

ABILITY OF GOLF COURSES TO PROVIDE LANDSCAPE CONNECTIVITY IN WESTERN NORTH CAROLINA

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Abstract

Forest fragmentation in the southeast is a major contributor to the loss of habitat for native species including interior forest songbirds. Golf courses are multiple use landscapes often containing large blocks of forested habitat which could provide connectivity across fragmented landscapes if interior forest conditions can be maintained in patches. This study evaluated 14 golf courses in western North Carolina to assess their potential to provide habitat connectivity. GIS was used to identify forested patches for sampling. Presence/absence of interior-forest birds was used as an indicator to of potential connectivity. Vegetation in golf course patches was classified by seral stage and structure and mapped to analyze vegetation patterns. The landscape analysis program Fragstats was used to analyze various patch metrics including: edge to interior ratio, shape, and proximity to adjacent forest. Data analyses showed a negative relationship ($p=0.0039$) between the amount of edge and presence of interior-forest birds. No statistically significant relationship between presence of interior forest birds and area ($p=0.0847$) or edge to interior ratio ($p=0.1064$) was found. The relationship of patch characteristics to interior-forest bird distribution, and the variation in patch characteristics among golf courses will be discussed. This study illustrates how spatial analysis can be used to evaluate the potential of natural features on golf courses to provide landscape connectivity. Designers can use this information to strategically arrange forest patch composition and structure to provide potential connectivity across fragmented landscapes through new and existing golf courses.

[Abstract Only]

In Proceedings of the 6th Southern Forestry and Natural Resources GIS Conference (2008), P. Bettinger, K. Merry, S. Fei, J. Drake, N. Nibbelink, and J. Hepinstall, eds. Warnell School of Forestry and Natural Resources, University of Georgia, Athens, GA.