Northern Goshawk, photo by ©Martha de Jong-Lantink

Conservation Profile

Species Concerns
Catastrophic Fires
Climate Change

Conservation Status Lists	
USFWS[1]	No
AZGFD[2]	Tier 1B
DoD[3]	Yes
BLM[4]	Sensitive Species
PIF Watch List[5b]	No
PIF Regional Concern[5a]	BCR 34

Migratory Bird Treaty Act
Covered

PIF Breeding Population Size Estimates[6]	
Arizona	5,500 ◑
Global	420,000 ◑
Percent in Arizona	1.31%

PIF Population Goal[5b]
Maintain

Trends in Arizona	
Historical (pre-BBS)	Unknown
BBS[7] (1968 — 2013)	+0.45/year ○

PIF Urgency/Half-life (years)[5b]
> 50

Monitoring Coverage in Arizona	
BBS[7]	Not adequate
AZ CBM	Not covered

Associated Breeding Birds
Broad-tailed Hummingbird, Hairy Woodpecker, Northern Flicker, Plumbeous Vireo, Steller's Jay, Pygmy Nuthatch, Yellow-rumped Warbler, Grace's Warbler, Western Tanager, Olive Warbler

Breeding Habitat Use Profile

Habitats Used in Arizona
Primary: Pine Forest
Secondary: Mixed Conifer Forest

Key Habitat Parameters	
Plant Composition	Often pure ponderosa pine; commonly Douglas fir, aspen, white fir; also Gambel oak and Chihuahua and Apache pine[8]
Plant Density and Size	Relatively dense old growth and mature forests (> 15 inches DBH) with scattered small openings, a relatively open understory, a well-developed herbaceous and shrub layer, large snags and downed trees[9]
Microhabitat Features	Nest stands > 60% canopy cover, but prefer > 80%, > 16 inches DBH; surface water and small forest openings often near nest[9]
Landscape	Forest stands > 20 acres for nesting, but > 45 acres optimal; mosaic of vegetation covers important, incl. forest openings, tree and age diversity; surface water < 2 miles[9]

Elevation Range in Arizona
6,000 – 9,500 feet [8]; locally to 5,400 feet

Density Estimate
Territory Size: 1,425 – 8,750 acres (mean 4,400 acres)[9]
Density: 17.6 pairs/100 square miles

Natural History Profile

Seasonal Distribution in Arizona	
Breeding	April – mid-August[8]
Migration	AZ populations primarily non-migratory
Winter	Some altitudinal movement to lower elevations

Nest and Nesting Habits	
Type of Nest	Bulky stick nest[9]
Nest Substrate	Ponderosa pine, other conifers, aspen[9]
Nest Height	15 – 90 feet[9]

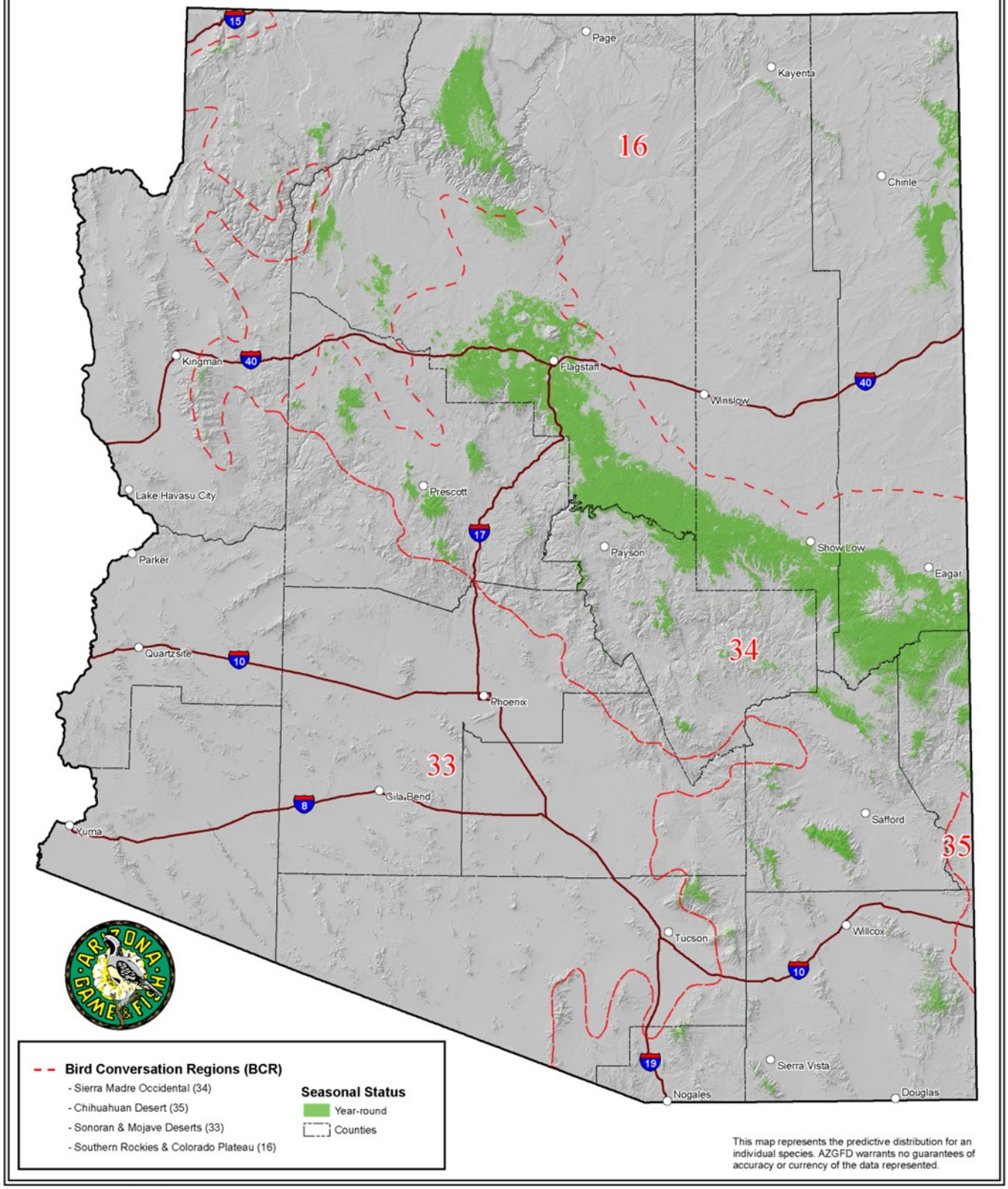
Food Habits	
Diet/Food	Small mammals and birds, often > 0.5 lb., especially tree squirrels[9]
Foraging Substrate	Ground, shrubs, or trees[9]

SPECIES ACCOUNT ● *NORTHERN GOSHAWK Accipiter gentilis*

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

Last Update: April 2023

Distribution of Northern Goshawk



General Information

Distribution in Arizona

Northern Goshawks are primarily year-round residents in the forested mountains and higher elevations of northern Arizona, particularly on the Kaibab Plateau and in the San Francisco Peaks region. They are also resident on Black Mesa and in the Chuska Mountains in the northeast, along the Mogollon Rim, and in the sky islands of southeastern Arizona (Wise-Gervais 2005). Additionally, they occur locally in Yavapai and northern Mojave counties (Wise-Gervais 2005). There is some influx of northern individuals into Arizona in fall and winter, as well.

Habitat Description

Northern Goshawks favor cool forests of tall pine, fir, and spruce, including conifer-dominated drainages (Wise-Gervais 2005). In Arizona, most Northern Goshawks occur in pure ponderosa pine forests from 6000 – 9500 feet elevation. They also nest in mixed stands with Douglas fir, white fir, ponderosa pine, and aspen, as well as in ponderosa pine-Gambel oak and mixed Madrean pine-oak habitat (Wise-Gervais 2005). In southeastern Arizona, they nest very locally in Madrean oak and sycamore dominated foothill drainages with very few tall pines at lower elevations (to 5,400 ft.). In Arizona wintering areas for Northern Goshawks are nearly the same as their nesting areas, but they may also forage in adjacent lower elevation riparian, pinyon -juniper, and evergreen oak woodlands (Beier 1997, Beier and Drennan 1997, Drennan and Beier 2003).

Microhabitat Requirements

Northern Goshawks, particularly in central and northern Arizona, nest in old-growth pine forest, where they may build several alternate nests in areas with dense canopy covers of > 60%, but preferably > 80% (Squires and Reynolds 1997). Nest trees must be large enough in size and height to support a large stick nest (DBH not available, but likely > 16 inches; Latta et al. 1999). Nests are often within 20 – 250 yards of a natural forest opening, but not usually along major roadways (Squires and Reynolds 1997). Northern Goshawks in the southwest forage in dense old-growth patches (DBH > 16 inches) with high canopy cover. Snags, downed wood, and other low perches may be important for successful foraging (Squires and Reynolds 1997). A healthy herbaceous layer but absence of dense shrubs has also been cited as important for supporting Northern Goshawk prey species, such as small mammals and birds (Latta et al. 1999).

Landscape Requirements

Nesting Northern Goshawks use varied sized forest stands (20 – 220 acres), but they need at least some old-growth with 60 – 90% canopy cover (Squires and Reynolds 1997). They prefer canopy cover of > 80% for nesting in Arizona (Squires and Reynolds 1997). Larger forest patches of > 45 acres are more likely to be occupied by Northern Goshawks than smaller ones (Squires and Reynolds 1997). Although Northern Goshawks use high-density old-growth for nesting and foraging, they also need forest stands with openings and areas of low tree densities to accommodate flight paths and diversity of prey (Latta et al. 1999, Wise-Gervais 2005). While access to surface water is apparently not a strict habitat requirement, surface water is usually found within two miles of Northern Goshawk nest sites (Squires and Reynolds 1997).

Conservation Issues and Management Actions

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
Residential and Commercial Development • Housing and urban areas • Tourism and recreation areas		Medium
Agriculture • Livestock farming and ranching		Medium
Transportation and Service Corridors • Roads and railroads • Utility and service lines	New or upgraded roads and utility lines through nest habitat could eliminate/degrade habitat	Medium
Human Intrusions and Disturbance • Recreational activities • Work and other activities	High recreational use near nest stands could disturb nesting birds	Medium
Natural System Modifications • Fire and fire suppression	Fire suppression that leads to stand-replacing catastrophic fires (i.e., burns mature forest stands on a landscape scale) could eliminate nesting and foraging habitat for many decades or longer	High
Climate Change • Ecosystem encroachment • Changes in precipitation and hydrological regimes	Prolonged or severe drought could affect prey species which will impact goshawk productivity and survival	High

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

Unsustainable livestock grazing in Northern Goshawk home ranges reduces vegetation that supports a healthy prey base.

Recommended Actions:

1. Monitor livestock levels and seasonal use dates as outlined in the *Management Recommendations for the Northern Goshawk in Southwestern United States* document (Reynolds et al. 1992).

Human Intrusions and Disturbance:

- Recreational activities
- Work and other activities

Northern Goshawks sensitive to the presence of humans near their nest or fledglings (Latta et al. 1999). Recreational disturbance issues and recommended buffer distances from active nests are addressed in the *Northern Goshawk Guidelines* (Reynolds et al. 1992) and incorporated into Forest Plans. No additional recommended actions are listed here.

Natural System Modifications:

- Fire and fire suppression

Climate Change:

- Ecosystem encroachment
- Changes in precipitation and hydrological regimes

Ponderosa pine forests are threatened by prolonged droughts that may lead to widespread insect outbreaks. These, in turn, increase tree mortality and frequency of catastrophic canopy fires. These fires threaten the persistence of the high canopy cover, old-growth stands preferred by nesting and foraging Northern Goshawks. While they can occur in relatively small patches of forest and tolerate, perhaps even prefer, occasional forest openings, large-scale losses of forest and reduction in forest patch sizes will likely lead to population decline in Northern Goshawks.

Recommended Actions:

1. Restore and manage forests to reduce the threat of large catastrophic fires.
2. Delineate stronghold areas for current Northern Goshawk populations in Arizona for more focused conservation planning.

Research and Monitoring Priorities

1. Develop a monitoring plan for ongoing assessment of Northern Goshawk population status in Arizona which takes into account possible effects of climate change on the current distribution.
2. Evaluate the effectiveness of the Forest Service's current *Northern Goshawk Guidelines* (Reynolds et al. 1992) and make adjustments as needed.
3. Determine role of insects, diseases, wildfire, and other natural disturbances in sustaining desired forest conditions (Reynolds et al. 1992).

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Recommended Citation

Arizona Bird Conservation Initiative and Sonoran Joint Venture. 2023. Northern Goshawk (*Accipiter gentilis*) Species Account. Available at https://sonoranjv.org/accounts/northern-goshawk.pdf