Lessard-Sams Outdoor Heritage Council

Howard Lake Habitat Restoration

ML 2026 Request for Funding

General Information

Date: 06/26/2025

Proposal Title: Howard Lake Habitat Restoration

Funds Requested: $711,500

Confirmed Leverage Funds: $120,000

Is this proposal Scalable?: No

Manager Information

Manager's Name: Alicia O'Hare
Title: Water Resource Specialist
Organization: Wright Soil and Water Conservation District
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Office Number: 763-682-1970
Mobile Number:
Fax Number:
Website: wrightswcd.org

Location Information

County Location(s): Wright.

Eco regions in which work will take place:

Metro / Urban

Activity types:

Restore

Priority resources addressed by activity:

Habitat

Narrative

Abstract

Howard Lake faces challenges to biodiversity because of several aquatic invasive species (AIS), common carp. curly leaf pondweed and Eurasian water milfoil. Curly-leaf pondweed and Eurasian watermilfoil create monocultures and suppress native plant species. Most native plant species have less than 5% frequency in the lake. This project will reduce invasive plant species by 90% through chemical treatment. Common carp destroy plants as they rummage through lake sediments. Carp population will be reduced by netting and limiting recruitment. We expect to reduce the carp population by 50% . Finally, native plants will be transplanted to fill voids and restore biodiversity.

Design and Scope of Work

Howard Lake is located near the City of Howard Lake within Middleville Township in Wright County about one hour west of the Twin Cities and one hour south of St. Cloud. It has a total surface area of 745 acres, a littoral area of 318 acres, and a maximum depth of 39 feet. The watershed is primarily agricultural and developed space. In 2008, it was determined that the lake is not “fishable and swimmable”. The most recent assessment in 2014, of fish and invertebrates gave Howard Lake an index of biological integrity (IBI) a score of 15, far less than the required 45 to meet state standards.

Howard Lake has become dominated by three aquatic invasive species (AIS) that suppress biodiversity and degrade fish habitat. Curly-leaf pondweed (CLP) and Eurasian watermilfoil (EWM) are plant species that outcompete native plant species. Common carp are a fish species that uproot plant species and suspend sediment. Algae blooms fueled by the mid-summer die-back of CLP reduce oxygen, stressing aquatic animals. These factors limit the availability of food and cover for insects, fish, and waterfowl. Our project will work to reduce the populations of all three AIS species and restore native habitat to support aquatic life.

There are 17 different native plant species present in Howard Lake based on a 2022 plant survey. However, 11 of these species have a frequency of 5% or less, a fact not considered in the floristic quality index. This project will use transplantation within this lake to expand native plant populations and reintroduce sensitive native species from nearby lakes.

The first part of this project will restore Howard Lake by reducing CLP and EWM populations. We worked with the Minnesota Department of Natural Resources (DNR) to create a preliminary treatment plan. They and other experts recommend beginning with a whole-lake treatment using the herbicide, fluridone. We expect whole lake treatments to be required for two years. Afterwards spot treatments will be used for the remaining populations. We will need to monitor CLP and EWM population changes on an annual basis to determine those treatment areas. We expect to achieve 90% reductions in EWM and CLP in five years.

We will further restore Howard Lake by reducing the invasive carp population. Surveys in 2022 and movement studies in 2023 and 2024 show that the carp population in Howard Lake is 110 kg/ha, slightly above the threshold of degradation. The project will include annual surveys to monitor the population, microchipping carp for marked recapture, removals via block netting, stocking of predatory sunfish, and barriers to prevent recruitment. We expect to remove about 50% of the carp population in five years.

The third part of the project is to restore Howard Lake by transplanting native plant populations. There are still some native species in Howard Lake so our first goal would be to expand their range. While natural regrowth may occur from the seed bank, we will seek a permit for transplanting additional species from nearby lakes to increase diversity.

Explain how the proposal addresses habitat protection, restoration, and/or enhancement for fish, game & wildlife, including threatened or endangered species conservation

This project will restore the habitat in Howard Lake by replacing invasive species with native species. Lakes are an important habitat not only for fish and invertebrates, but also waterfowl. Currently. CLP dominates 50% of the littoral zone (15ft depth or less) and most native plants only occur sparsely in the lake. EWM creates very dense monocultures by growing rapidly and forming a canopy at the surface. This shades out native species and makes recreation difficult. Carp are invasive bottom feeding fish that were introduced to Minnesota in the 1800's as a food source. Carp can dig through several inches of sediment in search of seeds and other food. This digging reduces clarity by suspending sediment particles that release phosphorus into the water column, amplifying the negative impacts of CLP.

This project will enhance Howard Lake by increasing the number of native aquatic plants in the lake, filling niches that invasives can exploit and providing for sustainability of the lake restoration. Habitats with more diverse native species are more robust, creating competition against AIS. Improving plant diversity will support a wide variety of game and non-game fish.

To protect the restored habitat this project includes annual surveys of both native and non-native species. Surveying invasive non-native species will help determine where and when to treat each year. Surveying native species will help determine success as well as create transplantation plans each year.

In two years, we expect to see a 90% reduction in EWM and hybrid milfoil. In five years, we expect to see a 90% reduction in CLP and 50% reduction in carp. After that, local stakeholder groups will have the capability to continue to steward the lake and maintain control of AIS.

What are the elements of this proposal that are critical from a timing perspective?

Restoring habitats in Howard Lake before more fish, invertebrate, and plant species die off is the most critical. Expanding the frequency of a species still present in Howard Lake is easier than reintroducing a species from a different lake.

The area is currently eligible for a federal 319 grant through the small watershed program. Activities to reduce CLP are also eligible and will offer additional funds for the project.

Describe how the proposal expands habitat corridors or complexes and/or addresses habitat fragmentation:

The current habitat in Howard Lake does not meet standards for fish and other aquatic life. The lake is dominated by AIS and a few tolerant native species. There is little variety of cover available for fish species. This also means fewer choices for waterfowl. Locals report that only solitary loons inhabit the lake. It does not support nesting pairs.

The area of the lake where plants generally grow, known as the littoral zone, is 329 acres. Typically, the littoral zone is defined as the area where water is less than 15ft deep, but plants are restricted by the amount of light penetration. The 2022 plant survey showed only 69% of the littoral zone was vegetated. CLP and EWM first reduce native plant growth by gaining height quickly and shading out slower growing native plants. Separating the groups of native plants and causing them to be sparsely populated. After CLP dies in June it leaves a void only to be filled by algae blooms. Removing the invasive species and replanting native species will allow for a continuous habitat corridor throughout Howard Lake that will exist throughout the growing season.

In addition, the Howard Lake Watershed Alliance will encourage responsible land management practices that minimize impacts on aquatic ecosystems by initiating a Lake Stewardship Program among lake residents. This program would promote buffers between the riparian Upland zone from the aquatic zone. The buffer zones would protect the lake from runoff and erosion by preserving or restoring natural shoreline vegetation.

Which top 2 Conservation Plans referenced in MS97A.056, subd. 3a are most applicable to this project?

Minnesota DNR Strategic Conservation Agenda

National Fish Habitat Action Plan

Explain how this proposal will uniquely address habitat resilience to climate change and its anticipated effects on game, fish & wildlife species utilizing the protected or restored/enhanced habitat this proposal targets.

The key to climate resilience in a lake is temperature control. Cool water holds more oxygen to support fish. CLP is a problem because it begins to decompose in June. Decomposition consumes oxygen and releases heat and phosphorus. The phosphorus leads to algae blooms, which also have a short life cycle, and more decomposition leads to further increasing temperatures. In general, native species persist later into the summer, so there is less decomposition. Therefore, replacing CLP with native species will expand cover and keep water temperatures lower.
A reduction in the carp population will also increase the amount of cover. Without the turbation from carp, increased clarity will expand the area where plants can thrive. Increased plant coverage will keep temperatures lower and increase oxygen in the water.

Which LSOHC section priorities are addressed in this proposal?

Metro / Urban

Protect, enhance, and restore riparian and littoral habitats on lakes to benefit game and nongame fish species

Describe how this project/program will produce and demonstrate a significant and permanent conservation legacy and/or outcomes for fish, game, and wildlife, and if not permanent outcomes, why it is important to undertake at this time:

Howard Lake is one of 137 lakes impaired for fish bioassessments in Minnesota, the first lake listed in 2016. Howard Lake was listed in 2020. Improvements to Howard Lake's habitat will demonstrate to stewardship partners that lake restorations are possible.
EWM may be fully controlled after two fluridone treatments. Other lakes that have conducted a fluridone treatment did not treat EWM for seven years post treatment. CLP will require continued stewardship. We estimate that after the five-year life of the grant we will have reduced the invasive plant population by 90%. Local partners have pledged ongoing support, including the Howard Lake Watershed Alliance, Minnesota Lakes and Rivers (MLR), Wright County Coalition of Lake Associations and the City of Howard Lake, so restoration will persist for many years.
Many lake users prefer fewer "weeds", so education efforts will be necessary to educate stakeholders about beneficial plants and habitats. Funding for such efforts are eligible under Watershed-Based Implementation Funds and the Federal Small Watershed 319 program.
MLR has been working to build a broad cross-sector base of key stakeholders in the Stearns, Wright, Meeker and Pope County area in response to AIS. We work by aligning roles and capacity (knowledge, time, constituencies and dollars) to protect the public good of healthy lake and river ecosystems. Key Stakeholders include local businesses, local government units, MN DNR, lake associations, and sports groups. Messaging will use the Howard Lake Restoration as a case study, and the group can continue to support local action.

Outcomes

Programs in metropolitan urbanizing region:

Improved aquatic habitat indicators ~ *This project will restore the littoral habitat of Howard Lake. We will assess this by measuring the frequency of occurrences of native species. An increase in frequency will indicate a successful project. Additionally, an increase in the index of biological integrity and an increase in average water clarity will indicate a successful project.*

This project will protect from long-term endangerment from invasive species by decreasing the populations of EWM, CLP, and carp. We will measure this through surveys of each individual species on an annual basis.

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

Clean Water Fund

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.

This fund provides a unique opportunity to support planting and growth of aquatic species to aid in the habitat recovery post-treatment. While there are opportunities to support this project with education through Watershed Based Implementation Funds, there has not been available funding to complete this level of project.

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

We estimate that in two years we can achieve a 90% reduction in EWM. In five years, we can achieve a 90% reduction in CLP and a 50% reduction in carp. However, continued monitoring and management will be necessary. Surveys to monitor CLP and EWM cost about $1,200 each annually. Treatments will be applied as deemed necessary. Some lakes that conducted fluridone treatments did not need to treat EWM for more than 7 years. Local stewardship groups, such as the Howard Lake Watershed Alliance and the City of Howard Lake, are financially committed to the continued effort. Limited funding to support surveys and treatment is available through Wright SWCD via the Local AIS Prevention Aid Funding.

Based on the carp population data, recruitment is sporadic. We will work with the DNR to stock blue gills and sunfish to further limit recruitment. Surveys of carp population currently costing about $6,000 will be scheduled for about every 3 years.

Actions to Maintain Project Outcomes

Year	Source of Funds	Step 1	Step 2	Step 3
2032	Local Stakeholders	Survey plant AIS annually	Treat plant AIS if necessary	-
2034	Local Stakeholders	Survey Carp population	-	-
2035	Watershed Based Implementation	Remove Carp if necessary	-	-
2035	Local AIS Aid	Native Plant Survey	-	-

Provide an assessment of how your program may celebrate cultural diversity or reach diverse communities in Minnesota, including reaching low- and moderate-income households:

By improving the ecology of Howard Lake, we increase its utility for Minnesotans and people from other areas that come to Minnesota to enjoy our remarkable resources. Water recreation, in all its forms, is enjoyed by Minnesotans of all ages, genders, ethnic backgrounds and cultural heritages.

The Minnesota DNR has adopted advancing diversity, equity and inclusion as a key priority in its 2020-22 strategic plan. In recent years the MN DNR, Wright County and Howard Lake Watershed Alliance have followed suit and

have worked to engage all Minnesotans, including black, indigenous, and people of color (BIPOC), in outdoor recreation opportunities. Minnesota Lakes and Rivers believes that good public policy serves economic, environmental and social justice goals, works to build partnerships that are reflective of Minnesota, and work with tribes, BIPOC, lesbian, gay, bisexual, transgender, queer (LGBTQ) partners to protect Minnesota's lake and river heritage.

As a result, increasingly, more diverse communities are engaging in conservation efforts, Get Outside campaigns are utilizing our state's lakes and rivers for recreation. High quality aquatic habitat projects, access improvements and greater recreational opportunities expand social justice in the state. Because Howard Lake is so accessible to large population centers, restoring high quality aquatic habitat will provide BIPOC and diverse communities recreational opportunities that are close-to-home, culturally responsive and accessible to Minnesotans with disabilities.

Activity Details

Requirements

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 or on lands to be acquired in this program?

Yes

Where does the activity take place?

Public Waters

Land Use

Will there be planting of any crop on OHF land purchased or restored in this program, either by the proposer or the end owner of the property, outside of the initial restoration of the land?

No

Will insecticides or fungicides (including neonicotinoid and fungicide treated seed) be used within any activities of this proposal either in the process of restoration or use as food plots?

No

Other OHF Appropriation Awards

Have you received OHF dollars through LSOHC in the past?

No

Timeline

Activity Name	Estimated Completion Date
Nonnative Plant Treatment	September 2030
Carp Removal	May 2031
Carp Recruitment Limitations	June 2031
Native Plant Transplants and seeding	September 2030
Condition Monitoring	September 2030
Grant Administration	June 2031

Budget

Totals

Item	Funding Request	Total Leverage	Leverage Source	Total
Personnel	$70,000	$20,000	SWCD General Fund (non-state)	$90,000
Contracts	$641,500	$150,000	319 Federal Small Watersehd	$791,500
Fee Acquisition w/ PILT	-	-	-	-
Fee Acquisition w/o PILT	-	-	-	-
Easement Acquisition	-	-	-	-
Easement Stewardship	-	-	-	-
Travel	-	-	-	-
Professional Services	-	-	-	-
Direct Support Services	-	-	-	-
DNR Land Acquisition Costs	-	-	-	-
Capital Equipment	-	-	-	-
Other Equipment/Tools	-	-	-	-
Supplies/Materials	-	-	-	-
DNR IDP	-	-	-	-
Grand Total	**$711,500**	**$170,000**	**-**	**$881,500**

Personnel

Position	Annual FTE	Years Working	Funding Request	Total Leverage	Leverage Source	Total
Conservation Technician	0.02	5.0	-	$10,000	SWCD General Fund (non-state)	$10,000
Resource Conservationist	0.02	5.0	-	$10,000	SWCD General Fund (non-state)	$10,000
Operations Specialist	0.05	5.0	$10,000	-	-	$10,000
District Manager	0.05	5.0	$20,000	-	-	$20,000
Water Resource Specialist	0.1	5.0	$40,000	-	-	$40,000

Amount of Request: $711,500
Amount of Leverage: $170,000
Leverage as a percent of the Request: 23.89%
DSS + Personnel: $70,000
As a % of the total request: 9.84%
Easement Stewardship: -
As a % of the Easement Acquisition: -

Total Leverage (from above)	Amount Confirmed	% of Total Leverage	Amount Anticipated	% of Total Leverage
$170,000	$120,000	70.59%	$50,000	29.41%

Detail leverage sources and confirmation of funds:
We are in workplan development for federal 319 funds through the Small Water Program to support contracts. Local stakeholders have committed up to $100,000 for cash and in-kind support. Wright SWCD is committed to $20,000 of in-kind staff time.

Does this proposal have the ability to be scalable?
No

Please explain why this project can NOT be scaled:
The project is limited to the area of Howard Lake. However, the project could be repeated in similar lakes.

Personnel

Has funding for these positions been requested in the past?
No

Contracts

What is included in the contracts line?
Carp population surveys, point-intercept plant surveys, seed bank surveys, nonnative plant delineations, nonnative plant treatment, carp removal efforts, carp barriers, native plant transplants

Federal Funds

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

Are the funds confirmed?
No

What is the approximate date you anticipate receiving confirmation of the federal funds?
September 2025

Output Tables

Acres by Resource Type (Table 1)

Type	Wetland	Prairie	Forest	Habitat	Total Acres
Restore	0	0	0	318	318
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**	**318**	**318**

Restoration/Enhancement Acres Breakdown of Existing Protected Lands (Table 1a.2)

	RESTORE		ENHANCE	
	Lands acquired with OHF	Lands NOT acquired with OHF	Lands acquired with OHF	Lands NOT acquired with OHF
DNR Lands (WMA, State Forests, etc)	-	318	-	-
Non-DNR Lands (city, state, federal, etc.)	-	-	-	-
Easements	-	-	-	-
Total	**-**	**318**	**-**	**-**

Total Requested Funding by Resource Type (Table 2)

Type	Wetland	Prairie	Forest	Habitat	Total Funding
Restore	-	-	-	$711,500	$711,500
Protect in Fee with State PILT Liability	-	-	-	-	-
Protect in Fee w/o State PILT Liability	-	-	-	-	-
Protect in Easement	-	-	-	-	-
Enhance	-	-	-	-	-
Total	**-**	**-**	**-**	**$711,500**	**$711,500**

Acres within each Ecological Section (Table 3)

Type	Metro/Urban	Forest/Prairie	SE Forest	Prairie	N. Forest	Total Acres
Restore	318	0	0	0	0	318
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	**318**	**0**	**0**	**0**	**0**	**318**

Total Requested Funding within each Ecological Section (Table 4)

Type	Metro/Urban	Forest/Prairie	SE Forest	Prairie	N. Forest	Total Funding
Restore	$711,500	-	-	-	-	$711,500
Protect in Fee with State PILT Liability	-	-	-	-	-	-
Protect in Fee w/o State PILT Liability	-	-	-	-	-	-
Protect in Easement	-	-	-	-	-	-
Enhance	-	-	-	-	-	-
Total	**$711,500**	**-**	**-**	**-**	**-**	**$711,500**

Average Cost per Acre by Resource Type (Table 5)

Type	Wetland	Prairie	Forest	Habitat
Restore	-	-	-	$2,237
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	$2,237	-	-	-	-
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

4.7 miles

Parcels

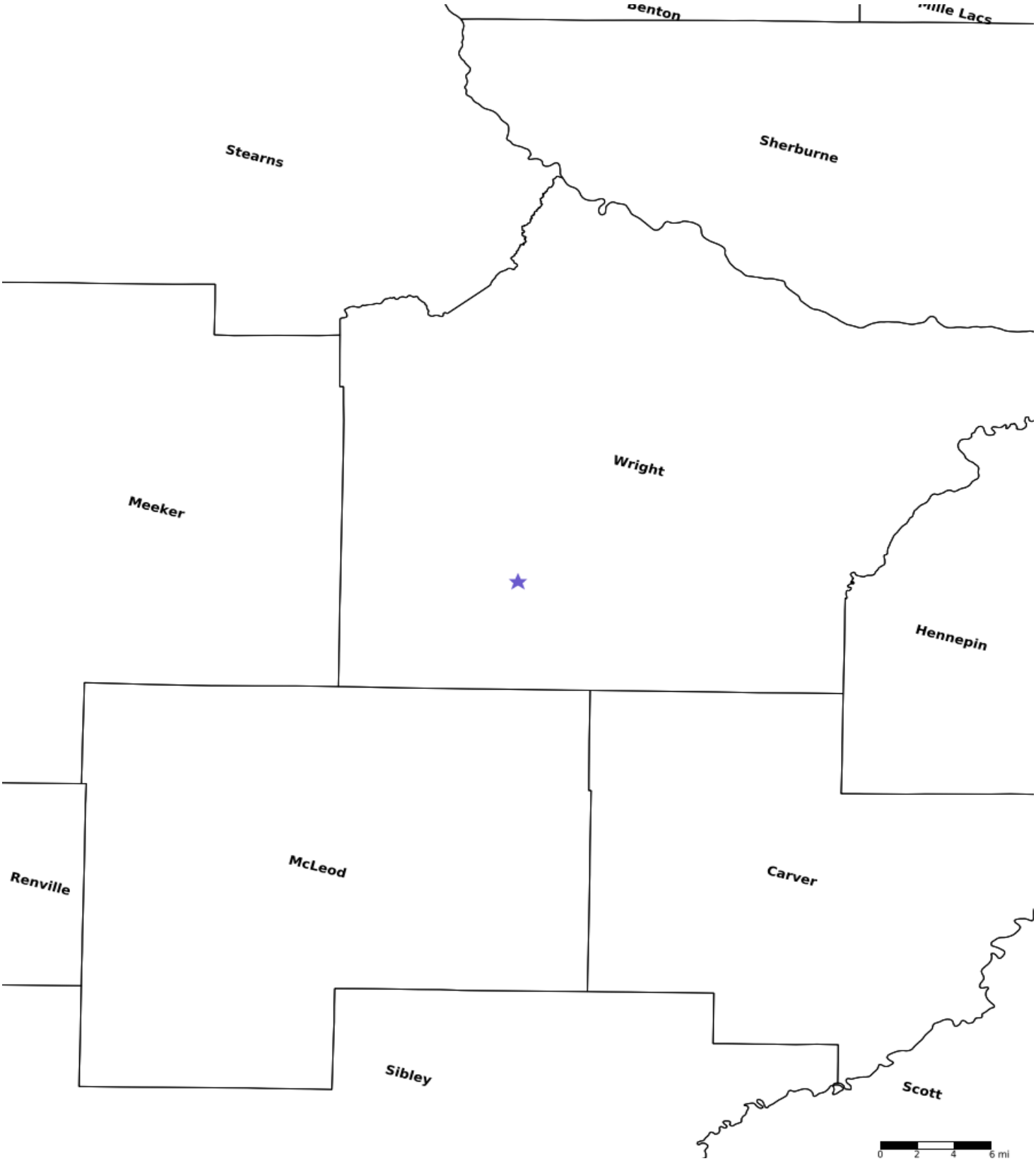
Sign-up Criteria?
No

Explain the process used to identify, prioritize, and select the parcels on your list:
The watershed surrounding Howard Lake was prioritized through the One Watershed One Plan process. We chose the watershed because it contains high-priority lakes, municipalities, county parks, and agricultural land. Then we conducted a feasibility study on five of the lakes in the watershed. We considered the pollutants coming from runoff, internal water chemistry, nonnative species prevalence, and native plant habitat. It was through this process that local government learned the true extent of the invasive species problem in Howard Lake. We spoke with the DNR, certified lake managers, and potential applicators to determine a viable project. Then we began to engage the public, including the City of Howard Lake, the Howard Lake Watershed Alliance, and the local sportsman's group. We have held several meetings with local stakeholders to verify interest, answer questions, and talk about local contributions.

Restore / Enhance Parcels

Name	County	TRDS	Acres	Est Cost	Existing Protection	Description
Howard Lake	Wright	11927233	318	$0	Yes	Lake ID 86-0199-00, Public waters. Section is an estimate

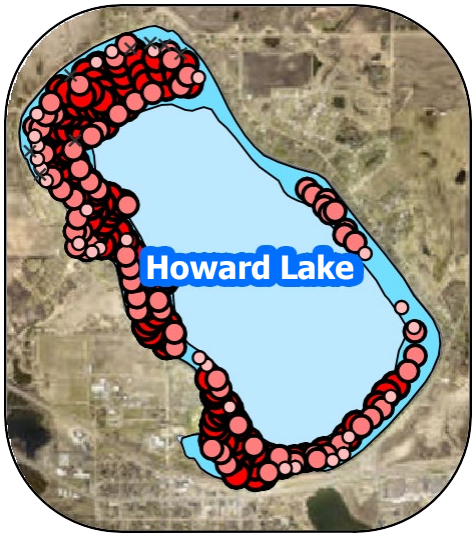
Parcel Map


Benton
Mille Lacs
Stearns
Sherburne
Wright
Meeker
Hennepin
Renville
McLeod
Carver
Sibley
Scott
0 2 4 6 mi
Protect in Easement
Protect in Fee with PILT
Protect in Fee W/O PILT
Restore
Enhance
Other

Howard Lake Habitat Restoration

Issue

Howard Lake is impaired for fish life in part because the habitat has been overrun with non-native species



Curly-Leaf Density
- High
- Medium
- Low
- None
- Littoral Zone
- Deep Zone

Goal

To improve the habitat of Howard Lake through reduction of aquatic invasive species and restoration of native aquatic plants

Funding Request

$641,500.00

Activities

Treatment of non-native plants
Removal of common carp
Native plant transplants
Limit carp recruitment
Condition monitoring

Anticipated Outputs

90% Reduction non-native plants
50% Reduction in Carp Population

Outcomes

Higher Fish Index of Biologic Integrity
Increased Frequency of Native Vegetation
Improved Clarity

Project Partners

Wright Soil and Water Conservation District
Minnesota Lakes and Rivers
Howard Lake Watershed Alliance
City of Howard Lake

Howard Lake Habitat Restoration

Restoration Area

318 acres

Project Timeline

July 2026 through June 2031

Howard Lake Highlights

Total lake area 745 acres
151 acres curly-leaf pondweed
45 acres Eurasian watermilfoil
Index of Biologic Integrity= 15
Carp density of 110 kg/ha
17 native aquatic plants species
11 native species less than 5% frequency

Past Studies

--Carp Solutions 2023, 2022-2023 Wright County Carp Management Full Report
--Carp Solutions 2025, Report on Carp Management in Wright County in 2025
--Freshwater Scientific 2002a, 2022 Curly-leaf Pondweed Delineation
--Freshwater Scientific, 2022b, Curlyleaf Pondweed Phosphorus Load Estimation Model
--Freshwater Scientific 2002c, 2022 Aquatic Plant Survey: Howard Lake
--Freshwater Scientific 2023, Curlyleaf Pondweed Turion Abundance Report
--Stantec, 2024a, 12-Mile Creek Watershed Lakes-Diagnostic Study
--Stantec, 2024b, Alum Feasibility for Howard and Waverly Lake
--Carp Solutions 2023, 2022-2023 Wright County Carp Management Full Report