

Final Abstract

Final Report Approved on November 1, 2024

M.L. 2021 Project Abstract

For the Period Ending June 30, 2025

Project Title: Stop Starry Invasion with Community Invasive Species Containment

Project Manager: Jeff Forester

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Website: <http://www.minnolakesandrivers.org/>

Funding Source:

Fiscal Year:

Legal Citation: M.L. 2021, First Special Session, Chp. 6, Art. 6, Sec. 2, Subd. 06g

Appropriation Amount: \$1,000,000

Amount Spent: \$995,854

Amount Remaining: \$4,146

Sound bite of Project Outcomes and Results

The Stop Starry project helps prevent the spread of Aquatic Invasive Species through a containment strategy, by deploying CD3 waterless boat cleaning stations, at accesses infested with starry stonewort. The equipment will last for many years, as will the civic groups established to promote Best Practices.

Overall Project Outcome and Results

Michigan discovered starry stonewort in 2005 and took no direct action to contain it. Today over 1,000 Michigan lakes are infested. Minnesota discovered starry stonewort in 2015 in Lake Koronis. Sixteen lakes (31 public accesses) were infested by 2021. Each is a vector of spread.

Starry stonewort is perhaps the most concerning AIS in Minnesota. It is expensive to manage and is very resilient.. But there is still time to contain it and prevent spread and save millions in ongoing management costs. Lake Koronis now spends over \$200,000 annually on starry stonewort mitigation to keep the public access usable. The Best Management Practice, BMP, is to completely clean, drain and dry all watercraft and water-related equipment when leaving a water body. Surveys consistently find lack of tools to be a major obstacle to BMP practice. ENRTF dollars were used to install

waterless watercraft cleaning stations with wet/dry vacs, high pressure air, scrubbers, grabbing tools, undercarriage and overhead lights, and drain plug wrenches. The units can be internet-enabled to send detailed use data and alerts to managers.

From July 2021 to July 2024 the Stop Starry Program deployed 27 CD3 boat cleaning stations at accesses infested with Starry Stonewort:

In 2021 three deployed units recorded 28 sessions.

In 2022 twenty two units recorded 10,517 sessions,

In 2023 twenty six stations recorded 12,227 sessions,

By July 31st, 2024, twenty seven stations recorded 14,394 sessions.

We organized monthly meetings to discuss community engagement strategies, control efforts and effects, prioritization schemes, and research ideas.

The Civic groups developed innovative treatment and prevention strategies in support of this program, including the installation of tool stations consisting of an educational sign and set of AIS removal tools to 39 lakes. In 2024 partners installed and additional 100 tool stations.

Project Results Use and Dissemination

Minnesota Lakes and Rivers Advocates built a website (<https://mnlakesandrivers.org/stopstarry/>) to disseminate directions on how to use a CD3 station, identify starry stonewort, a downloadable Stop Starry factsheet partners can use for meetings and events, an interactive map of the location of the CD3 stations, a free Check-in-Check Out tool, a New Infestation Response Plan tool to help managers plan ahead for an infestation, link to the MAISRC AIS Explorer tool to help target prevention resources, links to webinars and research on Starry Stonewort prevention and management along with other AIS.



Environment and Natural Resources Trust Fund

M.L. 2021 Approved Final Report

General Information

Date: November 21, 2024

ID Number: 2021-313

Staff Lead: Michael Varien

Project Title: Stop Starry Invasion with Community Invasive Species Containment

Project Budget: \$1,000,000

Project Manager Information

Name: Jeff Forester

Organization: Minnesota Lakes and Rivers Advocates

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Web Address: <http://www.mnlakesandrivers.org/>

Project Reporting

Final Report Approved: November 1, 2024

Reporting Status: Project Completed

Date of Last Action: November 1, 2024

Project Completion: July 31, 2024

Legal Information

Legal Citation: M.L. 2021, First Special Session, Chp. 6, Art. 6, Sec. 2, Subd. 06g

Appropriation Language: \$1,000,000 the first year is from the trust fund to the commissioner of natural resources for an agreement with Minnesota Lakes and Rivers Advocates to work with civic leaders to purchase, install, and operate waterless cleaning stations for watercraft; conduct aquatic invasive species education; and implement education upgrades at public accesses to prevent invasive starry stonewort spread beyond the 16 lakes already infested. This appropriation is available until June 30, 2025, by which time the project must be completed and final products delivered.

Appropriation End Date: June 30, 2025

Narrative

Project Summary: Minnesota Lakes Rivers, MLR will contain starry stonewort (*Nitellopsis obtusa*) in the 16 lakes (31 accesses) where it currently exists using civic organizing, waterless boat cleaning stations, and social messaging.

Describe the opportunity or problem your proposal seeks to address. Include any relevant background information.

Michigan discovered starry stonewort in 2005 and took no direct action to contain it. Today over 1,000 Michigan lakes are infested. Minnesota discovered starry stonewort in 2015 in Lake Koronis. Sixteen lakes (31 public accesses) are now infested. Each is a vector of spread. Starry stonewort is difficult and expensive to manage, prefers high quality waters, and significantly impacts fishing, boating, and swimming.

Since 2017 the Minnesota Aquatic Invasive Species Research Center and Extension Service has run a robust early detection program called “Starry Trek.” Over 200 volunteers survey hundreds of high risk MN lakes. The MN DNR, counties and lake associations also run organized early detection efforts for starry stonewort. There is hope that this highly destructive species is not widespread and that containment efforts should be pursued.

Starry stonewort is perhaps the most concerning AIS in Minnesota. It is expensive to manage and is very resilient.. But there is still time to contain it and prevent spread and save millions in ongoing management costs. Lake Koronis now spends over \$200,000 annually on starry stonewort mitigation to keep the public access usable. Without action now, spread of SSW to Minnesota’s premier lakes is imminent.

What is your proposed solution to the problem or opportunity discussed above? Introduce us to the work you are seeking funding to do. You will be asked to expand on this proposed solution in Activities & Milestones.

The Best Management Practice, BMP, is to completely clean, drain and dry all watercraft and water-related equipment when leaving a water body. Surveys consistently find lack of tools to be a major obstacle to BMP compliance. MLR will install waterless watercraft cleaning stations with wet/dry vacs, high pressure air, scrubbers, grabbing tools, undercarriage and overhead lights, and drain plug wrenches. Public use instructions can be included on equipment. The units can be internet-enabled to send detailed use data and alerts to managers.

This project will turbocharge clean, drain, dry BMPs by installing waterless boat cleaning stations at all thirty accesses. Hennepin County found that when waterless boat cleaning stations are combined with organized community engagement, signage, careful location, and pavement markings, AIS violation rates can be reduced by 70+%.

MLR will deploy these systems, with support from associations and local government, and use civic organizing strategies to elevate local awareness and support. Research shows lakes within 50 miles of an infestation are at higher risk.

This strategy has never been deployed to contain an emerging AIS. With only sixteen lakes infested, we hope to provide a protocol for containing future invasions by providing the tools boaters need.

What are the specific project outcomes as they relate to the public purpose of protection, conservation, preservation, and enhancement of the state’s natural resources?

Our goal is to protect, conserve and preserve Minnesota's waters by preventing the further spread of starry stonewort. We will further evaluate the success of the program by collecting and correlating two key variables: education impressions and behavior changes. Thereby, we can evaluate the impacts of our educational/civic organizing efforts by correlating the adoption of BMPs to education/outreach over the lifecycle of the campaign. These efforts will result in long-term educational infrastructure that reduces risk of not only starry stonewort spread, but all other AIS, after the project is over.

Project Location

What is the best scale for describing where your work will take place?

Statewide

What is the best scale to describe the area impacted by your work?

Statewide

When will the work impact occur?

During the Project and In the Future

Activities and Milestones

Activity 1: Tech/site advice Install, Manufacture and deliver 26 CD3 Stations, Provide and Supervise IoT services

Activity Budget: \$792,995

Activity Description:

The supplier of the waterless cleaning stations will be chosen through an RFP process, but so far only one, the CD3, has been identified. CD3s are built in Minnesota, in use across North America, are internet-connected to transmit use data and maintenance needs to managers of the equipment, and have all the tools required to meet current BMPs. CD3s have low maintenance costs and are designed to last at least ten years. Additionally, CD3s are an example of a success story of catalyzing innovation in invasive species management via the Lessard Outdoor Heritage Fund dollars via the Initiative Foundation grants. CD3s provide lights, wet/dry vacuum, air blower, hand tools for physical AIS removal, and a drain plug wrench so boaters can effectively Clean, Drain and Dry their water-related equipment. Because the selected boat cleaning station manufacturer has the knowledge and experience we will rely on their technicians to install the equipment. These systems will be free to boaters.

The project will cover the cost of the equipment, installation, IoT connectivity and platform design.

Activity Milestones:

Description	Approximate Completion Date
Build and enable IoT data systems	July 31, 2021
Deliver and Instal waterless cleaning systems	July 31, 2021
Site Selection on water accesses and signed leases with access owners.	July 31, 2021

Activity 2: Admin, Build Local Partners, Travel, Selecting Sites, Supervise Instal, Enhancing Launches w/Behavioral Cues, Education, Manage Project

Activity Budget: \$207,005

Activity Description:

Minnesota Lakes and Rivers, MLR will identify key local civic leaders and work with them to choose the best sites to instal waterless cleaning stations, plan access upgrades, and design strategic local AIS education efforts.

Priority will be given to lakes ranked by two criteria:

1. Lakes ranked as highest risk for originating spread by Minnesota Aquatic Invasive Species Research Center using their risk assessment algorithm,
2. Support of local community partners.

These partners will design and implement education ranging from pavement striping, signage, video content, and stop bars. These water access site upgrades will guide traffic flow and educate users. Supporting education and creating a broad base of committed active citizens will catalyze the use of waterless cleaning stations.

We will evaluate the success of the program by collecting and correlating two key variables: education impressions and behavior. Thereby, we can evaluate the impacts of our educational efforts by correlating the adoption of BMPs to education/outreach over the lifecycle of the campaign. These efforts will result in long-term educational infrastructure that reduces risk of not only starry stonewort spread, but all other AIS, after the life of the project.

Activity Milestones:

Description	Approximate Completion Date
Negotiate w/Install owner - secure permissions	July 31, 2021
Identify local partners, create civic workgroup to carry local process for each of the installations.	July 31, 2021
Use year 1 data via IoT platform to adjust community based marketing/education strategies	December 31, 2021
Administration of Process	December 31, 2023
Write and disseminate final case study.	July 31, 2024

Dissemination

Describe your plans for dissemination, presentation, documentation, or sharing of data, results, samples, physical collections, and other products and how they will follow ENRTF Acknowledgement Requirements and Guidelines.

MLR has partnered with MAISRC. County resource managers are also supporting this effort. Through these channels we will be able to reach hundreds of thousands of Minnesotans. We will also pursue print, radio and television stories on the effort. MLR will carry project information on their website. ENTRF logo and/or attribution language will be posted on the CD3 stations themselves, any special signage installed at the ramps, civic organizing materials and media releases.

Long-Term Implementation and Funding

Describe how the results will be implemented and how any ongoing effort will be funded. If not already addressed as part of the project, how will findings, results, and products developed be implemented after project completion? If additional work is needed, how will this work be funded?

The results of the project will be written as a case study and distributed by MLR to partners, MAISRC, and the media. Our hope is that this strategy can be used to contain any new-to-state AIS. This project will cover the cost of equipment and civic organizing to build an active citizen engagement around AIS prevention.

Budget Summary

Category / Name	Subcategory or Type	Description	Purpose	Gen. Ineligible	% Benefits	# FTE	Classified Staff?	\$ Amount	\$ Amount Spent	\$ Amount Remaining
Personnel										
Site Project manager		On site mgr for install and 3 years civic organizing, education, data collection, upkeep and contact.			0%	0.27		\$67,415	-	-
Project Manager of this grant		Administration and Management of this grant.			0%	0.54		\$23,800	-	-
							Sub Total	\$91,215	\$88,665	\$2,550
Contracts and Services										
							Sub Total	-	-	-
Equipment, Tools, and Supplies										
							Sub Total	-	-	-
Capital Expenditures										
		27 "Wayside Solar" (\$31,500 each) and 4 "Outpost" (\$13,500 each) CD3 Boat Cleaning Stations	To provide the tools, civic infrastructure and education at the place boaters need these tools and education so that they can effectively Clean, Drain and Dry watercraft and water related equipment before leaving the water access site.	X				\$829,120	\$829,120	-
							Sub Total	\$829,120	\$829,120	-
Acquisitions and Stewardship										
							Sub Total	-	-	-

Travel In Minnesota										
	Miles/ Meals/ Lodging	Lodging, and Incidentals (Per "Commissioner's Plan" (\$71 M&IE +\$124 Lodging) - 5 days/nights	Lodging and incidentals to identify Civic Leaders, select and enhance sites, monthly meetings to build institutional partners and develop civic infrastructure with outreach and behavioral cues and ongoing support of local AIS efforts for 3 years.					\$6,215	\$6,064	\$151
	Miles/ Meals/ Lodging	Lodging and Incidentals (Per "Commissioner's Plan" (\$71 M&IE +\$124 Lodging) 1 day/night	Install, Service and Maintain Waterless Cleaning Stations at 31 Boat Ramps for 3 Years					\$2,275	\$2,275	-
							Sub Total	\$8,490	\$8,339	\$151
Travel Outside Minnesota										
							Sub Total	-	-	-
Printing and Publication										
							Sub Total	-	-	-
Other Expenses										
		IoT capacity - 31 Units	Connect IoT to cell system to send real time use data and maintenance, ex. holding wet vacuum tank full. 1 years for 28 units.					\$26,650	\$26,575	\$75
		Software set up fees	Software set up fees for 6 counties - one time fee. (Wright County has already paid this fee.)					\$7,125	\$7,125	-
		IoT capacity - 28 units	Connect to IoT cell system to send real time use data and maintenance, ex holding wet vacuum tank full. Year 2 and Year 3 for 3 units.					\$37,400	\$36,030	\$1,370

							Sub Total	\$71,175	\$69,730	\$1,445
							Grand Total	\$1,000,000	\$995,854	\$4,146

Classified Staff or Generally Ineligible Expenses

Category/Name	Subcategory or Type	Description	Justification Ineligible Expense or Classified Staff Request
Capital Expenditures		27 "Wayside Solar" (\$31,500 each) and 4 "Outpost" (\$13,500 each) CD3 Boat Cleaning Stations	CD3 cleaning stations are capital equipment Additional Explanation : Estimated costs based on 28 CD3 "Solar Wayside" and 3 "Outpost" boat cleaning station for 31 water access sites on all listed starry stonewort infested lakes in Minnesota. The project will last three years during which time we will work to develop civic leaders and maintain local partnerships to enhance education and support for the containment of starry stonewort. At the end of three years the stations will be given to the local group or partners. Year two of the project they will take over the estimated \$1,500 annual maintenance costs. The estimated useful life of each station is at least ten years.

Non ENRTF Funds

Category	Specific Source	Use	Status	\$ Amount	\$ Amount Spent	\$ Amount Remaining
State						
Cash	County AIS Prevention Aid, Pope County	General support of Stop Starry project to put waterless boat cleaning stations at all accesses on all starry stonewort infested lakes in Minnesota, and use civic organizing, education and social marketing to support use. Stations prioritized using MAISRC risk assessment algorithm and community capacity.	Secured	\$5,000	\$5,000	-
In-Kind	County AIS Prevention Aid, Hennepin County	Purchase, instal and management of waterless boat cleaning station at Medicine Lake, Three Rivers Park District, Plymouth for three years.	Secured	\$45,000	\$45,000	-
Cash	County AIS Prevention Aid, Cook County	General support of Stop Starry project to put waterless boat cleaning stations at all accesses on all starry stonewort infested lakes in Minnesota, and use civic organizing, education and social marketing to support use. Stations prioritized using MAISRC risk assessment algorithm and community capacity.	Secured	\$1,500	\$1,500	-
			State Sub Total	\$51,500	\$51,500	-
Non-State						
Cash	Island Lake Association	General support of Stop Starry project to put waterless boat cleaning stations at all accesses on all starry stonewort infested lakes in Minnesota, and use civic organizing, education and social marketing to support use. Stations prioritized using MAISRC risk assessment algorithm and community capacity.	Secured	\$150	\$150	-
			Non State Sub Total	\$150	\$150	-
			Funds Total	\$51,650	\$51,650	-

Attachments

Required Attachments

Visual Component

File: [a342566b-d68.pdf](#)

Alternate Text for Visual Component

The maps show site analysis for each of the 29 public water access sites where solar powered waterless boat cleaning stations will be located. Each site will be ranked by two criteria; 1) potential risk as a source of starry stonewort spread based on the MAISRC risk assessment tool, 2) local support for the project and potential partnerships. We will deploy waterless as funding becomes available....

Financial Capacity

File: [2c38f72a-af9.pdf](#)

Board Resolution or Letter

Title	File
MLR Board resolution in support	ccf74b20-3ab.pdf
Background Check Certification	d61ec30b-1a9.pdf

Supplemental Attachments

Capital Project Questionnaire, Budget Supplements, Support Letter, Photos, Media, Other

Title	File
Lake Koronis Assoc. Ltr of Support	42b768db-c07.pdf
Cass SWCD Support Ltr.	e5bddd9b-fb9.pdf
UofM NRRI Support Ltr	339cc057-e28.pdf
Nat'l Pro. Anglers Support Ltr	8fcb125e-ccc.pdf
Cass Co. Env. Services Ltr. Support	5cb711c3-e68.pdf
Lake Sylvia Support Ltr	310e6eba-74a.pdf
Pope County Support Ltr.	f9336240-b80.pdf
Initiative Foundation Support Ltr.	d69c3b44-4f6.pdf
Beltrami County Support Letter	80a17b7f-99a.pdf
Stearns County Support Ltr.	15f0b7e3-bb7.pdf
Beltrami County CD3 Data	d992ce30-18d.pdf
Leech Lake Ojibwe CD3 Usage Report	0bdcf497-aad.pdf
Itasca County CD3 Usage Report	65d4eb00-973.pdf
Beltrami CD3 Usage Report	fd1000bc-a8c.pdf
High Tech BoAt Cleaning Solution	02be81ee-7f0.pdf
Boat Cleaning Station at Oak Haven Resort	0a551d16-cd9.pdf
Invasive Species Awareness Week	02bb26b8-dd3.pdf
LCCMR Stop Starry Tracking Sheet	ee38480d-166.pdf
Living With Aquatic Invaders	828a50c3-83f.pdf
Oak Haven Resort CD3	57ed9a6d-b0c.jpe
Oak Haven Diver Assisted Harvest Pilot	9724564d-5d9.jpe
Site maps	f3a92c1b-7c0.pdf
Site Maps	a12ca0ec-779.pdf
Site maps	aa7c6eb2-57f.pdf
Site Maps	2702624e-66c.pdf
Site Map	5f60dcdf-c1f.pdf
Site map	06e225c5-2a0.pdf
Site Map	d204c90b-a30.pdf
Site Map	354f0b5b-b78.pdf

Site Map	77f82025-b22.pdf
Site Map	7b9c5583-cca.pdf
Site Map	d4b22224-160.pdf
Civic Organizing/Outreach Materials	3399213b-d0e.pdf
Civic Org Outreach Materials/Impressions Documentation	8ba0a5ee-33e.pdf
Civic Org Outreach Materials/Impressions Documentation	91c7343c-873.pdf
Civic Org Outreach Materials/Impressions Documentation	4b660ffc-35f.pdf
Civic Org Outreach Materials/Impressions Documentation	ec4821d5-2e9.pdf
Civic Org Outreach Materials/Impressions Documentation	59380641-806.pdf
Civic Org Outreach Materials/Impressions Documentation	cc88d997-022.pdf
Civic Org Outreach Materials/Impressions Documentation	85202fa7-f51.pdf
Civic Org Outreach Materials/Impressions Documentation	cabaaf05-3e9.pdf
CD3 Use Data	8aae272a-378.png
CD3 Use Data	1f86791c-bdb.png
CD3 Use Data	eabfce0e-db1.png
Spreadsheet or table to better document locations of installed units, entity that has taken ownership, amount and source of any matching funds	419ed0d2-735.xlsx
CD3 Id Serial Numbers, location and information	46049f9d-cc9.pdf
2024 Press Release w/Links "How Well Do You Know Minnesota"	9d981a27-62f.pdf
Final Case Study	7aa1e1c8-c65.pdf

Difference between Proposal and Work Plan

Describe changes from Proposal to Work Plan Stage

During the LCCMR process, the budget was reduced from \$1,676,000 to \$1,000,000. We were able to manage this by leaning on partners to pick up annual maintenance and connectivity costs - the original budget included these costs for all three years of the project. In addition we identified low risk/use access site that do not require a "Wayside Solar" station and substituted an "Outpost" station at these sites. This year Lake Cornelian was listed as Starry Stonewort infested, and was added to the list of lakes we will protect.

Additional Acknowledgements and Conditions:

The following are acknowledgements and conditions beyond those already included in the above workplan:

Do you understand and acknowledge the ENRTF repayment requirements if the use of capital equipment changes?

Yes

Do you agree travel expenses must follow the "Commissioner's Plan" promulgated by the Commissioner of Management of Budget or, for University of Minnesota projects, the University of Minnesota plan?

Yes, I understand the Commissioner's Plan applies.

Does your project have potential for royalties, copyrights, patents, sale of products and assets, or revenue generation?

No

Do you understand and acknowledge IP and revenue-return and sharing requirements in 116P.10?

N/A

Do you wish to request reinvestment of any revenues into your project instead of returning revenue to the ENRTF?

N/A

Does your project include original, hypothesis-driven research?

No

Does the organization have a fiscal agent for this project?

No

Work Plan Amendments

Amendment ID	Request Type	Changes made on the following pages	Explanation & justification for Amendment Request (word limit 75)	Date Submitted	Approved	Date of LCCMR Action
1	Amendment Request	<ul style="list-style-type: none"> • Budget - Personnel • Budget - Capital, Equipment, Tools, and Supplies • Budget - Other 	MLR has incurred fewer hours over the grant period to date. There are more lakes infested with Starry Stonewort since the original grant application and therefore a need for more CD3 Cleaning Stations.	October 16, 2023	Yes	November 6, 2023
2	Amendment Request	<ul style="list-style-type: none"> • Other • Budget - Personnel • Budget - Capital, Equipment, Tools, and Supplies • Budget - Travel and Conferences • Budget - Other • Attachments 	The grant included the first year of annual software fee for the CD3 machines. This amendment provides support for the 2nd and 3rd year software fees and will free up LGU funding for other AIS efforts in the communities including inspection, detection and control of starry stonewort. The LGUs did pay these costs originally, and will continue to pay these costs moving forward in order to have the valuable data provided. This is merely support.	July 11, 2024	Yes	July 17, 2024
3	Completion Date	Previous Completion Date: 07/31/2024 New Completion Date: 12/31/2026	LCCMR staff work around to address system final reporting functionality conundrum.	July 17, 2024	Yes	July 17, 2024
4	Completion Date	Previous Completion Date: 12/31/2026 New Completion Date: 07/31/2024	LCCMR staff work around to address system final reporting functionality conundrum.	July 17, 2024	Yes	July 17, 2024

Status Update Reporting

Final Status Update September 14, 2024

Date Submitted: September 19, 2024

Date Approved: October 15, 2024

Overall Update

By July 31st, 2024, a short season, data collection on the CD3 machines reported 14,394 sessions, over 2,000 more than last year. Each session a boater uses the tools to clean, drain and dry their boats. Our Civic Organizing pilot includes Minnesota Lakes and Rivers, the Leech Lake Band of Ojibwe, Cass, Beltrami, Crow Wing, Hubbard and Itaska county AIS coordinators, Association of Cass County Lakes, Leech Lake Association, Steamboat Lake Association, Long Lake Association, Hubbard County COLA and the Association of Cass County Lakes. Partners do outreach, research into best treatment protocols including hand pulling regimes, benthic barriers and Diver Assisted Suction Harvest, DASH. Leech Lake Band of Ojibwe is testing the use of drones to locate starry stonewort infestations and are leading research into the impact of starry stonewort on wild rice beds. This summer member presented at over 50 public events/meetings including the Hubbard County Fair, the 2024 National Loon Center Festival and the 2024 Minnesota State Fair. We have published numerous articles in local media and organization newsletters, websites and blogs. At the July 18th, 2024 meeting this group adopted a draft communications plan, laying the groundwork for communication and education going forward.

Activity 1

This activity was previously marked complete.

(This activity marked as complete as of this status update)

Activity 2

From July 2021 to July 2024 the Stop Starry Program deployed 27 CD3 boat cleaning stations at accesses infested with Starry Stonewort:

In 2021 three deployed units recorded 28 sessions.

In 2022 twenty two units recorded 10,517 sessions,

In 2023 twenty six stations recorded 12,227 sessions,

By July 31st, 2024, twenty seven stations recorded 14,394 sessions.

We organized monthly meetings to discuss community engagement strategies, control efforts and effects, prioritization schemes, and research ideas.

- The Cass AIS Program, adjacent Counties and the MN DNR have implemented innovative Starry Stonewort control methods including biodegradable benthic barriers, thermal destruction, and UVC lights. Partners, led by Cass County have developed and deployed tool stations consisting of an educational sign and set of AIS removal tools to 39 lakes. In 2024 partners planned to expand these tool stations to over 100 accesses.

In addition, partners, working with Leighton Media and MN DNR, produced and promoted a free to use monthly display (274,892 impressions) and video (372,708 impressions) PSA "How Well Do You Know Minnesota?". The series will continue with new messages in August and September. The group is planning a similar effort for 2025.

(This activity marked as complete as of this status update)

Dissemination

Minnesota Lakes and Rivers Advocates has pursued many communication channels, including a website (<https://mnlakesandrivers.org/stopstarry/>). This site includes directions on how to use a CD3 station to fully clean, drain

and dry watercraft and water related equipment, identification of starry stonewort, a downloadable Stop Starry factsheet partners can use for meetings and events, an interactive map of the location of the CD3 stations we have deployed, a free Check-in-Check Out tool, a New Infestation Response Plan tool to help managers plan ahead for an infestation, link to the MAISRC AIS Explorer tool to help target prevention resources, links to webinars and research on Starry Stonewort prevention and management along with other AIS.

With partners and MN DNR and Leighton Media to develop a series of 5 display and 15 and 30 second video spots that we distributed to media, county resource managers and lake associations free to use. The entire series in different formats can be download from Dropbox:

<https://www.dropbox.com/scl/fo/xjecm00yq9ljbbtz0hreh/AEfTnD3nJhsVx0oMQkrDGM?rlkey=qzaclip-myn6fz6z3405xdlxmk&st=v9cpkyvz&dl=0>

MLR posted these videos on Facebook (2800 contacts) and Twitter where they were widely shared.

The group and dissemination will continue.

Additional Status Update Reporting

Additional Status Update September 14, 2024

Date Submitted: July 11, 2024

Date Approved: July 17, 2024

Overall Update

per LCCMR staff update not needed at this time

Activity 1

This activity was previously marked complete.

(This activity marked as complete as of this status update)

Activity 2

Per LCCMR staff update not needed at this time.

Dissemination

Per LCCMR staff update not needed at this time.

Status Update Reporting

Status Update June 1, 2024

Date Submitted: July 11, 2024

Date Approved: July 17, 2024

Overall Update

To date we have found LGU partners and civic partners to install 27 CD3 Units. In addition, we have had 26 public meetings with key local stakeholders, developed a communications strategy, produced materials to educate the public and have lined up booth space at three public events in the area. In the Beltrami/Leech/Hubbard/Cass/Itasca Counties area, stakeholders have supported Stop Starry and AIS prevention; the Leech Lake Band of Ojibwe, developed and is testing a Diver Assisted Suction Harvest, DASH, system to reduce starry stonewort density in infested areas, researching SSW impacts on wild rice and other native species, the Association of Cass County Lakes, launched a program to install over 100 toolbars at accesses for boaters to use to Clean, Drain and Dry at the accesses, North Long Lake, working with MN DNR and Hubbard County AIS Coordinator, is testing the use of a benthic barrier to suppress starry stonewort biomass. These innovations are being tested/adopted in other parts of the state.

Activity 1

This activity was previously marked complete.

(This activity marked as complete as of this status update)

Activity 2

There has been little use data reporting since the Feb. project update. In Stearns county we had difficulty finding a committed LGU partner to take ownership of CD3 units, but we do have committed local partners that have agreed to carry the annual costs of a CD3 Units. In order to overcome Stearns County LGU reluctance we worked with MN DNR to create a new model for them to take ownership of the equipment. In the Stearns/Wright/Pope/Meeker County we have begun a new strategy of using one on one meetings to bring stakeholders into alignment with common purpose of preventing AIS Spread.

In 2024 MLR, working with Erika Gilsdorf at Leighton Media and MN DNR, MLR leveraged our stakeholder group to fundraise and produce a fun video series concept this summer... 'How Well Do You Know MN?' (one new video May-Sept.) being release that partners can use for local PSA, social media and websites promoting Clean, Drain, Dry strategies.

To create sustainability of pilot efforts, 4 stakeholders meet monthly to work towards meeting MACI lead organizer criteria.

Dissemination

The ENRTF logo is featured on all of the CD3 boat cleaning units, flyers and other communication pieces. We have a section of our website dedicated to the Stop Starry project, and have put out an article about Stop Starry that our 290 lake association partners can use in their newsletters this summer.

The MLR monthly e-Newsletter, Water Connects Us All, is sent to about 50,000 lake home and cabin owners statewide. It is opened and read (recipients click to open articles) by over 10,000 people. Since our last update in December, 2023, MLR has had 5 articles about starry stonewort and other related AIS and hosted three webinars, with average attendance over 100 people, on three topics related to AIS and starry stonewort prevention, detection and/or control.

Status Update Reporting

Status Update December 1, 2023

Date Submitted: December 6, 2023

Date Approved: December 22, 2023

Overall Update

Our goal is to protect, conserve and preserve Minnesota's waters by preventing the further spread of starry stonewort. Since it is hard to prove a negative, we proposed using two variables; educational impressions and behavior changes. One key outcome we are hoping for is to create "civic infrastructure" in the form of a organized group working to prevent the spread of Starry Stonewort and AIS in general.

Activity 1

In our work plan we intended to 1) build and enable IoT data systems, 2) select the sites and execute all necessary agreements, permits and paperwork, deliver and 3) install 26 CD3 waterless boat cleaning stations at starry stonewort infested accesses. As of Dec. 1, 2023, we have reached these milestones.

But through leveraging partnerships and installing smaller units we have installed an additional 2 stations about to be installed for a total of 28 boat cleaning stations installed at accesses infested with starry stonewort. In addition, our partners in Cass County have expanded on the idea of making boat cleaning tools available by installing almost 50 self service boat cleaning tool stations. (KAXE Radio Story, August 8, 2023)

(This activity marked as complete as of this status update)

Activity 2

Work on Activity 2 remains ongoing.

We have developed and continue to support two pilot Stop Starry Civic organizing groups, a northern group and a southern group. The northern group includes AIS coordinators from Itasca, Cass, Beltrami, Hubbard, and Crow Wing Counties, Coalition of Lake Association officers from Hubbard and Cass County, a number of lake association leaders and the Leech Lake Band of Ojibwe. This group meets monthly. Members of the Civic Pilot attended multiple events, including Reeds Father's Day event, Walleye Tournament, Hubbard COLA meeting, and two MAISRC Lab to Lakes meetings and over two dozen lake association meetings.

The South Stop Starry Civic Pilot includes AIS coordinators from Wright County, Stearns County AIS Committee members, lake association members from Lake(s) Koronis, Rice, LGU reps in Pope and Meeker County and the North Fork of the Crow River SWCD and MN DNR. There is a smaller group in Kandiyohi County centered on Long Lake, which discovered Starry Stonewort this summer. Members include leaders from many of the lake associations in the area.

Strategic Priorities set by our partners include continued awareness campaigns, increased early detection efforts, and pursuit of treatment options to lower biomass and reduce spread.

Dissemination

MLR sent 28,000 emails to lake home and cabin owners in the area to encourage them to use the free waterless cleaning equipment to clean, drain and dry every time they or their guests enter or exit a water body. Part of this message urged people to "Take the Pledge" a Community Based Social Marketing program launched by the MN DNR. After our email effort, MN DNR reported that the number of Take the Pledge participants increased over 300, nearly doubling the participants

Working with partners to leverage funds, MLR helped develop a video series with Clean, Drain, Dry messaging to support Stop Starry efforts. Leighton Broadcasting, MN DNR, MLR and MAISRC shared/aired aired these videos creating a total of 569,160 impressions.

Total tool uses increased from 2022 (10,609 tool uses) to (11,635 tool uses) in 2023 for a total of 22,244 uses of the equipment since the Stop Starry Program began.

Status Update Reporting

Status Update June 1, 2023

Date Submitted: June 2, 2023

Date Approved: June 26, 2023

Overall Update

To date we have been able to deliver 24 CD3 Units at water access sites on 14 lakes. We have been holding monthly meetings with key stakeholders, published multiple articles and developed educational and outreach materials that will be distributed at events in local communities this summer.

Activity 1

We have delivered 24 CD3 Wayside units and connected them to IoT services. There are two sites (one on Koronis and one on Rice Lake in Stearns County) where the smaller Roadside CD3 units will be installed pending DNR approval. Their process, including final site selection, should be complete in the next month or two. While DNR will be the owner of the equipment, Rice Lake Association and Stearns County AIS program will manage the units and be responsible for annual operating costs.

Activity 2

A group of Key Stakeholders have been meeting monthly for the last year. We have developed communication and outreach materials, a direct communication plan using emails to local lake home and cabin owners and other stakeholders. We are scheduled to participate in two public events in late June and early July. We will continue to work for more opportunities in August and September. We have identified key stakeholders in Stearns/Wright/Pope and Meeker counties, had a number of one on one meetings and will begin organizing this summer.

Dissemination

MLR and our Leech Lake Band of Ojibwe/Beltrami AIS Coordinator/Association of Cass County Lakes, Cass County AIS Coordinator and Crow Wing County AIS coordinator, Hubbard COLA, Steamboat Lakes Association, Leech Lake Association will have a booth at the MAISRC Lab to Lakes event June 23rd and Reeds Sporting Goods event June 17th. MAISRC. We are in the process of developing an email campaign to go out to over 30,000 contacts in the 4 County area. Media outreach is ongoing.

Deployment of CD3 units was more complex in the Stearns/Wright/Pope/Meeker County area and so Civic Organizing has been delayed. Organizing efforts will begin this summer.

Status Update Reporting

Status Update December 1, 2022

Date Submitted: January 31, 2023

Date Approved: February 9, 2023

Overall Update

We have deployed 20 units to date in Beltrami, Cass, Itasca, Pope and Wright Counties. We are working towards the deployment of three more units in Stearns County. Active organizing is underway with key stakeholders in all areas. Stakeholders include representatives of COLA, Lake Associations, County AIS Coordinators, USFS, Tribal resource managers and resort owners.

Activity 1

Due to supply chain issues and delay in the availability of the ENRTF funding until October, 2021, the cost of CD3 stations increased. We worked with our local partners to identify the highest risk accesses. We have delivered 20 units to date and are working to secure partners for the remaining three sites, all in Stearns County. The IoT systems are working and reported over 6,000 uses so to date. This will serve as our baseline to judge success in future years.

Activity 2

We were able to secure LGU partners to whom we can donate the equipment. We worked with these partners to determine the best location for the equipment on each access. We secured appropriate transfer of ownership documentation in addition to no-cost leases, special use permits, or permissions by the access owner. We have been holding monthly meetings with our Pilot Civic Organizing groups to develop education and communication strategies, developing printed materials partners can use, a short video announcement on Clean, Drain, Dry for community broadcasting. These groups are planning a direct mail piece connecting the Stop Starry project with the MN DNR "Take the Pledge" to prevent the spread of AIS. In areas where appropriate, we are looking at pavement enhancements, signage and other site improvements to increase use of the boat cleaning equipment. Jeff Forester has visited ten of the sites so far to assess location and functionality.

Dissemination

The ENRTF logo is featured on all of the CD3 boat cleaning units. We have a section of our website dedicated to the Stop Starry project, and have put out an article about Stop Starry that our lake association partners can use in their newsletters. We also published at least two emails to about 60,000 recipients about the Stop Starry program. Working with our local partners, we have been able to publicize the installation of the boat cleaning equipment in local newspapers as well as a Jan. 28th, 2022 Star Tribune article on the effort. Through the Active Citizens in our Civic Pilots, we connected our effort with MAISRC's Starry Trek program.

In summer of 2023 our Civic Pilots are planning on more media efforts, hosting information booths at local community events, and deploying volunteers to present on the program at LGU and local civic meetings. In addition, we are compiling contact lists so that we can do direct mail to lake home and cabin owners, resort owners, and vacation home rental owners encouraging them to "Take the Pledge" to Clean, Drain and Dry to prevent the spread of AIS.

Status Update Reporting

Status Update June 1, 2022

Date Submitted: May 31, 2022

Date Approved: July 1, 2022

Overall Update

We have shipped 14 CD3 Units, but about half have not yet been installed at the landing due to high water. Our media efforts have generated at least five news stories about starry stonewort infestations and the benefits of using CD3 units. We have been meeting monthly with key stakeholders from these areas since February and have posters for bait shops, resorts, restaurants and taverns, flyers, a powerpoint, and a radio story. We are currently developing a 1 min., 30 sec., and 15 sec. videos to be used on public access stations and social media channels. We are planning literature drops, buoys to message infested areas, and booths at public events.

Key stakeholders now include tribal and county resource managers, lake associations, resort owners and an angling media company. We will continue to hold one-on-one meetings with civic leaders in other jurisdictions, including county and local government, Chambers of Commerce, angling groups. The CD3 units will report use rates on IoT, and this will show either an increase in use over time if our civic organizing efforts are effective. Working with partners, we are considering other methods of documenting current levels of public awareness of starry stonewort BMPs.

Activity 1

Our first step is to find an LGU to serve as the owner of the equipment. Beltrami County is serving as the owner for the landings in that county and the Leech Lake Band of Ojibwe is taking ownership of the units being placed on lands within the tribal boundaries in Beltrami, Cass and Crow Wing counties. Wright County is taking ownership there. In Stearns County we are working with the county to identify an alternate owner if possible.

After the units are installed we are working with our partners to build and enable the IoT data system to provide real time data on the condition and use of the CD3 Unit.

Once the owner is identified and transfer of ownership paperwork completed, we work with the LGU, CD3 and the access owner (private, USFS, County or MN DNR) on placement of the unit.

Currently we have 14 units delivered, but not all have been installed yet due to high water and flooding. We have the required permissions to locate units on the designated access for all sites but MN DNR owned sites. Their process is much slower and the paperwork may still be months from completion.

Activity 2

Placement of the units is based on risk assessment from the MAISRC, and then local conditions. We have worked to secure permission and placement on the highest risk sites, including two resorts.

Securing permissions is ongoing in Stearns and Itasca Counties and complete in Beltrami, LLBO, Crow Wing and Cass counties.

We are beginning our Civic Organizing efforts in an area once the equipment has been delivered. Our first contacts have been local AIS coordinators and impacted lake associations. We will build out our organizing efforts from this initial base.

So far, we have been able to promote earned media with stories about the seriousness of starry stonewort, and the utility of boat cleaning equipment being located at the access where it is needed. Local communities are made aware of this opportunity to protect their local resources by the support of the ENRTF.

MLR and key stakeholders in LLBO, Beltrami, Crow Wing and Cass Counties are meeting monthly to organize outreach to bait shops, resorts, media and community groups. We are working on special signage both on the landing and in Leech Lake.

Dissemination

To date stories about the ENRTF stop starry grant have run in the Star Tribune, Minnesota News Network (print and radio) and other local weekly papers. MLR distributed articles to 260 lake associations to use in their annual newsletters as content. The LLBO has published articles in their media. In addition MLR, MAISRC and Fish and Waters Conservation Fund have stop starry information on their websites and have distributed this information via social media and on webinars.

These efforts have had national penetration, including the Washington State lake Protection Association, which ran a story in its December 2021 newsletter about the ENRTF grant and Stop Starry Program.