



Lessard-Sams Outdoor Heritage Council

Laws of Minnesota 2019 Accomplishment Plan

General Information

Date: 08/19/2021

Project Title: Restoration of Non-Native Cattail Dominated Wetlands in Border Waters

Funds Recommended: \$1,270,000

Legislative Citation: ML 2019, 1st Sp. Session, Ch. 2, Art. 1, Sec. 2, subd. 4(f)

Appropriation Language: \$1,270,000 the first year is to the commissioner of natural resources for an agreement with the National Park Service to restore and enhance wetland and lacustrine habitat in Voyageurs National Park. A list of proposed restorations and enhancements must be provided as part of the accomplishment plan.

Manager Information

Manager's Name: Reid Plumb

Title: Wildlife Biologist

Organization: Voyageurs National Park

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Location Information

County Location(s): St. Louis and Koochiching.

Eco regions in which work will take place:

- Northern Forest

Activity types:

- Restore

Priority resources addressed by activity:

- Wetlands

Narrative

Abstract

Non-native cattails (*Typha* spp.) have invaded wetlands in the Border Waters near Voyageurs National Park, displacing native vegetation, reducing biodiversity, degrading fish/wildlife habitat, impairing recreational opportunities, and degrading cultural resources, especially wild rice (*Zizania palustris*). These lakes are designated "Outstanding Resource Value Waters" (Minn. R.7050.0250-0335) where herbicide use is prohibited. Treatment methods include mechanical removal along with burning and other methods. We propose to remove cattails using these methods followed by reestablishment of native vegetation to restore wetland communities. This will restore fish and wildlife habitat, reduce damage from detaching floating mats, and improve recreational opportunities.

Design and Scope of Work

Step 1 - Remove Non-native Cattail: In areas of dense invasion of floating mats, non-native hybrid cattails will be mechanically removed using plant mulching and harvesting barges. Cutting/harvesting barges are a quick and cost-effective method to completely remove aquatic vegetation where herbicide use is prohibited. Harvesting equipment cuts up and removes cattails, including the dense cattail mats that prevent other vegetation from growing. The equipment also collects the cattail biomass and stores it onboard until dumping in a designated location nearby. Any cattails not accessible by the harvesting equipment will be removed with hand tools designed for aquatic vegetation use. Burning will be used as a tool to reduce cattail biomass and stimulate native vegetation regrowth. We will conduct treatments over the course of multiple seasons to accommodate annual water level changes, weather delays, and availability of equipment. We are partnering/contracting with several tribal communities in Minnesota that have extensive experience in removal of cattails using harvesting equipment to restore wild rice communities and other native vegetation.

Step 2 – Restore Native Species: Following removal of cattail, we will use a combination of methods to reestablish native vegetation. Simply removing the cattail mats, even ones in place for many decades, will allow dormant seeds, including wild rice and other native aquatic plants, to germinate without any further effort. While viable seed banks exist, park staff will transplant plants from nearby sites and directly-sow seeds to jump start the re-establishment of a diverse community of native species.

The steps outlined above are part of our 10-year Wetland Restoration Plan initiated by Voyageurs National Park in 2016 to restore these non-native cattail invaded wetlands. Developing the most cost-effective techniques was the first phase of the project. Phase 2 can now be implemented by applying these techniques to the rest of the wetlands in the area. Outdoor Heritage Funds would be used to continue the most cost-effective cattail removal and wetland restoration techniques outlined in Steps 1-2. Completion of this proposed project would restore cattail invaded wetlands to diverse wetland communities that will create and enhance fish and wildlife habitat and improve recreational and cultural opportunities for Minnesotans.

How does the plan address habitats that have significant value for wildlife species of greatest conservation need, and/or threatened or endangered species, and list targeted species?

Over 50% of Minnesota's wetlands have been lost over the last 200 years. Of the remaining wetlands, most are under threat of invasive species including non-native cattails. Minnesota Pollution Control Agency identified non-native cattails and the single greatest negative impact on Minnesota wetlands (MPCA 2015). More than 43% of

threatened or endangered species in Minnesota and elsewhere in the US depend on wetlands. It is therefore critical to restore remaining wetlands which have been degraded by invasive species. The proposed wetland project will result in a more natural and diverse community that will benefit a variety of both game and non-game species of fish and wildlife. One of the main target species for the proposed project is wild rice, a plant with high cultural and biological significance. In addition, wetlands will be restored to create diverse plant communities to create or enhance habitat for a variety of fish and wildlife species. Targeted bird species include yellow rail (*Coturnicops noveboracensis*), American bittern (*Botaurus lentiginosus*), least bittern (*Ixobrychus exilis*), Virginia rail (*Rallus limicola*), red-necked grebe (*Podiceps grisegena*), and black tern (*Chlidonias niger*), all of which are on Minnesota's list of Species in Greatest Conservation Need. Targeted mammal species include several important furbearer species, namely muskrats, river otter (*Lontra canadensis*), American beaver (*Castor canadensis*), and mink (*Neovision vison*). Important targeted fish species include northern pike (*Esox Lucius*), whose spawning areas are degraded by invasive non-native cattails. Several other species on Minnesota's list of Species in Greatest Conservation Need will also benefit from the proposed project, including: common snapping turtles (*Chelydra serpentine*), eastern red-backed salamanders (*Plethodon cinereus*), a variety of insects such as caddisflies, and various mollusk species.

Describe how the plan uses science-based targeting that leverages or expands corridors and complexes, reduces fragmentation or protects areas identified in the MN County Biological Survey:

The project was designed using an Adaptive Management framework to improve management decisions. The basic premise of this approach is to "learn while doing", where science-based information from CURRENT management is used to inform FUTURE management. In the first phase of the project, this management framework has allowed the development of the most cost-effective techniques while simultaneously restoring wetlands. It has now also allowed targeted restoration for future management in Phase 2 by focusing on restoring the most critical wetlands. This will reduce the detachment of potentially hazardous floating mats while also restoring fish and wildlife habitat in the most cost-effective way. While the MN County Biological Survey activities have yet to be completed in this area (this is the last part of the state to be surveyed), it is already known that many of the wetland habitats in the area are currently threatened by invasive cattails. Any rare species and habitats identified by the upcoming MN Biological Survey will add further urgency to our proposed restoration work.

Which two sections of the Minnesota Statewide Conservation and Preservation Plan are most applicable to this project?

- H2 Protect critical shoreland of streams and lakes
- H5 Restore land, wetlands and wetland-associated watersheds

Which two other plans are addressed in this program?

- Managing Minnesota's Shallow Lakes for Waterfowl and Wildlife
- Other : Voyageurs National Park 10-year Wetland Restoration Plan

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

Does this program include leveraged funding?

-

Per MS 97A.056, Subd. 24, Please explain whether the request is supplanting or is a substitution for any previous funding that was not from a legacy fund and was used for the same purpose.

Not Applicable

Non-OHF Appropriations

Year	Source	Amount
2016	NPS	240,000
2017	Initiative Foundation	500,000

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

All invasive species control and habitat restoration projects require ongoing maintenance. Voyageurs National Park has staff and equipment capable of sustaining the monitoring and maintenance required once the OHF funds have been expended. We are also incorporating much of the ongoing monitoring and maintenance into current and future programs already occurring at the park and surrounding areas. We are working closely with other agencies and partners to develop long-term management plans for the control of invasive cattails and protection of critical wetland habitats. One of our project's objectives is to also increase public and other stakeholder awareness and education on the issues with invasive species and critical habitats which should in turn bring in future funds for long-term wetland management.

Actions to Maintain Project Outcomes

Year	Source of Funds	Step 1	Step 2	Step 3
2018-2028	NPS	Determine long term efficacy of restoration	Removal of any reemerging cattail	Replant native vegetation as needed
2018-2028	NPS	Monitor long term impacts of restoration on wetlands	Monitor long term cattail impacts on restored wetlands	Monitor fish and wildlife in restored wetlands
2018-2028	NPS	Publish and present outcomes of project to educate and assist other wetland management plans	Continue partnerships to assist with cattail and wetland management	Develop effective cattail and wetland management strategies

Activity Details

Requirements

If funded, this program will meet all applicable criteria set forth in MS 97A.056?

Yes

Will restoration and enhancement work follow best management practices including MS 84.973 Pollinator Habitat Program?

Yes

Is the restoration and enhancement activity on permanently protected land per 97A.056, Subd 13(f), tribal lands, and/or public waters per MS 103G.005, Subd. 15?

Yes

Where does the activity take place?

- Public Waters
- Other : US National Park

Land Use

Will there be planting of any crop on OHF land purchased or restored in this program?

No

Timeline

Activity Name	Estimated Completion Date
Remove Invasive Cattails	2023
Reestablish native vegetation where cattails were removed	2023
Maintain restored wetlands with mechanical techniques	2023
Monitor effectiveness of cattail removal and reestablishment of native vegetation	2023
Report results and recommend most cost effective cattail and wetland management strategies	2027

Date of Final Report Submission: 11/01/2024

Budget

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

Totals

Item	Funding Request	Antic. Leverage	Leverage Source	Total
Personnel	\$690,000	\$192,400	NPS, NPS, NPS, NPS, NPS	\$882,400
Contracts	\$475,000	-	-	\$475,000
Fee Acquisition w/ PILT	-	-	-	-
Fee Acquisition w/o PILT	-	-	-	-
Easement Acquisition	-	-	-	-
Easement Stewardship	-	-	-	-
Travel	\$20,000	\$36,000	NPS	\$56,000
Professional Services	-	-	-	-
Direct Support Services	\$30,000	\$89,700	NPS	\$119,700
DNR Land Acquisition Costs	-	-	-	-
Capital Equipment	-	\$350,000	NPS	\$350,000
Other Equipment/Tools	\$30,000	\$58,000	NPS	\$88,000
Supplies/Materials	\$25,000	\$50,000	NPS	\$75,000
DNR IDP	-	-	-	-
Grand Total	\$1,270,000	\$776,100	-	\$2,046,100

Personnel

Position	Annual FTE	Years Working	Funding Request	Antic. Leverage	Leverage Source	Total
Biological Science Technician - Seasonal	0.5	4.0	\$60,000	\$60,000	NPS	\$120,000
Biological Science Technician - Seasonal	0.5	4.0	\$60,000	\$60,000	NPS	\$120,000
Project Administrator	0.01	4.0	-	\$8,000	NPS	\$8,000
Project Supervisor	0.1	4.0	-	\$44,800	NPS	\$44,800
Restoration Ecologist	0.05	4.0	-	\$19,600	NPS	\$19,600
Biologist Project Manager	1.0	4.0	\$330,000	-	-	\$330,000
Biological Science Technician - Term	1.0	4.0	\$240,000	-	-	\$240,000

Capital Equipment

Item	Funding Request	Antic. Leverage	Leverage Source	Total
Facilities, boats, vehicles, vegetation harvester	-	\$350,000	NPS	\$350,000

Amount of Request: \$1,270,000
Amount of Leverage: \$776,100
Leverage as a percent of the Request: 61.11%
DSS + Personnel: \$720,000
As a % of the total request: 56.69%
Easement Stewardship: -
As a % of the Easement Acquisition: -

How will this program accommodate the reduced appropriation recommendation from the original proposed requested amount?

Generally, the project was reduced to 4 years from the original 5 years of funding request. Direct Support Services was reduced to the minimum while maintaining the original in-kind amount, now a greater portion of the necessary amount. Equipment and supplies were reduced to a minimum while maintaining original in-kind.

Describe and explain leverage source and confirmation of funds:

Current in-hand leverage funds are through the NPS and other federal agencies. We also have in-kind support from multiple partners and agencies to implement and monitor this project.

Contracts

What is included in the contracts line?

The amount in the contract line is to contract large harvesting equipment for cattail floating mat removal

Travel

Does the amount in the travel line include equipment/vehicle rental?

Yes

Explain the amount in the travel line outside of traditional travel costs of mileage, food, and lodging

Automobile lease for the project to travel to and from project sites and haul equipment and tools. Requesting one vehicle for the term of the project and leveraged with two additional vehicles funded by NPS.

I understand and agree that lodging, meals, and mileage must comply with the current MMB Commissioner Plan:

No

Direct Support Services

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

Reduced Direct Support Services to minimum of approximately 3% of grant total, 100% of which is direct to this program. Maintained in-kind direct support services leverage amount, now 7% of grand total.

Federal Funds

Do you anticipate federal funds as a match for this program?

Yes

Are the funds confirmed?

Yes

Is Confirmation Document attached?

[Yes](#)

- In Kind : \$776,100

Output Tables

Acres by Resource Type (Table 1)

Type	Wetland	Prairie	Forest	Habitat	Total Acres
Restore	1,016	0	0	0	1,016
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	1,016	0	0	0	1,016

Total Requested Funding by Resource Type (Table 2)

Type	Wetland	Prairie	Forest	Habitat	Total Funding
Restore	\$1,270,000	-	-	-	\$1,270,000
Protect in Fee with State PILT Liability	-	-	-	-	-
Protect in Fee w/o State PILT Liability	-	-	-	-	-
Protect in Easement	-	-	-	-	-
Enhance	-	-	-	-	-
Total	\$1,270,000	-	-	-	\$1,270,000

Acres within each Ecological Section (Table 3)

Type	Metro/Urban	Forest/Prairie	SE Forest	Prairie	N. Forest	Total Acres
Restore	0	0	0	0	1,016	1,016
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	1,016	1,016

Total Requested Funding within each Ecological Section (Table 4)

Type	Metro/Urban	Forest/Prairie	SE Forest	Prairie	N. Forest	Total Funding
Restore	-	-	-	-	\$1,270,000	\$1,270,000
Protect in Fee with State PILT Liability	-	-	-	-	-	-
Protect in Fee w/o State PILT Liability	-	-	-	-	-	-
Protect in Easement	-	-	-	-	-	-
Enhance	-	-	-	-	-	-
Total	-	-	-	-	\$1,270,000	\$1,270,000

Average Cost per Acre by Resource Type (Table 5)

Type	Wetland	Prairie	Forest	Habitat
Restore	\$1,250	-	-	-
Protect in Fee with State PILT Liability	-	-	-	-
Protect in Fee w/o State PILT Liability	-	-	-	-
Protect in Easement	-	-	-	-
Enhance	-	-	-	-

Average Cost per Acre by Ecological Section (Table 6)

Type	Metro/Urban	Forest/Prairie	SE Forest	Prairie	N. Forest
Restore	-	-	-	-	\$1,250
Protect in Fee with State PILT Liability	-	-	-	-	-
Protect in Fee w/o State	-	-	-	-	-

PILT Liability					
Protect in Easement	-	-	-	-	-
Enhance	-	-	-	-	-

Target Lake/Stream/River Feet or Miles

Rainy and Kabetogama Lakes

Outcomes

Programs in the northern forest region:

- Improved aquatic habitat indicators ~ *Post cattail treatment and restoration surveys of vegetation and wildlife will be compared to historic as well as pretreatment and restoration surveys to determine success of the project. Long-term monitoring of vegetation and indicator species will also determine the ultimate success of this wetland restoration project. All monitoring and evaluation of the project is funded by NPS and partners.*

Parcels

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.

Parcel Information

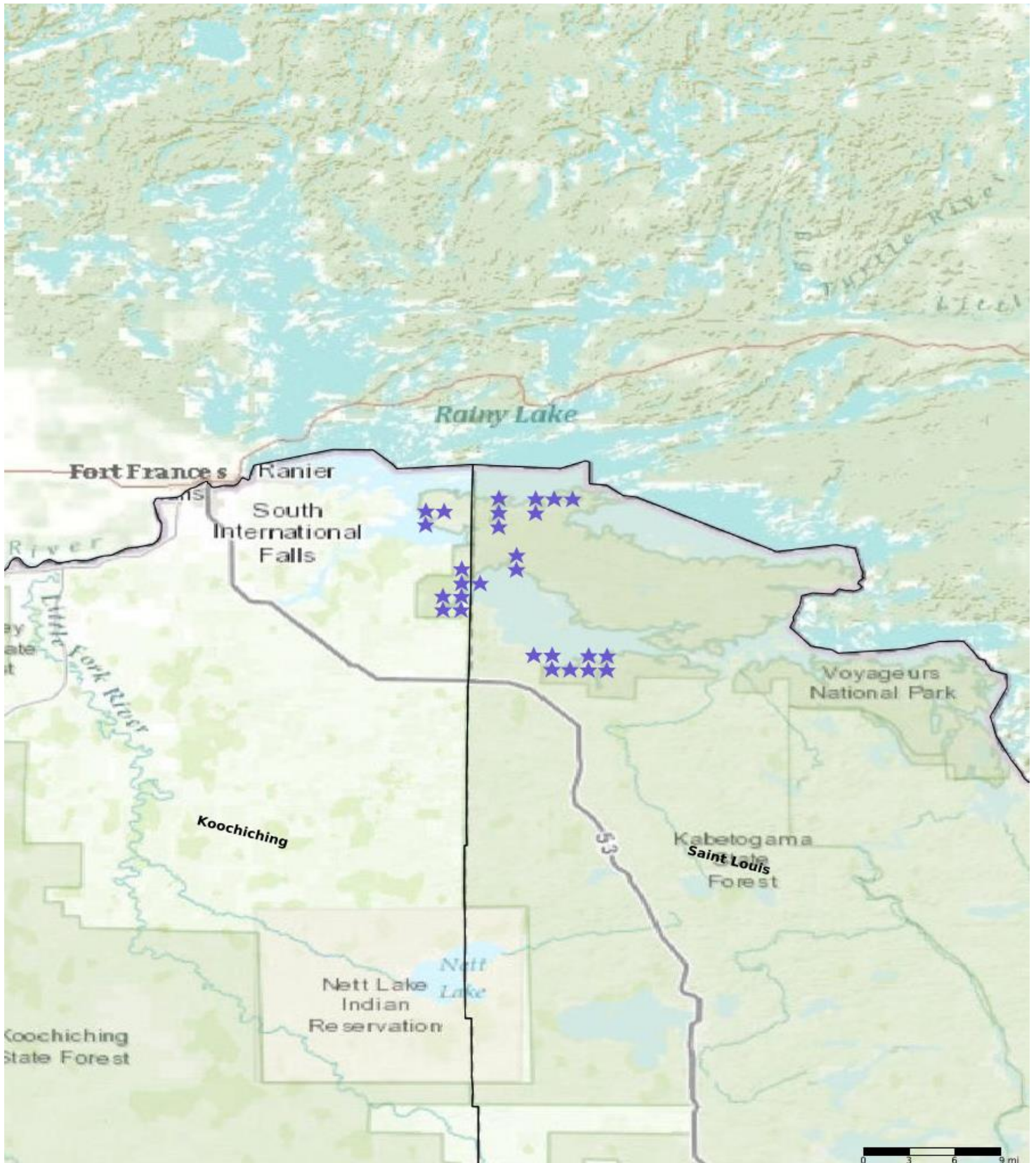
Sign-up Criteria?

No

Explain the process used to identify, prioritize, and select the parcels on your list:

Restore / Enhance Parcels

Name	County	TRDS	Acres	Est Cost	Existing Protection
Reuter Creek North	Koochiching	07022203	5	\$6,200	Yes
Reuter Creek West	Koochiching	07022210	22	\$27,000	Yes
Reuter Creek East	Koochiching	07022202	4	\$5,600	Yes
Daley Bay NW	St. Louis	06920231	4	\$4,500	Yes
Irwin Bay Central	St. Louis	06921236	36	\$44,900	Yes
Tom Cod East	St. Louis	06922201	69	\$86,500	Yes
Tom Cod SE	St. Louis	06922212	64	\$80,100	Yes
Alder Bay SE	St. Louis	07021203	32	\$40,600	Yes
Moose Bay North	St. Louis	07021221	10	\$12,900	Yes
Moose Bay South	St. Louis	07021228	6	\$7,100	Yes
Wooden Frog West	St. Louis	07021231	4	\$5,200	Yes
Ranta Bay North	St. Louis	07022225	7	\$8,200	Yes
Irwin Bay NW	St. Louis	06921227	5	\$6,700	Yes
Cranberry North	St. Louis	07121232	50	\$63,000	Yes
Tom Cod West	St. Louis	06922211	122	\$152,600	Yes
Irwin Bay West	St. Louis	06921235	106	\$133,000	Yes
Irwin Bay NW	St. Louis	06921226	61	\$76,500	Yes
Dove Bay East	St. Louis	07121236	52	\$64,700	Yes
Tom Cod NW	St. Louis	06922202	27	\$33,200	Yes
Daley Bay	St. Louis	06920232	80	\$99,400	Yes
Dove Bay West	St. Louis	07121235	27	\$33,500	Yes
Ranta Bay South	St. Louis	07022236	39	\$48,900	Yes
Cranberry South	St. Louis	07021208	11	\$13,500	Yes
Alder Bay South	St. Louis	07121234	65	\$81,700	Yes
Cranberry Central	St. Louis	07021205	102	\$127,200	Yes
Daley Bay NE	St. Louis	06920229	1	\$1,800	Yes
Daley Bay NW	St. Louis	06920230	4	\$5,400	Yes



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

Parcel Map
Restoration of Non-Native Cattail Dominated
Wetlands in Border Waters
(Data Generated From Parcel List)