FILLING THE GAPS IN UNDERBIRDED AREAS IN ARIZONA

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Arizona Birds 17:34-38; https://doi.org/10.65238/207.hig

Since its founding in 2006, a principal goal of the Arizona Field Ornithologists (AZFO) has been to learn more about the status and distribution of birdlife in Arizona. Organizing field expeditions to little-known or underbirded locations throughout the state has been the central activity to accomplish this. So far, AZFO has conducted 29 such expeditions in all 15 counties and is continuing to organize more. Typically, field expeditions have a specific purpose and data-gathering goal. Participants divide into teams and conduct surveys in different parts of the targeted area.

In 2020, AZFO began a new project, the eBird Gaps Project, to supplement the knowledge gained by the 1-to-2-day expeditions. The locations of all eBird checklists for the state (eBird 2020) were reviewed, and 5 general areas were selected that showed significant gaps in coverage (eBird 2020). These gaps were defined as few or no reports in any season or the absence of reports for particular seasons. The areas are Avra Valley (Pima/Pinal counties), Cactus Forest (Pinal County), Chavez Pass (Coconino County), Hassayampa Plain (Maricopa County), and Santa Maria Mountains (Yavapai County). This report summarizes what has been learned in the past 3 years and what steps are needed to continue to fill in these gaps. All data not otherwise attributed came from eBird.

Table 1. eBird Gaps Project Checklists, July 2020-November 2023

Month	Avra Valley	Cactus Forest	Chavez Pass	Hassayampa	Santa Maria
Jan	2	8		107	
Feb	3	6		38	
Mar	11	4		2	
Apr		2		20	
May		11			
Jun		4			
Jul		2	17	3	3
Aug		17	20	13	
Sep		9		2	
Oct	37	17	17	3	1
Nov	19	12	11	16	
Dec		9	2	36	
Total	**72**	**101**	**67**	**240**	**4**

Source: eBird 2023

Since 26 July 2020, 484 checklists have been posted and shared for the 5 areas, with the totals by area being: Avra Valley (72), Cactus Forest (101), Chavez Pass (67), Hassayampa Plain (240), and Santa Maria Mountains (4). The number of observers sharing checklists for each area are Avra Valley (9), Cactus Forest (12), Chavez Pass (4), Hassayampa Plain (10), and Santa Maria Mountains (3). The total number of species reported by project participants is 209. Species reported by area are Avra Valley (94), Cactus Forest (157), Chavez Pass (76), Hassayampa Plain (102), and Santa Maria Mountains (41). The number of checklists, while useful, does not necessarily show the extent of coverage. Some observers submit checklists every quarter or half mile during a drive or walk through an area, while others submit lists for every 4 or 5 miles of coverage, thus covering as much area or more with fewer lists. Both methods conform to eBird protocols and contribute to filling in gaps.

One of the objectives of the project is to organize trips to the 5 areas at all seasons in order to get a more complete picture of the presence and distribution of birds. Checklists have been submitted every month only in Cactus Forest, and even there the number of reports for several months is sparse. In all other areas there are gaps in monthly coverage (Table 1). A summary of how the 5 areas have been covered and what has been learned follows.

CACTUS FOREST

This area in central Pinal County includes extensive upland Sonoran desertscrub (Brown 1982) east of Florence and Coolidge with extensive stands of saguaro cactus (*Carnegiea gigantea*). However, to the south it also consists of a large higher elevation section (920 to 1,220 m), which is dominated by semidesert grassland (Brown and Makings 2014) with scattered velvet mesquite (*Prosopis velutina*), soaptree yucca (*Yucca elata*), palo verde (*Parkinsonia* spp.), and washes lined with netleaf hackberry (*Celtis reticulata*), desert willow (*Chilopsis linearis*), and western soapberry (*Sapindis saponaria*). Few saguaros are found in this area. Cattle graze in both locations, and ponds with intermittent water are scattered throughout. Previously much of both areas was not often birded. Since the beginning of the project both sections have been visited by birders, some sites fairly systematically. During the course of these visits several notable discoveries have been made.



Figure 1. Immature Crested Caracara near Box Canyon, Pinal County, 22 May 2023. Photo by Jim Hoagland

The first is a more extensive presence of Crested Caracara (*Caracara plancus*) in the saguaro forest area than was previously known. Since the 1980s caracaras have been reported along AZ 79 (Florence Highway), with a 1988 nest near Olsen Wash reported to the Arizona Game and Fish Department (AZGFD) by S. H. Levy (unpubl. data). They are also known to nest in the Coolidge area (pers. obs.). In the past 5 years reports of caracaras along AZ 79 have increased (eBird 2023). Even more noteworthy, reports east of Florence along the Florence-Kelvin Highway, which cuts through the saguaro forest, have increased. Caracaras have also been reported northeast of Florence near Box Canyon north of the Gila River (Figure 1). Black Vultures (*Coragyps atratus*) have also been reported in the latter area, where they are uncommon.



Figure 2. Male Cassin's Sparrow singing and skylarking, 5 May 2023, in semidesert grassland along Barkerville Rd., Pinal County. Photo by Jim Hoagland

A second finding was the probable breeding of Cassin's Sparrow (*Peucaea cassinii*) in the grassland area. Since 2006, Cassin's Sparrow has been reported nesting along Willow Springs Road, south of the eBird gap area (Jenness 2007, 2013). However, one was reported singing at Barkerville Tank in August 2022, more than 16 km north of where they had previously been reported (eBird 2022), and 2 more were reported on the same day at Lake Tank, another 13 km farther north (eBird 2022). Three reports in 2023 were even more surprising. Two singing Cassin's Sparrows were reported 5 May along Barkerville Road between the previous year's locations; one was also skylarking (eBird 2023; Figure 2). Skylarking at this date was unusual as it suggested the presence of females and nesting; the nesting season for this species is typically later, during the summer monsoon (Dunning et al. 1999). On 2 August, 2 were reported from nearby Beehive Tank, with up to 3 noted on 25 August (eBird 2023). These reports were particularly unexpected as there was no evidence that Cassin's Sparrow nested to the south in the Willow Springs Road area in 2023.

Paul Heveran, who lives in the Cactus Forest eBird gap area, made a third discovery. His observations, made since August 2022 in a small residential community in the Sonoran desertscrub east of AZ 79 and Coolidge, led him to conclude that a significant migratory route runs through the area. Systematic daily observations resulted in the first Broad-winged Hawk (*Buteo platypterus*) reported anywhere in the Cactus Forest area (eBird 2022). Even more significant was a Black Swift (*Cypseloides niger*) on 14 August 2023 (eBird 2023). It was the state's 12th record (if accepted by the Arizona Bird Committee) and Pinal County's first (Rosenberg and Radamaker 2021). It was also the first live bird of the species to be photographed in the state (Rosenberg et al. 2019). In September and October of 2022 and 2023, particularly the latter year, Heveran reported a significant movement of Vaux's Swift (*Chaetura vauxi*), with a high of 86 reported 15 September 2023 (eBird 2023). This species had not previously been reported in the Cactus Forest area and never in such high numbers in Pinal County. On 26 September 2023, he observed a flock of 170 American White Pelicans (*Pelecanus erythrorhynchos*) fly over (eBird 2023). No white pelicans had been reported before in the area. In addition, Cassin's Finch (*Haemorhous cassinii*) was observed on 25 November 2022 (eBird 2022) and up to 26 Red Crossbills (*Loxia curvirostra*) were reported by many observers between 7 November 2022 and 21 January 2023 (eBird 2023). Neither species had previously been reported in this area. Another species reported by Heveran, not previously reported in the Cactus Forest area, was a Ruddy Ground Dove (*Columbina talpacoti*) on 28 November 2023.

A few previous reports of Bendire's Thrasher (*Toxostoma bendirei*) suggested that this species might be more widespread in this area than previously known. Sightings at 3 new sites confirmed this. At his survey location, Heveran reported a single bird several times in October and November 2022 and 2023. In May and August 2023 up to 2 were reported at Barkerville Tank along Barkerville Road. A single bird was reported in May 2023 along Price Road in the northern part of the area, just west of the Diversion Dam on the Gila River east of Florence. Bendire's Thrasher is considered a Species of Greatest Conservation Need by AZGFD (2023).

HASSAYAMPA PLAIN

The Hassayampa Plain is the dry floodplain of the Hassayampa River as it flows south to its confluence with the Gila River south of I-10. Some of this area had been previously birded extensively, especially in and around Wickenburg, along the Phoenix-Wickenburg Highway, and the northern stretch of the Vulture Mine Road. However, bird populations in the Belmont Mountains, the Big Horn Wilderness Area, and Hummingbird Springs were not well known. Between December 2020 and April 2022, observers submitted many checklists from these locations in the Hassayampa Plain and helped establish a benchmark for species that can be found there. From 2019 to 2022, the area was a project site for research on Bendire's Thrasher, which increased the knowledge of its range and numbers in the area. There are still gaps for some months, particularly between March and July, and no reports have been shared since April 2022 following this research project.

CHAVEZ PASS

The Chavez Pass and Anderson Mesa areas southeast of Flagstaff contain a large diversity of vegetation types, including plains grassland, pinyon-juniper woodlands, ponderosa forest, and pockets of mixed conifers (Brown and Makings 2014). Dozens of ephemeral lakes scattered across the huge plateau provide critical stopovers for migrating birds. The Anderson Mesa Important Birding Area is located here and is globally recognized for Pinyon Jays (*Gymnorhinus cyanocephalus*). While the Anderson Mesa has been more heavily birded, the Chavez Pass area to the south hasn't received much coverage. The ranges of some species associated with areas farther to the south, such as Montezuma Quail (*Cyrtonyx montezumae*), extend into this area. Most of the Chavez Pass area is in the Coconino National Forest and is crisscrossed by a network of Forest Service roads, which are passable except for a few months in winter. Most of these roads have not been surveyed, and little information has been recorded about the avian populations there.

Through the efforts of a few observers, a start has been made in covering these underbirded areas. Reports have helped establish a baseline of species in several locations in 4 different months. This has included adding information about the location and number of Pinyon Jays. However, opportunities remain to survey more areas, including during months of spring and fall migration, which haven't been covered yet. More intensive searching may help determine whether Montezuma Quail can still be found in this area.

AVRA VALLEY

This area includes a section of the Santa Cruz Flats along Sasco Road in Pinal County north of Avra Valley, which has been heavily birded for many years and has included a Breeding Bird Survey route (USGS 2023). The eastern side of Avra Valley has also been well covered by birders. However, there is little information from important parts of Avra Valley and the Waterman Mountains and the Ironwood Forest National Monument, which are west of Avra Valley. Observers have begun to address these with the eBird Gaps Project.

Avra Valley is located in Sonoran desertscrub west of the Tucson Mountains. A scattering of residential communities, cattle ranches, and cultivated agricultural fields dominate the area. Bendire's Thrasher is regularly reported along some roads in this area, and observers sharing their lists with the eBird Gaps Project have expanded the area where its presence is known. One shared checklist included a Grasshopper Sparrow (*Ammodramus savannarum*), which had been reported in Avra Valley only a few times previously. Although Crested Caracaras nest in the area and have been reported foraging there (Jenness 2015, eBird 2023), none of the shared checklists have reported any. Reports are from only 5 months, so there is opportunity to increase monthly coverage, particularly for April through September, which have no reports.

SANTA MARIA MOUNTAINS

Of the 5 areas chosen to target for more coverage, this is the least birded with some of the most remote wilderness. It is a low mountain range northwest of Prescott, most of it in the Prescott National Forest. It contains midelevation chaparral, pinyon-juniper woodland, ponderosa pine forest, and riparian woodland. It includes 2 designated National Forest Wilderness Areas (Juniper Mesa and Apache Creek). Only a few stretches—along Williamson Valley, Walnut Creek, and Behm Mesa roads—have previously had even minimal coverage. Sightings of Gray Hawk (*Buteo plagiatus*) along Walnut Creek pose the possibility that if more locations are surveyed, this species may turn out to have a wider range in the area than previously known. The higher elevation riparian habitat also raises the possibility that Dusky-capped Flycatcher (*Myiarchus tuberculifer*) could be nesting in the area.

So far, only 4 checklists have been shared from this area—3 from July 2020 and one from October 2023, none from areas not previously covered. Thus, the whole Santa Maria Mountains area is still in need of volunteers to begin surveying it. A substantial network of Forest Service roads and trails affords access to much of the area.

From the data and the description of what has been accomplished, it's clear that the coverage in the 5 areas has been uneven, and in some cases barely begun. For this reason, AZFO will continue to focus on filling the gaps in these areas rather than adding new underbirded locations. Individuals can take one or more routes in one of these areas and survey them regularly through all 4 seasons. Nearby Audubon chapters, college research classes, or other interested groups, when organizing field trips, might consider adding locations in one of the 5 areas to visit and share checklists with the Gaps Project. Information on the 5 areas and how to participate can be found at: **eBird Gaps Detail | AZFO (azfieldorn.org)**

Thanks go to Joe Crouse, Tim DeJonghe, Paul Heveran, and Christina Kondrat for looking over the first draft of this note and to Jim Hoagland for reading the first draft and providing photos. Many useful suggestions from Edwin Juarez, who reviewed the final draft, are appreciated.

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Accepted 26 November 2023