

Fox Sparrow, Townsend's

Class: Aves
Order: Passeriformes

Passerella iliaca townsendi

Note: This assessment refers to this subspecies only. A species level report, which refers to all associated subspecies, is also available.

Review Status: Peer-reviewed

Version Date: 28 March 2019

Conservation Status

NatureServe: Agency:

G Rank: ADF&G:

IUCN:

Audubon AK:

S Rank: USFWS:

BLM:

Final Rank		
Conservation category: VII. Yellow		
low status and either high biological vulnerability or high action need		
<u>Category</u>	<u>Range</u>	<u>Score</u>
Status	-20 to 20	-6
Biological	-50 to 50	-20
Action	-40 to 40	12
Higher numerical scores denote greater concern		

Status - variables measure the trend in a taxon's population status or distribution. Higher status scores denote taxa with known declining trends. Status scores range from -20 (increasing) to 20 (decreasing).

Score

Population Trend in Alaska (-10 to 10)

-6

Breeding Bird Survey (BBS) data shows a slightly negative trend (1966-2015; Pardieck et al. 2017), while Handel and Sauer (2017) indicate a positive trend on roadside routes and suspected stable for off-road routes.

Distribution Trend in Alaska (-10 to 10)

0

Unknown.

Status Total: -6

Biological - variables measure aspects of a taxon's distribution, abundance and life history. Higher biological scores suggest greater vulnerability to extirpation. Biological scores range from -50 (least vulnerable) to 50 (most vulnerable).

Score

Population Size in Alaska (-10 to 10)

0

Unknown.

Range Size in Alaska (-10 to 10)

-2

Breeds on the mainland and islands of southeast Alaska (Bailey 1927; Gabrielson 1944; Rogers 1994; Johnson et al. 2008; Gibson and Withrow 2015) from Glacier Bay (Bailey 1927; Gabrielson and Lincoln 1959) south to Forrester Island (Willett 1920). Breeding range is approximately 95,000

sq. km (calculated in GoogleMaps). Some birds overwinter in southeast Alaska while others migrate further south (Bailey 1927; Gabrielson and Lincoln 1959) along the Pacific Coast to southern California (Weckstein et al. 2002).

Population Concentration in Alaska (-10 to 10)

-10

No subspecies specific information, likely same as species: Does not concentrate during breeding and is not known to gather in large flocks during migration (Weckstein et al. 2002).

Reproductive Potential in Alaska

Age of First Reproduction (-5 to 5)

-5

No subspecies specific information, likely same as species: Unknown, but assumed to be <2 years (Johnson and Anderson 2004).

Number of Young (-5 to 5)

1

3-4 eggs/clutch (Willett 1920; Bailey 1927; Rogers 1994). Able to lay 2nd clutch. Unknown whether double brooded or re-nest due to predation (Rogers 1994).

Ecological Specialization in Alaska

Dietary (-5 to 5)

-5

No subspecies specific information, likely same as species: Few data available for Alaska. Elsewhere in its range, fox sparrows are omnivorous and their diet changes with availability (reviewed in Weckstein et al. 2002). Consumes a variety of invertebrates (e.g. beetles, millipedes, spiders), seeds, and berries (Weckstein et al. 2002).

Habitat (-5 to 5)

1

Thick shrubs and understory (Johnson et al. 2008b).

Biological Total: -20

Action - variables measure current state of knowledge or extent of conservation efforts directed toward a given taxon. Higher action scores denote greater information needs due of lack of knowledge or conservation action. Action scores range from -40 (lower needs) to 40 (greater needs).

Score

Management Plans and Regulations in Alaska (-10 to 10)

2

Protected under the Migratory Bird Treaty Act (MBTA 1918).

Knowledge of Distribution and Habitat in Alaska (-10 to 10)

2

Habitat association and distribution generally known (Weckstein et al. 2002). Range limits are poorly known.

Knowledge of Population Trends in Alaska (-10 to 10)

-2

Captured on Breeding Bird Survey (BBS) routes (Handel and Sauer 2017; Pardieck et al. 2017).

Knowledge of Factors Limiting Populations in Alaska (-10 to 10)

10

No subspecies specific information, likely same as species: Very little is known about the factors that limit its population dynamics in Alaska or elsewhere. Potential factors include heavy snow on breeding grounds, inclement weather during migration or winter, nest predation, and competition (Johnson and Anderson 2004; Johnson et al. 2018c; Visty et al. 2018), but few data exist to support or refute these suggestions. Analyses of long-term data (1995-2013) from Denali National Park found that fox sparrows have expanded their distribution to include both lower and higher elevation areas (Mizel et al. 2016), which may account for the observed increased in fox sparrow abundance in the park (Schmidt et al. 2013; Mizel et al. 2016). Using a related dataset, Mizel et al. (2017) also noticed that there was less variation between individuals in the timing of arrival on breeding grounds.

Additional research is needed to understand what is driving this pattern. One explanation proposed by the authors is that population increases may have intensified competition for breeding territories. Several papers have considered the evolution and genetics of fox sparrow species and subspecies (e.g. Burns and Zink 1990; Zink 1994; Zink and Weckstein 2003).

Action Total: 12

Supplemental Information - variables do not receive numerical scores. Instead, they are used to sort taxa to answer specific biological or management questions.

Harvest:	None or Prohibited
Seasonal Occurrence:	Year-round
Taxonomic Significance:	Subspecies
% Global Range in Alaska:	>10%
% Global Population in Alaska:	≥75%
Peripheral:	No

References

- Bailey, A. M. 1927. Notes on the birds of southeastern Alaska (concluded). *The Auk* 44(3):351–367.
- Burns, K. J., and R. M. Zink. 1990. Temporal and geographic homogeneity of gene frequencies in the fox sparrow (*Passerella iliaca*). *The Auk* 107(2):421–425. DOI: 10.2307/4087632
- Gabrielson, I. N., and F. C. Lincoln. 1959. *The Birds of Alaska*. The Stackpole Company, Harrisburg, PA, USA.
- Hampton, S. 2016. Status and identification of fox sparrow subspecies in the Central Valley of California. *Central Valley Bird Club Bulletin* 19(2):28–63.
- Handel, C. M. and Sauer, J. R. 2017. Combined analysis of roadside and off-road breeding bird survey data to assess population change in Alaska. *The Condor* 119(3):557-575. DOI: 10.1650/CONDOR-17-67.1
- Johnson, A. S., and S. H. Anderson. 2004. Fox sparrow (*Passerella iliaca schistacea*): A technical conservation assessment. Prepared for the USDA Forest Service, Rocky Mountain Region, Species Conservation Project. Available online: <https://www.fs.usda.gov/detail/r2/landmanagement/?cid=stelprdb5177128>
- Johnson, J. A., B. A. Andres, and J. A. Bissonette. 2008b. Birds of the major mainland rivers of Southeast Alaska. General Technical Report PNW-GTR-739. U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station, Portland, OR, USA.
- Johnson, K. M., R. R. Germain, C. E. Tarwater, J. M. Reid, and P. Arcese. 2018c. Demographic consequences of invasion by a native, controphic competitor to an insular bird population. *Oecologia* 187(1):155–165. DOI: 10.1007/s00442-018-4101-y
- Migratory Bird Treaty Act (MBTA). 1918. U.S. Code Title 16 §§ 703-712 Migratory Bird Treaty Act.
- Mizel, J. D., J. H. Schmidt, C. L. McIntyre, and C. A. Roland. 2016. Rapidly shifting elevational distributions of passerine species parallel vegetation change in the subarctic. *Ecosphere* 7(3):e01264. DOI: 10.1002/ecs2.1264
- Mizel, J. D., J. H. Schmidt, C. L. McIntyre, and M. S. Lindberg. 2017. Subarctic-breeding passerines exhibit phenological resilience to extreme spring conditions. *Ecosphere* 8(2):e01680. DOI: 10.1002/ecs2.1680
- Pardieck, K. L., D. J. Ziolkowski Jr., M. Lutmerding, K. Campbell and M.-A.R. Hudson. 2017. North American Breeding Bird Survey Dataset 1966 - 2016, version 2016.0. U.S. Geological Survey, Patuxent Wildlife Research Center. DOI:10.5066/F7W0944J.
- Rogers, C. M. 1994. Avian nest success, brood parasitism and edge-independent reproduction in an Alaskan wetland. *Journal of Field Ornithology* 65(4):433–440.

Schmidt, J. H., C. L. McIntyre, and M. C. MacCluskie. 2013. Accounting for incomplete detection: What are we estimating and how might it affect long-term passerine monitoring programs? *Biological Conservation* 160:130–139. DOI: 10.1016/j.biocon.2013.01.007

Visty, H., S. Wilson, R. Germain, J. Krippel, and P. Arcese. 2018. Demography of sooty fox sparrows (*Passerella unalaschcensis*) following a shift from a migratory to resident life history. *Canadian Journal of Zoology* 96(5):436–440. DOI: 10.1139/cjz-2017-0102

Weckstein, J. D., D. E. Kroodsmma, and R. C. Faucett. 2002. Fox Sparrow (*Passerella iliaca*), version 2.0. In Poole, A. F., and F. B. Gill, eds. *The Birds of North America*, Cornell Lab of Ornithology, Ithaca, NY, USA. DOI: 10.2173/bna.715

Willett, G. 1920. Additional notes on the avifauna of Forrester Island, Alaska. *The Condor* 22(4):138–139. DOI: 10.2307/1362860

Zink, R. M. 1994. The geography of mitochondrial DNA variation, population structure, hybridization, and species limits in the fox sparrow (*Passerella iliaca*). *Evolution* 48(1):96–111. DOI: 10.1111/j.1558-5646.1994.tb01297.x

Zink, R. M., and J. D. Weckstein. 2003. Recent evolutionary history of the fox sparrows (Genus: *Passerella*). *The Auk* 120(2):522–527.

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