Williamson's Sapsucker

Sphyrapicus thyroideus

REGULATORY STATUS

USFWS: Migratory Bird
USFS R2: No special status
UWFS R4: No special status
Wyoming BLM: No special status
State of Wyoming: Protected Bird

CONSERVATION RANKS

USFWS: Bird of Conservation Concern
WGFD: NSS3 (Bb), Tier II
WYNDD: G5, S3S4
Wyoming contribution: MEDIUM
IUCN: Least Concern
PIF Continental Concern Score: 13

STATUS AND RANK COMMENTS

The Wyoming Natural Diversity Database has assigned Williamson's Sapsucker (*Sphyrapicus thyroideus*) a state conservation rank ranging from S3 (Vulnerable) to S4 (Apparently Secure) because of uncertainty about the proportion of range occupied and population trends for this species in Wyoming. The species is listed as Endangered in Canada because of small population sizes and habitat loss [1].

NATURAL HISTORY

Taxonomy:

Although two subspecies of Williamson's Sapsuckers were previously recognized, recent genetic and morphometric analyses do not support subspecific designations. Consequently, Williamson's Sapsucker is considered monotypic, with no recognized subspecies [2].

Description:

Williamson's Sapsucker is a medium-sized woodpecker (average 23 cm in length). The species is sexually dimorphic, and bill shape and size varies geographically, with western populations displaying longer, broader, and deeper bills. Adult males are easily distinguished by a bright yellow belly; black breast, head, and back; white malar stripe, eye stripe, wing-coverts, and rump; and a red throat. Juvenile males look like adults but have a white throat and nape. Females also display a yellow belly that is paler than in males, a black breast, and a white rump; however, the head is distinctly brown, and the rest of the body is heavily barred with black, brown, and white. Juvenile females are browner overall than adults [2]. In Wyoming, Williamson's Sapsucker is easily distinguished from other sympatric species, as it is the only woodpecker in the state with a bright yellow belly [3]. The belly of Red-naped Sapsucker (*S. nuchalis*) may be tinted pale yellow, but both sexes have a red crown [4].

Distribution & Range:
Williamson's Sapsucker is distributed throughout southern British Columbia, Canada; the western United States; and central Mexico. Breeding distribution extends from Canada to central Arizona and New Mexico but is patchy and defined by the presence of coniferous forests 1,500–3,200 m in elevation. The species is a year-round resident in much of California, northern Arizona, and northern New Mexico. Wintering distribution extends south to Jalisco and Michoacán, Mexico [2]. In Wyoming, the species is found in the western mountains, where it is most abundant, as well as the Laramie, Sierra Madre, and Bighorn Mountains, where it is relatively rare [3]. Williamson's Sapsucker has been documented in 21 of Wyoming's 28 latitude/longitude degree blocks, with confirmed or suspected breeding occurring in 12 of those blocks [5].

Habitat:
Range-wide, Williamson's Sapsucker breeds in mid- to high-elevation forests (1,500–3,200 m) composed of Western Larch (*Larix occidentalis*), Douglas Fir (*Pseudotsuga menziesii*), Ponderosa Pine (*Pinus ponderosa*), pine-fir (*Pinus* spp.-*Abies* spp.), and mixed deciduous-coniferous forests with Quaking Aspen (*Populus tremuloides*). In Colorado and Wyoming where Williamson's overlaps with Red-naped Sapsucker, sites in or near Ponderosa Pine forests tend to be used more frequently by Williamson's Sapsucker, although other aspects of nest-site preference did not differ between species [6]. Nonbreeding habitat tends to be at lower elevation oak-juniper (*Quercus* spp.-*Juniperus* spp.) and pine-oak forests [2]. Like all woodpeckers, Williamson's Sapsucker builds nests in tree cavities that it excavates at the beginning of each breeding season. Cavities from previous seasons may be reused, but this is relatively uncommon. Tree softness plays a major role in nest-site selection, and soft snags, live aspens, or trees infected with fungus are most often used for nests. Throughout its range, Williamson's Sapsucker nests have been found in Western Larch, Ponderosa Pine, Jeffrey Pine (*Pinus jeffreyi*), Lodgepole Pine (*Pinus contorta*), Douglas Fir, spruce (*Picea* spp.), Grand Fir (*A. grandis*), White Fir (*A. concolor*), Red Fir (*A. magnifica*), Quaking Aspen, White Birch (*Betula occidentalis*), Black Cottonwood (*Populus trichocarpa*), and a utility pole [2]. In Wyoming and Colorado, sapsuckers constructed south-facing nests 2–3 m from the ground in aspens roughly 23 cm diameter at breast height [6]. Nests are placed in larger trees overall [7]. Important nest site characteristics include presence of aspens and density of large snags [8].

Phenology:
Not all Williamson's Sapsuckers are migratory. Populations in most of California, northern Arizona, and northern New Mexico are annual residents. Williamson's Sapsucker is an early spring migrant, although departure dates from nonbreeding grounds in Mexico are not well known. Migration occurs March through early May, with males arriving at breeding grounds ≤ 2 weeks before females [2]. In Wyoming, Williamson's Sapsucker arrives in late April and early May [3]. Pairs begin excavating nests within 3 weeks of pair bonding, with the male doing most nest construction, and nests can take 3–4 weeks to complete. Clutch sizes range from 4–6 eggs, and only a single clutch is laid per season. Eggs hatch within 12–14 days, and young fledge 31–32 days later. Parents may continue to feed fledglings for the first couple of days after leaving the nest, but they quickly disperse after young are fledged. Individuals migrate south from late August through October, depending on latitude [2]. The latest confirmed record of Williamson's Sapsucker in Wyoming is 9 September, although they have been recorded on Christmas Bird Counts in three separate years since 1968 [3]. Females typically migrate farther than males [2].

Diet:
The diet of Williamson's Sapsucker varies seasonally. In the nonbreeding season, sap, phloem fibers, and berries are major food items. Both sap and phloem remain important during the breeding season before young hatch; Douglas Fir, Ponderosa Pine, and, to a lesser extent, Lodgepole Pine are important sources of sap, which is obtained by drilling shallow holes in the trunks of trees [2]. Diet then switches almost exclusively to ants (Hymenoptera), which are gleaned from trunks and branches and consumed by both adults and nestlings. Carpenter ants (*Camponotus* spp.) are preferred and can compose 80% of the nestling diet [9]. Adults and larvae of a variety of other arthropods may also supplement the diet during the breeding season, including beetles (Coleoptera), flies (Diptera), aphids (Homoptera), and false scorpions (Pseudoscorpionidae). Most foraging occurs in live conifers and, to a lesser extent, snags [2].

CONSERVATION CONCERNS

Abundance:
Continental: WIDESPREAD BUT PATCHY
Wyoming: UNCOMMON
Williamson's Sapsucker is distributed throughout the western United States, but distribution is patchy and restricted to mountainous, coniferous habitat [2]. Using Breeding Bird Survey (BBS) data, the Partners in Flight (PIF) Science Committee estimated the Wyoming population size of Williamson's Sapsucker to be 4,000 birds, or 1.3% of the global population [10]. The Integrated Monitoring in Bird Conservation Regions (IMBCR) program has detected the species 78 times since the program's inception in 2009 (range 1–14 detections per year) [11]. The statewide rank of UNCOMMON is based on the limited area of the state known to be occupied in any given season and the relatively small coverage of suitable habitat within that area. Within suitable habitat in the occupied area, Williamson's Sapsucker also appears to be uncommon, occurring in relatively low densities and requiring intensive survey efforts to detect the species [5]. In Wyoming, populations are distributed among the mountain ranges, with the exception of the Black Hills. Williamson's Sapsucker is more likely to occur in the western mountains and less likely to occur in the Bighorn Mountains [3].

Population Trends:
Historic: UNKNOWN
Recent: UNKNOWN
Population trends of Williamson's Sapsucker range-wide are not well known, and reports differ on the direction and magnitude of trends. Currently, there are no robust North American BBS trend data for Williamson's Sapsucker in Wyoming due to an extremely limited number of rotes with observations (N = 7 routes; 1968–2013) [12]. However, regional BBS data suggest a slight increase in the Great Basin and Southern Rockies regions and a slight decrease in the Northern Rockies region, although the data have been determined to fall within a credibility category with 'deficiencies' or 'important deficiencies'. Low relative abundance and number of routes with Williamson's Sapsucker detections likely contribute to this classification [12]. The PIF Science Committee categorizes Williamson's Sapsucker trends as uncertain or as displaying a stable to significant but small decrease [10].

Intrinsic Vulnerability:
LOW VULNERABILITY

Williamson's Sapsucker has somewhat specialized habitat requirements and may be limited by habitat availability, particularly the availability of suitable nest trees [2]. Aspen stands with large trees are especially important nest sites [6, 7, 13]. The dependence on ants for food during nesting is also important, but the potential as a limiting factor is unknown [9]. Overall nest success is high (> 60%), and successful nests fledge between 3.16 and 3.67 young [2]. Other life history characteristics do not predispose the species to declines from changes in environmental conditions.

Extrinsic Stressors:

MODERATELY STRESSED

PIF assigns Williamson's Sapsucker a threat level of 3, indicating that the species is expected to display a slight to moderate decline in the future suitability of breeding conditions. The factors that may contribute to this decline are variable but, for this species, likely include a moderate vulnerability to human activities and land-use trends and a relative specialization on sensitive habitats or successional stages [10]. Forest management practices, including fire management and logging, may impact the availability of nest trees and snags [2] as well as dead and decaying wood needed to support abundant ant populations [9], although the species has been shown to forage in clearcuts [7]. Low intensity and patchy burns might improve habitat for the species, but, in general, Williamson's Sapsucker demonstrates a negative response to burning [2]. The regeneration of aspen stands is hindered by a disruption of historic disturbance regimes as well as drought and climate change. Similar threats may impact coniferous habitats in Wyoming, including fire suppression, disease and insects, drought, and climate change [14]. The availability of these forest types will remain important for adequate nesting and foraging habitat for Williamson's Sapsucker.

KEY ACTIVITIES IN WYOMING

Little work has been done on Williamson's Sapsucker in Wyoming since the species was first detected in the state. Williamson's Sapsucker is listed as a Species of Greatest Conservation Need (SGCN) in Wyoming by the Wyoming Game and Fish Department and as a Level 2 Priority Species requiring monitoring action in the Wyoming Bird Conservation Plan [15]. Although BBS data analyses are able to determine population trend estimates, these estimates for Williamson's Sapsucker are based on very low sample sizes and have large confidence intervals that overlap [12], which limits the usefulness of estimates for this species. The IMBCR program has similarly low detections of the species [11]. The species is occasionally detected during playback surveys for other woodpeckers [16] but, as with other survey efforts, detections are limited. Overall, Williamson's Sapsucker is not adequately monitored by national or regional avian monitoring efforts in Wyoming, and no additional, targeted, systematic survey of Williamson's Sapsucker has been implemented.

ECOLOGICAL INFORMATION NEEDS

In Wyoming, assessment of the status of Williamson's Sapsucker is hampered by a lack of ecological and population data. Additional information is needed on distribution and habitat use, and estimates of abundance and occupancy rates are needed to assess status, monitor populations, and evaluate trends. Williamson's Sapsuckers, and woodpeckers in general, tend to respond to playback calls but, because this often results in individuals being drawn in from some distance, their usefulness for density estimation is limited. Therefore, a better survey effort may need to be explored to determine population densities and trends. Additionally, the availability of

habitat appears to be more widespread than the distribution of the species, and a better understanding of niche requirements is needed to evaluate habitat use and distributional boundaries.

MANAGEMENT IN WYOMING

This section authored solely by WGFD; Andrea C. Orabona. Williamson's Sapsucker is classified as a SGCN in Wyoming due to unknown population status and trends in the state. Two separate but compatible survey programs are in place to monitor populations of many avian species that breed in Wyoming; the BBS [12] and IMBCR [11]. While these monitoring programs provide robust estimates of occupancy, density, or population trends for many species in Wyoming, survey efforts do not tend to detect Williamson's Sapsucker at adequate levels, suggesting targeted, species-specific monitoring efforts are needed. Best management practices to benefit Williamson's Sapsucker include adequate monitoring, retaining mature stands of mixed conifer and aspen where this species occurs, maintaining stands of trees with a minimum 25-cm diameter at breast height, managing for an average to maximum snag density of 0.1 to 4 snags per ha, and avoiding or minimizing insecticide use where this species occurs to ensure an adequate food source exists [15].

CONTRIBUTORS

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Figure 1: Adult Williamson's Sapsucksers: male (left) in Gilpin County, Colorado and female (right) in Jefferson County, Colorado. (Photos courtesy of Bill Schmoker (left) and Shawn Billerman (right))

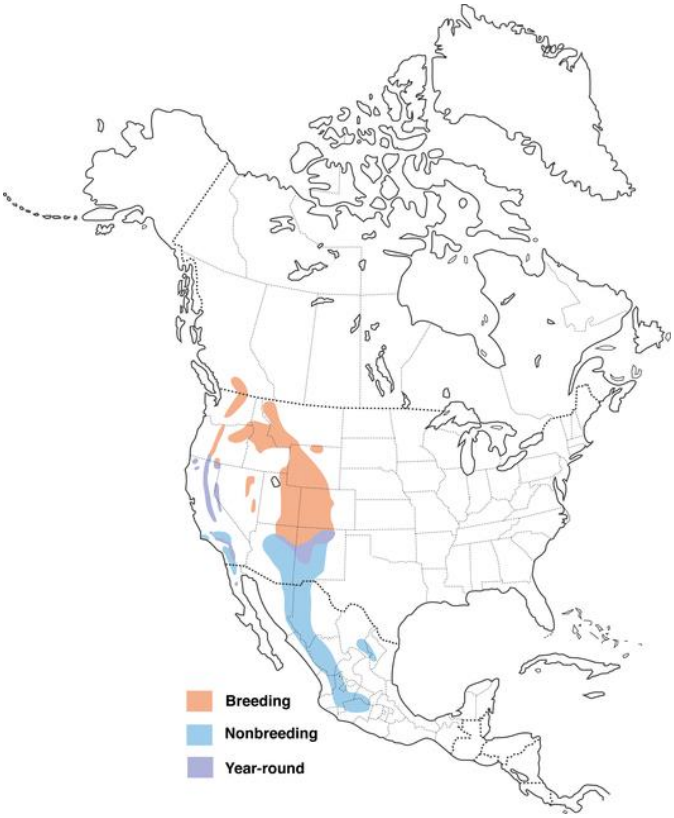

Figure 2: North American range of *Sphyrapicus thyroideus*. The species also winters irregularly east of the distribution shown above. (Map courtesy of Birds of North America, http://bna.birds.cornell.edu/bna, maintained by the Cornell Lab of Ornithology)

HABITAT PHOTOGRAPH

Figure 3: Photo not available.

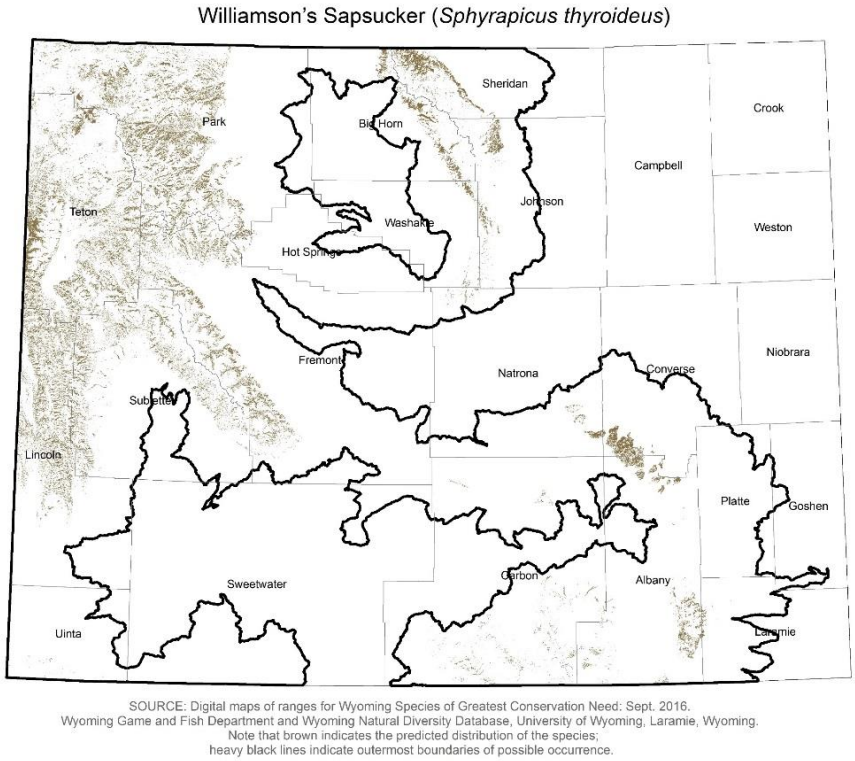

Figure 4: Range and predicted distribution of *Sphyrapicus thyroideus* in Wyoming.