

White-winged Crossbill

Loxia leucoptera

Class: Aves

Order: Passeriformes

Review Status: Reviewed (general)

Version Date: 04 June 2022

Conservation Status

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

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

Final Rank

Conservation Category: **VII. Yellow**

Low 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	-6
Biological	-50 to 50	-32
Action	-40 to 40	16

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 stable, but minimal data available. Handel and Sauer (2017) analyzed on-road and off-road survey data in Alaska and documented stable, long-term (1993-2015) trends for central and southern Alaska. Data were inadequate for estimating shorter-term, 12-year trends (Handel and Sauer 2017). A geographically broader analysis, including BBS data from outside Alaska, found a similar, stable trend; the authors noted that this species is "poorly monitored" (Sauer et al. 2017).

Score: -6

Distribution Trend in Alaska (-10 to 10)

Unknown.

Score: 0

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).

Population Size in Alaska (-10 to 10)

Uncertain, but likely >25,000 given the large population estimates provided by Handel et al. (2009) and PIF (2019).

Score: -10

Range Size in Alaska (-10 to 10)

Year-round resident from Southeast Alaska to treeline in central and western Alaska (Benkman 2020). Estimated range >400,000 sq. km., based on range map from ACCS (2017a).

Score: -10

Population Concentration in Alaska (-10 to 10)

Occurs in small flocks, but does not concentrate at specific locations (Phillips et al. 2017; Benkman 2020).

Score: -10

Reproductive Potential in Alaska

Age of First Reproduction (-5 to 5)

Unknown in Alaska. Elsewhere in its range, can breed before 1 year old (Benkman 2020).

Score: -5

Number of Young (-5 to 5)

Little data available for Alaska. Elsewhere in its range, typically lays 2-4 eggs per clutch (Benkman 2020). White-winged Crossbills can breed opportunistically throughout the year, provided that there is an abundant supply of cone crops (Benkman 2020). In southern parts of its range, there can be up to 4 nesting periods within a year. In Alaska, breeding is likely restricted to the spring and summer months; number of broods per year is likely 1 or 2, though additional research is needed (Deviche 1997; Benkman 2020).

Score: 1

Ecological Specialization in Alaska

Dietary (-5 to 5)

Specializes on conifer seeds, especially spruce and tamarack (Benkman 2020). Because large crops of conifer cones are a highly variable resource, White-winged Crossbills regularly move across boreal forests in search of food. When conifer seeds aren't abundant, White-winged

Crossbills will feed on insects, berries, buds, and seeds of other trees and shrubs (Benkman 2020).

Score: 1

Habitat (-5 to 5)

Found predominantly in mature spruce forests (Deviche 1997; Spindler and Kessel 1980; Armstrong 2008; Johnson et al. 2008b). In an analysis on coniferous forest bird species, Spindler and Kessel (1980) observed White-winged Crossbills far more often in white spruce than in black spruce plots. They found that subplots where this species was detected had the highest mean "spruce relative importance value" of any other species. Benkman (2020) asserts that access to large crops of spruce or tamarack is more important than specific habitat characteristics.

Score: 1

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 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)

General distribution and habitat associations is known from multi-species bird surveys across large parts of its range (e.g., Andres et al. 2005; Tibbitts et al. 2006; Ruthrauff et al. 2007; Phillips et al. 2017; Amundson et al. 2018; see citations in Habitat Specialization section). This species tends to be infrequently detected during surveys, which makes it difficult to rigorously evaluate habitat associations. Additional research is needed to determine the geographic extent of annual movements in search of food supply; Benkman (2020) proposes that White-winged Crossbills may undergo extensive movements from one end of the continent to the other, similar to other finch species.

Score: 2

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

Some data is available from multi-species bird surveys in central and southern Alaska; however, these data are inadequate for estimating short-term trends (Handel and Sauer 2017). Sauer et al. (2017) consider this species "poorly monitored" along Breeding Bird Survey routes, which form the basis for trend estimates of many songbirds in Alaska and elsewhere.

Score: 2

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

Little is known about the ecology of this species and the factors that limit its population size and distribution in Alaska. Conifer seeds are a critically important food resource for White-winged Crossbills and the abundance of spruce cones likely drives reproduction and distribution. Indeed, their opportunistic breeding and nomadism is thought to be an adaptation to their

dependence on this highly variable resource (Benkman 2020). Although year-round breeding has been documented at lower latitudes, Deviche (1997) suggests that temperature or photoperiod, rather than food supply, may limit reproduction to the spring and summer seasons in Alaska. Potential threats include habitat fragmentation, logging, spruce bark beetle outbreaks, and climate change, including changes to wildfire regimes (Benkman 1993; Lance and Howell 2000; Benkman 2020).

Score: 10

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: Year-round

Taxonomic Significance: Monotypic species

% Global Range in Alaska: >10%

% Global Population in Alaska: <25%

Peripheral: No

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