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Developing Probability Maps for Locating and Scouting Unprotected Areas of Gravel Hill Prairies on Rodman Soils along the Wabash River Valley Near Lafayette, Indiana

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Abstract:

The Gravel Hill Prairies (GHP's) of the Wabash River Valley are an endangered habitat in the state of Indiana and provide optimal growing conditions for a number of state endangered plants. Currently only three remnants are known to exist near Lafayette, IN, found by a previous study conducted in 1980 by Post, Bacone, and Aldrich (Proceedings of the Indiana Academy of Science, 1984, vol. 94: 457-464). These unique ecosystems have been found to occur almost exclusively on soils classified as Rodman Gravelly Loams and Strawn-Rodman complexes which occur predominantly along the outwash terraces of the Wabash River and its tributaries. Seven state endangered (S1) plant species, more typical of western shortgrass prairies, are documented on these soils. This research effort aimed to develop GIS maps to scout for and discover areas of unknown GHP remnants. The end goal of the project is to assist conservation groups in the development of a strategy to acquire and preserve previously undiscovered remnants. This project relied on spatial analyses with Geographic Information Systems (GIS) and numerous databases, including the USDA's gridded Soil Survey Geographic (gSSURGO), to develop maps and scouting plans. To date, GIS tools such as ArcGIS and extensive geospatial datasets such as gSSURGO have not been used to attempt and locate additional GHP remnants. Preliminary spatial analyses have located more than 200 areas of interest as potential remnants, encompassing more than 150 acres. Field work is currently being planned to ground-truth these analyses.