United States Department of Agriculture
Natural Resources Conservation Service

USDA - NRCS Targeted Watershed Approach for Water Quality Improvements

OVERVIEW

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Partner and Initiative Coordination
USDA - Natural Resources Conservation Service

After 80 years of organized, sustained conservation efforts, farming is still major source of degradation

-Soil erosion still 1.75B tons/yr. (NRI)

-Incidence of hypoxia has increased 30x since 1960 (CENR)

-40,000 water bodies impaired (EPA)

How is it, given the resources invested, we still face such major problems?

-Many critique the dominant conservation model as a "*conservation policy of aggregation*" based on assumption that if we get enough practices on the landscape, "an overall state of conservation will be achieved" (Nowak 2009)

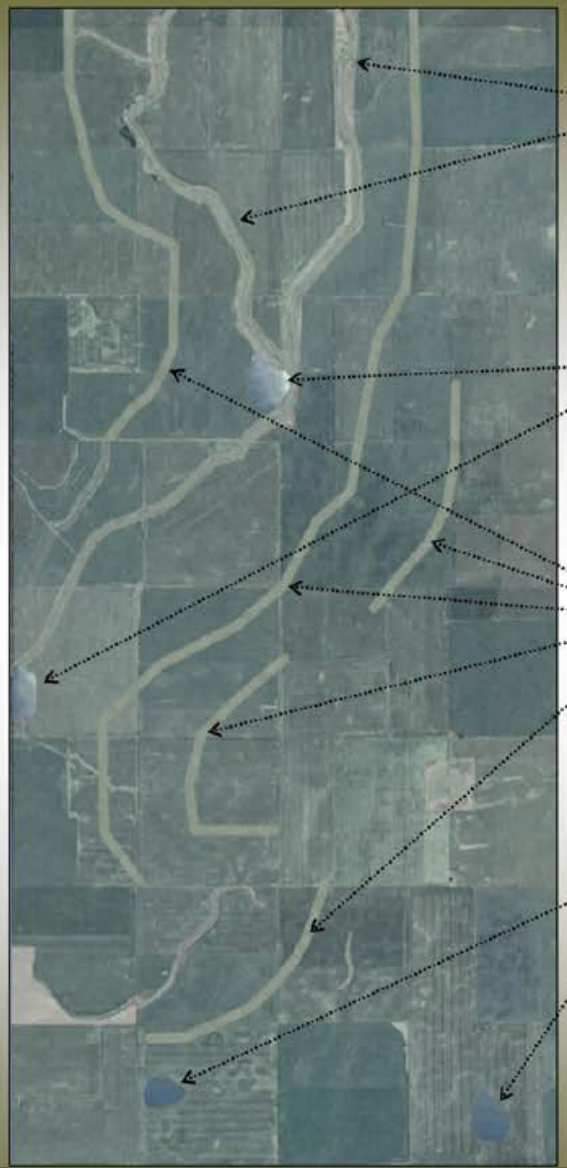
-Also termed "random acts of conservation" (Knight 2005)

-The approach has not led to an overall state of conservation

Courtesy of USDA/NRCS

Targeted Conservation?

- Known for decades that strategic, coordinated targeting could be a more effective and efficient approach (e.g., Batie 1985)
- Proactive landscape-level identification and treatment of critical areas
- Conservation practices applied in such areas can have outsized ameliorative effects
- We have the knowledge and tools to do it well (Berry et al. 2005)
- Calls for targeted approaches continue (e.g., Osmond et al. 2012)



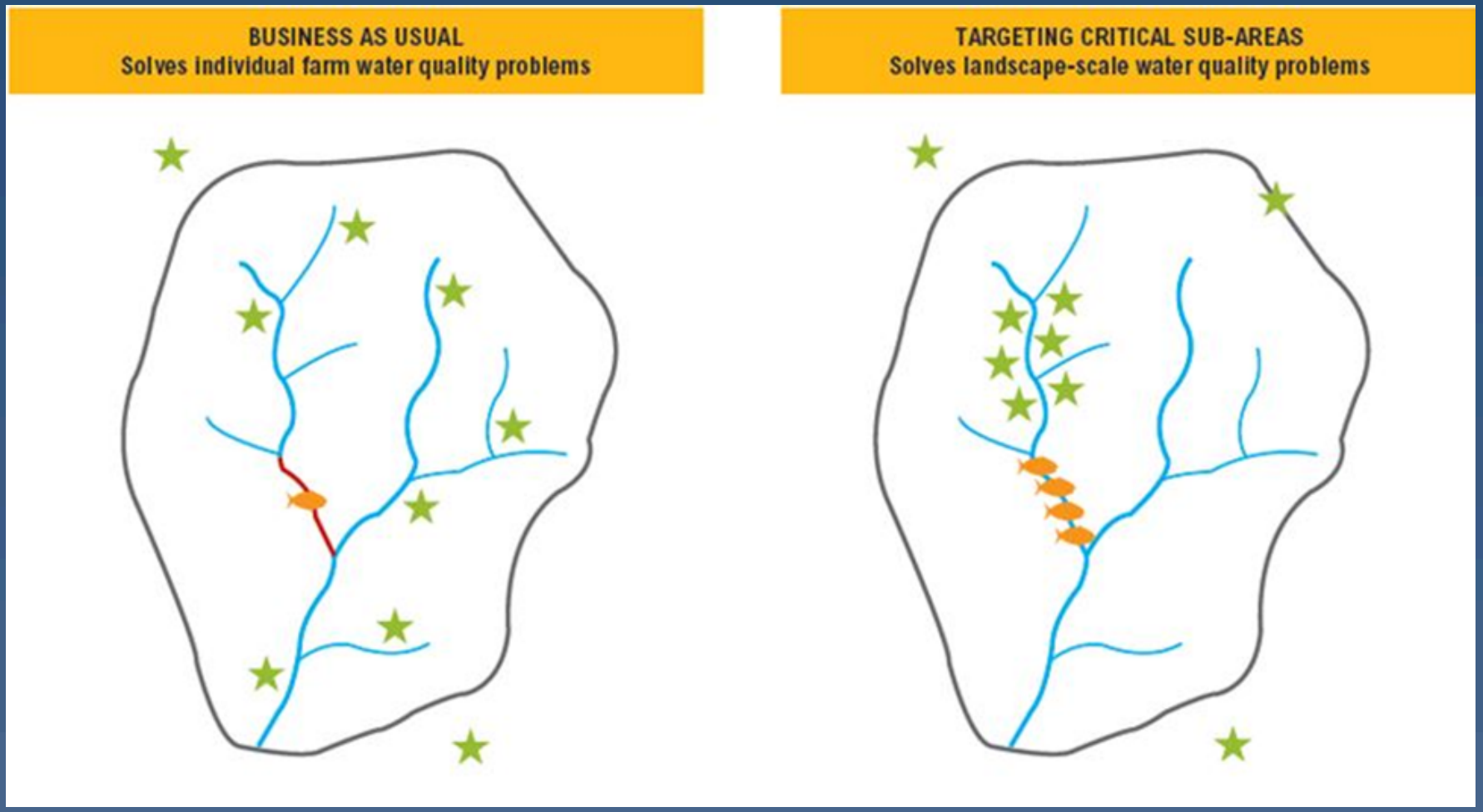
Riparian buffers

Nutrient removal wetlands

Contour buffer strips

Natural wetlands restoration

Targeted Conservation Delivery Model



Focus of Conservation Planning = Conservation Systems

At its core, the focus of conservation planning is on increasing voluntary adoption of:

- Right conservation systems
- Right position on landscape
- Right amount
- Right timing and sequencing of practice/ system implementation (progressive implementation)

Systems Approach to Nutrients: Avoiding, Controlling, Trapping (ACT)

Avoiding

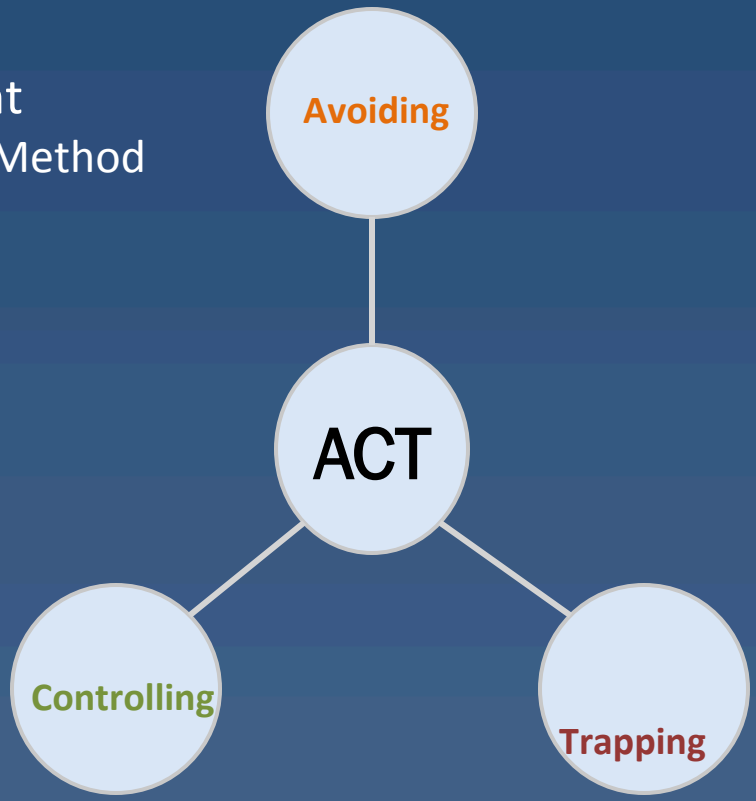
- Nutrient management
  - Rate, Timing, Form, Method

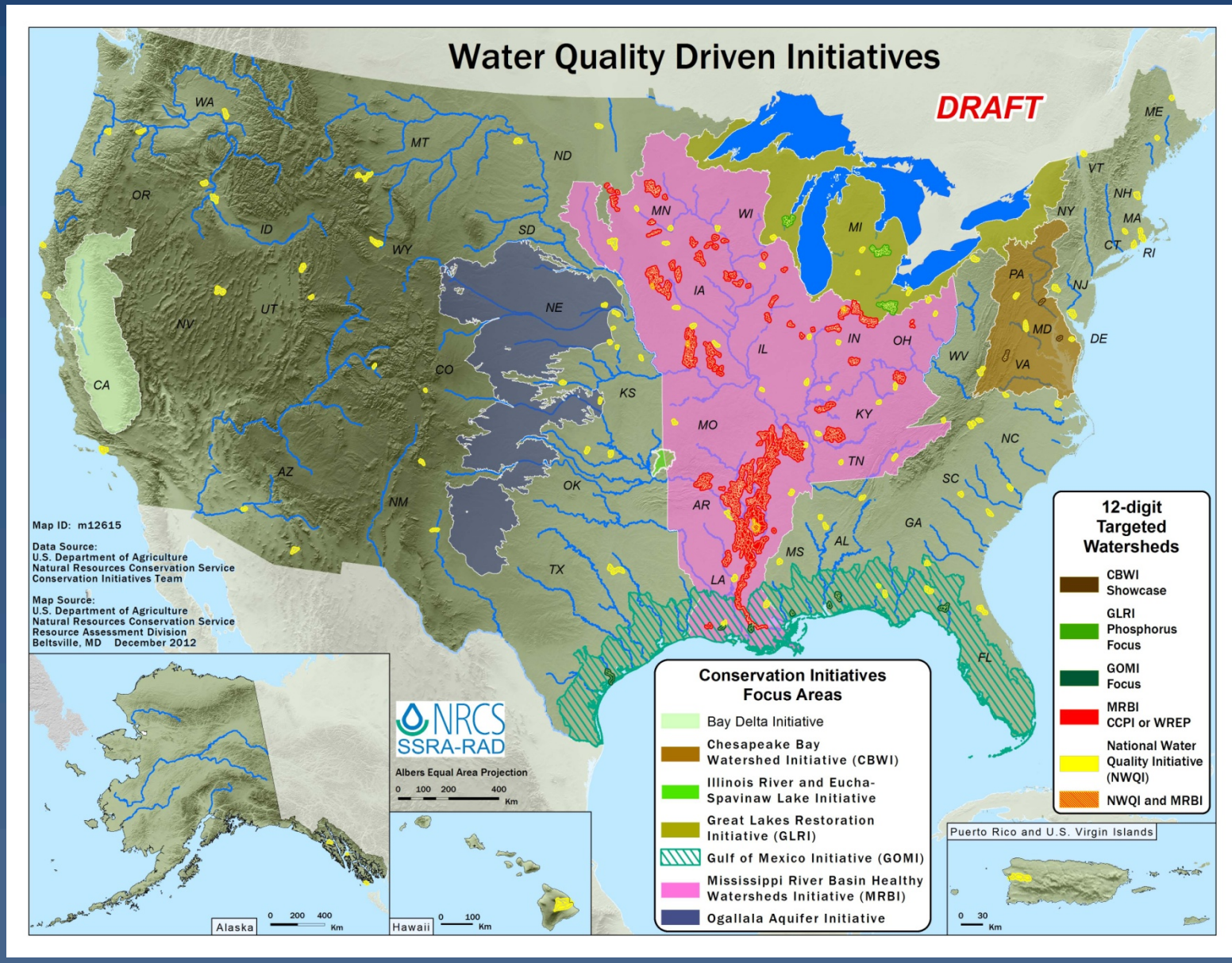
Controlling

- Residue and tillage management
- Drainage water management

Trapping

- Buffers
- Wetlands designed for nutrient removal
- Two-stage ditches




Water Quality Driven Initiatives
DRAFT
Map ID: m12615
Data Source:
U.S. Department of Agriculture
Natural Resources Conservation Service
Conservation Initiatives Team
Map Source:
U.S. Department of Agriculture
Natural Resources Conservation Service
Resource Assessment Division
Beltsville, MD December 2012
NRCS
SSRA-RAD
Albers Equal Area Projection
0 100 200 400 Km
Alaska
0 200 400 Km
Hawaii
0 100 Km
Puerto Rico and U.S. Virgin Islands
0 30 Km
Conservation Initiatives Focus Areas
Bay Delta Initiative
Chesapeake Bay Watershed Initiative (CBWI)
Illinois River and Eucha-Spavinaw Lake Initiative
Great Lakes Restoration Initiative (GLRI)
Gulf of Mexico Initiative (GOMI)
Mississippi River Basin Healthy Watersheds Initiative (MRBI)
Ogallala Aquifer Initiative
12-digit Targeted Watersheds
CBWI Showcase
GLRI Phosphorus Focus
GOMI Focus
MRBI CCPI or WREP
National Water Quality Initiative (NWQI)
NWQI and MRBI
WA
OR
CA
ID
NV
MT
WY
UT
AZ
CO
NM
ND
SD
NE
KS
OK
TX
MN
IA
MO
AR
LA
WI
IL
MS
MI
IN
KY
TN
AL
OH
WV
GA
FL
SC
NC
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PA
NY
MD
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NJ
CT
RI
MA
VT
NH
ME

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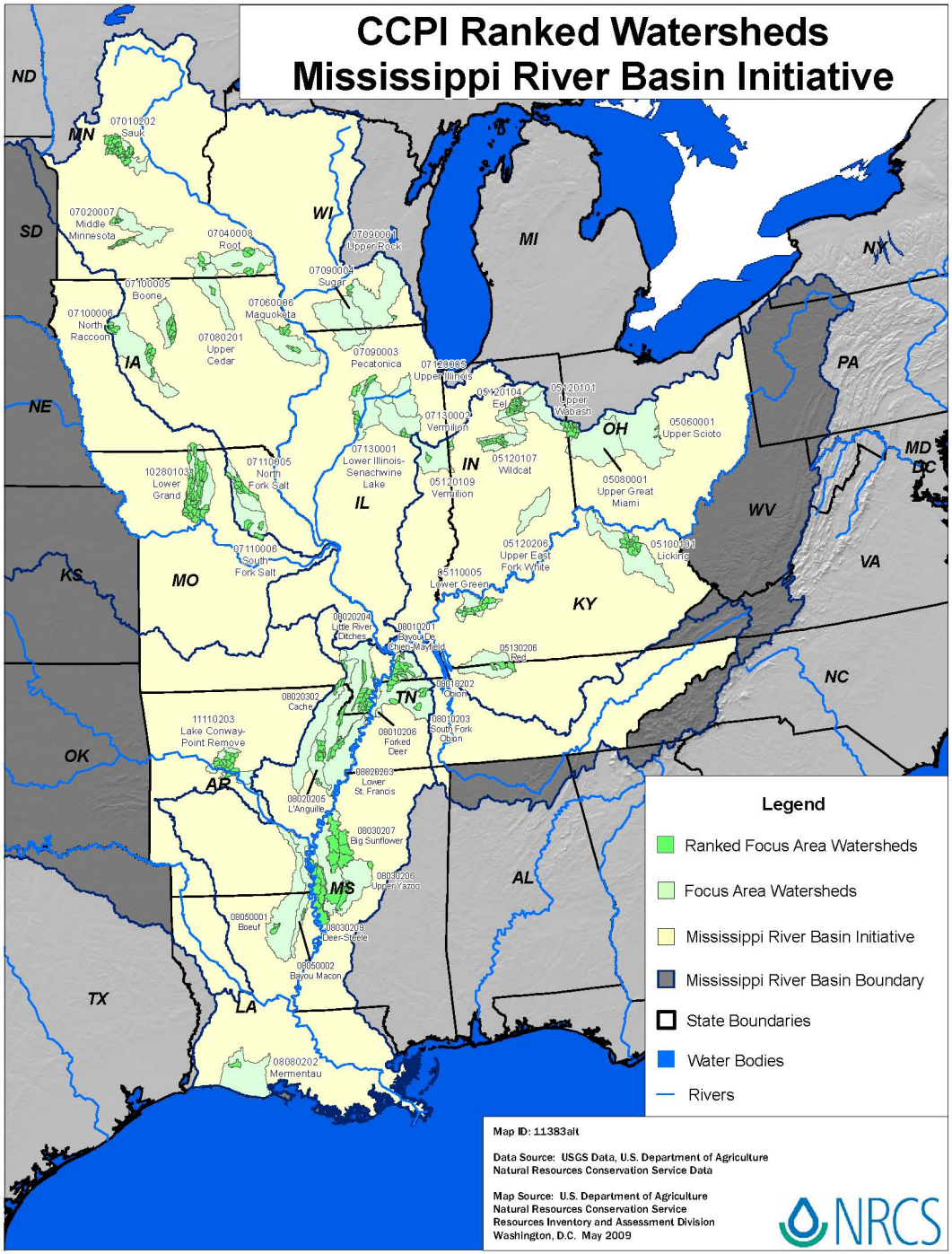
Mississippi River Basin Initiative

- 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



MRBI Projects 1.0

- 13 States
- 43 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
- Louisiana 6 project areas

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080500010503
Fleschmans Bayou-LaFourche Bayou

080500010502
Caney Bayou

080500010703
Camp Bayou Canal-Boeuf River

080500010701
Tiger Bayou

08060100
Lower Mississippi-
Greenville

080500010705
Cypress Bayou

080500010706
Coffee Bayou-Boeuf River

080500020601
Upper Joes
Bayou

08050001
Boeuf

08050002
Bayou Macon

08060100
Lower Mississippi-
Natchez

08070100
Lower Mississippi-
Baton Rouge

080802020205
Bayou Chene

08080202
Mermentau

080500011201
Upper Little
Bayou Boeuf

080500011202
Middle Little
Bayou Boeuf

080500011104
Lower Bayou Galion

080500011203
Lower Little Bayou Boeuf

080500011306
Gourd Bayou

080500011304
Crew Lake-
Bayou Lafourche

080500011307
Youngs Bayou-
Petticoat Bayou

080500011308
Steep Bayou-
Bayou Lafourche

080500011401
Halfway Bayou-
Bayou Lafourche

AR
TX
MS
N

CLAIBORNE
UNION
MOREHOUSE
WEST CARROLL
EAST CARROLL
BOSSIER
WEBSTER
CADDO
LINCOLN
OUACHITA
BIENVILLE
JACKSON
RICHLAND
MADISON
DE SOTO
RED RIVER
CALDWELL
FRANKLIN
TENSAS
WINN
LA SALLE
NATCHITOCHES
SABINE
GRANT
CATAHOULA
CONCORDIA
VERNON
RAPIDES
AVOYELLES
WEST FELICIANA
EAST FELICIANA
ST HELENA
WASHINGTON
TANGIPAHOA
BEAUREGARD
ALLEN
EVANGELINE
POINTE COUPEE
EAST BATON ROUGE
WEST BATON ROUGE
ST LANDRY
ST TAMMANY
JEFFERSON DAVIS
CALCASIEU
ACADIA
IBERVILLE
LIVINGSTON
ST MARTIN
ASCENSION
ST JOHN THE BAPTIST
LAFAYETTE
ORLEANS
ST JAMES
CAMERON
ASSUMPTION
ST CHARLES
ST BERNARD
VERMILION
ST MARTIN
JEFFERSON
ST MARY
LAFOURCHE
IBERIA
PLAQUEMINES
TERREBONNE

20
49
10
10
90

Watersheds Total Acres

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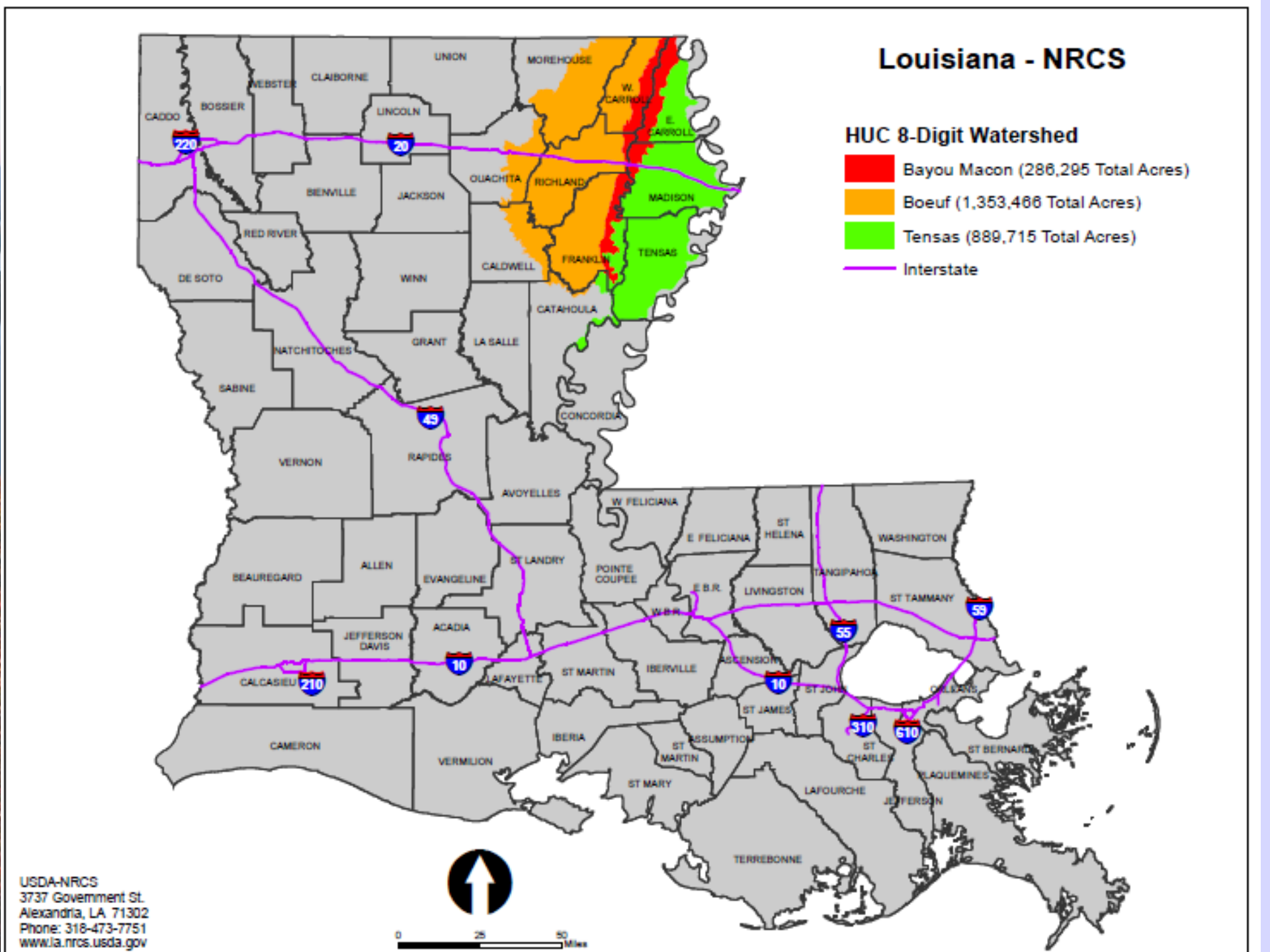
MRBI Next Steps 2.0

- Address Lessons Learned from FY 2010 and 2014
- NRCS Chief Jason Weller has committed 30 million a year
- New Watersheds must Link with State Nutrient Reduction Strategy
- ***New Watersheds Selection – March and September of 2015***



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Alexandria, LA 71302
Phone: 318-473-7751
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MRBI in Louisiana 2.0

Watershed	FY2016	FY2017	FY2018	Total
Alligator Bayou	$ 267,501	$ 174,570	$ 167,435	$ 609,506
Little Creek	$ 349,256	$ 188,311	$ 177,429	$ 714,996
Lake Providence-Tensas Bayou	$ 440,928	$ 364,691	$ 217,107	$ 1,022,726
Lake Bruin/Van Buren Bayou	$ 125,452	$ 205,937	$ 135,405	$ 466,794
Little Tensas Bayou-Bull Bayou	$ 180,754	$ 162,626	$ 166,357	$ 509,737
Upper Deer Creek	$ 255,150	$ 191,276	$ 166,633	$ 613,059
	$ 1,619,042	**$ 1,287,411**	**$ 1,030,366**	**$ 3,936,819**

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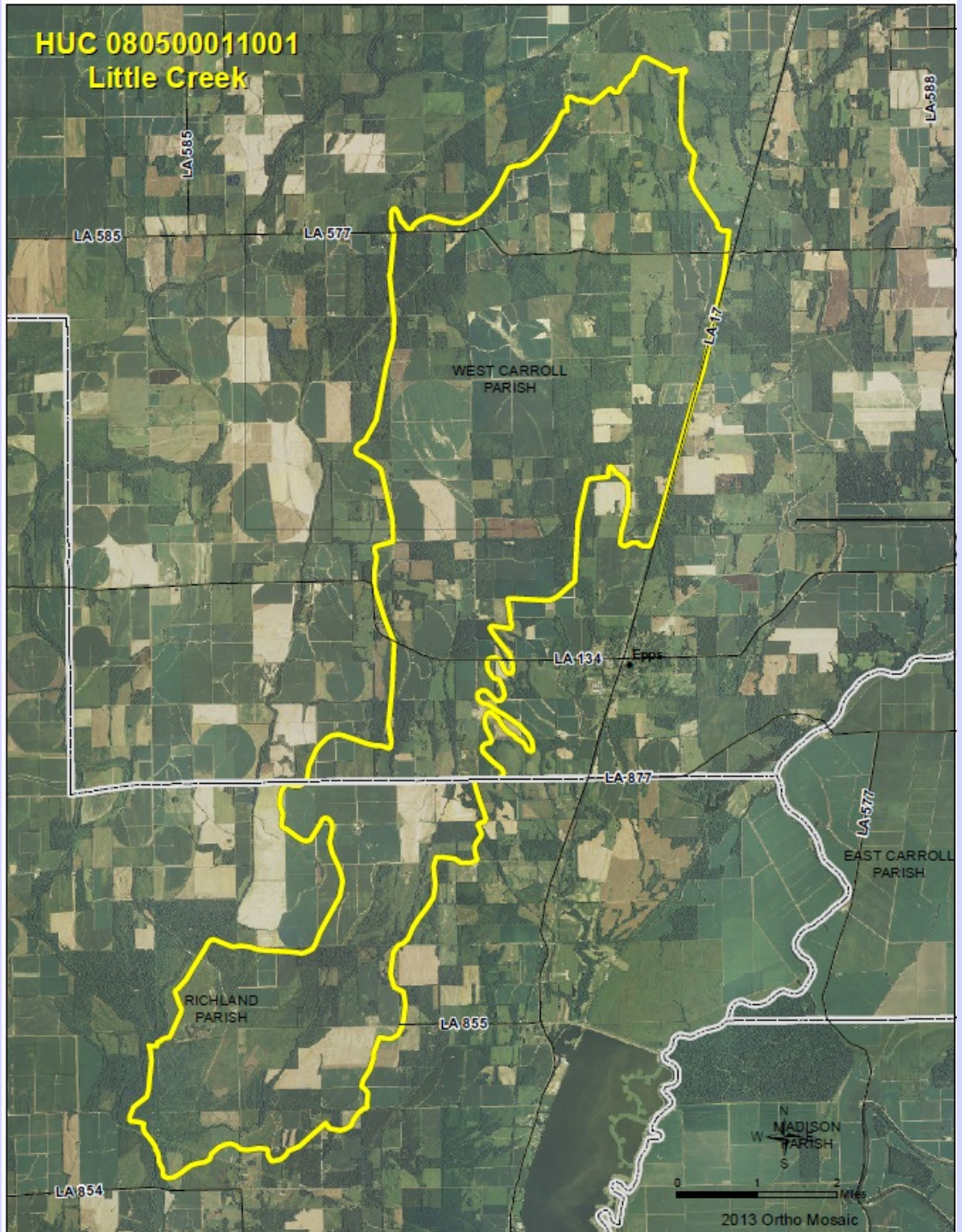
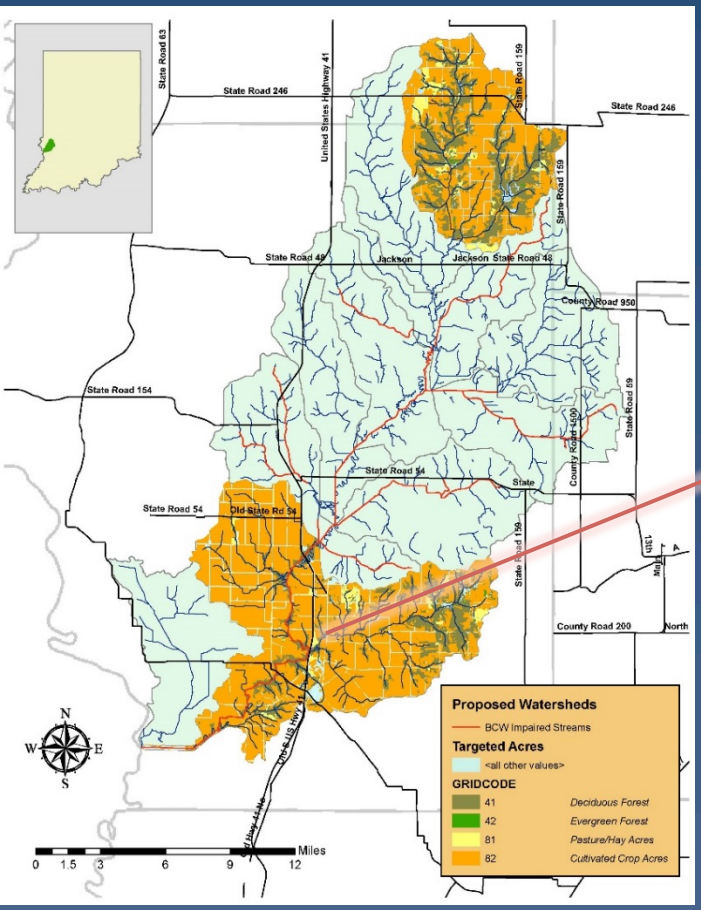
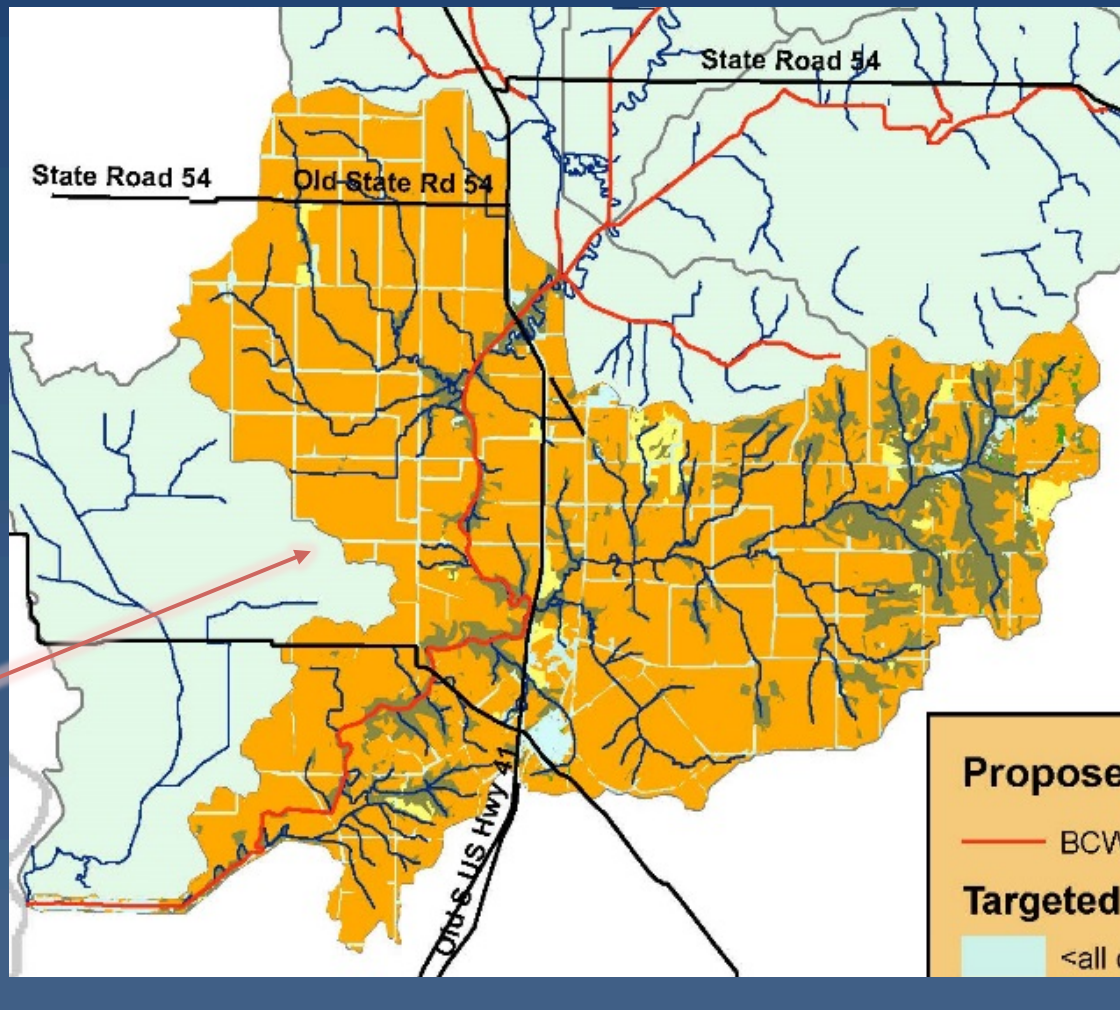
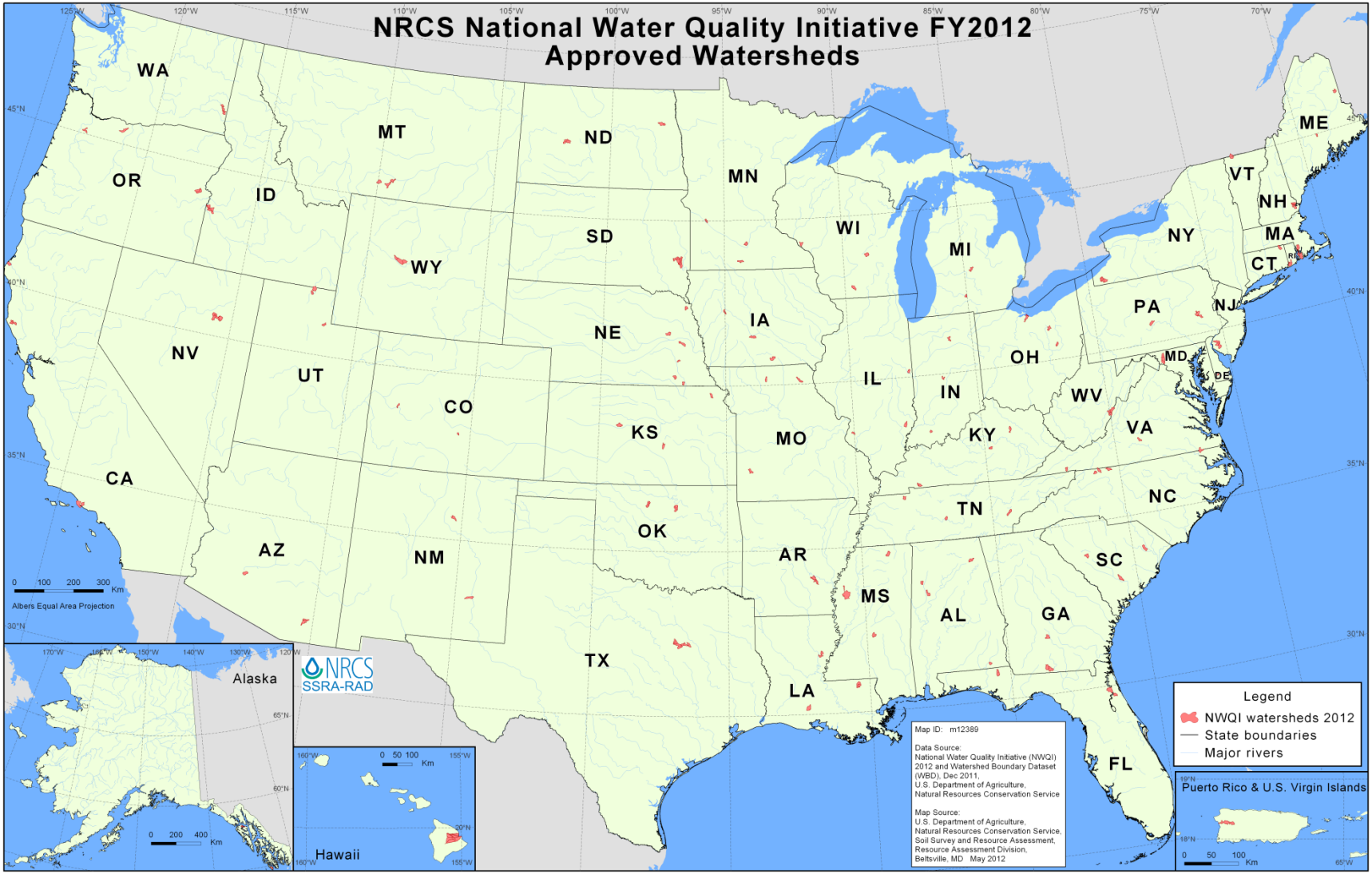



State Road 63
State Road 246
United States Highway 41
State Road 159
State Road 246
State Road 48
Jackson
Jackson State Road 48
County Road 950
State Road 154
State Road 59
State Road 54
State
State Road 54
Old State Rd 54
County Road 200
North
Proposed Watersheds
BCW Impaired Streams
Targeted Acres
<all other values>
GRIDCODE
41 Deciduous Forest
42 Evergreen Forest
81 Pasture/Hay Acres
82 Cultivated Crop Acres
N
W
E
S
0 1.5 3 6 9 12
Miles


State Road 54
State Road 54
Old State Rd 54
Old US Hwy 41
Propose
BCW
Targeted
<all

National Water Quality Initiative (NWQI)

- **Goal:** Remove streams and other water bodies
  - from 303d list, or
  - from threatened status, or
  - from contributing to impairments, or
  - to adequately address a TMDL plan.
- NWQI addresses agricultural sources of pollution that NRCS can effectively address through voluntary action of producers:
  - Nutrients
  - Sediment
  - Pathogens (new for FY 2013)


NRCS National Water Quality Initiative FY2012
Approved Watersheds
WA
OR
CA
ID
NV
MT
WY
UT
AZ
CO
NM
ND
SD
NE
KS
OK
TX
MN
IA
MO
AR
LA
WI
IL
MS
MI
IN
KY
TN
AL
OH
WV
GA
FL
SC
NC
VA
PA
NY
MD
DE
NJ
CT
RI
MA
VT
NH
ME
0 100 200 300 Km
Albers Equal Area Projection
Alaska
0 200 400 Km
NRCS
SSRA-RAD
Hawaii
0 50 100 Km
Map ID: m12389
Data Source:
National Water Quality Initiative (NWQI) 2012 and Watershed Boundary Dataset (WBD), Dec 2011.
U.S. Department of Agriculture, Natural Resources Conservation Service
Map Source:
U.S. Department of Agriculture, Natural Resources Conservation Service, Soil Survey and Resource Assessment, Resource Assessment Division, Beltsville, MD May 2012
Legend
NWQI watersheds 2012
State boundaries
Major rivers
Puerto Rico & U.S. Virgin Islands
0 50 100 Km

Progress Through NWQI

- More than **750 agreements** with landowners in **154 small (12-digit HUC) watersheds**
  - 128 have water quality monitoring stations
  - 82 have 319 projects
  - 68 are within Landscape Conservation Initiatives (e.g., MRBI and GoMI)
- Approximately **160,000 acres** of targeted conservation under contract or agreement in FY 2012
- More than **$38 million** in funding obligated in FY 2012
- ***New Watershed Selection for Louisiana by Dec 31***

Location of Dairy: *(So we can better help you with local assistance)*
- In what parish and city is the dairy located?
- In what watershed is the dairy located?

Herd Description:
- How many total animals does the facility have now? (Ex: 800 wet cows, 100 dry cows, 25 calves, etc.)
- How many total animals can the facility contain at full capacity?

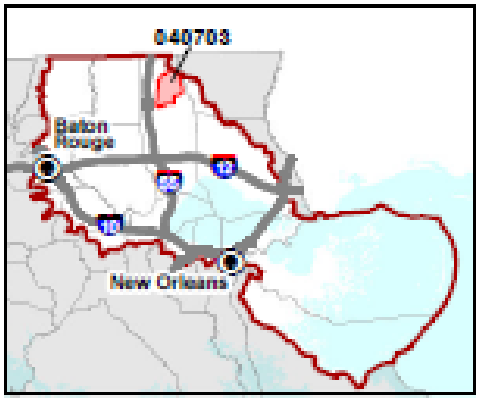
Facility Management:
- Are your structures guttered and maintained to keep the roof water from mixing with the waste/waste water?
- What is the age of your waste storage structure? Is the embankment being maintained with no breaches, has it overtopped, and when is the last time you agitated and pumped the waste material?
- Is storm water run-off mixed with wastewater, or is there a separate retention structure for each water source?

Waste Utilization/Disposal:
- Is there adequate manure storage capacity and land availability?
- Are solid and liquid wastes properly handled to prevent surface runoff into nearby public water bodies?
- Methods used to apply waste, location, receiving crop, and amount.

Nutrient Management:
- Do you have a current CNMP? If so, when was it implemented?
- Do you conduct soil tests and manure analyses? If so, are you following nutrient application recommendations?

Grazing Management:
- Do you have adequate forage throughout the year?
- Do animals have direct access to public water bodies?
- Do you utilize winter forage crops or clovers in your grazing system?

Other Resource Concerns:
- **How and where do you dispose of animal carcasses?**
- **Are you interested in future opportunities involving energy conservation and technology?**



Lake Pontchartrain Basin

RCPP VISION

RCPP offers new opportunities for NRCS to work with partners to encourage:

- locally driven innovation
- create high-performing solutions
- harness innovation
- accelerate the conservation mission
- launch bold ideas
- demonstrate the value and efficacy of voluntary, private lands conservation.

All projects are equally evaluated, regardless of size.

Regional Conservation Partnership Program

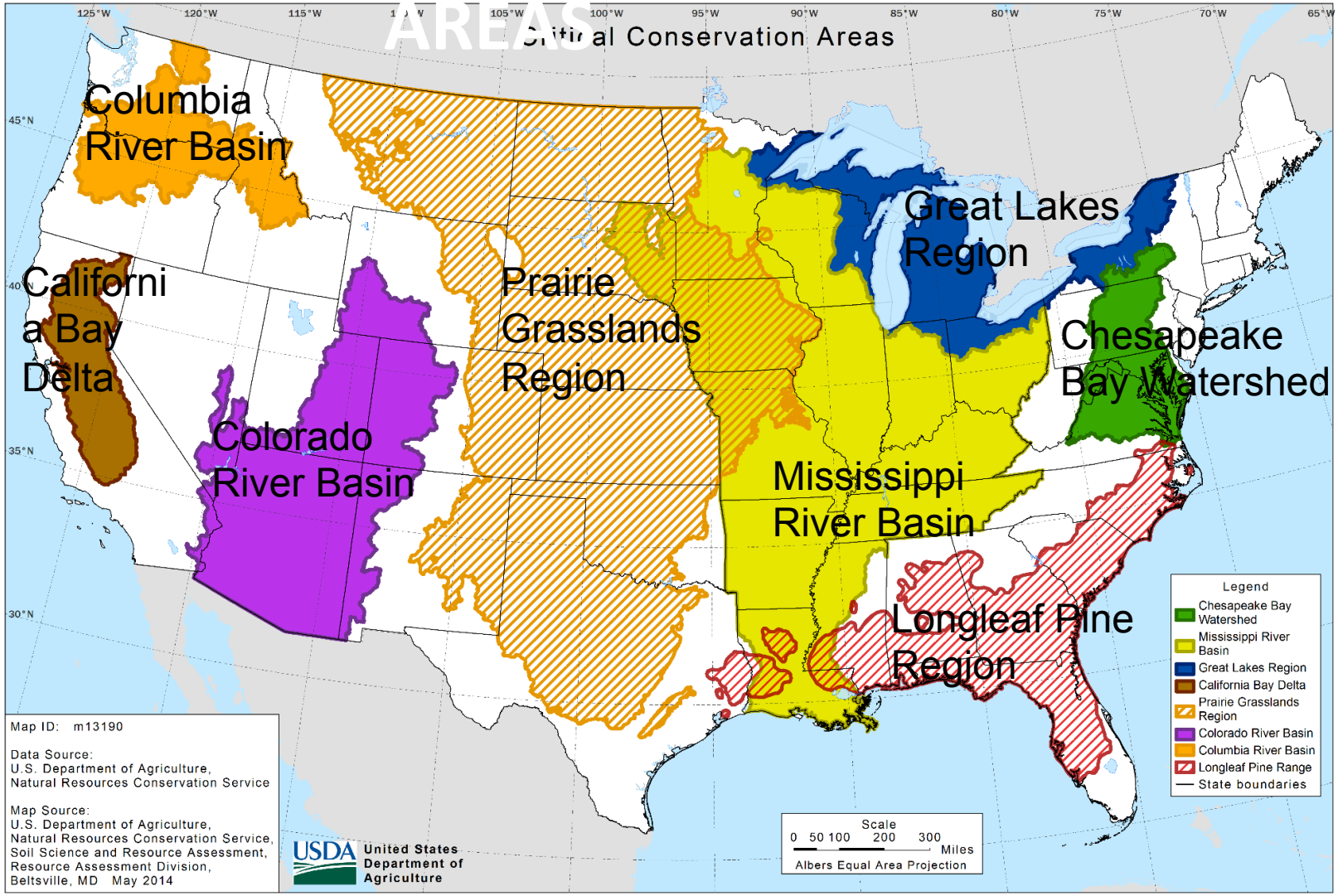
- **NRCS RCPP**
  - New program for this FARM Bill
  - Combined CCPI, AWEP, Great Lakes and Chesapeake Bay
  - Covered Programs CSP, EQIP, ACEP, HFRP + $100m/yr. and PL-566 in CCA's
  - 7% contribution from covered programs
  - 8 Critical Conservation Areas
  - **State (25%),** National (40%), and CCAs (35%)

MEASURES OF SUCCESS

For this new flagship program, NRCS will specifically measure environmental successes through the following four criteria:

1. **Solutions**
2. **Contributions**
3. **Innovation**
4. **Participation**

CRITICAL CONSERVATION AREAS



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www.glasbergen.com

"I want you to find a bold and innovative way to do everything exactly the same way it's been done for 25 years."

"What if we don't change at all ...
and something magical just happens?"

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Questions?

Scott D. Edwards

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Mississippi River Basin Healthy Watersheds Initiative