Black-chinned Sparrow, photo by ©Bill Radke

Conservation Profile

Species Concerns
Recent Declines Habitat Fragmentation Fire Suppression Unsustainable Livestock Grazing

Conservation Status Lists	
USFWS[1]	BCC List (BCR 33,34,R2)
AZGFD[2]	Tier 1C
DoD[3]	Yes
BLM[4]	No
PIF Watch List[5b]	Yes
PIF Regional Concern[5a]	Regional Concern and Steward-ship BCR 34

Migratory Bird Treaty Act
Covered

PIF Breeding Population Size Estimates[6]	
Arizona	84,000 ○
Global	1,100,000 ◑
Percent in Arizona	7.63%

PIF Population Goal[5b]
Reverse Decline

Trends in Arizona	
Historical (pre-BBS)	Unknown
BBS[7] (1968 – 2013)	-4.0%/year ◑

PIF Urgency/Half-life (years)[5b]
> 50

Monitoring Coverage in Arizona	
BBS[7]	Marginal
AZ CBM	Not covered

Associated Breeding Birds
Gray Vireo, Bewick's Wren, Rufous-crowned Sparrow, Canyon Towhee, Spotted Towhee, Scott's Oriole

Breeding Habitat Use Profile

Habitats Used in Arizona
Primary: Interior Chaparral Secondary: Pinyon-Juniper Woodlands

Key Habitat Parameters	
Plant Composition	Interior chaparral consisting of shrub live oak, manzanita, mountain mahogany, apache plume; big sagebrush and cliffrose, often with pinyon pine and juniper in north; acacia thickets in SE Arizona[8] ; high shrub diversity probably preferred[16]
Plant Density and Size	Brush generally tall (3 – 7 feet), at least moderately dense; especially post-fire (5 – 10 years), open tree canopy preferred, closed-canopy stands avoided[16]
Microhabitat Features	Young shrub stands broken by rocky out-crops and scattered trees[16]
Landscape	Rocky, mountain slopes and remote ridges; moves downslope in winter

Elevation Range in Arizona
3,800 – 7,700 feet[8]

Density Estimate
Territory Size: No data Density: No data

Natural History Profile

Seasonal Distribution in Arizona	
Breeding	Mid-March – August[8]
Migration	March – April, mid-August – October[16]
Winter	October – April, SE Arizona only[16]

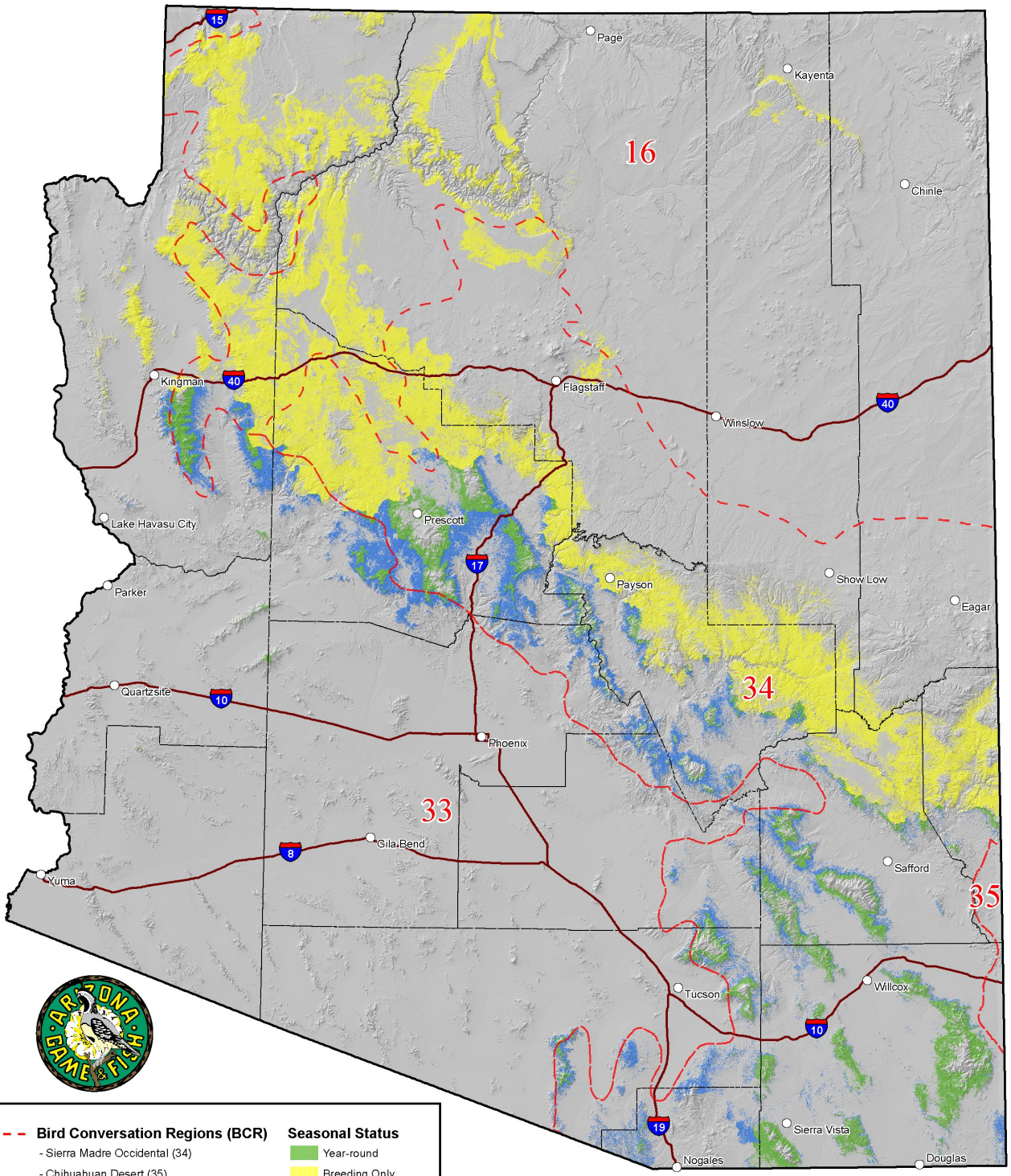
Nest and Nesting Habits	
Type of Nest	Cup[16]
Nest Substrate	Low, dense shrub[8]
Nest Height	1 – 7 feet[7]

Food Habits	
Diet/Food	Insects; seeds in winter[16]
Foraging Substrate	Within dense shrub cover[16]

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

Last Update: October 2023

Distribution of Black-chinned Sparrow



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

General Information

Distribution in Arizona

Most Black-chinned Sparrows in Arizona occur in a diagonal swath along the interior chaparral of the southern slopes of the Mogollon Rim, primarily in Yavapai and Gila counties. They are also sporadically distributed in the northwestern Mojave region and the southeastern sky islands in the state (Corman 2005). Many individuals winter in southeastern Arizona's low-elevation desertscrub (Tenney 1997).

Habitat Description

Black-chinned Sparrows reach their highest densities in a mosaic of interior chaparral, pinyon-juniper, and Great Basin grassland habitat types. Common shrub species in this setting include shrub live oak, manzanita, mountain mahogany, and apache plume. Big sagebrush, cliffrose, and Mormon tea are important for northerly populations, while acacia thickets are key in southeastern Arizona (Corman 2005). High shrub diversity appears to be a feature of all high population density settings (Tenney 1997). The shrub layer in nesting areas is generally 3 – 7 feet in height, at least moderately dense, and usually interspersed by rocky outcrops and large shrubs or trees. Black-chinned Sparrow also occurs in the pinyon-juniper zone, where scattered trees are a common feature, but trees are apparently not required.

Microhabitat Requirements

Nest microhabitat requirements of interior West populations, including Arizona, are largely unknown. However, most Black-chinned Sparrows in other regions nest at a height of approximately 0.5 – 5 feet above ground in shrubs (Tenney 1997). In coastal California, Black-chinned Sparrows prefer young stands of chaparral with openings in the brush, and they largely avoid overgrown stands (Tenney 1997). Black-chinned Sparrows primarily forage in the shrub layer and young trees, where they capture insects from foliage during the nesting season (Tenney 1997).

Landscape Requirements

Area requirements and disturbance distances are unknown for this species. Black-chinned Sparrows often occur on rugged, south-facing mountain slopes, and at the interface between different shrublands and pinyon-juniper woodland (Tenney 1997). They appear to avoid high shrub and tree densities. However, settings that feature a mosaic of different shrublands and high shrub species diversity on the landscape scale are particularly suitable for this species. Black-chinned Sparrows are patchily distributed throughout much of their occupied range, and are sometimes absent from apparently suitable habitat (Tenney 1997). The reasons for this landscape use pattern are unknown.

Conservation Issues and Management Actions

Direct 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	Threat Level
Agriculture • Livestock farming and ranching	Medium
Natural System Modifications • Fire and fire suppression • Other ecosystem modifications	Medium
Climate Change: • Ecosystem encroachment • Changes in precipitation and hydrological regimes (drought)	Medium

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

Climate Change:
- Ecosystem encroachment
- Changes in precipitation and hydrological regimes (droughts)

The Breeding Bird Survey shows Black-chinned Sparrow populations declining at 4% annually (1968 – 2012) in Arizona, although this trend is based on only 11 survey routes (Sauer et al. 2012). The reasons for these apparent declines are not clear because the geographic extent of their primary habitat type, chaparral, has remained largely stable. Population declines in California highlight the need for habitat preservation as continued land development and other human activities invade foothills chaparral in Arizona as well, especially north of Phoenix (Tenney 1997).

Recommended Actions:

1. Continue and expand monitoring for Black-chinned Sparrows to confirm Arizona population trends.
2. Conduct further research to identify and quantify conservation threats and the causes of declines.

Natural System Modifications:
- Fire and fire suppression
- Other ecosystem modifications (fragmentation)

Periodic fires may be necessary for suitable chaparral habitat (Tenney 1997), although most data on fire suppression in chaparral are anecdotal and from coastal California. Black-chinned Sparrows are frequently

found within 5 – 10 years after a burn in chaparral stands, and they generally avoid dense or closed-canopy shrub stands. Therefore, fire suppression that increases the density of shrubs and woodlands would be detrimental to this species. Studies in central Arizona have shown that although the geographic extent of chaparral has changed little since 1940, the average shrub canopy cover has increased (Huebner et al. 1999). Shrub species composition of fire-suppressed chaparral may also change (Schussman 2006), and the effects on Black-chinned Sparrows are unknown.

In a study of habitat fragmentation in canyons near San Diego, California (Bolger et al. 1997), Black-chinned Sparrow was largely absent from isolated fragments. No other research on this issue appears to be available, but the proximity of quality habitat near the growing cities of Phoenix and Prescott suggests that urban growth could be a conservation concern for this species.

Recommended Actions:

1. Consider thinning in fire-suppressed areas that feature a mosaic of different shrublands.
2. Determine area requirements and disturbance distances for Black-chinned Sparrows.
3. Identify key Black-chinned Sparrow conservation areas to protect from development.

Agriculture:

- Livestock farming and ranching

Livestock grazing may negatively impact chaparral, used for Black-chinned Sparrow breeding habitat. A study in Texas documented 30 years of reestablishment of chaparral after cattle removal and an increase in numbers of associated avifauna, including Black-chinned Sparrows (Tenney 1997). However, although low slopes of chaparral have been heavily grazed in the past century (Pase and Brown 1984), the rocky hillsides currently occupied by this species are often unsuitable for grazing, and shrubs can recover quickly from most disturbances (Schussman 2006). In fact, early efforts to clear chaparral for conversion to grassland were largely unsuccessful (Schussman 2006).

Recommended Actions:

1. Identify rocky slope areas with high concentrations of Black-chinned Sparrows for protection and suitable fire management that maintains the shrub layer.
2. In suitable protected areas, manage fires and other disturbances to recover Black-chinned Sparrow habitat in low slopes of historic chaparral landscapes.

Research and Monitoring Priorities

1. Conduct studies to better pinpoint key habitat, area requirements, and landscape features that are important to breeding Black-chinned Sparrows.
2. Continue and expand monitoring coverage to determine Black-chinned Sparrow population trends and determine average densities and densities in optimal habitat.
3. Conduct further research to identify and quantify conservation threats and the causes of probable, ongoing Black-chinned Sparrow population declines.
4. Conduct effectiveness monitoring for conservation actions taken to benefit Black-chinned Sparrows.

Literature Cited

[4]Bureau of Land Management. 2017. Arizona Bureau of Land Management Sensitive Species List – March 2017.

[2]Arizona Game and Fish Department. 2012. Arizona's State Wildlife Action Plan: 2012 – 2022. Arizona Game and Fish Department, Phoenix, AZ.

Bolger, D.T., T.A. Scott, and J.T. Rotenberry. 1997. Breeding bird abundance in an urbanizing landscape in coastal Southern California. Conservation Biology 11:406 – 421.

[8]Corman, T.E. 2005. Black-chinned Sparrow. In: Arizona Breeding Bird Atlas. T.E. Corman and C. Wise-Gervais (eds.) University of New Mexico Press. Albuquerque, NM.

[3]Department of Defense. 2012. DoD PIF Mission-Sensitive Priority Bird Species. Fact Sheet #11. Department of Defense Partners in Flight Program.

Huebner, C. D., Vankat, J. L., and W. H. Renwick. 1999. Change in the vegetation mosaic of central Arizona USA between 1940 and 1989. Plant Ecology. 144:83 – 91.

[5a]Partners in Flight. 2019. Avian Conservation Assessment Database, version 2019. Accessed on March 31, 2019.

[6]Partners in Flight. 2019. Population Estimates Database, version 2019. Accessed on March 31, 2019.

Pase, C.P. and D.E. Brown. 1984. Interior Chaparral. *In* Biotic communities of the southwest (D.E. Brown, ed.) Pp. 95-99. University of Utah Press, Salt Lake City, UT.

[5b]Rosenberg, K.V., J.A. Kennedy, R. Dettmers, R.P. Ford, D. Reynolds, J.D. Alexander, C.J. Beardmore, P. J. Blancher, R.E. Bogart, G.S. Butcher, A.F. Camfield, A. Couturier, D.W. Demarest, W.E. Easton, J.J. Giocomo, R.H. Keller, A.E. Mini, A.O. Panjabi, D.N. Pashley, T.D. Rich, J.M. Ruth, H. Stabins, J. Stanton, T. Will. 2016. Partners in Flight Landbird Conservation Plan: 2016 Revision for Canada and Continental United States. Partners in Flight Science Committee.

Salafsky, N., D. Salzer, A.J. Stattersfield, C. Hilton-Taylor, R. Neugarten, S.H.M. Butchart, B. Collen, N. Cox, L.L. Master, S. O'Connor, and D. Wilkie. 2008. A standard lexicon for biodiversity conservation: unified classifications of threats and actions. Conservation Biology 22(4): 897 – 911.

[7]Sauer, J. R., J. E. Hines, J. E. Fallon, K. L. Pardieck, D. J. Ziolkowski, Jr., and W. A. Link. 2012. The North American Breeding Bird Survey, Results and Analysis 1966 - 2011. Version 12.13.2011 USGS Patuxent Wildlife Research Center, Laurel, MD. Accessed March 1, 2013.

Schussman, H. 2006. Historical Range of Variation and State and Transition Modeling of Historical and Current Landscape Conditions for Interior Chaparral of the Southwestern U.S. Prepared for the

U.S.D.A. Forest Service, Southwestern Region by The Nature Conservancy, Tucson, AZ. 24 pp.

[16]Tenney, C.R. 1997. Black-chinned Sparrow (*Spizella atrogularis*), The Birds of North America Online (A. Poole, ed.) Ithaca: Cornell Lab of Ornithology.

[1]U.S. Fish and Wildlife Service. 2008. Birds of Conservation Concern 2008. United States Department of Interior, Fish and Wildlife Service, Division of Migratory Bird Management, Arlington, VA. 85 pp.

Recommended Citation

Arizona Bird Conservation Initiative and Sonoran Joint Venture. 2023. Black-chinned Sparrow (*Spizella atrogularis*) Species Account. Available at https://sonoranjv.org/accounts/black-chinned-sparrow.pdf