Tree Swallow

Tachycineta bicolor

Class: Aves
Order: Passeriformes

Review Status: Peer-reviewed **Version Date:** 29 January 2018

Conservation Status

NatureServe:	*Agency:*		
G Rank: G5	ADF&G: Species of Greatest Conservation Need	IUCN: Least Concern	Audubon AK: Watch
S Rank: S5B	USFWS:	BLM:	

Final Rank

Conservation category: **II. Red**

high status and either high biological vulnerability or high action need

Category	Range	Score
Status	-20 to 20	16
Biological	-50 to 50	-32
Action	-40 to 40	16

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) 10

Long-term trends indicate declines in southeastern and interior Alaska, based on data from the Breeding Bird Survey from 1993-2015 (Handel and Sauer 2017). Short-term (10-year) trends indicate ongoing declines in interior Alaska, but data are more uncertain and are inadequate for detecting trends in southeastern Alaska (Handel and Sauer 2017). Similar declines have been noted elsewhere in North America (Winkler et al. 2011). We assume that the inability to detect statistically significant declines is likely due to data quality, rather than the absence of an effect, and we therefore rank this question as A- Known to be declining.

Distribution Trend in Alaska (-10 to 10) 6

Suspected to be decreasing; boreal wetlands and lakes in Alaska are shrinking and drying out due to climate change (Handel and Sauer 2017 and references therein).

Status Total: 16

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) -10

>25,000. PIF (2019) estimates that there are 990,000 individuals breeding in Alaska, with high uncertainty (95% CI: 520,000-1,700,000).

Range Size in Alaska (-10 to 10) -10

Common summer resident across most of Alaska from Southeast Alaska north to the Brooks Range and from the Yukon-Kuskokwim Delta east to Canada (Winkler et al. 2011). Overwinters in the southern U.S., Mexico, and Central America. Estimated breeding range size is 1,028,452 sq. km, calculated in GIS and based on range map from ACCS (2017a).

Population Concentration in Alaska (-10 to 10) -10

Does not concentrate.

Reproductive Potential in Alaska

Age of First Reproduction (-5 to 5) -5

Most females probably breed by their third summer (age 2; Winkler et al. 2011). Females can breed within their first year, but the proportion that do appears to vary by population (Winkler et al. 2011).

Number of Young (-5 to 5) 1

Usually between 4 to 7 eggs per clutch (Winkler et al. 2011). In interior Alaska, average clutch size ranged from 5.59 to 5.80 (Rose and Lyon 2013; Irons et al. 2017). Females in Alaska likely only lay one clutch per year, though renesting may be possible if the first clutch fails early in the season (Winkler et al. 2011; Irons et al. 2017). Females can breed annually, but additional data are needed to determine the proportion of females that skip breeding for one or more years (Winkler et al. 2011).

Ecological Specialization in Alaska

Dietary (-5 to 5) 1

Little information available for Alaska. Tree Swallows are generalist aerial insectivores whose diet includes Diptera, Odonata, Ephemeroptera, and Trichoptera (Winkler et al. 2011; Godwin et al. 2019). Because invertebrates are an ephemeral and potentially unpredictable food source (e.g. Nebel et al. 2010), we rank this question as B- Moderately adaptable with key requirements common.

Habitat (-5 to 5) 1

During breeding season, found near water in meadows, marshes, and woodlands where flying insects are abundant (Johnson et al. 2008b; Winkler et al. 2011). Nests in natural tree cavities in snags, fallen logs, and tree stumps, but also in rock cracks, buildings, and nest boxes (Kessel 1989; Johnson et al. 2008b; Winkler et al 2011).

Biological Total: -32

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

Some knowledge of distribution and broad habitat associations captured by multi-species surveys (Quinlan 1978; Kessel 1989; Petersen et al. 1991; Johnson et al. 2008b; Handel and Sauer 2017). No knowledge of migration routes and wintering distribution.

Knowledge of Population Trends in Alaska (-10 to 10) 2

Monitored by the Breeding Bird Survey and the Alaska Landbird Monitoring Survey. The power to

detect short-term trends seems limited, especially in southeastern Alaska and on off-road surveys in interior Alaska (Handel and Sauer 2017).

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

Little is known about the factors that limit bank swallow populations or the reasons behind their decline in Alaska or elsewhere in North America. Declines may be associated with continental declines in the abundance of flying insects (Nebel et al. 2010), though it is unclear whether populations in Alaska are food limited (Ardia 2007; Rose and Lyon 2013). In some areas, range and population density are limited by the availability of nesting cavities (Holroyd 1975; Stutchbury and Robertson 1985; Winkler et al. 2011). Changes in climate, including wind patterns, precipitation, and temperature, appear to affect breeding phenology by influencing the timing of incubation and egg hatch, and the duration of the incubation period (Ardia et al. 2006; Irons et al. 2017). The impacts of these phenological changes on reproductive success require further study.

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.

Harvest:	None or Prohibited
Seasonal Occurrence:	Breeding
Taxonomic Significance:	Monotypic species
% Global Range in Alaska:	>10%
% Global Population in Alaska:	<25%
Peripheral:	No

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