

# CHECKLIST OF THE BIRDS OF COCHISE COUNTY

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**ABSTRACT:** Arizona Field Ornithologists (AZFO) is compiling up-to-date lists of bird species found in all of Arizona's 15 counties. The Cochise County list, which has just recently been completed (AZFO 2023), includes 485 species of birds recorded to date, 86% of the Arizona state list (ABC 2022). The county, located at the southeast corner of the state, has a strong ornithological history, contributing many first U.S. records and at least 25 first state records. In the past 2 decades 30 species and many new breeding records have been added. This checklist serves as a reference for amateur birders and field ornithologists and as a record of the county's avian natural history. It also provides a baseline for evaluating future changes to climate or habitat. This article describes the process for creating this checklist and highlights notable ornithological contributions of Cochise County.



## GEOGRAPHY, CLIMATE, AND HABITATS

The unique biodiversity of Cochise County has lured natural historians since the 19th century, including ornithological and botanical expeditions by Charles Bendire, Edgar Mearns, Elliot Coues, Harry Swarth, Sara Plummer Lemmon, and others. The county's biodiversity is fundamentally linked to the presence of sky islands—the Madrean Archipelago, a collection of isolated mountains rising from the desert valley floor. Elevations range from 2,976 m at Chiricahua Peak, to 890 m where the San Pedro River, the last free-flowing river in the U.S. Southwest, crosses into Pima County. The Madrean sky islands are the only sky islands that straddle 2 major floristic zones (Neotropic and Holarctic) and 2 faunal realms (Neotropic and Nearctic; Warshall 1995). As a result, a single sky island may host the seemingly incongruous nesting of a Neotropical species such as Elegant Trogon (*Trogon elegans*) and a Nearctic species such as Red-breasted Nuthatch (*Sitta canadensis*).

The county can be visualized as partitioned into 4 major valleys, oriented roughly north to south and divided by mountain ranges. From east to west lie the San Simon Valley (along the New Mexico-Arizona border), the Sulphur Springs Valley (an agricultural area), the San Pedro Valley (the most populated valley, centered on the San Pedro River), and part of the San Rafael Valley (grasslands and cattle ranches). The valleys span desert biomes of Chihuahuan desertscrub and semidesert grassland throughout much of the county, to upland Sonoran desertscrub in the far northwest corner (Spence and Corman 2005, Figure 1).



Figure 1. Huachuca Mountains viewed from Montezuma Pass.  
Photo by Mark Doyle

The mountains of Cochise County lie between the Rocky Mountains to the north and the Sierra Madre Occidental to the south. The montane plant communities shift from a Madrean evergreen woodland similar to that found in Mexico (with evergreen oak-pinyon-juniper), to pine-oak, and then to mixed coniferous pine-fir (Marshall 1957, Spence and Corman 2005). At the highest elevations, the habitat is reminiscent of the Rocky Mountains, and in fact Engelmann spruce (*Picea engelmanni*) reaches its southernmost limit in North America in Cochise County's Chiricahua Mountains.

Several additional factors supplement the region's biodiversity, including climatic zones, rainfall, mountain orientation, and mountain topography (Warshall 1995, Bowers and McLaughlin 1996, Coblentz 2005). Two major climatic zones converge in these sky islands—subtropical and temperate—creating 5 rather than 4 seasons. The county has bimodal annual rainfall, with a late summer rainy season known as “second spring” to the Chiricahua Apaches. This is the monsoon breeding cycle so popular among birders, when species such as Botteri's Sparrow (*Peucaea botterii*) push northward to breed, and Mexican rarities such as Berylline Hummingbird (*Saucerottia beryllina*) or Aztec Thrush (*Ridgwayia pinicola*) are likely to appear. This northward movement or vagrancy of Mexican species is directed in part by the predominantly north-south orientation of the mountain ranges (Coblentz 2005). Finally, the complex topography of these sky islands creates many microhabitats. There are 12 peaks over 2,800 m elevation and another 24 peaks over 2,500 m (LOJ 2002). Many of the peaks are ultraprominent, rising thousands of feet above the adjacent valleys, creating a complex drainage topography of varying elevation, plant cover, slope, and exposure.

## HUMAN INFLUENCES

Cochise County is 16,107 km<sup>2</sup> (more than 1.6 million ha), nearly the size of Connecticut and Rhode Island combined, with a total population of only 126,000. Sierra Vista has 45,000 residents, followed by Douglas at 16,000, with remaining towns such as Benson, Bisbee, and Willcox each 5,000 or fewer (ACA 2023).

Human-made habitats include agricultural, urban, and managed bodies of water. Cochise County has more than 400,000 ha in farms, primarily hay and corn, and is second in the state for nuts such as pecans and pistachios (USDA 2017). Cattle remain important, with 80% of farmland as pasture (USDA 2017), but much less so than at the beginning of the 20th century. The agricultural fields attract wintering shorebirds such as Mountain Plover (*Charadrius montanus*), raptors such as Ferruginous Hawk (*Buteo regalis*) and occasionally Rough-legged Hawk (*Buteo regalis*), and 3 species of *Calcariidae* including good numbers of Chestnut-collared Longspur (*Calcarius ornatus*). The county has several water features, although nearly all are not natural, including the deep mountain reservoir of Parker Canyon Lake, the wildlife management wetland area of Whitewater Draw—with a wintering population of 30,000 Sandhill Cranes (*Antigone canadensis*), and wastewater management sites such as Willcox's Lake Cochise and the Benson and Sierra Vista wastewater plants.

Only 40% of the county is owned by individuals or corporations, leaving well over half managed and/or owned by public entities (USBLM 2016). There are no tribal lands within Cochise County. Major public landholders include the State of Arizona (Kartchner Caverns State Park), State Trust Land, U.S. Forest Service (Coronado National Forest), U.S. Fish and Wildlife Service (San Bernardino National Wildlife Refuge), National Park Service (Chiricahua National Monument), Bureau of Land Management (San Pedro Riparian National Conservation Area), and the U.S. Army (Fort Huachuca). Public or government ownership may increase access and may result in management for habitat conservation, but not necessarily. In addition, unlike many other mountain ranges in Arizona, Cochise County's mountains are fairly accessible. For example, the Huachucas have over 320 km of trails (Bowers and McLaughlin 1996), and several high-elevation areas of the Chiricahuas are accessible by road.

The county also has an active birding community and a strong ecotourism industry, attracting private birding tours and hosting festivals such as Southwest Wings and Wings Over Willcox. A recent tourism survey found that 34% of visitors planned to bird-watch while in Cochise County (Combrink et al. 2020). Sierra Vista calls itself the Hummingbird Capital of the United States, with 17 hummingbird species on the county list.

With varied habitat, good accessibility, and active coverage, Cochise County still holds potential for new avian discoveries, as seen by the 30 species added to the county checklist over the past 20 years (Table 1). Even more astounding, in the past 2 years Cochise County has contributed 3 first state records: American Woodcock (*Scolopax minor*), White-tipped Dove (*Leptotila verreauxi*), and Orange-billed Nightingale-Thrush (*Catharus aurantiirostris*) (Marble 2022, Otnes 2022, Bowers 2022, Lamberton 2022, Figure 2). Cochise County remains a likely location for new state firsts, with several of those possibilities discussed later in this article.

## CRITERIA FOR INCLUSION ON CHECKLIST

Cochise County did not have a complete checklist that simply needed to be brought up to date. This new list is the first for the county. The first criterion for inclusion on the checklist is that species must be on the Arizona Bird Committee’s (ABC) state list (AZFO 2021). Whooping Crane (*Grus americana*), Elegant Quail (*Callipepla douglasii*), and Great Black Hawk (*Buteogallus urubitinga*), reported in the county but not accepted by the ABC, are not included. This new checklist is presented in the latest taxonomic order (AOS 2022).



Figure 2. Cochise County continues to add first state records, most recently this one-day Orange-billed Nightingale-Thrush, 15 June 2022. Photo by Ken Lamberton

**Table 1.** New species on Cochise County Checklist in Past 20 Years (2003-2022)

White-winged Scoter (2003) ( <i>Melanitta deglandi</i> )	Brown-backed Solitaire (2009) ( <i>Myadestes occidentalis</i> )	Couch’s Kingbird (2015) ( <i>Tyrannus couchii</i> )
Black Turnstone (2005) ( <i>Arenaria melanocephala</i> )	Five-striped Sparrow (2009) ( <i>Amphispizopsis quinquestriata</i> )	Clay-colored Thrush† (2015) ( <i>Turdus grayi</i> )
Carolina Wren (2005) ( <i>Thryothorus ludovicianus</i> )	Short-billed Gull (2010) ( <i>Larus brachyrhynchus</i> )	Wedge-rumped Storm-Petrel (2016) ( <i>Hydrobates tethys</i> )
Streak-backed Oriole (2005) ( <i>Icterus pustulatus</i> )	Ruby-throated Hummingbird (2010) ( <i>Archilochus colubris</i> )	Black Storm-Petrel (2016) ( <i>Hydrobates melania</i> )
Glossy Ibis (2007) ( <i>Plegadis falcinellus</i> )	Pacific Wren (split 2010) ( <i>Troglodytes pacificus</i> )	Little Bunting (2017) ( <i>Emberiza pusilla</i> )
Tufted Flycatcher (2008) ( <i>Mitrephanes phaeocercus</i> )	Chimney Swift (2011) ( <i>Chaetura pelagica</i> )	Common Crane (2020) ( <i>Grus grus</i> )
Pacific Golden-Plover (2009) ( <i>Pluvialis fulva</i> )	Upland Sandpiper (2012) ( <i>Bartramia longicauda</i> )	American Woodcock (2021) ( <i>Scolopax minor</i> )
Ruff (2009) ( <i>Calidris pugnax</i> )	Prairie Warbler (2012) ( <i>Setophaga discolor</i> )	White-tipped Dove (2022) ( <i>Leptotila verreauxi</i> )
Gray-collared Becard (2009) ( <i>Pachyrhamphus major</i> )	Roseate Spoonbill (2013) ( <i>Platalea ajaja</i> )	Orange-billed Nightingale-Thrush (2022) ( <i>Catharus aurantiirostris</i> )
Sinaloa Wren (2009) ( <i>Thryophilus sinaloa</i> )	Lesser Black-backed Gull (2014) ( <i>Larus fuscus</i> )	Least Flycatcher (2022) ( <i>Empidonax minimus</i> )

†Pending acceptance by ABC

The “common”, “uncommon”, and “rare” species are straightforward (more on these designations below) and can be verified using eBird (eBird 2022). Any species on the ABC review list of rare species must have been submitted and accepted (ABC 2021a, 2021b). For sources, I examined several searchable AZFO online historical and public view databases and the AZFO photo documentation archive (Ganley 1997, AZFO 2008, 2015, 2022, ABC 2022). I also searched ABC reports published in *Western Birds* (Speich and Parker 1973; Speich and Witzeman 1975; Rosenberg and Witzeman 1998, 1999; Rosenberg 2001; Rosenberg et al. 2007, 2011, 2017, 2019; Stevenson and Rosenberg 2007a, 2007b, 2007c, 2007d, 2008; Rosenberg and Rademaker 2021). I checked Arizona-birding-themed Facebook groups for reports with photographs and initiated personal communications with many county birders.

Historical records prior to ABC’s creation in 1972 were primarily determined by records listed in Phillips et al. (1964) and Monson and Phillips (1981), supplemented by original historical documents. I also searched *American Birds*, *National Audubon Field Notes*, and *North American Birds* (Rosenberg and Stejskal 1992, Rosenberg et al. 1994, Stejskal et al. 1994, 1995, Benesh and Rosenberg 1996, 1998, Rosenberg and Jones 2001), and other journals indexed in the Searchable Ornithological Research Archive (SORA). My goal was a comprehensive search of each species, but due to the dispersed nature of the archives there may be records I have overlooked. Corrections are welcome and will be incorporated in future updates.

With so much attention by early ornithologists, Cochise County has an interesting contribution of state-record specimens. The only state record of Gray-cheeked Thrush (*Catharus minimus*) is a specimen collected in 1932 in Cave Creek (Phillips et al. 1964). The only state and U.S. record for Bumblebee Hummingbird (*Selasphorus heloisa*) are 2 females collected in 1896 in Ramsey Canyon (Swarth 1904, Monson and Phillips 1981, Swarth 2018). The only breeding record of Aplomado Falcon (*Falco femoralis*) in Arizona is a nest with eggs collected in 1887 on Fort Huachuca (Bendire 1887). Some historical reports have been questioned, so they are not included in the checklist. A report of Northern Bobwhite (*Colinus virginianus*) was viewed by Monson and Phillips (1981) as “not well-founded.” Nutting’s Flycatcher (*Myiarchus nuttingi*), with a mention by Swarth (1904), is now viewed as a specimen error (Dickerman and Phillips 1953, Swarth 2018). Connecticut Warbler (*Oporornis agilis*) was determined by Monson and Phillips (1981) to be a typographic error propagated from an old AOU checklist.

Some species certainly have been reported in Cochise County but are not included because they are considered nonestablished exotics in this county, such as Monk Parakeet (*Myiopsitta monachus*) and Rosy-faced Lovebird (*Agapornis roseicollis*). Most difficult are species that have been reported by reputable and experienced birders, but were not submitted to ABC, or were submitted and not accepted due to insufficient documentation. As an AZFO checklist, a report must have been accepted by the ABC. However, these hypothetical species are important to mention as possible past or potential future county records (Appendix).

Cochise County’s avian list has grown considerably in the past 20 years (Table 1). Many of these additions highlight the impressive perspicuity and knowledge of birders scouring the county. An interesting example is Chimney Swift (*Chaetura pelagica*), first documented for the county in 2011 when an out-of-town birding guide recognized their twittering call in the Willcox Quality Inn parking lot and snapped diagnostic photos (Rosenberg and Witzeman 1998, Krueper 1999, Johnson 2011). Another is the county-first and state-second Couch’s Kingbird (*Tyrannus couchii*) noticed when a birding tour pulled over at Texas Canyon Rest Area along Interstate 10, remaining one of only 3 Couch’s Kingbirds in the state to date (Rosenberg et al. 2019).

## ABUNDANCE AND SEASONAL OCCURRENCE

The Cochise County Checklist also incorporates codes for abundance and seasonal occurrence, with categories for abundance being common, uncommon, rare, casual, or extremely rare.



"Common" indicates a species present in large numbers and easily found throughout the county in the appropriate habitat and season. A common wintering species is White-crowned Sparrow (*Zonotrichia leucophrys*) and a common permanent resident is Gambel's Quail (*Callipepla gambelii*).

"Uncommon" species are present in smaller numbers, within a more limited habitat, but still regularly seen in their appropriate habitat and season, such as Virginia's Warbler (*Leiothlypis virginiae*) during summer. The distinction between common and uncommon is subjective, so as a heuristic, in addition to case-by-case consideration, the eBird county bar chart for an uncommon species is about one-third to one-half the thickness of a common species.

"Rare" species are infrequently reported and/or locally distributed and occur annually. I interpreted this as at least one record each year, and I searched back 20 years. Examples are Pacific Wren (*Troglodytes pacificus*) in winter or Black-and-white Warbler (*Mniotilta varia*) during migration. Some species are nearly annual, such as Rufous-capped Warbler (*Basileuterus rufifrons*) or Tufted Flycatcher (*Mitrephanes phaeocercus*), but technically do not clear the annual threshold.

"Casual" species do not occur annually but have more than 5 records in the county. Rufous-capped Warbler and Tufted Flycatcher fall into this category, as do several of the vagrant warblers such as Worm-eating Warbler (*Helmitheros vermivorum*) and Kentucky Warbler (*Geothlypis formosa*).

"Extremely rare" species have 5 or fewer accepted records in the county. Some may never occur again, such as Wedge-rumped Storm-Petrel (*Hydrobates tethys*) or Black Storm-Petrel (*Hydrobates melania*) that arrived with Hurricane Newton in 2016. Several others are at the cusp of changing their county status from extremely rare to casual, such as Yellow-green Vireo (*Vireo flavoviridis*) and Canada Warbler (*Cardellina canadensis*). For consistency I maintained a strict definition of annual and greater than 5 records.

Most difficult are species that are regular in other parts of the state, so are not included on ABC's list of review species, but are extremely rare or casual in Cochise County. Because of the lack of review documentation, individual reports must be found and evaluated for credibility. Species that are not state-reviewed, but are extremely rare in Cochise County, include Red-shouldered Hawk (*Buteo lineatus*), Downy Woodpecker (*Dryobates pubescens*), and Mountain Chickadee (*Poecile gambeli*).

Categories used for seasonal occurrence are permanent resident, summer resident, winter resident, and migrant. To identify migrant species, I examined migration range maps (Sibley 2017) and looked for the presence of bimodal spring and/or fall "bulges" in the eBird bar charts, indicating that numbers increase during migration. However, designating a species as a migrant is not always straightforward. A "migrant" species may also have a permanent subpopulation, such as Lark Sparrow (*Chondestes grammacus*), or a breeding summer subpopulation, such as Barn Swallow (*Hirundo rustica*). A species that winters for several months, for example a terminal migrant such as Sandhill Crane, is not marked as a migrant but as a winter resident.

A species is marked "local" if it is found in very limited locations within a habitat. For example, Yellow-eyed Junco (*Junco phaeonotus*) is not marked as local because it is seen throughout its habitat. Rufous-capped Warbler, Short-tailed Hawk (*Buteo brachyurus*), and Mexican Chickadee (*Poecile sclateri*; Figure 3) are "local" because they occur in only a few locations.



Figure 3. Mexican Chickadees are extremely range-restricted in Arizona, with a small, isolated population in the Chiricahua Mountains, 11 August 2022. Photo by Carol Comeau/Macaulay Library at Cornell Lab of Ornithology (ML474477891)

The “irruptive” modifier marks species where the population has substantial variation year to year (typically linked to seed crops or drought). Many of the finches are irruptive in the county, such as Evening Grosbeak (*Coccothraustes vespertinus*), Cassin’s Finch (*Haemorhous cassinii*), and Lawrence’s Goldfinch (*Spinus lawrencei*). Irruptive species also extend to Pinyon Jays (*Gymnorhinus cyanocephalus*), which arrived in large numbers in 1973 and 2003; wintering populations of Lewis’s Woodpecker (*Melanerpes lewis*); or the drought-triggered absence of Cassin’s Sparrow (*Peucaea cassinii*) in some summers.

The Cochise County Checklist also includes extirpated species, defined as species that previously bred or were presumed to breed in the county. Aplomado Falcon, documented as formerly breeding in Cochise County, is extirpated. It was once “a fairly common summer resident in the southeast” before 1890 (Monson and Phillips 1981), but then disappeared abruptly, possibly linked to changes in land use with cattle grazing (Hector 1987). The last state record accepted by the ABC was a report in 1940 near St. David in Cochise County (Taylor 1995).

California Condor (*Gymnogyps californianus*) and Thick-billed Parrot (*Rhynchopsitta pachyrhyncha*), although no longer present in the county, are technically not extirpated because there is no evidence of their having had established nesting populations rather than being occasional visitors. California Condor, whose range formerly spanned New Mexico and Texas, is based on a report from Cave Creek in 1881 by ornithological collector Frank Stephens (Brewster 1883, Phillips et al. 1964). Because there are fewer than 5 records from the county it is coded as extremely rare, with the additional designator of “historical.” Thick-billed Parrot was last reliably reported in the county in 1935 and 1938 (Wetmore 1935, Monson and Phillips 1981). Small flocks occasionally summered in the Chiricahuas, so nesting is often assumed, but it remains unconfirmed for the entire state (Phillips et al. 1964, Corman 2005a). Because there are more than 5 records from the county and reports were not annual it is coded as casual, also with the historical designator. As an aside, a reintroduction program in the 1980s released 29 Thick-billed Parrots (confiscated from smugglers) into the Chiricahua Mountains (Snyder et al. 1994), which accounts for documented reports of this species during that time, but the last reliable sighting from the introduced population was in 1993 (Pereksta 1993). The species still breeds within 80 km of the U.S. border.

## BREEDING

Species that currently breed, or have bred, in Cochise County are marked with an “n”. Of the 485 species on the Cochise County Checklist, 213 species have nested in the county. Most breeding records were determined using the Arizona Breeding Bird Atlas (Atlas), based on surveys conducted between 1993 and 2000 (Corman and Wise-Gervais 2005).

To bring those surveys up to date over the past 20-plus years, I supplemented with personal communications, published findings, and searches of the eBird database. By applying for eBird researcher access (<https://ebird.org/data/download>), I could download custom datasets of confirmed breeding codes in Cochise County by species (eBird 2021). I then viewed the details of the report to evaluate credibility, and if necessary, I contacted the observer. Eighteen species are newly confirmed breeders since the Atlas surveys: Mallard (*Anas platyrhyncho*), Black-necked Stilt (*Himantopus mexicanus*), Least Bittern (*Ixobrychus exilis*), Cattle Egret (*Bubulcus ibis*), Northern Harrier (*Circus hudsonius*), Short-tailed Hawk, Northern Saw-whet Owl (*Aegolius acadicus*), Tufted Flycatcher, Ruby-crowned Kinglet (*Corthylio calendula*), Black-capped Gnatcatcher (*Poliophtila nigriceps*), Sinaloa Wren (*Thryophilus sinaloa*), Townsend’s Solitaire (*Myadestes townsendi*), Rufous-backed Robin (*Turdus rufopalliat*), Pine Siskin (*Spinus pinus*), Rufous-winged Sparrow (*Peucaea carpalis*), Yellow-headed Blackbird (*Xanthocephalus xanthocephalus*), Crescent-chested Warbler (*Oreothlypis superciliosa*), and Slate-throated Redstart (*Myioborus miniatus*).

In addition to the Aplomado Falcon nest mentioned above, many Cochise County nesting records are significant in the ornithological record of Arizona. The first U.S. nesting record of Berylline Hummingbird was in Cave Creek Canyon in 1976 (Anderson and Monson 1981). White-eared Hummingbird (*Basilinna leucotis*) was confirmed as an Arizona breeder in 1989 with a nest in Ramsey Canyon (Swarth 2018). The first conclusive evidence of Eared Quetzal (*Euptilotis*

*neoxenus*) nesting in the United States was the discovery of a pair feeding young in Ramsey Canyon in 1991 (Williamson 1992). A Short-tailed Hawk pair nested and successfully fledged young in the Chiricahua Mountains in 2007 close to the location of the first accepted report of Short-tailed Hawk in Arizona. This was the first confirmed nest in western United States (Snyder et al. 2010). Also in 2007 and in the Chiricahuas, a Crescent-chested Warbler was observed feeding a fledgling, the first nesting of this species in Arizona (Rosenberg et al. 2011, Rosenberg and Rademaker 2021, Figure 4). In 2015 in Ramsey Canyon, Tufted Flycatcher was confirmed as an Arizona breeder, with young successfully fledging in 2016 (Rosenberg et al. 2019, T. Lawson pers. comm.). Slate-throated Redstart, a species not included in the Atlas, successfully nested in Pinery Canyon in 2016 and 2017 (Ewing 2016, eBird 2021). In 2018, a Rufous-backed Robin nest monitored in Ramsey Canyon became the first breeding record in the United States (Kondrat-Smith and Corman 2020). Also in 2018, the first documented Sinaloa Wren nest with eggs was discovered at Huachuca Canyon. This nest was monitored, ultimately failed, and the nest-and-egg specimen is currently housed at the Georgia Museum of Natural History (Blankenship, 2018a, 2018b, pers. comm.).



Figure 4. Crescent-chested Warbler was confirmed nesting in Cochise County in 2007 and again in 2020, 28 May 2020. Photo by Richard Fray

Of the county's nesting species, many are unusual in that there are only a few nesting records, either historically or recently, indicating a possible trend. Because of Cochise County's geographic location, many of these unusual nesting records are of Mexican species. In addition to those first nesting records mentioned above, Black-capped Gnatcatcher was only confirmed breeding since 2000 (in Leslie Canyon and possibly Guindani Canyon) and Flame-colored Tanager (*Piranga bidentata*) continues to be found as a local and irregular breeder in the Huachuca and Chiricahua mountains. Yet, although many Mexican species may be expanding their range into Arizona, others appear to be declining—or at least subject to multiyear trends. Rose-throated Becard (*Pachyramphus aglaiae*) nested fairly regularly in the county in the 1950s, but the Atlas detected no breeding through the 1990s (Corman 2005b). Similarly, Green Kingfisher (*Chloroceryle americana*) was first confirmed breeding in 1988 along the upper San Pedro River, increasing through the mid-1990s when it was considered a regular nester, only to decline rapidly after 1996 to the present. Black-bellied Whistling-Duck (*Dendrocygna autumnalis*) bred annually at the Lehner Ranch from 1986 through 1993; now the mere sighting of this species is notable (Krueper 1999).

Some of the unusual nesting records are likely related to ephemeral water conditions, possibly the case with Black-bellied Whistling-Duck and Green Kingfisher, and the difficulties of detection of marsh and playa nesters. Species such as Eared Grebe (*Podiceps nigricollis*), Virginia Rail (*Rallus limicola*), Black-necked Stilt, Snowy Plover (*Charadrius nivosus*), Least Bittern, Cattle Egret, Black-crowned Night-Heron (*Nycticorax nycticorax*), and Yellow-headed Blackbird fall into this category, all with very few breeding records in the county.

Other unusual nesting records include species for which Cochise County is typically considered the winter range. Northern Harrier, Common Black Hawk (*Buteogallus anthracinus*), Long-eared Owl (*Asio otus*), Gray Flycatcher (*Empidonax wrightii*), and Lazuli Bunting (*Passerina amoena*) have bred in the county, well south of their usual summer ranges.

Localized high-elevation breeders are another category of unusual county nesters. This includes Sharp-shinned Hawk (*Accipiter striatus*), Short-tailed Hawk, Ruby-crowned Kinglet, American Dipper (*Cinclus mexicanus*), Evening Grosbeak, Red Crossbill (*Loxia curvirostra*), and Pine Siskin, with nests only rarely found at the highest elevations of the Chiricahua and Huachuca mountains. Purple Martin (*Progne subis*) formerly bred in the Chiricahua Mountains (Phillips et al. 1964),



but there have been no nesting detections since well before the Atlas. However, recently the desert subspecies (*P. s. hesperia*) has reappeared as a county breeder in low-elevation habitat, nesting where the northwest corner of the county extends into upland Sonoran desert.

An additional 8 species may have nested in the county—with observations of probable breeding behavior historically, during the Atlas, or in eBird—but remain unconfirmed. Ruddy Ground Dove (*Columbina talpacoti*) pairs have been observed during spring and summer along the upper San Pedro River (Corman 2005c G. Lewis pers. comm.). Buff-collared Nightjar (*Antrostomus ridgwayi*) is believed to have bred in Guadalupe Canyon in the 1950s (Phillips et al. 1964, Corman and Wise-Gervais 2005). Bald Eagles (*Haliaeetus leucocephalus*) attempted to nest at Parker Canyon Lake in the 1980s (Taylor 1995), and 2 adults were present in the summer of 2022 (eBird 2022). A pair of Scissor-tailed Flycatchers (*Tyrannus forficatus*) was observed near Portal in May 1990 (Rosenberg and Witzeman 1999). A singing male Yellow-throated Vireo (*Vireo flavifrons*) spent at least 2 summers on territory along the upper San Pedro River in 1992 and 1993, with conflicting archived reports of “presumed unmated” and “nest in area” (Corman and Wise-Gervais 2005, AZFO 2008). A Yellow-green Vireo was reported feeding a possible fledgling in Guadalupe Canyon during the Atlas surveys, but the location was immediately adjacent to the Mexican border so it could not constitute the first Arizona breeding record (Corman and Wise-Gervais 2005). Aztec Thrush may have nested in the Huachuca Mountains, with accepted records during the 1980s and 1990s of 2 individuals— even using the word “pair”—in suitable breeding habitat. An observation in 1994 was an immature thought to be too young to have migrated (Taylor 1995), but again could not constitute a first Arizona—and first U. S.— nesting record. Finally, a male Rose-breasted Grosbeak (*Pheucticus ludovicianus*) apparently paired with a Black-headed Grosbeak (*Pheucticus melanocephalus*), occupying a nest near Portal in 1994. Observations of any breeding activity of these species should be closely monitored and documented for the possibility of an upgrade to confirmed nesting status.

## OUTSTANDING RECORDS AND COUNTY HIGHLIGHTS

Cochise County has contributed 11 first documented U.S. records and at least 25 first Arizona records (Table 2, Figure 5). These reports date back to the 1880s and continue to the present with 2 first Arizona records as recently as 2022.

In addition, another 3 species were second U.S. records. Sinaloa Wren from Huachuca Canyon in 2009 was a second U.S. and second Arizona record (Rosenberg et al. 2011). A Blue Mockingbird (*Melanotis caerulescens*) in 1995 in Portal was also the second U.S. and second Arizona record (Rosenberg and Witzeman 1999). And Slate-throated Redstart, found in Miller Canyon in 1976, was a first Arizona and second U.S. record (Monson and Phillips 1981).

Eight species on the Arizona state list are from records currently only in Cochise County. This includes the range-restricted regular species of Mexican Chickadee. Two of the species are from historical specimens: Bumblebee Hummingbird from 1896 specimens and Gray-cheeked Thrush from a 1932 specimen. An additional 5 species are recent sightings, including White-tipped Dove in 2022, American Woodcock in 2021, Gray-collared Becard (*Pachyramphus major*) in 2009, Orange-billed Nightingale-Thrush in 2022, and Little Bunting (*Emberiza pusilla*) in 2017 (Figure 6).



Figure 5. Since the first U.S. and state record in Guadalupe Canyon in 1961, Fan-tailed Warbler is now casual status in the county, 18 April 2018. Photo by Diana Doyle



Figure 6. A Little Bunting at Slaughter Ranch was an unexpected first Arizona record, 27 May 2017. Photo by Richard Webster



**Table 2.** Cochise County First U.S. and First Arizona Records

White-tipped Dove ( <i>Leptotila verreauxi</i> )	2022, Huachuca Canyon	First Arizona (Otnes 2022, Bowers 2022)
Buff-collared Nightjar ( <i>Antrostomus ridgwayi</i> )	1960, Guadalupe Canyon	First U.S. (Phillips et al. 1964)
Bumblebee Hummingbird ( <i>Selasphorus heloisa</i> )	1896, Ramsey Canyon	First U.S. (Phillips et al. 1964)
White-eared Hummingbird ( <i>Basilinna leucotis</i> )	1896, Ramsey Canyon	First U.S. (Swarth 1904, Williamson 2001)
Berylline Hummingbird ( <i>Saucerottia beryllina</i> )	1967, Ramsey Canyon	First U.S. (Sheppard 1968)
Black Turnstone ( <i>Arenaria melanocephala</i> )	2005, Willcox	First Arizona (Rosenberg et al. 2011)
White-rumped Sandpiper ( <i>Calidris fuscicollis</i> )	1977, Willcox	First Arizona (Rosenberg and Witzeman 1998)
American Woodcock ( <i>Scolopax minor</i> )	2021, Cave Creek Canyon	First Arizona (Marble 2022)
Broad-winged Hawk ( <i>Buteo platypterus</i> )	1956, Cave Creek Canyon	First Arizona (Phillips et al. 1964)
Short-tailed Hawk ( <i>Buteo brachyurus</i> )	1985, Barfoot Junction	First Arizona (Snyder et al 2010)
Eared Quetzal ( <i>Euptilotis neoxenus</i> )	1977, Cave Creek Canyon	First U.S. (Rosenberg and Witzeman 1998)
Gray-collared Becard ( <i>Pachyramphus major</i> )	2009, Cave Creek Canyon	First U.S. (Johnston et al. 2010)
Rose-throated Becard ( <i>Pachyramphus aglaiae</i> )	1888, Ramsey Canyon	First U.S. (Lisowsky 2021)
Brown-backed Solitaire ( <i>Myadestes occidentalis</i> )	2009, Miller Canyon	First U.S. (until acceptance of 1996 resubmission)(Van Doren 2010)
Orange-billed Nightingale-Thrush ( <i>Catharus aurantirostris</i> )	2022, Bisbee	First Arizona (Lamberton 2022)
Gray-cheeked Thrush ( <i>Catharus minimus</i> )	1932, Cave Creek Canyon	First Arizona (Phillips et al.1964)
Clay-colored Thrush† ( <i>Turdus grayi</i> )	2015, Portal	First Arizona (pending resubmission) (Rosenberg and Radamaker 2021)
Aztec Thrush ( <i>Ridgwayia pinicola</i> )	1978, Huachuca Canyon	First Arizona (AZFO 2008)
Little Bunting ( <i>Emberiza pusilla</i> )	2017, Slaughter Ranch	First Arizona (Rosenberg et al. 2019)
Crescent-chested Warbler ( <i>Oreothlypis superciliosa</i> )	1983, Garden Canyon	First U.S. (Heathcote and Kaufman 1985)
Bay-breasted Warbler ( <i>Setophaga castanea</i> )	1972, Cave Creek Canyon	First Arizona (Speich and Parker 1973)
Pine Warbler ( <i>Setophaga pinus</i> )	1987, Benson	First Arizona (AZFO 2008)
Fan-tailed Warbler ( <i>Basileuterus lachrymosus</i> )	1961, Guadalupe Canyon	First U.S. (Levy 1962)
Rufous-capped Warbler ( <i>Basileuterus rufifrons</i> )	1977, Cave Creek Canyon	First Arizona (Monson and Phillips 1981)
Slate-throated Redstart ( <i>Myioborus miniatus</i> )	1976, Miller Canyon	First Arizona (Monson and Phillips 1981)
Flame-colored Tanager ( <i>Piranga bidentata</i> )	1985, Cave Creek Canyon	First U.S. (Morse and Monson 1985)

†Pending acceptance by ABC

Another subjective measure of the rarity of birds is American Birding Association (ABA) codes, with Code 3 as rare, Code 4 as casual, and Code 5 as accidental (ABA 2022). Cochise County's list includes 34 species that are Code 3-5, an impressive 7% of the county's total. This high number of ABA rarities is due in part to the Madrean ecosystem of Mexico extending into the county. Twenty-nine species are associated with Mexico, plus 2 wayward seabirds—Wedge-rumped Storm-Petrel and Red-billed Tropicbird (*Phaethon aethereus*)—and 3 Eurasian species—Common Crane (*Grus grus*), Ruff (*Calidris pugnax*), and Little Bunting.

## RECENT TRENDS

It is beyond the scope of an introduction to a checklist to discuss historical changes to the avifauna of Cochise County. We know very little about the avifauna of the county prior to the end of the 19th century, by which time major environmental changes already had occurred from extractive activities, particularly overgrazing, the subsequent erosion, and a major drought. Recovery has been limited and gradual. Recent trends include the effects of expanding population centers and continued reduction in cattle ranching; however, ranching continues to greatly affect the county, including on large publicly owned lands subject to grazing allotments. The recent elimination of cattle along the San Pedro Riparian National Conservation Area in 1987 has positively affected many riparian understory species such as Abert's Towhee (*Melospiza aberti*) and Yellow-breasted Chat (*Icteria virens*; Krueper 1999, Krueper et al. 2003). Increases in nut orchards, along with existing agriculture, highlight future threats to the water table. Two decades of local and regional drought also have affected the avifauna, and human-caused climate change will continue to exacerbate the scale of natural climatic cycles. Many other issues continue, ranging from fire management to poorly tested pesticides.

Very few species have declined drastically county-wide in recent decades. The most notable decline is Burrowing Owl (*Athene cunicularia*), which went from "considerable numbers in the various prairie dog 'towns' between the Huachucas and the San Pedro River" (Swarth 1904) to "locally extirpated" from the upper San Pedro River by the 1990s (Taylor 1995). This decline was attributed to government poisoning and eradication of prairie dogs in southeast Arizona during the 1930s. Burrowing Owls are now scattered throughout the county and part of a reintroduction program with private landholders (Martin 2005).

Several species have expanded their range into the county, most notably the Mexican rarities already mentioned. Eurasian Collared-Dove (*Streptopelia decaocto*) is the notable nonnative species, with the first eBird report in 2000; it is now a common permanent resident. For native avifauna, Rufous-winged Sparrow continues to expand its range into Cochise County. Taylor (1995) described it as "locally extirpated" with the last report along the San Pedro River in 1982. There were no eBird reports in the county of this species in 2000 and only 8 reports in 2010. Today it is an uncommon permanent resident, its range still expanding, and a regular breeder along the San Pedro River.

Cochise County awaits records of several species reported recently in adjacent counties. Close, but not yet in Cochise are Fulvous Whistling-Duck (*Dendrocygna bicolor*), Garganey (*Spatula querquedula*), Northern Jacana (*Jacana spinosa*), Arctic Tern (*Sterna paradisaea*), and LeConte's Sparrow (*Ammospiza leconteii*), all seen in adjacent Pima County; Iceland Gull (*Larus glaucoideus*) seen in Graham County; Sharp-tailed Sandpiper (*Calidris acuminata*), Glaucous Gull (*Larus hyperboreus*), Eastern Towhee (*Pipilo erythrophthalmus*), and Black-vented Oriole (*Icterus wagleri*) from Santa Cruz County; and Nutting's Flycatcher, Great Kiskadee (*Pitangus sulphuratus*), and White-throated Thrush (*Turdus assimilis*) from both Pima and Santa Cruz counties (the Nutting's Flycatcher summering less than 1.6 km from the Cochise County border).

Several Arizona first state records could yet appear in Cochise County, including Mexican species such as Elegant Quail, Mexican Violetear (*Colibri thalassinus*), Mountain Trogon (*Trogon mexicanus*), White-striped Woodcreeper (*Lepidocolaptes leucogaster*), Happy Wren (*Pheugopedius felix*), Russet Nightingale-Thrush (*Catharus occidentalis*),

Hooded Grosbeak (*Coccothraustes abeillei*), Black-headed Siskin (*Spinus notatus*), Rusty Sparrow (*Aimophila rufescens*), or Blue-black Grassquit (*Volatinia jacarina*) (R. Beck pers. comm., S. Healy pers. comm., Strand 2022). Vagrant shorebirds such as Surfbird (*Calidris virgata*), Curlew Sandpiper (*Calidris ferruginea*), Red-necked Stint (*Calidris ruficollis*), or Little Stint (*Calidris minuta*) are possible given Cochise County's Willcox Lake Cochise and Whitewater Draw. Other possibilities for the county are Red-bellied Woodpecker (*Melanerpes carolinus*), Alder Flycatcher (*Empidonax alnorum*), or Fork-tailed Flycatcher (*Tyrannus savana*).

Considering Cochise County's track record, this checklist certainly will have future additions. These new discoveries are possible due to shifting ranges linked to climate and habitat changes, advancements in identification skills, and technological sophistication in documentation with digital photography and audio recordings. This new comprehensive checklist can serve as a snapshot of documented species at this time in a county with a long and notable ornithological history. It also can serve as a benchmark to measure future changes to the county's avifaunal diversity and abundance.

## APPENDIX. HYPOTHETICAL SPECIES

The following species remain hypothetical in the county. In many cases, a report was never submitted to the ABC for review. In other cases, a report was submitted and the committee voted to not accept the report, most commonly due to a lack of sufficient documentation or sufficient written details to rule out similar species.

- Garganey in 1991 was not reviewed by the ABC (Rosenberg and Witzeman 1998).
- American Three-toed Woodpecker (*Picoides dorsalis*) from Barfoot Park in 2017 could not rule out an unusually plumaged juvenile Hairy Woodpecker (*Dryobates villosus*; ABC 2022).
- Nutting's Flycatcher, with various reports, most recently in 2015 and 2016, none with sufficient documentation to rule out Ash-throated Flycatcher (*Myiarchus cinerascens*) or Great-crested Flycatcher (*Myiarchus crinitus*; Dickerman and Phillips 1953, Monson and Phillips 1981, Rosenberg et al. 2019).
- Great Kiskadee reports from 1984, 1989, 1996, and 1997, none with photographs or sufficient written details (Krueper 1999, Rosenberg and Witzeman 1999).
- Fork-tailed Flycatcher reported in 1994 appears not to have been submitted and lacked sufficient written description for a first state record (Krueper 1999).
- Sedge Wren (*Cistothorus stellaris*) with a few reports pre-2011, all not accepted as a first state record due to insufficient documentation. One report in 2011 (after Arizona's first photographed Sedge Wren near Nogales) was also not accepted (Monson and Phillips 1981, Rosenberg and Witzeman 1999, Rosenberg et al. 2007, 2017, ABC 2022).
- Long-billed Thrasher (*Toxostoma longirostre*) described and photographed in 2007 was determined by the committee to likely be a hybrid Brown Thrasher (*T. rufum*) × Curve-billed Thrasher (*T. curvirostre*) (Rosenberg et al. 2011).
- Veery (*Catharus fuscescens*) reports in 1986 and 1989 were not submitted to ABC. In 1999 a bird netted and photographed in hand was ultimately identified as a Swainson's Thrush (*C. ustulatus*) (Krueper 1999, Rosenberg and Witzeman 1999, Rosenberg et al. 2007, 2011).
- Pine Grosbeak (*Pinicola enucleator*) is not a review species for the state. A credible report from Rustler Park in 1978 was not documented (Monson and Phillips 1981).
- Smith's Longspur (*Calcarius pictus*) reported in 1986 was not photographed or recorded and was not submitted to ABC (Krueper 1999).

- Nelson's Sparrow (*Ammospiza nelsoni*) was noted as hypothetical in historical county records. Most recently, a report in 2007 was not submitted to ABC (Monson and Phillips 1981, Rosenberg and Witzeman 1999, Rosenberg et al. 2007, 2011).
- Black-vented Oriole was reported in 1971 but was not accepted as a first state record. A subsequent report in 2010 was not accepted as a second state record (Speich and Witzeman 1975, Monson and Phillips 1981, ABC 2022).

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