



Lessard-Sams Outdoor Heritage Council

St. Louis River Restoration Initiative, Ph. V
Laws of Minnesota 2018 Final Report

General Information

Date: 11/02/2023

Project Title: St. Louis River Restoration Initiative, Ph. V

Funds Recommended: \$2,013,000

Legislative Citation: ML 2018, Ch. 208, Art. 1, Sec. 2, subd 5(j)

Appropriation Language: \$2,013,000 the second year is to the commissioner of natural resources to restore aquatic habitats in the St. Louis River estuary. Of this appropriation, up to \$1,350,000 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

Manager's Name: Melissa Sjolund

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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 achieved the following outcomes using ML2018 funds.

- Restored 4 acres of habitat at Interstate Island for threatened bird species, including a 30,000 sqft nesting area.
- Seeded 3,917 lbs of Manoomin with tribal partners across 28 acres.
- Removed 68,000CY of sediment from Perch Lake restoring coastal marsh and deep water habitat.
- Designed and implemented a portion of the Kingsbury Bay/Creek watershed restoration project contributing to an estimated total reduction of over 400 tons of sediment per year.
- Managed and advanced other projects contained in this appropriation and coordinated with partners to identify and prioritize future projects.

Process & Methods

ML2018 funds advanced the following projects:

Interstate Island: The goal was to restore the largest Common Tern colony on Lake Superior. Objectives included increasing the footprint/elevation to protect against flooding, enhancing the nesting area, and developing a management plan. The Minnesota Land Trust used ML2017 funds to contract SEH, Inc. to develop the project design and management plan. Final designs were completed in February 2020 and the long-term management plan was completed in December 2020. The project was constructed in 2020-21. ML2018 funds constructed 4 acres of habitat on the Minnesota side of the island, with non-OHF leverage funding construction on the Wisconsin side. The 4 acres of MN habitat are reported in this ML2018 final report.

Manoomin: MNDNR works within a larger partnership to restore Manoomin (wild rice) to the St. Louis River. MNDNR established an agreement with the Fond du Lac Band to restore Manoomin in high priority bays. For reporting purposes, the 39 acres seeded using ML2017 and ML2018 appropriations are reported proportional to funds spent, with 28 acres (3917 lbs) reported for ML2018. MNDNR continues to participate in the bi-state, multi-agency partnership restoring Manoomin.

Perch Lake: Objectives include restoring coastal marsh, deep water, and spawning habitats by removing sediment and increasing the hydrologic connection between the isolated bay and the St. Louis River. Using ML2017 and ML2018 funds, MNDNR established a partnership agreement with the Army Corps of Engineers to develop a design for Phase 1 (dredging). The MN Land Trust contracted Phase 1, including a construction contract with JF Brennan Company and professional services with SEH, Inc. Phase 1 began in summer 2022, removing 68,000 CY of sediment to restore deep water and coastal marsh habitat. 15,200 CY of sand/gravel were placed for spawning habitat for centrarchids and native vegetation was seeded or planted. Because two phases of this project remain (to be constructed in 2023-24 using other OHF appropriations), 10 acres of the total 30-acre project footprint are being reported with this ML2018 final report.

Kingsbury Creek (Kingsbury Bay watershed): Objectives include reducing sediment transport to downstream Kingsbury Bay and restoring coldwater habitat. ML2018 partially funded a contract with Barr Engineering to assess the watershed and identify unstable stream reaches, anthropogenic sediment sources, and areas of high bank erosion. The assessment generated a list of 14 potential restoration project sites, of which 8 were selected for design and construction. Barr produced engineering designs for the 8 project sites and assisted with permits and environmental review. MNDNR coordinated access permission from adjacent landowners. Project construction commenced in winter 2022-23 and was partly funded by ML2018. Construction will continue through fall 2023, using funds from ML2019 and other leveraged funds. Total acreage will be reported once completed, under the

ML2019 final report.

ML2018 funds were also used to fund staff coordination of future restoration projects on Lower Knowlton Creek, Keene Creek, and Mud Lake, which remain in the feasibility and design stages and therefore are not included on the final parcel table.

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 11,000-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.

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

Partially completed restoration at Perch Lake targets coastal marsh habitat which provides nursery habitat for species such as Muskellunge and Walleye. A layer of sand and gravel in portions of the project specifically targets spawning centrarchids. The project design incorporated deeper habitat benefiting species like Northern Pike, providing cool refugia in the summer and overwintering habitat.

Partially completed restoration within the Kingsbury Bay/Creek watershed contributes towards the goal of reducing sediment delivery to Kingsbury Bay, protecting recently restored coastal marsh which provides nursery and spawning habitat for species such as Muskellunge and Walleye and supports Manoomin (wild rice). Habitat restoration within the coldwater stream supports Brook Trout and macroinvertebrates.

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. For example, avian species experts with Wisconsin DNR and the University of Minnesota-Duluth Natural Resources Research Institute guided the design of nesting and shoreline habitat at Interstate Island. Area fisheries managers guided the design of deep water and spawning features at Perch Lake, and tribal natural resource managers guide Manoomin restoration.

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 Interstate Island, and Manoomin (various sites) have funding and partnerships in place to monitor habitat recovery and determine restoration effectiveness.

Explain Partners, Supporters, & Opposition

At the time of the ML2018 proposal, DNR had not secured any leverage. At close out, DNR is happy to report \$5,063,115 in leverage from the following sources:

- \$3,740,965: Great Lakes Restoration Initiative (GLRI) from EPA funded the Perch Lake Phase 1 construction contract.
- \$839,650: GLRI from EPA funded Interstate Island
- \$145,000: Great Lakes Fish & Wildlife Restoration Act from USFWS funded Interstate Island
- \$200,000: Coastal Program from USFWS funded Interstate Island
- \$137,500: Natural Damages Assessment settlement funds associated with the St. Louis River/Interlake/Duluth tar Superfund settlement funded the Kingsbury Creek Feasibility study

In addition to the funding partners above, other important partners include but are not limited to the City of Duluth, Fond du Lac Band of Lake Superior Chippewa, Minnesota Pollution Control Agency, US Army Corps of Engineers, and Wisconsin DNR.

There was no opposition to these projects.

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

Interstate Island restoration presented multiple challenges. 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.

The Perch Lake project (still in progress) requires extensive coordination with MNDOT and the City of Duluth to construct bridges through a state highway and city-owned trail. Due to the complex designs, approvals, and agreements needed, project managers divided the project into three phases and contracts. This ensured that more complex planning elements would not slow down overall progress and accommodated Duluth's short construction season.

Restoring Manoomin continues to present multiple challenges. Seed shortages are common and herbivory by Canada Geese impacts rice maturation. MNDNR and partners continue to creatively troubleshoot these issues and are encouraged by recent monitoring data.

What other dedicated funds may collaborate with or contribute to this program?

- N/A

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 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 (including Perch and Mud Lakes) will be completed with funding support from USEPA and includes biologic and bathymetric data collected over multiple years. Interstate Island also received federal funding for monitoring of use by common terns and shorebirds over multiple years; it is jointly monitored and managed by MN and WI nongame wildlife programs. 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 2026. The Kingsbury Creek project has funds in place for monitoring/maintenance through a Superfund NRDA settlement.

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 |
|--------------|---|--|--|---|
| 2023-2026 | 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 the removal of beneficial use impairments and may impact future project designs. |
| 2024-2028 | Superfund NRDA settlement | Monitor post-restoration performance of the Kingsbury Bay/creek watershed restoration project | Results of post-restoration monitoring may trigger maintenance | Results of post-restoration monitoring may impact future project designs. |
| 2023-2027 | state, other (as needed for maintenance) | Inspect restoration sites annually and after major weather events | Determine if maintenance is required | Implement required maintenance |
| 2028-ongoing | state, other (as needed for maintenance) | Continued monitoring and maintenance of St. Louis River estuary wildlife populations and habitats as a system. | Determine if maintenance is required | Implement required maintenance |
| 2022-ongoing | MN and WI DNRs nongame wildlife programs, GLRI, USFWS | Annual monitoring of the Interstate Island tern colony per the established long-term monitoring and | Determine if maintenance is required | Implement required maintenance |

Budget

Grand Totals Across All Partnerships

| Item | Requested | AP Amount | Spent | Leverage | Received Leverage | Leverage Source | Original Total | Final Total |
|----------------------------|--------------------|--------------------|--------------------|----------|--------------------|--|--------------------|--------------------|
| Personnel | \$291,500 | \$327,500 | \$331,700 | - | - | - | \$291,500 | \$331,700 |
| Contracts | \$1,425,000 | \$1,315,800 | \$1,335,600 | - | \$4,925,600 | -, Multiple (GLRI, GLFWRA, Coastal Prog). See narrative. | \$1,425,000 | \$6,261,200 |
| Fee Acquisition w/ PILT | - | - | - | - | - | - | - | - |
| Fee Acquisition w/o PILT | - | - | - | - | - | - | - | - |
| Easement Acquisition | - | - | - | - | - | - | - | - |
| Easement Stewardship | - | - | - | - | - | - | - | - |
| Travel | \$4,500 | \$2,000 | \$400 | - | - | - | \$4,500 | \$400 |
| Professional Services | \$255,000 | \$343,700 | \$316,200 | - | \$137,500 | NRDA Supperfund Settlement (see narrative) | \$255,000 | \$453,700 |
| Direct Support Services | \$26,500 | \$21,300 | \$25,700 | - | - | - | \$26,500 | \$25,700 |
| DNR Land Acquisition Costs | - | - | - | - | - | - | - | - |
| Capital Equipment | - | - | - | - | - | - | - | - |
| Other Equipment/Tools | \$8,000 | \$600 | \$300 | - | - | - | \$8,000 | \$300 |
| Supplies/Materials | \$2,500 | \$2,100 | \$1,900 | - | - | - | \$2,500 | \$1,900 |
| DNR IDP | - | - | - | - | - | - | - | - |
| Grand Total | \$2,013,000 | \$2,013,000 | \$2,011,800 | - | \$5,063,100 | - | \$2,013,000 | \$7,074,900 |

Totals

| Item | Requested | AP Amount | Spent | Leverage | Received Leverage | Leverage Source | Original Total | Final Total |
|----------------------------|------------------|------------------|------------------|----------|-------------------|--|------------------|------------------|
| Personnel | \$291,500 | \$240,500 | \$240,000 | - | - | - | \$291,500 | \$240,000 |
| Contracts | \$75,000 | \$75,000 | \$89,400 | - | - | - | \$75,000 | \$89,400 |
| Fee Acquisition w/ PILT | - | - | - | - | - | - | - | - |
| Fee Acquisition w/o PILT | - | - | - | - | - | - | - | - |
| Easement Acquisition | - | - | - | - | - | - | - | - |
| Easement Stewardship | - | - | - | - | - | - | - | - |
| Travel | \$4,500 | \$1,500 | \$100 | - | - | - | \$4,500 | \$100 |
| Professional Services | \$255,000 | \$322,500 | \$305,300 | - | \$137,500 | NRDA Supperfund Settlement (see narrative) | \$255,000 | \$442,800 |
| Direct Support Services | \$26,500 | \$21,300 | \$25,700 | - | - | - | \$26,500 | \$25,700 |
| DNR Land Acquisition Costs | - | - | - | - | - | - | - | - |
| Capital Equipment | - | - | - | - | - | - | - | - |
| Other Equipment/Tools | \$8,000 | \$600 | \$300 | - | - | - | \$8,000 | \$300 |
| Supplies/Materials | \$2,500 | \$1,600 | \$1,600 | - | - | - | \$2,500 | \$1,600 |
| DNR IDP | - | - | - | - | - | - | - | - |
| Grand Total | \$663,000 | \$663,000 | \$662,400 | - | \$137,500 | - | \$663,000 | \$799,900 |

Personnel

| Position | Annual FTE | Years Working | Amount Spent | Leverage | Leverage Source | Total |
|------------------------------------|------------|---------------|--------------|----------|-----------------|----------|
| AOC Coordinator | 0.5 | 2.0 | \$99,000 | - | - | \$99,000 |
| Habitat Coordinator | 0.5 | 2.0 | \$90,700 | - | - | \$90,700 |
| Office & Administrative Specialist | 0.75 | 1.0 | \$50,300 | - | - | \$50,300 |

Partner: Minnesota Land Trust

Totals

| Item | Requested | AP Amount | Spent | Leverage | Received Leverage | Leverage Source | Original Total | Final Total |
|----------------------------|--------------------|--------------------|--------------------|----------|--------------------|---|--------------------|--------------------|
| Personnel | - | \$87,000 | \$91,700 | - | - | - | - | \$91,700 |
| Contracts | \$1,350,000 | \$1,240,800 | \$1,246,200 | - | \$4,925,600 | Multiple (GLRI, GLFWRA, Coastal Prog). See narrative. | \$1,350,000 | \$6,171,800 |
| Fee Acquisition w/ PILT | - | - | - | - | - | - | - | - |
| Fee Acquisition w/o PILT | - | - | - | - | - | - | - | - |
| Easement Acquisition | - | - | - | - | - | - | - | - |
| Easement Stewardship | - | - | - | - | - | - | - | - |
| Travel | - | \$500 | \$300 | - | - | - | - | \$300 |
| Professional Services | - | \$21,200 | \$10,900 | - | - | - | - | \$10,900 |
| Direct Support Services | - | - | - | - | - | - | - | - |
| DNR Land Acquisition Costs | - | - | - | - | - | - | - | - |
| Capital Equipment | - | - | - | - | - | - | - | - |
| Other Equipment/Tools | - | - | - | - | - | - | - | - |
| Supplies/Materials | - | \$500 | \$300 | - | - | - | - | \$300 |
| DNR IDP | - | - | - | - | - | - | - | - |
| Grand Total | \$1,350,000 | \$1,350,000 | \$1,349,400 | - | \$4,925,600 | - | \$1,350,000 | \$6,275,000 |

Personnel

| Position | Annual FTE | Years Working | Amount Spent | Leverage | Leverage Source | Total |
|-----------------------------|------------|---------------|--------------|----------|-----------------|----------|
| Restoration Project Manager | 0.5 | 2.0 | \$91,700 | - | - | \$91,700 |

Direct Support Services

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

MNDNR's Office of Budget Management & Budget services provided a Direct and Necessary calculator to determine shared support services. The shared services costs and budget are reviewed and approved by their staff.

Explain any budget challenges or successes:

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.

The Kingsbury Creek project also came in under budget and was funded using both OHF and a Natural Resources Damages Assessment settlement associated with the St. Louis/Interlake/Duluth Tar Superfund site.

At the time of the ML2018 proposal, DNR had not secured any leverage. At close out, DNR is happy to report \$5,063,115 in leverage from multiple sources.

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 | 36 | 44 | 36 | 44 |
| 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 | 36 | 44 | 36 | 44 |

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 | - | - | - | - | - | - | \$2,013,000 | \$2,011,800 | \$2,013,000 | \$2,011,800 |
| Protect in Fee with State PILT Liability | - | - | - | - | - | - | - | - | - | - |
| Protect in Fee w/o State PILT Liability | - | - | - | - | - | - | - | - | - | - |
| Protect in Easement | - | - | - | - | - | - | - | - | - | - |
| Enhance | - | - | - | - | - | - | - | - | - | - |
| Total | - | - | - | - | - | - | \$2,013,000 | \$2,011,800 | \$2,013,000 | \$2,011,800 |

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 | 36 | 44 | 36 | 44 |
| 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 | 36 | 44 | 36 | 44 |

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 | - | - | - | - | - | - | - | - | \$2,013,000 | \$2,011,800 | \$2,013,000 | \$2,011,800 |
| Protect in Fee with State PILT Liability | - | - | - | - | - | - | - | - | - | - | - | - |
| Protect in Fee w/o State PILT Liability | - | - | - | - | - | - | - | - | - | - | - | - |
| Protect in Easement | - | - | - | - | - | - | - | - | - | - | - | - |
| Enhance | - | - | - | - | - | - | - | - | - | - | - | - |
| Total | - | - | - | - | - | - | - | - | \$2,013,000 | \$2,011,800 | \$2,013,000 | \$2,011,800 |

Target Lake/Stream/River Feet or Miles

5200

Explain the success/shortage of acre goals

In the original Accomplishment Plan, parcel acres are initially estimated, then refined during the project design. Acres may be more or less than originally planned. Because each project is typically funded with multiple OHF appropriations, the final project acreage is split proportionally amongst the appropriations that funded it. For example, the entire Interstate Island acreage (4 acres in MN) was claimed in this report because ML2018 was the primary OHF source for project construction. Conversely, ML2018 funded a portion of the Perch Lake project's construction, so only 10 acres of the project's 30 total acres are reported.

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. Physical habitat outcomes are estimated during the project design process, then measured post-construction to document "as-built" conditions. Biologic responses are estimated based on surveys, studies, and input from the Restoration Site Team. Select biologic responses are measured post-project to estimate site recovery, while other metrics are measured regularly as part of long-term resource management. 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

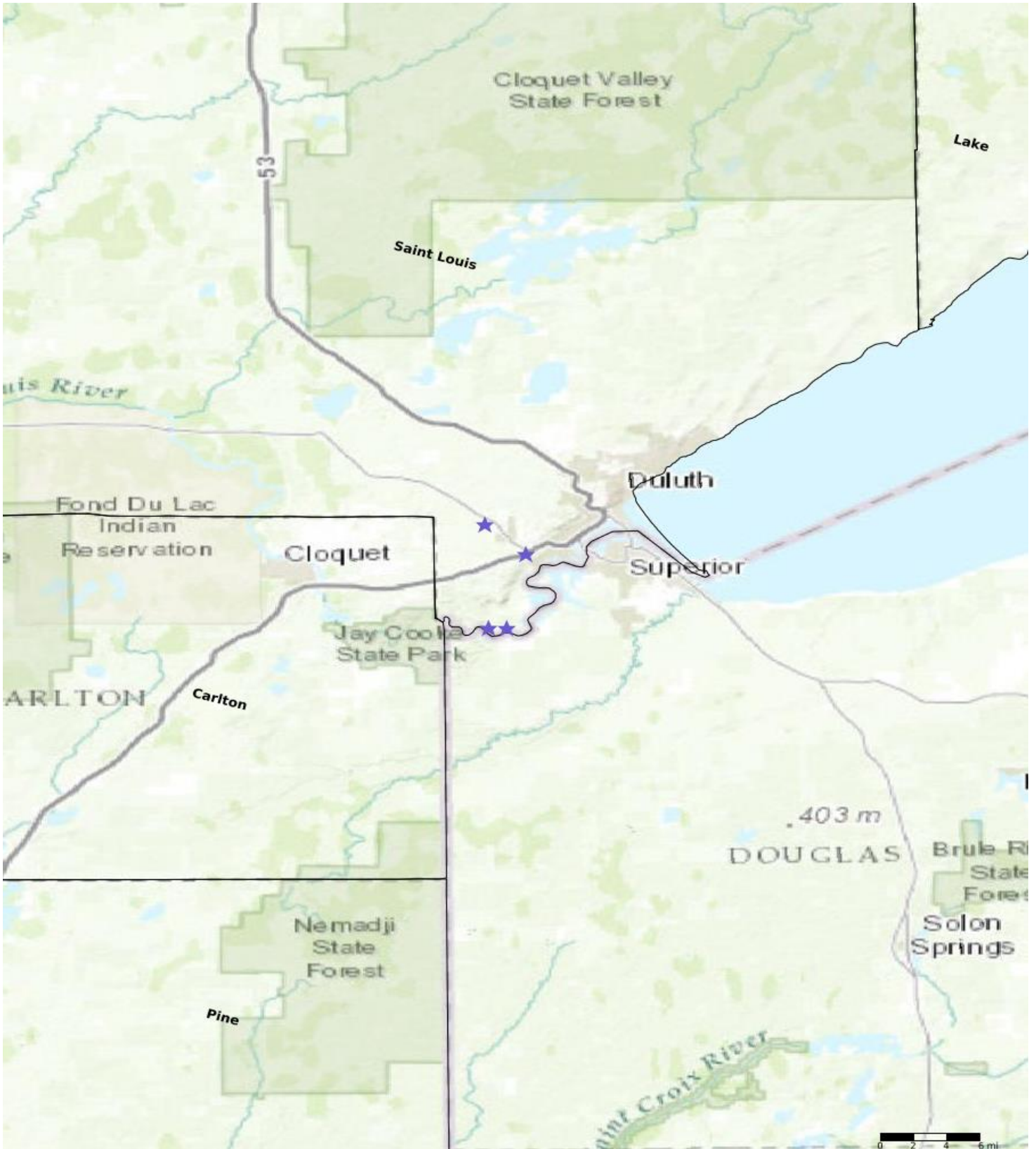
Sign-up Criteria?

No

Restore / Enhance Parcels

| Name | County | TRDS | Acres | Est Cost | Existing Protection |
|------------------------|-----------|----------|-------|-----------|---------------------|
| Kingsbury Creek | St. Louis | 04915214 | 2 | \$222,600 | Yes |
| Interstate Island Ph.2 | St. Louis | 04915204 | 4 | \$462,600 | Yes |
| Perch Lake | St. Louis | 04815209 | 10 | \$942,200 | Yes |
| Wild rice restoration | St. Louis | 04815210 | 28 | \$19,200 | Yes |

Parcel Map



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