



Rufous-winged Sparrow, photo by ©Robert Shantz

Conservation Profile

Species Concerns	
Habitat Loss Urbanization Unsustainable Livestock Grazing	
Conservation Status Lists	
USFWS ¹	BCC List (BCR 33, 34)
AZGFD ²	Tier 1B
DoD ³	No
BLM ⁴	No
PIF Watch List ^{5b}	Yellow List
PIF Regional Concern ^{5a}	Stewardship Species BCR 33
Migratory Bird Treaty Act	
Covered	
PIF Breeding Population Size Estimates ⁶	
Arizona	67,000
Global	200,000
Percent in Arizona	33.5%
PIF Population Goal ^{5b}	
Reverse Decline	
Trends in Arizona	
Historical (pre-BBS)	Unknown
BBS ⁷ (1968 – 2013)	Not given
PIF Urgency/Half-life (years) ^{5b}	
Insufficient Data	
Monitoring Coverage in Arizona	
BBS ⁷	Not adequate
AZ CBM	Covered
Associated Breeding Birds	
Cactus Wren, Black-tailed Gnatcatcher, Curve-billed Thrasher, Canyon Towhee, Black-throated Sparrow, Pyrrhuloxia	

Breeding Habitat Use Profile

Habitats Used in Arizona	
Primary: Semi-desert Grasslands Secondary: Sonoran Desertscrub	
Key Habitat Parameters	
Plant Composition	Grasses essential, with tobosa and false grama being most important; paloverde, hackberry, and cholla usually present; also mesquite, acacia, and many Upper Sonoran species often present ⁸
Plant Density and Size	Significant bunchgrass cover and sparse thornscrub ⁸
Microhabitat Features	Grassy swales that periodically flood, with cholla, paloverde, graythorn or other thorny shrubs for nesting ⁸
Landscape	Often at edges of desert washes, mesquite groves, or farmlands; avoids steeper slopes
Elevation Range in Arizona	
2,100 – 4,200 feet ⁹	
Density Estimate	
Territory Size: 1 – 3 acres ⁸ Density: Up to 20 – 30 pairs/100 acres	

Natural History Profile

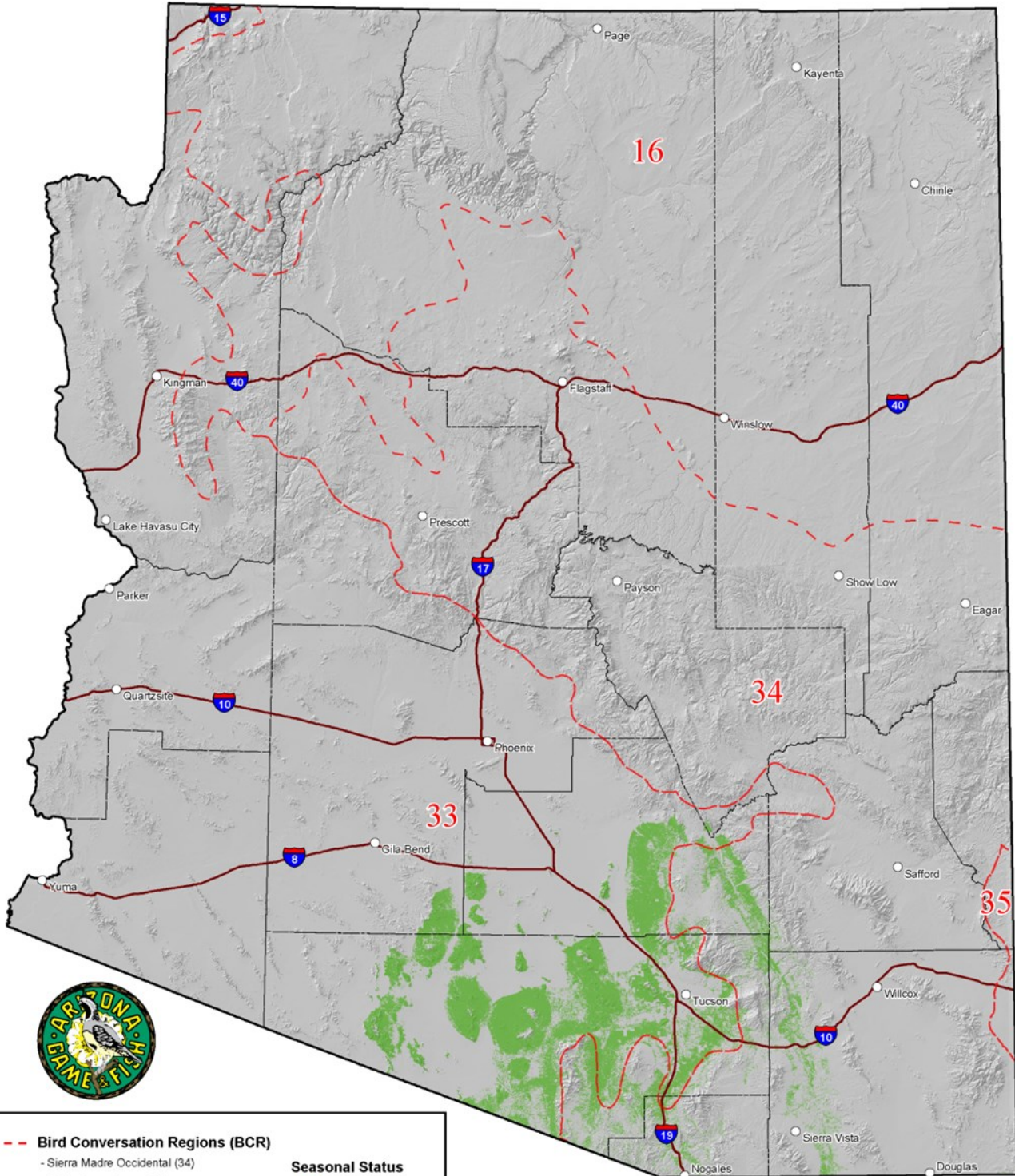
Seasonal Distribution in Arizona	
Breeding	April – mid-September; depending on rains ⁹
Migration	Year-round resident
Winter	Year-round resident
Nest and Nesting Habits	
Type of Nest	Cup ⁸
Nest Substrate	Thorny shrub or cholla ⁸
Nest Height	2 – 10 feet ⁸
Food Habits	
Diet/Food	Seeds and arthropods ⁸
Foraging Substrate	Ground or lowest branches of shrubs



Confidence in Available Data: ● High ● Moderate ○ Low ^ Not provided

Last Update: October 2023

Distribution of Rufous-winged Sparrow



This map represents the predictive distribution for an individual species. AZGFD warrants no guarantees of accuracy or currency of the data represented.

SPECIES ACCOUNT ● RUFOUS-WINGED SPARROW *Peucaea carpalis*



General Information

Distribution in Arizona

Rufous-winged Sparrows occur primarily in the southcentral region of Arizona, with highest densities in the Santa Cruz and Altar valleys (Corman 2005). They also occur locally west to the Ajo Mountains and northwest to near the San Tan Mountains and Vekol Valley, Maricopa County, then northeast to near Florence and within the lower San Pedro River Valley to near Winkelman (Corman 2005). Since 2005, the species appears to be expanding into sections of Cochise County with numerous records in the upper San Pedro River Valley (including near Sierra Vista), along the Mexico border east to Guadalupe Canyon, and recently near Portal. Rufous-winged Sparrows are primarily year round residents with some local dispersal that reach their northern most distribution in Arizona (Lowther et al. 1999).

Habitat Description

Rufous-winged Sparrows nest in flat to gently rolling, mixed thornscrub grasslands, composed primarily of bunchgrasses with scattered thorny shrubs and trees, and in grassy swales of tobosa grass (Lowther et al. 1999, Merola-Zwartjes 2005), which are characteristic of the transitional zone between semiarid grassland and Sonoran desertscrub. Although their primary habitat is classified as upper Sonoran desertscrub, Rufous-winged Sparrows primarily occur in desertscrub areas with at least some larger patches of low to medium height grass cover. During the monsoon season when grass cover is taller and more widespread, this sparrow often prefers desertscrub that contains some open areas with a cholla component.

Microhabitat Requirements

Rufous-winged Sparrows nest 1.5 – 10 feet up in paloverde or graythorn when these are available, but also frequently use mesquite, hackberry, and cholla (Lowther et al. 1999). They forage on the ground and in the low shrub layer in the same microhabitats, and winter habitat use is reportedly the same as during the breeding season (Lowther et al 1999).

Landscape Requirements

Rufous-winged Sparrow area requirements and landscape mosaics have not been studied. The species avoids steep hills and occurs primarily in relatively flat or gently rolling landscapes (Lowther et al. 1999). Until landscape requirements are better understood, consider managing large landscapes with the habitats described above in areas occupied by Rufous-winged Sparrow.



Conservation Issues and Management Actions

Small Population

The U.S. population of Rufous-winged Sparrow is primarily confined to Arizona, and the remainder of their global range is very small (Lowther et al. 1999). Because nearly 64% of the global population of this species occurs in the state, Arizona has stewardship responsibility and management activities can influence this species in significant ways. Historical records indicate that Rufous-winged Sparrows were more widely distributed in Arizona grasslands in the 19th century, including in the Tucson Basin (Lowther et al. 1999). Urbanization, drought, and livestock grazing are blamed for historic population reductions. Recent population trends are largely unknown because of insufficient sample sizes in the small geographic area occupied by Rufous-winged Sparrows. However, reports and eBird records suggest they are expanding their range very locally.

Threats Assessment

This table is organized by Salafsky et al.'s (2008) standard lexicon for threats classifications. Threat level is based on expert opinion of Arizona avian biologists and reviewers. We considered the full lexicon but include only medium and high threats in this account.

Threat	Details	Threat Level
Residential and Commercial Development <ul style="list-style-type: none"> Housing and urban areas 		Medium
Agriculture <ul style="list-style-type: none"> Livestock farming and ranching 	Long-term unsustainable grazing has significantly degraded core habitat. Some large areas have completely lost their grass component	High
Energy Production and Mining <ul style="list-style-type: none"> Renewable energy 	Large solar array projects could be the first large-scale land conversion projects to significantly fragment desertscrub grassland or permanently eliminate it	Medium
Human Intrusions and Disturbance <ul style="list-style-type: none"> Work and other activities 	Because much of the United States/Mexico border region is also some of the highest quality habitat for this species, border activities can degrade habitat	Medium
Natural System Modifications <ul style="list-style-type: none"> Fire and fire suppression 	Introduced grasses and forbs, such as buffelgrass, allow natural fire events to burn over larger areas of desertscrub at temperatures hot enough to destroy cholla and other shrubs used for nesting	Medium



Threat	Details	Threat Level
<i>Invasive and Problematic Species</i> <ul style="list-style-type: none"> Invasive non-native/alien plants 		Medium
<i>Climate Change</i> <ul style="list-style-type: none"> Ecosystem encroachment Changes in precipitation and hydrological regimes 	Low rainfall combined with continued unsustainable cattle grazing has eliminated the grass component over large areas where this sparrow is found.	High

In the following section we provide more detail about threats, including recommended management actions. Threats with similar recommended actions are grouped.

Residential and Commercial Development:

- Housing and urban areas

Energy Production and Mining:

- Renewable energy

Human Intrusions and Disturbance:

- Work and other activities

Urbanization was a factor in historic losses of Rufous-winged Sparrow in Arizona. It continues to threaten currently occupied habitats, particularly in the Santa Cruz Valley and other regions north of Tucson (Latta et al. 1999).

Recommended Actions:

1. Delineate important Rufous-winged Sparrow habitat and create conservation easements to preserve it from development.
2. Set aside major swaths of grasslands as greenbelts or open space near already existing urban areas in Rufous-winged Sparrow range.
3. Restore tall bunchgrass communities in floodplains.

Agriculture:

- Livestock farming and ranching

Unsustainable livestock grazing in wooded washes may have led to the historic loss of xero-riparian stronghold populations of Rufous-winged Sparrows (Merola-Zwartjes 2005), mostly attributed to the loss of bunchgrasses. Much of the range of this grassland type has now been converted to thornscrub (Brown 1994). Nearly a century of unsustainable grazing practices on many semiarid grasslands in Arizona have also greatly altered this landscape.



Recommended Actions:

1. Protect remaining areas of grasslands occupied by the Rufous-winged Sparrow from overuse and unsustainable livestock grazing.
2. Implement grazing management on state and federally administered lands that uses light to moderate grazing or livestock exclosures to protect Rufous-winged Sparrow habitat.

Natural System Modification:

- Fire and fire suppression

Invasive and Problematic Species:

- Invasive non-native/alien plants

Climate Change:

- Ecosystem encroachment
- Changes in precipitation and hydrological regimes

As an inhabitant of one of the driest environments of the southwest, the Sonoran Desert, Rufous-winged Sparrow is potentially vulnerable to prolonged droughts caused by climate change. Risks include loss of vigor and mortality of shrubs used for nesting, cover, and foraging. Catastrophic losses may occur from increased intense fires that are facilitated by invasive, non-native grasses and weeds. To mitigate these risks for Rufous-winged Sparrows and other desert dwellers we need adequate and appropriate habitat protection and management.

Recommended Actions:

1. Devise a robust monitoring or frequent population inventory program for Rufous-winged Sparrow to determine population trends and monitor responses to climate change.
2. Create livestock exclosures or seasonal grazing pastures to allow patches of grass establishment, particularly during low precipitation years within Rufous-winged Sparrow range.

Research and Monitoring Priorities

1. Determine area requirements, landscape requirements, and nest disturbance distances for Rufous-winged Sparrow.
2. Conduct rigorous population monitoring, including effectiveness monitoring for all areas subject to conservation and management action.
3. Study Rufous-winged Sparrow reproductive success and survival in relation to seasonality, cowbird parasitism, predation, nest failure, and effects of land uses.



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Recommended Citation

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