

# Fox Sparrow, Kodiak

Class: Aves  
Order: Passeriformes

*Passerella iliaca insularis*

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: <b>IV. Orange</b>		
unknown status and high biological vulnerability and action need		
<u>Category</u>	<u>Range</u>	<u>Score</u>
Status	-20 to 20	0
Biological	-50 to 50	-8
Action	-40 to 40	16
<b>Higher numerical scores denote greater concern</b>		

**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)*

0

Unknown.

*Distribution Trend in Alaska (-10 to 10)*

0

Unknown.

Status Total: 0

**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 islands of the Kodiak Archipelago (Gabrielson 1944, Gabrielson and Lincoln 1959, MacIntosh 2009, Gibson and Withrow 2015) and Chirikof Island (Withrow 2015). Breeding range approximately 17,000 sq. km (calculated in GoogleMaps). Overwinters in coastal Washington, Oregon, and California (Weckstein et al. 2002).

<i>Population Concentration in Alaska (-10 to 10)</i>	2
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). However, this subspecies only occurs on islands of the Kodiak Archipelago and Chirikof Island (Withrow 2015).	
<i>Reproductive Potential in Alaska</i>	
<u>Age of First Reproduction (-5 to 5)</u>	-5
No subspecies specific information, likely same as species: Unknown, but assumed to be <2 years (Johnson and Anderson 2004).	
<u>Number of Young (-5 to 5)</u>	1
No subspecies specific information, likely same as species: Little information available, but clutch sizes of 3 to 4 eggs are commonly reported in Alaska (Willett 1920; Bailey 1927; Petersen et al. 1991; Rogers 1994) and elsewhere (Weckstein et al. 2002). Double-brooding was reported in Juneau by Rogers (1994), but this behavior has not been well-documented in Alaska. Double-brooding does occur on Mandarte Island in southern B.C. (Vistry et al. 2018).	
<i>Ecological Specialization in Alaska</i>	
<u>Dietary (-5 to 5)</u>	-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).	
<u>Habitat (-5 to 5)</u>	1
No subspecies specific information, likely same as species: Throughout its range in Alaska, this species is most often found in low and tall shrub thickets (Isleib and Kessel 1973; Spindler and Kessel 1980; Gill et al. 1981; Kessler and Kogut 1985; Cotter and Andres 2000a; Van Hemert et al. 2006; Schmidt et al. 2013; Amundson et al. 2018), including edge habitat near rivers and other waterbodies (Kessel and Schaller 1960; Cotter and Andres 2000a). In interior Alaska, also reported in open deciduous or mixedwood forests with a thick shrub understory (Spindler and Kessel 1980; Cotter and Andres 2000a; Schmidt et al. 2013).	
	Biological Total: -8

**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**

<i>Management Plans and Regulations in Alaska (-10 to 10)</i>	2
Protected under the Migratory Bird Treaty Act (MBTA 1918).	
<i>Knowledge of Distribution and Habitat in Alaska (-10 to 10)</i>	2
Habitat association and distribution generally known (Weckstein et al. 2002). Range limits are poorly known.	
<i>Knowledge of Population Trends in Alaska (-10 to 10)</i>	2
Although banded 2010-2014 on Kodiak Island for MAPS (Corcoran et al. 2014), no trend information available, and otherwise not monitored.	
<i>Knowledge of Factors Limiting Populations in Alaska (-10 to 10)</i>	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; Vistry 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 increase 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: 16

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

<b>Harvest:</b>	None or Prohibited
<b>Seasonal Occurrence:</b>	Breeding
<b>Taxonomic Significance:</b>	Subspecies
<b>% Global Range in Alaska:</b>	>10%
<b>% Global Population in Alaska:</b>	Endemic
<b>Peripheral:</b>	No

## References

- Amundson, C. L., C. M. Handel, D. R. Ruthrauff, T. L. Tibbitts, and R. E. Gill. 2018. Montane-breeding bird distribution and abundance across national parks of southwestern Alaska. *Journal of Fish and Wildlife Management* 9(1):180–207. DOI: 10.3996/062017-JFWM-050
- 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
- Corcoran, R., C. Trussell, and R. MacIntosh. 2014. Monitoring Avian Productivity and Survivorship on Kodiak Island, Alaska, 2010-2014. Refuge report 2014.7, Kodiak National Wildlife Refuge, U.S. Fish and Wildlife Service, Kodiak, AK, USA.
- Cotter, P. A., and B. A. Andres. 2000a. Breeding bird habitat associations on the Alaska breeding bird survey. Information and Technology Report USGS/BRD/ITR- 2000-0010, Biological Resource Division, U.S. Geological Survey, Springfield, VA, USA.
- Gabrielson, I. N. 1944. Some Alaskan notes (concluded). *The Auk* 61(2):270–287.
- Gabrielson, I. N., and F. C. Lincoln. 1959. *The Birds of Alaska*. The Stackpole Company, Harrisburg, PA, USA.
- Gibson, D. D., and J. J. Withrow. 2015. Inventory of the species and subspecies of Alaska birds, second edition. *Western Birds* 46(2):94–185.
- Gill, R. E., Jr., M. R. Petersen, and P. D. Jorgensen. 1981. Birds of the northcentral Alaska Peninsula, 1976-1980. *Arctic* 34(4):286–306. DOI: 10.14430/arctic2532
- 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.

- Isleib, M. E., and B. Kessel. 1973. Birds of the north Gulf Coast- Prince William Sound region, Alaska. Biological Papers of the University of Alaska no. 14. University of Alaska Fairbanks, AK, USA.
- 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, 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
- Kessel, B., and G. B. Schaller. 1960. Birds of the Upper Sheenjek Valley, northeastern Alaska. Biological Papers of the University of Alaska 4:1–58.
- Kessler, W. B., and T. E. Kogut. 1985. Habitat orientations of forest birds in southeastern Alaska. *Northwest Science* 59(1):58-65.
- MacIntosh, R., ed. 2009. Kodiak National Wildlife Refuge and the Kodiak Archipelago birds. Unpublished report, U.S. Fish and Wildlife Service, Kodiak National Wildlife Refuge, Kodiak, AK, USA. Available online: [https://www.fws.gov/uploadedFiles/Region\\_7/NWRS/Zone\\_2/Kodiak/PDF/knwr\\_bird\\_broc\\_2009.pdf](https://www.fws.gov/uploadedFiles/Region_7/NWRS/Zone_2/Kodiak/PDF/knwr_bird_broc_2009.pdf)
- 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
- Petersen, M. R., D. N. Weir, and M. H. Dick. 1991. Birds of the Kilbuck and Ahklun Mountain region, Alaska. *North American Fauna* 76:1-158.
- 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
- Spindler, M. A., and B. Kessel. 1980. Avian populations and habitat use in interior Alaska taiga. Final report, University of Alaska Museum, Fairbanks, AK, USA.
- Van Hemert, C., C. M. Handel, M. N. Cady, and J. Terenzi. 2006. Summer inventory of landbirds in Kenai Fjords National Park. Final report NPS/AKR/SWAN/NRTR-2006/04, U.S. Geological Survey, Alaska Science Center, Anchorage, AK, USA.
- 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. Kroodsmas, 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
- Withrow, J. J. 2015. Notes on the birds of Chirikof Island, Alaska. *Western Birds* 46(1):28-48.
- 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.
-

Alaska Center for Conservation Science  
Alaska Natural Heritage Program  
University of Alaska Anchorage  
Anchorage, AK