

Western Ecological Research Center

Publication Brief for Resource Managers

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Determining Nest Predators of the Least Bell's Vireo

Predation is the major cause of nest failure in open-nesting birds, but predation is rarely witnessed, and the identity of specific predator species is largely unknown. Yet knowledge of the active predator community, which can include birds, snakes, and mammals, is necessary for effective management of sensitive bird species and their habitat. In a recent study published in the *Journal of Field Ornithology*, USGS scientists Dr. Barbara E. Kus and Bonnie L. Peterson, and Dr. Douglas H. Deutschman, an assistant professor at San Diego State University, used three methods to determine nest predators of the least Bell's vireo, an endangered songbird restricted to southern California riparian woodlands.

Working at two rivers in northern San Diego County, the authors used point counts and tracking stations to identify potential bird and mammalian predators, and their relative abundance at vireo breeding sites. Specialized miniature video cameras trained on active vireo nests were used to document actual nest predators. Parental activity was quantified from video recordings to determine whether it contributed to nest predation.

The researchers documented the occurrence of ten potential predators at their sites. Coyotes had the highest abundance of the four mammalian species detected, while yellow-breasted chats, followed by Western scrub-jays, were the most abundant potential avian predators. Cameras documented a 48 % predation rate with Western scrub-jays as the major nest predator, responsible for 67 % of predation events. Other confirmed predators include Virginia opossum (17 %), gopher snake (8 %), and Argentine ants (8 %). Nests depredated by opossums were torn from their supporting branch, while those taken by other species were left intact. Identification of potential predators from track-

Management Implications:

- Two of the four predators recorded in this study are introduced species, while a third (scrub-jay), also the primary predator of vireo nests, is among the corvids increasing in abundance in urban areas as a result of subsidized foraging.
- Point counts and tracking stations were poor predictors of actual nest predators, but could be useful in measuring changes in abundance of known predators.
- Landscape features and human activities influencing predator distribution and abundance warrant further investigation to aid our understanding of how to manage endangered species in urban and agricultural areas.

ing stations and point counts demonstrated only moderate correspondence with actual nest predators. Parental behavior at the nest prior to depredation was unrelated to nest outcome.

Peterson, B. L., B. E. Kus, and D. H. Deutschman. 2004. Determining nest predators of the Least Bell's Vireo through point counts, tracking stations, and video photography. *Journal of Field Ornithology* 75(1):89-95.