Mississippi River Basin Healthy Watersheds Initiative (MRBI)

OVERVIEW

Scott Edwards
State Resource Conservationist
USDA - Natural Resources Conservation Service
MRBI Objectives

• Improve the health of the Mississippi River Basin by:
  – Working with producers to help them voluntarily implement conservation practices which:
    • Avoid, control and trap nutrient runoff
    • Restore/enhance wildlife habitat
    • Maintain agricultural productivity

Mississippi River Basin Healthy Watersheds Initiative
Conservation Systems Approach

• A conservation systems approach that implements multiple practices and management techniques to address water quality concerns due to nutrient and sediment runoff.

• Practices
  – Core
  – Supporting
  – Conservation Activity Plans

Mississippi River Basin Healthy Watersheds Initiative
CEAP – Conservation Effects Assessment Project

Achieving Effective Conservation
Upper Mississippi River Basin

What CEAP Reveals —

✓ Conservation practices work
✓ Comprehensive planning is needed because suites of practices work better than single practices
✓ Targeting critical acres improves effectiveness significantly

Conservation Practices Work

Compared to no conservation practices:
Sediment loss reduced by 69%
Total phosphorous loss reduced by 49%
Total nitrogen loss reduced by 18%
Pesticide risks to human health reduced by 48%
Avoiding, Controlling, Trapping (ACT)

• Avoiding
  – Nutrient Management
    • Rate, Timing, Form, Methods

• Controlling
  – Residue & Tillage Management
  – Drainage Water Management

• Trapping
  – Buffers
  – Wetland designed for nutrient removal

Mississippi River Basin Healthy Watersheds Initiative
CORE CONSERVATION PRACTICES

AVOIDING
328 - Conservation Crop Rotation
340 - Cover Crop
590 - Nutrient Management

CONTROLLING
329 - Residue & Tillage Management - No Till/Strip Till
330 - Contouring
345 - Residue & Tillage Management - Mulch Till
346 - Residue & Tillage Management - Ridge Till
412 - Grassed Waterway
554 - Drainage Water Management
585 - Stripcropping
600 - Terrace
635 - Wastewater Treatment Strip

TRAPPING
332 - Contour Buffer Strips
390 - Riparian Herbaceous Cover
391 - Riparian Forest Buffer
393 - Filter Strip
601 - Vegetative Barriers
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 - Fence
- 472 - Access Control
- 511 - Forage Harvest Management
- 512 - Pasture & Hayland Planting
- 528 - Prescribed Grazing
- 558 - Roof Runoff Structure
- 561 - Heavy Use Area Protection
- 612 - Tree & Shrub Planting
- 632 - Solid/Liquid Waste Separation Facility
- 633 - Waste Utilization
- 634 - Waste Transfer
- 646 - Shallow Water Management

## CONTROLLING
- 324 - Deep Tillage
- 342 - Critical Area Planting
- 362 - Diversion
- 386 - Field Border
- 410 - Grade Stabilization Structure
- 447 - Tailwater Recovery
- 449 - Irrigation Water Management
- 484 - Mulching
- 533 - Pumping Plant
- 587 - Structure for Water Control
- 606 - Subsurface Drainage
- 607 - Surface Drainage
- 620 - Underground Outlet
- 638 - Water & Sediment Control Basin
- 430FF - Irrigation Water Conveyance, Pipeline

## 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
MRBI Geographic Scope

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

South Dakota was added in 2011.
How Focus Areas Were Selected

• In consultation with State Technical Committees
• 8-digit HUCs
• Utilized a consistent watershed evaluation process including:
  – Information from CEAP
  – SPARROW
  – State-level nutrient reduction strategies and priorities
  – State-level water quality data
  – Available monitoring and modeling of nitrogen and phosphorus management
Mississippi River Basin Healthy Watersheds Initiative

Total Acres for
Boeuf Watershed:
1,353,471.64
Bayou Macon Watershed:
286,295.93
Mermentau Watershed:
890,572.56

- Lower Mermentau
- Bayou Macon
- Bayou Boeuf
- Parish Boundary
- Interstate
FY 2010
- 12 States
- 41 Focus Areas

FY 2011
Added two focus areas:
- One in SD
- One in MS

Now 13 states and 43 focus areas
Project Area Selection

- Proposals must address one or more 12-digit HUC watersheds within a designated 8-digit HUC focus area.
MRBI Funding - NRCS

- 80 Million Dedicated additional funding, by Program
  - $50 million for Cooperative Conservation Partnership Initiative (CCPI)
  - $25 million for Wetlands Reserve Enhancement Program (WREP)
  - $5 million for Conservation Innovation Grants (CIG)

This is in addition to regular NRCS program funding in the Initiative states

Mississippi River Basin Healthy Watersheds Initiative
CCPI

- Offers a statutory (2008 Farm Bill) funding mechanism for targeting resources on a watershed basis through existing programs. For MRBI, uses:
  - Environmental Quality Incentives Program
  - Wildlife Habitat Incentive Program
  - Conservation Stewardship Program
- Leverage non-federal sources
- Coordination with other efforts
- Funds do not go to partners, but to landusers through program contracts
100 plus proposals

35 of 41 focus areas

58 projects through CCPI for approximately $23 million in financial assistance

18 WREP projects for approximately $9 million in financial assistance

12 CIG projects for approximately $2.9 million
Mississippi River Basin Healthy Watersheds Initiative

NE Delta – Upper Joe’s Bayou

DEQ – Implementation Plan – Watershed Coordinator

20,003 total acres

Head water of Joe’s Bayou

45 farmers identified – interest level high

Healthy Watersheds Initiative
Bouef River
South of Monroe
2 – 12 Digit Watersheds
53,138 total acres
WREP – Companion project
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FY 2011 RFP

• Published in Federal Register in November 2010
• Project proposals were due January 28
• Made available up to:
  – CCPI – $15 million
    • EQIP – $9 million   WHIP – $500,000
    • CSP – 278,000 acres
  – WREP – $25 million
• The proposals have been reviewed and awaiting final approval
• CCPI has a 6 percent statutory limit – 25% reduction
• CCPI is also used for non-initiative projects nationwide.
2010 Contracts

• Obligated more than $35 million in MRBI project areas in 2010

• 33 contracts contain the new monitoring and evaluation conservation practice for edge-of-field monitoring

• 799 Monitoring and Evaluation

Mississippi River Basin Healthy Watersheds Initiative
Measuring Outcomes

• Monitoring and Evaluation
  – Adopted a three-tiered monitoring and evaluation approach
    • Edge-of-Field
    • In-stream
    • At the 12-digit HUC level
  – Developed an Interim Conservation Practice Standard for Edge-of-Field Monitoring (799)
    • Conducted a review of first year of use
    • Lessons learned
Collaboration With Others

• Collaborating with EPA, USGS, ARS, USACE, LA DEQ

• Goal: Show the effects that the implementation of conservation systems have on nutrients leaving the field

• BMP installation began 2010 monitoring programs are lagging behind – Funding uncertain
Monitoring – Bayou Lafourche

- First flush - collect 200 mL every 5 minutes (40 minute; 1600 ml total) Collect 50 mL every 15 minutes (4 hrs; 800 mL) Replace bottles to collect 50 mL every 15 minutes for another 6 hours or until the rain event is concluded

Only 1 autosampler is needed for this scheme. An area velocity flow meter will also be installed in a culvert-pipe receiving convergent runoff from the field. This will allow for calculation of flow-weighted averages for comparison between baseline and after conservation practice installation.

The parameters to be measured and the 3 monthly time frames and number during each time frame (i.e., 10 runoff events per time frame) will be the same as described in the protocol.

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Monitoring – Bayou Chene

Each field (Conventional and BMP) will need to have a single water source and outflow (riser) location for each field. The irrigation (inflow) pipe providing water to each field will be equipped with totalizing propeller flow meters and flow volumes will be recorded weekly throughout the growing season. On the outflow of each field a monitoring flume and flow system will be installed. Flow volumes will be recorded every minute and stored by a datalogger throughout both the fallow and growing seasons.

**Weekly grab samples** will be collected at pre-determined locations within the field and flow-weighted storm samples will be collected at the outlet of each field using ISCO automated water samplers.

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**Mississippi River Basin Healthy Watersheds Initiative**
Strategic Watershed Action Teams SWATs - MRBI

• Accelerate conservation activities through:
  – Outreach
  – Conservation Planning
  – Practice Implementation
  – Follow-up

• 23 different partners will provide matching funds, helping to staff teams that will work in approximately 30 high priority watersheds

• $4 million NRCS + $2.16 million partner match in Contribution Agreements

• Approximately 41 staff years each year over the next 3 years.
Next Steps

• Address Lessons Learned from FY 2010

• Promote adaptive management strategies

• Partners have a crucial role in encouraging and supporting producer participation.

• Engaging all partners for the 3 tiered monitoring effort. Commitment has not reached watershed level

Mississippi River Basin Healthy Watersheds Initiative
Questions?

Scott D. Edwards  
State Resource Conservationist

USDA-Natural Resources Conservation Service  
3737 Government Street  
Alexandria LA 71302  
Office: (318) 473-7761  
Cell: (318) 623-1458  
Email: scott.edwards@la.usda.gov

Check us out on the Web at: http://www.la.nrcs.usda.gov

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