Woody Corridor Levee Protection Along the Missouri River: Mapping Areas That Can Benefit

Abstract

This study focused on finding areas along the lower Missouri River that could benefit from the incorporation of woody corridors. Woody corridors have been shown to reduce levee damage during floods up to 84% when they are at least 300 feet wide between the river bank and the levee. The model was created at the county level incorporating several variables: soils, land use, forest cover, the 500 year Missouri River floodplain, and existing levees. Three counties in Missouri were used: Boone, Carroll, and Osage.

Each county's model output was dissolved by soil type and corresponding acreage calculations were given. The different soil types provided information on the level of suitability of each site determined by the model (well suited vs. moderately suited). Areas in all three study area counties were found and range in total from 304 acres to 1,103.5 acres of land that could benefit per county. Accuracy of the model was determined by comparison of the output with satellite imagery of the study areas.