Black-capped Chickadee

Poecile atricapillus

Class: Aves
Order: Passeriformes

Review Status: Peer-reviewed **Version Date:** 06 February 2019

Conservation Status

NatureServe:	*Agency:*		
G Rank: G5	ADF&G: Species of Greatest Conservation Need	IUCN: Least Concern	Audubon AK:
S Rank: S5	USFWS:	BLM:	

Final Rank

Conservation category: **VII. Yellow**

low status and either high biological vulnerability or high action need

Category	Range	Score
Status	-20 to 20	-6
Biological	-50 to 50	-38
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) -6

Both short-term and long-term trends suggest population is stable in interior Alaska (Handel and Sauer 2017). Not listed as declining or vulnerable by Audubon Alaska (http://ak.audubon.org/conservation/alaska-watchlist).

Distribution Trend in Alaska (-10 to 10) 0

Unknown.

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). **Score**

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

>25,000. Partners in Flight estimates an Alaskan population of 1,700,000 (95% CI: 1.1 to 2.5 milliion; PIF 2019).

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

>400,000 sq. km. Widespread throughout Alaska, where it occurs from southeast Alaska north at least to Nome and east to the Canadian border (Saracco et al. 2007; Foote et al. 2010; 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

Little is known about the reproductive ecology of black-capped chickadees in Alaska. Elsewhere in North America, age at first reproduction is usually < 2 years (Foote et al. 2010).

Number of Young (-5 to 5) 1

Few data available for Alaska. A nest box study in southcentral Alaska documented clutch sizes ranging from 2 to 11 and a mean clutch size of 7.83 ± 0.08 SE (n=216; Handel et al. 2006). Brood size at hatch and at 12 days old averaged 7.15 ± 0.12 and 6.74 ± 0.13, respectively (Handel et al. 2006). Elsewhere in North America, most clutches have between 6 to 8 young (Foote et al. 2010). Females typically lay one clutch per year (Foote et al. 2010). Renesting is possible if the first clutch fails (Handel et al. 2006; Foote et al. 2010).

Ecological Specialization in Alaska

Dietary (-5 to 5) -5

Generalist feeder that consumes mostly invertebrates (insects, spiders), but also conifer seeds, berries, and anthropogenic food (i.e. sunflower seeds and peanut butter from bird feeders) (Foote et al. 2010; Van Hemert et al. 2012a).

Habitat (-5 to 5) 1

Mainly inhabits deciduous and mixedwood forests, but also found in coniferous forests, shrublands, and wooded habitats in urban and suburban areas (Spindler and Kessel 1980; Cotter and Andres 2000a; Van Hemert et al. 2006; Ruthrauff et al. 2007; Foote et al. 2010; Van Hemert et al. 2012a). Females nest in tree cavities excavated by her and her partner, or in cavities created by other species (Brewer 1961).

Biological Total: -38

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

Broad distribution and habitat associations are known from multi-species bird surveys (e.g. Kessel and Gibson 1978; Spindler and Kessel 1980; Kessel 1989; Cotter and Andres 2000a; Van Hemert et al. 2006; Ruthrauff et al. 2007; Savage and Johnson 2013), though this species is not often detected in southwestern and western Alaska (e.g. Kessel 1989; Ruthrauff et al. 2007; Savage and Johnson 2013; Amundson et al. 2018). Species-specific studies on habitat requirements have not been conducted, and the extent of its breeding and non-breeding range in northern and western Alaska are unknown.

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

Monitored locally along Breeding Bird Survey routes (Handel and Sauer 2017). Also detected during other multi-species bird surveys (MAPS and ALMS; e.g. Ruthrauff et al. 2007; Saracco et al. 2007; Savage and Johnson 2013; Corcoran et al. 2014), but detection rates are often low. Surveys do not encompass the species' entire range.

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

Little is known about the factors that regulate this population in Alaska. Elsewhere in North

America, several studies have considered the effects of territoriality on individual fitness and population dynamics (e.g. Smith 1967 and references therein; 1994; 1995; Otter et al. 1998; 1999; Schubert et al. 2008). Individuals of higher social rank have higher reproductive success and overwinter survival (Smith 1994; Otter et al. 1998; 1999). However, Schubert et al. (2008) found that the effect size of social rank on survival was small. Other factors such as food availability, weather, and human disturbance (e.g. Fort and Otter 2004) may be equally or more important in regulating population dynamics, but have received comparatively little attention. The effects of logging and spruce bark beetle infestations require further study (Lance and Howell 2000; Collins et al. 2001).

In Alaska, recent studies have focused on isolating the cause and effects of beak deformities, which arise in individual birds afflicted by avian keratin disorder (AKD). AKD is a disease thought to be caused by the Poecivirus (Zylberberg et al. 2018). It was first observed in Alaska in the late 1990s and is estimated to affect 6.5% of P. atricapillus adults in Alaska (Handel et al. 2010). AKD causes beak deformities, which in turn makes it more difficult for birds to preen and forage (D'Alba et al. 2011; Van Hemert et al. 2012b). Individuals with AKD are also more vulnerable to avian malaria (Wilkinson et al. 2016), have high mortality rates (Van Hemert et al. 2012b), and have lower reproductive success (Handel et al. 2006). Because of the novelty of this disease, the impacts on population dynamics are not yet known.

Lastly, climate change may increase the contact zone between black-capped chickadees and boreal chickadees; hybrids of the two species have been documented in eastern Canada (Lait et al. 2012).

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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