An Automated Approach to Site Selection for Ecological Restoration in Fragmented Landscapes

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Abstract
Reducing fragmentation and increasing interior area of habitat patches are major goals of restoration programs. Most strategies to correct these issues are qualitative based on visual interpretation, rather than quantitative based on the spatial characteristics of patches. To circumvent this, we developed an approach that integrates domain knowledge into an objective and geometric analysis of the spatial characteristics of patches. A prioritization grid is then generated from this approach and used to evaluate prospective ecological restoration sites based on their capability to decrease fragmentation and increase interior area. An application of the method indicated a 25% improvement of the compactness ratio and overall saving of investment in restoration efforts.

Keywords
GIS, convolution, habitat fragmentation, interior area, ecological restoration

1082-4006/06/1202-98$5.00