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PREDATORS AND PRICKLY PARADIGMS: NESTING ECOLOGY OF BOBWHITES AND SCALED QUAIL IN WEST TEXAS

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ABSTRACT

Sporadic recruitment appears to be the impetus for the irruptive population patterns observed along the western edge of northern bobwhite (*Colinus virginianus*) range. We investigated hen survival, nest selection strategies, and reproductive success of sympatric northern bobwhites and scaled quail (*Callipepla squamata*) in west Texas. Radio-marked bobwhites, along with a smaller sample of sympatric scaled quail, were monitored during the spring and summer of 1994 and 1995. Predation was the major source of mortality, with mammals and raptors responsible for about 60 and 30 percent of the mortalities observed, respectively. We used TrailMaster camera systems to document the presence and behavior of various nest predators. Raccoons (*Procyon lotor*) appear to be the dominant nest predator in this area, accounting for over 80 percent of the nests destroyed. Photographic surveillance of artificial nests provides some clues for making objective assessments of predators involved in nest depredations. The amount and kinds of egg shell evidence at a nest site varied with egg size (chicken vs quail). We found egg shell evidence at 83 percent of nests using chicken eggs, but only at 3 percent of nests using quail eggs. We predict that snakes are overrated in their importance as a nest predator, when such diagnoses are based solely on the absence of physical evidence (i.e., no egg shells). Our results suggest that pricklypear (*Opuntia* spp.) was a key nesting microhabitat. Overall, 12 of 21 bobwhite and 8 of 12 scaled quail nests were located in pricklypear. Subsequent investigations revealed that nests situated in pricklypear were afforded higher survival, especially in more arid sites with less traditional nesting cover (e.g., *Schizachyrium scoparium*). Initial results with intensive, short-term mammal removal suggest that nest survival can be increased for about \$0.35 per hectare.

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