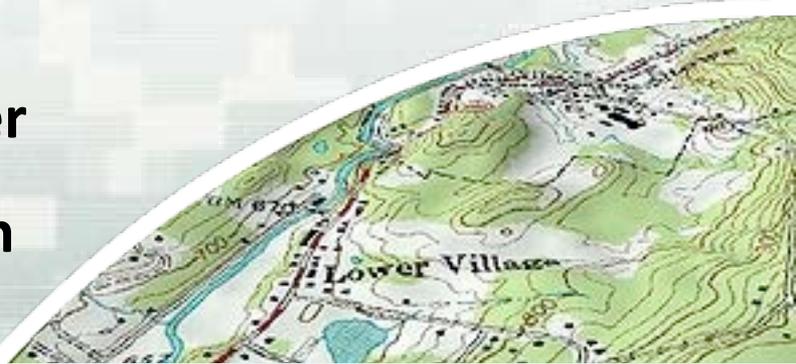


Marsh Lake Ecosystem Restoration Project

**Colonel Michael Price, District Commander
St. Paul District, Mississippi Valley Division
Civil Works Review Board Presentation
September 27, 2011**



**US Army Corps of Engineers
BUILDING STRONG®**

Presentation Outline

- Purpose
- Project Delivery Process
- Study Authority
- Overview of Study and Selected Plan
- Technical Review
- Policy Review
- Cost Apportionment
- Summary of Account Contributions
- Integrated Watershed Planning
- Environmental Operating Principles
- USACE Campaign Plan
- Project Summary
- Recommendation



Purpose of Briefing

- Provide an overview of the Marsh Lake Ecosystem Restoration Project Feasibility Study and the Recommended Plan
- Answer questions and address comments
- Obtain CWRB approval for State & Agency Review
- Discuss the next steps in the approval process toward a Chief's Report



Project Delivery Team

Corps of Engineers

- Michael Wyatt, Planning
- Corby Lewis, H&H
- Scott Goodfellow, H&H
- Daniel Wilcox, Environmental
- Lance Awsumb, Economics
- Ginny Gnabasik, Cultural Resources
- Rodney Peterson, Real Estate
- Dave Tschida, Civil Engineering
- Chris Behling, Geotechnical
- BJ Siljenberg, Structural Engineering
- Renee McGarvey, Recreation
- Dorie Bollman, Recreation

Other Partners

- Josh Kavanagh, Ducks Unlimited
- Dick Kroger, Clean Up the River Environment
- Shannon Fisher, Mankato State University

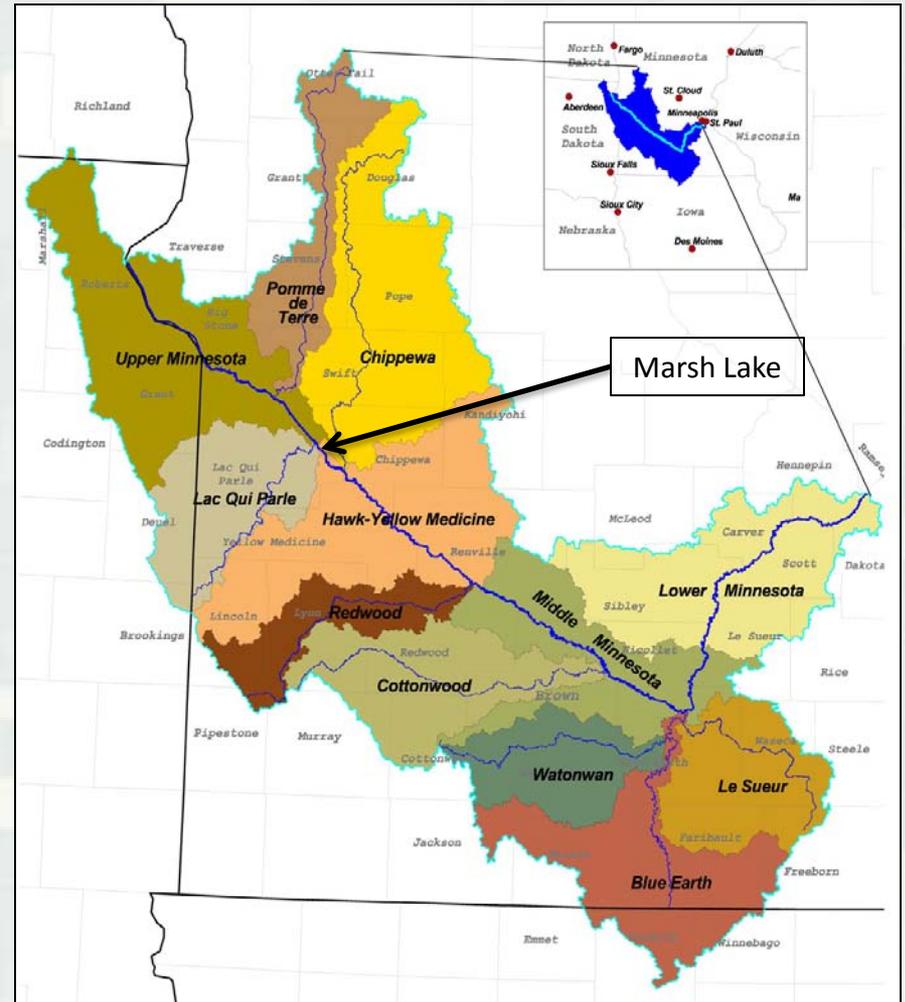
Minnesota Department of Natural Resources (Non-Federal Sponsor)

- Mark Matuska, Regional Director
- Ken Varland, Wildlife/Planning
- David Trauba, Wildlife
- Jack Lauer, Fisheries
- Norm Haukos, Fisheries
- Chris Domeier, Fisheries
- John Schladweiler, Ecological Services
- Luther Aadland, Fisheries
- Dave Lueth, Waters
- Skip Wright, Waters
- Shane Rustin, Engineering
- Craig Mitchell, Trails/Waterways

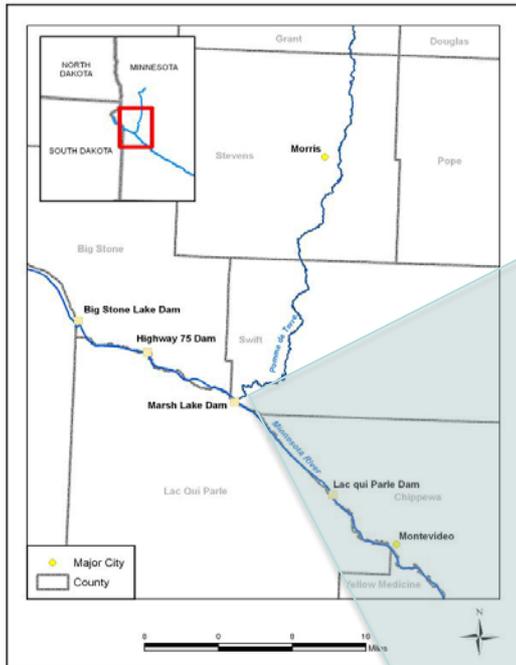


Study Authority

- 1962 Resolution of the House Committee on Public Works
 - ▶ Authorized investigation of improvements for “navigation, flood control, recreation, low flow augmentation, and other related water and land resources” within the Minnesota River Basin
- Minnesota River Watershed Reconnaissance Study, 2004
 - ▶ Recommended Integrated Watershed Study
 - ▶ Recommended Marsh Lake Ecosystem Restoration Study



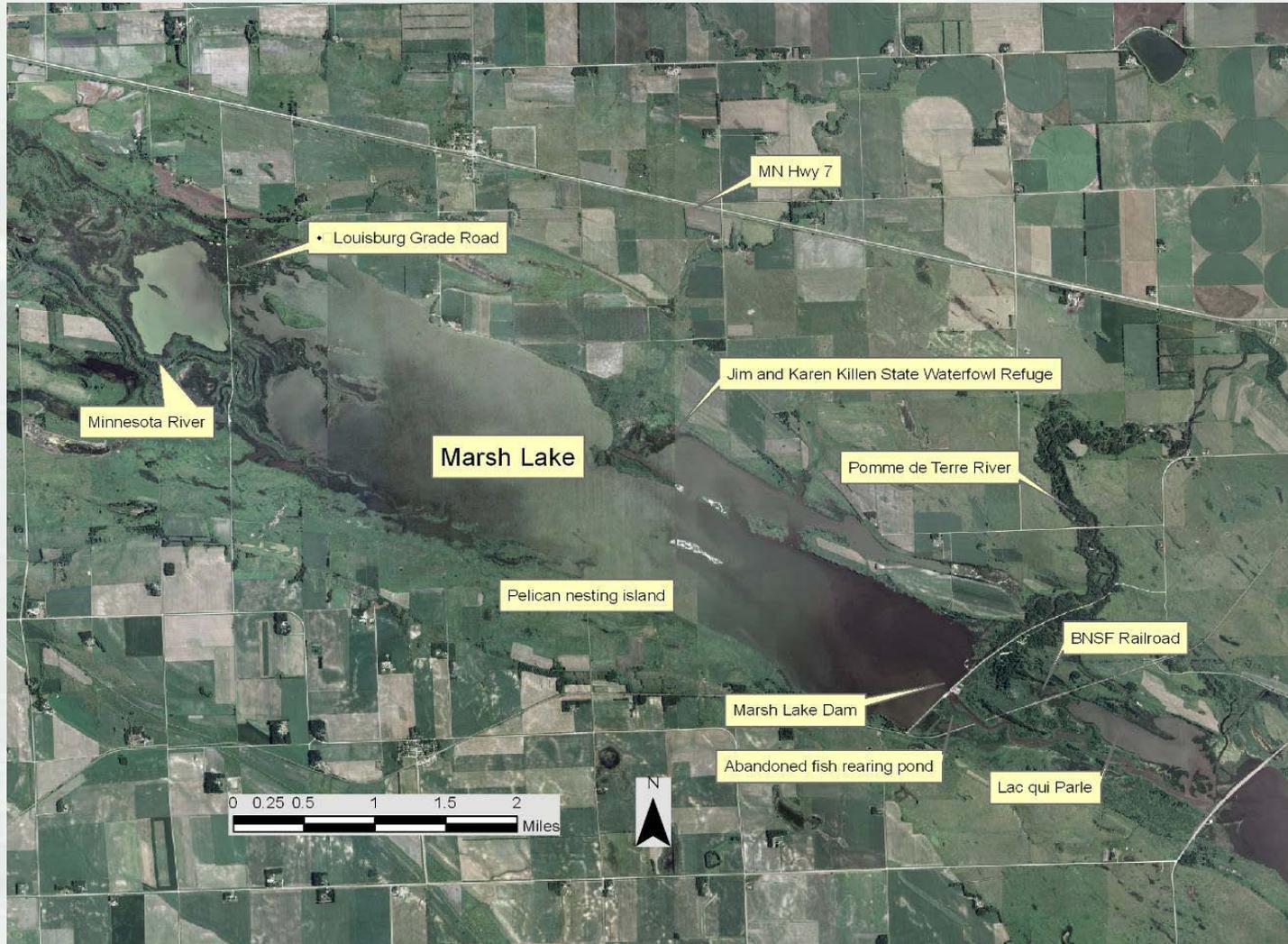
Location



- Western Minnesota
- Main stem of the Minnesota River
- Upper pool of the Lac qui Parle Reservoir



Geographic Scope of Study Area



Purpose and Objectives

Study Purpose: Identify alternative measures to return the Marsh Lake Ecosystem to a less degraded, higher functioning condition

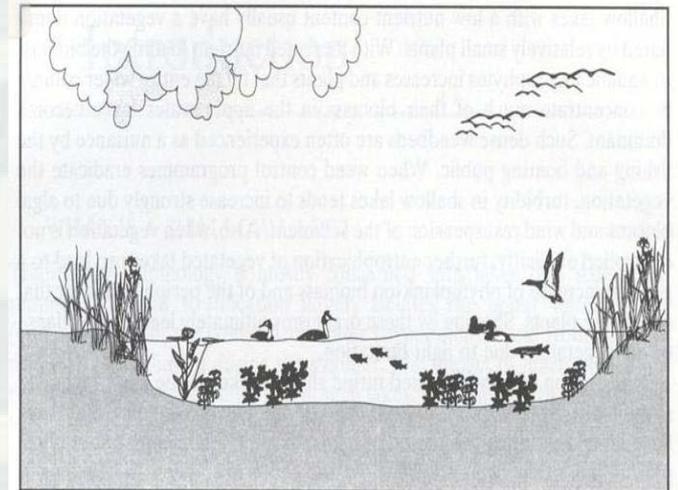
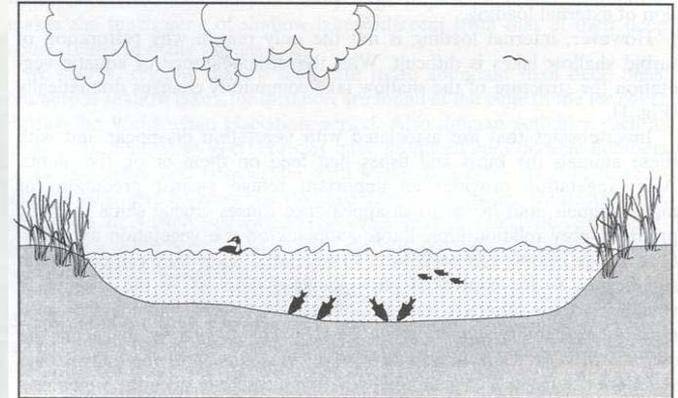
Objectives

Reducing:

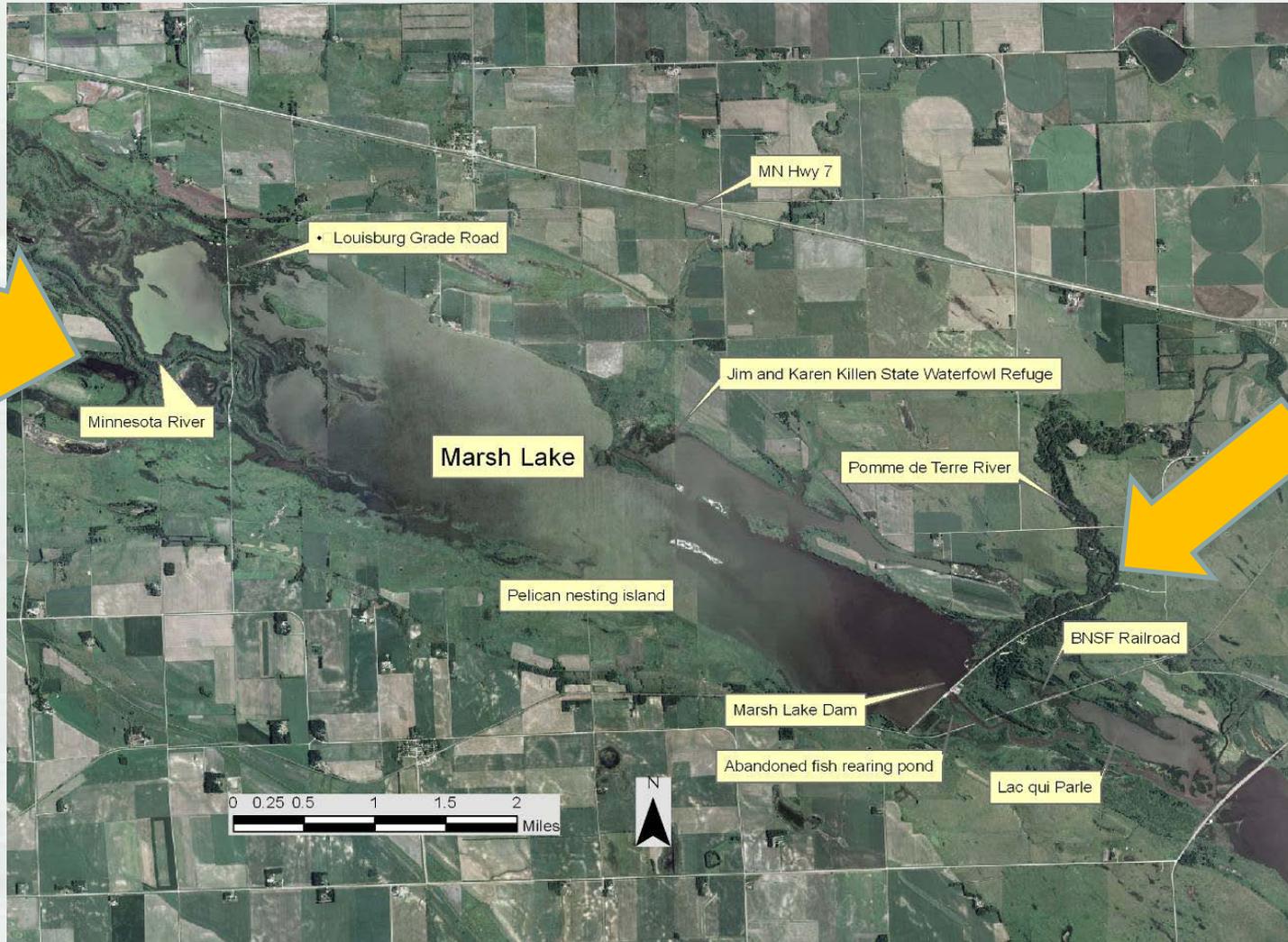
- Sediment Loads to Marsh Lake
- Sediment Resuspension within Marsh Lake
- The abundance of invasive species within Marsh Lake

Restoring:

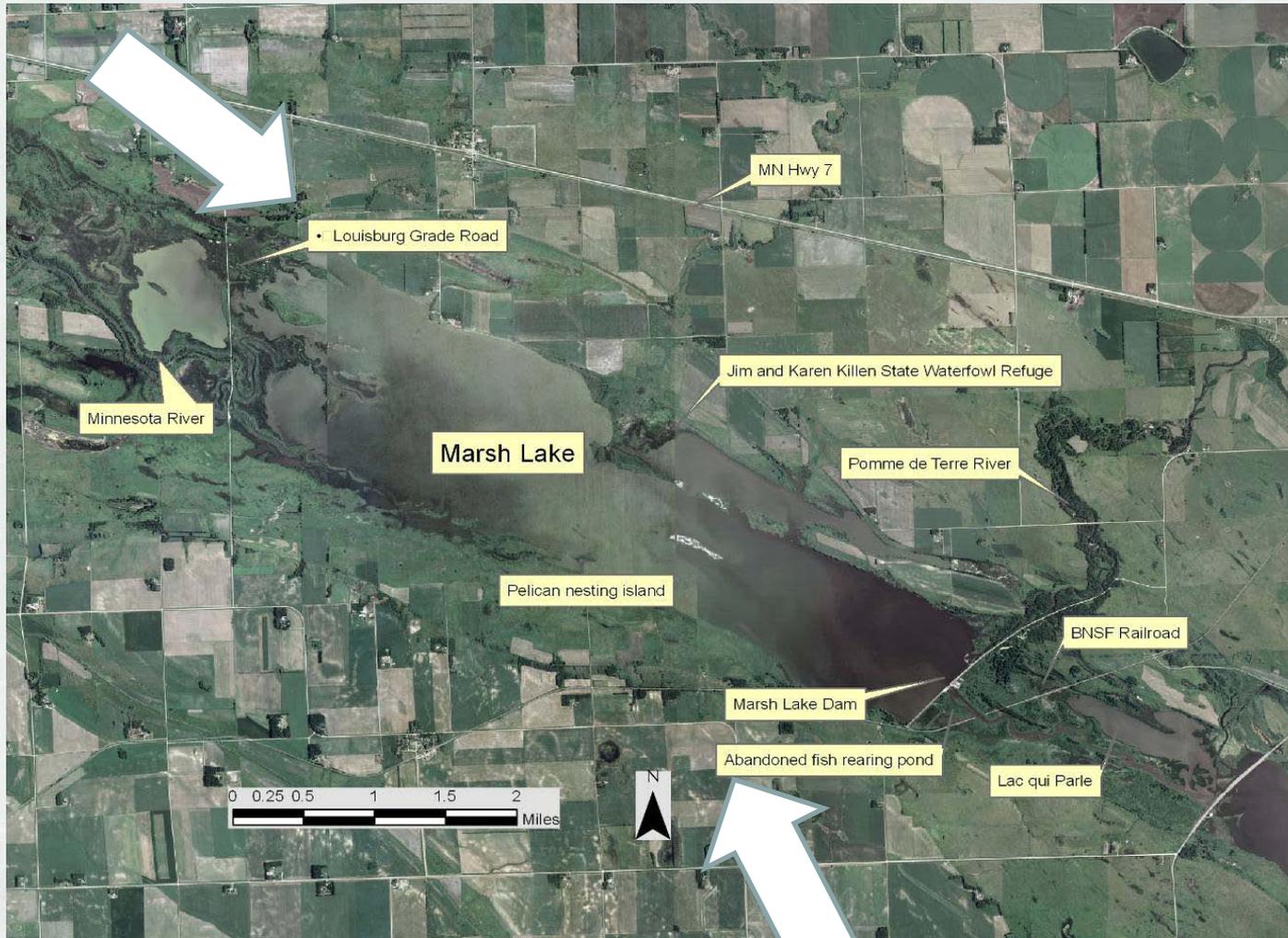
- Natural fluctuations to the hydrologic regime
- Geomorphic processes to the Pomme de Terre River
- Emergent and submersed aquatic plant communities within Marsh Lake
- Habitat connectivity between Marsh Lake, Lac qui Parle and the Pomme de Terre River
- Waterfowl habitat within Marsh Lake
- The diversity and abundance of native fish within Marsh Lake and the Pomme de Terre River



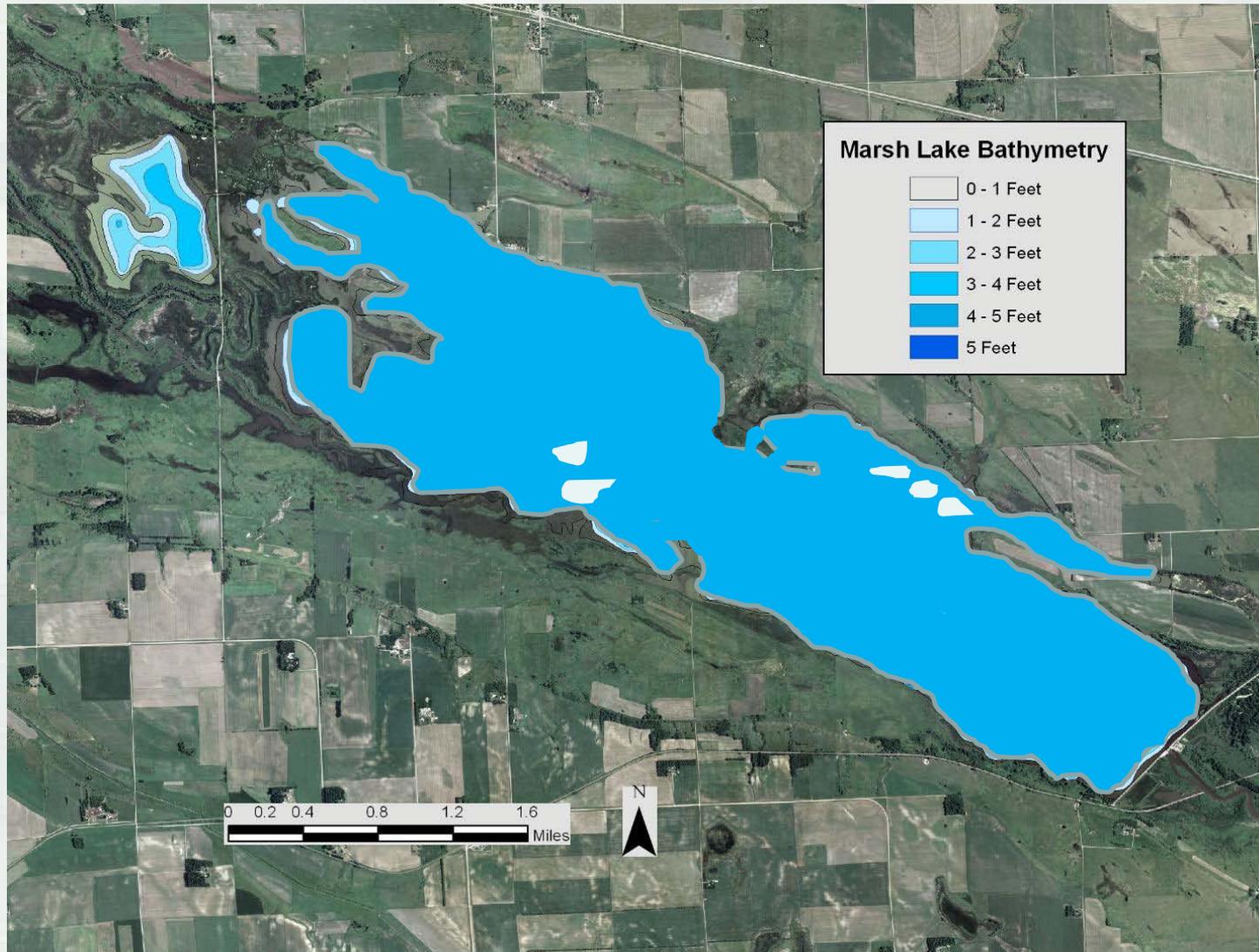
Sediment Loading



Sediment Resuspension



Lake Level Variability



Ecosystem Connectivity



Non-Native Species

Common Carp

- Destroy aquatic vegetation
- Disrupt food chain
- Resuspend sediment
- Outcompete native species

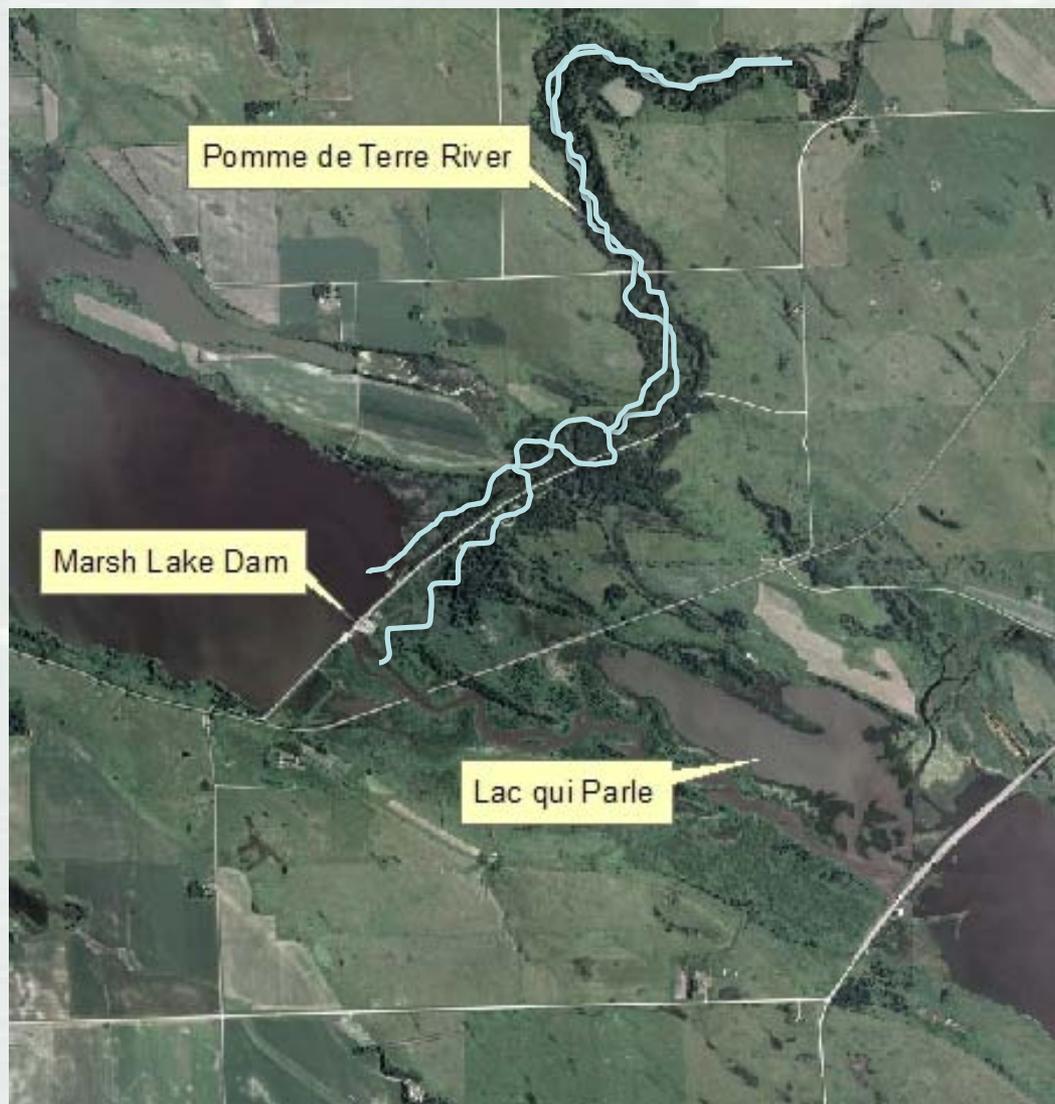


Initial Array of Alternative Measures

- Watershed Best Management Practices
- Streambank Stabilization within the Watershed
- Restore the Pomme de Terre to its Historic Channel
- Remove Marsh Lake Dam
- Modify the Marsh Lake Dam with a Fishway
- Conduct Drawdowns to Restore Aquatic Vegetation
- Install Gated Culverts at the Louisburg Grade Road
- Install Gated Culverts and Pumps at Abandoned Fish Pond
- Breach dike at Abandoned Fish Pond
- Construct Islands within Marsh Lake
- Construct Exclosures to Restore Aquatic Vegetation



Final Array – Alternative Measure 1



REROUTE POMME DE TERRE TO HISTORIC OUTLET

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Final Array – Alternative Measure 2



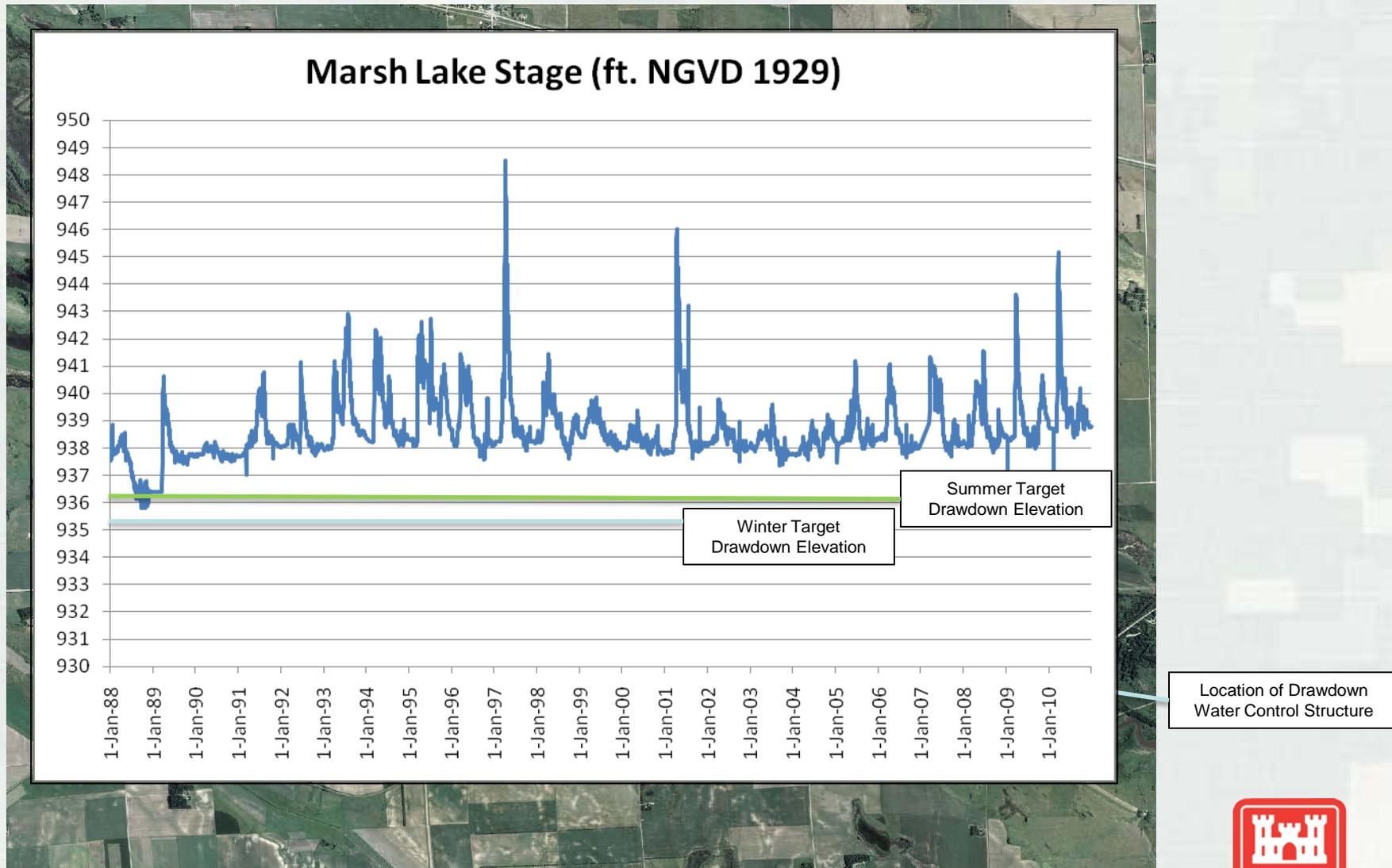
Marsh Lake Dam



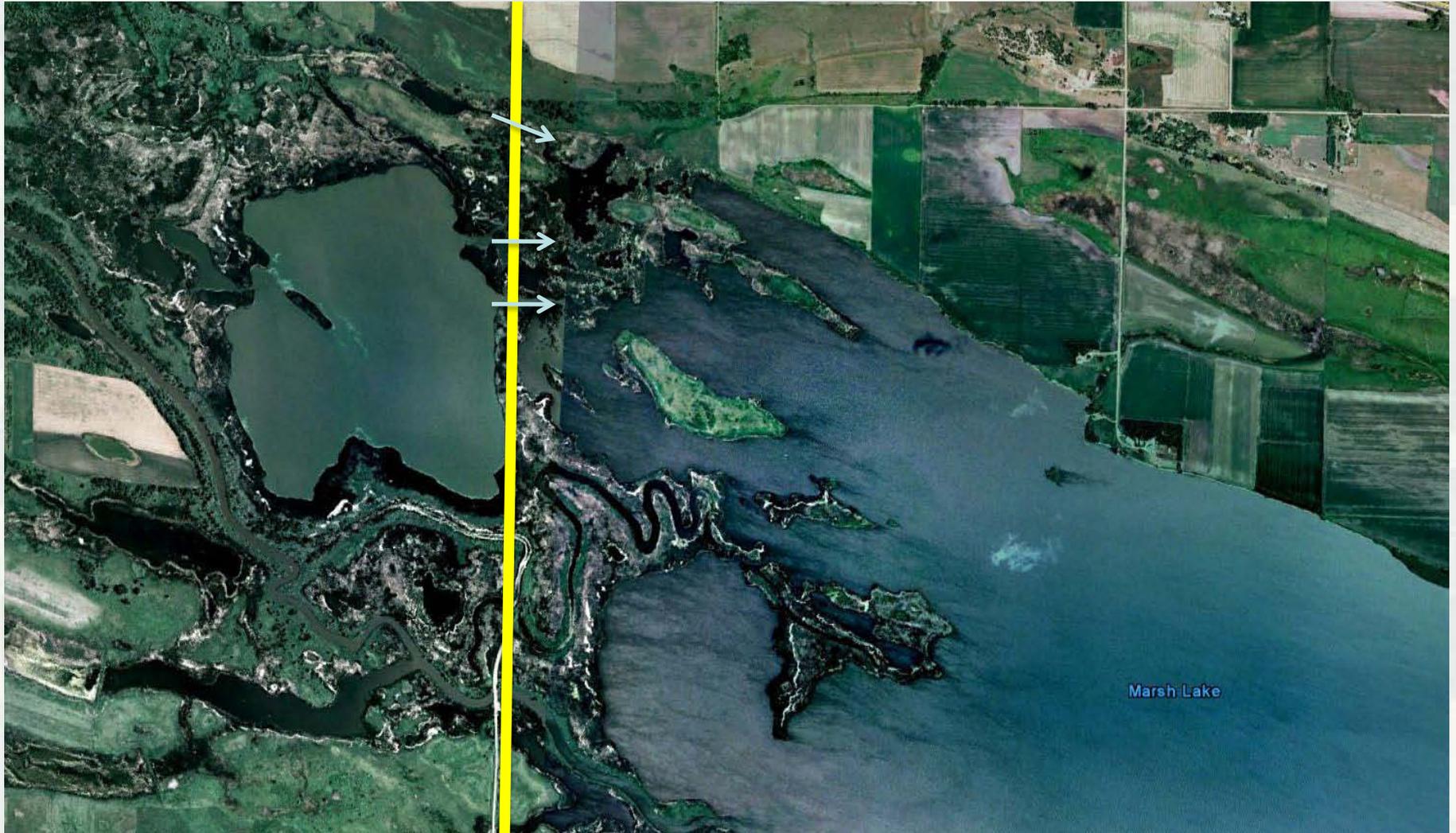
Completed fish passage on the Red River



Final Array – Alternative Measure 3



Final Array – Alternative Measure 4



LOUISBURG GRADE ROAD CULVERT STRUCTURES

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Final Array – Alternative Measure 5



Final Array – Alternative Measure 6



CONSTRUCT ISLANDS WITHIN MARSH LAKE

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Costs and Benefits of Alternative Measures

Alternative Measure Number	Alternative Measures	Net Benefit (AAHU)	Total First Project Costs	Average Annual Costs
0	No Action	0	\$ -	\$ -
1	Restore Pomme de Terre River to its former channel	6567	\$ 4,030,130	\$ 203,588
2	Modify Marsh Lake Dam to attain target	483	\$ 1,631,344	\$ 85,382
3	Construct drawdown water control structure	725	\$ 3,012,706	\$ 157,782
4	Install gated culverts in Louisburg Grade Road	610	\$ 528,125	\$ 26,105
5	Breach dike at abandoned fish pond	5	\$ 7,731	\$ 421
6	Construct islands in Marsh Lake	239	\$ 4,679,567	\$ 244,535

All measures combined total approximately \$14 million



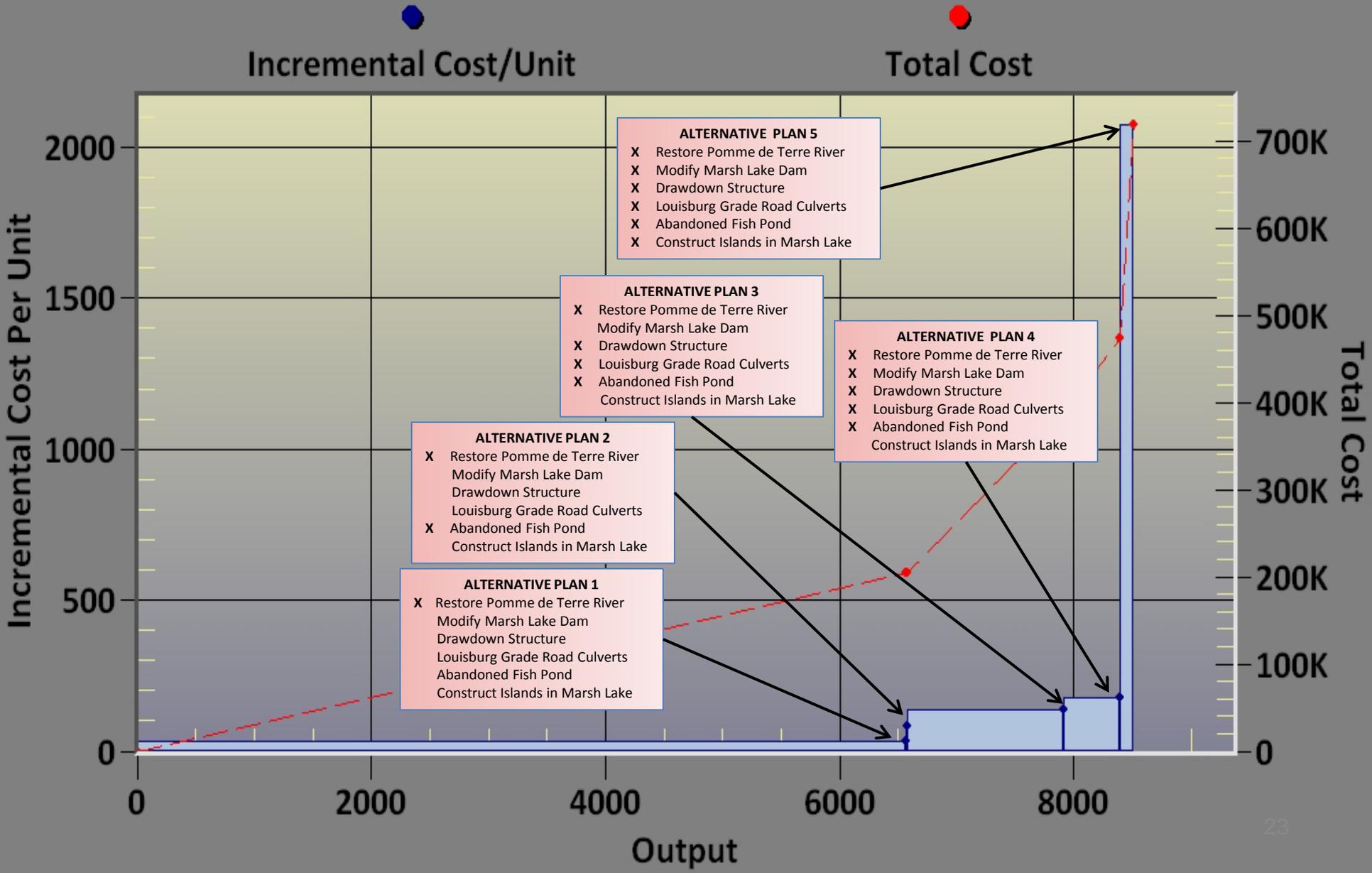
Combined Best Buy Alternative Plans

No.	Restore Pomme de Terre	Modify Marsh Lake Dam, Fishway	Drawdown Structure	Louisburg Grade Road Gated Culverts	Modify Abandoned Fish Pond	Construct Islands in Marsh Lake	Average Annual Habitat Units (AAHU)	Average Annual Costs	Average Costs per AAHU
0							0	\$ -	\$ -
1	X						6567	\$ 203,588	\$ 31.00
2	X				X		6572	\$ 204,009	\$ 31.04
3	X		X	X	X		7907	\$ 387,896	\$ 49.06
4	X	X	X	X	X		8390	\$ 473,278	\$ 56.41
5	X	X	X	X	X	X	8508	\$ 717,813	\$ 84.37



Marsh Lake Incremental Cost Analysis

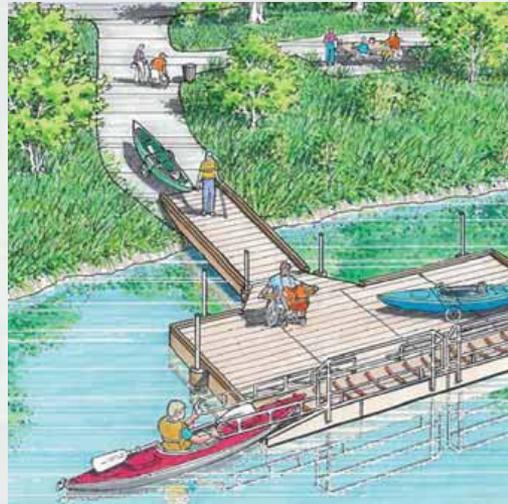
Best Buy Plan Alternatives - Incremental/Average Costs per Unit Output

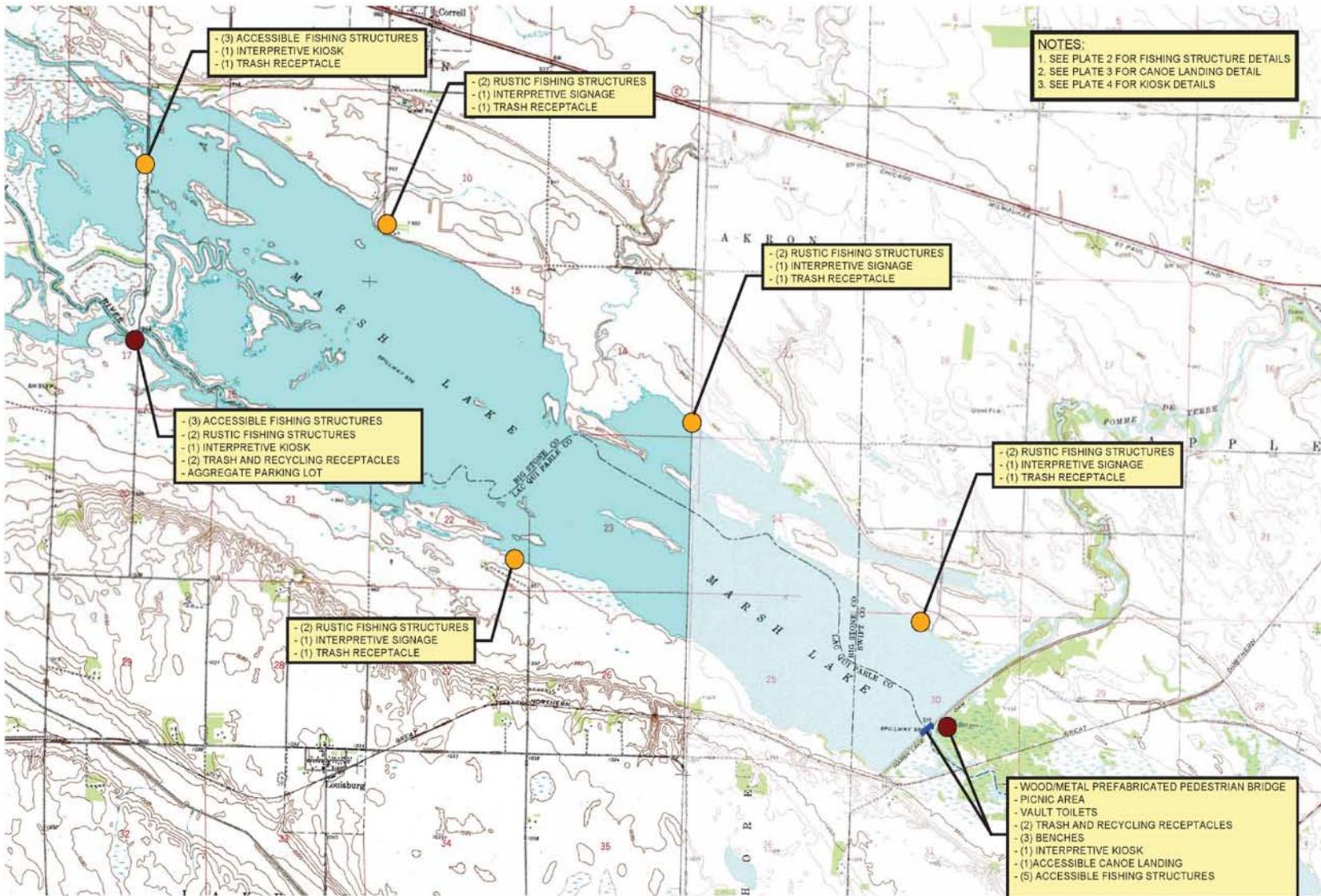


Recommendation – Recreation Improvements

Facilities Include:

- Shoreline Fishing Stations
- Pedestrian Bridge
- Canoe Access
- Toilets, Picnic Tables, Park Benches
- Interpretive Signage





Technical Review

- Value Engineering Completed, Oct 2007
- ITR Completed, Oct 2007
- ATR 1 Completed, Dec 2010
- ATR 2 Completed, June 2011
 - ▶ All ATR issues have been resolved
- Primary ATR Concerns:
 - ▶ Compliance with Cost Engineering requirements
 - ▶ Incremental Cost Analysis



Policy Review

- Feasibility Scoping Meeting, Dec 2007
- Alternatives Formulation Briefing, Feb 2011
- Draft Feasibility Report, May 2011
- Final Feasibility Report, Jul 2011

Primary Policy Concerns:

- Content of Objectives and Constraints
 - Incremental Cost Analysis
 - Plan Selection
- All policy changes were incorporated



Cost Apportionment

Apportionment of Project First Costs Between Federal and Non-Federal Sponsor			
	Federal	Non-Federal	Total
Ecosystem Restoration Features			
Preconstruction Engineering, Design	\$ 619,000	\$ 333,000	\$ 952,000
Construction Management	\$ 392,000	\$ 211,000	\$ 604,000
Construction	\$ 5,133,000	\$ 2,764,000	\$ 7,897,000
LERRD	\$ 7,000	\$ 3,000	\$ 10,000
Total Ecosystem Restoration	\$ 6,151,000	\$ 3,311,000	\$ 9,463,000
Recreation Features			
Preconstruction Engineering, Design	\$ 26,000	\$ 26,000	\$ 52,000
Construction Management	\$ 13,000	\$ 13,000	\$ 26,000
Construction	\$ 213,000	\$ 213,000	\$ 426,000
LERRD	\$ -	\$ -	\$ -
Total Recreation Features	\$ 252,000	\$ 252,000	\$ 504,000
Total Project	\$ 6,403,000	\$ 3,563,000	\$ 9,967,000



Summary of Account Contributions

- Environmental Quality – Improvement to the environment, net restoration of 8400 AAHU's (\$60/habitat unit)
- National Economic Development = \$199,000 average annual contribution through recreation benefits (8.6 B/C ratio)
- Regional Economic Development - Construction contracting, recreation benefits
- Other Social Effects – No negative environmental justice issues or other social effects



Integrated Watershed Planning

- Minnesota River Watershed Reconnaissance Study Report Recommendations:
 - ▶ Minnesota River Integrated Watershed Study
 - ▶ Marsh Lake Ecosystem Restoration Project
- Future efforts will explore similar opportunities upstream and downstream



Environmental Operating Principles

1. Strive to **achieve environmental sustainability**. An environment maintained in a healthy, diverse and sustainable condition is necessary to support life.
2. **Recognize the interdependence of life and the physical environment**. Proactively consider environmental consequences of Corps programs and act accordingly in all appropriate circumstances.
3. Seek **balance** and synergy among **human development activities and natural systems** by designing economic and environmental solutions that support and reinforce one another.
4. Continue to **accept corporate responsibility** and accountability under the law for activities and decisions under our control that impact human health and welfare and the continued viability of natural systems.
5. Seeks ways and means to assess and **mitigate cumulative impacts to the environment**; bring systems approaches to the full life cycle of our processes and work.
6. Build and **share an integrated scientific, economic, and social knowledge base** that supports a greater understanding of the environment and impacts of our work.
7. **Respect the views of individuals and groups** interested in Corps activities, listen to them actively, and learn from their perspective in the search to **find innovative win-win solutions** to the nation's problems that also protect and enhance the environment.



USACE Campaign Plan

2. Deliver enduring and essential water resource solutions through collaboration with partners and stakeholders
 - ▶ 2a –Deliver integrated, sustainable water resource solutions
 - ▶ 2b –Implement collaborative approaches to effectively solve water resource problems
 - ▶ 2c – Implement streamlined and transparent regulatory processes to sustain aquatic resources

4. Build and cultivate a competent, disciplined, and resilient team equipped to deliver high quality solutions
 - ▶ 4a –Multidisciplinary, regional PDT enhanced technical competencies to provide technical analyses and plan recommendations
 - ▶ 4b -Communicating with teams, stakeholders, and the public strategically and transparently, receiving broad public support for the project



Project Summary

- Recommended Plan modifies existing Corps infrastructure to achieve significant environmental benefits
- Recommended Plan will restore critical habitat and connectivity of resources within a priority watershed of the Mississippi River Flyway
- Recommended Plan is extremely cost effective with a total cost of approximately \$10 million (less than \$60 per habitat unit)
- Recreation features will augment existing site use and provide connectivity to future area recreation infrastructure
- Public coordination and involvement by both the non-Federal sponsor and the Corps has resulted in broad public support for the recommended plan



Project Schedule

- 03 Oct 11 Initiate S&A review
- 02 Nov 11 Complete S&A review
- Dec 2011 Sign Chief's Report
- Dec 2011 Submit Chief's Report to ASA(CW) for administrative review
- Mar 2012 ASA(CW) submit report to Congress



Recommendation

Approval to initiate State and Agency Review for the *Marsh Lake Ecosystem Restoration Feasibility Study Report with Integrated Environmental Assessment*, dated July, 2011.





ESSAYONS



Non-Federal Sponsor Perspective Marsh Lake Ecosystem Restoration



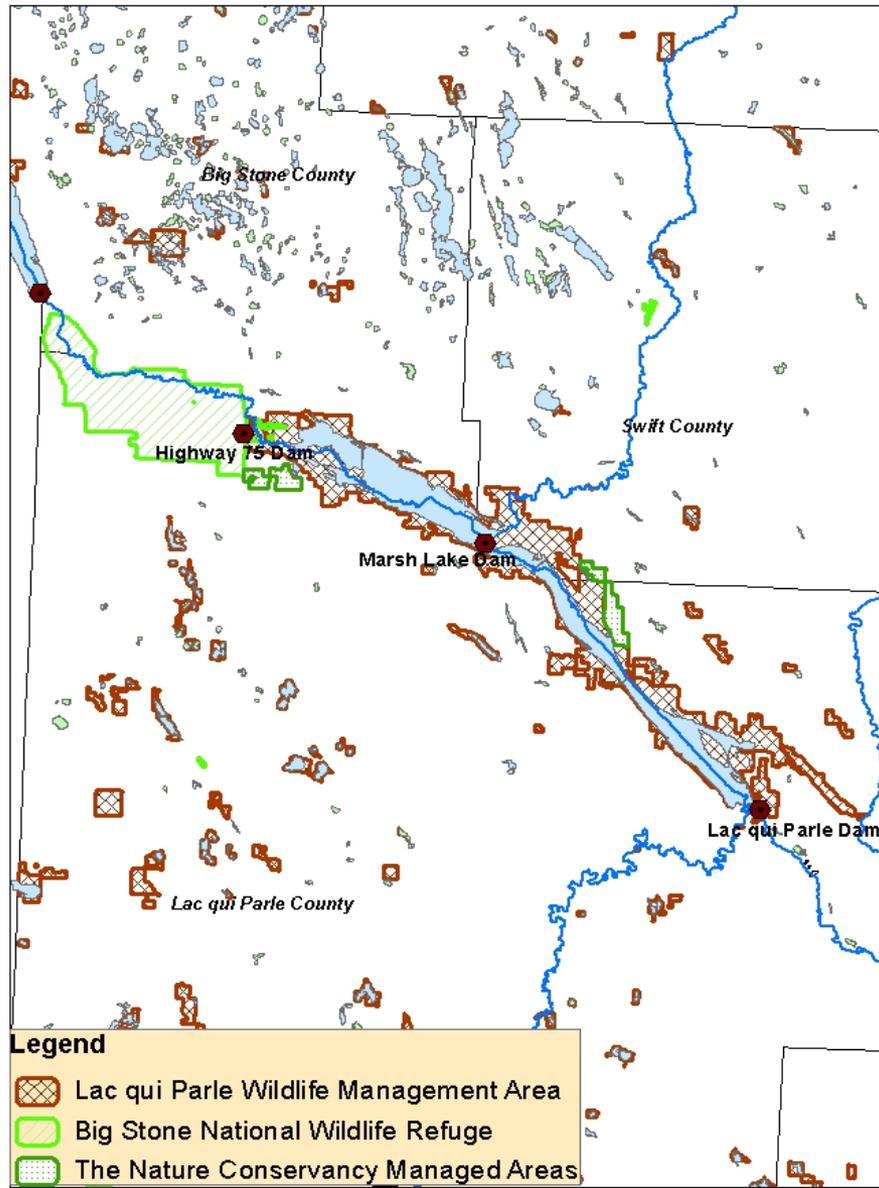
By: David R. Trauba
Lac qui Parle Area
Supervisor, Wildlife
MN Dept of Nat Res

To: Civil Works Review Board

27 September 2011







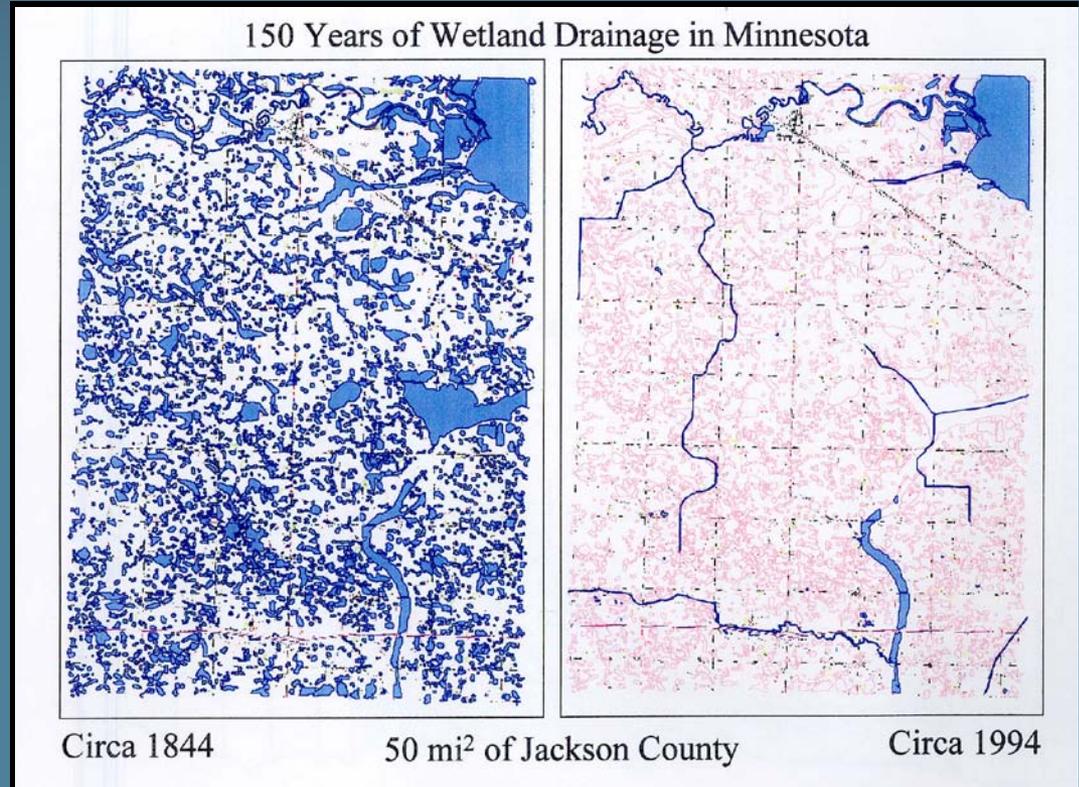
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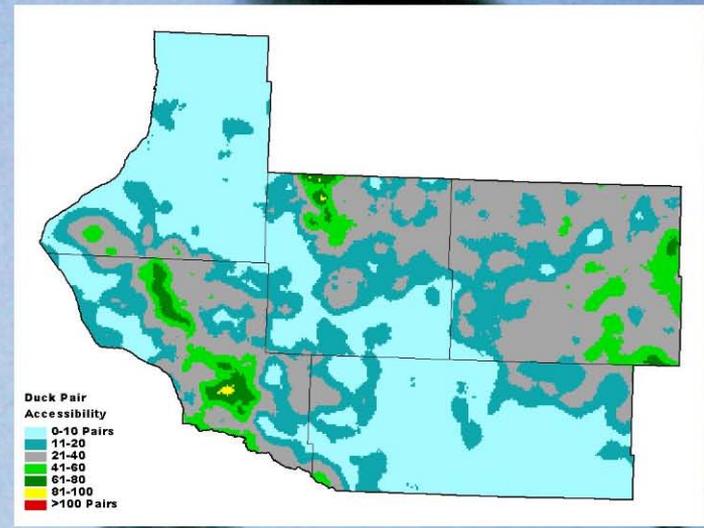
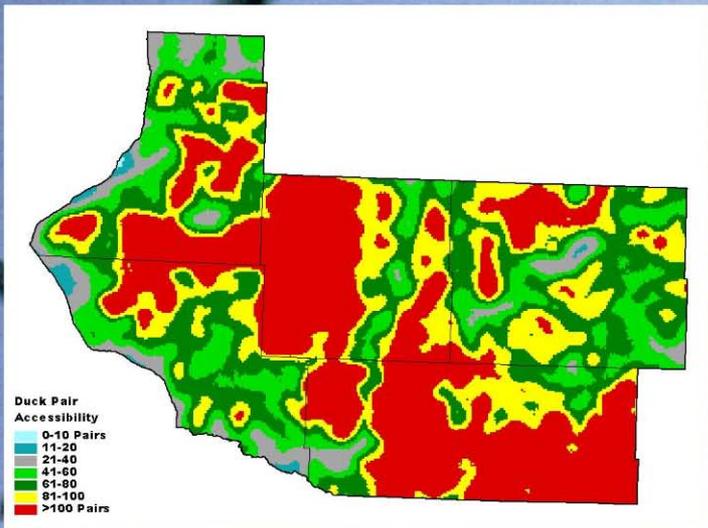
-  Lac qui Parle Wildlife Management Area
-  Big Stone National Wildlife Refuge
-  The Nature Conservancy Managed Areas



Wetland Loss in Minnesota

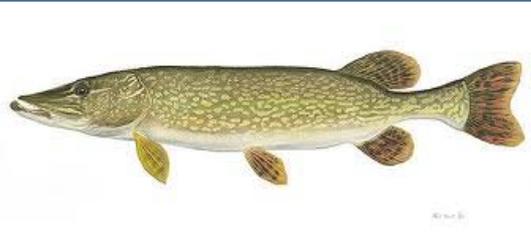
- ❑ 90% of MN's prairie wetlands have been drained, especially temporary and seasonal wetlands
- ❑ Remaining wetlands tend to be large basins or shallow lakes.





Pairs	Historic	Current	Change
Mallard	119,391	23,281	-80.5%
Blue-winged Teal	124,183	30,061	-75.8%
Gadwall	30,194	2,288	-99.0%
Northern Pintail	10,587	1,311	-87.6%
Northern Shoveler	12,532	1,664	-86.7%
Total	296,887	58,604	-80.3%

Clear-water Condition



Turbid Condition

Current State of Marsh Lake



Why is improving Marsh Lake important?

❑ Migratory Waterfowl

- Critical stop-over for migratory waterfowl.
- Located in one of the heaviest travelled migration corridors in the United States.
- Lac qui Parle WMA annually has the largest concentration of migrating and wintering Canada geese in Minnesota.
- Migratory Waterfowl are an International resource governed by the Migratory Bird Treaty Act.





Mallard Migration Phenology February 25, 2008

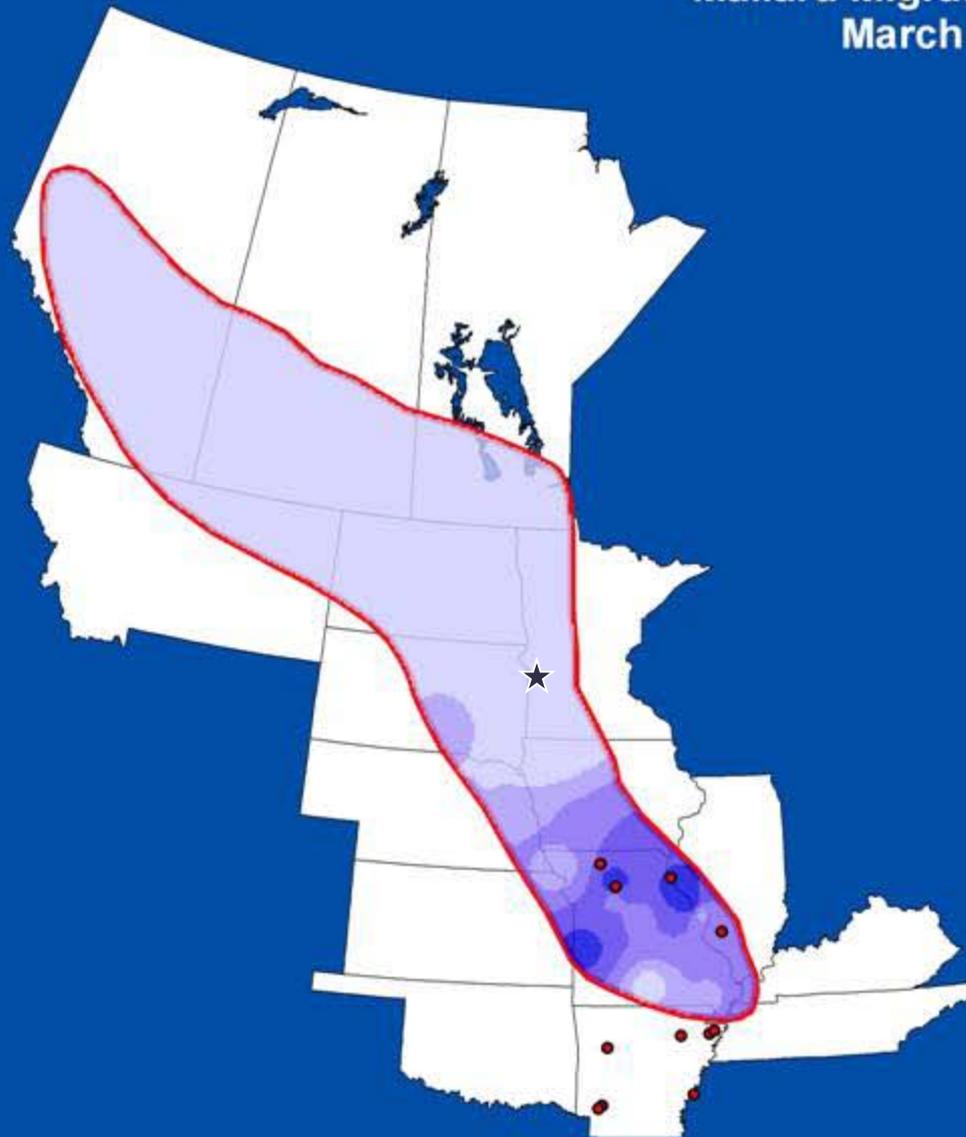


Explanation	
●	GPS Mallard Locations
Density	
Very Light Purple	Very Low
Light Purple	Somewhat Low
Medium Purple	Moderate
Dark Purple	High
Dark Blue	Peak

0 200 400 800 1,200 Miles



Mallard Migration Phenology March 3, 2008



Explanation	
●	GPS Mallard Locations
Density	
Very Light Purple	Very Low
Light Purple	Somewhat Low
Medium Purple	Moderate
Dark Purple	High
Blue-Black	Peak

0 200 400 800 1,200 Miles



Mallard Migration Phenology March 10, 2008

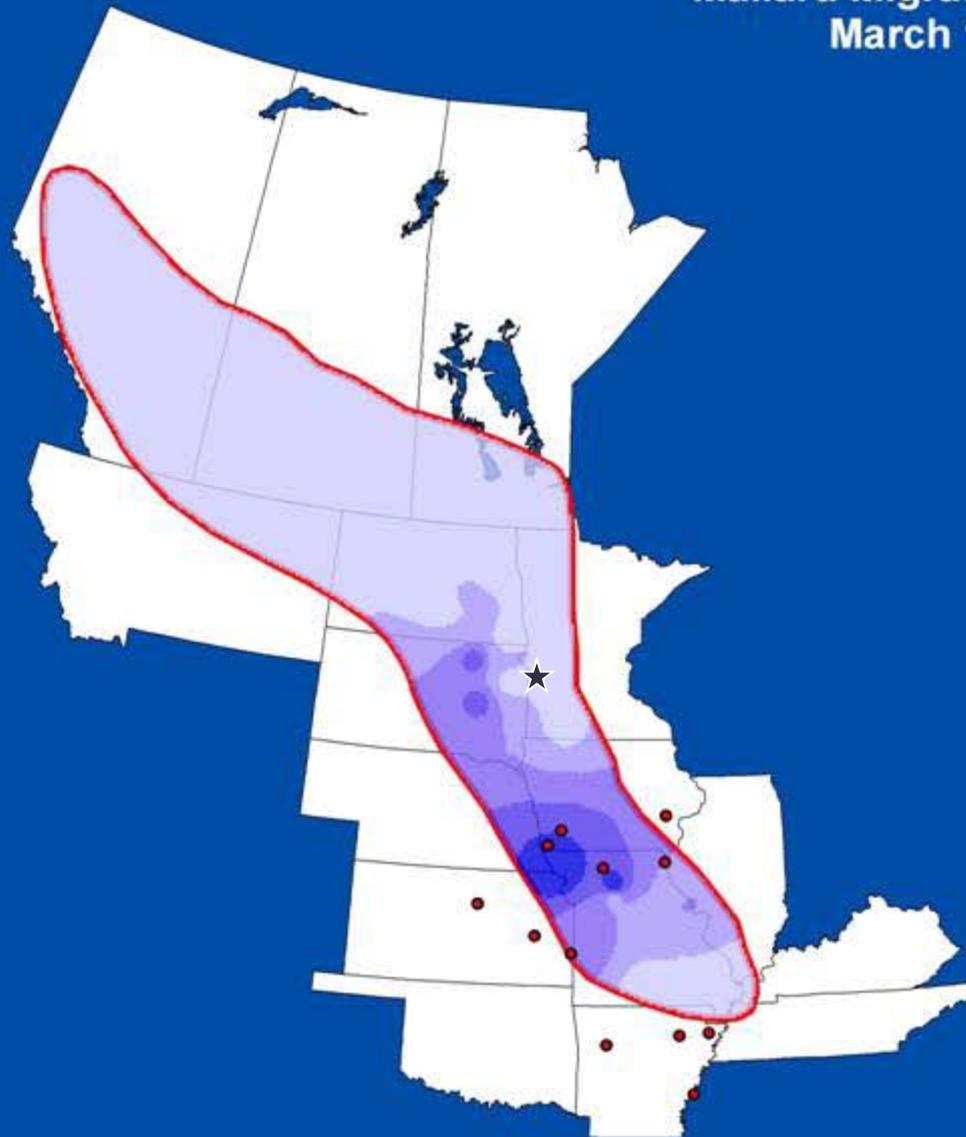


Explanation	
●	GPS Mallard Locations
Density	
Very Light Purple	Very Low
Light Purple	Somewhat Low
Medium Purple	Moderate
Dark Purple	High
Dark Blue	Peak

0 200 400 800 1,200 Miles



Mallard Migration Phenology March 17, 2008

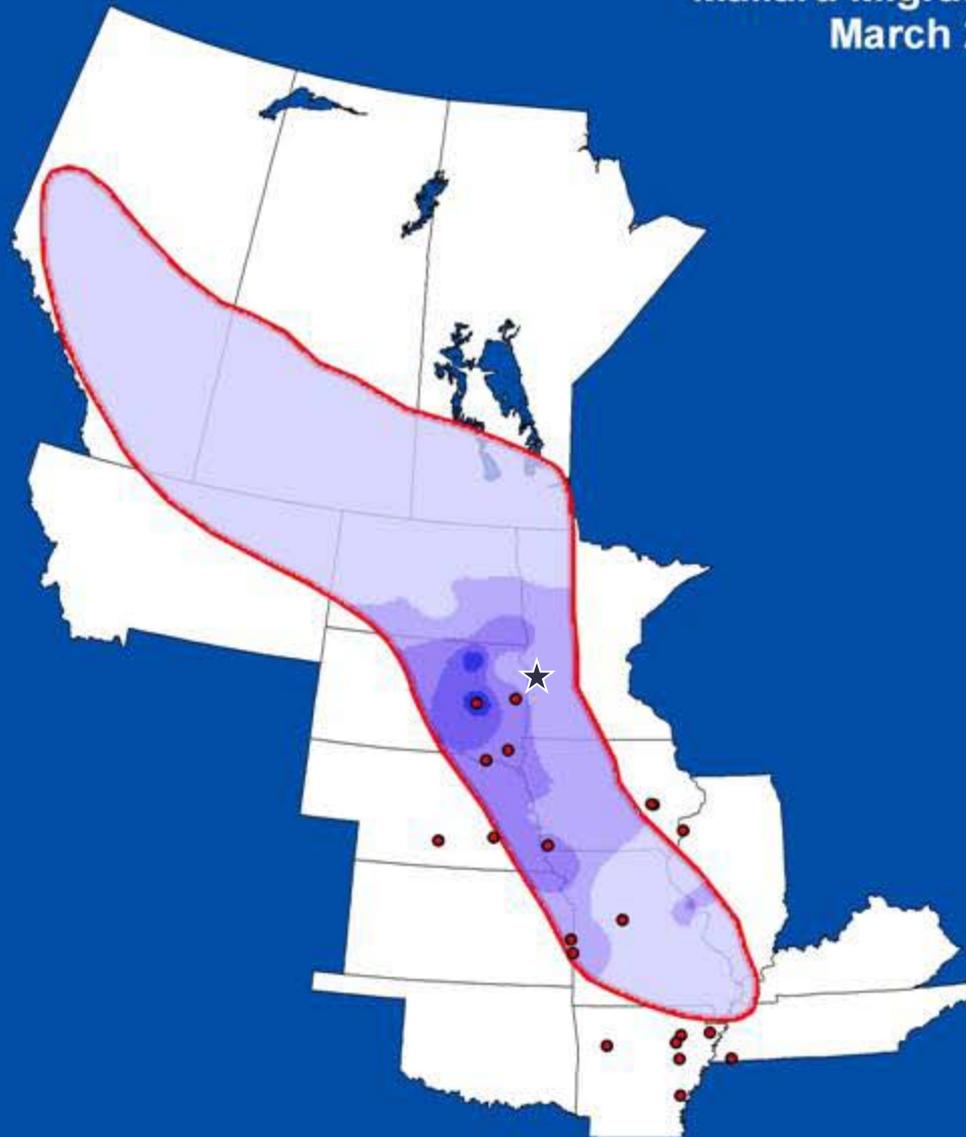


Explanation	
●	GPS Mallard Locations
Density	
Very Light Purple	Very Low
Light Purple	Somewhat Low
Medium Purple	Moderate
Dark Purple	High
Dark Blue	Peak

0 200 400 800 1,200 Miles



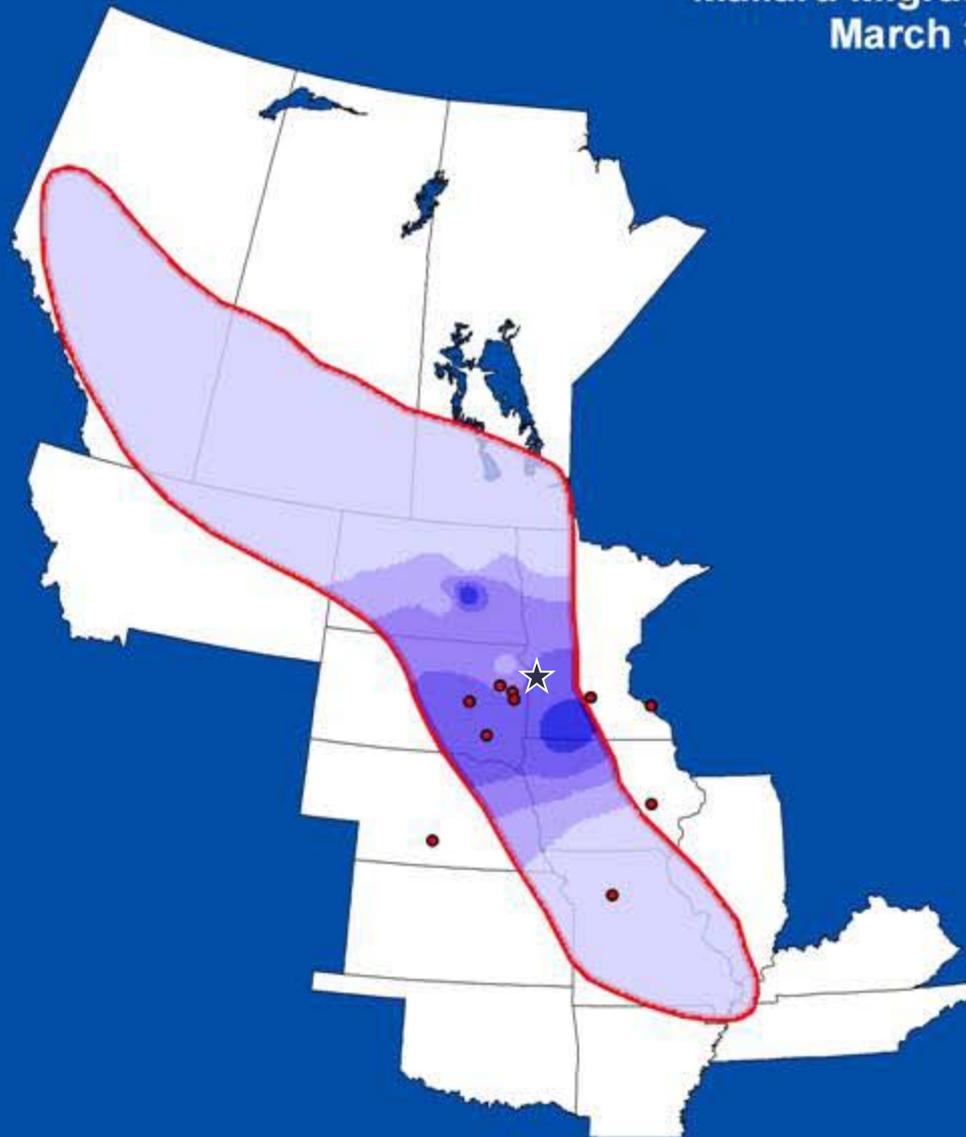
Mallard Migration Phenology March 24, 2008



Explanation	
●	GPS Mallard Locations
Density	
Very Light Purple	Very Low
Light Purple	Somewhat Low
Medium Purple	Moderate
Dark Purple	High
Dark Blue	Peak



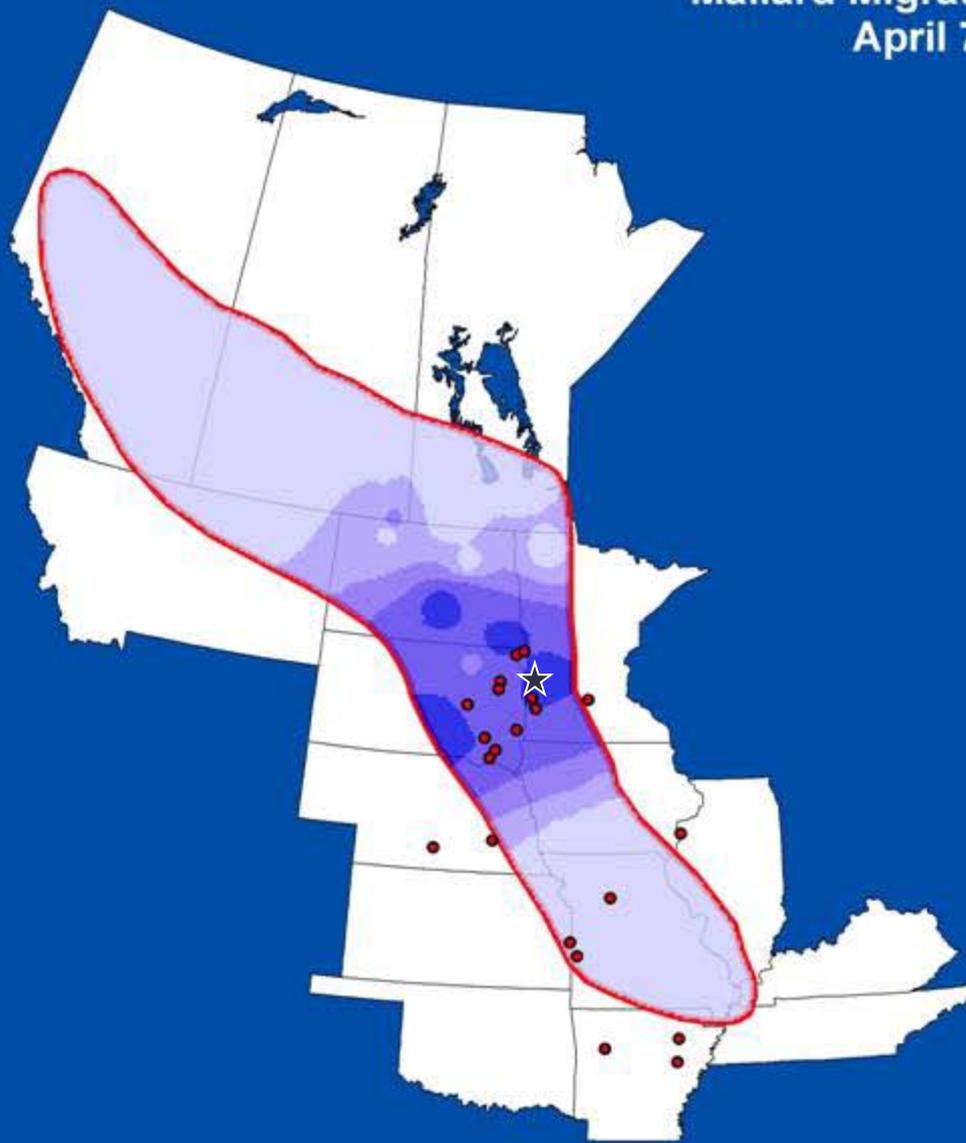
Mallard Migration Phenology March 31, 2008



Explanation	
●	GPS Mallard Locations
Density	
Very Light Purple	Very Low
Light Purple	Somewhat Low
Medium Purple	Moderate
Dark Purple	High
Dark Blue	Peak



Mallard Migration Phenology April 7, 2008



Explanation

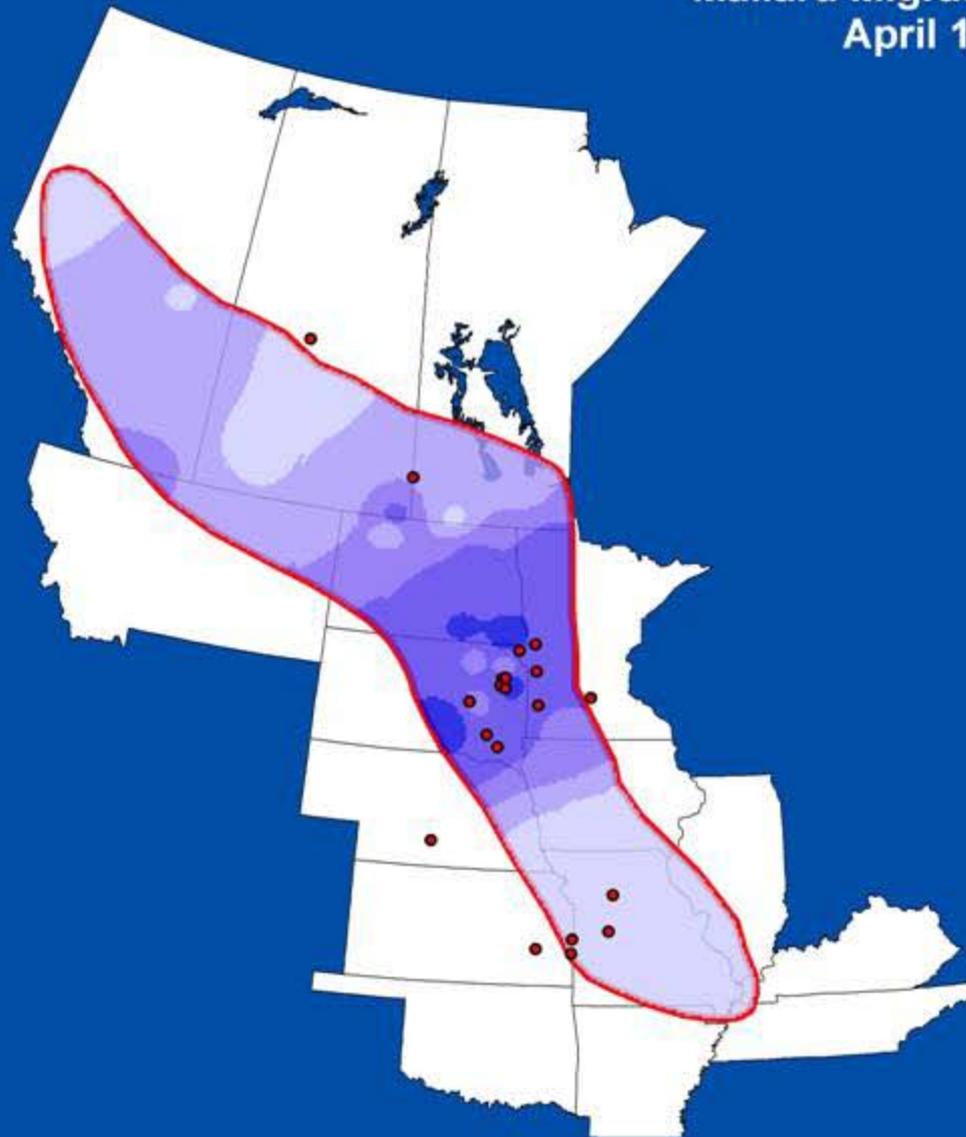
- GPS Mallard Locations

Density

- Very Low
- Somewhat Low
- Moderate
- High
- Peak



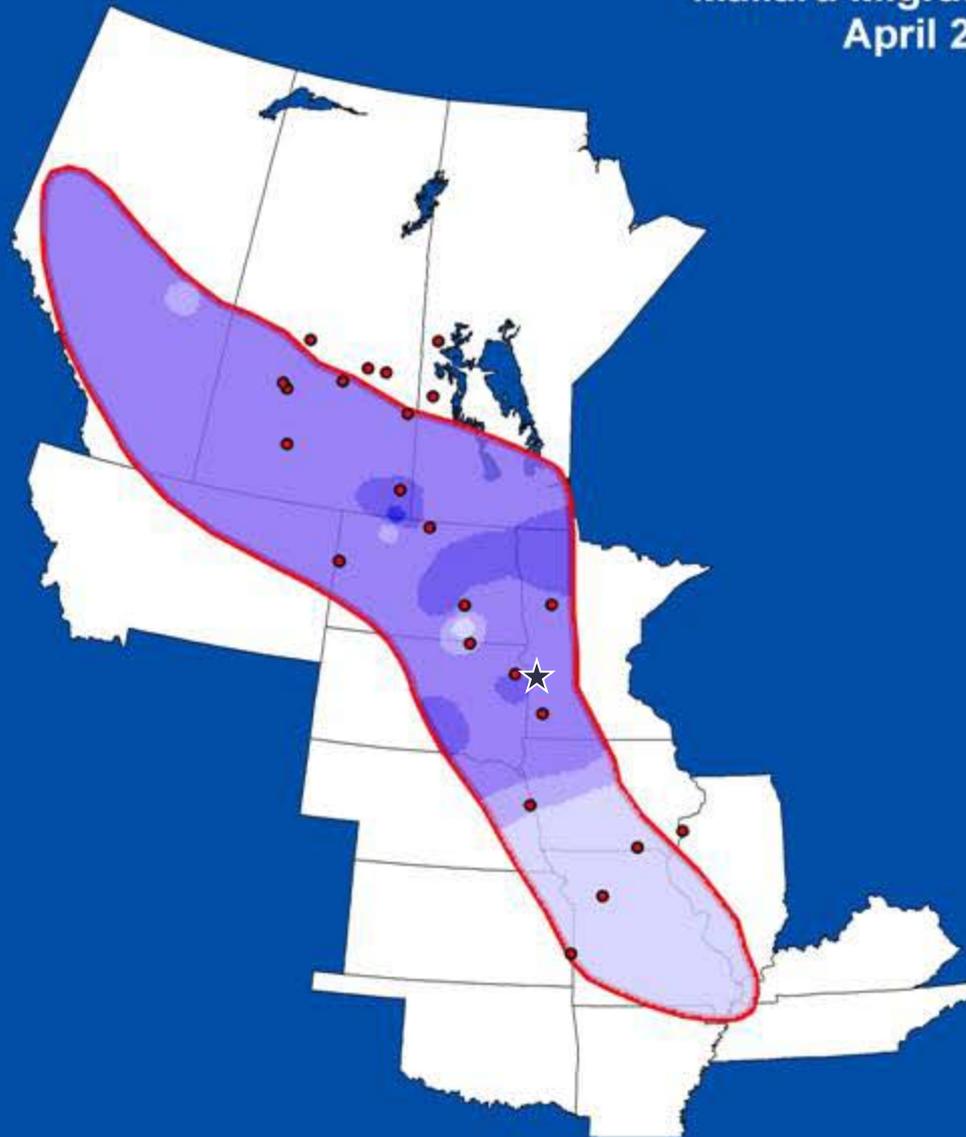
Mallard Migration Phenology April 14, 2008



Explanation	
●	GPS Mallard Locations
Density	
Very Light Purple	Very Low
Light Purple	Somewhat Low
Medium Purple	Moderate
Dark Purple	High
Dark Blue	Peak



Mallard Migration Phenology April 21, 2008

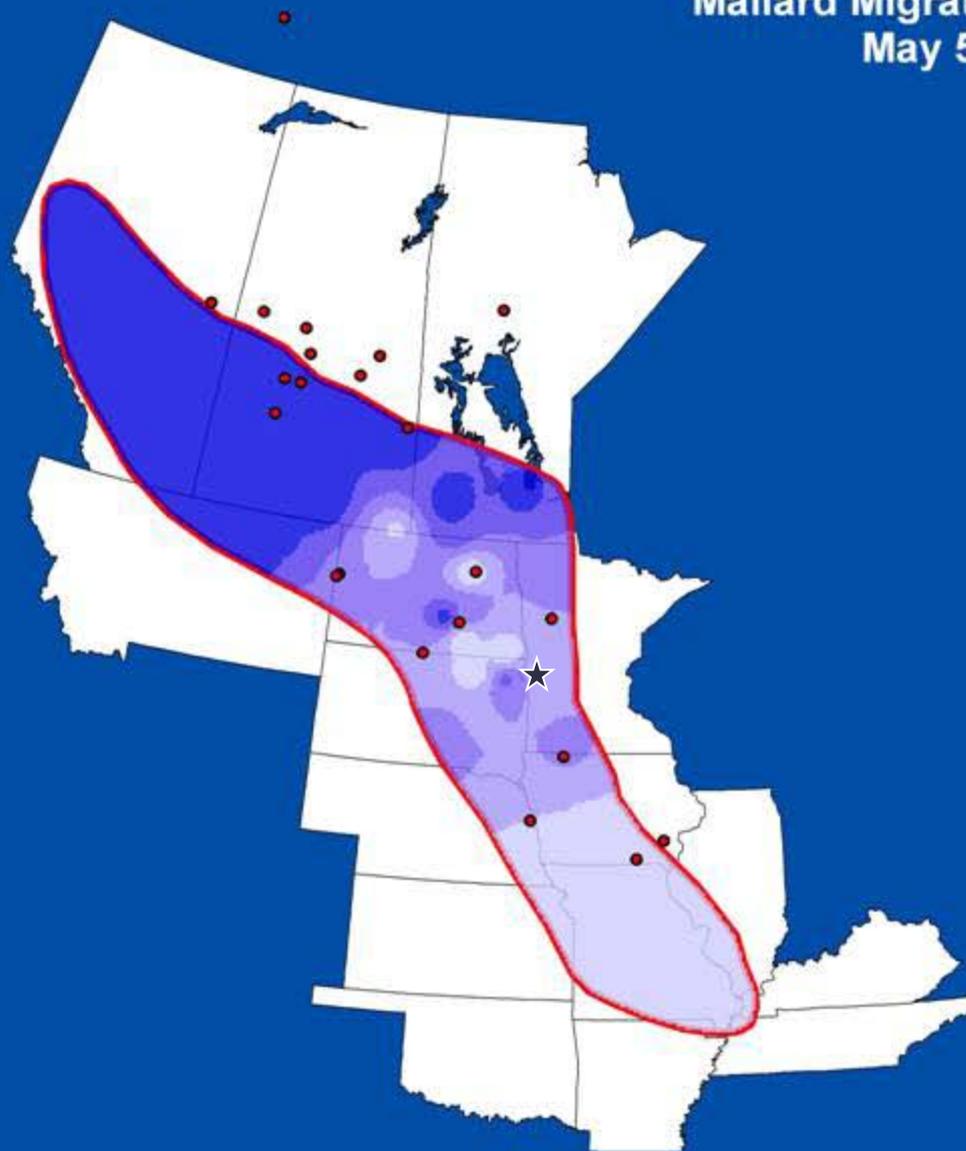


Explanation	
●	GPS Mallard Locations
Density	
Very Light Purple	Very Low
Light Purple	Somewhat Low
Medium Purple	Moderate
Dark Purple	High
Dark Blue	Peak

0 200 400 800 1,200 Miles



Mallard Migration Phenology May 5, 2008



Explanation	
●	GPS Mallard Locations
Density	
Very Light Blue	Very Low
Light Blue	Somewhat Low
Medium Blue	Moderate
Dark Blue	High
Very Dark Blue	Peak



Eastern Prairie Population (EPP) Canada Geese

Migration Corridor

EPP
Breeding
Grounds

Oak Hammock/Winnipeg

Roseau/Thief Lake/Agassiz

Lac qui Parle

Talcot Lake

Swan Lake



Why is improving Marsh Lake important?

- Migratory Waterfowl

- **Migratory Shorebirds**

- Critical stop-over for migratory shorebirds.
- Located in one of the heaviest travelled migration corridors.
- Over 100,000 shorebirds have been counted within the Lac qui Parle – Big Stone Important Bird Area.
- Shorebirds are an International resource – US Shorebird Conservation Plan.

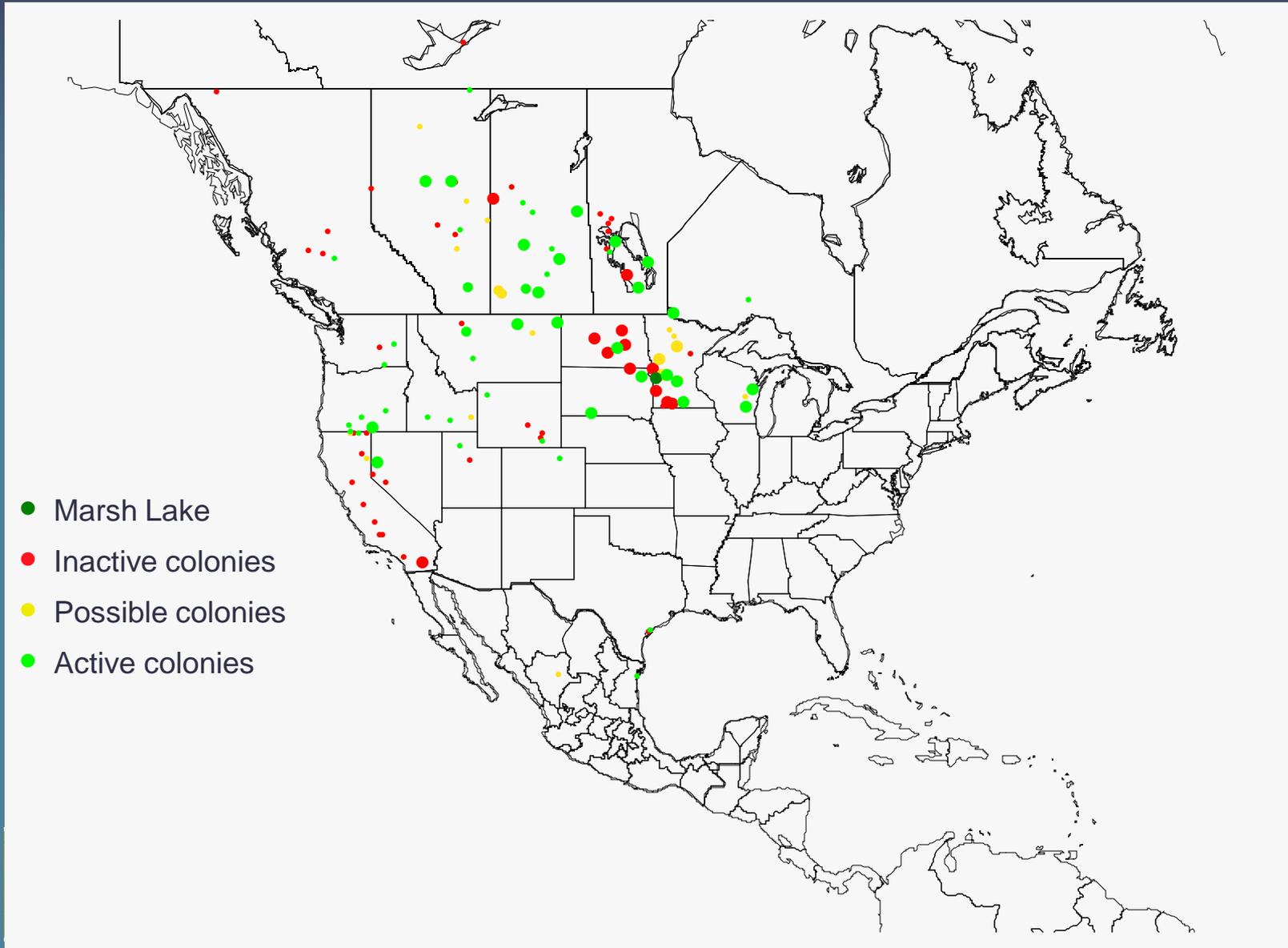


Why is improving Marsh Lake important?

- Migratory Waterfowl
- Migratory Shorebirds
- **Waterbird Concentrations**
 - Marsh Lake contains the largest recorded breeding colony of American white pelicans in North America. In addition, there are significant numbers of double-crested cormorants, ring-billed gulls, pied-billed grebes, and Forster's terns.

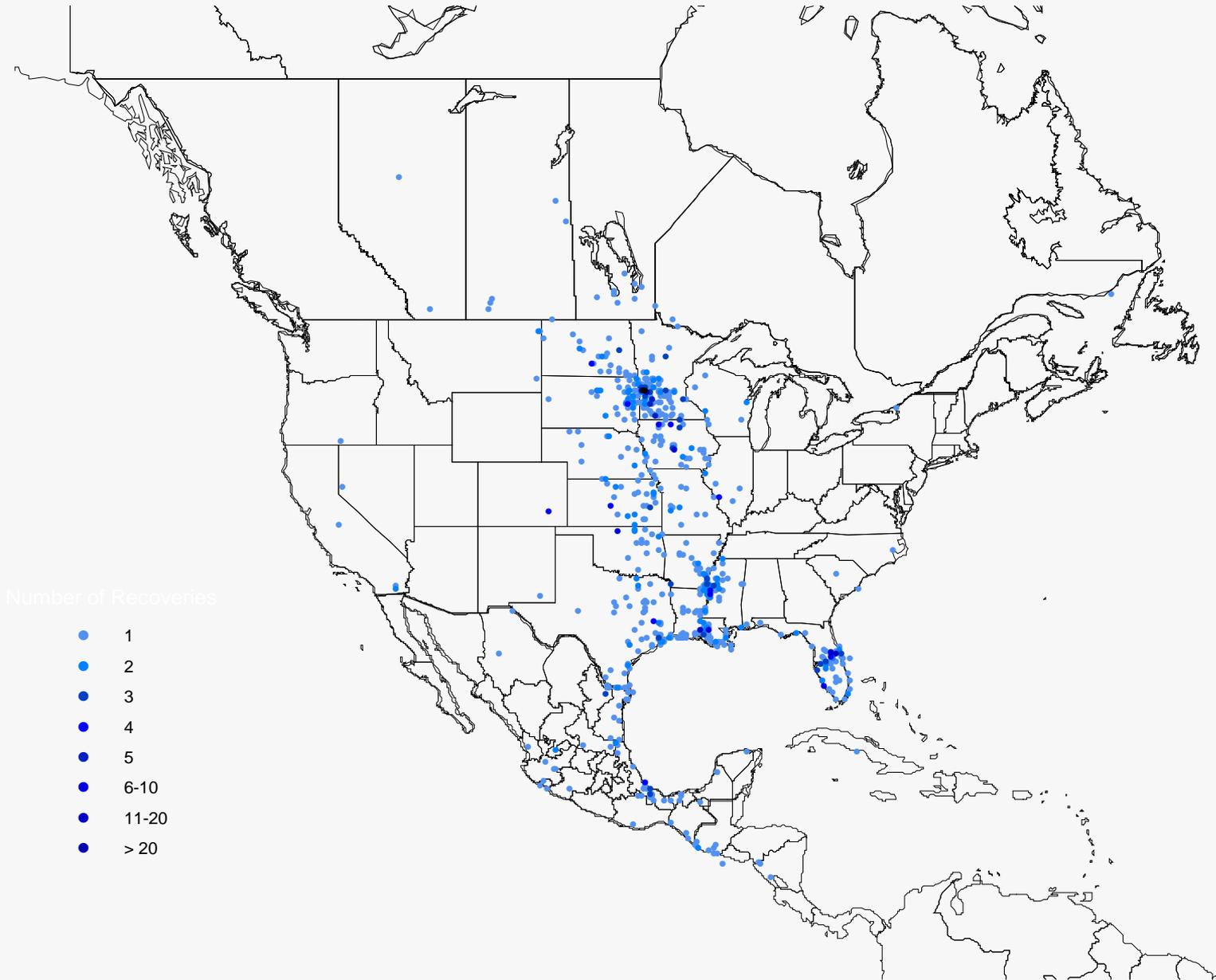


American White Pelican Colonies



Pelican Colonies with Band Recovery Connections to Marsh Lake

Distribution of Recoveries of Marsh Lake Banded Pelicans



Why is improving Marsh Lake important?

- Migratory Waterfowl
- Migratory Shorebird Concentrations
- Waterbird Concentrations
- **Native Fish Restoration**
 - Diverse fish community (25 species, 2006)
 - Habitat Connectivity and Fish Migration



Why is improving Marsh Lake important?

- Migratory Waterfowl
- Migratory Shorebirds
- Waterbird Concentrations
- Native Fish Restoration
- **Ecosystem Restoration**
 - Restore ecosystem structure and function
 - More natural water level regime
 - Aquatic habitat connectivity
 - Vegetated lake ecosystem state



Why is improving Marsh Lake important?

- Migratory Waterfowl
- Migratory Shorebirds
- Waterbird Concentrations
- Native Fish Restoration
- Ecosystem Restoration
- **Top Destination for Outdoor Recreation**
 - Economic development – our local communities depend on outdoor-related tourism!



Marsh Lake Ecosystem Restoration Project supports the following Statewide Planning Documents

- ❑ Minnesota Statewide Conservation and Preservation Plan
- ❑ A Fifty-Year Vision – MN Campaign for Conservation
- ❑ Tomorrow's Habitat for the Wild and Rare
- ❑ MN-DNR Long-Range Duck Recovery



Plan

MN-DNR Planning Process

- ❑ First reference on improving conditions in Marsh Lake – 1985.
- ❑ Focused on drawdown structure.
- ❑ Upper Minnesota River Partnership formed in 1991 under US Army Corps of Engineers leadership. Reservoir management and coordination main focus but kept Marsh Lake in our vocabulary.



Internal DNR Working Group

- ❑ November 2000 – 30 DNR staff from the field, region, and state-wide programs levels met to initiate Marsh Lake study process.
- ❑ Workgroup formed – Regional Planner, Wildlife Manager, Fisheries Manager, Steam Habitat Program Leader, and local Conservation Officer.
 - *Our Charge: develop recommendations to improve the health of Marsh Lake. Recommendations will address the dam, the fishery, colonial waterbirds, migratory waterfowl habitat, hunting and fishing opportunities, downstream effects of any management change including the effects on riverine habitat, public participation, and the consequences of no action within the context of Marsh Lake watershed.*



Internal DNR Working Group continued

- ❑ Workgroup met monthly with quarterly updates to Regional committee. Division Directors were briefed on progress by Regional Director.
 - First priority – define problem statement and define and engage stakeholders to ensure broad support.
 - Two public meetings held – identified the problems facing Marsh Lake and a broad range of solutions. Over 50 citizens attended each meeting; we asked for their ideas.
 - 10-member Marsh Lake Citizen Advisory Board created – sounding board to DNR and to further communicate with citizen and stakeholder groups.
 - Press releases sent periodically to over 100 individuals, news organizations, etc.



Internal DNR Working Group continued

- ❑ Internal DNR process very similar to federal planning process - considered broad range of alternative measures, identified alternative measures to bring forward, and further develop those selected alternatives.

- ❑ In 2003, a set of core project features identified:
 - Presented to our senior managers and approved.
 - Marsh Lake Citizen Advisory Group reviewed and approved.
 - Public meeting held in summer 2003 to present our final recommendations – positive response – “balance of resource values.”



Agreement in Principle

- ❑ On June 12, 2003, each DNR Division Director signed “Agreement in Principle.”
 - Core project features: 1) restore Pomme de Terre River to historic channel, 2) construct fishway, and 3) drawdown water control structure.
- ❑ Planning process served as the foundation for the current Corps Feasibility Study Report and State-Federal partnership.

Closing Comments

- ❑ **Marsh Lake has been, and will remain, a top priority for the MN Department of Natural Resources. Our commitment is evident in the over 12 years of intensive effort to bring this project to conclusion.**



Closing Comments

- ❑ Marsh Lake – top priority.
- ❑ **The MN-DNR has the capacity for future operation and maintenance.**



Closing Comments

- ❑ Marsh Lake – top priority.
- ❑ The MN-DNR has the capacity for future operation and maintenance.
- ❑ **The MN-DNR has the financial capability**
 - Legacy Amendment, Bonding, Game & Fish Appropriations
 - Last week LSOHC budgeted funds for Final Design and Construction for Marsh Lake Ecosystem Restoration Project.



Closing Comments

- ❑ Marsh Lake – top priority.
- ❑ The MN-DNR has the capacity for future operation and maintenance.
- ❑ The MN-DNR has the financial capability
- ❑ **Widespread public support – our constituents want action to improve habitat conditions in Marsh Lake.**



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mndnr.gov



Presentation to the

CIVIL WORKS REVIEW BOARD

Marsh Lake Ecosystem Restoration Project

by
MG Michael J. Walsh
Commander
Mississippi Valley Division

September 27, 2011



®

US Army Corps of Engineers
BUILDING STRONG®



MVD Command Endorsement

- Concur with MVP Commander's findings and recommendations for Marsh Lake Ecosystem Restoration Project
- Report complies with all applicable policies and laws in place at this time
- Anticipate a favorable response to the draft Chief's Report
- Plan supported by sponsor and congressional delegation
- Consistent with the Environmental Operating Principles



Certification of Legal and Policy Compliance

- Legal certification completed on 8 July 11
- Technical and policy compliance:
 - ▶ ATR performed through composition of staff from ECO-PCX, SWT, SWL, MVM, MVR, MVN, IWR, and NWW
 - ▶ All ATR comments resolved and certification dated 15 July 11



MVD Quality Assurance Activities

- MVD reviewed ATR comments/responses to ensure appropriate resolution
- Active participation by vertical team
- Worked with MVP to successfully resolve HQ review comments
- MVD concurs that project is technically and policy compliant



MVD Recommendation

- Approve Final Report for release for State and Agency Review
- Complete Chief's Report NLT 31 Dec 11



Marsh Lake Ecosystem Restoration Project – Agency Technical Review

Marc Masnor, ATR Lead

Tulsa District, Southwest Division

Civil Works Review Board Presentation

September 27, 2011



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Technical Review

- Value Engineering Completed, Oct 2007
- ITR Completed, Oct 2007
- ATR 1 Completed, Dec 2010 (pre-AFB)
- ATR 2 Completed, Jun 2011 (post-AFB)



ATRs 1

- ATR 1 (Pre AFB)
 - ▶ 142 comments submitted
 - ▶ 111 were closed by December 16, 2010
 - ▶ 28 evaluated comments remained open to be addressed at the Alternatives Formulation Briefing review
 - ▶ 3 comments were not evaluated
 - ▶ At the District's request and with ECO PCX concurrence, 31 comments remained open.
 - ▶ A review report noted the open comments to be addressed following the AFB.
- Primary ATR Concerns:
 - ▶ Cost Engineering requirements
 - ▶ Incremental Cost Analysis



ATRs 2

- ATR 2 (Post AFB)
 - ▶ 28 open comments were evaluated by the District and backchecked by the ATRT
 - ▶ 3 comment evaluations were added and backchecked
 - ▶ All comments were closed to the satisfaction of the ATRT and PCX
 - ▶ The review report was amended to note that all comments were closed by adding “Enclosure 3” to the Review Report, signed Sep 2011



HQUSACE POLICY REVIEW CONCERNS

Civil Works Review Board

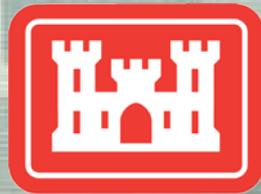
Marsh Lake, Minnesota Ecosystem Restoration Project

Mark Matusiak

Office of Water Project Review

Planning and Policy Division

Washington, DC – 27 September 2011



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HQUSACE Team Reviews:

- FSM was held December 2007
- AFB was held February 2011
- Review of Draft Report completed April 2011
- Back check of remaining outstanding comments completed August 2011
- Final Feasibility Report /EA HQUSACE review completed



Significant Policy Questions from AFB and Draft Report Reviews

- Base Year. The Alternatives Formulation Briefing report did not clearly state the base year or specify the period of analysis.
- Cost Effectiveness/Incremental Cost Analysis (CE/ICA). The CE/ICA used to evaluate alternative plans required clarification because the habitat outputs did not appear to be additive, and the justification for the last added increments was not clear.
- Performance Standards. Performance standards for ecosystem restoration were not developed in sufficient detail at the Alternatives Formulation Briefing stage.



Base Year

CONCERN: The Alternatives Formulation Briefing report did not clearly state the base year or specify the period of analysis.

REASON: Base year and period of analysis needed to evaluate project outputs and costs. Average annual outputs important to cost-effectiveness and incremental analysis.

RESOLUTION: Base year and period of analysis clarified.

RESOLUTION IMPACT: Concern Resolved.



Cost Effectiveness/ Incremental Cost Analysis

CONCERN: The CE/ICA used to evaluate alternative plans required clarification because the habitat outputs did not appear to be additive, and the justification for the last added increments was not clear for this reason.

REASON: Habitat outputs must be appropriately derived in order to provide accurate input to the CE/ICA.

RESOLUTION: MVN explained that habitat outputs were not additive because of the need to guard against possible double-counting of benefits. Justification of last added increments clarified

RESOLUTION IMPACT: Concern Resolved.



Performance Standards

CONCERN: Performance standards for ecosystem restoration were not developed in sufficient detail at the Alternatives Formulation Briefing stage.

REASON: Section 2039 of WRDA 2007 requires that criteria for determining success of ecosystem restoration projects be included in decision document.

RESOLUTION: Performance standards needed to determine ecological success included in draft feasibility report.

RESOLUTION IMPACT: Concern Resolved.



HQUSACE POLICY REVIEW TEAM RECOMMENDATION

**Release the report and EA for S&A
Review**



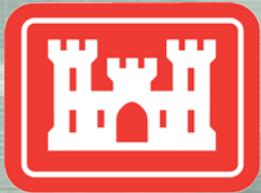
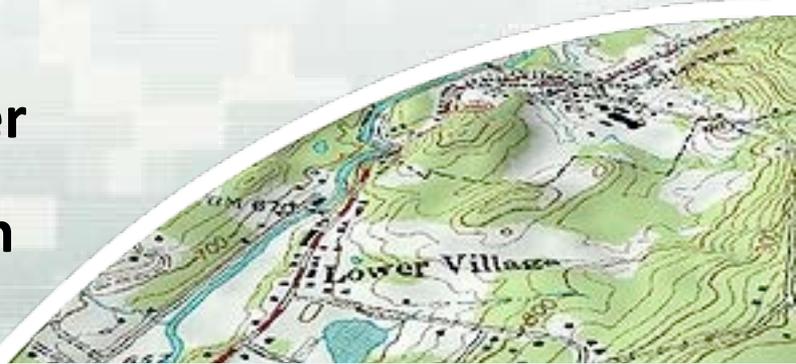
Marsh Lake Ecosystem Restoration Project – Lessons Learned

Colonel Michael Price, District Commander

St. Paul District, Mississippi Valley Division

Civil Works Review Board Presentation

September 27, 2011



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Lessons Learned

- Coordination

- ▶ Early stakeholder coordination between Corps, sponsor and other Federal Agencies served the project well
- ▶ Coordination with the RIT could have been more frequent
- ▶ Avoid changing project managers to avoid schedule delays

- Risk-Uncertainty

- ▶ Utilize adaptive management and project monitoring address ecosystem risk and uncertainty



Presentation to the

CIVIL WORKS REVIEW BOARD

Lessons Learned Marsh Lake Ecosystem Restoration Project

by
MG Michael J. Walsh
Commander
Mississippi Valley Division

September 27, 2011



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MVD Lessons Learned

- Used regional resources to provide necessary expertise
- Active Vertical Team involvement was essential
- Get early written buy-in from leadership on areas of policy interpretation

