

Northern Flying Squirrel (*Glaucomys sabrinus*)

Conservation Status Rank Summary

September 16, 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 | 2024-09-16 | Y: 137882.9 km ² | 3.930 | MTNHP Range Maps | None |
| Area of Occupancy | 2024-09-16 | 4674 4km ² 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 | | | - | | Factor not used in ranking. |
| Rarity is calculated by averaging weighted factor scores: $((3.93 \times 1) + (4.81 \times 2)) / 3 = 4.52$ | | | | | |
| Trends | | | | | |
| Short-term Trend | 2018-05-03 | | - | MTNHP Species Rank Data Table | Factor not used in ranking. No data on trends available Methodology: NS (2003) Original Score: U |
| Long-term Trend | 2018-05-03 | | [-0.070, 0.070] | MTNHP Species Rank Data Table | Habitat is likely stable within +/- 25% since European settlement Methodology: NS (2003) Original Score: E |
| Trends score is calculated by summing weighted short and long-term trend scores: $(([-0.07, 0.07] \times 1)) = [-0.07, 0.07]$ | | | | | |

Threats

| Rank Factor | Date Assessed | Value | Score | Data Source | Comments |
|--|---------------|----------------|-------|-------------|---|
| Threats | | | | | |
| Overall Threat Impact | | Low/No Threats | 5.500 | | Largely unknown, but forest management practices and fire may impact this species as it is found in mature forests, but the extent of impacts is not currently known and likely to be low |
| Intrinsic Vulnerability | | | - | | Factor not used in ranking. |
| Threat score is calculated from Overall Threat Impact when available or Intrinsic Vulnerability if not: (5.50) = 5.50 | | | | | |

Individual Threats Data

| Threat Category | Date Assessed | Impact Score | Scope | Severity | Immediacy | Comments |
|---|---------------|--------------|------------|----------|-----------|--|
| Biological Resource Use | 2024-09-16 | Low | Restricted | Moderate | High | Squirrel density may decline in thinned or treated areas, but overall numbers may increase if the habitat is heterogeneous and suitable refugia within untreated stands are in proximity to these treatments |
| Natural System Modifications | 2024-09-16 | Low | Restricted | Moderate | High | Sever burns are likely to reduce squirrel occupancy and density |
| Threat Tally: 0 - Very High, 0 - High, 0 - Medium, 2 - Low Overall Threat Impact* = Low/No Threats | | | | | | |

*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: $(4.52 \times 70\%)$ + Threats: $(5.50 \times 30\%)$ + Trends: $([-0.07, 0.07])$ = $[4.74, 4.88]$

Calculated Rank: S5

| | |
|---------------------------|--|
| Accepted Rank | S5 |
| Date Approved | 2024-12-18 |
| Approval Authority | MTNHP |
| Rank Justification | Species is uncommon but wide-spread in forested habitat. It faces threats low-level threats from habitat loss due to fire and treatments such as thinning. However the species may compensate for this loss by increased occupancy of surrounding areas. |

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=AMAFB09030>

Predicted Suitable Habitat Model:

<https://mtnhp.mt.gov/resources/models/?elcode=AMAFB09030>

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 available

Summary of Information Needs

No additional information are needed at this time.

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 |
|---|---------------|-------------|----------------------------|------------|----------|-----------|--|
| Biological Resource Use - 5.3 - Logging & Wood Harvesting | 2024-09-16 | Dan Bachen | Sollmann et al. 2016 | Restricted | Moderate | High | Squirrel density may decline in thinned or treated areas, but overall numbers may increase if the habitat is heterogeneous and suitable refugia within untreated stands are in proximity to these treatments |
| Natural System Modifications - 7.1 - Fire & Fire Suppression | 2024-09-16 | Dan Bahcen | Mazzella and Koprwski 2020 | Restricted | Moderate | High | Sever burns are likely to reduce squirrel occupancy and density |