

A PREDICTIVE MODEL FOR TALLGRASS PRAIRIE REMNANT DISTRIBUTION IN THE SOUTHWEST GRASSLANDS AREA OF WISCONSIN

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Abstract: Southern Wisconsin tallgrass prairie habitat, consisting of about 800,000 hectares in pre-settlement times, now occurs on less than 0.1% of the landscape as a collection of remnants embedded in a mosaic of farmland. Because most of the land cover is used for intensive agriculture or pasture, there has been a corresponding loss of regional biodiversity and other ecosystem services such as water quality and grassland bird and invertebrate habitat. Several land trusts along with the Wisconsin Department of Natural Resources seek to protect and restore the landscape structure of southwest Wisconsin by managing remnants and prairie pastures for grasslands birds and other species. These prairie remnants are often less than 5 acres, difficult to locate on aerial photographs, and typically occur on private lands; therefore it can be challenging to locate previously unknown remnants. In our study, we seek to model environmental and geographic factors associated with the locations of known prairie remnants in the Southwest Grasslands Area (SGA) of Wisconsin in order to create a predictive model of remnant distribution. While predictive landscape models are difficult to implement, they have the potential to be more efficient and accurate for locating remnant locations than visual interpretation of aerial photography and remote sensing imagery alone. This paper reports on several variables that we have found to increase the prediction of remnants on private lands in the SGA. Elevation and stony soils in particular may be key predictors of remnant location.