FILLING GAPS IN UNDERBIRDED AREAS IN ARIZONA—AN UPDATE

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In 2020, Arizona Field Ornithologists (AZFO) launched a project to fill in the gaps of underbirded areas in Arizona. This endeavor started by reviewing the locations of all eBird checklists for the state (eBird 2020). Five areas were initially selected that showed significant gaps in coverage. 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 and Pinal counties), Cactus Forest (Pinal County), Chavez Pass (Coconino County), Hassayampa Plain (Maricopa County), and Santa Maria Mountains (Yavapai County). General maps of the 5 areas are published here and updated quarterly. An assessment of the results of the eBird Gap project was made in late 2023 (Jenness 2023). This note reviews what has been accomplished through 2024 and what steps are needed to continue to fill in these gaps. All data not otherwise attributed are from eBird.

Progress was made in 4 of the 5 areas, particularly the Avra Valley and Cactus Forest areas. Between 1 December 2023 and 31 December 2024, the number of checklists shared by birders jumped from 572 to 749 (Table 1). The number of species reported increased from 224 to 241 (eBird 2023, eBird 2024). New reports from 3 areas in months with previously no or few shared checklists were an important achievement.

Figure 1. AZFO participants on Avra Valley field expedition, looking toward Silverbell Mountains, 21 April 2024. Photo by Dara Vasquez

The project received a significant boost from an AZFO-organized weekend field expedition 20-21 April in the Avra Valley Area, which added 61 checklists during spring migration (Figure 1). A total of 115 species has been reported for that Gaps area since 2020 (Table 2). The area is rarely visited at night, so the expedition included targeting owls and nightjars, principally in the Ironwood National

Table 1. Comparison of Checklists between 1 Dec 2023 and 31 December 2024

Month	Santa Maria		Chavez Pass		Cactus Forest		Hassayampa		Avra Valley	
	1-Dec-23	31-Dec-24	1-Dec-23	31-Dec-24	1-Dec-23	31-Dec-24	1-Dec-23	31-Dec-24	1-Dec-23	1-Dec-24
Jan					8	13	110	111	2	9
Feb					6	16	38	45	3	7
Mar					4	6	5	19	11	11
Apr			9	9	2	8	41	41		61
May				3	11	19	6	6		
Jun			11	11	4	9	9	9		
Jul	3	3	27	27	2	4	7	7		
Aug			19	20	17	29	13	13		
Sep					9	25	12	12		5
Oct	1	1	17	17	17	24	4	4	37	37
Nov			14	14	12	17	16	17	19	19
Dec			2	6	9	9	36	37		
Total	**4**	**4**	**99**	**107**	**101**	**169**	**296**	**320**	**72**	**149**

Table 2. Comparison of Species Numbers, 1 Dec 2023 and 31 Dec 2024

Santa Maria Mtns.		Chavez Pass		Cactus Forest		Hassayampa		Avra Valley	
1-Dec-23	31-Dec-24	1-Dec-23	31-Dec-24	1-Dec-23	31-Dec-24	1-Dec-23	31-Dec-24	1-Dec-23	31-Dec-24
41	41	107	108	157	190	133	134	98	115

Monument. Volunteers detected 15 Elf Owls (*Micrathene whitneyi*), 24 Western Screech Owls (*Megascops kennicottii*), 25 Great Horned Owls (*Bubo virginianus*), 17 Lesser Nighthawks (*Chordeiles acutipennis*), and 8 Common Poorwills (*Phalaenoptilus nuttallii*). These totals substantially added occurrence records of nocturnal species for the area. On 29 September 2024, a half-day trip by volunteers from the AZFO-Western Bird Banding Association's joint meeting in Tucson, visited the Avra Valley Area and added more checklists for the fall season. Previously there were no shared checklists for September. Two Bendire's Thrashers (*Toxostoma bendirei*) and many passerines, including sparrows, wood warblers, and flycatchers were found. The shared checklists in the Avra Valley Area increased from 72 to 149 between 1 December 2023 and 31 December 2024. However, it still has no shared checklists for the 4-month period, May to August, or for December (Table 1).

There was much activity in the Cactus Forest area in 2024 with increases in the number of checklists from 101 to 169 and the number of species from 157 to 190. Big gains were also made in adding checklists in 7 of the months (Table 1). On the Global Big Day spring migration count, 10 May 2024, a team substantially added observations of owls and nightjars in the area. It counted 12 Elf Owls, 7 Western Screech-Owls, 10 Great Horned Owls, 1 American Barn Owl (*Tyto furcata*), 28 Lesser Nighthawks, and 6 Common Poorwills along the Florence-Kelvin Highway, which crosses the saguaro forest east to west. A major event potentially affecting wildlife was the Freeman Fire 10-18 July, a grass wildfire that burned 13,180 ha, nearly half of it in the southern part of the Cactus Forest Area. The burned area was primarily semidesert grassland (Brown and Makings 2014) with scattered Velvet Mesquite (*Prosopis velutina*). By September, following summer monsoon rains, amaranth (*Amaranth palmeri*) and other annuals were lush in the burned areas, and migrating sparrows and other passerines were present (Figure 2). The long-term effects remain to be seen, especially whether native perennial grasses that are common in much of the unburned area will become established.

Figure 2. Wildfire killed many mesquites in Cactus Forest area. Amaranth coming up underneath after monsoon rains, 7 September 2024. Photo by Doug Jenness

A significant discovery is that part of the Cactus Forest Area serves as a bird migration route. At a private residence along East Paisano Drive, east of AZ 79, surveys during spring and fall migration offered a glimpse of the extent of this avian movement, particularly for some species. Most noteworthy is that 4 Black Swifts (*Cypseloides niger*), a rarity in Arizona, were reported in 2 successive years—on 14 August 2023, 1 July 2024, 24 August 2024, and 22 September 2024. The 2023 report, accepted by the Arizona Bird Committee (Rosenberg and Core 2024), was the first record for Pinal County. Vaux's Swifts (*Chaetura vauxi*) also move along this route from late August to late October with one-day highs of 86 reported in 2023 on 15 September and 42 in 2024 on 26 September. Other notable migrants, many not previously reported in this eBird Gaps area, are 5 Greater White-fronted Geese (*Anser albifrons*) on 17 September 2024, 28 Sandhill Cranes (*Antigone canadensis*) on 2 December 2023, 170 American White Pelicans (*Pelecanus erythrorhynchos*) on 26 September 2023, 2 Ring-billed Gulls (*Larus delawarensis*) on 4 November 2024, and flocks of White-faced Ibis (*Plegadis chihi*) in August and September 2024. Raptors also migrate through the area, and notable sightings were 3 Broad-winged Hawks (*Buteo platypterus*), a White-tailed Kite (*Elanus leucurus*), a Golden Eagle (*Aquila chrysaetos*), and numerous sightings of Common Black Hawk (*Buteogallus anthracinus*) in both fall and spring migration. Two Acorn Woodpeckers (*Melanerpes formicivorus*), firsts for this Gaps area, passed through in September and October 2024. A Common Grackle (*Quiscalus quiscula*) in November 2024 was the first record for Pinal County.

The Cactus Forest Area also has a scattering of cattle tanks, both in the northern area dominated by saguaros and the southern grassland area. In 2024, at least one of these tanks, Lake Tank, had water all year. The tank attracted many waterbirds, including American Avocet (*Recurvirostra americana*; Figure 3), Wilson's Snipe (*Gallinago delicata*), Greater Yellowlegs (*Tringa melanoleuca*), Spotted Sandpiper (*Actitis macularius*), Killdeer (*Charadrius vociferus*), and Mexican Duck (*Anas diazi*). In the fall, when water was unavailable in other locations in the area, many passerines showed up including Virginia's Warbler (*Leiothlypis virginiae*), Townsend's Warbler (*Setophaga townsendi*), Hermit Warbler (*S. occidentalis*), Black-throated Gray Warbler (*S. nigrescens*), and Wilson's Warbler (*Cardellina pusilla*). A Clay-colored Sparrow (*Spizella pallida*; Figure 4) was reported along with many other sparrows. Lawrence's Goldfinch (*Spinus lawrencei*) was also present the same day. A pair of Harris's Hawks (*Parabuteo unicinctus*) nested in this area and at least 1 American Barn Owl roosted in tamarisks near the tank (Figure 5). In the northern part of the area, the site of a lush saguaro forest, Arizona's most northern Crested Caracara (*Caracara plancus*) nest was discovered. Although the Cactus Forest Area has shared checklists for all 12 months, the months of March, April, June, July, and December still need more coverage.

Figure 3. American Avocets at Lake Tank in Cactus Forest area, 18 October 2024. Photo by Tim DeJonghe

Figure 4. Clay-colored Sparrow at Lake Tank, Cactus Forest area, 18 October 2024. Photo by Tim DeJonghe

The Hassayampa Plain Area added 24 checklists and now has checklists for all months. But certain portions of the area still need coverage. Most of the 320 checklists, the greatest number for all the Gap areas, are stationary point stops along roads and trails. This is an effective way to help fill in the gaps, as is submitting lists for every 4 or 5 miles of coverage, which covers more area with fewer lists. Both methods conform to eBird protocols and contribute to filling in gaps.

Figure 5. Barn Owl roosting in tamarisks at Lake Tank, Cactus Forest area, 11 October 2024. Photo by Tim DeJonghe

The Chavez Pass Area added checklists in the month of May but still has 4 months with no shared checklists—January, February, March, and September. The Chavez Pass and Anderson Mesa areas southeast of Flagstaff contain a diversity of vegetation types, including plains grassland, pinyon-juniper woodlands, ponderosa forest, and pockets of mixed conifers (Brown and Makings 2014; Figure 6). Dozens of ephemeral lakes scattered across the expansive plateau provide stopovers for migrating birds, and it is globally recognized as the Anderson Mesa Important Birding Area for Pinyon Jays (*Gymnorhinus cyanocephalus*).

Figure 6. Chavez Pass area near Pine Mountain, 29 December 2023. Photo by Joe Crouse

No progress was made in the Santa Maria Mountains Area, much of it in the Prescott National Forest. To address this challenge, AZFO is organizing a weekend field expedition

24-26 May 2025 with a focus on observing late spring migrants and breeding birds in that area. Of the 5 eBird Gap areas, this is the least birded with much remote wilderness. Only a few stretches—along Williamson Valley, Walnut Creek, and Behm Mesa roads—have had any coverage, and it has been minimal. 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. So far, only 4 checklists have been shared from this area—3 from July 2020 and one from October 2023, none from locations not previously covered.

The data and description of what has been accomplished show that much still needs to be done in the 5 Gaps areas. AZFO will continue to focus on filling the gaps in these areas rather than adding new underbirded geographies. Individuals can adopt one or more routes in one of these areas and survey them regularly through all 4 seasons. Local Audubon chapters and other birding groups, college classes, or other interested organizations planning field trips are encouraged to incorporate visits to locations in one of the 5 areas to support expanding our knowledge of these underbirded areas. Information on the 5 areas, how to participate, and how to share checklists can be found at the **AZFO website**.

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