BREEDING STATUS OF ROSE-THROATED BECARDS ALONG THE SANTA CRUZ RIVER, ARIZONA

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ABSTRACT: Rose-throated Becards (*Pachyramphus aglaiae*) are rare in the United States. On occasion, small groups of nests develop just north of the Arizona/Mexico border. Nests in a specific area often proliferate over a period of years and then just as suddenly disappear. One such cluster of nests was found and documented along the Santa Cruz River in Santa Cruz County, Arizona in the late 1940s. More than 70 years later, Rose-throated Becards are again nesting here and over the past 5 years at least 19 nests have been confirmed, with over 28 juveniles detected. This is now the only active breeding population of this species in the United States (Figure 1).

Figure 1. Map of Arizona highlighting Santa Cruz County

Rose-throated Becards (*Pachyramphus aglaiae*) are typically found from northern Mexico to Central America and are rare visitors to the United States. This article will share the story of a breeding population along the Santa Cruz River in Santa Cruz County, Arizona over the past 5 years, currently the only one active in the United States.

Figure 2. Male at Tubac, 15 May 2019. Photo by Jim Lockwood

Rose-throated Becard sightings in the United States are confined to Texas and Arizona. A typical scenario is that a single bird is reported in the same area for an extended period but unless nesting it is often difficult to relocate by hopeful observers. Despite their distinctive plumage and vocalizations, becards usually feed very slowly and silently much of the day high in the canopy and thus are easily missed. It is not unusual for a feeding becard to wait up to 10 minutes between movements.

Two distinct subspecies of Rose-throated Becard reach the United States, extending northward in 2 widely separated populations from central Mexico. Early classification work had placed Rose-throated Becard and several similar species in the genus *Platypsaris* (Webster 1963), but in 1979 they were moved to *Pachyramphus* to join the other becards (Snow 1979, Greenlaw 2020a). Rose-throated Becard has been known as *Pachyramphus aglaiae* since that time. The northwestern race, *P.a. albiventris*, occurs in southeastern Arizona while the larger and more colorful northeastern race, *P.a. gravis*, reaches south Texas, primarily in the Lower Rio Grande Valley (Webster 1963, eBird 2020).

Figure 3. Female at Tubac, 14 January 2019. Photo by Bill Lisowsky

Rose-throated Becards are 16.5 to 18 cm, comparable in size to bluebirds (*Sialia* spp.). Males are mostly gray with a blackish crown and a bright rose-pink patch on the lower throat (Figure 2). The female has a grayish-black crown, brown or cinnamon upperparts, and buffy underparts and throat (Figure 3). Body shape is stocky with a relatively large head. Juveniles are similar in color to adult females.

The common calls are a plaintive, downslurred "*tzeeeu*" note or a spluttering chatter (Howell and Webb, 1995). Rose-throated Becards typically inhabit open forests, forest edges, woody canyons, or river groves. In Arizona, they use tall trees such as sycamores (*Platanus* spp.) or cottonwoods (*Populus* spp.) to build hanging nests that are 30 to 75 cm long and typically built 4 to 21 m off the ground along the end of a lateral branch that droops with the weight of the nest (NatureServe 2011). The nest is quite an undertaking for such a small bird (Figure 4).

The nest consists of vegetative matter bound to the end of the branch with long strips of inner bark of cottonwoods interwoven with grass, leaves, insect webs, roots, and other miscellaneous materials (Figure 5).

The nest usually takes 2 to 3 weeks to construct, with the entrance hole typically found close to the bottom and the nesting cup well inside the structure (Figure 6). A typical clutch size is 3 to 6 eggs. Diet consists mainly of larger insects and their larvae, along with some wild fruits and berries.

Figure 4. Male as a size comparison to Tubac nest, 3 May 2020. Leaf was taken from nearby prior-year nest. Photo by Bill Lisowsky

Figure 5. Female brings stripped bark to Tubac nest, 3 May 2020. Photo by Bill Lisowsky

Figure 6. Nest in Tubac with entrance hole visible near bottom, 28 May 2020. Photo by Bill Lisowsky

HISTORICAL RECORDS AND DISTRIBUTION

The first known record of Rose-throated Becard in the United States was an adult male found 20 June 1888 in Ramsey Canyon, Cochise County, Arizona (Price 1888). It was presumed to be an outlier from the very northern end of the known breeding territory in Sonora, Mexico. At that time, the northwestern subspecies was called Xantus's Becard (*Platypsaris albiventris*).

Evidently the earliest Texas record is a specimen from Brownsville, Cameron County, 30 October 1891 (Greenlaw 2020a). A brief literature search indicates that Rose-throated Becards were not recorded again in the United States until April 1943, when the first confirmed nests were discovered in Hidalgo and Cameron counties in Texas and were thought to establish the species as a "resident of low density" there (Davis 1945, Sutton 1949).

The first Rose-throated Becard nest in Arizona was documented in June 1947 when Phillips (1949) discovered a huge hanging nest along the Santa Cruz River in Santa Cruz County. He watched the nest for hours and eventually saw a male Rose-throated Becard nearby, which he identified to be from the northwestern subspecies. Later, he saw the female, which led him to conclude she might have been incubating eggs on his first visit. More exploration led to discovery of another nest along the river about a 1.5 km away. The following year he found 4 nests within the same 1.5-km stretch, including one that was only 1 m away from the prior year's nest. This is not unusual, as becards often return to old nest sites and build new nests nearby (Terres 1980). No other documentation about this breeding population has been found.

Over the years, small clusters of nests developed, usually along a river corridor, where they often persisted for several years before declining and then disappearing completely. Notable locations were Anzalduas Park in Mission, Texas (one nesting pair, then an unpaired male); Santa Ana National Wildlife Refuge in Hidalgo, Texas (NAB 1972-1979 and 1997-1999, Gehlbach 1987, Brush 2000); along the Sonoita Creek across from the now famous roadside rest stop in Patagonia, Arizona (aka "The Patagonia Picnic Table"); and along Arivaca Creek in Pima County, Arizona (NAB 1970-1987, Flesch 1998, Corman 2005). Each of these locations offered a consistent place over several breeding seasons where large nests could be watched as they were being constructed and young birds were being raised. Most birds disappeared after raising their young and were believed to have retreated south into Mexico, potentially to return in May or June of the next year (NatureServe 2004). The Patagonia group, for example, spanned much of the 1970s and 1980s, though it appears some ebb and flow occurred in numbers over time (Greenlaw 2020b). Eventually at each of these locations, the birds failed to return to nest, and only an occasional sighting has occurred in these former sites. The number of nesting pairs of Rose-throated Becards in Arizona declined beginning in the late 1980s (Corman 2005) until the last breeding attempt prior to those described here was recorded in 2006 (Rosenberg et. al 2017).

In Texas, the Rose-throated Becard was gradually extirpated as a breeding bird in the Lower Rio Grande Valley. This coincided with the dramatic changes in vegetation types from riparian woodland to thorn-forest and thorn-scrub, and the decline of large trees such as Texas ebony (*Pithecellobium ebano*), tepehuaje (*Leucaena pulverulenta*), and anacua (*Ehretia anacua*) in subtropical evergreen forests. This is mainly attributed to drought and a lack of river flooding due to dam construction (Brush and Cantu 1998). In addition, considerable riparian forest was cleared for agriculture in the 20th century (Brush 2000). The most recent successful nests in Texas were reported in 1999 (Brush 2000). Most sightings of Rose-throated Becards in Texas now occur in late fall and winter (Greenlaw 2020a).

LOCAL OBSERVATIONS

After an absence of many years, Rose-throated Becards have again begun nesting in Arizona along the Santa Cruz River. This river flows north from the United States/Mexico border and winds through a lush riparian strip that includes mature mesquites (*Prosopis* spp.), cottonwoods, and sycamores in Santa Cruz County. This is similar riparian habitat to where Rose-throated Becards are found in Mexico.

Sightings along the river began 27 January 2004, when an immature male Rose-throated Becard was seen at Tumacacori and described as the third winter record for this species in Arizona (Bieber 2004, NAB 2004). Over the next 5 years, 4 additional sightings occurred along the Santa Cruz River corridor. Many of these birds were seen during the late summer and early fall and were assumed to be part of postbreeding dispersal from Mexico (Greenlaw 2020b).

A new pattern began 3 January 2017 with a winter sighting of an immature male becard just south of Ron Morriss Park in Tubac during the "Tuesday Morning Bird Walk" (Rutledge 2017). As with many other Rose-throated Becard reports, the news quickly spread and almost overnight, birders from all over the country began searching for the bird on the Juan Bautista de Anza Trail as it parallels the Santa Cruz River. Unlike many sightings of the past decade, this bird hung around for an extended period and was frequently seen. It seemed to feed low in the shorter mesquites in the morning (Figure 7) and then as the sun rose higher, the bird was often seen near the tops of the cottonwoods where leaves were quickly appearing (pers. obs.). Over time, reports seemed to show it was slowly drifting south (eBird 2017).

Figure 7. Male feeding in mesquites south of Tubac, 16 January 2017. Photo by Bill Lisowsky

On 9 January 2017, a second Tubac becard was spotted, this time a female, which was then seen sporadically over the next month about 0.8 km from the initial sighting, along the Santa Cruz River north of Bridge Road. Several weeks later, a pair was reported close to this location.

On 10 January 2017, male and female Rose-throated Becards were seen in the general vicinity of the Tumacacori National Historic Park, just west of the Santa Cruz River, about 3 km south of Tubac (Suchanek 2017). They continued to be reported at this location until late March 2017 (eBird 2017). In late January, another male, judged to be an immature, and the presumed fifth bird of the winter, was seen nearly 5 km south of Tubac, again along the Santa Cruz River, just south of the well-known birding hotspot on Santa Gertrudis Lane.

During the remainder of the spring of 2017, sporadic reports from Tubac and Santa Gertrudis Lane continued (eBird 2017). Then, on 19 May, a female Rose-throated Becard was resighted at Tumacacori (elevation 987 m), with a pair observed the following day nest-building near the end of a drooping branch in a tall cottonwood about 12 m off the ground (Stejskal 2017). The nest was on the east side of the Santa Cruz River. Interestingly, a second nest was found soon thereafter hanging over the river not far away but based on its worn appearance was judged to have been built the year before. That nest is now known as nest #1. Given that becard nests are so distinctive, it provides conclusive proof that some birds were present, but unreported (publicly at least), during 2016. Some of the material from the prior year's nest was reportedly used to build the new 2017 nest, which is now referred to as nest #2 (Galvin and Galvin 2017).

Reports of the Tumacacori becard nest caught the attention of hundreds of birders throughout the summer of 2017, as the nest was visible from the west bank of the Santa Cruz River. A flagged "social" trail was established to guide people to the best viewing spot and the distance was such that the birds were undisturbed for the most part while being watched. At least one juvenile was fledged from this nest. In August 2017, another occupied nest (#3) was discovered nearby, this time farther north on the west side of the river, about 11 to 12 meters off the ground in a widely spaced group of mature cottonwoods. At least one young bird was seen here with 2 adults during September.

No other becard sightings were reported from the Tubac area during the summer of 2017. However, based on the discovery of these 3 nests from Tumacacori, local birders believed there were likely more undiscovered nests. Given the secretive nature of this species most of the year, the dense canopy in which they spend the majority of their time, and the limited access to the eastern side of the river, it seemed probable that more birds were present than was known. Having seen Rose-throated Becards build nests and raise young in 2017, I and others monitoring the nests also speculated as to whether the Santa Cruz birds might return to the area in 2018 and nest for a third straight year.

It didn't take long for an answer, as reports of Rose-throated Becards began with a male near Santa Gertrudis Lane 20 January 2018 (Tucson Audubon Field Trips 2018). A pair was then seen and heard repeatedly along the Santa Cruz River just north of the bridge in Tubac beginning 16 February 2018 (Lisowsky 2018a). Still midwinter, the river corridor trees did not yet have many leaves. As birders began following up on the reports, 2 nests believed to be from 2017 (#4 and #5) were discovered about 0.5 km north of the Tubac bridge, about 300 m apart.

In early April, a Tubac pair was seen constructing a new nest (#6), just north of the 2 that had been recently discovered. In May, another pair was discovered building a new nest (#7) on the east side of the river at Tumacacori. The Santa Gertrudis Lane male was unreported throughout the summer.

The Tubac pair raised and fledged 3 young at nest #6. Close to the time that the young birds left the nest, a second pair of becards was seen stripping the northernmost of the prior-year nests and building a new nest (#8) less than 15 m away (pers. obs.). Multiple observers confirmed that 2 distinct pairs were present. This nest produced at least 2 young, which were seen repeatedly in late August and September. Surprisingly, on 8 August, soon after the young birds fledged from nest #6, the presumed same pair (based on coloration, behavior, and location) was observed building yet another nest (#10) directly below that nest (Lisowsky 2018b), which then produced 2 more young in early

September (pers. obs.). Rose-throated Becards are believed to nest only once a year in Arizona unless there is a nest failure (Corman 2005), which would make this unconfirmed situation most unusual.

The Tumacacori nest (#7) apparently disappeared during the summer monsoons and breeding results for that nest are unknown. A new nest (#9) was discovered in August as it was being built just south of the nest #7 location on the east side of the river. This nest fledged 3 young birds, which remained in the area until October (pers. obs.).

Supporting the assumption that some nesting birds are likely to go undetected, another 2018 becard nest (#11) was found on 10 November 2018, several kilometers farther south along the Anza Trail, this time at a new birding hotspot, the Rancho Santa Cruz (Fray and MacFarland, 2018). Less than a week later, a male becard was seen on the property (Benesh 2018).

In 2018, at least 7 adults and 6 new nests were discovered, and a total of 10 young birds were fledged. Nesting success also continued through breeding seasons in 2019 and 2020 (Table 1).

Table 1. Rose-throated Becard nesting results (2016-2020), Santa Cruz River (SCR) corridor, Santa Cruz County, AZ.

Year	SCR Nests	Adults	Young	Total Birds	Remarks
2016	1	1	0	1	Nest found in 2017, presumed 1 adult
2017	4	6	2	8	2 nests found after nesting season in Tubac area
2018	6	7	10	17	1 nest found after nesting season
2019	5	10	8	18	At least 4 birds overwintered near Tubac in 2019; See Note #1
2020	3	6	8	14	See Note #2
Totals	19	30	28	58	

Notes

#1 There are additional reports of 3 adults and 1 juvenile (at least one presumed nest) during the summer of 2019, near Patagonia.

#2 There are additional reports of a nest with 2 adults and 2 juv. reported from Temporal Gulch in the summer of 2020, near Patagonia.

The new Santa Cruz River Rose-throated Becard breeding population is now well established, and it will be interesting to see how long it flourishes. It remains the only active nesting area in the United States. As of this writing in late January 2021, at least 3 birds are still present near Tubac and a previously unreported pair of nests has just been discovered.

DISCUSSION

Each year of observations has brought new insights and raises more questions. Here are some general observations offered for future consideration:

The winter range for becards that withdraw from Arizona nest sites is unknown and breeding birds were believed to arrive in May (Greenlaw 2020a). Since 2018, it appears that some Santa Cruz birds are present year-round, and nesting begins in early to mid-April (eBird 2018-2020). Is this related to changing weather patterns? This breeding population may offer some insight on this over time and is worthy of more study.

Overwintering males seem to spend most of their time not far from where nests are later built, suggesting some territorial behavior, particularly in late winter.

Most of the time, the pair begins building the nest together. The mates call frequently to each other while nest-building. More than 50% of the time, the males disappear after a week or so. Often, the male returns to help feed the young, but sometimes is never seen again.

On at least one occasion, 2 adult females were bringing food to nestlings at the same nest. This behavior is not mentioned in the "Birds of the World" account (Greenlaw 2020a), and it is unclear if this is a common occurrence or represents behavior expressed by individuals in an isolated population at the northern edge of their distribution.

The top of the nest is left unfinished until the nest is nearly complete, allowing easier and faster access to construct the upper sections. The entrance hole is almost always on the north side of the nest.

On 4 occasions, a second nest was built adjacent to or as part of a previous nest or very close by in the same tree (Figure 8).

Of the 19 nests discovered so far, each has been built near the end of a cottonwood branch. Only one has been on the west side of the Santa Cruz River and just 2 built on branches on the south side of the tree. Most nests fall to the ground the year after they are built, although some have lasted 4 years while others have fallen in their first year.

Figure 8. 2019 Nest in Tubac, built directly above 2018 nest, 2 July 2019. Photo by Jim Lockwood

Once the birds leave the nest, the female is most often seen with the juveniles and is easily located by the trill note she uses to call the young birds and their short contact (reply?) notes, which are given frequently.

As noted in Table 1, there have been several other breeding pairs of becards discovered nearby in 2019 and 2020. Those birds have been found along Sonoita Creek, not very far from where it feeds into the Santa Cruz River. Some of that area is private land and other parts are difficult to access and therefore less birded. Likely there are additional but undiscovered nests in these areas. Perhaps there is some connectivity between these populations? Are immature birds wandering along these waterways and set up new breeding territories?

Little seems to be written about conditions and environmental factors that lead to the development and disappearance of a nesting population. Is it related to the amount of monsoon rainfall, extended drought, below-average winter temperatures, habitat changes, and/or prior year breeding success? Has a change in watershed condition over time contributed to their return? These questions deserve more study.

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