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UNUSUAL NEST SITES OF SCISSOR-TAILED FLYCATCHERS (*Tyrannus forficatus*)

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Abstract—In 2015 and 2016, we documented two cases of Scissor-tailed Flycatchers (*Tyrannus forficatus*) nesting in metal corral mechanisms on the Wichita Mountains Wildlife Refuge in Comanche County, Oklahoma. Known to nest in a variety of natural and human constructed locations, these observations represent two novel locations being used by Scissor-tailed Flycatchers.

INTRODUCTION

Scissor-tailed Flycatchers (*Tyrannus forficatus*) are insectivorous (Bailey 1914, Bendire 1895, Oberholser 1974, Teather 1992) neotropical migrants, that winter in southern Mexico, Central America, and Florida, and breed in the south-central United States (Colorado, New Mexico, Nebraska, Kansas, Oklahoma, Texas, Missouri, Arkansas, and Louisiana) (Feitchtinger 2012, Fitch 1950, Oberholser 1974, Regosin 1998) into northeastern Mexico (Coahuila, Nuevo Leon, and Tamaulipas; Regosin 1998). Highest breeding densities occur in Oklahoma and Texas (Feitchtinger 2012, Regosin 1998, Sauer *et al.* 2011). In both breeding and wintering habitats, Scissor-tailed Flycatchers typically choose conspicuous perch locations (Bailey 1914, Foreman 1978, Regosin 1998, Sutton 1967, Teather 1992) in open habitats that facilitate their scanning for foraging (Feitchtinger 2012) and territorial defense (Fitch 1950). Scissor-tailed Flycatchers nest in savannas, prairies, bush patches, agricultural fields and pastures (Feitchtinger 2012, Foreman 1978, Nolte and Fulbright 1996, Oberholser 1974, Regosin 1998) with a variety of native and introduced trees used for nesting sites (e. g.

Quervus spp., *Ulmus* spp., *Celtis* spp., *Prosopis* spp.; Bendire 1895, Bailey 1914, Sutton 1967, Nolte and Fulbright 1996, Regosin and Pruett-Jones 1995, Regosin 1998). Scissor-tailed Flycatchers will also use a variety of man-made structures as nesting substrates in both rural and urban environments (Foreman 1978) including; utility poles, light poles, signs (Regosin and Pruett-Jones 1995), posts, power transformers, television antennas (Sutton 1967, Oberholser 1974, James and Neal 1986), windmills (Bent 1963), cell phone towers, and even inside of some man-made covered structures (e.g. tension fabric Quonset huts; Husak and Landoll 2013). The list of anthropogenic structures used by Scissor-tailed Flycatchers continues to grow. To our knowledge, there has been no previous documentation of Scissor-tailed Flycatchers nesting on or in any low-lying, all metal structures. Here we report two observations of Scissor-tailed Flycatchers using metal livestock corrals for nesting at the Wichita Mountains Wildlife Refuge in Comanche County, Oklahoma.

OBSERVATIONS

On 26 May 2015, while searching for other Scissor-tailed Flycatcher nests as part of an ongoing study, a banded female was observed building a nest directly atop a steel gate post. Located east of the Wichita Mountains Wildlife Refuge Visitor's Center (34.714699° N, 98.615388° W), the 2.1 m (external diameter 10.15 cm) post supported a gate adjacent to a livestock corral complex (Figure 1) and was filled

Figure 1. Livestock corral complex at the Wichita Mountains Wildlife Refuge used as a nesting site by Scissor-tailed Flycatchers in 2015 and 2016.

Figure 2. A gate post with a Scissor-tailed Flycatcher nest at the Wichita Mountains Wildlife Refuge in 2015.

with concrete to within 5.82 cm of the top, thus allowing for nesting material to be placed directly within the top portion of the post (Figure 2). This nest was 0.25 m north of a dirt road used for wildlife refuge personnel and research volunteers throughout the year. This location was surrounded by open oak/elm (*Quercus/Ulmus*) savannah, where other nesting pairs of Scissor-tailed Flycatchers were present and being

Figure 3. Sliding livestock gate with a Scissor-tailed Flycatcher nest at the Wichita Mountains Wildlife Refuge in 2016.

monitored. Scissor-tailed Flycatchers build a cup-shaped nest with a thick rim that generally ranges from 12.00 cm (Fitch 1950) – 15.24 cm in diameter (Bendire 1895). The 10.02 cm internal diameter of the gate post was apparently adequate for the female to build in. The nest had no cover and had minimal human traffic flow by refuge volunteers checking a nearby Brown-headed Cowbird (*Molothrus ater*) trap. Three nestlings fledged from this nest on 02 July 2015. In 2014, this female was banded and nested in a post oak tree approximately 200 m from this abnormal 2015 nest; this nesting attempt was also successful.

The second unusual nest was found in the same livestock corral complex on 22 May 2016. While searching for nests in the area, a female was observed taking nesting material and placing it in the frame of a sliding backup gate (Figure 3). This female repeatedly placed structural vegetation on the medial pole of the sliding gate for approximately 7-10 days, before getting the vegetation sufficiently supported between the sides of the steel frame of the sliding gate, made immobile at the time by bailing wire. The gate was 1.0 m wide and 3.4 m tall. The nest was 2.90 m high and had considerable coverage (100%) due to steel beams above the nest. Welded to the support structure that housed the rolling mechanism for the gate were four large steel plates, two on each side of the main base pole. These steel plates partially covered the two sides of the nest and provided lateral protection. The nest itself was positioned on top of the gate on a horizontal steel pipe that was between the steel plates of the gate frame which allowed for the gate to slide. The pipe had a diameter of 6.05 cm, and a space of 6.23 cm for the nest. Although this nest was covered on four sides, it failed on 15 June 2016 due to apparent predation. During the time that it was active, the female was observed incubating four eggs and both the male and female were observed defending the nest location.

DISCUSSION

Habitat characteristics in the immediate vicinity of a nest-site have direct implications for success for nesting birds (Martin and Roper 1988). Nest-site selection by adults can be a limiting factor for fitness as it directly affects potential losses of young due to predation and/or weather (Martin and Roper 1988, Nolte and Fulbright 1996). Scissor-tailed Flycatcher nest failure is high, and has been directly related to

nest cover (Nolte and Fulbright 1996, Rubenstahl *et al.* 2012), with placement likely being a compromise between accessibility by parents, cover from predators, and anchoring against weather (Rubenstahl *et al.* 2012). Both nests described here were at lower heights than what has typically been found for nests on the refuge between 2008 and 2016 (4.27 ± 0.10m; M. S. Husak, unpubl. data), but varied dramatically in nest cover from above (0% for the post and 100% for the gate). Locally cover above nests averages 43.92 ± 2.1% (M.S. Husak, unpubl. data). A number of bird species have been reported to use metal posts and gates, including Bewick's wren (*Thryomanes bewickii*, Kennedy and White 2013), House Sparrows (*Passeres domesticus*, E.A. Young pers. comm.), and the closely related Western Kingbird (*T. verticalis*, Kennedy 1915). While use of such structures can have negative impacts on nesting birds (Hatchcock and Fair 2014), it remains unclear if they have any effect on Scissor-tailed Flycatchers. From our small sample size (two), one nest was successful, and one failed, so more information is needed. While future studies may be able to address the effects of anthropogenic structures on this species, our observations do add to the list of opportunistic nesting substrates documented to be used by Scissor-tailed Flycatchers.

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