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FEATURE ARTICLES

PREDATION ON REAL AND ARTIFICIAL NESTS IN SHRUBSTEPPE LANDSCAPES FRAGMENTED BY AGRICULTURE

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Abstract: Clearing of shrubsteppe communities for agriculture has created a highly fragmented landscape in eastern Washington, a condition that has been shown to adversely affect nesting success of birds in some forest and grassland communities. We used artificial nests monitored by cameras to examine relative effects of fragmentation, distance to edge, and vegetation cover on nest predation rates and to identify predators of shrubsteppe-nesting passerines and grouse. Predation rate for artificial nests was 26% ($n = 118$). Fragmentation had a strong influence on predation rates for artificial nests, with nests in fragmented landscapes about 9 times more likely to be depredated as those in continuous landscapes. Daily survival rate (\pm SE) for 207 real nests of 4 passerine species also was greater in continuous (0.978 ± 0.004) than in fragmented (0.962 ± 0.006) landscapes, although pattern of predation between real and artificial nests was not consistent among sites. Artificial nests were depredated by Common Ravens (*Corvus corax*), Black-billed Magpies (*Pica hudsonia*), Sage Thrashers (*Oreoscoptes montanus*), least chipmunks (*Tamias minimus*), and mice. Most nests in fragments were depredated by corvids (58%), whereas only Sage Thrashers and small mammals depredated nests in continuous landscapes. Increased predation by corvids and lower nest success in fragmented landscapes may have played a part in recent declines of some shrubsteppe birds. Future research should measure annual reproductive success of individual females and survival rates of juveniles and adults.

Key words: *artificial nests, cameras, grouse, nest predators, nest success, passerines, shrubsteppe.*