Maryland Birdlife 65(1):26-30

Transmission Tower Nesting by American Kestrels (*Falco sparverius*) within a Suburban Corridor

David R. Smith

2203 Flag Marsh Road, Mount Airy, Maryland 21771
lacsmith12@comcast.net

According to the *2nd Atlas of the Breeding Birds of Maryland and the District of Columbia* (Ellison 2010), the American Kestrel (*Falco sparverius*) continues to breed within urban environments, including Baltimore, Maryland and Washington, District of Columbia. However, statewide, American Kestrels decreased in distribution by about one third (Ellison 2010) compared to the first breeding bird atlas (Smith 1996) conducted 20 years earlier. Many of these losses were from the Piedmont and Coastal Plain regions where urbanization and suburbanization have increased. The decrease in American Kestrel distribution is likely attributable to loss of suitable nesting and foraging habitat within these developed or developing areas. This note documents confirmation of breeding of four pairs of American Kestrels within a 15.9 km (9.9 mi) long transmission line right-of-way within a suburban corridor in northwestern Prince George's County, Maryland. The note also describes a novel nesting substrate for kestrels within the region.

The kestrels were observed during a routine raptor nest survey for proposed transmission line work on 10-11 June 2014. The transmission line corridor begins just outside the limits of the District of Columbia within a densely developed residential area. It extends north along the I-95 corridor to just south of Sandy Spring Road (MD Route 198) (Figure 1). The land use within much of this corridor is residential, commercial, and institutional development. However, the corridor crosses a portion of the Beltsville Agricultural Research Center and several forested stream valley parks. The approximately 60-m (197-ft) wide transmission right-of-way is comprised of two transmission lines. The corridor is maintained as upland meadow, emergent scrub, or shrub wetland within an otherwise built or forested landscape. These maintained open habitats within the transmission line right-of-way provide suitable foraging habitat for kestrels. During the raptor nest surveys, kestrels were observed nesting within the hollow cross-arms of the metal mono poles between University Boulevard (MD Route 193) and the Intercounty Connector (MD Route 200).

The southernmost nest occurred just south of the crossing of Northwest Branch. Another nest was located four poles northward (approximately 1 km [0.6 mi]),

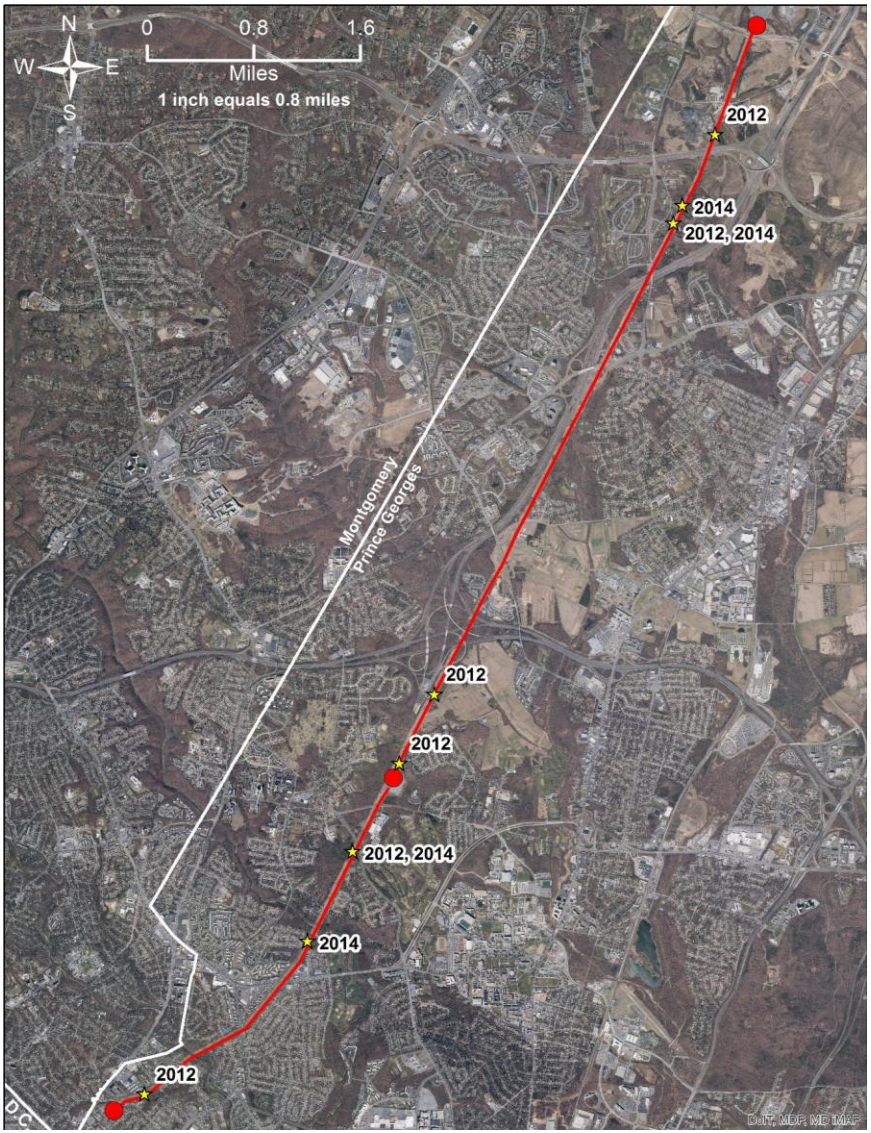

Figure 1. The transmission line project area showing locations of mono pole nesting American Kestrels in 2014 and likely nesting in 2012.

immediately south of Adelphi Road. The two northernmost nests were on successive poles 242 m (794 ft) apart, north and south of Aitcheson Road. All nests were in the hollow cross-arms of the metal mono poles.

Mono poles were approximately 27 m (90 ft) tall. Each pole contained three main cross-arms and a short top cross-arm (Figure 2). The lowest cross-arm was approximately 15 m (50 ft) above ground. The cross-arms are hollow, but contain a plate across the end of the arm that attaches to the mono pole (Figure 3). The metal plate has two, vertically arranged, round openings that are approximately 8 cm (3 in) in diameter—the recommended hole size for American Kestrel nest boxes (American Kestrel Partnership 2011). The cross-arms are bolted to the mono pole on metal brackets providing a space of approximately 13 cm (5 in) at the top and bottom for kestrel access.

At each nest location, male kestrels were observed perched on transmission wires near a mono pole. Confirmation of breeding was documented when the male kestrel captured prey and either took the prey directly to the nest location in the cross-arm or returned to the wire where the female exited the cross-arm nest location, took the prey, and returned to the cross-arm, presumably to feed young. Prey items were not identifiable to taxa in most instances, but small mammals were observed in at least two of the four feeding events.

Three of four nests were in cross-arms extending to the east. Two nests were within the second cross-arm up from the ground, while one each was within the lowest cross-arm and the third cross-arm from the ground. Beasley and Parish (2009) documented Southeastern American Kestrels (*Falco sparverius paulus*) nesting in the cross-arms of 230 kV transmission towers in Georgia. However, these towers were different in shape from the mono pole structures, and the birds were nesting in the open ended round cross-arms.

The current observations appear to represent the first documented nesting by American Kestrels in a mono pole transmission structure. While the nests were not followed to determine whether the young fledged successfully, this note at least provides evidence that American Kestrels can successfully hatch young within the cross-arm structure.

Also, a similar raptor nest survey along the same line in mid July 2012 documented fledged young kestrels with a pair of adults on the same transmission pole south of Northwest Branch where a nest was documented in 2014. The birds were not observed entering the cross-arm, but it does seem likely that the pair successfully nested in the same mono pole structure. The 2012 survey also found a kestrel pair one pole south of the pole just south of Adelphi Road where a pair nested in 2014, and an adult female near the 2014 nest just south of Aitcheson Road, suggesting that these birds have been using the same or nearby nest structures over several years.

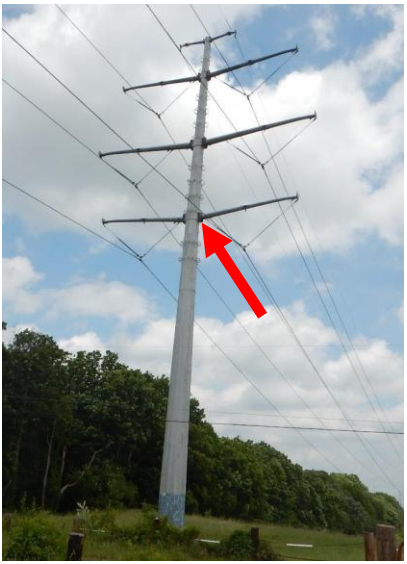

Figure 2. A metal mono pole with tubular cross-arms where American Kestrels are nesting along the Burtonsville to Takoma transmission line in northwestern Prince George's County, Maryland. Location of the kestrel access at the base of the cross-arm.

Figure 3. Detail of the 8-cm (3-in) holes providing American Kestrel nesting access to the hollow cross-arm.

Kestrels nested in 4 of 52 (8%) mono poles with suitable cross-arm nest sites. This density is considerably lower than observed by Beasley (2007) in Georgia where Southeastern American Kestrels nested in 284 of 471 (60%) towers with tubular cross-arms. However, the Beasley (2007) study area was in rural Georgia, while this observation occurred within a suburban location just outside the District of Columbia. Also, during the 2012 raptor nest survey, adult and fledgling kestrels were observed at four additional locations within the study area where the four nested in 2014 (Figure 1). If kestrels also nested in those locations in 2014, but were missed during the survey, this would double the observed density within the corridor.

The conclusion reached from these observations is that American Kestrels can and do successfully nest within the tubular cross-arms of metal mono pole transmission structures within a suburbanized area just outside the District of Columbia. The proposed work for which the raptor survey was completed is the replacement of the older lattice towers with metal mono poles similar to the ones the kestrels were using. This replacement will increase the number of potential nest sites for kestrels in the future.

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