

## **Grasshopper Sparrow**

**(*Ammodramus savannarum ammoregus*)**

**“Arizona Grasshopper Sparrow”**

NMPIF level: Species Conservation Concern, Level 1 (SC1)

NMPIF assessment score: 20

NM stewardship responsibility: High

New Mexico BCRs: 34

Primary breeding habitat(s): Chihuahuan Desert Grasslands

**(*Ammodramus savannarum perpallidus*)**

NMPIF level: Biodiversity Conservation Concern, Level 2 (BC2)

NMPIF assessment score: 12

NM stewardship responsibility: Low

National PIF status: Stewardship.

New Mexico BCRs: 16, 18, 34, 35 (most in 18)

Primary breeding habitat(s): Plains-Mesa Grasslands

Other habitats used: Chihuahuan Desert Grasslands, Agricultural

## **Summary of Concern**

Grasshopper Sparrow is a grassland species that has undergone large, long-term population declines in many areas. *A. s. ammoregus* is a subspecies restricted to a small area of the southwest United States and northern Mexico; the small New Mexico population has been declining. Other subspecies are locally present in suitable grassland areas in the east. These populations should be monitored for further declines.

## Associated Species

Northern Harrier, Eastern Meadowlark

## Distribution

One of twelve Grasshopper Sparrow subspecies, and one of four breeding in the United States, *A. s. ammoregus* breeds only in a very small area, including parts of southeast Arizona, southwest New Mexico, and north Sonora. The winter range of this taxon is poorly known; some *A. s. ammoregus* remain in the United States, others migrate to central Mexico and possibly south into Central America. In New Mexico, *A. s. ammoregus* is found only in the Animas and Playas valleys, in Hidalgo County (Phillips et al. 1978, Vickery 1996).

*A. s. perpallidus* is broadly distributed across the west and Great Plains, from southern Canada to the Mexican border states. Its range overlaps with that of the eastern race, *A. s. pratensis*. In New Mexico, *A. s. perpallidus* may be present in summer in suitable habitat in the eastern plains.

## Ecology and Habitat Requirements

Grasshopper Sparrows occupy moderately open grasslands with patchy bare ground, and avoid areas with extensive shrub cover. In southeast Arizona, *A. s. ammoregus* prefers lush grasslands with less bare area, and with a shrub component (Bock and Bock 1992, Saab et al. 1995). Habitat in New Mexico is characterized as short, dense grassland, generally blue grama; habitat appears to coincide with that of the white-sided jackrabbit (Williams 1991).

Habitat requirements for *A. s. perpadillus* are generally similar: open grasslands with some bare ground and limited shrubs. Hayfields and other agricultural lands, especially Conservation Reserve Program (CRP) fields, are also sometimes used. Grasshopper Sparrow is more likely to occupy large tracts of habitat than small fragments; minimum area requirements are about 100 ha in Maine and 30 ha in Illinois (Vickery 1996). This species nests on the ground, constructing dome-shaped nests with overhanging grasses and a side entrance. Like other ground-nesters, these sparrows experience moderate to high levels of nest predation. Two or more successful broods per season may be raised over the course of a protracted breeding season lasting from April to August. Grasshopper Sparrows forage on the ground, hunting grasshoppers and other insects.

## Conservation Status

### Species Assessment

*A. s. ammoregus*:

DISTRIBUTION	5
THREATS	4
GLOBAL POPULATION SIZE	3
LOCAL POPULATION TREND	5
IMPORTANCE OF NEW MEXICO TO BREEDING	3
<b>COMBINED SCORE</b>	<b>20</b>

Arizona Grasshopper Sparrow is a Species Conservation Concern, Level 1 species for New Mexico, with a total assessment score of 20. It receives maximum vulnerability scores of 5 from NMPIF for its restricted breeding range and local population trend. Arizona Grasshopper Sparrow is listed as threatened in the state of New Mexico.

*A. s. perpadillus:*

DISTRIBUTION	2
THREATS	3
GLOBAL POPULATION SIZE	2
LOCAL POPULATION TREND	4
IMPORTANCE OF NEW MEXICO TO BREEDING	1
<b>COMBINED SCORE</b>	<b>12</b>

This taxon is a Biodiversity Conservation Concern, Level 2 species for New Mexico, with a total assessment score of 12. It receives a high score of 4 from NMPIF for its negative local population trend (the national PIF score for population trend is 5). Grasshopper Sparrow is a U.S. Fish and Wildlife Service (2002) national Bird of Conservation Concern.

**Population Size**

No population estimates for *A. s. ammoregus* are available. Size of the New Mexico population of *A. s. ammoregus* is unknown, but must be considered small. In 1992, numbers reported in the Animas and

Playas valleys were 109 and 41, respectively; in 2004, numbers in the Animas and Playas valleys were 21 and 0, respectively (Williams 2004).

PIF estimates the Grasshopper Sparrow species population (mostly *A. s. perpallidus*) at 15 million, and estimates that New Mexico holds less than 1% of the species population, or about 75,000 birds.

### Population Trend

Data for *A. s. ammoregus* are limited; the score of 5 for local population trend is assigned by expert opinion. Grasshopper Sparrow generally is not well-surveyed by BBS in New Mexico; existing BBS data for the state, FWS Region 2, and the western region mainly reflect *A. s. perpallidus* populations. Grasshopper Sparrow has experienced long-term declines since the early part of the 20th century, mostly due to loss of native grassland habitat, conversion of pasture to intensive row crops, and inhibition of fire. BBS data show alarming downward trends; in the West in particular, these have worsened for the period 1980-2004.

1980-2004	Annual Trend (%)	P-value	Number of Routes
New Mexico	-9.1	0.09	14
FWS Region 2	-2.4	0.04	139
Western States	-7.9	0.00	134

1966-2004	Annual Trend (%)	P-value	Number of Routes
New Mexico	-4.0	0.52	14
FWS Region 2	0.8	0.53	149
Western States	-6.9	0.00	152

### Threats

Habitat loss, initially of native prairies and grasslands and subsequently of hayfields and pastures, has driven this species' long-term population decline. Degradation of shortgrass prairie and southwestern grasslands has also had a major impact (Saab et al. 1995, Vickery 1996). Small breeding populations of *A.*

*s. ammoregus* are threatened by loss of Chihuahuan desert grassland habitat to development, and by shrub encroachment and spread of invasive species that may be a consequence of drought, heavy grazing, and a non-natural regime of fire and fire suppression. Early-season mowing of hayfields and other agricultural lands may be responsible for nest failures (Vickery 1996).

### **Management Issues and Recommendations**

Management for all Grasshopper Sparrow in New Mexico should focus on maintaining or increasing areas of suitable grassland habitat in the south and east. Grasshopper Sparrow responds well to grassland restoration (Vickery 1996).

### **NMPIF Recommendations**

- Maintain native grassland areas where sod has not been broken.
- Where appropriate and possible, seek to manage grazing to maintain high grass density and some amount of shrub cover.
- Defer mowing in hayfields and other managed areas where Grasshopper Sparrows may be present.
- In areas where *A. s. ammoregus* may be present, create or maintain at least 100-ac (40-ha) blocks of dense native grasses with a low shrub component.
- Investigate effects of fire on habitat, and of prescribed burning as a management tool for maintaining an appropriate mix of native grass and shrubs. In southeast Arizona, the species avoided recently burned sites for  $\geq 2$  yr post-burn (Bock and Bock 1992). In Montana shrub-steppe, densities were reduced for three years following severe fire that eliminated sagebrush cover (Bock and Bock 1987).
- Research demography of *A. s. ammoregus* and determine causes of apparent population declines.
- Research the importance of seed resources and effects of precipitation on wintering Grasshopper Sparrows.
- Look for management and grassland restoration options on military bases and municipal airport lands.
- Work to maximize CRP fields seeded with native grass mixes in eastern New Mexico counties.

## Species Conservation Objectives

### NMPIF Objectives

- Monitor statewide to better understand and assess negative population trends.
- Seek to increase current state populations.
- Maintain 100+ singing *A. s. ammoregus* in the Animas and Playas valleys.

### Sources of Information

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