

COMPARING MOSQUITO COMMUNITIES OF VARIOUS PATCH-MATRIX
LANDSCAPE COMBINATIONS IN CENTRAL MISSOURI, WITH
IMPLICATIONS FOR DEVELOPING MODELS TO FORECAST
ABUNDANCES OF IMPORTANT MOSQUITO TAXA

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ABSTRACT

Disease vector population densities, combined with their relationship to landscape characters, will clearly affect the proliferation of arboviruses to humans present in these landscapes. Advanced mapping techniques (e.g., GPS, land cover surveys) allow for the characterization of specific locations with regard to landscape, ecological matrix, and the presence of patches of different land cover types within matrices. Thus, coupling biological sampling for mosquito vectors of disease with certain environmental conditions within different landscape configurations may help approximate a model for predicting the risk of encountering these disease vectors.

Therefore, the goals of the research were to 1) describe the mosquito fauna of the various patch-matrix landscape combinations common in five central Missouri counties; 2) evaluate the temporal occurrence of these mosquito taxa; 3) assess relationships between regional weather factors and the occurrence and abundance of the mosquito fauna; and 4) categorize the risk of encountering mosquito vectors of disease based on patch-matrix landscape configurations, temporal mosquito abundance and diversity, and weather data.