



Lessard-Sams Outdoor Heritage Council

St. Louis River Restoration Initiative - Phase IV

Laws of Minnesota 2017 Final Report

General Information

Date: 11/07/2022

Project Title: St. Louis River Restoration Initiative - Phase IV

Funds Recommended: \$3,392,000

Legislative Citation: ML 2017, Ch. 91, Art. 1, Sec. 2, subd. 5(f)

Appropriation Language: \$3,392,000 in the first year is to the commissioner of natural resources to restore aquatic habitats in the St. Louis River estuary. Of this appropriation, up to \$226,000 is for an agreement with Minnesota Land Trust. A list of proposed restorations must be provided as part of the required accomplishment plan.

Manager Information

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Location Information

County Location(s): St. Louis.

Eco regions in which work will take place:

- Northern Forest

Activity types:

- Restore

Priority resources addressed by activity:

- Habitat

Narrative

Summary of Accomplishments

DNR's St. Louis River Restoration Initiative (SLRRI) advanced multiple large-scale habitat restoration projects. ML2017 funds contributed to:

- Removing 300,000 CY of invasive vegetation, sediment, and sawmill waste from the waters of Kingsbury Bay and Grassy Point, restoring approximately 230 acres of coastal marsh habitat;
- Restoring five acres of habitat at Interstate Island for a threatened avian species by beneficially using over 52,000 CY of clean sand dredged from navigation channels;
- Seeding approximately 5,000 pounds of manoomin with tribal partners, and
- Developing designs to restore and reconnect two isolated back bays at Perch and Mud Lakes

Process & Methods

ML2017 funds advanced the following projects:

Grassy Point and Kingsbury Bay: Project objectives included removing invasive vegetation and sediment from Kingsbury Bay to restore open water wetlands, deeper fish habitat, and coastal marsh. MNDNR beneficially used clean sediment removed from Kingsbury Bay to remediate wood waste impairments at Grassy Point and establish open-water wetland. Legacy sawmill waste was excavated from the river, constructing an island complex to shelter the bay and support upland and littoral habitat. Project designs and specifications were completed by Barr Engineering in 2017-18. MNDNR awarded a construction contract was to Veit, Inc. in April 2019. Project construction began in June 2019 and required three seasons to complete. The project was deemed substantially complete in November 2021. MNDNR used ML2017 funds for project coordination, project design, construction, and construction oversight. The project was constructed with funds from multiple OHF appropriations and non-OHF leverage. Therefore, a portion of the total project acres will be reported with ML2017.

Interstate Island: The project goal was to restore the largest Common Tern nesting colony in the Lake Superior watershed. Objectives included increasing the island's footprint and elevation to protect against flooding, enhancing the tern nesting area, and developing a long-term management plan. ML2017 funds were allocated to the Minnesota Land Trust and used to fund a contract with SEH, Inc. to develop the project design and long-term management plan. Final plans and specifications were completed in February 2020 and the long-term management plan was completed in December 2020. The project was constructed in 2020 using ML2018 funds and non-OHF leverage. Therefore, acres associated with this project will be claimed in the final report for ML2018.

Manoomin: MNDNR works within a larger partnership using a 2014 plan to restore manoomin (wild rice) to the St. Louis River, where it was historically abundant. Using funds from ML2017 and ML2018 appropriations, MNDNR entered into a Joint Powers Agreement with the Fond du Lac Band of Lake Superior Chippewa to restore manoomin in high priority bays. For reporting purposes, the 38 acres seeded using ML2017 and ML2018 appropriations will be reported proportional to funds spent, with 11 acres reported for ML2017 and 28 acres for ML2018. MNDNR continues to participate in the bi-state, multi-agency partnership restoring manoomin.

Perch and Mud Lakes: Project objectives include restoring coastal marsh habitat by removing sediment and increasing the hydrologic connection between the two isolated bays and the St. Louis River. Using ML2017 and ML2018 funds, MNDNR established partnership agreements with the Army Corps of Engineers to develop designs for Perch and Mud Lakes, respectively. ML2017 funds were also allocated to MLT to manage the Perch Lake project and collect baseline data. Perch Lake is currently under construction using other OHF appropriations and non-OHF leverage; construction will be complete in 2023. Mud Lake is currently in the baseline data collection and design

phase and is planned for construction using other OHF appropriations and non-OHF leverage in 2024. Acres associated with these projects will be reported under later OHF appropriations.

How did the program address habitats of significant value for wildlife species of greatest conservation need, threatened or endangered species, and/or list targeted species?

The 12,000 acre St. Louis River Estuary, at the head of Lake Superior, is a unique Minnesota resource. It is the largest source of biological productivity to Lake Superior as well as the world's largest freshwater shipping port. The combination of extensive wetlands, warmer waters and the connection to Lake Superior resulted in it becoming the primary source of productivity for the western Lake Superior fishery and a critical flyway for waterfowl and other migratory birds. Nearly two-thirds of the estuary's native wetlands have been altered, eliminated or impaired as a result of historic impacts of dredging, filling and waste disposal associated with industrial activities. The St. Louis River Restoration Initiative Program targets locations for restorations that will directly benefit species of greatest conservation need, threatened/endangered species, and targeted species by improving habitat quality and extent in strategic locations to maximize benefits to populations.

Completed restorations at Kingsbury Bay and Grassy Point target coastal marsh habitat which provides spawning and nursery habitat for target species such as muskellunge and walleye. Both project designs incorporated deeper habitat benefitting species like northern pike.

The Interstate Island restoration project directly targeted and benefitted two threatened and endangered species by restoring and protecting nesting habitat for the Common Tern (threatened) and stopover habitat for Piping Plover (endangered).

Restoring manoomin provides food and shelter for many fish and is one of the most important foods for waterfowl in North America. Minnesota DNR's Comprehensive Wildlife Conservation Strategy lists 17 species of wildlife known as "species of greatest conservation need" that use wild rice as habitat for reproduction or foraging.

How did the program use science-based targeting that leveraged or expanded corridors and complexes, reduced fragmentation, or protected areas in the MN County Biological Survey.

The SLRRI uses science-based targeting to identify, design, monitor, and ensure the quality of all restoration projects. This comes in the form of comprehensive planning, team-lead project development, and partnering with researchers and subject matter experts.

MNDNR worked with many local, state, tribal, and federal resource professional as well as stakeholders to develop the Lower St. Louis River Habitat Plan, a comprehensive science-based plan for protecting, restoring, and managing the estuary's fish and wildlife habitat. Partners developed the Habitat Plan to guide and prioritize restoration work. It has been the foundation of the SLRRI and informed the restoration projects chosen as Management Actions under the St. Louis River Area of Concern (AOC) program.

Restoration Site Teams (RSTs) are developed for each implementation project to identify site-specific restoration targets and objectives. Natural resource managers, ecologists, biologists, and other partners associated with the estuary examine conceptual restoration project alternatives and assess and evaluate habitat benefits and trade-offs between conceptual designs using both qualitative and quantitative measures of habitat value. Site-specific habitat needs and opportunities are also evaluated in the context of Estuary-wide restoration objectives and planned or completed projects. Knowledge transfer from previously completed OHF-funded projects is facilitated in RSTs by engaging local resource experts on multiple SLRRI projects.

Scientists from University of Minnesota, National Oceanic and Atmospheric Administration, U.S. Environmental Protection Agency, U.S. Fish & Wildlife Service, MNDNR, and MPCA continue to monitor and evaluate the Estuary's fish and wildlife populations and habitat to prioritize restoration projects, model expected outcomes of restoration alternatives, and evaluate restoration outcomes. Completed projects at Kingsbury Bay, Grassy Point, Interstate Island, and manoomin (various sites) have funding and partnerships in place to monitor habitat recovery and determine restoration effectiveness.

Explain Partners, Supporters, & Opposition

The MNDNR coordinated and managed the design and contracting of the Kingsbury Bay, Grassy Point, Interstate Island, Perch Lake, and manoomin restoration projects with assistance from the Minnesota Land Trust (MLT). Key partners in this process included USACE, USEPA, USFWS, Wisconsin DNR, Minnesota Pollution Control Agency, University of Minnesota-Duluth, and the City of Duluth. Manoomin restoration is planned and implemented estuary-wide through a broader partnership that includes MLT, Wisconsin DNR, Fond du Lac Band of Lake Superior Chippewa, 1854 Treaty Authority, and the Great Lakes Indian Fish and Wildlife Commission.

Non-OHF funding partners contributing to the projects in this report include: Great Lakes Restoration Initiative, and the St. Louis River/Interlake/Duluth Tar Superfund Site Natural Resources Damages Assessment Settlement.

There was no opposition to these projects.

Exceptional challenges, expectations, failures, opportunities, or unique aspects of program

Kingsbury Bay and Grassy Point represented MNDNR's largest contract to date, with challenges expected for a large, complex project. Several bidding rounds were necessary before receiving a bid meeting state requirements and budget. Additional Federal funds were obtained to accommodate contract amendments. The project team is proud to report that the innovative project was awarded the 2022 Grand Conceptor award by the MN American Council of Engineering Companies.

Interstate Island restoration presented multiple challenges that were successfully addressed: working in two states required extensive coordination, interstate agreements, duplicative permitting, and careful application of funds. This project was contracted and constructed during the height of the COVID-19 pandemic, yet managed to stay on track, on budget, and in compliance with safety requirements.

Restoring manoomin continues to present multiple challenges. Seed shortages are common, and herbivory by Canada Geese impacts rice germination. MNDNR and partners continue to creatively troubleshoot these issues

What other fund may contribute to this program?

- Other : Non-legacy leveraged funds
- Clean Water Fund

How were the funds used to advance the program?

Clean Water Fund (CWF): To date, the CWF has been matched with funding from the USACE to characterize sediments within the entire Minnesota portion of the St. Louis River Area of Concern (AOC). This data informs restoration project design.

As related to this specific ML2017 appropriation, Clean Water Funds obtained by the MPCA were used to develop the 2012 concept plans for the Kingsbury Bay - Grassy Point project.

What is the plan to sustain and/or maintain this work after the Outdoor Heritage Funds are expended?

Habitat restoration projects completed in the St. Louis River estuary as part of the SLRRI and supported by the Legacy Amendment are designed to be maintained by the natural processes that define this system and it is not anticipated that long-term maintenance will be required. Construction contracts for all SLRRI projects include a one-year warranty period, with costs for applicable maintenance covered by the contractor. Post-project monitoring for all Area of Concern (AOC) projects will be completed through AOC delisting with funding support from the USEPA. The following parcels included in this appropriation (Kingsbury Bay, Grassy Point, Perch Lake, and Mud Lake) will be included in this AOC monitoring project, with biologic and bathymetric data collected over multiple years. Kingsbury Bay and Grassy Point were selected by USEPA to receive enhanced restoration effectiveness monitoring. Interstate Island also received federal funding for monitoring of use by common terns and shorebirds over multiple years. Wild rice restoration areas (both MN and WI) have federal funds in place and administered by WI DNR to continue annual seeding, monitoring, and maintenance through 2024.

Data collected through the AOC program will be used to compare post-project ecological health to restoration targets established for the estuary. After AOC delisting, the restored resources will be monitored and maintained under the authority of the State of Minnesota's environmental agencies. Budget calculations for future natural resource management by MNDNR are difficult to estimate, but this work is anticipated to be covered through existing state funding mechanisms and programs.

Actions to Maintain Project Outcomes

Year	Source of Funds	Step 1	Step 2	Step 3
2022-2025	GLRI	St. Louis River AOC monitoring of restoration sites - managed by the MPCA	Results of post-restoration monitoring may trigger maintenance	Results of post-restoration monitoring included in removal of beneficial use impairments and may inform future project designs.
2022-2025	GLRI	Enhanced "restoration effectiveness monitoring" specific to Kingsbury Bay and Grassy Point - managed by EPA GL-TED lab.	Results of post-restoration monitoring may trigger maintenance	Results of post-restoration monitoring included in removal of beneficial use impairments and may inform future project designs.
2022-2025	Superfund NRDA settlement	Supplement EPA-GLTED monitoring at Kingsbury Bay	Results of post-restoration monitoring may trigger maintenance	Results of post-restoration monitoring included in removal of beneficial use impairments and may inform future project designs.
2022-2026	state, other (as needed for maintenance)	Inspect restoration sites annually and after major weather events.	Determine if maintenance is required.	Implement required maintenance.
2027-ongoing	state, other (as needed for maintenance)	Continued monitoring and maintenance of St. Louis River estuary wildlife populations	Determine if maintenance is required.	Implement required maintenance.

		and habitat as a system.		
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Budget

Grand Totals Across All Partnerships

Item	Requested	AP Amount	Spent	Antic. Leverage	Received Leverage	Leverage Source	Original Total	Final Total
Personnel	\$390,000	\$264,400	\$264,400	-	-	-	\$390,000	\$264,400
Contracts	\$2,457,000	\$1,858,700	\$1,900,300	\$1,500,000	\$6,773,200	-, USEPA-GLRI, NRDA	\$3,957,000	\$8,673,500
Fee Acquisition w/ PILT	-	-	-	-	-	-	-	-
Fee Acquisition w/o PILT	-	-	-	-	-	-	-	-
Easement Acquisition	-	-	-	-	-	-	-	-
Easement Stewardship	-	-	-	-	-	-	-	-
Travel	\$7,000	\$3,800	\$3,400	-	-	-	\$7,000	\$3,400
Professional Services	\$463,000	\$1,210,000	\$1,166,700	-	\$20,200	-, MN Coastal Prog	\$463,000	\$1,186,900
Direct Support Services	\$57,000	\$51,000	\$49,500	-	-	-	\$57,000	\$49,500
DNR Land Acquisition Costs	-	-	-	-	-	-	-	-
Capital Equipment	-	-	-	-	-	-	-	-
Other Equipment/Tools	\$8,000	\$2,000	\$1,900	-	-	-	\$8,000	\$1,900
Supplies/Materials	\$10,000	\$2,100	\$2,300	-	-	-	\$10,000	\$2,300
DNR IDP	-	-	-	-	-	-	-	-
Grand Total	\$3,392,000	\$3,392,000	\$3,388,500	\$1,500,000	\$6,793,400	-	\$4,892,000	\$10,181,900

Partner: MN Land Trust

Totals

Item	Requested	AP Amount	Spent	Antic. Leverage	Received Leverage	Leverage Source	Original Total	Final Total
Personnel	\$200,000	\$113,000	\$116,600	-	-	-	\$200,000	\$116,600
Contracts	\$20,000	\$20,000	\$20,000	-	-	-	\$20,000	\$20,000
Fee Acquisition w/ PILT	-	-	-	-	-	-	-	-
Fee Acquisition w/o PILT	-	-	-	-	-	-	-	-
Easement Acquisition	-	-	-	-	-	-	-	-
Easement Stewardship	-	-	-	-	-	-	-	-
Travel	\$2,000	\$2,000	\$1,600	-	-	-	\$2,000	\$1,600
Professional Services	-	\$87,000	\$80,200	-	-	-	-	\$80,200
Direct Support Services	-	-	-	-	-	-	-	-
DNR Land Acquisition Costs	-	-	-	-	-	-	-	-
Capital Equipment	-	-	-	-	-	-	-	-
Other Equipment/Tools	\$2,000	\$2,000	\$1,900	-	-	-	\$2,000	\$1,900
Supplies/Materials	\$2,000	\$2,000	\$2,200	-	-	-	\$2,000	\$2,200
DNR IDP	-	-	-	-	-	-	-	-
Grand Total	\$226,000	\$226,000	\$222,500	-	-	-	\$226,000	\$222,500

Personnel

Position	Annual FTE	Years Working	Funding Request	Antic. Leverage	Leverage Source	Total
Restoration Staff	0.3	4.0	\$116,600	-	-	\$116,600

Totals

Item	Requested	AP Amount	Spent	Antic. Leverage	Received Leverage	Leverage Source	Original Total	Final Total
Personnel	\$190,000	\$151,400	\$147,800	-	-	-	\$190,000	\$147,800
Contracts	\$2,437,000	\$1,838,700	\$1,880,300	\$1,500,000	\$6,773,200	USEPA-GLRI, NRDA	\$3,937,000	\$8,653,500
Fee Acquisition w/ PILT	-	-	-	-	-	-	-	-
Fee Acquisition w/o PILT	-	-	-	-	-	-	-	-
Easement Acquisition	-	-	-	-	-	-	-	-
Easement Stewardship	-	-	-	-	-	-	-	-
Travel	\$5,000	\$1,800	\$1,800	-	-	-	\$5,000	\$1,800
Professional Services	\$463,000	\$1,123,000	\$1,086,500	-	\$20,200	MN Coastal Prog	\$463,000	\$1,106,700
Direct Support Services	\$57,000	\$51,000	\$49,500	-	-	-	\$57,000	\$49,500
DNR Land Acquisition Costs	-	-	-	-	-	-	-	-
Capital Equipment	-	-	-	-	-	-	-	-
Other Equipment/Tools	\$6,000	-	-	-	-	-	\$6,000	-
Supplies/Materials	\$8,000	\$100	\$100	-	-	-	\$8,000	\$100
DNR IDP	-	-	-	-	-	-	-	-
Grand Total	\$3,166,000	\$3,166,000	\$3,166,000	\$1,500,000	\$6,793,400	-	\$4,666,000	\$9,959,400

Personnel

Position	Annual FTE	Years Working	Funding Request	Antic. Leverage	Leverage Source	Total
EWR Project Manager	0.1	3.0	\$45,700	-	-	\$45,700
FAW Office & Administrative Specialist	0.25	3.0	\$57,400	-	-	\$57,400
EWR SLR Consultant	0.15	3.0	\$44,700	-	-	\$44,700

Direct Support Services

How did you determine which portions of the Direct Support Services of your shared support services is direct to this program?

DNR's Office of Management & Budget services provided a Direct and Necessary calculator to determine shared support services.

Explain any budget challenges or successes:

The combined Kingsbury Bay - Grassy Point project was more costly than originally budgeted. The budget shortfall was covered with additional Great Lakes Restoration Initiative (GLRI) funding through EPA. The Interstate Island project successfully came in at budget and was funded using both OHF and GLRI; care was taken to ensure OHF funds were spent only on restoring the MN side of the MN/WI-owned island.

Due to funds obtained through the federal GLRI and a Natural Resources Damages Assessment settlement associated with the St. Louis/Interlake/Duluth Tar superfund site, total leverage was over 4x more than originally proposed.

Total Revenue: \$0

Revenue Spent: \$0

Revenue Balance: \$0

Of the money disclosed above, what are the appropriate uses of the money:

- E. This is not applicable as there was no revenue generated.

Output Tables

Acres by Resource Type (Table 1)

Type	Wetland (AP)	Wetland (Final)	Prairie (AP)	Prairie (Final)	Forest (AP)	Forest (Final)	Habitat (AP)	Habitat (Final)	Total Acres (AP)	Total Acres (Final)
Restore	0	0	0	0	0	0	192	144	192	144
Protect in Fee with State PILT Liability	0	0	0	0	0	0	0	0	0	0
Protect in Fee w/o State PILT Liability	0	0	0	0	0	0	0	0	0	0
Protect in Easement	0	0	0	0	0	0	0	0	0	0
Enhance	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	192	144	192	144

Total Requested Funding by Resource Type (Table 2)

Type	Wetland (AP)	Wetland (Final)	Prairie (AP)	Prairie (Final)	Forest (AP)	Forest (Final)	Habitat (AP)	Habitat (Final)	Total Funding (AP)	Total Funding (Final)
Restore	-	-	-	-	-	-	\$3,392,000	\$3,388,500	\$3,392,000	\$3,388,500
Protect in Fee with State PILT Liability	-	-	-	-	-	-	-	-	-	-
Protect in Fee w/o State PILT Liability	-	-	-	-	-	-	-	-	-	-
Protect in Easement	-	-	-	-	-	-	-	-	-	-
Enhance	-	-	-	-	-	-	-	-	-	-
Total	-	-	-	-	-	-	\$3,392,000	\$3,388,500	\$3,392,000	\$3,388,500

Acres within each Ecological Section (Table 3)

Type	Metro / Urban (AP)	Metro / Urban (Final)	Forest / Prairie (AP)	Forest / Prairie (Final)	SE Forest (AP)	SE Forest (Final)	Prairie (AP)	Prairie (Final)	N. Forest (AP)	N. Forest (Final)	Total (AP)	Total (Final)
Restore	0	0	0	0	0	0	0	0	192	144	192	144
Protect in Fee with State PILT Liability	0	0	0	0	0	0	0	0	0	0	0	0
Protect in Fee w/o State PILT Liability	0	0	0	0	0	0	0	0	0	0	0	0
Protect in Easement	0	0	0	0	0	0	0	0	0	0	0	0
Enhance	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	192	144	192	144

Total Requested Funding within each Ecological Section (Table 4)

Type	Metro / Urban (AP)	Metro / Urban (Final)	Forest / Prairie (AP)	Forest / Prairie (Final)	SE Forest (AP)	SE Forest (Final)	Prairie (AP)	Prairie (Final)	N. Forest (AP)	N. Forest (Final)	Total (AP)	Total (Final)
Restore	-	-	-	-	-	-	-	-	\$3,392,000	\$3,388,500	\$3,392,000	\$3,388,500
Protect in Fee with State PILT Liability	-	-	-	-	-	-	-	-	-	-	-	-
Protect in Fee w/o State PILT Liability	-	-	-	-	-	-	-	-	-	-	-	-
Protect in Easement	-	-	-	-	-	-	-	-	-	-	-	-
Enhance	-	-	-	-	-	-	-	-	-	-	-	-
Total	-	-	-	-	-	-	-	-	\$3,392,000	\$3,388,500	\$3,392,000	\$3,388,500

Target Lake/Stream/River Feet or Miles

12000

Outcomes

Programs in the northern forest region:

- Improved availability and improved condition of habitats that have experienced substantial decline ~ *MNDNR evaluates habitat restoration effectiveness using a variety of physical and biologic metrics measured pre- and post-project. Completed restoration associated with the AOC will be measured in acres of habitat restored and evaluated to remove beneficial use impairments and ultimately delist the AOC.*

Parcels

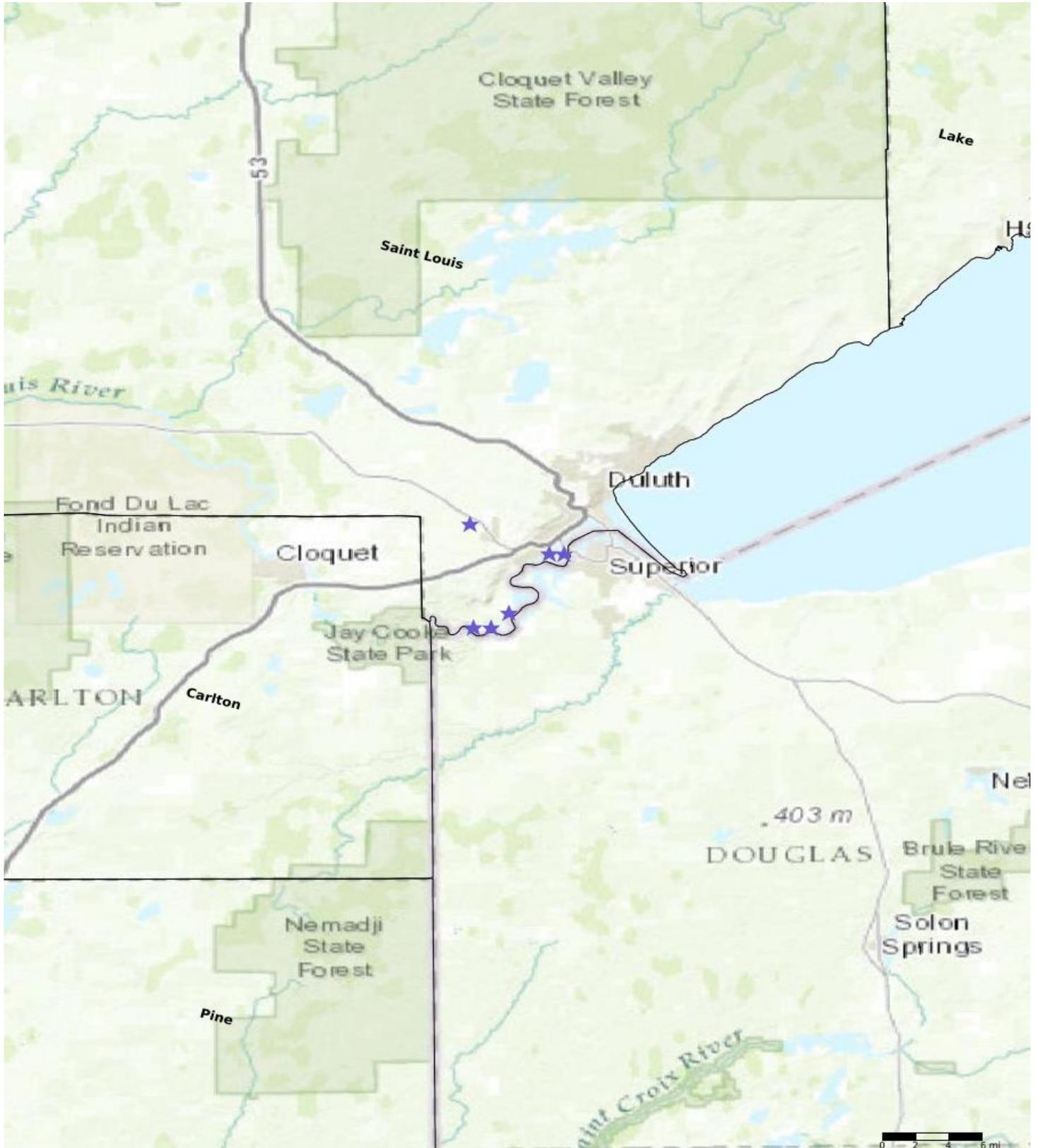
Sign-up Criteria?

No

Restore / Enhance Parcels

Name	County	TRDS	Acres	Est Cost	Existing Protection
Wild rice restoration	St. Louis	04815210	11	\$22,000	Yes
Mud Lake	St. Louis	04815202	0	\$285,000	Yes
Perch Lake	St. Louis	04815209	0	\$175,400	Yes
Interstate Island	St. Louis	04915204	0	\$87,000	Yes
Kingsbury Bay	St. Louis	04914218	44	\$1,168,600	Yes
Grassy Point	St. Louis	04914217	89	\$1,168,700	Yes

Parcel Map



- Protect in Easement
- ▲ Protect in Fee with PILT
- Protect in Fee W/O PILT
- ★ Restore
- ✕ Enhance
- ⊕ Other