



Song Sparrow, photo by @Dave Krueper

Conservation Profile

Species Concerns	
Habitat Loss and Degradation Unsustainable Livestock Grazing Surface Water Diversion	
Conservation Status Lists	
USFWS ¹	No
AZGFD ²	No
DoD ³	No
BLM ⁴	No
PIF Watch List ^{5b}	No
PIF Regional Concern ^{5a}	No
Migratory Bird Treaty Act	
Covered	
PIF Breeding Population Size Estimates ⁶	
Arizona	130,000 ●
Global	130,000,000 ●
Percent in Arizona	0.10%
PIF Population Goal ^{5b}	
Maintain	
Trends in Arizona	
Historical (pre-BBS)	Unknown
BBS ⁷ (1968 – 2013)	+2.78/year ●
PIF Urgency/Half-life (years) ^{5b}	
> 50	
Monitoring Coverage in Arizona	
BBS ⁷	Not adequate
AZ CBM	Covered
Associated Breeding Birds	
Yellow-billed Cuckoo, Willow Flycatcher, Common Yellowthroat, Yellow Warbler, Yellow-breasted Chat, Abert's Towhee, Summer Tanager, Blue Grosbeak	

Breeding Habitat Use Profile

Habitats Used in Arizona	
Primary: Lowland Riparian Woodlands Secondary: Wetlands	
Key Habitat Parameters	
Plant Composition	Cottonwood, willow or tamarisk in overstory; young trees, seepwillow, and cattails in understory ^{8,9}
Plant Density and Size	High volume of riparian understory shrubs, grasses, and forbs ^{8,10}
Microhabitat Features	Average foliage cover at nests 68% at 0 – 3.3 feet height, 13% at 6.6 – 10 feet ⁸ ; foraging microhabitats similar
Landscape	Continuous dense, riparian vegetation most suitable ¹⁰ ; occurs in small patches of suitable riparian shrub understory, but area requirements not studied
Elevation Range in Arizona	
90 – 5,000 feet (locally to 8,320) ⁹	
Density Estimate	
Territory Size: 0.5 – 2 acres ⁸ Density: 1 – 8 pairs/acre ⁸	

Natural History Profile

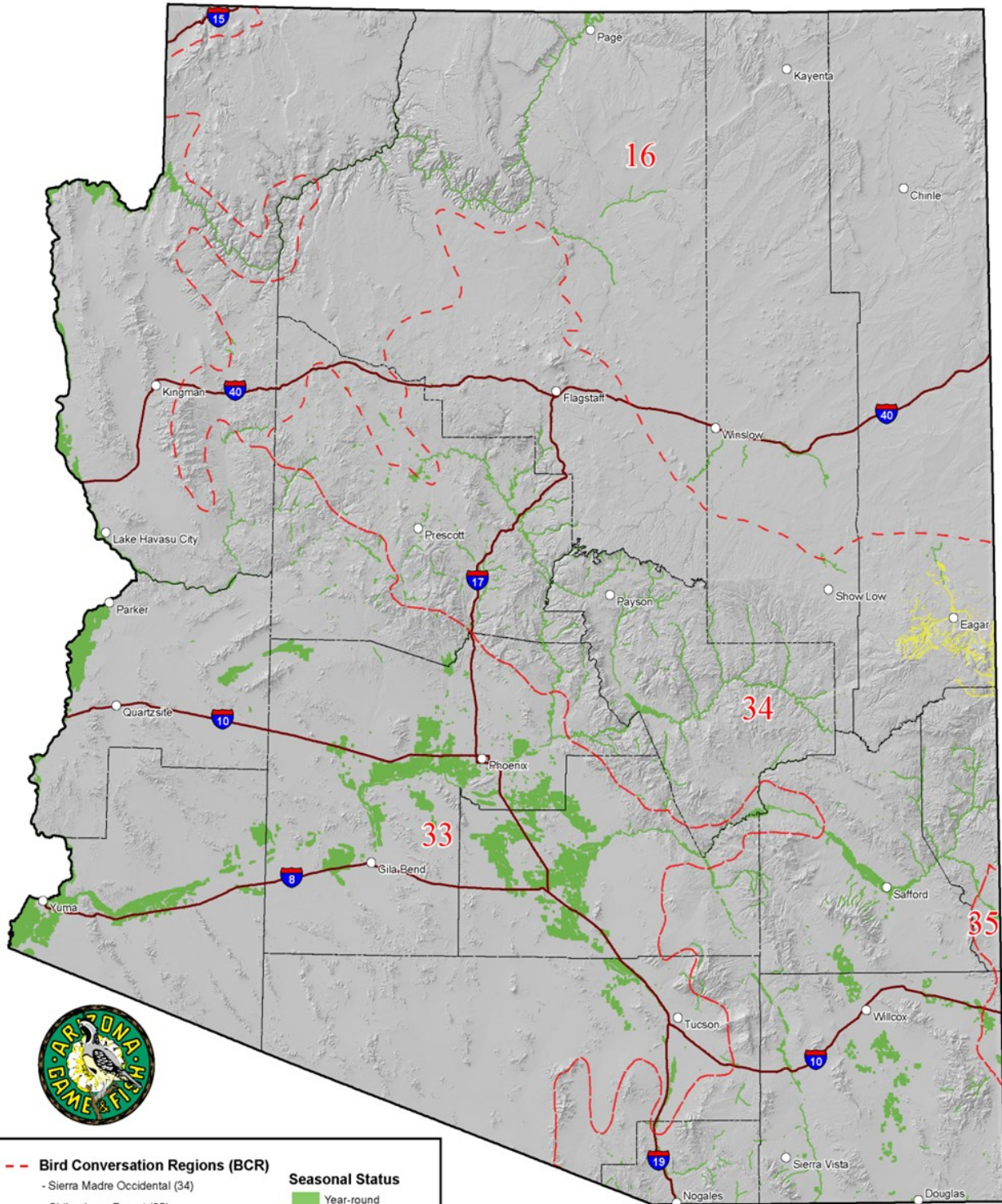
Seasonal Distribution in Arizona	
Breeding	Mid-March – early August ⁹
Migration	Late August – November; February – April; resident at low elevations
Winter	November – March
Nest and Nesting Habits	
Type of Nest	Cup ⁸
Nest Substrate	Ground or ground vegetation ⁸
Nest Height	0 – 13 feet ⁸
Food Habits	
Diet/Food	Insects; seeds ⁸
Foraging Substrate	Ground and streamside vegetation ⁸



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

Last Update: October 2023

Distribution of Song Sparrow



-- Bird Conservation Regions (BCR)	Seasonal Status
- Sierra Madre Occidental (34)	 Year-round
- Chihuahuan Desert (35)	 Breeding Only
- Sonoran & Mojave Deserts (33)	 Counties
- Southern Rockies & Colorado Plateau (16)	

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

SPECIES ACCOUNT ● SONG SPARROW *Melospiza melodia*



General Information

Distribution in Arizona

Song Sparrows occur in most major river drainages south of the Mogollon Rim, along the Colorado River from Yuma to the Coconino County line, and along the Virgin River (Shrout 2005). They are very sparse above the Mogollon Rim, with small, local populations in the White Mountains and nearby (Shrout 2005). Most Song Sparrows in Arizona nest at elevations ranging from 90 – 5,000 feet and locally to 8,320 feet (Shrout 2005). Song Sparrow distribution and abundance of breeding populations in Arizona have changed during the past hundred years due to human manipulation of water sources. Song Sparrows can be found throughout Arizona around river drainages, perennial waterways, canals, ponds, and marshes of southern and western Arizona with sufficient ground and understory vegetative cover. They winter locally throughout Arizona and include an influx of migrants from breeding populations north of the state (Arcese et al. 2002).

Habitat Description

Song Sparrows occur in a wide range of lowland riparian woodlands with dense herbaceous and shrub undergrowth (Arcese et al. 2002). In Arizona, they nest most commonly in cottonwood-willow and thickets, but they also use emergent vegetation of wetlands (Shrout 2005). Song Sparrow density increases with increasing woody riparian cover, suggesting they prefer multiple vegetation layers (White 2011). In arid environments, Song Sparrows generally nest in dense vegetation near water; they rarely use irrigated landscapes (Arcese et al. 2002). Wintering habitats in Arizona are similar to breeding, but they also include weedy fallow fields and woody thickets, often near irrigated lands or other water sources.

Microhabitat Requirements

Song Sparrows nest on the ground or low in riparian grasses, sedges, or shrubs with very dense overhead cover (Arcese et al. 2002). Riparian restoration areas may initially lack sufficient ground vegetation to provide the required cover for nest sites and foraging, but once these are established Song Sparrows readily colonize restored areas (Larison et al. 2001, Krueper et al. 2003). They forage primarily on the ground inside dense woody riparian thickets, grasses and sedges, or at shallow water edges (Arcese et al. 2002).

Landscape Requirements

Song Sparrows may nest on islands as small as .25 acres (Arcese et al. 2002), indicating very low area requirements for breeding. However, breeding densities are significantly higher in contiguous shrub thickets than they are in scattered, open stands (Sanders and Edge 1998). It is unknown whether or not adjacent vegetation types matter for territory selection, but it is unlikely. The primary landscape requirements of this species are the extent of dense riparian thickets and herbaceous cover within the riparian zone. Disturbance distances have not been studied.



Conservation Issues and Management Actions

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 <ul style="list-style-type: none"> Livestock farming and ranching 	High
Natural System Modifications <ul style="list-style-type: none"> Fire and fire suppressions Dams and water management/use 	Medium
Climate Change <ul style="list-style-type: none"> Ecosystem encroachment Changes in precipitation and hydrological regimes (drought) 	High

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

Agriculture:

- Livestock farming and ranching

Natural System Modifications:

- Fire and fire suppression
- Dams and water management/use

Although Song Sparrows can be abundant in riparian areas, habitat loss and degradation lead to loss of local breeding populations. This is particularly true in the southwest, where dense riparian thickets are vulnerable to water diversions, groundwater pumping, and unsustainable livestock use. Invasive exotic vegetation such as grasses, forbs, and tamarisk fuel wildfires in riparian corridors, which often kill or set-back native trees and shrubs. Dropping water tables in some grazed areas, combined with stream banks becoming cut and incised, result in woody riparian vegetation and Song Sparrow declines. In some cases, minimal restoration effort, including removal of grazing and stopping channel incision by restoring the water table, appears to be sufficient to allow habitat to passively restore itself (Burnett and Harley 2003). Unsustainable livestock grazing reduces vegetation cover and increases nest predation (Arcese et al. 2002), but this effect is reversible. In one study along the upper San Pedro River, Song Sparrow abundance increased four-fold three years after riparian vegetation and ground cover was allowed to recover from livestock grazing (Krueper et al. 2003). Groundwater pumping and surface water diversions can lead to loss of riparian woody vegetation and ground cover because these plants usually need near-permanent access to water through their root systems.



Recommended Actions:

1. Promote agriculture, grazing, and recreation management, as well as comprehensive land use planning, that is compatible with Song Sparrow habitat requirements.
2. Manage habitat to incorporate structural habitat characteristics that reduce brood parasitism (such as increased herbaceous cover) by reducing grazing or otherwise altering habitat (Humple and Geupel 2004).
3. Use Song Sparrows as an indicator of management action because the species both positively responds to riparian restoration and is sensitive to habitat degradation.
4. Restore riparian areas, particularly dense thickets of willows, cottonwoods, sedges and grasses.

Climate Change:

- Ecosystem encroachment
- Changes in precipitation and hydrological regimes

Prolonged droughts and excessive heat carry the risk of riparian vegetation loss, as most riparian plants need almost permanent root access to water. Riparian vegetation loss is directly related to declines in Song Sparrow breeding populations. For instance, Song Sparrows declined 16% annually along the lower Colorado River in Mexico during a severe drought in 2002-2007, during which the cover of Fremont cottonwood and Goodding's willow decreased (Hinojosa-Huerta et al. 2013).

Recommended Actions:

1. Evaluate and implement the best options for mitigating effects of prolonged drought on mature riparian vegetation, including shrub thickets and native ground cover.
2. Enhance existing wetland borders to provide dense riparian shrub stands that are suitable for Song Sparrows; larger patches are more suitable, but .25 acres may be sufficient.
3. Map all riparian areas that are at least .25 acres in size to create a baseline from which future riparian losses can be monitored and mitigated.

Research and Monitoring Priorities

1. Quantify to what degree Song Sparrow presence and abundance is related to other indicators of riparian functionality and use this as an easily-measurable indicator of riparian health.
2. Map all riparian areas that are at least .25 acres in size to create a baseline from which future riparian losses can be monitored and mitigated.

Literature Cited

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