



WATER RESOURCES RESEARCH GRANT PROPOSAL

Project ID: IA1681

Title: Evaluating the Effectiveness of Restored Wetlands for Reducing Nutrient Losses from Agricultural Watersheds

Focus Categories: Wetlands, None

Keywords: Wetlands, Watersheds, Nutrient loss

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Congressional District: Iowa 3rd

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Abstract

What is proposed is the first quantitative analysis at the watershed level of the effectiveness of actual wetland restorations for reducing non-point pollution resulting from agricultural activities. Specifically, one major goal of this project is to determine why restored wetlands in the IGLW seem not be effective nutrient traps. Three possible reasons will be investigated. One, the restored wetlands may not be located in a given subwatershed where they can intercept significant amounts of agricultural runoff. Two, the restored wetlands in a given subwatershed may not be large enough to handle the loads of nutrients that they receive and most nutrients simply pass through the restored wetlands. Three, recently restored wetlands may not have the same capacity to remove nutrients as natural wetlands.

The other major goal of this project is to improve the effectiveness of future wetland restorations as nutrient traps. This will be done by using the data about restored wetlands and their physical characteristics to model nutrients movement and retention in subwatershed and restored wetlands to determine if nutrient exports from particular subwatersheds could be further reduced by altering the location and/or size of restored wetlands. The major product of this study will be a set of workable guidelines for siting, sizing, establishing, and managing restored wetlands within agricultural watersheds to minimize nutrient losses from them and to maximize the amount of land that can be kept in production.