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Locust Creek Healthy Watershed Initiative

The Locust Creek Healthy Watershed Initiative is sponsored by the Linn and Sullivan County Soil and Water Conservation Districts and will be implemented in 12 small watersheds encompassing 311,667 acres in Linn, Sullivan, Putnam, Chariton, and Livingston counties in north central Missouri. The goal of the Locust Creek Healthy Watershed Initiative is to implement wise soil and nutrient management, protect critical plant and wildlife habitat, and facilitate sustainable agricultural production in the Locust Creek and greater Mississippi River basins. Within the project area, Pershing State Park in Linn County features the largest complex of natural bottomland wetlands remaining in northern Missouri. This wetland complex contains numerous federal and state listed aquatic and terrestrial species of concern which have been adversely affected by excessive siltation from upstream soil erosion. The financial assistance obtained through the federal Mississippi River Basin Healthy Watersheds Initiative (MRBI) funding will be leveraged with existing state and local resources to accelerate technical assistance and implementation of conservation practices that will address these important local and regional aquatic resource concerns, in addition to those in the Gulf of Mexico. Critical watersheds within the project area have been identified which will be targeted more intensely for application of conservation practices. The success of this project in reducing nutrient and sediment runoff will be measured using watershed modeling and a three-tiered water quality monitoring strategy that includes edge-of-field assessments of runoff water.

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Mark Twain Lake - North Fork Salt Watershed Project: Integrated Conservation Practice Implementation, Monitoring, and Outreach

The Mark Twain Lake - North Fork Salt Watershed Project is a collaborative effort among federal, state, and local agricultural, natural resources, and environmental organizations to reduce runoff of nutrients and sediment from agricultural lands, which will be implemented from July 1, 2010 through June 30, 2015. This project will use a voluntary, incentive, and educational-based approach to encourage eligible producers to implement a combination of conservation practices designed to avoid, control, and trap water quality contaminants. The Shelby County Soil and Water Conservation District will lead this effort within eight small watersheds in Adair, Knox, Macon, and Shelby counties in northeast Missouri encompassing 198,773 acres. The North Fork Salt Watershed drains into Mark Twain Lake and the high nutrient loads have stimulated algal blooms in this reservoir. A public water supply cooperative uses Mark Twain Lake to provide three million gallons of drinking water daily to approximately 42,000 people in the area. The algal blooms in the reservoir require enhanced water treatment. Several past natural resource conservation and water quality research programs have been conducted in this watershed. This project will rely on these previous partnerships and the information obtained from these watershed programs to implement an effective conservation implementation, water quality monitoring, and education project. The success of this project in reducing nutrient and sediment runoff will be measured using watershed modeling and a three-tiered water quality monitoring strategy that includes edge-of-field assessments of runoff water.

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The Floodway Cooperative Conservation Partners Initiative

The Floodway project is a collaborative effort between several federal, state, and local conservation partners in the Bootheel area of southeast Missouri to address water quality problems involving excessive runoff of nutrients and sediment. This project will be led by the Stoddard County Soil and Water Conservation District and implemented from July 1, 2010 through September 30, 2014. The project area is located in two small watersheds in Stoddard, New Madrid, and Pemiscot counties that encompass over 75,000 acres and 330 miles of waterways. Of these 75,000 plus acres, there are approximately 71,565 acres of prime and unique farmland that will benefit from the implementation of conservation practices. The primary focus of this project will be in Stoddard and New Madrid counties, which have been identified as the critical areas for implementing the core and supporting conservation practices. Excessive runoff is a water quality concern on furrow irrigated ground in southeast Missouri, where producers apply on average between 12 to 36 inches of water per acre using surface irrigation systems. The primary natural resource concerns to be addressed include water quality problems caused by nutrient and sediment runoff, and soil erosion problems caused by irrigation runoff and gully, sheet, and rill erosion. The success of this project in reducing nutrient and sediment runoff will be measured using watershed modeling and a three-tiered water quality monitoring strategy that includes edge-of-field assessments of runoff water.

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Headwaters Medicine Creek and Buckworth Creek-Medicine Creek Cooperative Conservation Partners Initiative

The Headwaters Medicine Creek and Buckworth Creek-Medicine Creek Project is a collaborative effort between the Putnam County Soil and Water Conservation District (SWCD) in Missouri and the Wayne County SWCD in Iowa and their federal, state, and local partners, which will be implemented from July 1, 2010 through September 30, 2014. These partners have the common goal of reducing agricultural runoff of nutrients and sediments which are contributing to local water quality problems in Missouri and Iowa, and the hypoxic zone in the Gulf of Mexico. The Wayne and Putnam County SWCDs have a long, successful history of working with producers on agricultural land. This history dates back to 1946 for Wayne County, Iowa and 1963 for Putnam County, Missouri. The Headwaters Medicine Creek and Buckworth Creek-Medicine Creek watersheds are located in north central Missouri at the upper end of the Lower Grand Watershed. These two small watersheds consist of a total area of 55,359 acres with about one-third of the drainage area south of the Missouri-Iowa state line in Putnam County, Missouri. Two stream segments of East Fork Medicine Creek within the project area are on the Missouri Section 303(d) list of impaired waters for bacteria and sediment. The primary natural resource concerns to be addressed are soil erosion from streambanks and sheet, rill, and gully erosion from cropland. The success of this project in reducing nutrient and sediment runoff will be measured using watershed modeling and a three-tiered water quality monitoring strategy that includes edge-of-field assessments of runoff water.

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Butler County Water Quality Initiative

The Butler County Water Quality Initiative will be led by the Butler County Soil and Water Conservation District (SWCD) and is a collaborative effort between a multitude of federal, state, and local agricultural, natural resources, and environmental organizations to address water quality problems involving excessive runoff of nutrients. This project will be implemented from July 1, 2010 through September 30, 2014 within two small watersheds which encompass over 31,000 acres of land and 50 miles of waterways in Butler County at the headwaters of the Cache River Basin in southeast Missouri. Agricultural croplands within the project area make up 92% of the total land use. The primary crops grown are soybeans, corn, rice, and wheat; the majority of which are produced with surface-irrigation systems. In 2010, the Butler County SWCD Board of Supervisors, comprised of local elected citizens, conducted a needs assessment and identified resource concerns for the district. Among these resource concerns, the management of water (irrigation and drainage), soil (quality and erosion), and wildlife ranked at the top of the list. The conservation practices identified for this project will address the objectives of the Butler County SWCD needs assessment as well as the objectives of the Mississippi River Basin Healthy Watersheds Initiative (MRBI) Program. The success of this project in reducing nutrient runoff will be measured by monitoring the water quality of ditches within the upper and lower ends of the project area throughout the project period.

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West Sikeston Ridge Mississippi River Basin Initiative

The West Sikeston Ridge Mississippi River Basin Initiative is a collaborative effort between a multitude of federal, state, and local agricultural, natural resource, and environmental partners that have worked together for many years. The West Sikeston Ridge Watershed is located in southeast Missouri in the middle of the Little River Ditches Basin. The West Sikeston Ridge Watershed consists of a total of 27,175 acres with all of the drainage area within New Madrid County, Missouri. Land use within the West Sikeston Ridge Project is primarily agricultural, with approximately 89% of the land area in corn, cotton, soybeans, grain sorghum or other crops, 1% in pastureland, and 0.3% in woodland. The primary natural resource concerns to be addressed include sheet, rill, and gully erosion; irrigation management; nutrient management; and surface and ground water quality. A voluntary, incentive-based approach will be used to encourage eligible producers to implement designated core, supporting, and other conservation practices that will avoid, control, and trap nutrient and sediment runoff. These conservation practices will be targeted in identified critical areas within the West Sikeston Ridge Watershed. The success of this project will be determined using water quality monitoring which will detect changes in nutrient (nitrogen and phosphorus) and sediment concentrations and loadings from agricultural sources for the pre- and post-conservation practice implementation phases of this project. All water quality samples measured or used during the project will be collected in conjunction with estimates of agricultural runoff volumes or stream flows.

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Livingston and Carroll Lower Grand Watershed Project

The Livingston and Carroll Lower Grand Watershed Project is a collaborative effort between a multitude of federal, state, and local agricultural, natural resource, and environmental partners that have worked together for many years. These existing partnerships will help ensure the success of this project to reduce agricultural runoff of nutrients and sediments which are contributing to local water quality problems in Missouri and the hypoxic zone in the Gulf of Mexico. This project will be implemented from July 1, 2010 through September 30, 2014 within 19 small watersheds which encompass over 2,100 miles of perennial and intermittent streams and 392,739 acres of cropland, grassland and forest within the Lower Grand River Basin in north central Missouri. Land use within the project area is primarily agricultural, with approximately 39% of the land area in corn, grain sorghum, soybeans or other crops, 38% in pastureland, and 11% in woodland. A voluntary, incentive-based approach will be used to encourage eligible producers to implement designated core and supporting practices that will avoid, control, and trap nutrient and sediment runoff. All of the natural resource concerns addressed in this proposal have been identified for inclusion in a Resource Management System by the Natural Resources Conservation Service (NRCS). Watershed modeling and a multi-tiered sampling network will be used to determine how the implementation of integrated resource conservation practices in the Lower Grand River Basin affects stream water quality and nutrient export from the basin. Water-quality sampling stations will be sited to quantify and characterize water quality at field edges and in larger receiving stream segments of the Lower Grand River Basin.

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Chariton County Missouri - Lower Grand Water Quality Project "Show-Me Conservation"

The Chariton County Lower Grand Water Quality Project is located in north central Missouri and includes two small watersheds, Yellow Creek and Salt Creek, which encompass 64,636 acres. This project is a collaborative effort between numerous federal, state, and local organizations that have partnered with the Chariton County Soil and Water Conservation District (SWCD). These watershed partners have committed significant technical and financial resources to leverage the federal Mississippi River Basin Healthy Watershed Initiative funds and strengthen the overall conservation effort to improve water quality; maintain agricultural productivity; improve wildlife habitat; and protect, restore, and enhance wetlands. By focusing resources in these two small watersheds, this project will attempt to significantly reduce nutrient and sediment loss and demonstrate successful strategies for improving water quality in local streams and ultimately, in the Gulf of Mexico.

This project will focus on reducing nitrogen, phosphorous, and sediment losses to surface waters by implementing a "systems approach" to resource conservation. Both proven and innovative conservation techniques will be utilized to address water quality issues avoid, control, and trap nutrients and sediment, while maintaining agricultural productivity. The financial contributions from partners will strongly emphasize implementation of practices beneficial to wildlife as a key element in meeting water quality objectives. Likewise, substantial partner resources have been committed for wetland restoration, enhancement, and creation. The primary land uses being addressed as part of this proposal are cropland, hayland, and pastureland. Identified resource concerns to be addressed include surface water quality, soil erosion, soil deposition, soil quality, plant management, wetland loss, and riparian area management. An extensive outreach and education program will be implemented. This program will include an annual informational series with expert speakers to educate area landowners on innovative new technologies, methods, equipment, and practices that limit nutrient and sediment losses while maintaining or improving agricultural productivity. The success of this project in reducing nutrient and sediment runoff will be measured using watershed modeling and a multi-tiered water quality monitoring strategy developed in cooperation with the U.S. Geological Survey (USGS).

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Upper Little Medicine Creek Cooperative Conservation Partners Initiative

The Upper Little Medicine Creek Conservation Partners Initiative is a collaborative effort between a multitude of federal, state, and local agricultural, natural resource, and environmental partners that have worked together for many years. These existing partnerships will help ensure the success of this project in reducing agricultural runoff of nutrients and sediments which are contributing to local water quality problems in Missouri and the hypoxic zone in the Gulf of Mexico. This project will leverage MRBI funds with existing state and local resources in order to accelerate conservation efforts to improve water quality; maintain agricultural productivity; improve wildlife habitat; and protect, restore, and enhance wetlands. The project area is the Upper Little Medicine Creek watershed in north central Missouri. The project area encompasses over 33,000 acres of land with 125 miles of waterways. The area is largely agricultural with 12% cropland, 66% grassland/grazing, 17% forest/woodland, and 0.5% classified wetlands. A voluntary, incentive-based approach will be used to encourage eligible producers to implement designated core, supporting, and other conservation practices that will avoid, control, and trap nutrient and sediment runoff. The success of this project in reducing nutrient and sediment runoff will be measured using watershed modeling and three levels of water quality monitoring: edge-of-field, small watershed, and large watershed. The monitoring goal for each of these watershed scales is to detect changes in nutrient (nitrogen and phosphorus) and sediment concentrations and loadings from agricultural sources for the pre-and post-conservation practice implementation phases of this project.

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Goodwater Creek - South Fork Salt Watershed Project

The Goodwater Creek – South Fork Salt Watershed Project is a collaborative effort between federal, state, and local agricultural, natural resources, research and educational organizations to address water quality problems involving excessive runoff of nutrients and sediment. The project area is located within four small watersheds in Audrain, Boone, Callaway, and Monroe counties in northeast Missouri. This project will be led by the Audrain County Soil and Water Conservation District and implemented from July 1, 2010 through June 30, 2015. The project area encompasses over 122,000 acres of land and 400 miles of intermittent and perennial streams, and is mostly agricultural with over 60% cropland, 20% grassland/grazing, 7% forests, and 3% wetlands. Water from this watershed flows into the Mark Twain Reservoir, which serves as the public water supply for approximately 42,000 people, including residents of the target watersheds. Enhanced water treatment is often required as a result of the high sediment and nutrient loads in this reservoir after rainfall events. Long-term relationships between producers in the targeted watersheds and the Audrain County Soil and Water Conservation District (SWCD) and Natural Resources Conservation Service (NRCS) conservationists, combined with recent erosion problems resulting from several years of high rainfall, have stimulated a high level of producer interest in conservation practices. Typically, the number of applications for practices in the targeted area is three to four times higher than the funds available to obligate contracts with producers.

A voluntary, incentive based approach will be used to encourage the adoption of core, supporting, and other conservation practices by eligible producers. The Audrain County SWCD has conducted needs assessments within their district and identified the priority resource concerns for installing core and supporting practices during this project. The Audrain County SWCD will also work with the Farm Service Agency and the Private Land Conservationist to enhance riparian protection and wildlife habitat. Numerous water quality studies have been conducted in the Goodwater Creek Watershed by the U.S. Department of Agriculture – Agricultural Research Service and the University of Missouri. Monitoring and modeling approaches will be continued during the project period to document the success of the project to reduce nutrient and sediment loadings.

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Mud Creek/Mingo Ditch Cooperative Conservation Partners Initiative

The Mud Creek/Mingo Ditch Project is a collaborative effort between several federal, state, and local agricultural, natural resource, and environmental partners that have worked together for many years. These existing partnerships will help ensure the success of this project to reduce agricultural runoff of nutrients and sediments within the proposed project area located in the Bootheel area of southeast Missouri. This project will use MRBI funds, along with existing state and local resources, in order to accelerate conservation efforts to improve water quality, maintain agricultural productivity and improve wildlife habitat. A voluntary, incentive-based approach will be used to encourage eligible producers to implement designated core, supporting, and other conservation practices that will avoid, control, and trap nutrient and sediment runoff. These conservation practices will be targeted within two small watersheds in Stoddard County. The project area encompasses approximately 40,000 acres of land, which includes 2,700 acres of designated wetlands and 154 miles of waterways. Land use within the project area is 62% cropland, producing corn, rice, soybeans and other crops; 7% grassland; and 18% forest. The primary natural resource concerns to be addressed include water quality: nutrient, pesticide, sediment runoff; soil erosion: irrigation induced, gully, sheet & rill; and soil condition: nutrient and pesticide over-application. Monitoring will be conducted to document the success of the project to reduce nutrient and sediment loadings.

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Medicine & Muddy Watershed Conservation Initiative

The Medicine & Muddy Watershed Conservation Initiative is a collaborative effort between a multitude of federal, state, and local agricultural, natural resource, and environmental partners that have worked together for many years. These existing partnerships will help ensure the success of this project to reduce agricultural runoff of nutrients and sediments which are contributing to local water quality problems in Missouri and the hypoxic zone in the Gulf of Mexico. This project will be implemented over a five-year period from July 1, 2010 to June 30, 2015 within four small watersheds in Grundy County in north central Missouri. Land use within these four watersheds is primarily agricultural, with approximately 31% of the land area in com, grain sorghum or other crops, 51% in pastureland, and 11% in woodland. Land management on cropland in the area consists mainly of com/soybean rotations, with spring tillage and blanket applied fertilizer and nutrients, either with, or without a soil test. Livestock operations consist mainly of cow/calf operations with unrestricted grazing on pastures. However, some rotational grazing systems have been implemented. Producer interest and participation in conservation programs in the area has been high, but funding limited. Over the last three years, requests for assistance for both federal and state cost-share have exceeded available funds by over 300%. The success of this project in reducing nutrient and sediment runoff will be measured using watershed modeling and a three-tiered water quality monitoring strategy that includes edge-of-field assessments of runoff water.