Sage Thrasher, photo by ©Robert Shantz

Conservation Profile

Species Concerns
Increased Fire Frequency
Invasive Plants
Unsustainable Livestock Grazing
Climate Change

Conservation Status Lists	
USFWS[1]	No
AZGFD[2]	Tier 1C
DoD[3]	Yes
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	23,000 ◑
Global	6,400,000 ◑
Percent in Arizona	0.36%

PIF Population Goal[5b]
Maintain

Trends in Arizona	
Historical (pre-BBS)	Unknown
BBS[7] (1968 – 2013)	+1.79/year ●

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

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

Associated Breeding Birds
Northern Mockingbird, Brewer's Sparrow, Lark Sparrow, Black-throated Sparrow, Sagebrush Sparrow

Breeding Habitat Use Profile

Habitats Used in Arizona
Primary: Cold-Temperate Desertscrub
Secondary: None

Key Habitat Parameters	
Plant Composition	Sagebrush preferred but apparently not required; also saltbush, shadscale, greasewood or similar species; avoids cheatgrass[8]
Plant Density and Size	Shrub cover 11 – 44%[9], average height 1 – 3 feet, but can be taller; sparse to moderate ground cover[8]
Microhabitat Features	Live sagebrush shrubs with dense, wide crowns; intact understory that produces insects
Landscape	Spatial variability in density and height and structural complexity; patches of bare ground acceptable[8]; avoids areas with junipers[3];most likely to occur in large areas of uninterrupted sagebrush[10]

Elevation Range in Arizona
4,800 – 7,200 feet[10]

Density Estimate
Territory Size: 2 – 5 acres[11]
Density: 1 – 10 pairs/100 acres[11]

Natural History Profile

Seasonal Distribution in Arizona	
Breeding	April – July[10]
Migration	Late January – early April; August – October[10]
Winter	November – February; primarily southern Arizona[10]

Nest and Nesting Habits	
Type of Nest	Cup, sometimes with roof[8]
Nest Substrate	Dense shrub < 30 inches tall, sometimes on ground
Nest Height	Within 3 feet of ground[11]

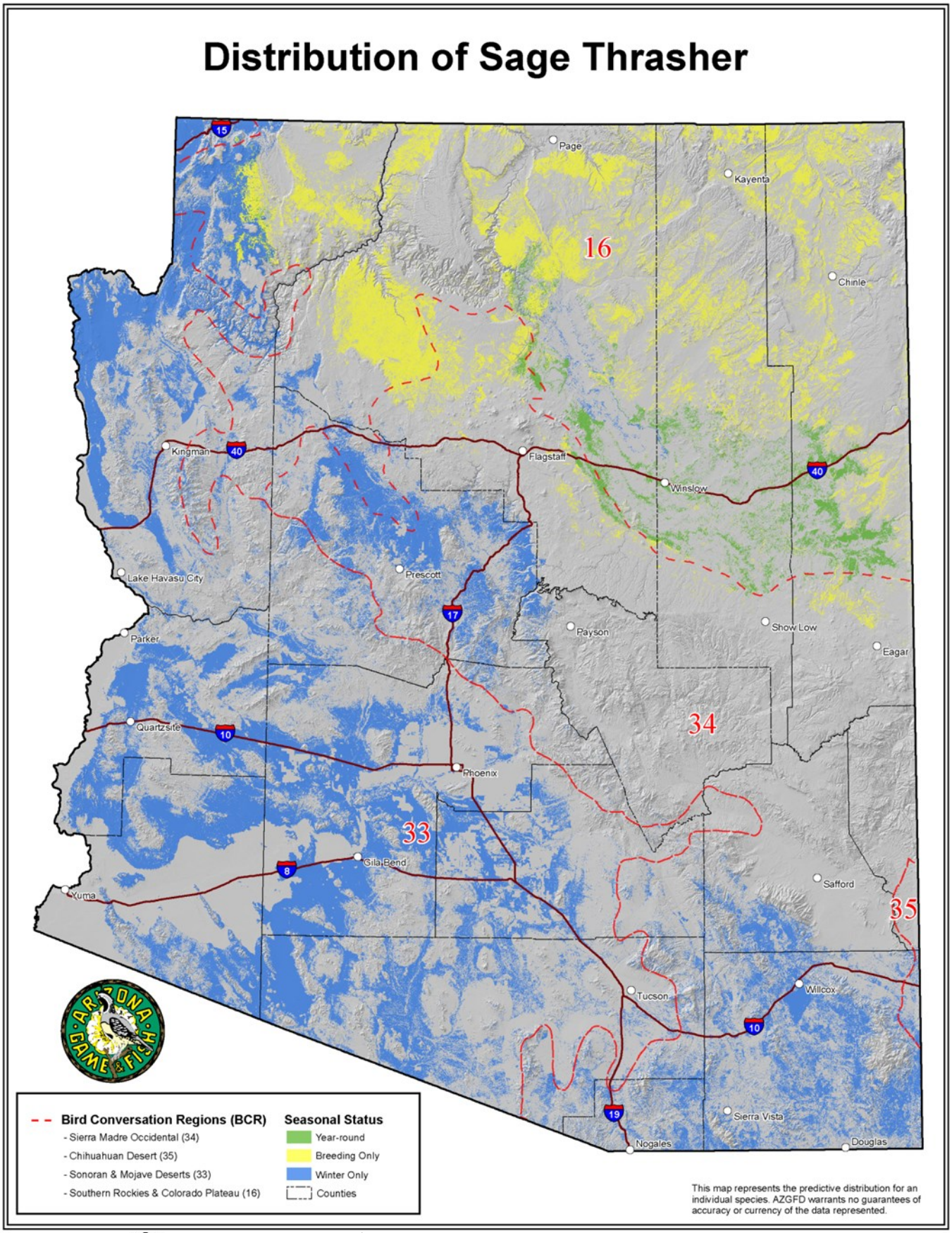
Food Habits	
Diet/Food	Insects; berries[12]
Foraging Substrate	Ground

SPECIES ACCOUNT ● *SAGE THRASHER Oreoscoptes montanus*

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

Last Update: April 2023

Distribution of Sage Thrasher



General Information

Distribution in Arizona

Sage Thrashers are inconspicuous nesters at elevations from 4800 – 7200 feet in Navajo and Apache counties, ranging as far south as St. Johns, north of the Grand Canyon in the Arizona Strip region, and north of Flagstaff (Corman 2005). They reach the southern limit of their breeding range in northeastern Arizona, but commonly winter south of the Mogollon Rim (Reynolds et al. 1999). The abundance and distribution of wintering birds in Arizona varies with food availability (Corman 2005).

Habitat Description

While Sage Thrashers only occur in cold desert scrublands, they are described as habitat generalists within this vegetation type (Wiens and Rotenberry 1981). In Arizona, they primarily nest in big sagebrush communities, but are also found in areas dominated by shadscale, saltbush, and greasewood (Latta et al. 1999). LaRue (1994) found Sage Thrashers to be more common in saltbush and greasewood than in sagebrush on Black Mesa near Kayenta, Arizona. They tend to avoid areas with scattered trees, such as junipers.

Microhabitat Requirements

Little is known about microhabitat requirements of Sage Thrashers in Arizona. In other parts of their range, nesting Sage Thrashers are positively associated with 1 – 2 foot tall shrubs, primarily sagebrush, and with shrub cover of 11 – 44% (Rich 1980, Wiens and Rotenberry 1981, Reynolds et al. 1999). Within shrub stands, Sage Thrashers place nests on or above the ground, usually inside taller shrubs with wide, dense crowns (Reynolds et al. 1999). Sage Thrashers forage for insects almost exclusively on the ground during the breeding season (Reynolds et al. 1999). In winter they may congregate in areas of rich food sources, with multiple individuals foraging on juniper cones several feet above the ground.

Landscape Requirements

Area and landscape requirements of Sage Thrashers are largely unknown, although the species avoids forested or wooded areas, apparently even if only scattered trees are present (Noson et al. 2006). Similarly, Sage Thrasher sensitivity to various disturbances has yet to be studied, particularly in the southwestern portion of their breeding range. Winter landscape requirements also remain unknown.

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	Details	Threat Level
Agriculture • Livestock farming and ranching		High
Energy Production and Mining • Renewable energy	Wind farms	Medium
Human Intrusions and Disturbance • Recreational activities		Medium
Natural System Modifications • Fire and fire suppression • Other ecosystem modifications		High
Invasive and Problematic Species • Invasive non-native/alien plants	Exotic grasses and forbs	High
Climate Change • Ecosystem encroachment • Changes in temperature regimes • Changes in precipitation and hydrological regimes		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

Degradation of suitable Sage Thrasher nesting habitat may be the result of incompatible land use, such as unsustainable livestock grazing and motorized recreation, which cause direct mortality to shrubs and understory plants and lead to invasion of weeds, compacted soils, and loss of shrub recruitment. While landscape requirements of Sage Thrashers in Arizona are currently unknown, these activities occurring at a large enough scale in occupied Sage Thrasher range likely lead to loss of suitable breeding habitat. They also increase the likelihood of invasion of weeds that are unsuitable for breeding habitat and increase the chances of catastrophic fires. While fires that burn in a mosaic have been found to have a neutral effect on Sage Thrasher populations (Reynolds et al. 1999), stand-replacing fires displace breeding birds.

Recommended Actions:

1. Manage sagebrush and other shrublands occupied by Sage Thrashers with the goal of a 10% minimum shrub cover (Reynolds et al. 1999).
2. Protect tall shrubs with dense crowns from removal and fire to maintain Sage Thrasher nesting habitat.
3. Examine current land uses and intensity of uses, status of weed invasion, and fire frequencies in currently occupied and potentially suitable areas for breeding Sage Thrashers (see recommendations below for climate change).
4. Create green belts and fire breaks to prevent catastrophic fires in Sage Thrasher habitat.
5. Manage invasive weeds where they threaten to alter suitability or increase fire frequency in Sage Thrasher habitat.
6. Use prescribed fire and mechanical treatment practices that leave a mosaic of live shrub stands on the landscape.
7. Develop fire management strategies that support high-quality legacy sagebrush habitat while promoting traditional fire regimes.
8. Minimize activities that promote establishment or maintenance of cheatgrass, including unsustainable livestock grazing and heavy OHV use. Limit these activities to areas that are already degraded.
9. Conserve native grass and forb understories wherever possible. Protect current season's growth through the nesting season. Manage for at least 50% of annual plant growth to remain (Paige and Ritter 1999).

Energy Production and Mining:

- Renewable energy

Wind energy development has led to local impacts to sagebrush and other cold-temperate desertscrub habitats. It is expected that this activity will increase in the future with unknown impacts to breeding birds. Potential loss of habitat due to wind energy development and mining is cause for concern for this species.

Recommended Actions:

1. All recommended actions are found in the Research and Monitoring Priorities Section.

Human Intrusions and Disturbance:

- Recreational activities

Soil crusts are associated with healthy sagebrush-steppe ecosystems and are thought to promote soil development and productivity in sagebrush habitats.

Recommended Actions:

1. Employ exclosures or non-fence methods to prevent livestock trampling.
2. Inoculate disturbed soils with material from surrounding biological crusts to hasten recovery time (often > 10 years naturally).
3. Use established trails and roads for recreational activities (Buseck et al. 2004).

Natural System Modifications:

- Fire and fire suppression
- Other ecosystem modifications

Management for Sage Thrasher should focus on retaining large patches of dense, taller sagebrush habitat. Prevent large-scale fires to maintain such a landscape mosaic.

Recommended Actions:

1. Avoid burning or removing > 50 percent of sagebrush habitat to maintain adequate habitat for Sage Thrashers (Latta et al. 1999).
2. Limit prescribed burns to small-scale fires during the non-breeding season.
3. Minimize conversion of shrublands to nonnative grasslands or croplands.
4. Discourage road construction or other developments, especially if it would reduce sagebrush-steppe habitat to patch sizes less than 20 hectares (Buseck et al. 2004).

Invasive and Problematic Species:

- Invasive non-native/alien plants

Recommended Actions:

1. Protect shrub-steppe habitat from invasion of non-native plant species that can change the composition of this landscape mosaic (e.g., cheatgrass and crested wheatgrass; see below).
2. Protect intact, suitable habitat through conservation easements or management agreements (Buseck et al. 2004).

Climate Change:

- Ecosystem Encroachment
- Changes in temperature regimes
- Changes in precipitation and hydrological regimes

Prolonged droughts cause loss of overall shrub vigor and increase fire frequency, which may lead to loss of Sage Thrasher nesting sites, prey items, and cover. Since Sage Thrashers are at the southern boundary of their breeding distribution in Arizona, any responses to climate change will likely be detected in Arizona populations. Sage Thrashers are forecast to experience a 78% decline in breeding habitat between 2010 and 2019 (van Riper et al. 2014), which will lead to large future population declines.

Recommended Actions:

1. Conduct treatments in narrow strips or small blocks to maintain a mosaic pattern of edge and useable habitat.
2. Discourage fragmentation of sagebrush habitat exceeding 50%, especially where conversion would result in grasslands or agriculture (Wiens and Rotenberry 1985, Yanishevsky and Petring-Rupp 1998)

Research and Monitoring Priorities

1. Expand monitoring coverage or regular population inventories to determine Sage Thrasher population trends and distribution changes in response to climate change. Continue long-term monitoring of landbirds statewide (BBS and other similar efforts).
2. Delineate currently occupied and potentially suitable Sage Thrasher breeding habitat in Arizona to improve population monitoring and conservation planning.
3. Determine area requirements, landscape needs, and sensitivity to disturbances of Arizona's Sage Thrasher populations.
4. Determine all aspects of Sage Thrasher migration and winter habitat use in Arizona.
5. Develop beneficial management practices for lands used by breeding Sage Thrashers.
6. Expand interagency planning of fire management, livestock management, and invasive grass prevention efforts into a climate-change effects response network emphasizing increased drought effects (Chambers et al. 2008).
7. Study effects of OHV use on Sage Thrasher habitat quality.
8. Monitor status of invasive weeds to assess impacts on Sage Thrasher habitat.
9. Increase public outreach that emphasizes the fragility and ecological benefit of intact sagebrush expanses, with emphasis on responsible OHV use, fire prevention, control of invasive plants, and appreciation of sagebrush birds.
10. Offer land manager workshops focused on sagebrush birds and their habitat needs; provide beneficial management practices tools and help review project plans.
11. Study the effects of land uses (including wind energy development), weed invasion, and fire on Sage Thrasher productivity and survival in Arizona.

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