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The Influence of Land-Use Change on Loggerhead Shrike Population Decline in Lincoln Parish

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Since the 1940's, the Loggerhead Shrike (*Lanius ludovicianus*) has faced population declines throughout its continental range. These population declines have been attributed to the spraying of biocides, changes in land-use, and increasing competition from human-tolerant species. Loggerhead Shrike numbers are declining in Louisiana as well and are a species of conservation concern. Louisiana Tech ornithology students collected information about shrike nest sites from 1976 - 1989. We used these data to determine if changes in land-use could explain the reduction in shrike population in Lincoln Parish. We used ArcGIS to plot the historic nest sites. Landscape features of 8ha nest site territories were characterized using four variables important for habitat selection in shrikes: perches, tree cover, open land, and water. The amount of area in each variable was compared between historical and current maps to determine land-use changes. No shrikes were found at the historic nest sites, so all nesting territories were used in our analyses. The amount of open area significantly decreased, while perches and tree cover significantly increased. Shrikes need open land and perches for hunting. Our results suggest that the amount of open area for hunting is critical for sustaining Loggerhead Shrikes more so than the number of perches. This information can be used to improve conservation of shrikes in our area.