White-crowned Sparrow

Zonotrichia leucophrys

Class: Aves

Order: Passeriformes

Review Status: Peer-reviewer

Version Date: 09 December 2022

Conservation Status

Table 1 Conservation status according to state, national, and international organizations and agencies.

Organization	Rank
NatureServe	S5/G5
ADF&G	Species of Greatest Conservation Need
IUCN	Least Concern
Audubon Alaska	Watch

Final Rank

Conservation Category: **II. Red**

High status and either high biological vulnerability or high action need

Table 2 ASRS categorical scores. Higher numerical scores denote greater concern.

Category	Range	Score
Status	-20 to 20	1
Biological	-50 to 50	-24
Action	-40 to 40	4

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).

Population Trend in Alaska (-10 to 10)

Suspected to be declining. Data from roadside Breeding Bird Surveys in interior Alaska point to statistically significant negative declines in both the long-term (1993-2015) and short-term (2003-2015; Handel and Sauer 2017). Off-road surveys from 2003-2015 also suggest negative declines, though these declines were not statistically significant (Handel and Sauer 2017).

Score: 6

Distribution Trend in Alaska (-10 to 10)

White-crowned Sparrows may be expanding their range northward in Alaska, coincident with the expansion of shrubs (Krause et al. 2016).

Score: -5

Status Total: 1

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).

Population Size in Alaska (-10 to 10)

Uncertain, but likely >25,000 (Handel et al. 2009; PIF 2019). This species is commonly encountered during multi-species bird surveys throughout its breeding range in Alaska (e.g., Spindler and Kessel 1980; Handel and Sauer 2017; Phillips et al. 2017; Amundson et al. 2018).

Score: -10

Range Size in Alaska (-10 to 10)

Breeds throughout most of mainland Alaska from Southcoastal Alaska north past the Brooks Range and west to the Alaska Peninsula (Chilton et al. 1995). Non-breeding range is most restricted and extends from Southeast Alaska to Cordova (Isleib and Kessel 1973; Heinl and Piston 2009). Estimated non-breeding range is <10,000 sq. km.

Score: 4

Population Concentration in Alaska (-10 to 10)

While migrants are occasionally seen in flocks, maximum flock size is small relative to the total population size and groups do not aggregate at specific locations every year (Isleib and Kessel 1973; Heinl and Piston 2009). We therefore rank this question as D- Does not concentrate.

Score: -10

Reproductive Potential in Alaska

Age of First Reproduction (-5 to 5)

Breeds within their first year (Chilton et al. 1995).

Score: -5

Number of Young (-5 to 5)

Females in Alaska lay one clutch per year. In northern interior Alaska, Chmura et al. (2018) documented a mean clutch size of 4.61 eggs; similar means have been reported from studies elsewhere in this species' northern range (Kessel and Schaller 1960; Chilton et al. 1995). In rare cases, White-crowned Sparrows may lay a second clutch if the first one fails (Chmura et al. 2018). Double brooding is also extremely rare in Alaska (H. Chmura, USFS, pers. comm.).

Score: 1

Ecological Specialization in Alaska

Dietary (-5 to 5)

Adults and nestlings feed on a variety of invertebrates including crane flies, saw flies, midges, spiders, caterpillars, and true bugs (Chilton et al. 1995; Chmura et al. 2018). Adults also feed on berries, seeds, and other plant material (Boelman et al. 2015). This species is commonly seen visiting feeders in the winter and during migration (Heinl and Piston 2009).

Score: -5

Habitat (-5 to 5)

Commonly found in shrub thickets, but also found in wetlands, logged and beetle-killed spruce forests, and open agricultural fields (DeWolfe 1967; Spindler and Kessel 1980; Lance and Howell 2000; Matsuoka et al. 2001; Amundson et al. 2018). In tundra habitats, vegetation structural characteristics appear to be an important consideration for the selection of nest sites (Kessel and Schaller 1960; Boelman et al. 2015). For instance, nests near Toolik Lake Field Station were placed at the foot of deciduous shrubs whose heights were between 20 cm and 100 cm; while the shrub species varied, nests were only found at the edges of shrub thickets (Boelman et al. 2015). Studies in non-tundra habitats would be helpful in determining whether patterns of nest site selection are different in other parts of their range in Alaska.

Score: 1

Biological Total: -24

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 to lack of knowledge or conservation action. Action scores range from -40 (lower needs) to 40 (greater needs).

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

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

Score: 2

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

Range and habitat associations are captured through multi-species bird surveys and targeted studies (see Habitat Specialization above). Some knowledge of nest site selection patterns in northern Alaska (Boelman et al. 2015), however, studies in non-tundra habitats would be helpful in determining whether patterns of nest site selection are different in other parts of their range. There remains limited knowledge of migration patterns and non-breeding habitat in Alaska (Andres et al. 2005; Lisovski et al. 2019; Chmura et al. 2020).

Score: 2

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

Data from roadside Breeding Bird Surveys are adequate to detect short- and long-term trends in interior Alaska (Handel and Sauer 2017). Additional surveys in areas that are not accessible by road would help refine trend estimates.

Score: -2

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

Some knowledge of factors affecting reproductive success, however, the causes of population declines are unknown. Of the 498 eggs/nestlings monitored by Chmura et al. (2018), ~20% did not hatch, 12% were depredated, and ~9% died from non-predation causes. Inclement weather such as late-season snowfall and cold temperatures affect several aspects of this species' ecology, including clutch initiation date, offspring survival, and start of autumn migration (Boelman et al. 2017; Chmura et al. 2018; 2020). Several studies have considered the effects of climate change on this species' range, migration patterns, morphology and physiology (Boelman et al. 2015; 2017; Krause et al. 2016; Oliver 2019; Chmura et al. 2020). There is some evidence

to suggest that White-crowned Sparrows are expanding their range in Alaska, coincident with shrub expansion (Krause et al. 2016).

Score: 2

Action Total: 4

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: Monotypic species

% Global Range in Alaska: >10%

% Global Population in Alaska: 25-49%

Peripheral: No

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