



# **Mississippi River Basin Healthy Watersheds Initiative (MRBI)**

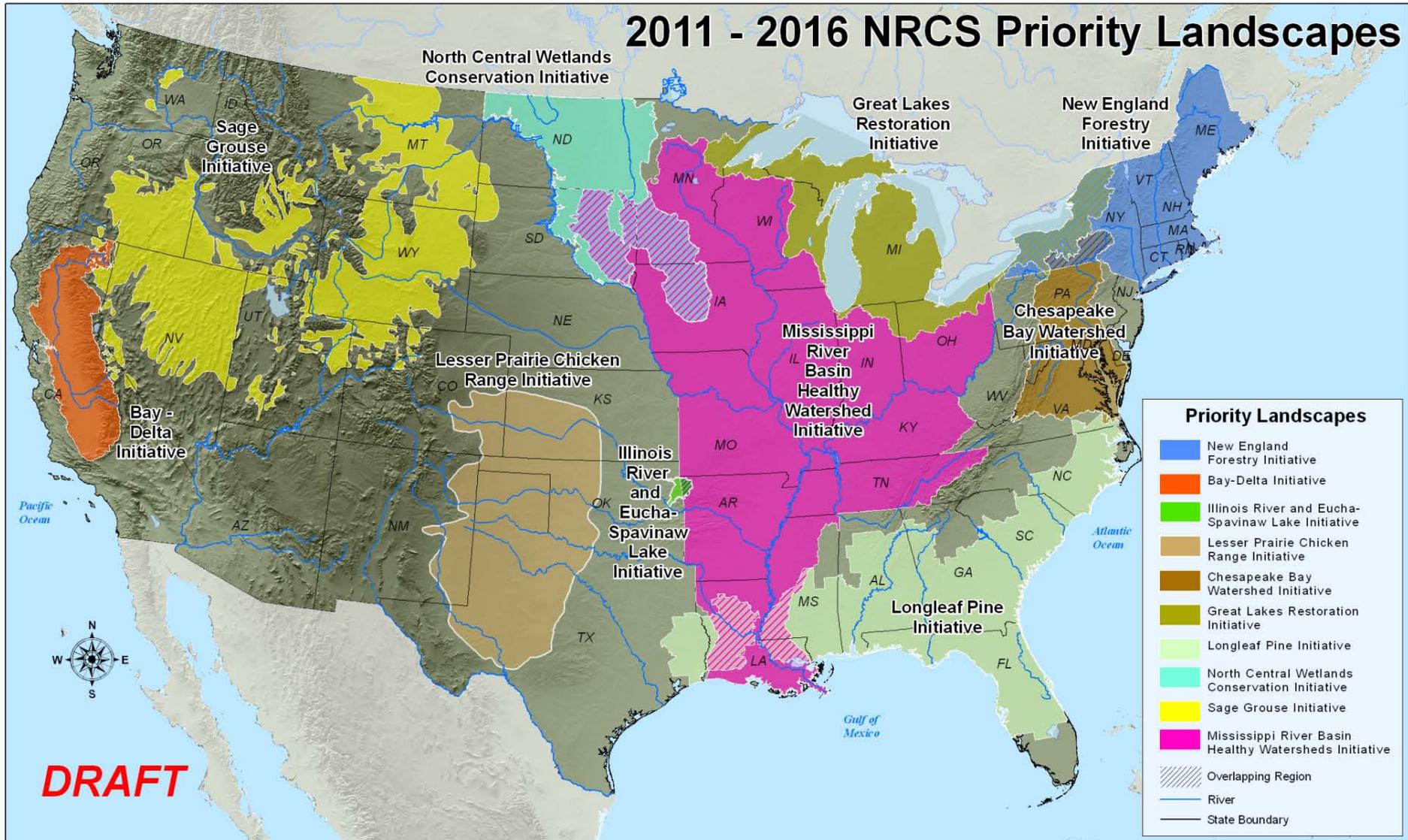
## **OVERVIEW**

**Scott Edwards**

**State Resource Conservationist**

**USDA - Natural Resources Conservation Service**

# 2011 - 2016 NRCS Priority Landscapes



## Priority Landscapes

-  New England Forestry Initiative
-  Bay-Delta Initiative
-  Illinois River and Eucha-Spavinaw Lake Initiative
-  Lesser Prairie Chicken Range Initiative
-  Chesapeake Bay Watershed Initiative
-  Great Lakes Restoration Initiative
-  Longleaf Pine Initiative
-  North Central Wetlands Conservation Initiative
-  Sage Grouse Initiative
-  Mississippi River Basin Healthy Watersheds Initiative
-  Overlapping Region
-  River
-  State Boundary

**DRAFT**



# 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



# 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

# 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

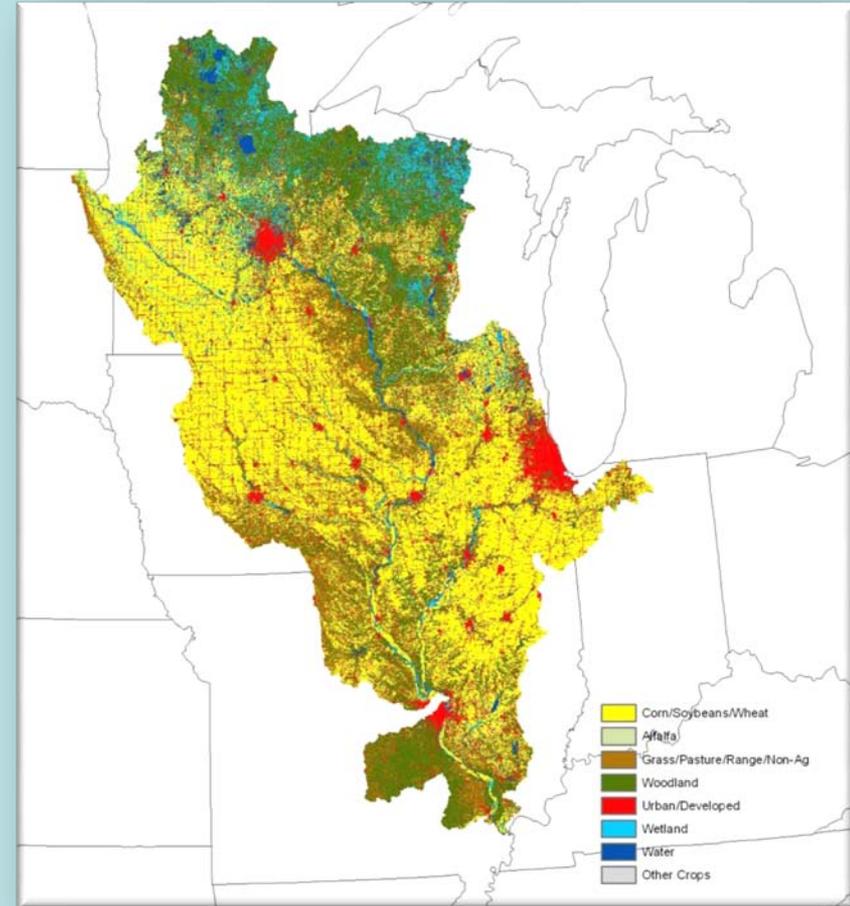
Compared to no conservation practices:

Sediment loss reduced by 69%

Total phosphorous loss reduced by 49%

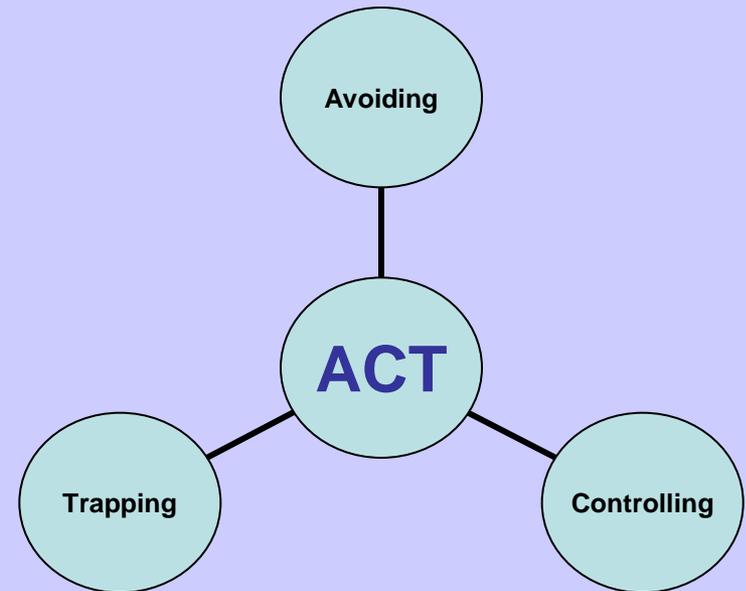
Total nitrogen loss reduced by 18%

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



# 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

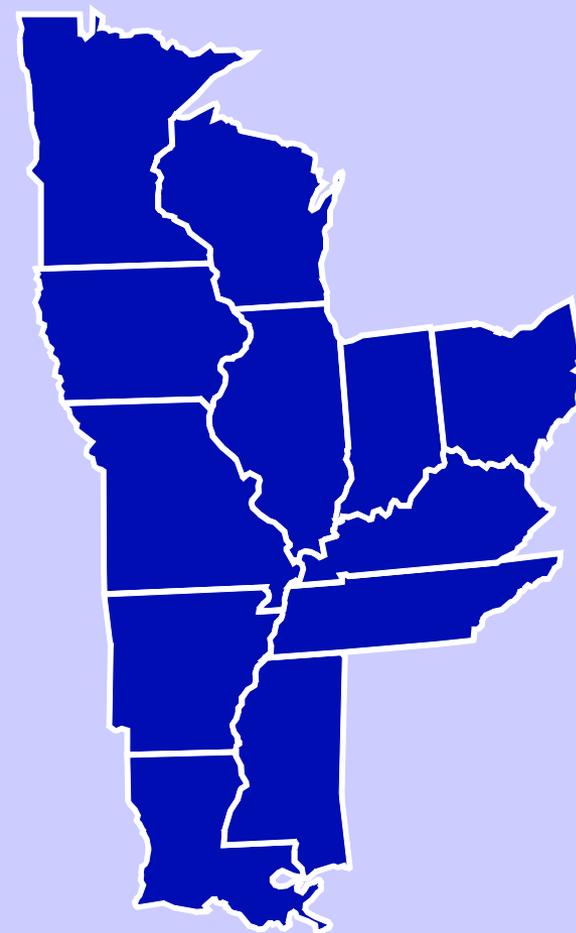




# MRBI Geographic Scope

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

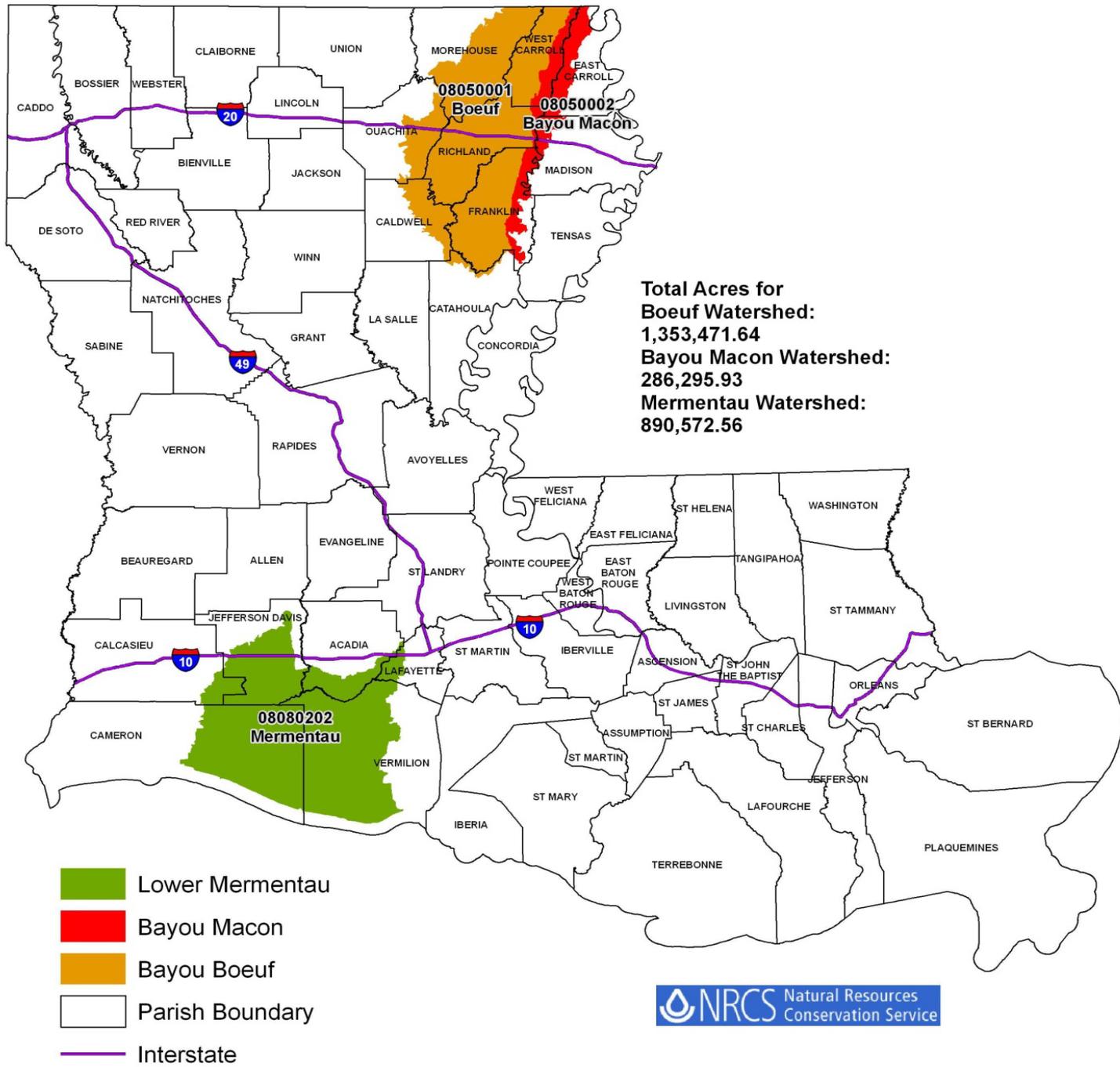
South Dakota was  
added in 2011



# 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 Initiative Focus Area Watersheds



Map ID: 11562  
Data Source: USGS Data, U.S. Department of Agriculture  
Natural Resources Conservation Service Data  
Map Source: U.S. Department of Agriculture  
Natural Resources Conservation Service  
Resource Assessment Division  
Washington, D.C. December 2010



## 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)

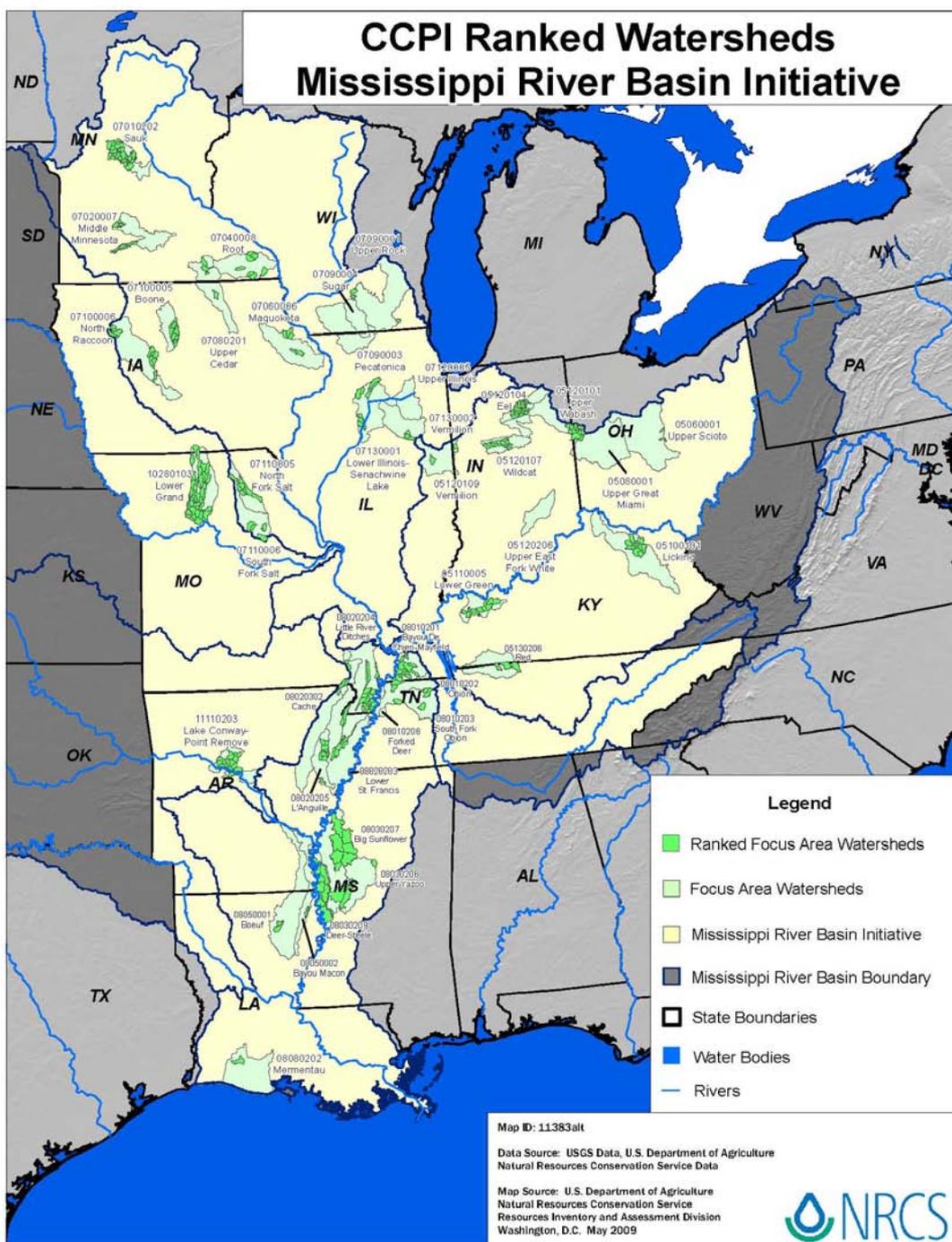
This is in addition to regular NRCS program funding in the Initiative states



# 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

## CCPI Ranked Watersheds Mississippi River Basin Initiative



# MRBI Funded Projects FY-2010

- 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





# NE Delta – Upper Joe's Bayou

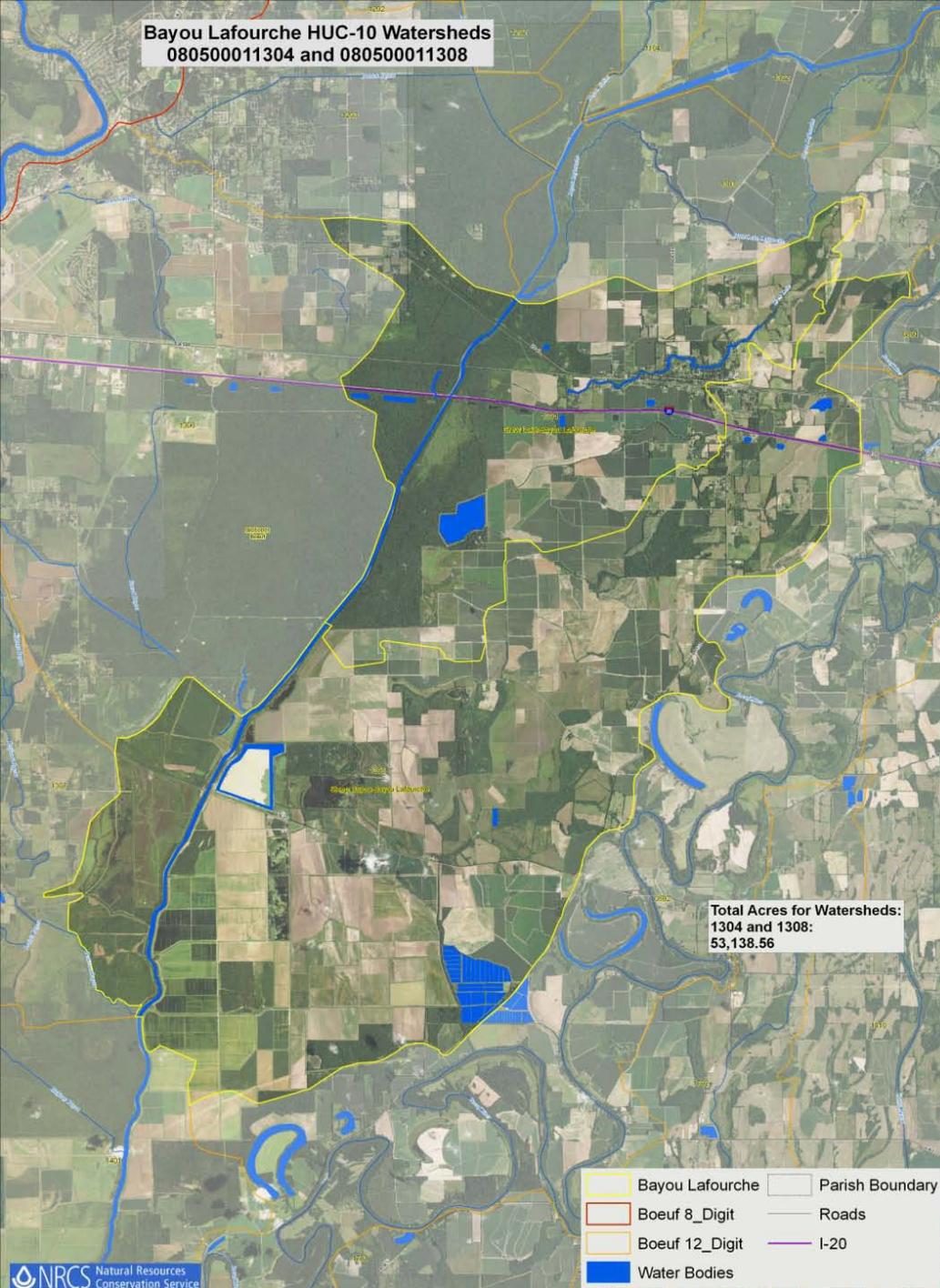
DEQ – Implementation Plan – Watershed Coordinator

20,003 total acres

Head water of Joe's Bayou

45 farmers identified – interest level high

Bayou Lafourche HUC-10 Watersheds  
080500011304 and 080500011308



Bouef River

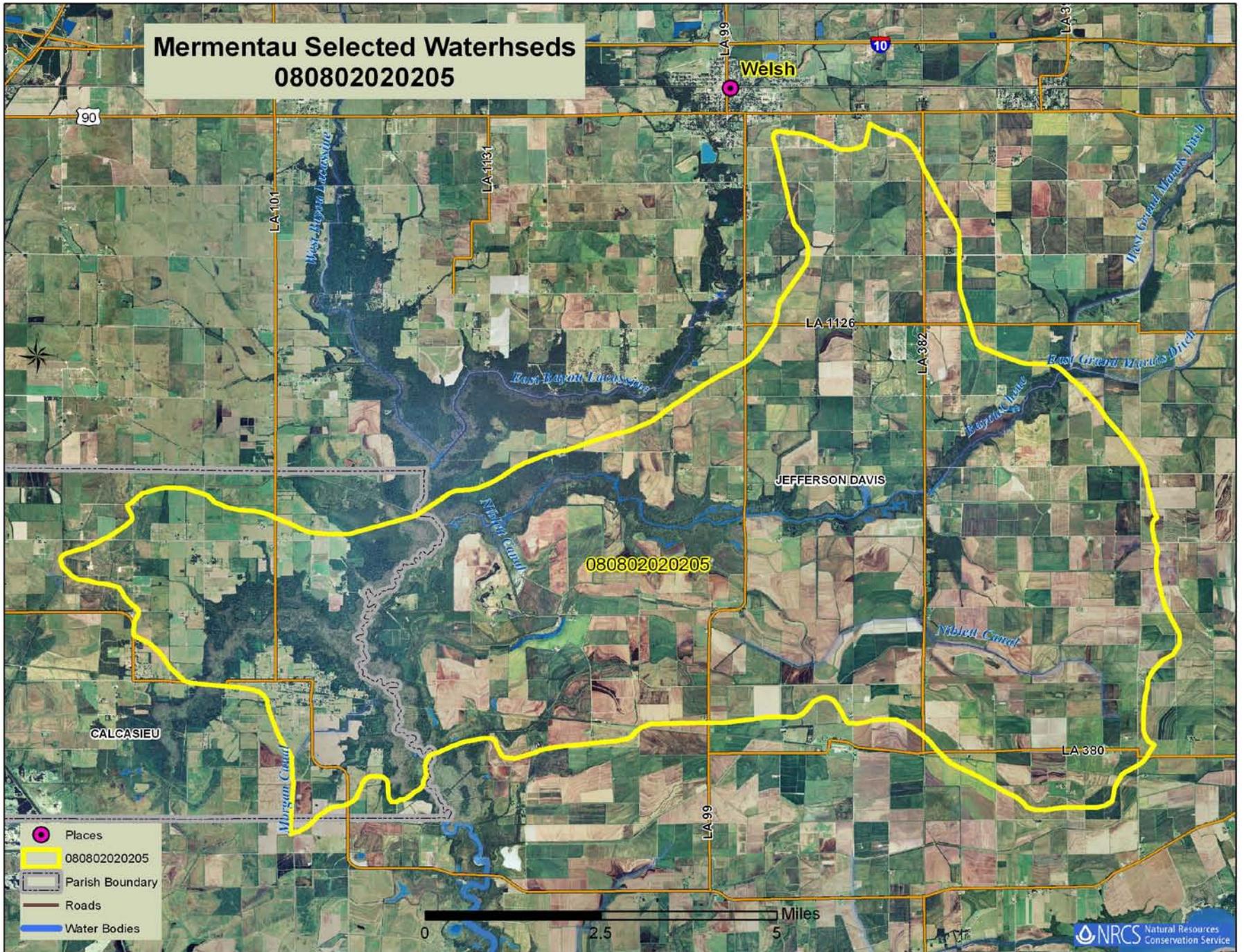
South of Monroe

2 – 12 Digit Watersheds

53,138 total acres

WREP – Companion  
project

# Mermentau Selected Watersheds 080802020205

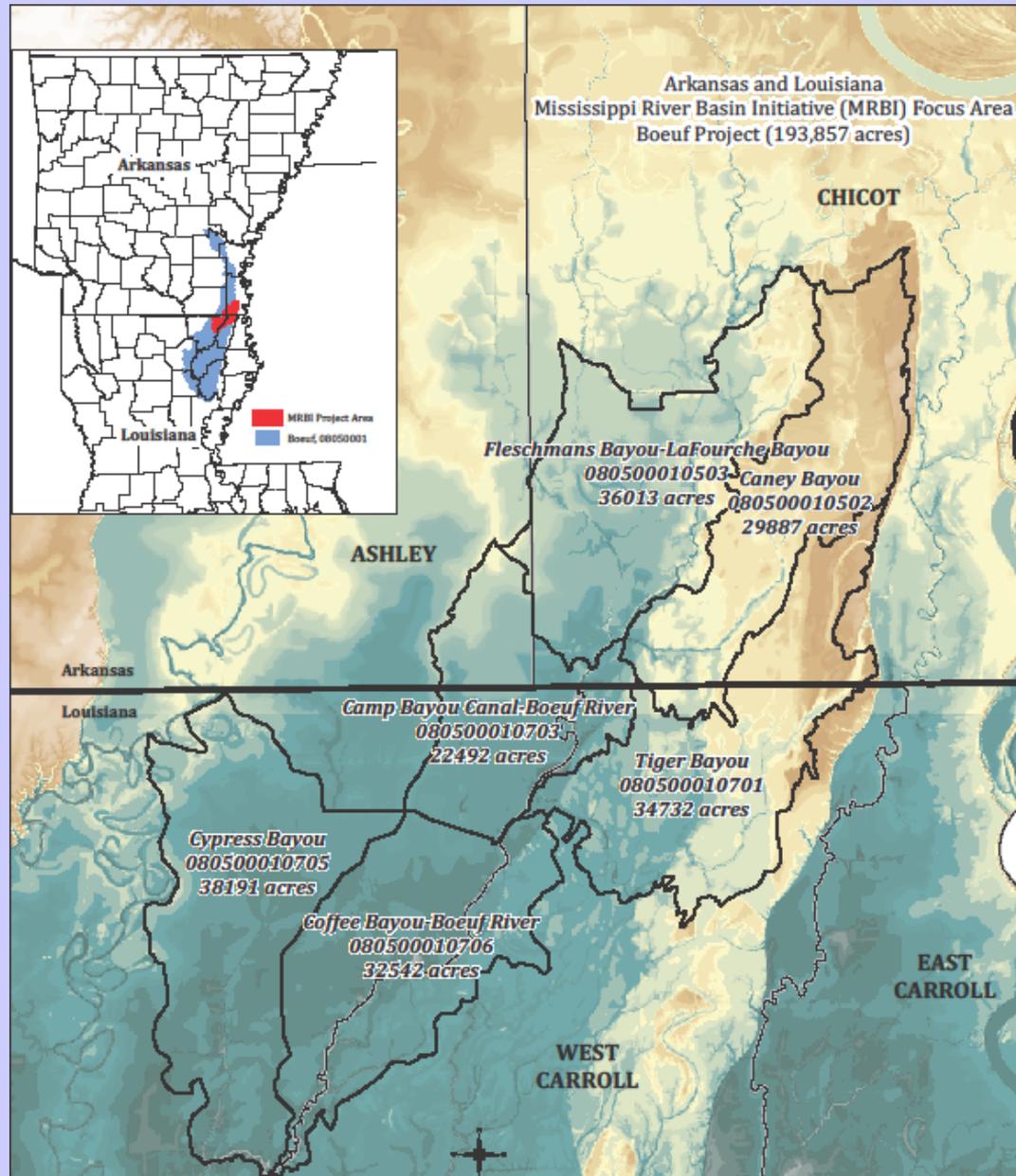


FY 2010 Obligations	Environmental Quality Incentives Program (EQIP)		Wildlife Habitat Incentive Program (WHIP)		Conservation Stewardship Program (CSP)		Wetlands Reserve Enhancement Program (WREP)	
	Financial & Technical Assistance	Number of Landuser Contracts	Financial and Technical Assistance	Number of Landuser Contracts	Dollars Obligated	Number of Landuser Contracts	Financial & Technical Assistance	Number of Contracts
Arkansas	\$ 3,392,716	39	\$ 35,097	2	\$ 175,312	6	\$	0
Illinois	\$ 142,151	28	\$ -	-	\$ 120,504	6	\$ 284,295	1
Indiana	\$ 663,870	17	\$ -	-	\$ -	-	\$ 843,465	10
Iowa	\$ 1,485,344	45	\$ 1,759	1	\$ 482,722	23	\$	
Kentucky	\$ 1,753,799	41	\$ -	-	\$ -	-	\$	
Louisiana	\$ 325,748	17	\$ 1,013	1	\$ 47,499	1	\$	
Minnesota	\$ 1,783,675	38	\$ -	-	\$ -	-	\$	
Mississippi	\$ 4,972,059	123	\$ -	-	\$ -	-	\$ 2,982,712	7
Missouri	\$ 7,203,471	165	\$ 46,751	15	\$ 88,159	9	\$	
Ohio	\$ 1,773,687	41	\$ -	-	\$ -	-	\$	
Tennessee	\$ 644,266	52	\$ -	-	\$ -	-	\$	
Wisconsin	\$ 601,285	24	\$ -	-	\$ -	-	\$	
<b>Totals</b>	<b>\$ 24,742,072</b>	<b>630</b>	<b>\$ 84,621</b>	<b>19</b>	<b>\$ 914,196</b>	<b>45</b>	<b>\$ 4,110,472</b>	<b>18</b>

# 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*

# 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.





# 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.

Parameter	Method
Ammonia-N	SM 4500 - NH3-E
Total Kjeldahl N	EPA 351.4
Nitrate	EPA 300.0
Nitrite	EPA 300.0
Phosphate	EPA 300.0
Ortho-Phosphate	EPA 365.3
Total Phosphorus	EPA 365.3
Total Solids	EPA 160.3
Total Suspended Solids	EPA 160.2



# 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

# 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](mailto:scott.edwards@la.usda.gov)

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

## EEO Statement

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD). To file a complaint of discrimination write to USDA, Director, Office of Civil Rights, 1400 Independence Avenue, S.W., Washington, D.C. 20250-9410 or call (800) 795-3272 (voice) or (202) 720-6382 (TDD). USDA is an equal opportunity provider and employer.

**Mississippi River Basin Healthy Watersheds Initiative**