

Botteri's Sparrow (*Aimophila botterii*)

NMPIF level: Biodiversity Conservation Concern, Level 1 (BC1)

NMPIF assessment score: 15

NM stewardship responsibility: Low

National PIF status: No special status

New Mexico BCRs: 34, 35

Primary breeding habitat(s): Chihuahuan Desert Grasslands

Summary of Concern

Botteri's Sparrow is a Mexican species with a limited breeding distribution in southeast Arizona and southwest New Mexico. Breeding populations in the Animas Valley are vulnerable to loss of older or senescent stands of giant sacaton, a bunch grass of floodplains and river bottoms that is the species' primary breeding habitat.

Associated Species

None

Distribution

Botteri's Sparrow is a year-round resident across much of Mexico and portions of Central America. It breeds in grassland and savanna habitats from southeast Arizona and northwest Mexico south through the Mexican central plateau and portions of the Pacific slope to Nicaragua and Costa Rica. A separate eastern subspecies breeds in coastal prairie habitat in south Texas and northeastern Mexico (Webb and Bock 1996).

In New Mexico, this species breeds exclusively (or nearly so) at several locations in the Animas Valley in Hidalgo County, in the vicinity of Rodeo, Animas and Hachita.

Ecology and Habitat Requirements

Botteri’s Sparrow is a tall grass specialist that breeds in various grassland, savanna, and coastal prairie habitats across its geographic range. In Arizona, it occupies several types of semidesert grassland and oak woodland, but is most common in sacaton grasslands, where it is often the most abundant breeding bird species. Highest densities are reached in dense, senescent stands of sacaton, a bunchgrass species that can grow to 2.5 m tall along river corridors and flat floodplains. Breeding occurs in sacaton bottoms of varying size and structure, but only when bordered by hillsides with fairly dense short grass cover for foraging. Sacaton habitat may be near or associated with riparian sycamore/cottonwood/willow vegetation. In Arizona, this species also breeds less commonly in upland mesquite grassland, tobosa swales, and oak woodland. Scattered shrubs are considered an essential component of all breeding habitat (Webb 1985, Webb and Bock 1990, Webb and Bock 1996).

In the Animas Valley, breeding occurs in flats dominated by giant sacaton (Williams 2004). Botteri’s Sparrows arrive in the Southwest in mid- to late-May. Studies in Arizona have shown that egg-laying is triggered by the arrival of monsoonal rains in early July; more than 75% of laying followed the first heavy rain of the season. Consequently, hatching of chicks is coincident with a period of rapid plant growth and high grasshopper densities. Nests are located on the ground, well-concealed at the base of tall overhanging grass clumps averaging over 2.5 feet tall. Sacaton or various grama grasses may be used. Nests are often placed toward the elevated edge of sacaton bottoms, probably to reduce risk of flood inundation. A single clutch is raised unless the first attempt fails. Botteri’s Sparrows leave their breeding grounds in Arizona and New Mexico by early September (Webb and Bock 1996).

Conservation Status

Species Assessment

DISTRIBUTION	4
THREATS	5
GLOBAL POPULATION SIZE	3
LOCAL POPULATION TREND	2
IMPORTANCE OF NEW MEXICO TO BREEDING	1
COMBINED SCORE	15

Botteri’s Sparrow is a Biodiversity Conservation Concern, Level 1 species for New Mexico, with a total assessment score of 15. At the continental level, it receives PIF vulnerability scores of 4 for its limited breeding and non-breeding distribution. From NMPIF, it receives a maximum score of 5 for threat to breeding in the state.

Population Size

PIF estimates a species population of 2 million. Numbers breeding in New Mexico are small; in 1995, 21 singing males were detected in the Animas Valley region. In Arizona, mean abundances in undisturbed habitat were 0.68 individuals/ha in mature sacaton grassland, 0.42/ha in oak woodland, 0.29/ha in mesquite grassland, and 0.13/ha in tobosa swale (Webb 1985). In preferred habitat of sacaton bottoms bordered by grassy hillsides, abundance increased with stand age.

Population Trend

Historical records suggest that Botteri's Sparrow was more common and widespread in desert grasslands of Arizona and New Mexico prior to extensive grazing and shrub incursion. No BBS data are available for this species. Local populations fluctuate but appear to be stable or increasing.

Threats

Botteri's Sparrow in New Mexico is considered highly threatened by loss or degradation of sacaton habitat that is its last stronghold in the state. Fire, grazing, development, or other forms of human disturbance all may potentially eliminate existing, scattered patches of breeding habitat.

Management Issues and Recommendations

Management for Botteri's Sparrow in New Mexico should focus on identification and protection of patchy giant sacaton habitat in the Animas Valley.

NMPIF Recommendations

- Maintain senescent giant sacaton stands along valley flats and river corridors.
- Do not conduct controlled burning in these areas.
- Maintain habitat continuity between sacaton flats and grassy hillsides surrounding, managing grazing as needed to maintain dense cover.

Species Conservation Objectives

NMPIF Objectives

- Maintain or increase the current population in the Animas Valley.
- Survey for other possible breeding locations in southwest New Mexico.

Sources of Information

Webb, E. A. 1985. Distribution, habitat and breeding biology of the Botteri's Sparrow (*Aimophila botterii arizonae*). Master's Thesis, Univ. of Colorado, Boulder, CO.

Webb, E. A., and C. E. Bock. 1990. Relationship of the Botteri's Sparrow to sacaton grassland in southeastern Arizona. Pp. 199–209 *in* Managing Wildlife in the Southwest: Proceedings of the Symposium (P. R. Krausman and N. S. Smith, eds.). Arizona Chpt. Wildl. Soc., Tucson, AZ.

Webb, E. A., and C. E. Bock. 1996. Botteri's Sparrow (*Aimophila botterii*). *In* The Birds of North America, No. 216 (A. Poole and F. Gill, eds.). The Academy of Natural Sciences, Philadelphia, and The American Ornithologists' Union, Washington, D.C.

Williams, S. O. 2004. Botteri's Sparrow in the Animas Valley: range extension and habitat use in relation to fire. Report to Animas Foundation. New Mexico Department of Game and Fish, Santa Fe, NM.