

Sprague's Pipit (*Anthus spragueii*) Conservation Status Rank Summary

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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	2024-10-04	280888.7 km ² G = 200,000-2,500,000 km ²	4.710	MTNHP Range Maps	None
Area of Occupancy	2024-10-04	15185 4km ² cells I = > 12,500 4-km ² grid cells	5.500	MTNHP Modeling	None
Number of Occurrences	2024-10-04	3048 E = >300	5.500	MTNHP Databases	None
Population Size			-		Factor not used in ranking.
# of Occurrences in Good Condition	2024-10-04	* D = Some (13-40) occurrences with excellent or good viability or ecological integrity	3.300	MTNHP Data	Most occurrences are on private agriculture lands
% of Area Occupied in Good Condition			-		Factor not used in ranking.
Environmental Specificity	2011-12-20	Narrow B = Narrow; specialist or community with key requirements common	-	MTNHP Species Rank Data Table	Factor not used in ranking. Narrow specialist. Species requires native prairie grassland without shrubs. Methodology: NS (2003) Original Score: B
Rarity is calculated by averaging weighted factor scores: $((4.71 \times 1) + (5.50 \times 2) + (5.50 \times 1) + (3.30 \times 2)) / 6 = 4.64$					
Trends					
Short-term Trend	2023-12-20	-11.9% F = Decline of 10 - 30%	-0.070	IMBCR	IMBCR trend in population estimates for Bird Conservation Region 11. "-Point Estimate"
Long-term Trend	2011-12-20	* E = Decline of 30 - 50%	-0.140	MTNHP Species Rank Data Table	Grassland cover types have been drastically reduced (25-50%) in Montana since European arrival. Methodology: NS (2003) Original Score: D
Trends score is calculated by summing weighted short and long-term trend scores: $((-0.07 \times 2) + (-0.14 \times 1)) = -0.28$					

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*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		None
Intrinsic Vulnerability	2011-12-20	Not intrinsically vulnerable C = Not intrinsically vulnerable	-	MTNHP Species Rank Data Table	Factor not used in ranking. Not Intrinsically Vulnerable. Species matures quickly, reproduces frequently, and/or has a high fecundity such that populations recover quickly (5 years or 2 generations) from decreases in abundance. Species has good dispersal capabilities such that extirpated populations generally become reestablished through natural recolonization. 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	None	Medium	Restricted	Serious	High	Multiple Level 2 threats - see Additional Threat Details below.
Transportation & Service Corridors	2026-04-09	Low	Small	Moderate	Moderate	Utility Service lines can result in degradation, fragmentation and loss of large tracts of native grassland, in addition to disturbance, affecting breeding. Collisions into utility and service lines during migration affects survival. Increase of predator perching sites.
Natural System Modifications	2026-04-09	Low	Large	Slight	High	Altered fire regimes and fire suppression in grassland landscapes can alter the vegetation structure and composition of native prairies which can degrade habitat for grassland birds. Fire suppression in Sprague's pipits breeding grounds can lead to increase of woody vegetation encroachment, invasive species encroachment, and unsuitable vegetation composition for nesting. Burning intensity, timing, and duration depend on local environmental conditions to provide the best habitat for pipits (Jones 2010).
Invasive & Other Problematic Species, Genes & Diseases	2026-04-09	Low	Restricted	Moderate	High	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. Reduced forb and insect abundance in non-native monocultures. Reduced ability for SPPI to walk through non-native grass stands that tend to be very dense.
Climate Change & Severe Weather	2024-10-04	Medium	Pervasive	Moderate	High	Suitable habitat for this species may shift due to climate change
Threat Tally: 0 - Very High, 1 - High, 2 - Medium, 3 - 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

Accepted Rank	S3B
Author(s)	Dan Bachen
Rank Approved By	Montana Species of Concern Committee
State Rank Reason	Species appears to be declining in Montana and faces threats from native habitat loss and fragmentation due row crop conversion, overgrazing, exotic plant invasions, altered fire regimes, and mowing prior to fledging of young.

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=ABPBM02060>

Predicted Suitable Habitat Model:

<https://mtnhp.mt.gov/resources/models/?elcode=ABPBM02060>

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 is well studied and all categories have sufficient data to inform status ranking efforts.

Summary of Information Needs

No additional information needs are recognized at this time. To monitor declines and inform management actions and recovery, monitoring of populations should continue.

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
Agriculture & Aquaculture - 2.1 - Annual & Perennial Non-Timber Crops	2024-10-04	Dan Bachen	Expert Opinion	Restricted	Serious	High	Conversion of native habitat to row crops and degradation of native habitat through agricultural practices
Agriculture & Aquaculture - 2.3 - Livestock Farming & Ranching	2024-10-04	Dan Bachen	Pipher et al. 2016	Large	Serious	High	Increased grazing intensity and duration negatively effect nest success for this species
Energy Production & Mining - 3.1 - Oil & Gas Drilling	2026-04-09	Dan Bachen	SWAP Assessment	Restricted	Serious	High	Degradation, conversion, and fragmentation of grassland habitat due to oil and gas structures and activity associated with drilling can decrease breeding habitat. Sprague's pipits are an area sensitive species and can be greatly affected by the infrastructure and fragmentation of a landscape due to oil and gas. Much of Sprague's pipits breeding range overlap with major areas of oil production in eastern Montana (Jones 2010).
Energy Production & Mining - 3.3 - Renewable Energy	2026-04-09	Dan Bachen	SWAP Assessment	Restricted	Moderate	Moderate	Solar & wind farms can result in degradation, fragmentation and loss of large tracts of native grassland, in addition to disturbance, affecting breeding. Collisions into wind farms during migration affects survival. Sprague's pipits are an area sensitive species and can be greatly affected by the infrastructure and fragmentation of a landscape due to renewable energy. Sprague's pipits respond negatively to shrub and tree densities and are likely to exhibit negative responses to other vertical structures in their habitat (turbines, power lines) (Jones 2010).
Transportation & Service Corridors - 4.2 - Utility & Service Lines	2026-04-09	Dan Bachen	SWAP Assessment	Small	Moderate	Moderate	Utility & Service lines can result in degradation, fragmentation and loss of large tracts of native grassland, in addition to disturbance, affecting breeding. Collisions into utility and service lines during migration affects survival. Increase of predator perching sites.
Natural System Modifications - 7.1 - Fire & Fire Suppression	2026-04-09	Dan Bachen	SWAP Assessment	Large	Slight	High	Altered fire regimes and fire suppression in grassland landscapes can alter the vegetation structure and composition of native prairies which can degrade habitat for grassland birds. Fire suppression in Sprague's pipits breeding grounds can lead to increase of woody vegetation encroachment, invasive species encroachment, and unsuitable vegetation composition for nesting. Burning intensity, timing, and duration depend on local environmental conditions to provide the best habitat for pipits (Jones 2010).

Invasive & Other Problematic Species, Genes & Diseases - 8.1 - Invasive Non-Native/Alien Species/Diseases	2026-04-09	Dan Bachen	SWAP Assessment	Restricted	Moderate	High	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. Reduced forb and insect abundance in non-native monocultures. Reduced ability for SPPI to walk through non-native grass stands that tend to be very dense.
Pollution - 9.3 - Agricultural & Forestry Effluents	2026-04-09	Dan Bachen	SWAP Assessment	Large	Unknown	High	Herbicide/ pesticide spraying, use, and runoff may impact invertebrate abundance and species health. Sprague's pipits may forage within croplands where pesticides are used to spray crop pests such as grasshoppers. Sprague's pipits are not directly targeted by pesticide application, but it may negatively impact the species and offspring success from direct ingestion of prey or indirectly from runoff (Environment Canada 2008). Abundance of insect prey is likely reduced from widespread use of insecticides, including neonicotinoids seed treatments.
Climate Change & Severe Weather - 11.1 - Habitat Shifting & Alteration	2024-10-04	Dan Bachen	Expert Opinion	Pervasive	Moderate	High	Suitable habitat for this species may shift due to climate change