



Dusky Grouse, photo by ©Tommy DeBardeleben

Conservation Profile

Species Concerns	
Small Population Size	
Climate Change (habitat loss)	
Conservation Status Lists	
USFWS ¹	No
AZGFD ²	Tier 1B
DoD ³	No
BLM ⁴	Sensitive Species
PIF Watch List ^{5b}	No
PIF Regional Concern ^{5a}	No
Migratory Bird Treaty Act	
Not Covered	
PIF Breeding Population Size Estimates ⁶	
Arizona	Unknown
Global	200,000 ^A
Percent in Arizona	Not given
PIF Population Goal ^{5b}	
Maintain	
Trends in Arizona	
Historical (pre-BBS)	Unknown
BBS ⁷ (1968 – 2013)	Not given
PIF Urgency/Half-life (years) ^{5b}	
> 50	
Monitoring Coverage in Arizona	
BBS ⁷	Not adequate
AZ CBM	Not covered
Associated Breeding Birds	
Red-naped Sapsucker, American Three-toed Woodpecker, Red-breasted Nuthatch, Golden-crowned Kinglet, Hermit Thrush, Pine Siskin	

Breeding Habitat Use Profile

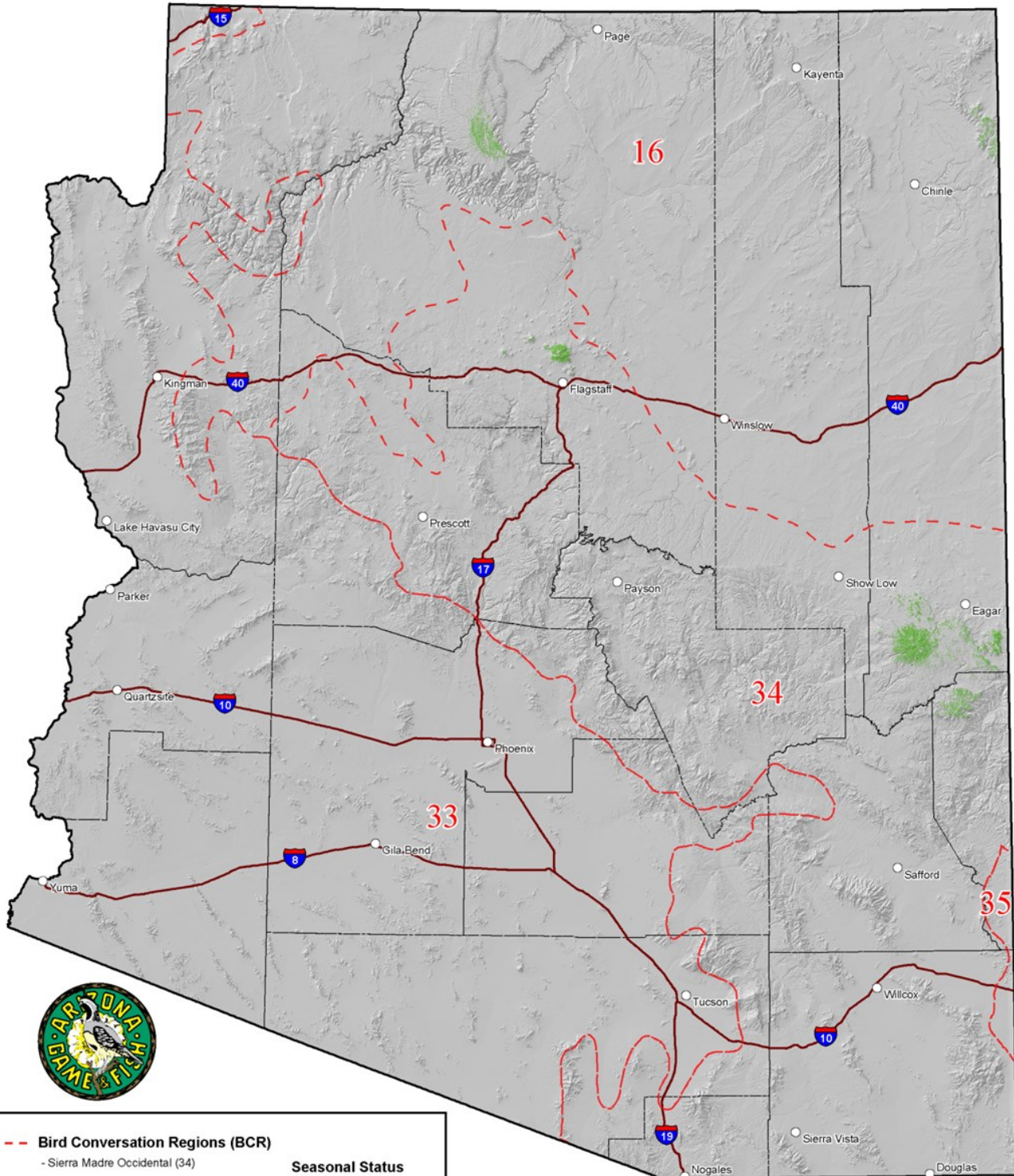
Habitats Used in Arizona	
Primary: Mixed Conifer-Aspen Forest	
Secondary: Subalpine Conifer Forest	
Key Habitat Parameters	
Plant Composition	Douglas fir, white fir, blue spruce, Engelmann spruce, and aspen, in mixed or pure stands; sometimes Gambel oak; understory with juniper and diversity of ferns, forbs, and grasses ⁸
Plant Density and Size	Open forest; Dense shrub and/or herbaceous understory (30 – 60% cover), at least 12" in height, important for brood cover ⁹
Microhabitat Features	Aspen groves may be important, especially for male courtship territories; ground cover essential for broods ⁹
Landscape	Mixture of coniferous and deciduous woodlands, often near waterways or steep slopes ⁹
Elevation Range in Arizona	
8,000 – 11,000 feet ⁸	
Density Estimate	
Territory Size: 10 – 100 acres (females and broods) ⁹	
Density: 15 – 30 birds/sq. mi. ⁹ , likely lower in AZ	

Natural History Profile

Seasonal Distribution in Arizona	
Breeding	April – July ⁸ ; egg laying begins early May
Migration	Year-round resident
Winter	Year-round resident
Nest and Nesting Habits	
Type of Nest	Shallow scrape ⁹
Nest Substrate	Ground; under wood or groundcover ⁹
Nest Height	Ground ⁸
Food Habits	
Diet/Food	Leaves, flowers, fruit; conifer needles in winter; invertebrates during breeding ⁹
Foraging Substrate	Ground or in trees



Distribution of Dusky Grouse



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

SPECIES ACCOUNT • DUSKY GROUSE *Dendragapus obscurus*



General Information

Distribution in Arizona

The Dusky Grouse is found locally in Arizona's White, Blue, Escudilla, and Chuska mountains, the Kaibab Plateau, as well as the San Francisco Peaks, where they were re-established in the mid-1970s (Brown 1989, Bradley 2005). Beginning in 2008, the Arizona Game and Fish Department began translocating Dusky Grouse to a section of the Mogollon Rim and Mount Graham in the Pinaleno Mountains. Success of these efforts is still pending. In Arizona, the species is near the southernmost edge of its global range, and is a year-round resident (Zwickel and Bendell 2005).

Habitat Description

Dusky Grouse occur in a variety of mixed conifer vegetation types, but in Arizona, they occur primarily in high-elevation forests with Engelmann and blue spruce, white fir, and Douglas fir (Brown 1989, Bradley 2005). They appear to prefer open tree canopies and forest edges (Zwickel and Bendell 2005). Dusky Grouse often use conifer stands mixed with quaking aspen near openings and edges. Birds may also wander away from forest edges into open shrublands and grasslands (Zwickel and Bendell 2005). The species winters in the upper montane or subalpine zone near their breeding grounds (Zwickel and Bendell 2005).

Microhabitat Requirements

Dusky Grouse nests are located on the ground, typically under low conifer cover, and outside of the male's territory (Zwickel and Bendell 2005). An understory cover at least 12 inches in height is important for Dusky Grouse breeding habitat, and generally consists of juniper or other low shrubs, ferns, forbs, and grasses (Brown 1989). Brood rearing depends on the availability of mesic patches in the summering grounds into the late summer (Zwickel and Bendell 2005), which may be particularly important in Arizona's dry environment.

Landscape Requirements

Dusky Grouse year-round landscape requirements include 1) suitable breeding areas in mixed conifer forests with aspen patches, 2) suitable brooding areas consisting of moist sites with live forbs and dense cover, and 3) suitable wintering areas consisting of upper-elevation conifer forests reaching into the edges of the alpine tundra (Zwickel and Bendell 2005).



Conservation Issues and Management Actions

Small Population

The Dusky Grouse populations of Arizona are overall relatively small and largely isolated from one another. Any stochastic event (e.g., a devastating fire or wholesale loss of riparian areas) in one mountain range pose a threat to the Arizona population. When an isolated population is extirpated, it will not recover without re-establishment efforts, as major habitat barriers separate each population. Land managers should be alerted to occurrence of grouse populations on their management units.

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 <ul style="list-style-type: none"> Livestock farming and ranching 		Medium
Natural System Modifications <ul style="list-style-type: none"> Fire and fire suppression Other ecosystem modifications 	Elk over-browsing aspen saplings, scrub willows, and alder	Medium
Climate Change <ul style="list-style-type: none"> Ecosystem encroachment Changes in precipitation and hydrological regimes 		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

Natural System Modifications:

- Fire and fire suppression
- Other ecosystem modifications

The greatest concerns for habitat loss and degradation are land uses that alter mesic areas in the montane zone, including aspen, springs, and meadows. Land uses typically found in these sites directly impact the availability of forbs, water, and thermal cover. Detrimental effects can be the result of unsustainable livestock grazing, elk browsing, recreational uses, water diversions, and road construction.

Recommended Actions:

1. Encourage land managers to preserve or restore mesic sites, such as aspen groves, riparian areas, meadows, and springs.



2. Conserve high priority Dusky Grouse habitat, including mesic sites during mid-late summer.
3. Continue forest restoration and management activities to reduce catastrophic fires.

Climate Change:

- Ecosystem encroachment
- Changes in precipitation and hydrological regimes

Habitat changes in the montane and subalpine zone that can be expected from increasing temperatures and droughts and may include the loss of spruce and fir habitats, retreat of the mixed conifer zone into higher elevations, increase of fire frequency in conifer forests, loss of snowpack, and the subsequent loss of mesic areas, such as riparian areas, aspen stands and springs. These net losses present the greatest concern for Dusky Grouse populations in the state.

Recommended Actions:

1. Plan for the retreat of Dusky Grouse habitats into higher elevations by preserving the riparian and snowmelt areas from degradation due to other land uses.
2. Determine which Dusky Grouse populations can be saved through planning for gradual habitat changes due to climate change; focus conservation efforts on those areas.
3. Consider additional population transplants into unoccupied suitable areas, if such areas are available.

Research and Monitoring Priorities

Surprisingly little is known about threats to Dusky Grouse populations in any part of its range. In Arizona, the main concerns are the small size and degree of isolation of individual populations, which make all threats more pronounced due to the possibility of local extirpations.

Recommended Actions:

1. Determine the extent of potential impacts in sensitive Dusky Grouse habitat, such as forest management practices, livestock grazing, elk browsing, and recreational roads.
2. Investigate specific habitat requirements and habitat use by Dusky Grouse chicks.
3. Develop and implement survey protocols to understand current Dusky Grouse distribution and population sizes in Arizona to support strategic planning in light of climate change.

Literature Cited

⁴Arizona 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.

Bradley, B. 2005. Blue Grouse. *In: Arizona Breeding Bird Atlas*. Corman, T.E., and C. Wise-Gervais (eds.)



University of New Mexico Press. Albuquerque, NM.

Brown, D.E. 1989. Arizona Game Birds. University of Arizona Press, Tucson, AZ.

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., D. Salzer, A.J. Stattersfield, C. Hilton-Taylor, R. Neugarten, S.H.M. Butchart, B. Collen, N. Cox, L.L. Master, S. O'Connor, and D. Wilkie. 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.

⁹Zwickel, F.C. and J.F. Bendell. 2005. Blue Grouse (*Dendragapus obscurus*). In *Birds of North America Online* (A. Poole, ed.) Cornell Lab of Ornithology, Ithaca, NY.

Recommended Citation

Arizona Bird Conservation Initiative and Sonoran Joint Venture. 2023. Dusky Grouse (*Dendragapus obscurus*) Species Account. Available at <https://sonoranjv.org/accounts/dusky-grouse.pdf>.

