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Chimney Swifts (*Chaetura pelagica*) Nest in Tree Cavities in Arkansas

Richard E. Hines¹, Troy J. Bader², and Gary R. Graves^{3,*}

Abstract - We report the first records of tree-nesting *Chaetura pelagica* (Chimney Swifts) in Arkansas from the White River National Wildlife Refuge (WRNWR). These represent the only well-documented reports of tree-nesting swifts for many decades in the lower Mississippi Valley. The WRNWR may support a large population of tree-nesting swifts.

There have been few records of *Chaetura pelagica* L. (Chimney Swift) nesting in natural tree cavities since the 19th-century destruction of old-growth forest in eastern North America (Graves 2004) and no documented reports in the lower Mississippi Valley for many decades (Mengel 1966, Nicholson 1997, Palmer-Ball 1996, Robbins and Easterla 1992). From 2002 to 2008, we conducted searches for Chimney Swift nesting sites in relatively remote areas of the White River National Wildlife Refuge (WRNWR) in southeastern Arkansas. Here we report the discovery of two tree-cavity nests, the first confirmed records of tree nesting in Arkansas (Howell 1911, James and Neal 1986).

Study area. The WRNWR (62,373 ha) is comprised largely of bottomland forest (85%) that borders 87 km of the White River through four counties (Arkansas, Desha, Monroe, and Phillips). Most of the remainder is occupied by oxbow lakes, bayous, and sloughs. The refuge was lumbered intensively until the 1960s, and most of the remnant old-growth trees are hollow or broken-topped *Taxodium distichum* (L.) Rich (Bald Cypress) along waterways. Topography is relatively flat, ranging in elevation from 40 to 50 m above sea level. Access to most of the refuge is limited to waterways and a network of primitive roads and trails that may undergo seasonal flooding during the Chimney Swift nesting-period. The White River corridor is surrounded by cropland and low-density human settlement.

Search methods. The authors and several volunteers conducted opportunistic as well as focused searches for nesting Chimney Swifts in dozens of locations in WRNWR from late April through July, 2002–2008. Through trial and error, we discovered that potential Chimney Swift nesting activity on the heavily wooded refuge was most easily monitored from watercraft or from observation stations on the shores of oxbow lakes and bayous. Chimney Swifts appear to narrow their feeding activities to the area around their nesting or roosting sites during the hour before sunset. We located all but one of the roosting or nesting trees from watercraft at dusk.

Chimney Swift nests. Active tree-cavity nests were discovered at two sites. The first nest site was found on 13 April 2006 on Brushy Lake (34°25.96'N, 91°07.57'W), Monroe County, when three Chimney Swifts were observed entering a fissure in the trunk of a broken-topped Bald Cypress that was 15.5 m tall with a diameter of 100 cm (1.4 m above the waterline). The lower margin of the vertical fissure, which was 155 cm long and 6–9 cm wide, was 6.55 m above the water line (Fig. 1). Two Chimney Swifts were observed entering the fissure at 19:50 hr on 1 May 2006. The tree was inspected again on 13 May 2006, when T.J. Bader climbed the tree and was able to insert a small camera into the fissure. Photographs revealed that the trunk was hollow from the waterline to the top of the broken trunk. A single swift

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nest, containing three small chicks, was attached to the wall of the hollowed bole, $\approx 3.0\text{--}3.5$ m below the fissure, $\approx 3.0\text{--}3.5$ m above the water line, and $\approx 12.0\text{--}12.5$ m below the broken Bald Cypress top. While T.J. Bader was climbing the nest tree, four Chimney Swifts, including one carrying a twig, attempted to enter the fissure. This sighting suggested that a second nest was being built. Although the birds could reach the nest through the broken top of the trunk, we observed them entering and exiting only through the vertical fissure.

We discovered a second nest on 16 July 2008, after a Chimney Swift was observed exiting a cavity in a *Nyssa aquatica* L. (Water Tupelo) growing in Crowfoot Lake ($34^{\circ}23.79'N$, $91^{\circ}6.74'W$), Monroe County. The cavity opening ($32\text{ cm} \times 28\text{ cm}$) was formed by a decayed branch at a fork in the trunk ≈ 7.5 m above the water line (Fig. 1). T.J. Bader climbed the tree and photographed a nest containing three eggs. The nest was attached to the inside of the hollowed bole ≈ 4.5 m below the opening, and ≈ 3 m above the waterline. The external diameter of the trunk at the level of the nest was 79 cm.

Possible evidence of tree cavity-nesting was observed at five additional locations in the WRNWR. We observed a flock of eight Chimney Swifts flying close to a cavity in a Bald Cypress on the north end of Jones Lake ($34^{\circ}16.48'N$, $91^{\circ}06.30'W$) at 11:30 hr on 21 June 2008, although we could not confirm entry in the cavity. Six to eight Chimney Swifts were observed entering a Bald Cypress cavity on the south side of Belknap Lake ($34^{\circ}22.68'N$, $91^{\circ}6.68'W$) on 12 June 2008, and six swifts were observed going to roost on the north side



Figure 1. Nesting cavities of Chimney Swifts at Brushy Lake (left) and Crowfoot Lake (right), Monroe County, AR.

of Belknap Slough (34°22.68'N, 91°7.03'W) on 14 June 2008, but the observers could not locate the roost tree. On 19 June 2008, three swifts were observed entering a large Bald Cypress on Goose Lake (34°24.78'N; 91°6.88'W). Finally, four swifts were observed entering a cypress on the north side of Buck Lake (34°23.66'N; 91°6.98'W) on 20 June 2008. All suspected nesting trees were large (dbh > 125 cm) with decayed tops that were too dangerous to climb.

Our searches were conducted on just a few of the more than 300 natural lakes and sloughs in the WRNWR. This abundance of potential habitat suggests that the refuge, as a whole, may support a large population of natural cavity-nesting swifts. Refuge policy currently favors the protection of large Bald Cypress, including those classified as culls. Documented cavity nesting by swifts provides yet another reason to continue this policy.

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