# Lessard-Sams Outdoor Heritage Council
# Laws of Minnesota 2012 Accomplishment Plan

**Date: January 10, 2017**

**Program or Project Title:** Lower St. Louis River Habitat Restoration

**Funds Recommended: $ 3,670,000**

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**Legislative Citation: ML 2012, Ch. 264, Art. 1, Sec. 2, Subd. 5(d)**

**Appropriation Language:** $3,670,000 in the second year is to the commissioner of natural resources to restore habitat in the lower St. Louis River estuary. A list of proposed projects must be provided as part of the required accomplishment plan.

**County Locations:** St. Louis

**Regions in which work will take place:**

- Northern Forest

**Activity types:**

- Restore

**Priority resources addressed by activity:**

- Habitat
- Wetlands

## Abstract:

MDNR is implementing a programmatic approach to restore aquatic habitat in the Lower St. Louis River Estuary. Project area located in the Northern Forest planning region.

## Design and scope of work:

The St. Louis River Restoration Initiative is a programmatic approach to restore more than 1,400 acres of aquatic, wetland and terrestrial habitat within the Lower St. Louis River over the next 15-20 years. The Minnesota Department of Natural Resources is working in conjunction with more than 15 partner agencies and organizations, including the Minnesota Pollution Control Agency (MPCA), Wisconsin Department of Natural Resources, the Fond du Lac Band of Lake Superior Chippewa, the US Fish and Wildlife Service, the US Environmental Protection Agency (USEPA), the National Oceanic and Atmospheric Administration (NOAA), the St. Louis River Alliance(SLRA) and the Minnesota Land Trust (MLT) to prioritize and construct projects to restore the fisheries and migratory waterfowl habitat to return the St. Louis River estuary to one of Minnesota's and the Great Lakes' premier recreational fisheries . The St. Louis River estuary is also considered a Great Lakes Area of Concern (AOC) by the USEPA, which provides considerable funds to accomplish habitat improvement projects.

In this phase of the project, the MNDNR proposes to restore at least 208 acres of aquatic habitat within priority project sites for FY2013-2016. Over the next three years this will complete approximately 15% of Minnesota's overall habitat restoration objective for the estuary. In order to implement the proposed restoration, MNDNR will engage with a non-government implementation partner to accomplish project related

tasks, including management of construction-related contracting and other coordination tasks.

Together, MNDNR and the implementation partner will complete: 1) restoration of 165 acres of submerged aquatic vegetation beds and 8 acres of wetlands on sites degraded by historic industrial activity to improve the quality and quantity of habitat for gamefish species such as walleye, muskellunge, northern pike, smallmouth bass, black crappie and bluegill and 2) Channel and floodplain restoration to improve accessibility of spawning and rearing habitat on priority trout streams and tributaries in the AOC. Restoration outcomes will also benefit a host of other terrestrial and aquatic game and non-game species important to the ecological health of the estuary, and will include wetland restoration where possible.

Program activities and outputs:
Trout Stream Habitat Restoration - Four stream crossings will be assessed and replaced or removed. 5,000 feet (5 acres) of stream channel will be reconstructed and 30 acres of floodplain planted to restore stream connectivity and improve spawning and rearing habitat for Brook Trout. Stream restoration will increase the amount and quality of available spawning and rearing habitat and enhance fish migration corridors within the watershed. The proposed work will also protect and restore a vital wildlife corridor between the Magney-Snively forest complex and the St. Louis River estuary as well as reduce a significant source of sediment to the St. Louis River estuary. Where possible, wetland restoration will also be completed.

- All Trout Stream Habitat Restoration will occur in Knowlton Creek. Knowlton Creek is a St. Louis River tributary and designated trout stream that has been severely degraded. A partnership among the agencies represented on the SLR A, the City of Duluth and the City of Cloquet is implementing a watershed based approach that will control runoff, erosion, and restore degraded sections of the Knowlton Creek channel. MDNR's objective for Knowlton Creek is to restore habitat conditions sufficient to support a self-maintaining brook trout fishery.

Restore Aquatic Habitat structure within Lower St. Louis River – 165 acres of industrially influenced sheltered bay and river flats will be restored to support high quality native aquatic vegetation beds and provide suitable spawning and rearing habitat for target fish species (includes 110 acres of wild rice restoration). Construction can include removal of uncontaminated industrial waste from the shoreline and river bed, placement of appropriate sand substrate and organic material to create desired water depths and establishment of riparian, shoreline emergent wetland and submersed aquatic vegetation. These projects are closely coordinated with remedial activities being conducted by MPCA and USEPA due to the possible presence of contaminated sediments within some portion of the project sites. River flats and sheltered bays serve as productive spawning, nursery and foraging areas for both prey fish (minnows) and game fish including walleye, muskellunge, lake sturgeon, smallmouth bass, bluegill and black crappie. MDNR objective for restoration of quality aquatic habitat is to improve the overall biological productivity (fish, aquatic vegetation and benthic invertebrates) and provide substantially more opportunity for anglers and recreational boaters in the estuary.

Restoration will occur on one or more of the following priority sites to accomplish the overall habitat restoration objective. Determination of construction specifics will be based on opportunities to include other funding sources as match, project design readiness, permitting and input from program partner agencies.

- **Radio Tower Bay** – Sheltered bay that was impacted by a historic sawmill in the late Century. Aquatic habitat quality is negatively impacted by derelict infrastructure and milling waste. MDNR objectives include removing foreign material from approximately 30 acres of the site to create optimum bathymetry and restoration of aquatic vegetation beds to enhance larval fish survival and growth. Activity at Radio Tower Bay will also open an inaccessible bay for recreational boaters and anglers.

- **Wild Rice Restoration (replaces Rask Bay project area in proposal)** – There are several places within the lower St. Louis River

Estuary that the Fond du Lac Band of Lake Superior Chippewa has identified as suitable for wild rice restoration. Approximately 20 acres of wild rice beds will be established at several locations within the St. Louis River estuary. Wild rice is a culturally significant plant for the Lake Superior Chippewa people and is an important forage and resting habitat for many species of waterfowl including mallard, teal and wood ducks. Construction will include evaluating depth and substrate conditions and direct seeding of wild rice and temporary protection from disturbance by geese and carp as well as excessive wave energy. Successful implementation of this project will establish protocols for more extensive restoration of wild rice within the estuary.

- **Ave West Complex** – Open water flats and shallow sheltered bay habitats that have been impaired by historical industrial activities. The project area is over 500 acres (25 acres of restored aquatic vegetation beds within the overall project site) in size and is adjacent to the Western Lake Superior Sanitary District Treatment Plant, Canadian National Ore Docks and Rice's Point in a heavily industrialized portion of the lower estuary. Restoration activities are being coordinated through a remediation to restoration partnership between MDNR and MPCA as well as other partners to the St. Louis River AOC. The project design will soften shorelines, remove debris and industrially influenced substrates, establish optimum bathymetry and address excessive wave energies to increase the overall footprint of quality aquatic vegetation beds and spawning habitat available in the lower St. Louis River. Restoration of the entire complex will be phased as multiple projects. The desired outcome of the project is to significantly increase the biological productivity of this complex of river flats and sheltered bays.

Planning
Restoration of fish and wildlife habitat in the Lower St. Louis River is described in numerous important regional and national conservation plans.

These include:

**Outdoor Heritage Fund: A 25-year Framework**
The Northern Forest Section Vision for the OHF Framework states: "Lakes and wetlands supporting healthy fish populations are fundamental to the future of the Northern Forest Section. Lakes and streams with protected shoreland and restored watersheds will produce quality warm- and cold-water aquatic systems. Those resources will provide the aquatic habitat required to support excellent populations of fish and other aquatic organisms. This proposed program implements projects consistent with the Priority Action #1 for the Northern Forest Section; Protect shoreland and restore or enhance critical habitat on wild rice lakes, shallow lakes, cold water lakes, streams and rivers, and spawning areas.

**The MNDNR Strategic Conservation Agenda**
Strategic Conservation Agenda 2009-2013 sets strategic direction for natural resources and measures conservation results for the MN Department of Natural Resources. This program meets the goals for:
1) Minnesota's fish and wildlife populations will be healthy and provide great recreation opportunities
2) Minnesota's natural lands and habitats will be conserved and enhanced
3) Conservation of Minnesota's natural resources will provide a solid foundation for a strong economy, a healthy environment, and vibrant communities.

**Minnesota Conservation and Preservation Plan**
This program advance two recommendations contained in the Statewide Conservation and Preservation Plan including:
1) Habitat Recommendation 6A, Restore habitat structure within lakes (p.81) This recommendation seeks "...to restore the natural features of lakeshore habitats (shoreland, shoreline, and near shore areas) The estuarine portion of the St. Louis River functions much like a lake, or coastal wetland complex. Restoration of submerged and emergent aquatic vegetation beds on the broad river flats is consistent with this recommendation.
2) Habitat Recommendation 6B, Protect and restore in-stream habitats (p.82). This recommendation seeks to restore connectivity and the diverse habitats typical of a naturally functioning stream system. The trout stream restoration objectives of this proposal include riparian restoration, stream channel reconstruction and removing fish passage barriers.

**Tomorrow's Habitat for the Wild and Rare**
The States Wildlife Action Plan is a rare species condition assessment and habitat conservation guidance document for Minnesota's species of greatest conservation need. Several aquatic species including plants, insects, mussels, fish and water-dependent and seasonal migrant bird species are dependent on large river systems. The Lower St. Louis River is included as a key river reach for both the Northshore Highlands and Glacial Lake Superior Plain subsections. Key management actions are listed on pages 170-171 and 140-141, respectively, of the plan.

**MN DNR Fisheries Management Plan for the St. Louis River Estuary**
The MNDNR Section of Fisheries produces individual fisheries management plans for every actively managed land and stream resource in the state. These plans include fish population goals and objectives and identify habitat management actions that are needed to sustain quality fisheries. MNDNR, Section of Fisheries planning and evaluation model is similar to the US Fish and Wildlife Service's Strategic Habitat Conservation model and is composed of planning, implementation and evaluation phases in the traditional adaptive management framework. Management plans guide fish population management and identify opportunities for habitat protection, restoration, and enhancement. Support for implementation of the Lower St. Louis River Habitat Plan, of which these projects are a part, is identified in the Operational Plan of the document.

**Great Lakes Water Quality Agreement** The Agreement, first signed in 1972 and renewed in 1978, expresses the commitment of the United States and Canada to restore and maintain the chemical, physical and biological integrity of the Great Lakes Basin Ecosystem and includes a number of objectives and guidelines to achieve these goals. The GLWQA mandated the development and implementation of remedial action plans for Areas of Concern and lakewide management plans to address specific protection, restoration and enhancement objectives. The Lower St. Louis River Habitat Plan is the result of the RAP process and completion of the proposed projects are identified in the Implementation Strategies of the Plan.

**St. Louis River Habitat Plan** The Habitat Plan was prepared to guide the protection and restoration of the ecological diversity of the Lower St. Louis River. The objective for the conservation goals sought to achieve a mix of ecological and social benefits. This Plan presents a new vision of the St. Louis River ecosystem toward which communities, organizations, and individuals can work in cooperation and partnership. The Habitat Plan includes an estuary-wide guide for resource management and conservation that will lead to adequate representation, function, and protection of ecological systems in the St. Louis River, so as to sustain biological productivity, native biodiversity, and ecological integrity, a list of conservation and management objectives that reflects a consensus of the Committee and a suite of specific, obtainable, prioritized conservation and management actions that address specific threats. As described in the previous section, the proposed projects are identified in the Implementation Strategies of the Habitat Plan.

**Great Lakes Regional Collaboration Strategy to Restore and Protect the Great Lakes** The Great Lakes Regional Collaboration (GLRC) is a wide-ranging, cooperative effort to design and implement a strategy for the restoration, protection and sustainable use of the Great Lakes. In 2003, at the request of a Great Lakes congressional delegation and as a first step in providing the leadership and coordination all agree is needed, the Great Lakes governors identified nine priorities for Great Lakes restoration and protection. Since their release, these priorities have been adopted by the Great Lakes mayors, the Great Lakes Commission and other Great Lakes leaders. The GLRC was the basis for federal legislation authorizing up to $475 million/year through the Great Lakes Restoration Initiative for cooperative projects.

## Which sections of the Minnesota Statewide Conservation and Preservation Plan are applicable to this program:

- H6 Protect and restore critical in-water habitat of lakes and streams

## Which other plans are addressed in this program:

- Minnesota DNR Strategic Conservation Agenda
- Outdoor Heritage Fund: A 25 Year Framework
- MN DNR Fisheries Management Plan for the St. Louis River Estuary, St. Louis River Habitat Plan,

## Which LSOHC state-wide priorities are addressed in this program:

- Not Listed

## Which LSOHC section priorities are addressed in this program:

**Northern Forest:**

- Protect shoreland and restore or enhance critical habitat on wild rice lakes, shallow lakes, cold water lakes, streams and rivers, and spawning areas

## Relationship to other funds:

- Clean Water Fund

**Describe the relationship of the funds:**

MNDNR has worked hard to leverage funds from multiple sources to implement St. Louis River Restoration projects. A total of $4,239,294 has already been secured to complete advance planning, design and construction of proposed project components.

Leveraged sources directly related to the proposed projects:
Knowlton Creek: ($1,703,000): Clean Water Legacy ($200,000) plus Army Corps of Engineers Great Lakes Legacy Act ($403,000) for engineering design and permitting. National Oceanic and Atmospheric Administration – Great Lakes Regional Partnership ($700,000) identified in year two of budget for construction,
Radio Tower Bay 790,000)For completion of Phase I of Radio Tower Bay Project from NOAA Marine Debris Removal Program ($665,000) Minnesota Remediation Fund ($100,000)
Wild Rice Restoration ($246,294): Clean Water Legacy inter-agency pass through from MPCA to MNDNR ($86,790) for design of wild rice restoration, National Fish and Wildlife Foundation – Sustain Our Great Lakes ($159,504) awarded to Minnesota Land Trust to combine with MNDNR OHF funds.
21st Ave West Complex ($250,000): USFWS Environmental Contaminants Program -, Project Title: St. Louis River Area of Concern Ave West Complex Remediation and Restoration Project: Ecological Design.

## How does this program accelerate or supplement your current efforts in this area:

Program funding for Lower St. Louis River habitat restoration will supplement existing sources and is reasonably sized compared to current MNDNR yearly expenditures.

The projected cost of implementing habitat restoration projects described in the Lower St. Louis River Habitat Plan is estimated to be approximately $100 million. The strategy for accomplishing these projects includes the pursuit of both State and Federal funding sources at roughly a 50/50 rate. The amount of funding requested in this proposal is 7% of the States portion and represents a reasonable amount relative to the overall objective of achieving delisting of the AOC within 20-25 years.

**Describe how these funded activities will supplement your current budget:**
As the primary agency responsible for management of natural resources within the public waters of Minnesota, the MNDNR is obligated to coordinate and implement existing plans to restore habitat within the St. Louis River AOC. Currently, the MNDNR does not have the capacity to accomplish restoration objectives within the timeline described in the Lower St. Louis River Habitat Plan. The MNDNR was able to supplement its capacity to plan and implement restoration projects through support from the Great Lakes Restoration Initiative for FY 2010 through 2013. This resulted in an increase from 0.5 to 1.0 of a Full Time Equivalent to coordinate and implement the Habitat Plan. However, accomplishing the work described in this proposal will require the MNDNR to supplement its current capacity both internally and externally through the assistance of the Minnesota Land Trust.

## How will you sustain and/or maintain this work after the Outdoor Heritage Funds are expended:

St. Louis River habitat restoration projects are designed to be maintained by the natural processes that define these systems. Barring catastrophic events, these projects would not require future adjustment, or clean-up. For example stream channel restoration construction is designed to mimic natural riffle-pool sequences and be maintained by the hydraulic processes of river flow. Restoration of submerged aquatic vegetation beds will consider the water depth, substrate type and wave energy environment required to maintain these systems.

Healthy and robust native communities are resistant to invasion by exotic species. A concern is the establishment of noxious non-native species such as zebra mussel, purple loosestrife, and Eurasian water milfoil in project sites. If these species successfully establish on a site they can disrupt the foodweb of the native community and result in reduced populations of target species. Timely reseeding or plant establishment with native species immediately following construction activities is one of the best ways to reduce the risk of invasive exotic species establishment.

## Activity Details:

Will there be planting of corn or any crop on OHF land purchased or restored in this program - **Not Listed**

Is the activity on permanently protected land per 97A.056, subd 13(f) and/or public waters per MS 103G.005, Subd. 15 - **Yes**

## Accomplishment Timeline:

| Activity | Approximate Date Completed |
|---|---|
| Trout Stream Habitat Restoration - 4 fish passage projects assessed completed | November 30, 2014 |
| Approximately 5,000 feet (5 acres) of stream channel restored | November 30, 2015 |
| 30 acres riparian/floodplain habitats restored | November 30, 2016 |
| Restore habitat strucure within the Lower St. Louis River - 20 acres submerged vegetation restored | November 30, 2014 |
| 45 acres submerged vegetation beds restored | November 30, 2015 |
| 30 acres submerged vegetation | November 30, 2015 |
| 8 acres of wetlands restored along riparian corridor | November 30, 2016 |
| 110 acres wild rice beds restored | November 30, 2016 |

**Date of Final Report Submission:** 6/30/2015

## Federal Funding:

Do you anticipate federal funds as a match for this program - **No**

## Outcomes:

**Programs in the northern forest region:**

- Restoration of submerged aquatic vegetation beds, emergent wetlands and other habitats associated with river flats and shallow-sheltered bays directly contributes to desired long term outcomes for providing healthy terrestrial and aquatic habitat for fish, game and other wildlife species in the lower St. Louis River estuary by addressing limiting factors such as removing industrial waste and establishing native vegetation. Restoration of submerged aquatic vegetation beds, emergent wetlands and other habitats associated with river flats and shallow-sheltered bays is expected to help achieve desired long-term outcomes for prolific fish, game and other wildlife species in the lower St. Louis River estuary by improving the biological productivity within the project limits. Restoration of connectivity and stream habitats for brook trout in Knowlton Creek contributes to prolific fish, game and other wildlife species in the lower St. Louis River by improving access to additional spawning

# Budget Spreadsheet

*Budget reallocations up to 10% do not require an amendment to the Accomplishment Plan*

**How will this program accommodate the reduced appropriation recoomendation from the original proposed requested amount**

Not Listed

**Total Amount of Request: $ 3670000**

## Budget and Cash Leverage

| Budget Name | LSOHC Request | Anticipated Leverage | Leverage Source | Total |
|---|---|---|---|---|
| Personnel | $300,000 | $150,000 | EPA-GLRI Capacity | $450,000 |
| Contracts | $3,260,100 | $1,879,000 | NOAA, USFWS, ACOE | $5,139,100 |
| Fee Acquisition w/ PILT | $0 | $0 | | $0 |
| Fee Acquisition w/o PILT | $0 | $0 | | $0 |
| Easement Acquisition | $0 | $0 | | $0 |
| Easement Stewardship | $0 | $0 | | $0 |
| Travel | $2,900 | $0 | | $2,900 |
| Professional Services | $30,000 | $0 | | $30,000 |
| Direct Support Services | $66,400 | $0 | | $66,400 |
| DNR Land Acquisition Costs | $0 | $0 | | $0 |
| Capital Equipment | $0 | $0 | | $0 |
| Other Equipment/Tools | $300 | $0 | | $300 |
| Supplies/Materials | $10,300 | $0 | | $10,300 |
| DNR IDP | $0 | $0 | | $0 |
| Total | $3,670,000 | $2,029,000 | | $5,699,000 |

## Personnel

| Position | FTE | Over # of years | LSOHC Request | Anticipated Leverage | Leverage Source | Total |
|---|---|---|---|---|---|---|
| Program Coordinator | 0.50 | 3.00 | $0 | $150,000 | EPA-GLRI Capacity | $150,000 |
| Administrative Assistant | 0.75 | 3.00 | $105,000 | $0 | | $105,000 |
| Project Manager | 0.75 | 3.00 | $195,000 | $0 | | $195,000 |
| Total | 2.00 | 9.00 | $300,000 | $150,000 | | $450,000 |

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

Not Listed

# Output Tables

## Table 1a. Acres by Resource Type

| Type | Wetlands | Prairies | Forest | Habitats | Total |
|---|---|---|---|---|---|
| Restore | 8 | 0 | 0 | 200 | 208 |
| Protect in Fee with State PILT Liability | 0 | 0 | 0 | 0 | 0 |
| Protect in Fee W/O State PILT Liability | 0 | 0 | 0 | 0 | 0 |
| Protect in Easement | 0 | 0 | 0 | 0 | 0 |
| Enhance | 0 | 0 | 0 | 0 | 0 |
| Total | 8 | 0 | 0 | 200 | 208 |

## Table 2. Total Funding by Resource Type

| Type | Wetlands | Prairies | Forest | Habitats | Total |
|---|---|---|---|---|---|
| Restore | $0 | $0 | $0 | $3,670,000 | $3,670,000 |
| Protect in Fee with State PILT Liability | $0 | $0 | $0 | $0 | $0 |
| Protect in Fee W/O State PILT Liability | $0 | $0 | $0 | $0 | $0 |
| Protect in Easement | $0 | $0 | $0 | $0 | $0 |
| Enhance | $0 | $0 | $0 | $0 | $0 |
| Total | $0 | $0 | $0 | $3,670,000 | $3,670,000 |

## Table 3. Acres within each Ecological Section

| Type | Metro Urban | Forest Prairie | SE Forest | Prairie | N Forest | Total |
|---|---|---|---|---|---|---|
| Restore | 0 | 0 | 0 | 0 | 208 | 208 |
| Protect in Fee with State PILT Liability | 0 | 0 | 0 | 0 | 0 | 0 |
| Protect in Fee W/O State PILT Liability | 0 | 0 | 0 | 0 | 0 | 0 |
| Protect in Easement | 0 | 0 | 0 | 0 | 0 | 0 |
| Enhance | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 0 | 0 | 208 | 208 |

## Table 4. Total Funding within each Ecological Section

| Type | Metro Urban | Forest Prairie | SE Forest | Prairie | N Forest | Total |
|---|---|---|---|---|---|---|
| Restore | $0 | $0 | $0 | $0 | $3,670,000 | $3,670,000 |
| Protect in Fee with State PILT Liability | $0 | $0 | $0 | $0 | $0 | $0 |
| Protect in Fee W/O State PILT Liability | $0 | $0 | $0 | $0 | $0 | $0 |
| Protect in Easement | $0 | $0 | $0 | $0 | $0 | $0 |
| Enhance | $0 | $0 | $0 | $0 | $0 | $0 |
| Total | $0 | $0 | $0 | $0 | $3,670,000 | $3,670,000 |

## Target Lake/Stream/River Feet or Miles

10

# Parcel List

*For restoration and enhancement programs ONLY: Managers may add, delete, and substitute projects on this parcel list based upon need, readiness, cost, opportunity, and/or urgency so long as the substitute parcel/project forwards the constitutional objectives of this program in the Project Scope table of this accomplishment plan. The final accomplishment plan report will include the final parcel list.*

## Section 1 - Restore / Enhance Parcel List

St. Louis

| Name | TRDS | Acres | Est Cost | Existing Protection? |
|---|---|---|---|---|
| 21st Ave West Complex | 04915204 | 25 | $220,000 | Yes |
| Knowlton Creek | 04915210 | 35 | $570,500 | Yes |
| Knowlton Creek | 04915213 | 43 | $400,000 | Yes |
| Knowlton Creek | 04915214 | 35 | $570,500 | Yes |
| Radio Tower Bay | 04815211 | 30 | $2,279,800 | Yes |
| Rask Bay | 04815210 | 35 | $570,500 | Yes |
| Rask Bay (Wild Rice) | 04815209 | 110 | $360,000 | Yes |

## Section 2 - Protect Parcel List

No parcels with an activity type protect.

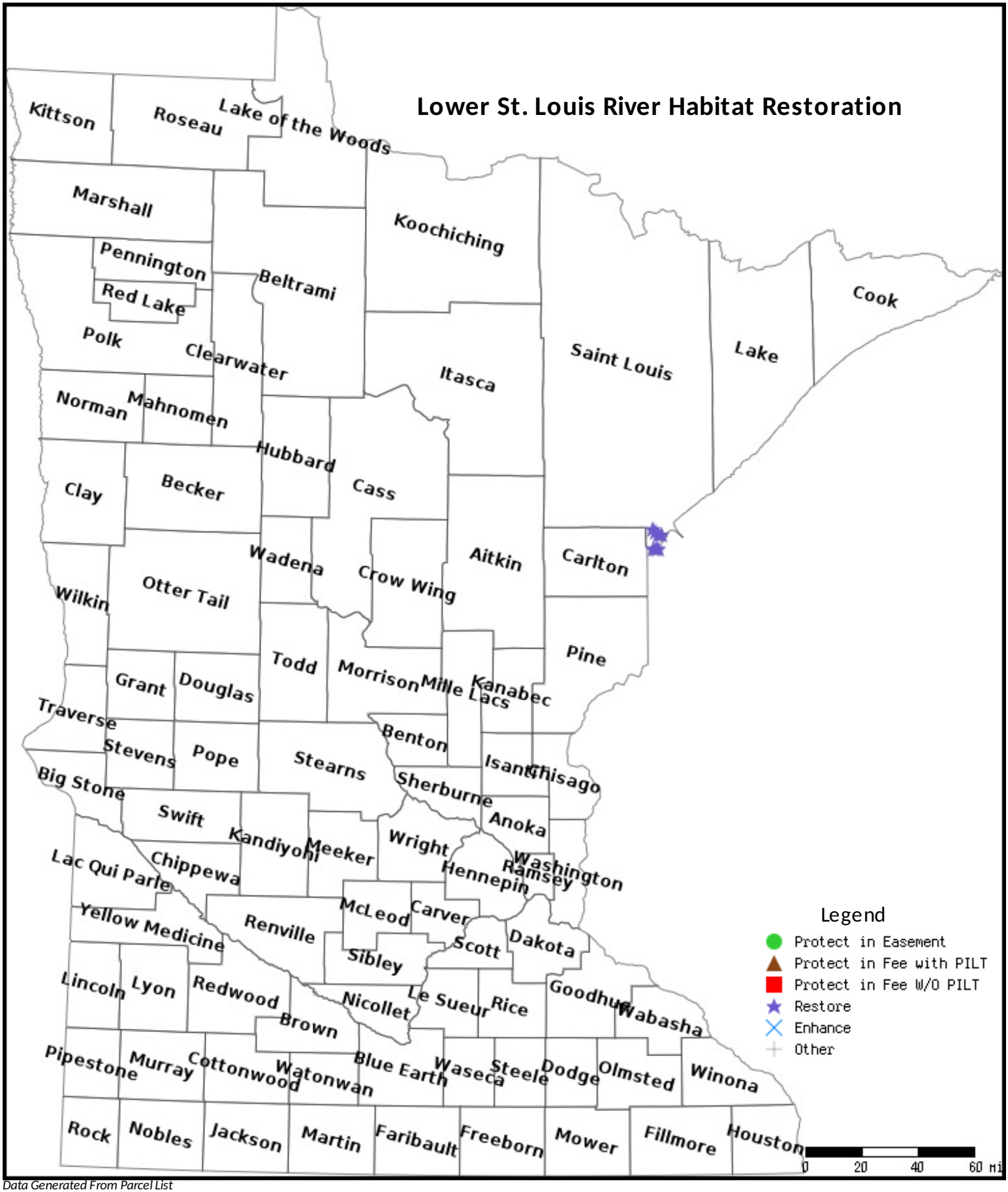
## Section 2a - Protect Parcel with Bldgs

No parcels with an activity type protect and has buildings.

## Section 3 - Other Parcel Activity

No parcels with an other activity type.

# Parcel Map




*Data Generated From Parcel List*