

# Habitat Use of Monk Parakeets in Dallas and Tarrant Counties, Texas

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**ABSTRACT:** Monk parakeets (*Myiopsitta monachus*) are native to South America and were exported as popular caged birds during the legal pet bird trade. Due to accidental and intentional releases, monk parakeets established naturalized, self-sustaining populations in the United States (US). This species is the only member of the parrot family (Psittacidae) that builds large, communal twig nests and uses them for both breeding and roosting year-round. In the US, monk parakeets often construct their nests on anthropogenic structures, most notably electric utility structures. This nesting behavior causes economic damage and management strategies have been unsuccessful addressing this persistent problem. From 2010–2012, we investigated monk parakeet habitat use, food habits, and nest-site selection in Dallas and Tarrant counties, Texas, US, to determine which variables and spatial scales influenced the selection of electric stations as nest sites. We located >50 colonies and found 76% of the nest structures on electric utility structures. We tracked 20 radio-tagged birds at 3 sites and recorded 962 locations. We calculated 85% kernel density estimators and found no differences between sexes ( $P = 0.50$ ). Winter core activity areas ( $\bar{x} = 49$  m, 95% CI = 39 m–59 m) were significantly larger than summer ( $\bar{x} = 25$  m, 95% CI = 13 m–36 m) or fall ( $\bar{x} = 15$  m, 95% CI = 5 m–25 m). There were no differences in foraging distances between sexes ( $P = 0.72$ ). Winter foraging distances ( $\bar{x} = 579$  m, 95% CI = 510 m–648 m) were farther than summer ( $\bar{x} = 339$  m, 95% CI = 246 m–433 m) or fall ( $\bar{x} = 303$  m, 95% CI = 210 m–397 m). Monk parakeets utilized 33 plant species from 22 families as food sources. Southern live oak (*Quercus virginiana*; 20.3%) was the most important food resource. However, monk parakeet diet was diverse and seasonal, suggesting that food is not a limiting factor. Analysis of land use/land cover (LULC) classifications (pavement, building, canopy, grass, and water) on 3 scales (1250 m, 625 m, and 100 m) buffered around electric stations ( $n = 28$  pairs, with and without nests) revealed LULC impacted monk parakeet nest-site selection only at the 100 m scale. Pavement and building rooftops appeared important for pooled water for drinking and bathing. Further analysis at the local scale revealed that monk parakeets selected electric stations with flat, multiple-angled construction, small fenced enclosures, large canopy trees within 100 m, and an active colony within 2.5 km ( $AIC_c = 37.30$ ,  $w_i = 0.82$ ). Our results suggest that wildlife managers who want to prevent monk parakeets from nesting on electric utility structures should focus on modifying or replacing existing construction and redesigning future construction.

**Key Words:** habitat, Monk parakeets, nesting behavior, Texas

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