and targeted removal for perceived livestock competition and indirect livestock damage and loss of general prey species like jack rabbits. Possible impacts from rabbit hemorrhagic disease in jack rabbits.
<b>Climate Change &amp; Severe Weather - 11</b>	2024-12-03	Dan Bachen	Audubon Survival by Degrees Project	Pervasive	Moderate	Moderate	Audubon's Survival by Degrees project predicts minor habitat loss due to warming temperatures