

Vesper Sparrow (*Pooecetes gramineus*)

NMPIF level: Species Conservation Concern, Level 2 (SC2)

NMPIF assessment score: 14

NM stewardship responsibility: Low

National PIF status: No special status

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

Primary breeding habitat(s): Plains-Mesa Grassland, Great Basin Desert Shrub

Other habitats used: Plains-Mesa Sand Shrub, Pinyon-Juniper Woodland

Summary of Concern

Although still widespread and common, Vesper Sparrow is a grassland species that has shown steady long-term declines across its range, and sharper declines in New Mexico. Reasons for negative population trends in the state are unclear.

Associated Species

Swainson's Hawk (SC2), Mountain Plover (SC1), Mourning Dove, Western Kingbird, Cassin's Kingbird (SC2), Common Raven, Horned Lark, Mountain Bluebird (SC2), Sage Thrasher (BC1), Green-tailed Towhee, Brewer's Sparrow, Western Meadowlark

Distribution

Vesper Sparrow is a widespread North American species that breeds from interior British Columbia east to Nova Scotia and south to the central and south-central United States. The breeding range extends furthest south in Arizona and New Mexico. Vesper Sparrow winters across the southern tier of states from southern California to South Carolina, and south throughout most of interior Mexico to Oaxaca (Jones and Cornely 2002).

In New Mexico, Vesper Sparrow breeds in shrubby habitats in the northwest, and other shrub and grassland habitats south to the Plains of San Agustin, and in higher elevation grasslands from Taos and Colfax Counties south to Lincoln County in the central part of the state (Parmeter et al. 2002).

Ecology and Habitat Requirements

Vesper Sparrows are found in open habitats, including old fields, shrub-steppe, grasslands, and cultivated crop fields. This species expanded its range historically with the clearing of forests, and now is declining in areas where abandoned farms are reverting back to tree cover. Vesper Sparrows occupy agricultural lands in the midwest, and continue to be common in shrub-steppe and open rangelands in the west (Jones and Cornely 2002). This species occupies a variety of different grassland types. It generally prefers short, sparse, and patchy herbaceous vegetation with some bare ground, and low to moderate shrub or tall forb cover for concealment and song perches (Swanson 1996, Yanishevsky and Petring-Rupp 1998).

In the west, native breeding habitat includes dry montane meadows, grasslands, prairie, and sagebrush steppe. In montane meadow habitat in Montana, abundance was positively correlated with forb cover and variation in shrub height (Rotenberry and Wiens 1980). Vesper Sparrow is considered a near obligate of sagebrush steppe in Wyoming, Nevada, and Idaho, especially common where shrubs are low and there is sparse grass cover (Ryser 1985, Medin et al. 2000). In Colorado it also uses open areas with small dense shrubs in pinyon-juniper woodland (Sedgwick 1987). Vesper Sparrows are present in New Mexico from April to September in mid- to high-elevation grassland and plateau areas. They nest on the ground at the base of grass tussocks or forbs, with or without shrub cover. Territory size averages around 5 ac (Yanishevsky and Petring-Rupp 1998). They are common in lowlands statewide during migration and winter in the southern tier of counties, irregularly further north.

Conservation Status

Species Assessment

DISTRIBUTION	2
THREATS	3
GLOBAL POPULATION SIZE	2
LOCAL PLOPULATION TREND	5
IMPORTANCE OF NEW MEXICO TO BREEDING	2
COMBINED SCORE	14

Vesper Sparrow is Species Conservation Concern, Level 2 species for New Mexico, with a total assessment score of 14. It receives a maximum vulnerability score of 5 from NMPIF for local population trend.

Population Size

Total population for New Mexico is unknown. PIF estimates a species population of 30 million, and that New Mexico holds about 2.4 percent of the species population, or about 720,000 birds.

Population Trend

Vesper Sparrow is still a widespread and common species, but it has shown moderate, statistically significant declines across its range. Regional declines have been more severe, particularly in the East and Southwest. Over the entire range, BBS data show a 1.1% annual decline ($p = 0.00$) from 1966 to 2004. This has been attributed to loss of grassland habitat to development, agriculture and forest re-growth. Data indicate a 3% annual decrease in New Mexico, although the number of routes is relatively small. BBS data for 1966-2004 are:

	Annual Trend (%)	P-value	Number of Routes
New Mexico	-3.0	0.03	29
FWS Region 2	-3.1	0.02	44
Western BBS	-0.3	0.20	627

Threats

NMPIF assigns this species a low score of 2 for threats to breeding in New Mexico. However, the question of what is causing downward population trends remains open. Nationally, PIF assigned this category a 3, indicating that further loss of breeding habitat is expected. Vesper Sparrows have responded negatively to changes in farming practices. Breeding success in cultivated and no-tillage row-crop fields and croplands generally not sufficient to maintain populations (Rodenhouse and Best 1983). This may be of less concern in New Mexico, where the species breeds primarily in upland meadow and sagebrush steppe habitat. Grazing may also affect this species. Numbers increased in Great Basin sagebrush steppe when grazing was deferred from spring to fall, and in Idaho Vesper Sparrows showed a negative response to heavy grazing (Saab et al. 1995).

Management Issues and Recommendations

It is important to understand reasons for regional population declines in this species. Management should focus on maintaining suitable nesting habitat in grassland areas above 6,000 feet and in sagebrush shrublands.

NMPIF Recommendations

- In dry grasslands and shrublands and juniper savanna, maintain a mixture of low grass cover, patches of bare ground, and shrubs with less than 40% canopy cover (Yanishevsky and Petring-Rupp 1998).
- Where warranted, manage grazing during nesting season (May 15-August 15) to prevent nest destruction and increased parasitism.

Species Conservation Objectives

NMPIF Objectives

- Seek to understand reasons for population declines in New Mexico.
- Seek to stop or reverse downward population trends in New Mexico.

Sources of Information

Jones, S. L., and J. E. Cornely. 2002. Vesper Sparrow (*Pooecetes gramineus*). In *The Birds of North America*, No. 624 (A. Poole and F. Gill, eds.). The Birds of North America, Inc., Philadelphia, PA.

Medin, D. E., B. L. Welch, and W. P. Clary. 2000. Bird habitat relationships along a Great Basin elevational gradient. U.S. For. Serv., Rocky Mtn. Res. Stn. RMRS-RP-23.

Parmeter, J., B. Neville, and D. Emkalns. 2002. *New Mexico Bird Finding Guide*. New Mexico Ornithological Society, Albuquerque, NM.

Rodenhouse, N. L., and L. B. Best. 1983. Breeding ecology of Vesper Sparrow in corn and soybean fields. *Am. Midl. Nat.* 110:265–275.

Rotenberry, J. T., and J. A. Wiens. 1980. Habitat structure, patchiness, and avian communities in North American steppe, vegetation: a multivariate analysis. *Ecology* 61:1228–1250.

Ryser, F. A. 1985. *Birds of the Great Basin—a natural history*. Univ. of Nevada Press, Reno, NV.

Saab, V. A., C. E. Bock, T. D. Rich, and D. S. Dobkin. 1995. Live-stock grazing effects in western North America. Pp. 311–353 *in* Ecology and management of Neotropical migratory birds (T. E. Martin and D. M. Finch, eds.). Academic Press, New York.

Sedgwick, J. A. 1987. Avian habitat relationships in pinyon-juniper woodland. *Wilson Bull.* 99:413–431

Swanson, D. A. 1996. Nesting ecology and nesting habitat requirements of Ohio's grassland-nesting birds: a literature review. Div. Wildl., Ohio Dep. Nat. Res., Ohio Fish Wildl. Rep. 13.

Yanishevsky, R., and S. Petring-Rupp. 1998. Management of breeding habitat for selected bird species in Colorado. Colorado Division of Wildlife. Denver, CO.