

Williamson's Sapsucker pair, photo by ©Tom Wilberding

Conservation Profile

Species Concerns	
Fire Suppression	
Aspen Recruitment Decrease	
Silvicultural Practices	
Conservation Status Lists	
USFWS ¹	No
AZGFD ²	Tier 1C
DoD ³	No
BLM ⁴	No
PIF Watch List ^{5b}	No
PIF Regional Concern ^{5a}	Regional Steward. (BCR 16,34)
Migratory Bird Treaty Act	
Covered	
PIF Breeding Population Size Estimates ⁶	
Arizona	24,000 ○
Global	300,000 ●
Percent in Arizona	8.01% ○
PIF Population Goal ^{5b}	
Maintain	
Trends in Arizona	
Historical (pre-BBS)	Unknown
BBS ⁷ (1968 – 2013)	+0.56% per year (BCR 16) ●
PIF Urgency/Half-life (years) ^{5b}	
> 50	
Monitoring Coverage in Arizona	
BBS ⁷	Not adequate
AZ CBM	Not covered
Associated Breeding Birds	
Flammulated Owl, Broad-tailed Hummingbird, Grace's Warbler, Yellow-rumped Warbler, Pygmy Nuthatch	

Breeding Habitat Use Profile

Habitats Used in Arizona	
Primary: Pine Forest (with aspen)	
Secondary: Mixed Conifer-Aspen Forest	
Key Habitat Parameters	
Plant Composition	Ponderosa pine and Douglas fir for foraging; often aspen for nesting ¹⁶
Plant Density and Size	150 snags/100 acres with DBH > 12 inches otherwise unknown
Microhabitat Features	Large aspen (often dead) for nesting, young and midsized conifers for foraging near nesting
Landscape	Multi-aged coniferous stands intermixed with aspen that feature groves of snags and old trees; managed at patch sizes > 125 acres
Elevation Range in Arizona	
7,000 – 9,700 feet ⁸	
Density Estimate	
Territory Size: 10 – 22 acres ¹⁶	
Density: 4 birds/100 acres ¹⁶	

Natural History Profile

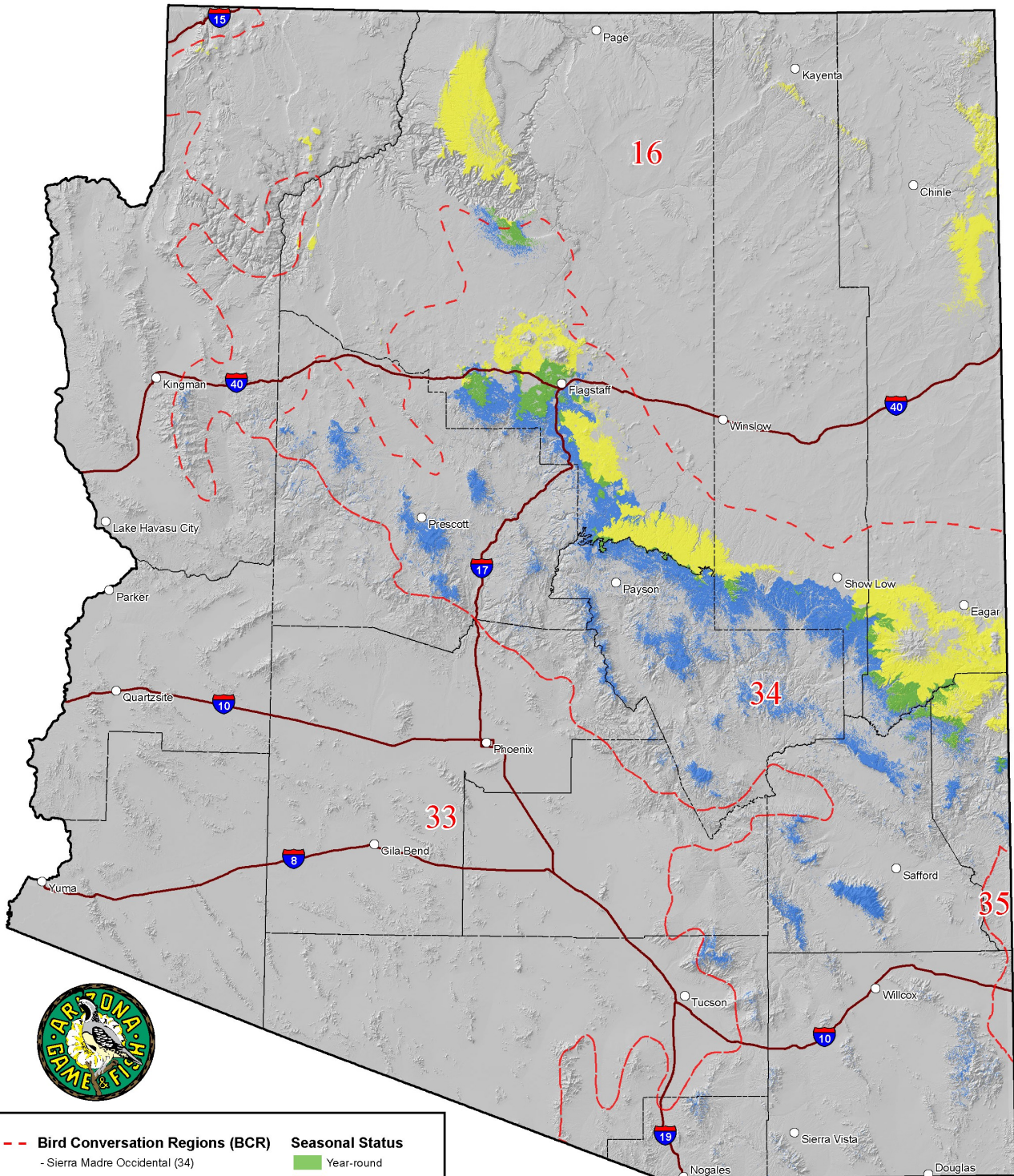
Seasonal Distribution in Arizona	
Breeding	April – July ⁸
Migration	March – April; Mid-July – September ⁸
Winter	Southern Arizona, Mid- August – April ⁸
Nest and Nesting Habits	
Type of Nest	Tree cavity ¹⁶
Nest Substrate	Aspen; sometimes conifer snags ¹⁶
Nest Height	10 – 55 feet ⁸
Food Habits	
Diet/Food	Insects, sap from conifers ¹⁶
Foraging Substrate	Young and mid-sized conifers



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

Last Update: November 2023

Distribution of Williamson's Sapsucker



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

In Arizona, Williamson's Sapsuckers nest only in high-elevation forests, and their breeding distribution is largely restricted to the White Mountains, the Mogollon Rim, San Francisco Peaks, and the Kaibab Plateau (Latta and Corman 2005). Isolated breeding populations are also found in the Chuska and other mountains of the northeast, and a possible breeding population was noted in the Black Mesa and Mount Trumbull areas (Latta and Corman 2005). Some Williamson's Sapsuckers winter throughout most of their breeding areas in Arizona, while others descend to lower elevations or migrate to forested regions to the south, including in sections of central and southeastern Arizona (Guyg et al. 2012, eBird 2019).

Habitat Description

Williamson's Sapsuckers breed in ponderosa pine and cool mixed conifer forests that often include aspen and sometimes Gambel oak (Latta and Corman 2005). Williamson's Sapsuckers primarily use aspen for nesting habitat in the southwest, while they use multi-aged coniferous forests, particularly ponderosa pine, for foraging habitat (Guyg et al. 2012). In Arizona's Mogollon Rim, Williamson's Sapsuckers prefer drainage bottoms over ridge tops, and most nests are in live and decaying aspen (Conway and Martin 1993). Winter habitat also includes Madrean pine-oak, oak juniper, and wooded riparian drainages (Guyg et al. 2012, eBird 2019), though details of winter habitat requirements have not been studied.

Microhabitat Requirements

Williamson's Sapsuckers nest in cavities that they excavate themselves from live and decaying aspen that are 9 – 16 inches DBH, often older and larger than most other trees in the stand (Guyg et al. 2012). They forage almost exclusively in live conifers, particularly ponderosa pines, which are used for drilling sawwells and capturing insects (Guyg et al. 2012). Most conifers with Williamson's Sapsucker sawwells are small to mid-sized (Guyg et al. 2012).

Landscape Requirements

Area requirements of Williamson's Sapsuckers in the southwest are largely unknown, but in the Pacific Northwest, sapsuckers are more likely to be found in large forests that feature 150 snags per 100 acres than in small forest patches with fewer snags (Guyg et al. 2012). As long as their favored microhabitats are available, Williamson's Sapsuckers appear to be relatively resilient to landscape disturbances (Guyg et al. 2012), although details have not been studied. One published recommendation is to maintain all microhabitat types (old-growth aspen, old-growth pine, young pine) within a patch size of 125 acres to meet Williamson's Sapsucker landscape requirements (Guyg et al. 2012).



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
Agriculture • Livestock farming and ranching	Overgrazing can lower recruitment of riparian vegetation	Medium
Biological Resource Use • Gathering terrestrial plants • Logging and wood harvesting	Removal of snags can reduce nesting sites Fire suppression may lead to conifer encroachment of aspen stands	High
Natural System Modifications: • Fire and fire suppression • Other ecosystem modifications		Medium
Invasive and Problematic Species: • Problematic native species	Monoculture stands of forest can increase risk of insect outbreak	Medium
Climate Change: • Ecosystem encroachment • Changes in precipitation and hydrological regimes (drought)		Medium

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

In areas of chronic livestock grazing, riparian areas are often degraded from lack of recruitment of riparian shrubs and trees, including aspen. Livestock often spend more time in wet habitat types than in uplands, so they have proportionally greater impacts on deciduous woodlands that support Williamson's Sapsuckers.

Recommended Actions:

1. Determine current livestock use in the highest-priority aspen and montane riparian areas for Williamson's Sapsuckers.
2. Work with permittees and landowners to reduce or exclude livestock use in the most important areas for Williamson's Sapsuckers.
3. Provide alternate water sources for livestock to protect aspen riparian areas.
4. Promote the importance of healthy aspen and riparian areas with agency partners, landowners, and the public, including informational materials on threats to these habitats.



Biological Resource Use:

- Gathering terrestrial plants
- Logging and wood harvesting

Williamson's Sapsuckers require abundant live ponderosa pines and other conifers near their nesting sites in aspen. Extensive silvicultural practices and other logging activities that remove different age classes of live conifers can be a concern. Williamson's Sapsuckers tolerate fairly significant logging, as long as nest trees are not affected and sufficient trees remain for foraging (Guyg et al. 2012). Snag removal may be an issue in areas without aspen where Williamson's Sapsuckers occur, as the birds rely on dead standing conifers for nesting if aspen is not available (Guyg et al. 2012). Where conifers encroach aspen stands, fire suppression may impact the viability of aspen stands. Williamson's Sapsuckers reportedly tolerate disturbance by natural mosaic fires and regularly uses post-fire early successional stands (Guyg et al. 2012).

Recommended Actions:

1. Promote silvicultural practices that protect viability of ponderosa pine stands, particularly in the vicinity of aspen; retain large snags (especially where they occur in groups) as well as multiple age-classes of ponderosa pine and other conifers.
2. Consider regulation of non-commercial wood cutting in pine forests surrounding aspen stands.
3. Evaluate aspen stands in northeastern Arizona for signs of conifer encroachment and develop a fire management plan to restore aspen recruitment, including the use of prescribed fires.

Natural System Modifications:

- Other ecosystem modifications (aspen decline syndrome)
- Fire and fire suppression

Climate Change:

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

Recent evidence suggests that western aspen clones can experience catastrophic loss from disease and sudden mortality. While this is well-documented throughout the region, the current status of Arizona aspen stands is largely unknown. Climate change is one of the suspected causes of aspen decline, and with prolonged droughts predicted from climate change, aspen and other deciduous woodlands interspersed with coniferous forests are likely threatened. Elk populations have been high in Arizona since the early 1990s and these increased numbers have enhanced a noted decrease in aspen recruitment due to excessive browsing (Beschta and Ripple 2010). Because Williamson's Sapsuckers depend on live pines and other conifers, insect outbreaks that cause widespread conifer mortality are likely a concern in areas where this species nests.

Recommended Actions:

1. Delineate and evaluate stand condition in current aspen stands and adjacent deciduous woodlands. Identify the highest-value areas that are within Williamson's Sapsucker range for strategic stewardship action and monitoring.
2. Develop a climate change-oriented monitoring or repeated status assessment program for aspen stands and montane riparian areas.



3. Determine extent and changes in large-scale insect outbreaks that cause conifer mortality in areas where Williamson's Sapsuckers nest.
4. Promote silvicultural, grazing, and fire management practices that support aspen regeneration, particularly in aspen stands that occur in drainage bottoms.

Invasive and Problematic Species:

- Problematic native species
1. Determine extent and changes in large-scale insect outbreaks that cause conifer mortality in areas where Williamson's Sapsuckers nest.
 2. Promote silvicultural, grazing, and fire management practices that support aspen regeneration, particularly in aspen stands that occur in drainage bottoms.
 3. Manage for groups of aspen stands of different age classes, in a larger forest complex, to ensure continual availability of older trees and snags (> 12 in. DBH) for nesting, particularly in drainage bottoms.

Research and Monitoring Priorities

1. Clarify landscape use and area requirements of Williamson's Sapsucker in Arizona, including territories that include aspen vs. conifer-only stands.
2. Delineate aspen areas to better monitor effects of climate change, Aspen Decline Syndrome, status of conifer encroachment, and livestock use.
3. Use multi-species protocols to establish population monitoring of Williamson's Sapsuckers.
4. Prepare plans for monitoring distribution changes as vegetation types preferred by Williamson's Sapsuckers may change due to climate change.

Literature Cited

⁴Bureau of Land Management. 2017. Arizona Bureau of Land Management Sensitive Species List – March 2017.

²Arizona Game and Fish Department. 2012. Arizona's State Wildlife Action Plan: 2012 – 2022. Arizona Game and Fish Department, Phoenix, AZ.

Beschta, R.L. and W.J. Ripple. 2010. Mexican wolves, elk, and aspen in Arizona: Is there a trophic cascade? *Forest Ecology and Management* 260: 915 – 922.

Conway, C.J. and T.E. Martin. 1993. Habitat suitability for Williamson's Sapsuckers in mixed-conifer forests. *J. Wildl. Manage.* 57:322 – 328.

eBird. 2019. eBird: An online database of bird distribution and abundance. eBird, Ithaca, New York. Accessed on July 2019.

⁸Latta, M. J., and T.E. Corman 2005. Williamson's Sapsucker. *In: Arizona Breeding Bird Atlas*. T.E. Corman and C. Wise-Gervais (eds.) University of New Mexico Press. Albuquerque, NM.



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

^{5a}Partners in Flight. 2019. Avian Conservation Assessment Database, version 2019. Accessed on March 31, 2020.

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

^{5b}Rosenberg, K.V., J.A. Kennedy, R. Dettmers, R.P. Ford, D. Reynolds, J.D. Alexander, C.J. Beardmore, P. J. Blancher, R.E. Bogart, G.S. Butcher, A.F. Camfield, A. Couturier, D.W. Demarest, W.E. Easton, J.J. Giocomo, R.H. Keller, A.E. Mini, A.O. Panjabi, D.N. Pashley, T.D. Rich, J.M. Ruth, H. Stabins, J. Stanton, T. Will. 2016. Partners in Flight Landbird Conservation Plan: 2016 Revision for Canada and Continental United States. Partners in Flight Science Committee.

Salafsky, N., Salzer, D., Stattersfield, A.J., Hilton-Taylor, C., Neugarten, R., Butchart, S.H.M., Collen, B., Cox, N., Master, L.L., O'Connor, S. and Wilkie, D. 2008. A standard lexicon for biodiversity conservation: unified classifications of threats and actions. *Conservation Biology* 22(4): 897 – 911.

⁷Sauer, J.R., J.E. Hines, J.E. Fallon, K.L. Pardieck, D.J. Ziolkowski, Jr., and W.A. Link. 2016. The North American Breeding Bird Survey, Results and Analysis 1966 – 2013, Version 2016. USGS Patuxent Wildlife Research Center, Laurel, MD. Accessed on July 1, 2016.

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

Recommended Citation

Arizona Bird Conservation Initiative and Sonoran Joint Venture. 2023. Williamson's Sapsucker (*Sphyrapicus thyroides*) Species Account. Available at <https://sonoranjv.org/accounts/williamsons-sapsucker.pdf>

