

Mississippi River Basin Healthy Watersheds Initiative



Overview

To improve the health of the Mississippi River Basin, including water quality and wildlife habitat, the USDA Natural Resources Conservation Service is developing the Mississippi River Basin Healthy Watersheds Initiative (MRBI). Through this new Initiative, NRCS and its partners will help producers in selected watersheds in the Mississippi River Basin voluntarily implement conservation practices that avoid, control, and trap nutrient runoff; improve wildlife habitat; and maintain agricultural productivity.

These improvements will be accomplished through a conservation systems approach to manage and optimize nitrogen and phosphorous within fields to minimize runoff and reduce downstream nutrient loading. NRCS will provide producers assistance with a system of practices that will control soil erosion, improve soil quality, and provide wildlife habitat while managing runoff and drainage water for improved water quality.

The Initiative will build on the past efforts of producers, NRCS, partners, and other State and Federal agencies in the 12-State Initiative area to address nutrient loading in the Mississippi River Basin. Nutrient loading contributes to both local water quality problems and the hypoxic zone in the Gulf of Mexico. The 12 participating States are Arkansas, Kentucky, Illinois, Indiana, Iowa, Louisiana, Minnesota, Mississippi, Missouri, Ohio, Tennessee, and Wisconsin. MRBI will be implemented by NRCS through the Cooperative Conservation Partnership Initiative (CCPI), the Wetlands Reserve Enhancement Program (WREP), Conservation Innovation Grants (CIG), and other programs.

NRCS will offer this Initiative in fiscal years (FYs) 2010 through 2013, dedicating at least \$80 million in each fiscal year. This is in addition to funding by other Federal agencies, States, and partners and the contributions of producers.

The \$80 million will be in addition to regular NRCS program funding in the 12 Initiative States.

NRCS MRBI Funding *(in millions of dollars)*

	FY 10	FY 11	FY 12	FY 13
CCPI	\$50	\$50	\$50	\$50
WREP	\$25	\$25	\$25	\$25
CIG	\$5	\$5	\$5	\$5
Total	\$80	\$80	\$80	\$80

How Will MRBI Work?

Step One: Watershed Selection

The first step will be to select the participating watersheds in the fall of 2009. State Technical Committee members will provide input on the conservation objectives to be achieved. Each State will select up to three 8-digit hydrologic unit area watersheds as focus areas for the MRBI (8-digit hydrologic unit code (HUC) watersheds are 250,000 to 1,250,000 acres). When making these selections, States will consider future growth opportunities and providing opportunities for maximum program participation. States will use a consistent watershed evaluation process that includes the following information:

- Conservation Effects Assessment Project (CEAP) data.
- Spatially Referenced Regression On Watershed (SPARROW) attributes. SPARROW is a statistically based U.S. Geological Survey (USGS) modeling approach that attempts to explain in-stream measures of water quality in relation to upstream sources.
- State-level nutrient reduction strategy and priorities.
- State-level water quality data.
- Monitoring and modeling of nitrogen and phosphorous management in the watershed.



12 Participating States

Arkansas	Minnesota
Illinois	Mississippi
Indiana	Missouri
Iowa	Ohio
Kentucky	Tennessee
Louisiana	Wisconsin

Example Focus Area with Selected CCPI Proposals



NRCS will work to ensure applied conservation has a measurable effect on water quality nutrient issues at the edge of farm fields.

Step Two: Selecting and Implementing CCPI Projects

Using the Cooperative Conservation Partnership Initiative as the foundation for MRBI facilitates leveraging the investment from non-Federal sources and ensures coordination of NRCS efforts with other Federal, State, Tribal, and local efforts. CCPI offers a statutory (2008 Farm Bill) funding mechanism for targeting resources on a watershed basis across three programs: the Environmental Quality Incentives Program (EQIP), the Wildlife Habitat Incentive Program (WHIP), and the Conservation Stewardship Program (CSP).

Using CCPI as the principal delivery vehicle has several advantages; it:

- Targets three competitive programs to critical watersheds.
- Solicits and leverages partner contributions through a competitive proposal process.
- Allows the introduction of flexibilities not inherent in each program's normal delivery and operations.

Implementation

Early in FY 2010, NRCS will issue a CCPI request for proposals (RFP) specific to the MRBI and the 12 participating States. The CCPI RFP will provide for up to \$50 million dollars of financial assistance in FY 2010 toward the implementation of conservation practices in at least one watershed per State.

The \$50 million in CCPI dedicated to the MRBI may only be used on MRBI-related agreements; it will not be counted toward the 6 percent of set aside funds or acres required of States for CCPI. The RFP will allow 10 percent of the \$50 million to be managed at the national level for projects that are multi-state. The remaining 90 percent of the \$50 million will be managed at the State level to maximize flexibility in implementing conservation systems specific to different regions.

The RFP will allow partners to submit proposals within each State's focus areas. The proposals will receive a higher

ranking score if they are offered on the 12-digit HUC (10,000 to 40,000 acre) scale. This will allow multiple proposals to compete within the larger focus area, creating more opportunity for applicants. Proposals on this smaller scale will also allow the applied practices to provide for a concentrated effect and offer better opportunity to measure Initiative outcomes.

Proposals with watersheds limited to one State will be submitted to the appropriate State Conservationist. Proposals with watersheds that cross State lines will be submitted to the NRCS Chief.

Conservation Practices

The Initiative emphasizes a "systems approach" to address water quality resource concerns. A cornerstone of this approach is to use screening and ranking systems to focus program support on producers who agree to implement a system of practices that has been determined to address specific high-priority resource concerns in selected watersheds.



Core and Supporting Practices Approved for MRBI

CORE CONSERVATION PRACTICES	
Practice Code*	Practice Name
AVOIDING	
328 ^a	Conservation Crop Rotation
340	Cover Crop
590 ^b	Nutrient Management
CONTROLLING	
329	Residue & Tillage Management
330	Contouring
345	Residue & Tillage Management
346	Residue & Tillage Management
412	Grassed Waterway
554	Drainage Water Management
585	Stripcropping
600	Terrace
TRAPPING	
332	Contour Buffer Strips
390	Riparian Herbaceous Cover
391	Riparian Forest Buffer
393	Filter Strip
601	Vegetative Barriers
635	Vegetative Treatment Area
656	Constructed Wetland
657	Wetland Restoration
658	Wetland Creation
659	Wetland Enhancement
747	Denitrifying Bioreactor

SUPPORTING CONSERVATION PRACTICES	
AVOIDING	
313	Waste Storage Facility
317	Composting Facility
327	Conservation Cover
381	Silvopasture Establishment
382 ^c	Fence
472	Access Control
511	Forage Harvest Management
512	Pasture & Hayland Planting
528	Prescribed Grazing
558 ^d	Roof Runoff Structure
561	Heavy Use Area Protection
612	Tree & Shrub Planting
632	Solid/Liquid Waste Separation Facility
634	Waste Transfer
646	Shallow Water Management
CONTROLLING	
324	Deep Tillage
342 ^e	Critical Area Planting
362	Diversion
386	Field Border
410	Grade Stabilization Structure
430 ^f	Irrigation Water conveyance, Pipeline
447	Tailwater Recovery
449	Irrigation Water Management
484	Mulching
533	Pumping Plant
587	Structure for Water Control
606	Subsurface Drainage
607	Surface Drainage
620 ^g	Underground Outlet
638	Water & Sediment Control Basin

SUPPORTING CONSERVATION PRACTICES	
TRAPPING	
342	Critical Area Planting
350	Sediment Basin
356	Dike
410	Grade Stabilization Structure
533	Pumping Plant
587	Structure for Water Control
638	Water & Sediment Control Basin

- * Practice codes relate to the NRCS Field Office Technical Guide (National Conservation Practice Handbook).
- Must add at least 3rd crop to the rotation.
 - Fall application will give lowest ranking.
 - Only for use with 511, 512, and 528.
 - Only for use with 313, 317, 561, 632, 633 and 634.
 - As a component of wetlands, construction, or earth-disturbing practice.
 - In conjunction with 634 (waste transfer).
 - As a supplement to terraces and sediment basins.

NOTES:

Water management practices such as underground outlets will be used in combination with proper water filtering practices to ensure nutrient trapping.

State Conservationists will have reasonable flexibility to make adjustments to this practice listing to meet State and local needs.



Instead of addressing one aspect of a resource concern by implementing one practice, participants will implement a system of practices, that is, multiple practices and management techniques that work together to address the nitrogen and phosphorous generated from agricultural runoff. The nationally approved practices selected for this Initiative address priority resource concerns using recognized methods of avoiding, trapping, and controlling pollutants. Used together, these three methods will address the entire nutrient system. NRCS has approved a number of core and supporting practices (see table on page 3) to be included in the Initiative. These practice options allow flexibility for producers in different States and/or with different types of agricultural operations while focusing resource and technological solutions on the primary goals of minimizing runoff and leaching and reducing downstream nutrient loads.

Practice Selection Process

A team of NRCS technical specialists worked together to create the list of core practices most important in reducing downstream loading of nitrogen and phosphorous in the Mississippi River Basin. State Conservationists were then asked to recommend supporting practices that would address the primary water quality concerns most effectively and efficiently within their State. NRCS technical specialists then reviewed and approved both the core and supporting practices, taking into consideration which practices would be the most effective at managing nutrients within fields to minimize runoff and loading of nitrogen and phosphorous to water bodies.

Ranking

To ensure efforts are targeted toward areas that will provide the greatest impact on nutrient runoff and leaching in the Mississippi River Basin, different ranking criteria for selecting proposed watersheds within States as well as criteria for choosing proposals will be advertised and adopted. The following ranking suggestions are general, and will require further refinement by each individual State.

Selecting Watersheds Within States

NRCS will give special consideration to proposed watersheds within States that will have the largest impact on reducing downstream nutrient loads, including proposals that:

- Show the greatest promise for delivering applied conservation within the watershed focus areas as defined in step one.
- Target a 12-digit HUC watershed, or smaller, within the focus areas (the 8-digit watersheds chosen by States) and leverage the non-Federal financial and technical resources coordinated with local, State, or Federal efforts.
- Work within a watershed that has an existing monitoring system to measure practice implementation outcomes.

Selecting Proposals

Although NRCS will not require a specific number of the approved core practices to be included in proposals, a higher priority will be assigned to proposals that apply these core practices in a systems approach. NRCS will develop scenarios to make practices more effective. Proposals may be ranked higher than others if they, for example:

- Include multiple core practices from each category (avoiding, controlling, and trapping).
- Implement a practice that will complete a system or will put additions onto a completed system.
- Include drainage water management practices for land that is drained.

Payments

Payments through CCPI are for implementation of core and supporting conservation practices approved in the Field Office Technical Guide that assist the producer in meeting the goals of MRBI. Payments are not authorized for activities or practice components that are solely production related and not linked to an identified resource concern. Payments will be based on payment schedules for eligible conservation practices.

Payment schedules are based on the estimated cost incurred in performing or implementing conservation practices and the estimated income forgone by



the producer. Forgone income includes the annual net income lost from a change in land use or land taken out of production and the opportunity cost of accepting less farm income in exchange for improved resource conditions resulting from the practice. Forgone income may be a one-time cost during the installation year or may be an annual cost occurring after the installation year, such as taking land out of production.

Payment schedules documenting payment rates for MRBI will be reasonably consistent across State lines, and States will coordinate the development of cost data for payment schedules for practices offered across State boundaries.

Payment schedules may account for the acquisition of technical knowledge associated with conservation implementation. This would include cash expenditures to obtain direct technical assistance, over and above what NRCS (or a similar agency) would typically provide. These expenditures could include costs to the land manager of acquiring technical knowledge through an educational course to operate, manage, or maintain a practice or activity that is "new" to the producer. These costs may also include hiring a technical consultant or specialist to assist in implementing the conservation practice.

Step Three: Adding Other Programs

Once there exists a clearly defined watershed supported by local and State partners through an established program and agreement with NRCS, MRBI will provide additional program opportunities, including WREP and CIG.

Wetlands Reserve Enhancement Program

WREP enables NRCS to enter into agreements with a State, non-governmental organization (NGO), or Tribe to carry out special projects that will advance the restoration, protection, or enhancement of wetlands on private and/or Tribal lands.

As part of MRBI, NRCS will provide \$25 million annually in WREP in FYs 2010 through 2013 in selected MRBI watersheds. WREP will operate through an RFP in the Federal Register, much like CCPI. Proposals will be submitted to the appropriate State Conservationist for initial review, and recommended proposals

will be provided to the Chief by the State Conservationists for nationwide ranking and final selection.

WREP will offer opportunities for the restoration of wetland ecosystems. These wetlands can be used to filter surface waters near the watershed outlets, while providing additional resource benefits such as wildlife habitat.

WREP will facilitate opportunities that are identified within the MRBI's 12 States. WREP also provides an opportunity for implementing a reserved rights pilot where grazing is consistent with the long-term wetland protection and enhancement goals of the project. Participants in the reserved rights pilot are subject to the general eligibility and program administration requirements of the Wetlands Reserve Program (WRP). However, under the reserved rights pilot, landowners who wish to reserve grazing rights in the easement deed or 30-year contract must comply with an NRCS-approved WRP plan of operations that includes the location, timing, intensity, frequency, and duration of grazing.

NRCS intends to compile, evaluate, and make available aggregate information acquired through its monitoring of projects enrolled through WREP in general, and the reserved rights pilot specifically, to ascertain the benefits gained through these programmatic options.

Conservation Innovation Grants

Similar to the Chesapeake Bay component of CIG, a special CIG category will be designated for MRBI. CIG affords a competitive opportunity to match funds and collaborate with non-Federal agencies, NGOs, Tribes, and individuals on innovative projects (technologies and/or approaches) that will further the objectives of the Initiative. A designated funding pool of \$5 million annually through FY 2013 will be established to fund innovative projects related to nutrient management, drainage water management, bio-filters, market-based approaches to conservation on a watershed scale, and other high-priority interest areas where field trials and demonstrations are needed and/or scaling up of previous proven research to a farm- or watershed-scale is desired.



Other Programs

The Conservation Stewardship Program (CSP) will also provide opportunities for agricultural producers to participate in an on-farm nutrient monitoring program as a CSP enhancement, while providing beneficial data for measuring outcomes. In addition to NRCS programs, many other Federal, State, and local programs could be focused on the designated watersheds. This could include the Farm Service Agency (FSA) Conservation Reserve Program (CRP) and the Environmental Protection Agency (EPA) 319 Program. CRP includes the Conservation Reserve Enhancement Program and various Continuous CRP options.

Step Four: Implementation

For CCPI, WREP, and CIG, implementation will extend beyond FY 2013, because funds are obligated through contracts and agreements for multiple years. The number of new watersheds added each year through FY 2013 under CCPI will depend on how much of each year's new \$50 million is needed to meet prior-year commitments in previously selected proposals.

Step Five: Outcome Measurement

Estimates of nitrogen and phosphorous load reductions will be needed. The ability to determine the benefits of the practices applied through MRBI is complicated by three major factors:

- The need to establish a baseline for the participating watersheds.
- The lag time between practice application and measurable results. Studies report this gap ranges from 2 to 15 years depending on the intensity of conservation efforts.
- The density and geographic location of acres treated relative to the acres contributing to nutrient loading.

With a minimum of one 8-digit HUC for each of the 12 States, it is proposed that a tiered approach—at three scales, utilizing a combination of monitoring data and modeled data—be used to validate estimates of benefits from the Initiative. The scales and overview of actions are described here:

Field Scale

At this scale, validate the Agricultural Policy Environmental Extender (APEX) model from on-farm and/or an existing research facility. Part of the watershed assessment activities of CEAP may contribute, as will monitoring data from partners such as State water quality

agencies, the Agricultural Research Service, and universities.

1. Gather existing field-scale research on the effects of practices applied through the Initiative.
2. Establish paired-comparison studies for selected practices or systems of practices.

Small-Watershed Scale

To monitor at the 12-digit HUC:

1. Access data from CEAP watershed studies or existing monitoring data from partners such as State water quality agencies and universities. Compare results to modeled results using APEX and the Soil and Water Assessment Tool (SWAT).
2. Partner with USGS and other water quality monitoring entities in 12-digit HUCs to establish a loading baseline. Concentrate practice implementation sufficient to cover a significant portion of cropland acres.

Large-Watershed Scale

At the 8-digit HUC where practices will be applied in a focused manner (for example, targeting the most vulnerable acres for losses), run the SWAT model with APEX model estimates for acres treated. Utilize CEAP national assessment estimates and procedures for baseline and Initiative benefits at the large scale.

It will be necessary to establish monitoring criteria within the RFP specific to the type of monitoring activities conducted, number of sites per watershed at each scale, number of times monitoring activities will occur annually, reports provided to NRCS for data collection, and various other means to track nitrogen and phosphorous reduction throughout the watershed areas.

The smaller-scale benefit validation will provide the science-based support for benefit estimates at the larger scales. Much of this work has been initiated by the watershed and national assessment portions of CEAP, but may need to be augmented by the above-stated activities.

The Role of Partners

In addition to providing input for watershed selection criteria and the processes used to implement MRBI, partners will have a crucial role in encouraging and supporting producer participation. Partners' involvement will be key in a variety of ways, including:

- Providing information and conducting education and outreach activities.
- Forming agreements to provide staffing for technical assistance and education activities.
- Joining the State Technical Committee to provide input for focus area and watershed selection.
- Submitting proposals for CCPI, CIG, and WREP or partnering with a group submitting a proposal.
- Targeting their agency's or organization's programs toward the Initiative's watersheds.
- Assisting with monitoring, evaluation, and assessment.

Specifically, interested partners at the national level are asked to:

- Designate a point of contact for collaboration with NRCS.
- Provide NRCS a description of how they would like to collaborate (funding, technical assistance, outreach, etc.) with MRBI.

Contact Information

Partner responses should be emailed to Thomas Christensen, Central Regional Conservationist, at thomas.christensen@wdc.usda.gov.