Private Lands Voluntary Conservation in the Great Lakes Basin

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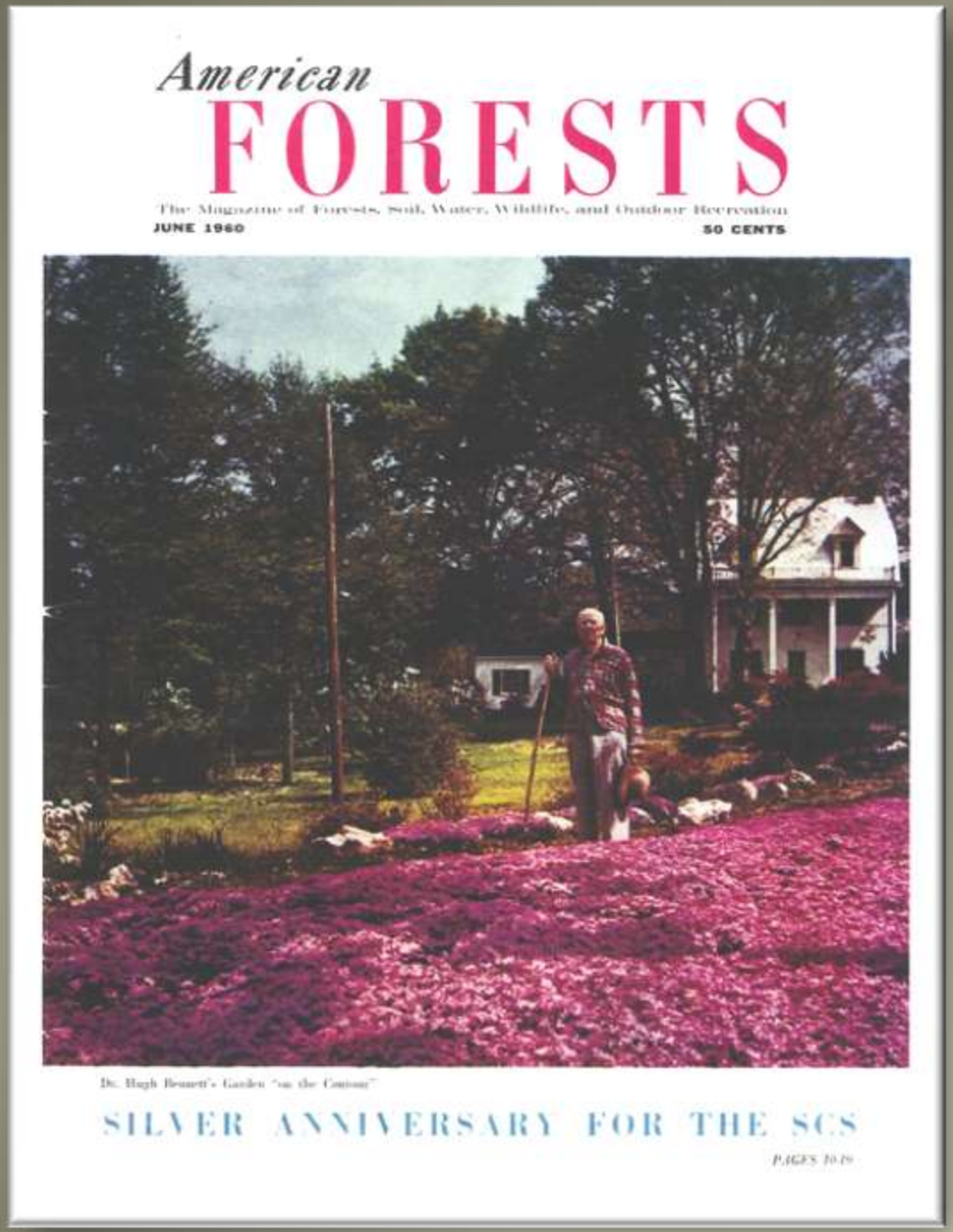
Natural Resources Conservation Service



75th Anniversary

"Carrying out an effective nationwide soil conservation program is not a simple matter in a large country of diversified characteristics and interests."

Hugh Hammond Bennett

Despite all the changes since 1935, and Bennett's passing 50 years ago, many of his ideas and principles have withstood the test of time and still greatly inform our work today…

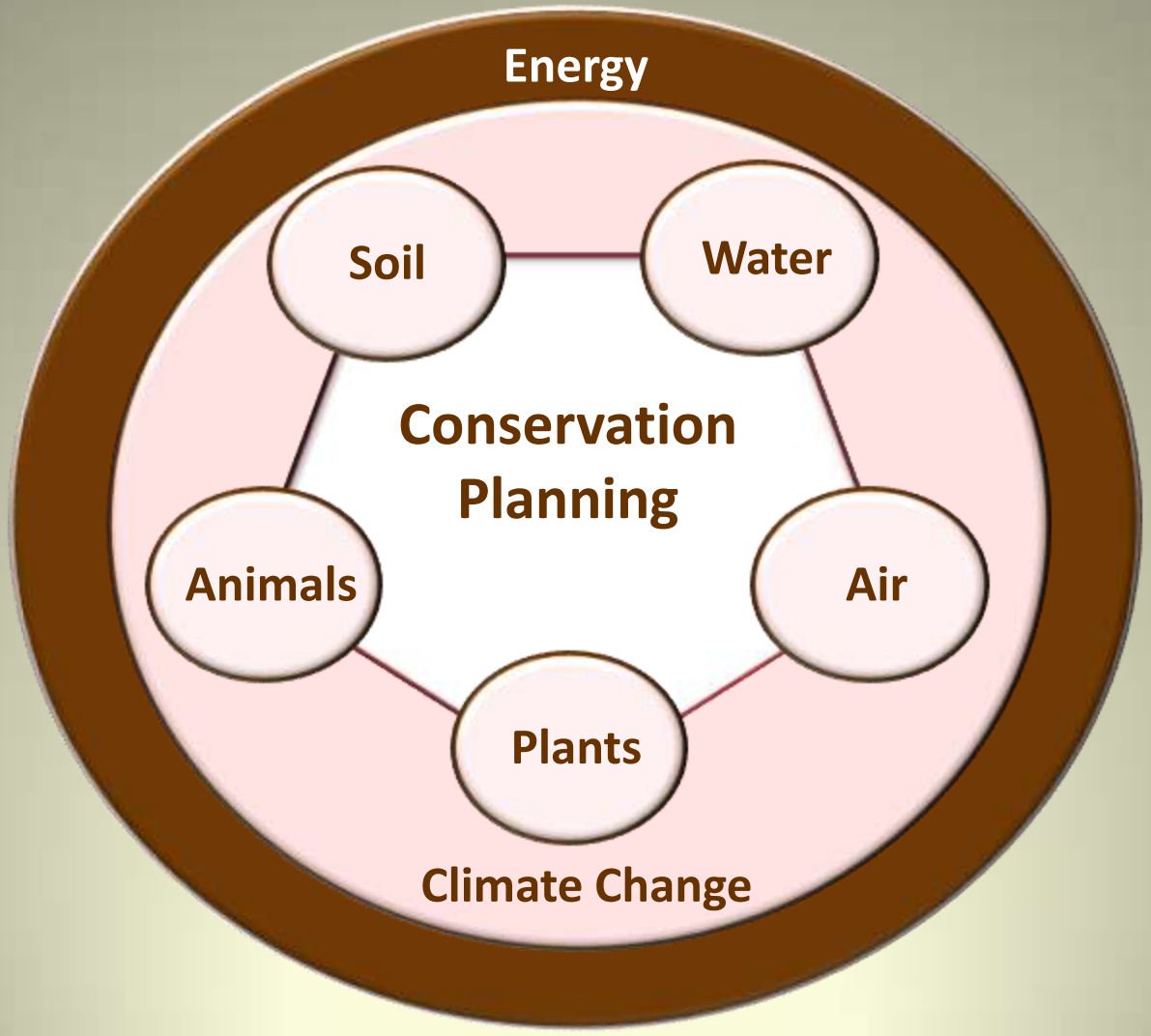
- Can't do conservation work from behind a desk or truck windshield
- Good science must be the foundation for conservation
- Can't treat natural resource concerns in isolation – soil, water, air, plants, and animals – plus humans (SWAPA+H) must be considered in conservation solutions
- Focus coordinated action on a watershed or landscape scale ("random acts of conservation" are not as effective as ones focused on a geographic basis)
- Local leadership is critical to success – local leaders know the issues best and how to fix them (SWCDs, RC&Ds)

Private Lands Conservation

Elements

- Local leadership
- Voluntary approach
- Sound science and technical standards
- High quality resource information
- Site specific and personalized
- Watershed or landscape perspective
- Progressive implementation
- Adaptive management

The Conservation Planning Process



Conservation Practices and Systems

- Systems of conservation practices are used to address resource concerns.
- Practices are science based and founded on trials, demonstrations, and practical application.
- There are nearly 170 conservation practice standards.
- Conservation practice standards undergo a public review process before they are adopted by NRCS.

Benefits of Conservation Programs and Practices

- Partnership efforts have yielded great benefits for SWAPA+E+H.
  - Soil, Water, Air, Plants, Animals + Energy + Humans
- Conservation tillage has experienced phenomenal growth.
- Considerable progress in reducing soil erosion and sedimentation.
- Wetland gains outnumber losses on agricultural lands.
- Significant gains in wildlife habitat.

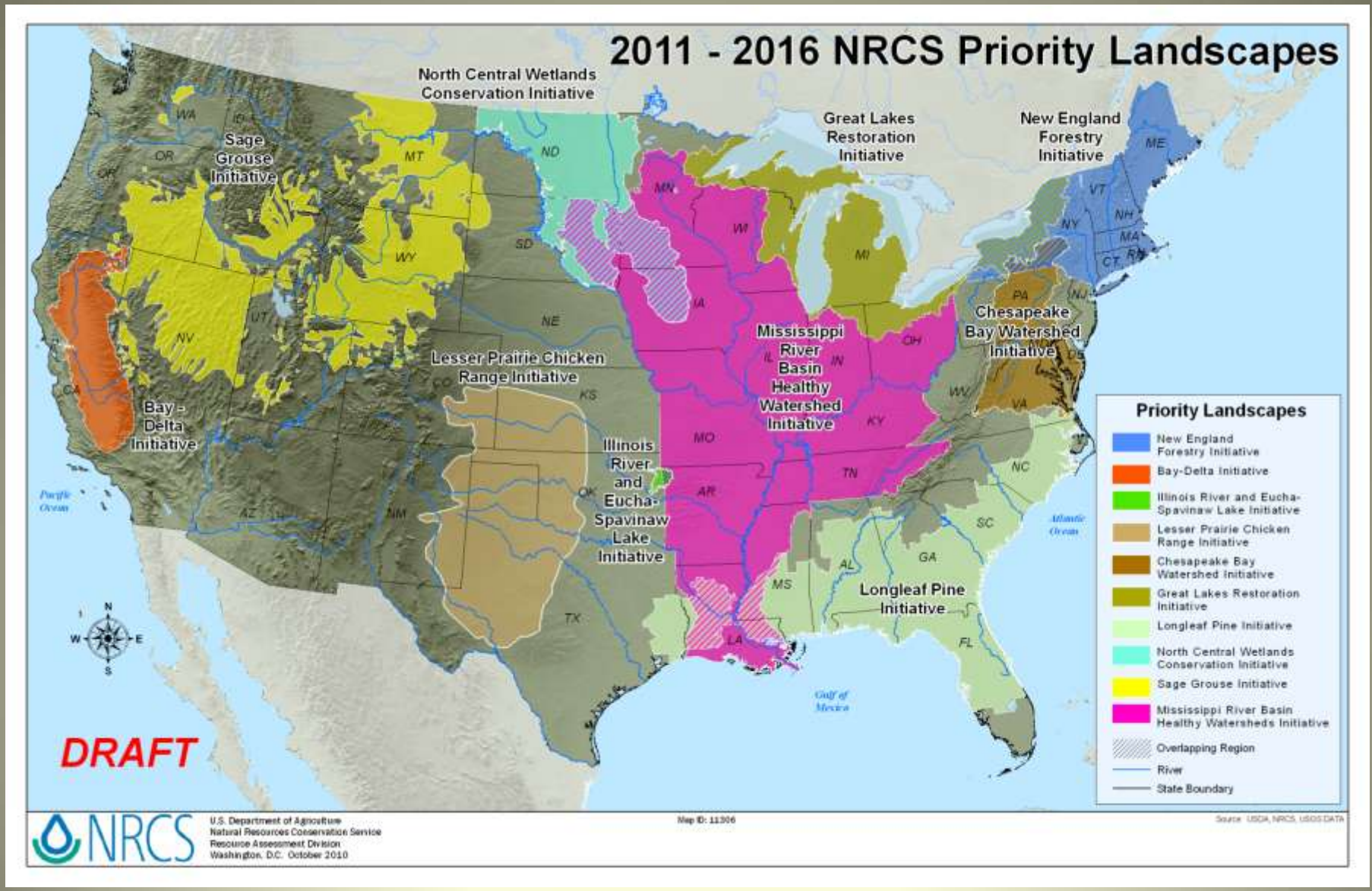
What Have We Learned?

- Conservation works and can improve the economic bottom line.
- Watershed and site-specific conservation planning are needed to aid decision-making.
- Targeting critical areas improves effectiveness and efficiency.
- Technical assistance is critical to planning, implementation, and follow-up.
- Effective adaptive management, after implementation, is vital.
- Leadership and partnerships must be effective and sustainable.

Major NRCS Initiatives in FY 2011

Approved Landscape Initiatives

- Bay Delta
- Chesapeake Bay Watershed Initiative
- Great Lakes Restoration Initiative
- Illinois River Sub-basin and Eucha-Spavinaw Lake Watershed
- Lesser Prairie Chicken Initiative
- Longleaf Pine Initiative
- Mississippi River Basin Healthy Watersheds Initiative
- New England/New York Forestry Initiative
- North Central Wetlands Conservation Initiative
- Sage-Grouse Initiative


2011 - 2016 NRCS Priority Landscapes
North Central Wetlands Conservation Initiative
Great Lakes Restoration Initiative
New England Forestry Initiative
Sage Grouse Initiative
Lesser Prairie Chicken Range Initiative
Mississippi River Basin Healthy Watershed Initiative
Chesapeake Bay Watershed Initiative
Bay - Delta Initiative
Illinois River and Eucha-Spavinaw Lake Initiative
Longleaf Pine Initiative
DRAFT
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
NRCS
U.S. Department of Agriculture
Natural Resources Conservation Service
Resource Assessment Division
Washington, D.C. October 2010
Map ID: 11306

Agriculture in the Great Lakes Basin

- Nearly 75 million acres in 8 States flow to the Great Lakes
- Nearly 1/3 of the drainage area is agricultural land
  - Over 126,000 farms comprising nearly 24m acres
  - Includes 16.7m acres of cropland and 6.7m acres of hay/pasture
- Average farm size is under 200 acres, with less than 10% of the farms greater than 500 acres
- Major crops include corn (5.5m ac) and soybeans (4.5m ac)
- Major livestock types include dairy and hogs

Working in the Great Lakes Basin

- Wide range of resource conditions – high quality to degraded
- Traditional issues (soil erosion) and emerging issues (invasive species)
- Under GLRI, NRCS will focus on: Near-shore and nonpoint source pollution, habitat and wildlife protection and restoration, and invasive terrestrial species control using:

- ✓ Conservation Technical Assistance Program
- ✓ Environmental Quality Incentives Program
- ✓ Wildlife Habitat Incentives Program
- ✓ Emergency Watershed Protection Program – Flood Plain Easements
- ✓ Farm and Ranchland Protection Program

Challenges of Working in the Great Lakes Basin

- Wide range of land covers/uses (forest, ag ranging from cash crops to orchard & specialty crops, developing and developed lands)
- Loss of ag lands to other uses

Photos courtesy of NRCS and US EPA GLNPO

Challenges of Working in the Great Lakes Basin

- Climatic conditions limit the window for establishing cover crops after harvest
- Colder, wet soils hinder adaptation of no-till planting

Nutrient Management

- Fines in sediments transport phosphorus and remain in suspension
- Timing and method/placement of nutrients are critical
- Management of agricultural drainage water

Challenges of Working in the Great Lakes Basin

- Outreach to people who have not participated in USDA conservation programs in the past
- Intensive technical assistance to people improving existing conservation systems – e.g., enhanced nutrient management

EPA funding through the Great Lakes Restoration Initiative (GLRI) includes:

- Conservation Technical Assistance to aid with outreach to new or reticent land owners
- Focused assistance (technical & financial)
  - Geographically
  - Practice selection
  - Ranking priorities (state and local)
  - Assessment of results

Geographic focus on specific resource issues – Nonpoint source (sediments, nutrients, pesticides)

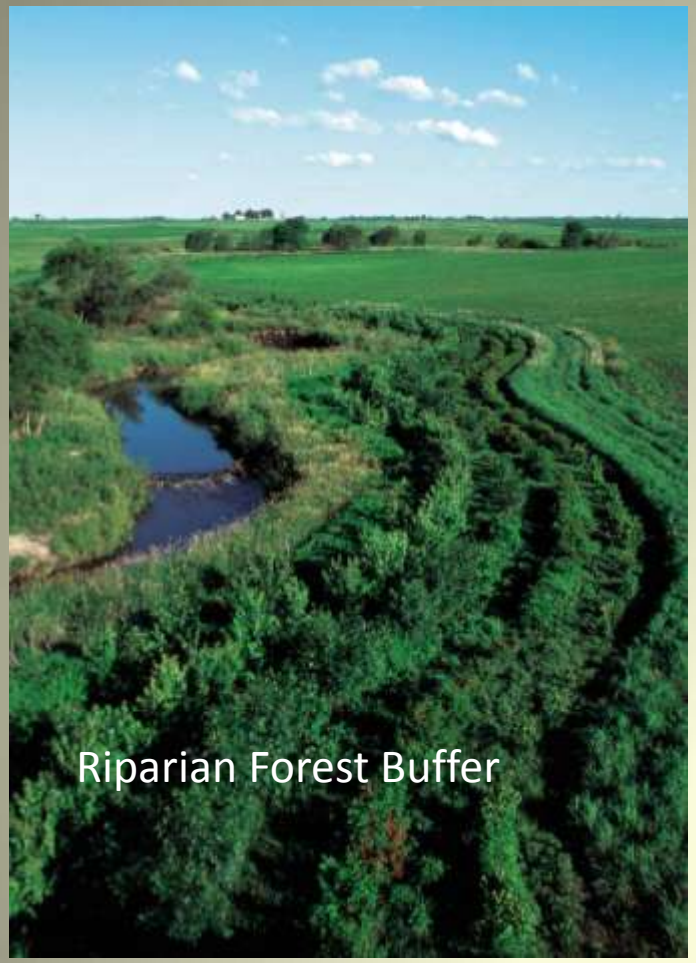
Practice selection - NPS

GLRI financial assistance is limited to core practices effective for addressing the resource concern

Practice selection - NPS

Core practices for livestock include those that limit or eliminate access to surface water

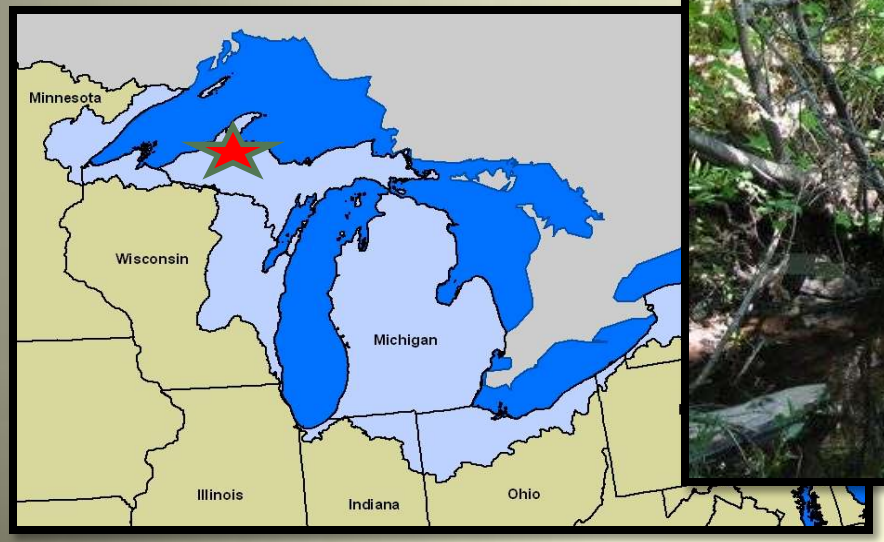
Practice selection - NPS



Core practices for non-point source include those that reduce sediment and associated contaminants from running off the edge of the field

Practice selection to target specific resource issues - Habitat

- Fish passages contracted with the Keweenaw Bay Indian Community will replace 12 culverts and open up 70 miles of streams to fish, including native brook trout



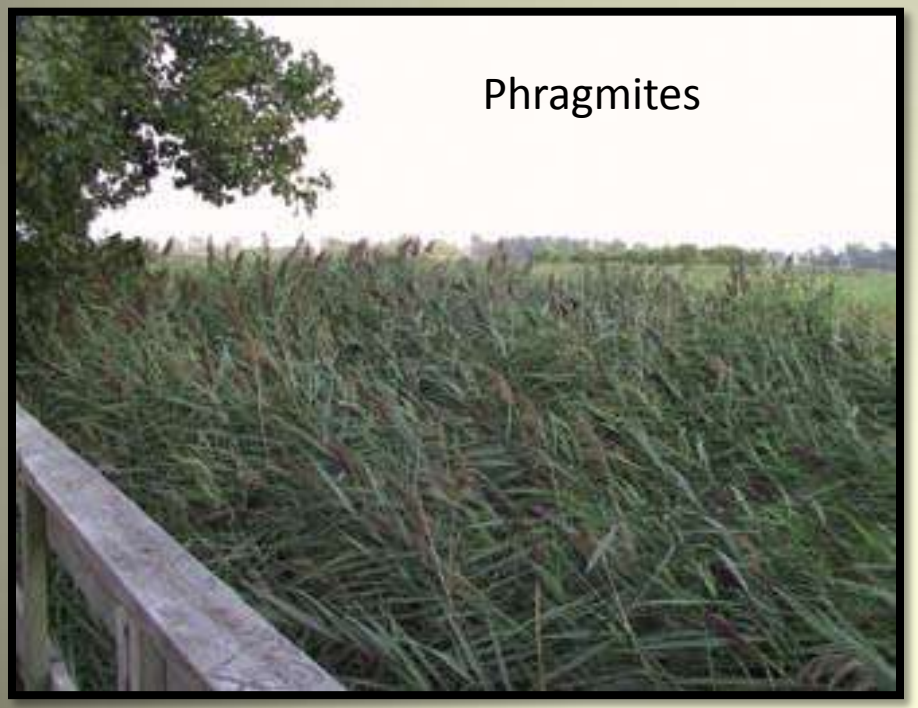
Practice selection to target specific resource issues - Habitat

- Goldenwinged Warbler (GWW) is a potential T&E candidate species
- Loss of habitat and interbreeding with Bluewinged Warbler (BWW) are major issues
- The St. Lawrence River corridor provides 15% of the GWW total habitat and does not have a breeding population of BWW
- Early Successional Habitat Management provides mixed grass and shrubland

Geographic selection to target specific resource issues – Invasive Species

- The most effective approach is to control invasives at the "fringe" – where the population is still at a controllable level
- Lake Michigan lakeshore – Illinois & Indiana
- Bay County - Michigan

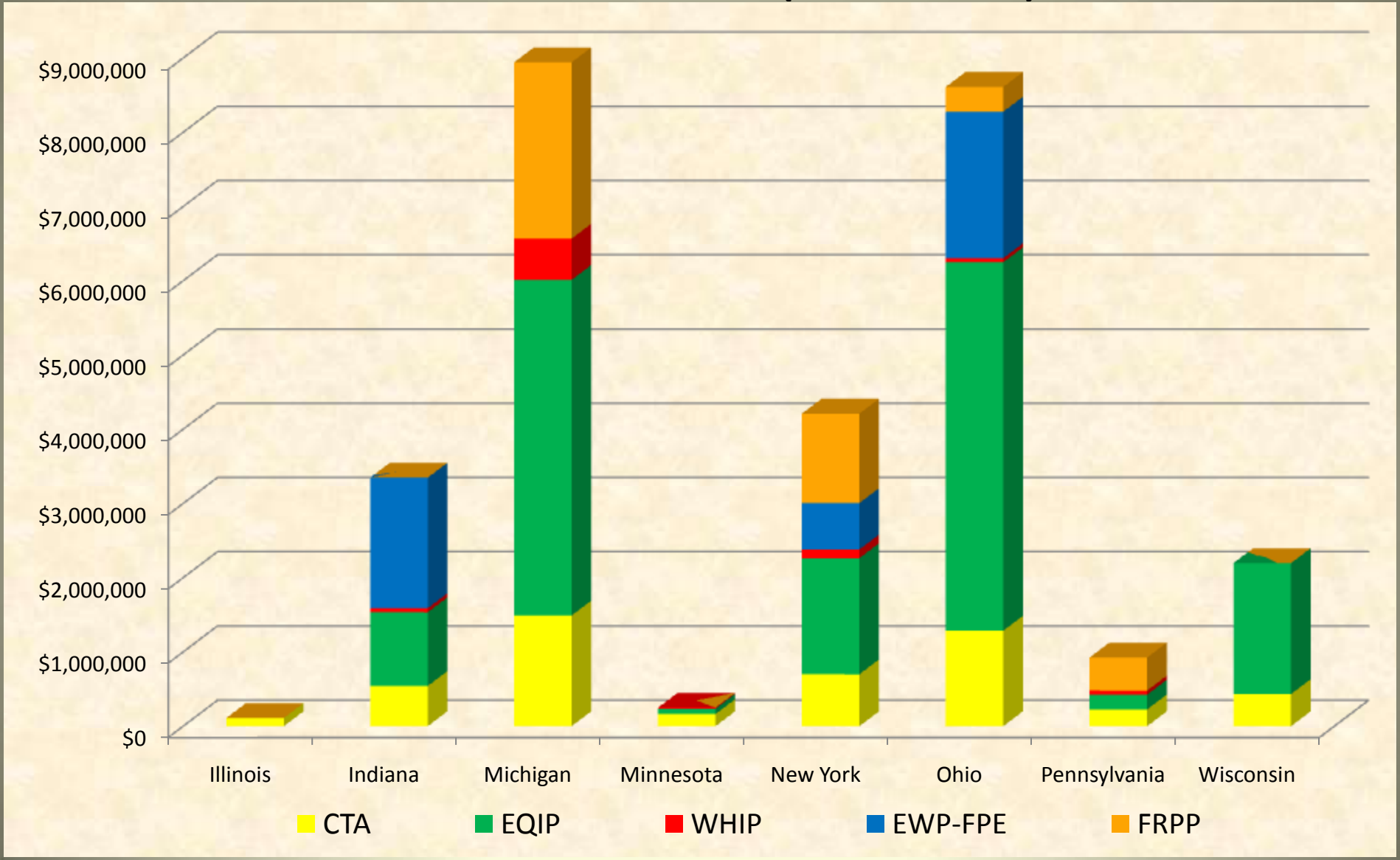
Glossy buckthorn

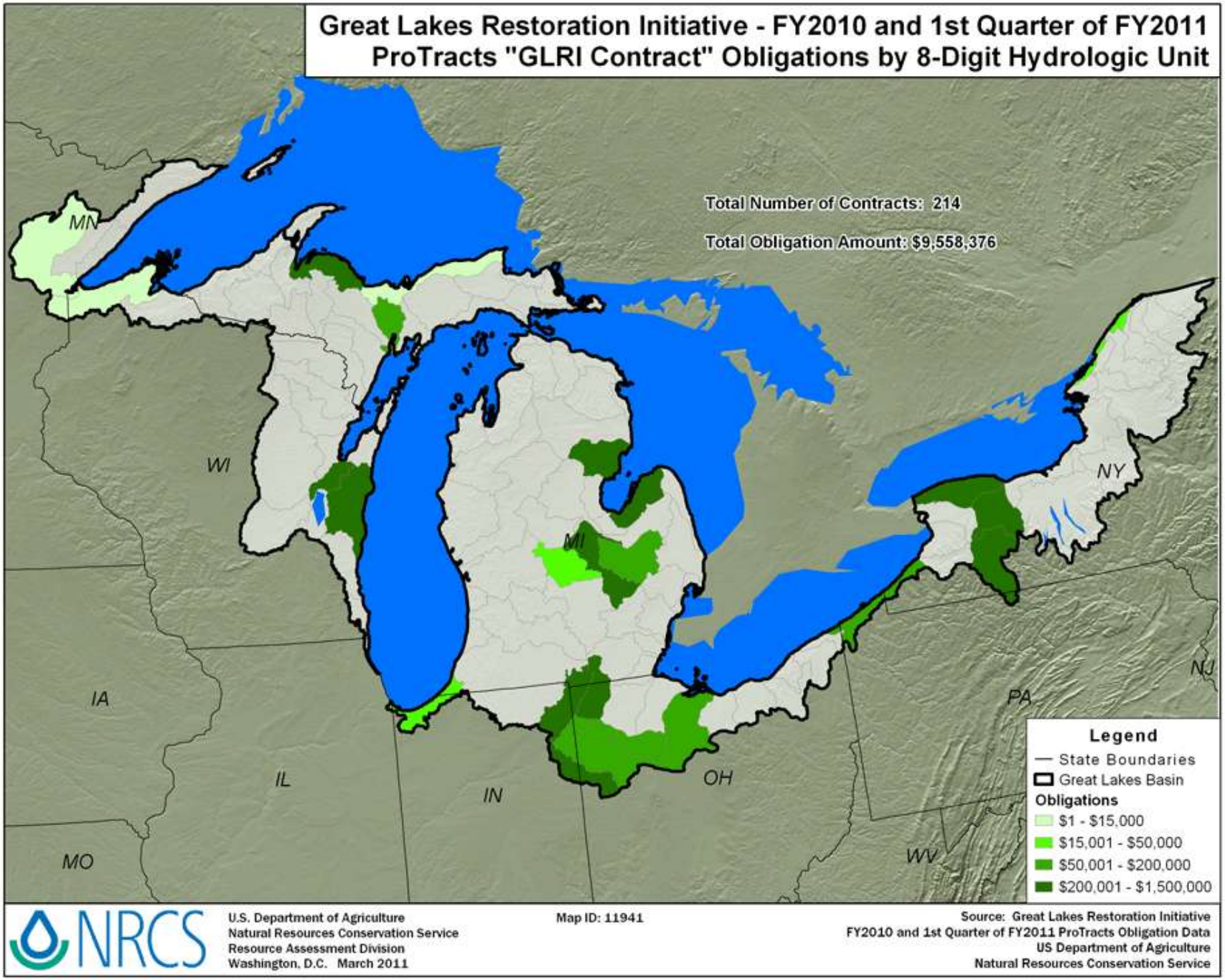


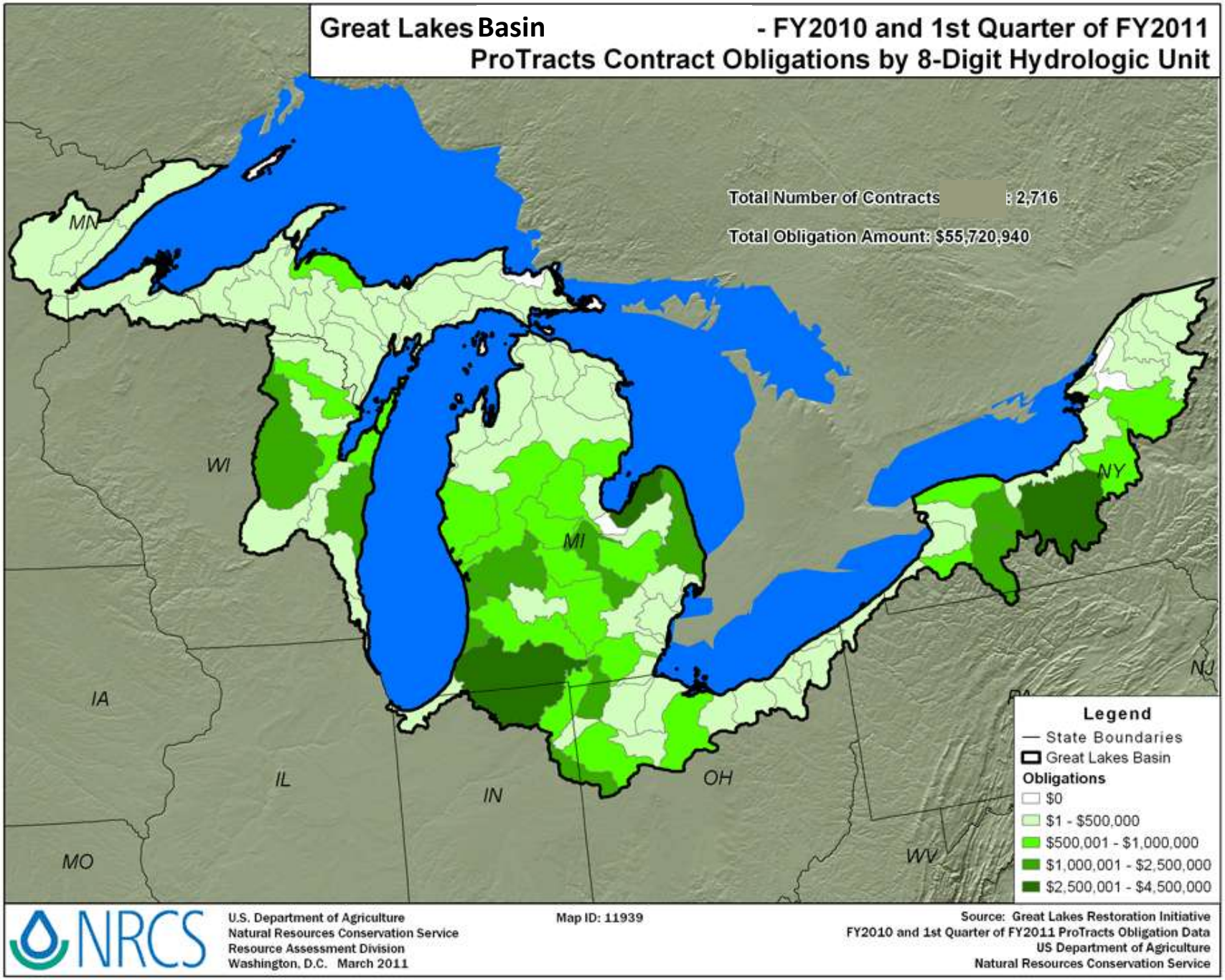
Phragmites

Feral swine

GLRI Fund Distribution
FA & TA Totals (FY 2010)




Great Lakes Restoration Initiative - FY2010 and 1st Quarter of FY2011
ProTracts "GLRI Contract" Obligations by 8-Digit Hydrologic Unit
Total Number of Contracts: 214
Total Obligation Amount: $9,558,376
MN
WI
MI
NY
PA
NJ
IA
IL
IN
OH
WV
MO
Legend
State Boundaries
Great Lakes Basin
Obligations
$1 - $15,000
$15,001 - $50,000
$50,001 - $200,000
$200,001 - $1,500,000
NRCS
U.S. Department of Agriculture
Natural Resources Conservation Service
Resource Assessment Division
Washington, D.C. March 2011
Map ID: 11941
Source: Great Lakes Restoration Initiative
FY2010 and 1st Quarter of FY2011 ProTracts Obligation Data
US Department of Agriculture
Natural Resources Conservation Service


Great Lakes Basin - FY2010 and 1st Quarter of FY2011
ProTracts Contract Obligations by 8-Digit Hydrologic Unit
Total Number of Contracts : 2,716
Total Obligation Amount: $55,720,940
MN
WI
MI
NY
IA
IL
IN
OH
WV
NJ
MO
Legend
State Boundaries
Great Lakes Basin
Obligations
$0
$1 - $500,000
$500,001 - $1,000,000
$1,000,001 - $2,500,000
$2,500,001 - $4,500,000
NRCS
U.S. Department of Agriculture
Natural Resources Conservation Service
Resource Assessment Division
Washington, D.C. March 2011
Map ID: 11939
Source: Great Lakes Restoration Initiative
FY2010 and 1st Quarter of FY2011 ProTracts Obligation Data
US Department of Agriculture
Natural Resources Conservation Service

Challenges & Opportunities

Looking forward, we need to be strategic about conservation assistance:

- the right amount
- in the right place
- at the right time

Follow up and adaptive management needed to continuously optimize the benefits of applied conservation systems

Western Lake Erie Basin

- Dissolved Reactive Phosphorus (DRP) and resulting Harmful Algal Blooms
- Cause might be related to:
  - no-till planted Roundup Ready© soybeans
  - fall/winter (surface) applied fertilizer
  - soil compaction leading to more runoff
  - manure application
  - more land being farmed due to high crop prices
- Conservation systems can effectively address all of these

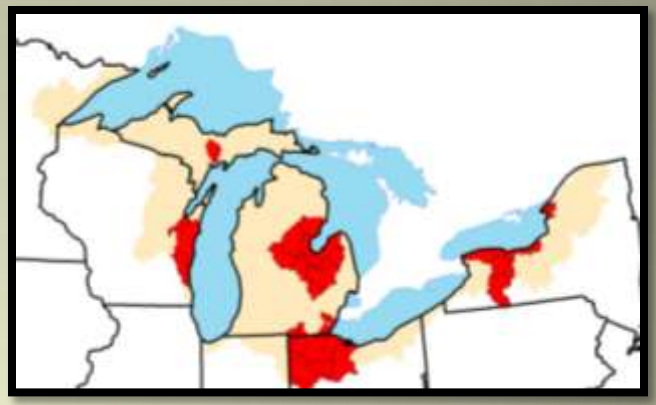
Western Lake Erie Basin

NRCS is increasing the level of conservation in WLEB through

- Nutrient Management – emphasize the “4 Rs”
  - Right source (less prone to loss)
  - Right time (close to crop needs)
  - Right place (beneath the soil surface)
  - Right rate (based on soil tests & crop need)
- Moving beyond the basics
  - Use systems of practices (nutrient management AND residue management, filter strips, subsoiling, cover crops)
  - Use new technologies (crop reflectance, corn stalk nitrate testing)

Strategic Watershed Action Teams SWATs

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



- 6 teams in the Great Lakes Basin (GLRI-funded watersheds)
- $1.1 million NRCS + $366,684 (25%) partner match in Contribution Agreements
- Over 30 staff years over the next 2 years

Conclusions

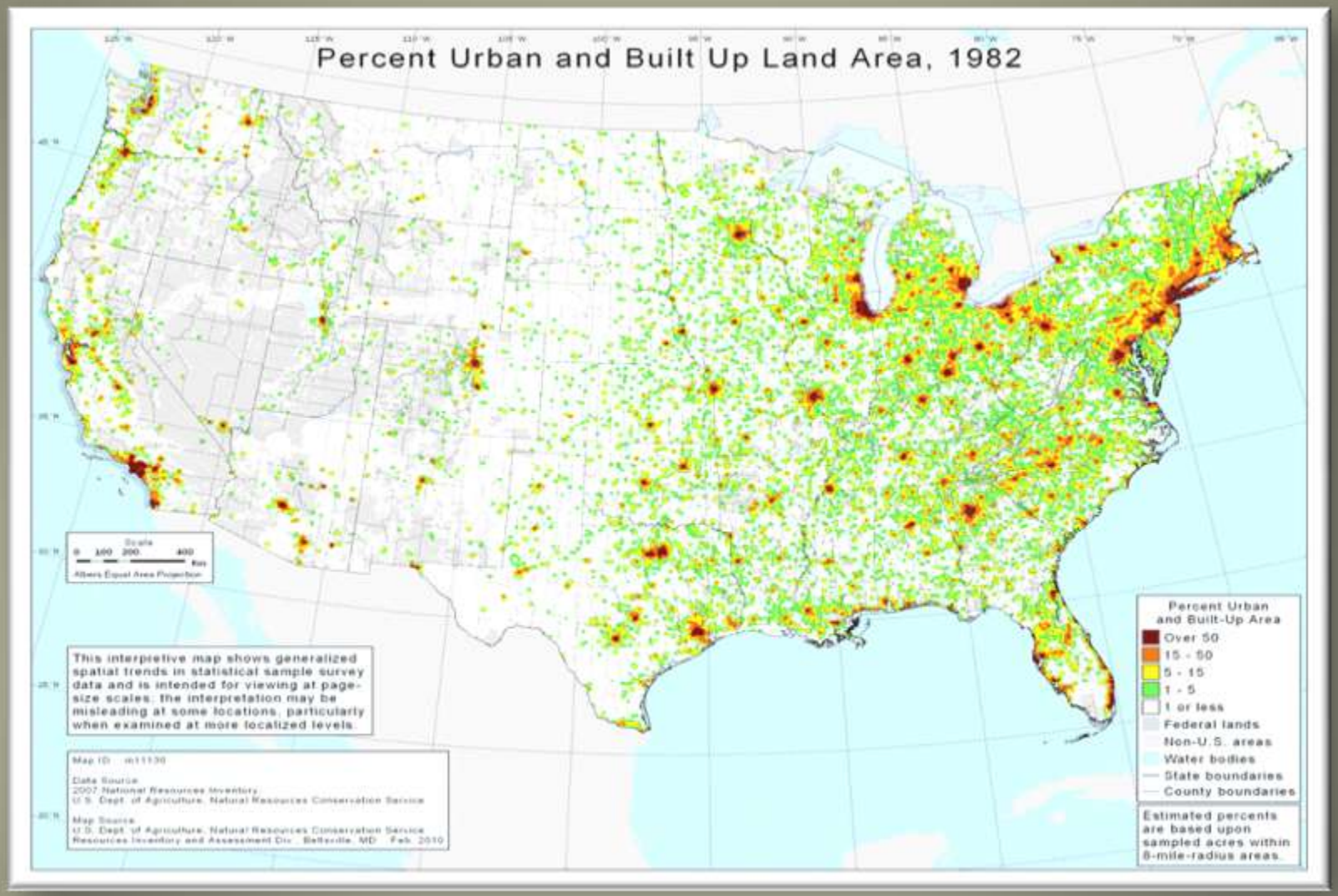
- Ag conservation practices deliver environmental benefits for the Great Lakes Basin.
- Inherent soil vulnerabilities in the Basin create a complex environment for ag.
- Water quality, particularly related to sediment and/or nutrient loading, is the most critical conservation concern.
- Systems of conservation practices are needed to manage complex nutrient loss pathways.
- Targeting the most critical areas delivers the largest benefits.

Partnership Opportunities

Sustainable, environmentally friendly, safe food production

- By 2050 there will be 2.4 billion more people to feed.
- 2007 National Resources Inventory (NRI) tells us that U. S. cropland acreage dropped by 63 million acres between 1982 and 2007.
  - From 420 million acres to 357 million acres
- To close the gap between current food production and future food demand, food output will need to increase by 70 percent over the next 4 decades.

Loss of Agricultural Land



Loss of Agricultural Land

All this calls for new collaborative responses and a continuing and even stronger commitment to private lands voluntary conservation.

- Chief White refers to the 70/30 rule – 70% of the contiguous US is private lands – the success of conservation will depend on what happens in that 70%.

- The historic local, state and federal partnership, complemented by the private sector (both nonprofit and for profit) will remain at the core of facilitating voluntary actions by this nation's farmer and ranchers.

Private lands conservation is needed to continue producing high quality food and providing essential ecosystem services in the Great Lakes Basin.