



Canada Jay, photo by @Danielle Brigida

## Conservation Profile

Species Concerns	
Small Population Size Catastrophic fires Local Declines Climate Change (habitat shifts, drought)	
Conservation Status Lists	
USFWS <sup>1</sup>	No
AZGFD <sup>2</sup>	Tier 1B
DoD <sup>3</sup>	No
BLM <sup>4</sup>	No
PIF Watch List <sup>5b</sup>	No
PIF Regional Concern <sup>5a</sup>	No
Migratory Bird Treaty Act	
Covered	
PIF Breeding Population Size Estimates <sup>6</sup>	
Arizona	360
Global	27,000,000 ◐
Percent in Arizona	.001%
PIF Population Goal <sup>5b</sup>	
Maintain	
Trends in Arizona	
Historical (pre-BBS)	Unknown
BBS <sup>7</sup> (1968 – 2013)	Possible declines <sup>8</sup>
PIF Urgency/Half-life (years) <sup>5b</sup>	
Insufficient Data	
Monitoring Coverage in Arizona	
BBS <sup>7</sup>	Not adequate
AZ CBM	Not covered
Associated Breeding Birds	
Northern Goshawk, Clark's Nutcracker, Hermit Thrush, Golden-crowned and Ruby-crowned Kinglets, Red-breasted Nuthatch, Cordilleran Flycatcher	

## Breeding Habitat Use Profile

Habitats Used in Arizona	
Primary: Subalpine Conifer Forest Secondary: Mixed Conifer-Aspen Forest	
Key Habitat Parameters	
Plant Composition	Closely tied to Engelmann spruce, may be mixed with white fir, blue spruce, Douglas fir or aspen <sup>7</sup>
Plant Density and Size	Extensive closed-canopy forest, but often forage and nest near openings
Microhabitat Features	Edge of mountain meadows and other forest clearings, particularly northern edge, with trees up to 100 feet tall
Landscape	Unknown
Elevation Range in Arizona	
8,750 – 1,000 feet <sup>7</sup>	
Density Estimate	
Territory Size: 75 – 175 acres (Canada) <sup>9</sup> Density: No data	

## Natural History Profile

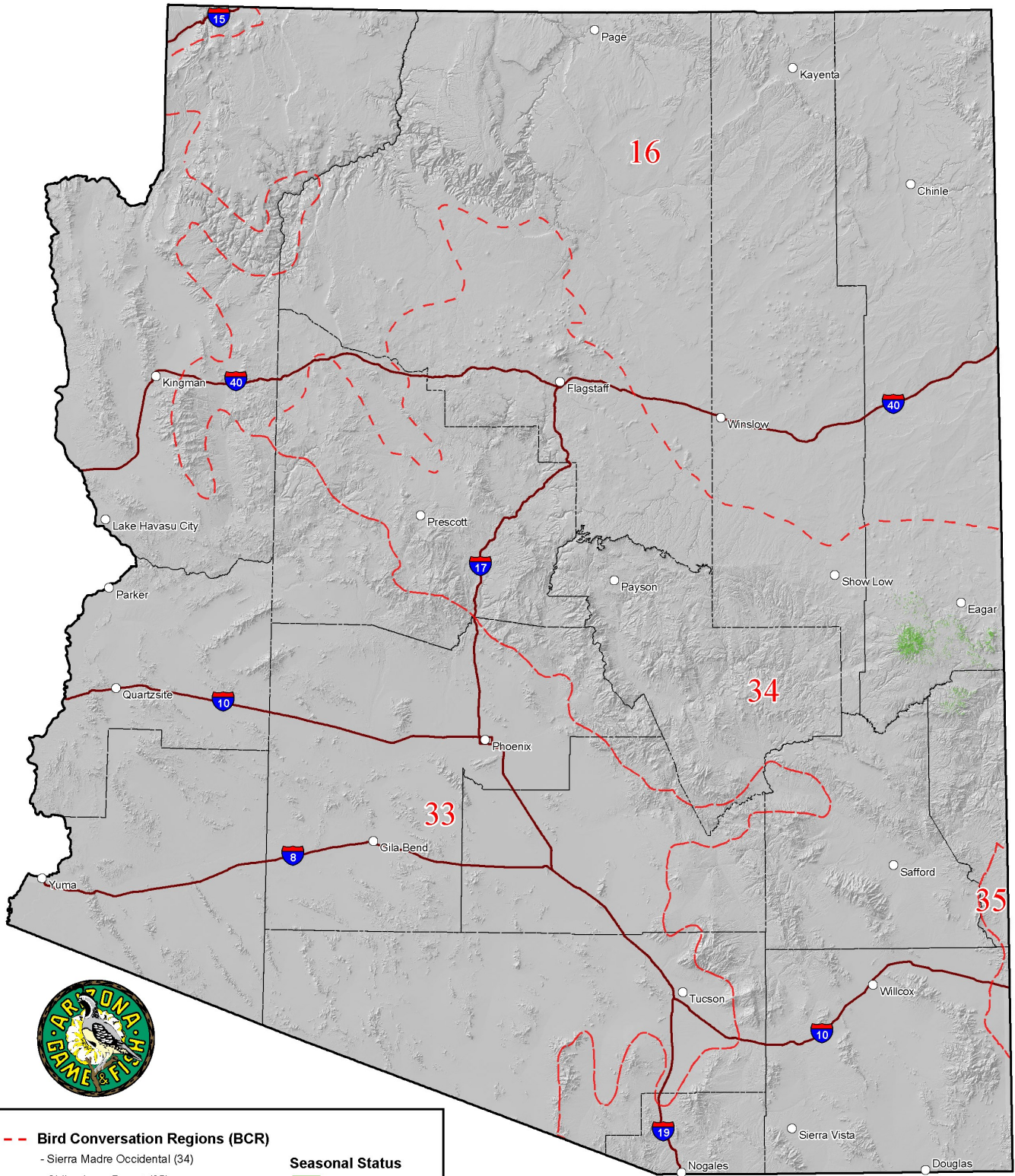
Seasonal Distribution in Arizona	
Breeding	March – June <sup>10</sup>
Migration	Non-migratory
Winter	Non-migratory
Nest and Nesting Habits	
Type of Nest	Cup <sup>9</sup>
Nest Substrate	Tall conifers such as spruce, fir <sup>9</sup>
Nest Height	6 – 55 feet <sup>9</sup>
Food Habits	
Diet/Food	Omnivorous <sup>9</sup>
Foraging Substrate	Opportunistic



Confidence in Available Data: ● High ◐ Moderate ○ Low ^ Not provided

Last Update: April 2023

# Distribution of Canada Jay



**-- Bird Conservation Regions (BCR)**

- Sierra Madre Occidental (34)
- Chihuahuan Desert (35)
- Sonoran & Mojave Deserts (33)
- Southern Rockies & Colorado Plateau (16)

**Seasonal Status**

- Year-round
- Counties

This map represents the predictive distribution for an individual species. AZGFD warrants no guarantees of accuracy or currency of the data represented.



## General Information

### Distribution in Arizona

The Canada Jay is primarily a bird of the boreal forest in Canada and reaches the southern boundary of its range in east-central Arizona (Strickland and Ouellet 1993). Its distribution in the state is restricted to the White Mountain region of east-central Arizona. Populations are centered on the slopes of and near Mount Baldy, then north to near Greens Peak, east to Escudilla Mountains, west to Paradise Creek (north of Hawley Lake), and south to Hannagan Meadows (Corman 2005, eBird 2019). In their current range, Canada Jays are sparsely distributed, which is in contrast to their historic ranking as “common” in Arizona (Phillips et al. 1964, Monson and Phillips 1981, Corman 2005).

### Habitat Description

Canada Jays occur in the Engelmann spruce zone of subalpine elevations. Their habitat is generally described as boreal coniferous and mixed-conifer/deciduous forests (Strickland and Ouellet 1993, Corman 2005). In Arizona, the areas currently occupied by Canada Jay are restricted to elevations of 8,800 – 11,000 feet (Corman 2005), and feature mostly closed-canopy spruce-fir forest with occasional forest openings, aspen stands, or open wetlands (Strickland and Ouellet 1993).

### Microhabitat Requirements

Canada Jays often nest near the edge of forest openings in mature conifers with trees that can support their stick nests at a nest height of 4 – 85 feet. Typical nest sites are located within the first few tree rows along the northern edge of a forest bog (Strickland and Ouellet 1993). Little is known about microhabitat use for roosting, but it appears to be similar to nest sites. Food sources can be quite varied, including carrion, berries, arthropods, small vertebrates, seeds, and fungi (Strickland and Ouellet 1993). Excess food is often cached from late summer and fall. Birds use sticky saliva to paste food in bark crevices, on a limb, or other hidden locations, typically above the depth of the eventual snow accumulation (Strickland and Ouellet 1993). Details on the microhabitats in which natural food items are obtained are unknown. Canada Jays also make use of artificial food sources, such as unattended or discarded food from campsites and picnic areas, but the role of these sources in jay conservation is unknown.

### Landscape Requirements

Although no studies have been conducted on Canada Jay area requirements, landscape requirements, or sensitivity to disturbances, it is likely that they require large tracts of contiguous coniferous forest, interspersed with natural clearings, such as wet meadows and bogs. In the periphery of their range, such as in Arizona, they may be restricted to mountain ranges that feature large areas of undisturbed subalpine forest.



## Conservation Issues and Management Actions

### Small Population Size

Although Canada Jays are widespread from most of the Rockies northwest through Alaska and across much of forested Canada and adjacent northern New England, they are one of the most restricted breeding bird species in Arizona. They only nest in the subalpine conifer forest zone of the White Mountains and are isolated by over 200 miles from the nearest populations in north-central New Mexico. This isolation, and the fact these jays are non-migratory, makes the population especially vulnerable to local extirpation from climate change, wildfires, and other catastrophic or gradual loss of breeding habitat.

### Threats Assessment

This table is organized by Salafsky et al.'s (2008) standard lexicon for threats classifications. Threat level is based on expert opinion of Arizona avian biologists and reviewers. We considered the full lexicon but include only medium and high threats in this account.

Threat	Details	Threat Level
<b>Agriculture</b>		Medium
<ul style="list-style-type: none"> <li>Livestock farming and ranching</li> </ul>		
<b>Human Intrusions and Disturbance</b>		Medium
<ul style="list-style-type: none"> <li>Recreational activities</li> </ul>		
<b>Natural System Modifications</b>	Fire and fire suppression can change forest stand dynamics	High
<ul style="list-style-type: none"> <li>Fire and fire suppression</li> </ul>		
<b>Climate Change</b>	Rising temperatures may impact food availability	High
<ul style="list-style-type: none"> <li>Ecosystem encroachment</li> <li>Changes in precipitation and hydrological regimes (drought)</li> </ul>		

In the following section we provide more detail about threats, including recommended management actions. Threats with similar recommended actions are grouped.

#### Agriculture:

- Livestock farming and ranching

#### Human Intrusions and Disturbance:

- Recreational activities

#### Natural System Modifications

- Fire and fire suppression

Habitat loss and degradation of subalpine forests may be the result of insect outbreaks that increase tree mortality, resulting in an increase in fire frequency. If land uses such as livestock grazing or motorized recreational activities are present in the areas occupied by Canada Jay, these may reduce habitat quality of



interspersed aspen and wetland patches. It is likely that these vegetation types play an important role for foraging habitat, but landscape requirements are poorly known at present to estimate their role.

*Recommended Actions:*

1. Determine options for minimizing the effects of land uses that degrade subalpine forest vigor, subalpine wetlands, aspen, and mesic areas within the areas occupied by Canada Jays.

**Climate Change:**

- Ecosystem encroachment
- Changes in precipitation and hydrological regimes (drought)

The Canada Jay reaches its southernmost distribution in Arizona, and these populations are not connected to the larger populations in the Rocky Mountains and the northern boreal forests. In Arizona, this species is vulnerable to local extirpation, particularly if the currently occupied areas become degraded due to drought, wildfires, or deforestation. This peripheral, high-elevation population is particularly subject to habitat shifts in the boreal zone that is a predicted effect of climate change. Rising winter temperatures are also a concern due to the potential spoiling and subsequent loss of berry, mushroom and carrion winter caches (Waite and Strickland 2006).

*Recommended Actions:*

1. Expand population monitoring coverage, to determine gradual changes and better plan targeted conservation action that preserves large tracts of subalpine forest in areas occupied by Canada Jay.

**Research and Monitoring Priorities**

1. Develop a repeatable monitoring or population inventory program for Canada Jay, which is currently not covered by existing monitoring efforts. Options for employing citizen scientists and other volunteers should be explored as this species is easily detectable and occurs in places with public access.
2. Delineate currently occupied and potentially occupied habitats of Canada Jay.
3. Evaluate current land uses of occupied and potentially occupied areas and determine whether measures are needed to protect the forests and adjacent open landscapes Canada Jays require.
4. Determine landscape and area requirements of Canada Jay in Arizona, including the importance of mesic habitat.

**Literature Cited**

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<sup>2</sup>Arizona Game and Fish Department. 2012. Arizona’s State Wildlife Action Plan: 2012 – 2022. Arizona Game and Fish Department, Phoenix, AZ.

<sup>8</sup>Corman, T.E. 2005. Gray Jay. *In: Arizona Breeding Bird Atlas*. Corman, T.E., and C. Wise-Gervais (eds.) University of New Mexico Press. Albuquerque, NM.



<sup>3</sup>Department of Defense. 2012. DoD PIF Mission-Sensitive Priority Bird Species. Fact Sheet #11. Department of Defense Partners in Flight Program.

<sup>5a</sup>Partners in Flight. 2019. Avian Conservation Assessment Database, version 2019. Accessed on March 31, 2020.

<sup>6</sup>Partners in Flight Science Committee. 2019. Population Estimates Database, version 3.0. Accessed on March 31, 2020.

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<sup>9</sup>Strickland, D. and H. R. Ouellet. 2020. Canada Jay (*Perisoreus canadensis*), version 1.0. In *Birds of the World*, P.G. Rodewald, Editor. Cornell Lab of Ornithology, Ithaca, NY.

<sup>1</sup>U.S. Fish and Wildlife Service. 2008. Birds of Conservation Concern 2008. United States Dept of Interior, Fish and Wildlife Service, Division of Migratory Bird Management, Arlington, VA. 85 pp.

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### Recommended Citation

Arizona Bird Conservation Initiative and Sonoran Joint Venture. 2023. Canada Jay (*Perisoreus canadensis*) Species Account. Available at <https://sonoranjv.org/accounts/canada-jay.pdf>.

