CSREES National Water Quality Program

Title: Constructed Wetlands for Improving Water Quality of Agricultural Run-off in Northwest Louisiana

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Organization: LSU Agricultural Center

State: LA **Region:** Southern **Year of Funding:**

Theme: Water Conservation and Agricultural Water Management

Situation: Over 25,000 acres of agricultural cropland reside within Louisiana's water quality sub-segments 100402 and 100406. The Flat River and Red Chute Bayou drain these segments and are listed among the impaired waters bodies in Louisiana. The primary suspected cause of this impairment is crop production. Approximately 400 acres of discharge water from LSU AgCenter's Red River Research Station flows to the Flat River, making it an ideal location for demonstrating the potential of a constructed wetland in improving the water quality of discharge from agricultural lands in Louisiana.

Objectives: The specific goal of this project is to demonstrate the potential of a constructed wetland for improving the quality of water of agricultural discharge from over 400 acres of agricultural land prior to entering an impaired water body. An additional objective of this project is to develop an educational outreach program to inform agricultural producers of the benefits that can be derived from the construction of a wetland.

Methods: A constructed wetland that will accommodate discharge from 400 acres of agricultural land will be developed in the Red River Basin of Louisiana with the guidance of engineers from the NRCS. Parameters measured to determine the effectiveness of the system will include organic enrichment, low dissolved oxygen, nutrients, pesticides, suspended solids, siltation, and pathogen indicators resulting from non-irrigated crop production.

Partnerships: This projection will be conducted with cooperation from the USDA Natural Resources Conservation Service and the Louisiana Department of Environmental Quality.

Research: This project is in the beginning stages, but plans are in place that includes development and implementation of an educational outreach program to inform agricultural producers of the benefits that can be derived from the construction of a wetland.

Resources: The Louisiana State University Agricultural Center and the Louisiana Department of Environmental Quality are funding this project. The USDA Natural Resources Conservation Service is contributing technical support.

Results: This project is in the beginning stages. Success will be measured by the degree to which the quality of water discharged from agricultural land can be improved prior to entrance into the Flat River/Red Chute Bayou watershed.