

Sage Thrasher

Oreoscoptes montanus

REGULATORY STATUS

USFWS: Migratory Bird
USFS R2: No special status
USFS R4: No special status
Wyoming BLM: Sensitive
State of Wyoming: Protected Bird

CONSERVATION RANKS

USFWS: Bird of Conservation Concern
WGFD: NSS4 (Bc), Tier II
WYNDD: G4, S5
Wyoming Contribution: LOW
IUCN: Least Concern
PIF Continental Concern Score: 11

STATUS AND RANK COMMENTS

Sage Thrasher (*Oreoscoptes montanus*) has no additional regulatory status or conservation rank considerations beyond those listed above.

NATURAL HISTORY

Taxonomy:

There are currently no recognized subspecies of Sage Thrasher^{1, 2}. On average, northern populations have longer tails than southern populations, indicating slight phenotypic differences between populations¹. Beyond this, there is no evidence supporting subspecific designation.

Description:

Identification of Sage Thrasher is possible in the field. Sage Thrasher is a medium sized passerine and is the smallest thrasher species¹. Males are slightly larger than females, but plumage is similar for both sexes¹. Adults are generally drab brown-grey. The head is characterized by an indistinct whitish supercilium, whitish leading edge of the nape, and whitish malar with thin black submoustachial stripe. Underside is lighter and breast, sides, flanks, and belly have distinct dark streaking. Back and wings are brown-grey. Wings have two narrow, crisp wing-bars^{1, 3, 4}. Juveniles are similar in appearance, paler overall with less distinct streaking on underside^{1, 3, 4}. The species is distinguished from other thrashers by its smaller size and short, straight bill¹. Sage Thrasher is similar in appearance to Bendire's Thrasher (*Toxostoma longirostre*). Bendire's Thrasher has small triangular spots on its breast while Sage Thrasher has streaks on its breast and crisp white wing-bars⁴.

Distribution & Range:

Sage Thrasher breeds from northern New Mexico and Arizona north to extreme southern British Columbia. Wyoming constitutes a relatively large portion of the breeding range and marks the northeastern edge of summer range. Confirmed or suspected breeding has been documented in

all of the state's 28 latitude/longitude degree blocks⁵. Sage Thrasher migrates south and winters in the southwestern United States, central Mexico, and Baja Peninsula. There are no known range contractions or expansions. But local extinctions have been observed in some areas that have undergone significant habitat alteration¹.

Habitat:

Sage Thrasher is considered a sagebrush obligate species^{1,3}. In Wyoming and other parts of its range, the species is found in shrubsteppe habitats dominated by big sagebrush (*Artemisia* spp.). The species is occasionally found nesting in desert shrublands with Black Greasewood (*Sarcobatus vermiculatus*), rabbitbrush (*Chrysothamnus* spp.), and Bitterbrush (*Purshia tridentata*)³. In other portions of their range, they may be found in semi-arid grasslands and juniper woodlands³. Sage Thrasher typically nests in large, healthy sagebrush shrubs. Shrubs greater than 70 cm in height and with greater than 75% living canopy are generally selected for nesting³. Additionally, Sage Thrasher is typically associated with areas of higher than average cover and height of sagebrush shrubs³. In Wyoming, Sage Thrasher is most common in areas with contiguous tracts of healthy sagebrush steppe. Specifically, Sage Thrasher is common in the Upper Green River Basin, Great Divide Basin, and Big Horn Basin. Habitat use during migration and non-breeding season is more general than during breeding^{1,3}. Sage Thrasher is still typically found in shrubsteppe habitats including mixed desert shrublands, arid grasslands with shrub cover, and open pinyon-juniper woodlands^{1,3}.

Phenology:

Sage Thrasher arrives in Wyoming in mid to late March and departs for wintering grounds in August through early October¹. In Wyoming, Sage Thrasher establishes territories and nest shortly after arriving in the breeding range¹. Inter-annual timing of seasonal migration and nesting is dependent upon weather conditions and may vary by several weeks.

Diet:

Sage Thrasher feeds primarily on insects, but berries and other small fruits are consumed when available^{1,3}.

CONSERVATION CONCERNS

Abundance:

Continental: WIDESPREAD

Wyoming: COMMON

In 2013, Partners in Flight estimated that Sage Thrasher had a global population of approximately 5.9 million individuals and a Wyoming population of approximately 1 million⁶. The species has a statewide abundance rank of common and appears to be common within suitable environments in the occupied area⁵. From 1968–2015, annual Wyoming Breeding Bird Survey (BBS) detections of Sage Thrasher ranged from 13 to 1,015 (average = 521), with 531 recorded in 2015⁷. Annual detections of Sage Thrasher ranged from 264 to 559 during surveys for the Integrated Monitoring in Bird Conservation Regions (IMBCR) program between 2009–2015⁸. Estimated mean density across this same time period was 2.31 birds per km² (standard deviation 0.63, standard error 0.24) in suitable habitats in Wyoming⁸.

Population Trends:

Historic: MODERATE DECLINE

Recent: STABLE

Wyoming trend data from the North American BBS indicate that Sage Thrasher declined by 0.53% annually from 1968–2013 and 1.94% annually from 2003–2013; however, neither state estimate was statistically significant⁹. Survey-wide BBS trend data indicate that Sage Thrasher numbers experienced a statistically significant annual decline of 1.39% from 1966–2013, and a non-significant annual decline of 1.21% from 2003–2013⁹.

Intrinsic Vulnerability:

MODERATE VULNERABILITY

Sage Thrasher has a high degree of habitat specificity, preferring contiguous stands of healthy, mature sagebrush^{1, 3}. For example, along a successional gradient of sagebrush steppe habitat, Sage Thrasher was strongly associated with mature sagebrush as opposed to recently burned sagebrush or juniper-sagebrush mosaic in Oregon¹⁰. Similarly, in Wyoming, Sage Thrasher was negatively associated with areas that had undergone controlled burning¹¹. Furthermore, it appears that requirements for suitable nesting habitat are quite narrow, being restricted to large, healthy sagebrush shrubs³.

Extrinsic Stressors:

MODERATELY STRESSED

Research indicates that the largest threat to Sage Thrasher is habitat loss, degradation, and fragmentation^{1, 3, 12}. Evidence suggests that Sage Thrasher abundance was negatively correlated with grass cover in Washington State¹. Sagebrush steppe habitats in portions of Wyoming have experienced large-scale invasions of Cheat Grass (*Bromus tectorum*). It is likely that this negatively affects Sage Thrasher populations in the state. Additionally, cheat grass increases fire frequency in sagebrush ecosystems¹². It is well established that Sage Thrasher avoids burned areas^{10, 11, 13}. In Wyoming, sagebrush habitats have also been fragmented by energy development, including traditional oil and gas, coal bed methane, and wind power. Patterns of sensitivity to habitat fragmentation are mixed and may be context dependent. For example, reproductive success of Sage Thrasher was lower in habitats fragmented by agriculture¹⁴ and energy development¹⁵. However, abundance of Sage Thrasher was not influenced by the density of natural gas wells. Reproductive success of Sage Thrasher was lower in energy development areas¹⁵. Increasing energy development in Wyoming may lead to population declines of Sage Thrasher.

KEY ACTIVITIES IN WYOMING

Sage Thrasher is classified as a Species of Greatest Conservation Need (SGCN) by the Wyoming Game and Fish Department (WGFD), and as a Level II Priority Bird Species requiring monitoring in the Wyoming Bird Conservation Plan¹⁶. The WGFD, Bureau of Land Management (BLM), and United States Forest Service have implemented increased monitoring efforts for Sage Thrasher and other sagebrush songbirds¹⁷. In 2004 and from 2008 to present, the WGFD has funded graduate research at the University of Wyoming, in conjunction with the Wyoming Cooperative Fish and Wildlife Research Unit, to examine potential effects of oil and natural gas development on Sage Thrasher and other sagebrush-obligate songbirds in Wyoming^{15, 18-22}. From 2011 to present, the WGFD has funded graduate research to determine if state-wide efforts to conserve the Greater Sage-Grouse (*Centrocercus urophasianus*) may simultaneously benefit other SGCN species, including Sage Thrasher²³. In 2016, the WGFD funded an additional project to examine the effects of climate on nongame sagebrush bird demography and populations. Field work is scheduled to begin in 2017. The BLM funded research from 2010–2012 to examine the potential effects of natural gas extraction infrastructure (i.e., roadways and

well pads) on the distribution of sagebrush-obligate songbirds, including Sage Thrasher, at a natural gas field in southern Wyoming²⁴.

ECOLOGICAL INFORMATION NEEDS

Data regarding both abundance and population trends are lacking for Sage Thrasher. Also, a better understanding of how habitat loss and fragmentation affects this species is needed.

MANAGEMENT IN WYOMING

This section authored solely by WGFD; Zachary J. Walker. Sage Thrasher is classified as a SGCN in Wyoming due to habitat degradation and fragmentation. Broad scale monitoring efforts, such as the BBS and IMBCR, should be continued. Additional research should focus on addressing ecological information needs, and should examine the impacts of habitat loss and fragmentation on Sage Thrasher populations. Best management practices for this species include maintenance of large (> 50 acres) unfragmented stands of sagebrush habitat. Fragmentation and disturbance should be limited with effort to maintain large suitable habitat tracts.

CONTRIBUTORS

Ian M. Abernethy, WYNDD
 Kaylan A. Hubbard, WYNDD
 Zachary J. Walker, WGFD
 Douglas A. Keinath, WYNDD

REFERENCES

- [1] Reynolds, T. D., D., R. T., and Stephens, D. A. (1999) Sage Thrasher (*Oreoscoptes montanus*), In *The Birds of North America* (Rodewald, P. G., Ed.), Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America: <https://birdsna.org/Species-Account/bna/species/sagthr>.
- [2] Lepage, D. (2016) Avibase: The World Bird Database, Bird Studies Canada, Birdlife International, <http://avibase.bsc-eoc.org/avibase.jsp>.
- [3] Buseck, R. S., Keinath, D. A., and McGee, M. H. (2004) Species assessment for Sage Thrasher (*Oreoscoptes montanus*) in Wyoming, p 74, Wyoming Natural Diversity Database and USDI Bureau of Land Management, University of Wyoming, Laramie, WY.
- [4] Sibley, D. A. (2000) *The Sibley Guide to Birds*, Alfred A. Knopf, Inc., New York.
- [5] Orabona, A., Rudd, C., Grenier, M., Walker, Z., Patla, S., and Oakleaf, B. (2012) Atlas of birds, mammals, amphibians, and reptiles in Wyoming, p 232, Wyoming Game and Fish Department Nongame Program, Lander, WY.
- [6] Partners in Flight Science Committee. (2013) Population Estimates Database, version 2013, <http://rmbo.org/pifpopestimates>.
- [7] Pardieck, K. L., Ziolkowski, D. J., Jr., Hudson, M.-A. R., and Campbell, K. (2016) North American Breeding Bird Survey Dataset 1966 - 2015, version 2015.0, U.S. Geological Survey, Patuxent Wildlife Research Center, www.pwrc.usgs.gov/BBS/RawData/.
- [8] Bird Conservancy of the Rockies. (2016) The Rocky Mountain Avian Data Center [web application], Brighton, CO. <http://adc.rmbo.org>.
- [9] Sauer, J. R., Hines, J. E., Fallon, J. E., Pardieck, K. L., Ziolkowski, D. J., Jr., and Link, W. A. (2014) The North American Breeding Bird Survey, Results and Analysis 1966 - 2013. Version 01.30.2015, USGS Patuxent Wildlife Research Center, Laurel, MD.
- [10] Reinkensmeyer, D. P., Miller, R. F., Anthony, R. G., and Marr, V. E. (2007) Avian community structure along a Mountain Big Sagebrush successional gradient, *Journal of Wildlife Management* 71, 1057-1066.
- [11] Erickson, H. J. (2011) Herbaceous and avifauna responses to prescribed fire and grazing timing in a high-elevation sagebrush ecosystem, p 180, Colorado State University, Fort Collins, CO.

- [12] Knick, S. T., Dobkin, D. S., Rotenberry, J. T., Schroeder, M. A., Vander Haegen, W. M., and van Riper III, C. (2003) Teetering on the edge or too late? Conservation and research issues for avifauna of sagebrush habitats, *Condor* 105, 611-634.
- [13] Holmes, A. L. (2007) Short-term effects of a prescribed burn on songbirds and vegetation in mountain big sagebrush, *Western North American Naturalist* 67, 292-298.
- [14] Vander Haegen, W. M. (2007) Fragmentation by agriculture influences reproductive success of birds in a shrubsteppe landscape, *Ecological Applications* 17, 934-947.
- [15] Gilbert, M. M. (2010) Demographic responses of sagebrush-obligate songbirds to oil and natural gas development in western Wyoming, p 79, University of Wyoming, Laramie, WY.
- [16] Nicholoff, S. H., compiler. (2003) Wyoming Bird Conservation Plan, Version 2.0, Wyoming Partners In Flight, Wyoming Game and Fish Department, Lander, Wyoming.
- [17] Wyoming Game and Fish Department. (2010) State Wildlife Action Plan, p 512.
- [18] Ingelfinger, F., and Anderson, S. (2004) Passerine response to roads associated with natural gas extraction in a sagebrush steppe habitat, *Western North American Naturalist* 64, 385-395.
- [19] Gilbert, M. M., and Chalfoun, A. D. (2011) Energy development affects populations of sagebrush songbirds in Wyoming, *Journal of Wildlife Management* 75, 816-824.
- [20] Hethcoat, M. G. (2014) Mechanistic understanding of the effects of natural gas development on sagebrush-obligate songbird nest predation rates, p 30, University of Wyoming, Laramie, WY.
- [21] Hethcoat, M. G., and Chalfoun, A. D. (2015) Energy development and avian nest survival in Wyoming, USA: A test of a common disturbance index, *Biological Conservation* 184, 327-334.
- [22] Hethcoat, M. G., and Chalfoun, A. D. (2015) Towards a mechanistic understanding of human-induced rapid environmental change: a case study linking energy development, nest predation and predators, *Journal of Applied Ecology*, 8.
- [23] Carlisle, J., and Chalfoun, A. D. (2012) The Effectiveness of Sage-Grouse Core Areas as an Umbrella for Nongame Species of Greatest Conservation Need, In *Threatened, Endangered, and Nongame Bird and Mammal Investigations: Annual Completion Report* (Grenier, M. B., Abel, B., and Cudworth, N., Eds.), p 208, Wyoming Game and Fish Department.
- [24] Mutter, M., Pavlacky, D. C., Van Lanen, N. J., and Grenyer, R. (2015) Evaluating the impact of gas extraction infrastructure on the occupancy of sagebrush-obligate songbirds, *Ecological Applications* 25, 1175-1186.



Figure 1: Adult Sage Thrasher in Wyoming. (Photo courtesy of Gunnar Kramer)

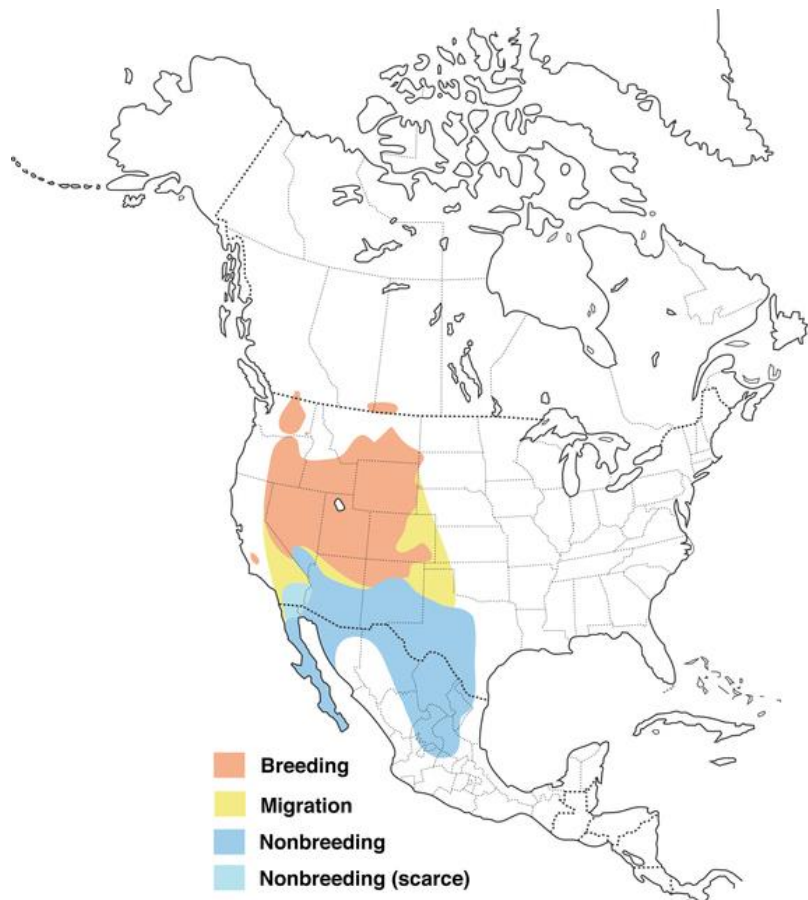


Figure 2: North American range of *Oreoscoptes montanus*. (Map courtesy of Birds of North America, <http://bna.birds.cornell.edu/bna>, maintained by the Cornell Lab of Ornithology)



Figure 3: Large, mature, sagebrush typically preferred by Sage Thrasher in Sublette County, Wyoming. (Photo courtesy of Ian M. Abernethy)

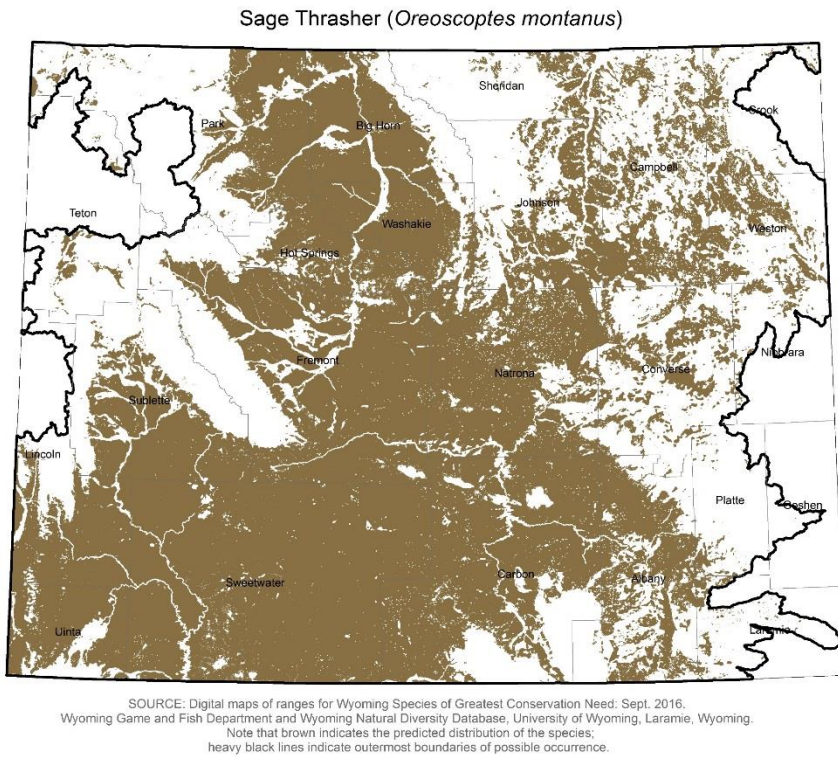


Figure 4: Range and predicted distribution of *Oreoscoptes montanus* in Wyoming.