

**Buff-breasted Sandpiper***Calidris subruficollis*

Class: Aves

Order: Charadriiformes

**Review Status:** Peer-reviewed**Version Date:** 18 March 2019**Conservation Status***NatureServe:**Agency:*

G Rank: G4

ADF&amp;G: Species of Greatest Conservation Need

IUCN: Near Threatened

Audubon AK: Red

S Rank: S2B

USFWS: Bird of Conservation Concern

BLM: Sensitive

**Final Rank**Conservation category: **I. Red**

high status, biological vulnerability, and action need

<u>Category</u>	<u>Range</u>	<u>Score</u>
Status	-20 to 20	12
Biological	-50 to 50	-12
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

Data are limited, but suspected to be declining (COSEWIC 2012; ASG 2019).

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

6

Unknown, but suspected to be decreasing as a result of long-term and ongoing population declines (R. Lanctot, USFWS, pers. comm.).

Status Total: 12

**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)*

-6

The North American population is estimated at 56,000 individuals, of which less than 25% breed in Alaska (Lanctot et al. 2010; ASG 2019). We therefore estimate that population size in Alaska is between 10,000 and 25,000 individuals.

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

-2

Breeds along the coast from Point Barrow east to Canada (McCarty et al. 2017). Overwinters in South America. Estimated range size is ~92,550 sq. km., based on the range map from BirdLife International (2018).

<i>Population Concentration in Alaska (-10 to 10)</i>	-6
More than 1,200 birds are estimated to breed in the Teshekpuk Lake Special Area (Andres et al. 2012b) and 1,600 breeders are estimated for the northeast Arctic Coastal Plain (Smith et al. 2012a). Occasionally flocks in small numbers during migration (Lanctot et al. 2010). Given its small population size and restricted range in Alaska, we estimate that number of sites is between 25 and 250.	
<i>Reproductive Potential in Alaska</i>	
<u>Age of First Reproduction (-5 to 5)</u>	-5
Unknown, but thought to be 1 year old (McCarty et al. 2017).	
<u>Number of Young (-5 to 5)</u>	1
Females lay a single 4-egg clutch per year (Pruett-Jones 1988; McCarty et al. 2017; Weiser et al. 2018a).	
<i>Ecological Specialization in Alaska</i>	
<u>Dietary (-5 to 5)</u>	1
Little information available. During breeding, mainly consumes terrestrial invertebrates including spiders, flies, beetles, and earthworms (COSEWIC 2012; McCarty et al. 2017). Because invertebrates are an ephemeral and potentially unpredictable food source, we rank this question as B- Moderately adaptable with key requirements common.	
<u>Habitat (-5 to 5)</u>	5
Restricted to the Arctic tundra, typically 80 to 120 km from the coast (Pruett-Jones 1988; McCarty et al. 2017). Typically nests on dry or upland graminoid meadows such as ridges and bluffs (Lanctot et al. 2010), though nests in wetter habitats have also been documented (Beckett et al. 2008, qtd. in COSEWIC 2012). When foraging and later in the breeding season, uses riparian and wetlands habitats (Latour et al. 2005; Brown et al. 2007; Johnson et al. 2007a; Lanctot et al. 2010). Researchers in Alaska (Johnson et al. 2007a) and eastern Russia (Stishov 1994) have contended that habitats supporting <i>C. subruficollis</i> were rare.	
<b>Biological Total:</b>	-12

**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>	-10
Protected under the Migratory Bird Treaty Act (MBTA 1918). Closed to recreational and subsistence harvest (AMBCC 2018).	
<i>Knowledge of Distribution and Habitat in Alaska (-10 to 10)</i>	2
Distribution and habitat associations captured during multi-species surveys (e.g. Brown et al. 2007; Johnson et al. 2007a; Taylor et al. 2010; Andres et al. 2012b; Saalfeld and Lanctot 2015) and specific surveys (e.g. Pruett-Jones 1988; Lanctot and Weatherhead 1997; Lanctot et al. 1997; 1998; Lounsberry et al. 2013; 2014). Additional research is needed to determine specific habitat requirements in Alaska and whether the rarity of these requirements explain the sporadic distribution of <i>C. subruficollis</i> . Migration routes are beginning to be studied, but are still largely unknown (Lanctot et al. 2016).	
<i>Knowledge of Population Trends in Alaska (-10 to 10)</i>	10
There is currently no monitoring program in place in Alaska that can provide data on population trends. Recent efforts such as PRISM surveys conducted in northern are promising (Bart et al. 2012),	

but this program is still in its infancy and multi-year data are not available. Monitoring is difficult because this species is infrequently detected during surveys (Brown et al. 2007; Johnson et al. 2007a; Taylor et al. 2010; Andres et al. 2012b) and rarely returns to breeding grounds (Saalfeld and Lanctot 2015). Until multi-year data become available, we rank this question as A- Not currently monitored.

10

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

Little is known about the ecology of buff-breasted sandpipers and the reasons behind its decline. It experienced severe population declines in the late 19th century due to hunting (Lanctot et al. 2002; McCarty et al. 2017) and distribution on non-breeding grounds has been reduced due to habitat loss (Lanctot et al. 2002). Fortunately, genetic diversity has remained high despite these declines (Lounsberry et al. 2014).

Surveys on breeding grounds in Alaska have noted high interannual variation in density and spatial distribution (Pruett-Jones 1988; Lanctot and Weatherhead 1997; Johnson et al. 2007a; Saalfeld and Lanctot 2015), but the factors driving these variations are not well-understood. Yearly variation in the distribution of lek sites may be influenced by unpredictable environmental factors such as the timing of snow melt (Pruett-Jones 1988; Lanctot and Weatherhead 1997), while breeding densities may be influenced by conditions encountered during migration (McCarty et al. 2017) or by specific requirements for rare habitats (Stishov 1994; Johnson et al. 2007a). Both Weiser et al. (2018a) and Pruett-Jones (1988) documented very low nest survival rates. Clutch size and nest survival rates appear unrelated to the timing of egg laying (Weiser et al. 2018a), but predation may be the main cause of nest loss (Pruett-Jones 1988; Saalfeld and Lanctot 2015).

Males are known for their lekking behavior (Pruett-Jones 1988; Lanctot and Weatherhead 1997; Lanctot et al. 1998), but differences in reproductive success between males is low, indicating that alternative mating strategies are successfully employed (Lanctot et al. 1998). Adult survival rates are largely unknown (Lanctot et al. 2010). Return rates on breeding grounds are an unreliable proxy because adults exhibit low site fidelity (McCarty et al. 2017).

In addition to information on demographic rates, research is needed on the effects of environmental contaminants on both breeding (Saalfeld et al. 2016) and non-breeding grounds. High levels of pesticides have been documented from individuals on non-breeding grounds, though body mass of individuals did not seem to be affected (Strum et al. 2010). Studies are also needed to determine the effects of climate change on populations. Wauchope et al. (2017) predict that suitable habitat will decline by 50% by the end of this century.

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.

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

## References

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