

M.L. 2019 ENRTF Project Abstract
For the Period Ending June 30, 2023

PROJECT TITLE: Noxious Weed Detection & Eradication

PROJECT MANAGER: Mark Abrahamson

AFFILIATION: Minnesota Department of Agriculture

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WEBSITE: <https://www.mda.state.mn.us/plants-insects/noxious-and-invasive-weed-program>

FUNDING SOURCE: Environment and Natural Resources Trust Fund

LEGAL CITATION: M.L. 2019, First Special Session, Chp. 4, Art. 2, Sec. 2, Subd. 6c as extended by M.L. 2022, Chp. 94, Sec. 2, Subd. 19 (c.1) [to June 30, 2023]

APPROPRIATION AMOUNT: \$1,000,000

AMOUNT SPENT: \$999,074

AMOUNT REMAINING: \$926

Sound bite of Project Outcomes and Results

This project supported noxious weed management on priority species at both the State and local levels and helped to establish and build support systems that will assist noxious weed management efforts beyond the conclusion of the project.

Overall Project Outcome and Results

Ninety-one noxious weed management grant projects were completed by local units of government and tribes during this project. Through these projects, over 10,000 acres and roadsides miles were surveyed, and noxious weed locations mapped; noxious weeds on over 5,000 acres and roadsides miles were treated; and more than 75 workshops were held educating 350+ participants on noxious weed identification and management strategies. In addition, after the completion of projects, grantees were better prepared for ongoing weed control through the purchase of herbicide, sprayers, mowers, and other equipment.

In addition to the work done through grant projects, control work was conducted on about 1,215 acres through partnership with Conservation Corps Minnesota and Iowa (CCMI) on priority species such as black and pale swallowworts, common and cutleaf teasels, Grecian foxglove, knotweeds, Japanese hops, meadow knapweed, poison hemlock, rough potato, round leaf bittersweet (formerly oriental bittersweet), and tree of heaven. In addition to the importance of controlling highly damaging invasive plants, this project helped to train the next generation of natural resource managers through their work with CCMI. They were trained in plant identification as well as infestation mapping and reporting and learned control tactics for herbaceous and woody species in different habitats. Thirty-five CCMI crew members and leaders worked on this project for a collective 4,500 hours of infestation control.

Finally, ISMTrack is now being utilized across the state. There are over 200 users who have created 1,795 sites and recorded 3,952 individual invasive plant management activities. Previously, management activities were recorded by and stored at the offices of the individuals overseeing the work. This made it difficult to share information across organizations and maintain continuity as personnel changed. Now we can share information across organizations and see what work had been done previously.

Project Results Use and Dissemination

Results from this project reached Minnesotans in several different ways. The broadest impact would have been through four media releases. In addition, a presentation on ISMTrack was made at the Upper Midwest Invasive

Species Conference and three ISMTrack events were held reaching 262 participants. Seven presentations were made on the project reaching 1,044 participants. Finally, project updates were provided at four Noxious Weed Advisory Committee meetings each year and at Cooperative Weed Management Area meetings.



Environment and Natural Resources Trust Fund (ENRTF)

M.L. 2019 ENRTF Work Plan Final Report

Today's Date: August 15, 2023

Final Report

Date of Work Plan Approval: June 17, 2019

Project Completion Date: June 30, 2023

PROJECT TITLE: Noxious Weed Detection & Eradication

Project Manager: Mark Abrahamson

Organization: Minnesota Department of Agriculture

College/Department/Division: Plant Protection

Mailing Address: 625 Robert St. N.

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Web Address: <https://www.mda.state.mn.us/plants-insects/noxious-and-invasive-weed-program>

Location: Statewide

Total Project Budget: \$ 1,000,000

Amount Spent: \$ 999,074

Balance: \$ 926

Legal Citation: M.L. 2019, First Special Session, Chp. 4, Art. 2, Sec. 2, Subd. 6c as extended by M.L. 2022, Chp. 94, Sec. 2, Subd. 19 (c.1) [to June 30, 2023]

Appropriation Language: \$1,000,000 the first year is from the trust fund to the commissioner of agriculture to continue to monitor, detect, and eradicate noxious weeds, including Palmer Amaranth, primarily in conservation plantings and to develop and implement methods to prevent infestation and protect prairies, other natural areas, and agricultural crops. Of this amount, \$650,000 is for grants to local communities to help combat infestations.

M.L. 2022 - Sec. 2. ENVIRONMENT AND NATURAL RESOURCES TRUST FUND; EXTENSIONS. [to June 30, 2023]

I. PROJECT STATEMENT:

This project will significantly reduce the impact of noxious weeds on Minnesota. We will work to identify, control and remove infestations of noxious weeds that are high priorities for the state and for local governments across Minnesota. We will do this through three lines of work. The first (Activity 1) will be a noxious weed grant program that will allow local governments to propose weed control projects that are a high priority in their jurisdictions. The second (Activity 2) will be weed control efforts directed from the state level towards high priority target weeds such as Palmer amaranth. The third line of work (Activity 3) will be enhancing mobile capability for ISMTrack, a critical tool for tracking weed control efforts and progress. This work will serve citizens across Minnesota with the goal of protecting conservation plantings, prairies, other natural areas, and agricultural crops.

The success of this project will be enhanced by previous and current work supported by the ENRTF. The M.L. 2017 project *Tactical Invasive Plant Management Plan Development* will help define regional priorities through the work it has accomplished and is doing in defining invasion fronts, identifying isolated infestations and projecting control costs. Projects proposed by local governments can be vetted within the context of the *Tactical Plan* project and preference given to those that address regional as well as local priorities.

The *Tactical Plan* project will also help guide state level efforts to address high priority weed issues. Weed problems that demand simultaneous efforts across multiple jurisdictions or may otherwise be impractical for local governments to tackle will be addressed through Activity 2. The M.L. 2016 project *Elimination of Target Invasive Plant Species* created a framework for the state to follow in cooperation with Conservation Corps of Minnesota and other partners to address weed issues difficult to manage at the local level.

The ENRTF has invested in the development of the weed management tracking tool, ISMTrack, and we will work with project partners to track outcomes using this system. It will be imperative that project information is entered and managed through this system in order to quantify and evaluate the impact of management activities. While ISMTrack is functional for desktop computing, more work is needed to bring full functionality into a mobile environment. Activity 3 will be focused on the deployment and continued development of a mobile app for ISMTrack as well as system enhancements related to tracking biological control based weed management.

This project will be conducted in collaboration with the wide range of partners who are brought together through the Noxious Weed Advisory Committee. We will implement management recommendations from the Minnesota Invasive Terrestrial Plants and Pests Center as new research is available.

II. OVERALL PROJECT STATUS UPDATES:

First Update January 31, 2020

The Noxious Weed and Invasive Plant Grant aims to support local governments by filling gaps in their weed control programs. We have built on two years of awarding grants by refining the RFP and grant application process. With this appropriation, the MDA Noxious Weed Program developed an RFP to promote collaborations between counties and municipalities that would address regional weed issues across the state.

We are gearing up for controlling isolated invasive plant infestations. We surveyed outlier bittersweet populations in the fall to identify priority infestations for control. We have a contract with CCM and are securing landowner permissions to ramp up control efforts in March. We are working on a contract with University of Georgia for ISMTrack development.

As a result of the important work we have achieved with our ENRTF invasive plant projects, we were asked to submit a proposal for non-competitive funding to ramp up invasive plant management efforts in the Lake Superior Basin. We plan to submit a proposal in 2020 to EPA for Great Lakes Restoration Initiative (GLRI) funding to continue building our efforts.

Amendment Request April 2, 2020 and Amendment Approved by LCCMR 04/10/2020

In response to COVID 19 social distancing guidelines and Governor Walz’ Stay at Home order, we request to reassign 6 CCM field specialists from invasive plant control to linking weed biocontrol data in ISMTrack. This work can be done safely from home and will further project progress. This would increase the scope of work for CCM but the budget would not change.

One of our project goals is to improve ISMTrack to handle biological control data. It is a process to get historical weed biocontrol data into ISMTrack and link bioagent releases with specific infestations. CCM will manually link biocontrol agent data with infestations.

Second Update July 31, 2020

We suspended field operations due to COVID 19 until we could resume operations with safety measures in place in May. We utilized CCM field specialists during this suspension to analyze aerial images and link weed biocontrol releases and infestations. We greatly appreciate LCCMR’s quick turnaround of our amendment request to do this work. After field operations resumed, we continued to make progress at identifying and controlling infestations of oriental bittersweet, poison hemlock, black swallow-wort, cutleaf and common teasels, Japanese hops, Dalmatian toadflax, Grecian foxglove, diffuse, brown and meadow knapweeds and knotweeds.

A total of 35 grants were awarded in FY20. Awards were given to one tribal council, one city, two townships, and 27 counties. The RFP had two levels people could apply for. Level 1 grants were one year, small grants intended for local projects. Level two grants were two year, collaborative projects with multiple partners intended to address regional or multi-county noxious weed issues.

Third Update January 29, 2021

Of the 23 Level 1 grants awarded (maximum award \$10,000) in FY20, 11 (48%) have closed. Impacts from these 11 grants include:

| | |
|---|--------|
| Total number of townships worked with | 34 |
| Total acres surveyed | 2,092 |
| Total acres treated | 1,344 |
| Total miles of roadside surveyed | 1,272 |
| Total miles of roadside treated | 514 |
| Total number of printed outreach materials produced | 21,902 |

The Fiscal Year 2021 (FY21) grant applications are currently under review.

We were very pleased with utilization of a CCM summer crew that hit numerous priority infestations in different areas of the state. There were some surprising new finds of tree of heaven and the non-native vining milkweeds pale swallow-wort and rough potato. Control was initiated on all of these new infestations.

Fourth Update July 30, 2021

With our many partners, we continued to make progress on target weed management. ISMTrack was included in a national EDDMapS Summit which provided a lot of outreach. We have awarded 55 total grant awards to tribal councils, counties, townships, and cities.

Amendment Request October 13, 2021

We request to move \$15,000 from salary and \$35,000 from travel, to Noxious Weed Management Grants. Through the first two rounds of grant-making, we have seen a tremendous amount of weed management accomplished by local units of government. In the final round of grant-making we would like to maximize the resources available to grant to local governments.

Amendment Approved by LCCMR 10/18/2021

Fifth Update January 31, 2022

CCMI did not work on this project during this reporting period. For ISMTrack development, we are working on a dashboard with summaries and developing the Apple app. An Android app is currently available.

Update as of June 30, 2022:

Project extended to June 30, 2023 by LCCMR 6/30/22 as a result of M.L. 2022, Chp.94, Sec. 2, Subd. 19, legislative extension criteria being met.

Sixth Update as of July 1, 2022:

Waived per LCCMR Staff on 6/8/2022

Amendment Request December 28, 2022

We request to move \$1,327 from Personnel, \$9,733 from PT Services, and \$2,851 from Travel to Other so that the remaining dollars can be offered as grants for small projects. An additional RFP will not be needed, as these awards will be under \$5,000. We also request creating a new budget category "Communications" and moving \$504 to that category from Travel. In reconciling the project budget for this update we discovered that \$504.14 were spent during FY2020 on mailing costs for the project.

Amendment Approved by LCCMR 2/9/2023

Seventh Update as of January 1, 2023:

Most activities are completed and grantees are finishing their projects and submitting their expenses for reimbursement.

Final Report as of June 30, 2023 (to be submitted before August 15, 2023):

Remaining grant projects were completed prior to June 30.

Overall Project Outcomes and Results:

Ninety-one noxious weed management grant projects were completed by local units of government and tribes during this project. Through these projects, over 10,000 acres and roadsides miles were surveyed and noxious weed locations mapped, noxious weeds on over 5,000 acres and roadsides miles were treated and more than 75 workshops were held educating 350+ participants on noxious weed ID and management strategies. In addition, after the completion of projects, grantees were better prepared for ongoing weed control through the purchase of herbicide, sprayers, mowers and other equipment. The equipment purchases were under \$5,000 and were not considered capital equipment (over \$5,000).

In addition to the work done through grant projects, control work was conducted on about 1,215 acres through partnership with Conservation Corps Minnesota and Iowa (CCMI) on priority species such as black and pale swallowworts, common and cutleaf teasels, Grecian foxglove, knotweeds, Japanese hops, meadow knapweed, poison hemlock, rough potato, round leaf bittersweet (formerly oriental bittersweet) and tree of heaven. This

work was done primarily in natural areas such as forests and grasslands. In addition to the importance of controlling highly damaging invasive plants, this project helped to train the next generation of natural resource managers through their work with CCMI. They were trained in plant identification as well as infestation mapping and reporting. They also learned control tactics for herbaceous and woody species in different habitats. Thirty-five CCMI crew members and leaders worked on this project for a collective 4,500 hours of infestation control.

Finally, ISMTrack is now being utilized across the state. There are over 200 users who have created 1,795 sites and recorded 3,952 individual invasive plant management activities. Previously, management activities were recorded by and stored at the offices of the individuals overseeing the work. This made it difficult to share information across organizations and maintain continuity as personnel changed. Now we can share information across organizations and see what work had been done previously.

III. PROJECT ACTIVITIES AND OUTCOMES:

Activity 1: Grants for Local Management of Noxious Weeds

Description: The grant program will enable local governments to identify, control and remove priority infestations of noxious weeds. This activity will benefit from past and current efforts supported by the ENRTF to identify and prioritize infestations of noxious weeds in Minnesota which can be used to give preference to local efforts that will pay regional dividends. State and local partnerships are a key factor for successful noxious weed management and the grant program will help maintain and foster those partnerships.

The MDA has experience in administering grants for noxious weed management having received a one-time appropriation to provide grants during the 2018-2019 biennium as outlined by [M.S. 18.90](#). Many local governments applied for grants and many successful projects to control and remove noxious weed infestations have been completed. The Department anticipates that the ENRTF grant program will be conducted in a similar fashion to the last.

As described, this activity will leverage previous work supported by ENRTF to fund local weed control efforts using the [Office of Grants Management](#) protocol. There will be two grant cycles between July 1, 2019 and June 30, 2022. RFPs will be developed and released, funds will be disbursed, and final reports will be submitted to the grant administrator.

Data from local projects will be managed in ISMTrack which will allow the MDA and partners to assess the impact of management and inform future decisions.

ACTIVITY 1 ENRTF BUDGET: \$713,911

Amount Spent: \$712,985

Balance: \$926

| Outcome | Completion Date |
|--|------------------------|
| 1. Grant cycle #1 RFP released | 12/31/19 |
| 2. Grant cycle #1 awards disbursed | 12/31/20 |
| 3. Grant cycle #1 final reports due | 02/28/21 |
| 4. Grant cycle #2 RFP released | 12/31/20 |
| 5. Grant cycle #2 awards disbursed | 12/31/21 |
| 6. Grant cycle #2 final reports due | 02/28/22 |
| 7. Grantees' management activities completed in ISMTrack | 06/30/22 |

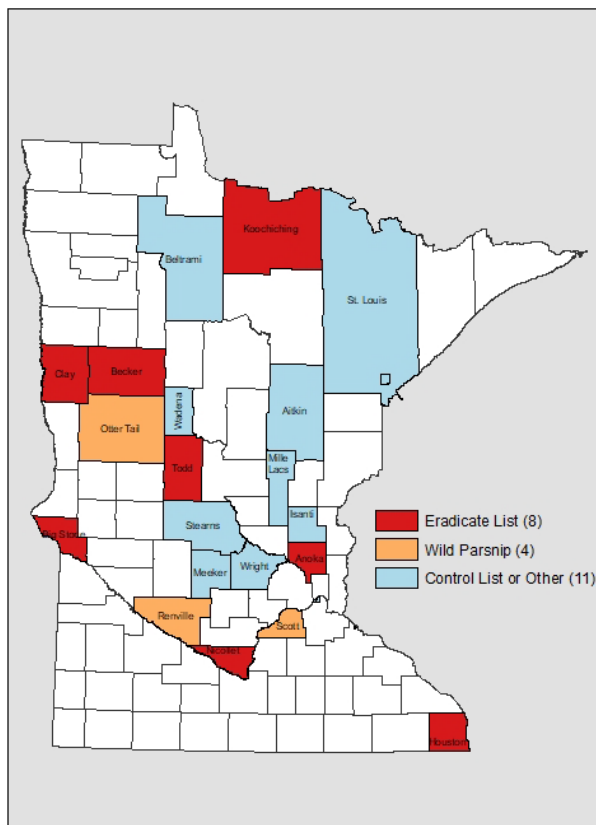
First Update January 31, 2020

The grant RFP was developed and approved according to the Office of Grants Management protocol. For Fiscal Year 20 (FY20), the grant RFP included two levels. Level 1 grants were \$10,000 or less and intended for small, on the ground work to counties and municipalities. Level 2 grants were a maximum of \$50,000 and were intended to support collaborative projects between counties and other municipalities. The RFP closed on November 26, 2019 and successful applicants have been notified of their awards.

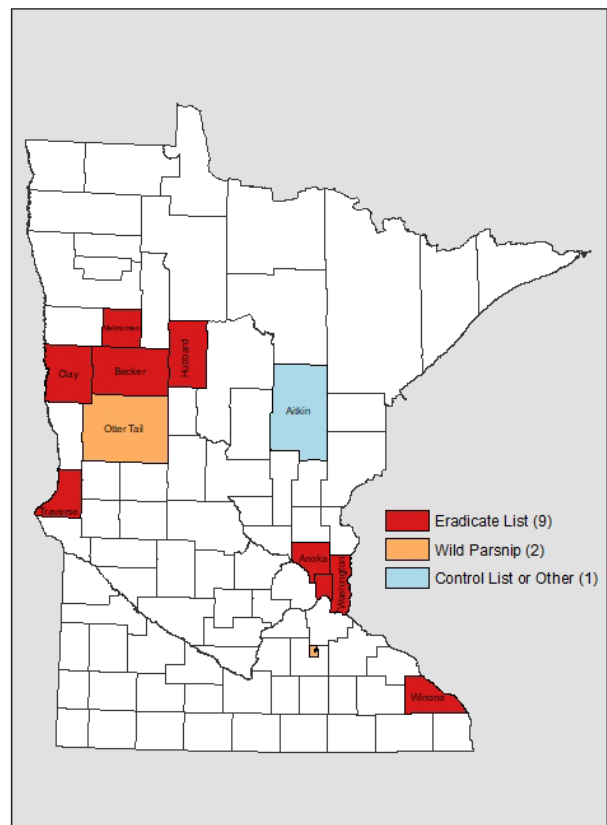
Second Update July 31, 2020

All Fiscal Year 20 (FY20) awards have been signed and fully executed. Twenty-three Level 1 projects were awarded and twelve Level 2 projects were awarded. A [news release](#) announcing the awardees was issued on June 29, 2020. Several local newspapers subsequently interviewed grantees for local stories on the impact of the grants on municipalities. A total of \$573,679 has been encumbered for FY20. “Other species” refers to a species in the Restricted or Specially Regulated categories, or not listed but of special concern; “other” may also refer to outreach or equipment purchases.

2020 Level 1 Awardees



2020 Level 2 Awardees



Awards were given to one Tribal Council, one City, two Townships, and 27 Counties/SWCDs



The grant recipients for 2020 were as follows:

| Level | Organization | Award Amount | Project Title |
|---------|-------------------------------|--------------|---|
| Level 1 | Aitkin County Land Department | \$10,000.00 | ACLD Invasive Plant Control Project |
| Level 1 | Anoka Conservation District | \$10,000.00 | Invasive Species Control in Anoka County |
| Level 1 | Becker SWCD | \$10,000.00 | Becker County Noxious Weed and Invasive Plant Grant |

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|---------|--|-------------|--|
| Level 1 | Beltrami County Natural Resource Management Department | \$10,000.00 | Beltrami County Natural Resource Management Department Noxious Weed Mitigation |
| Level 1 | Big Stone SWCD | \$8,244.00 | Big Stone County Noxious Weeds: Prevention, Eradication, and Control |
| Level 1 | Canosia Township | \$2,500.00 | Canosia Township Noxious Weed Program |
| Level 1 | City of Mendota Heights | \$10,000.00 | Mendota Heights Terrestrial Invasive Species Control Program |
| Level 1 | Clay SWCD | \$5,000.00 | Eradicate Poison Hemlock and Control Leafy Spurge |
| Level 1 | East Otter Tail SWCD | \$7,435.00 | Common Tansy and Wild Parsnip Control in East Otter Tail County |
| Level 1 | Houston County Environmental Services | \$5,000.00 | Houston Township Sprayer Acquisition |
| Level 1 | Isanti County Zoning | \$10,000.00 | Noxious Weed Early Detection and Management Project and Partnership |
| Level 1 | Koochiching County | \$10,000.00 | Koochiching County MDA Noxious Weed Grant |
| Level 1 | Meeker SWCD | \$10,000.00 | Meeker County Noxious Weed Control |
| Level 1 | Mille Lacs SWCD | \$10,000.00 | Mille Lacs County Noxious Weed Control |
| Level 1 | Nicollet County Public Works | \$10,000.00 | Noxious Weed Management Program |
| Level 1 | Prairie Island Tribal Council | \$10,000.00 | Tribal Noxious Weed Management Project |
| Level 1 | Renville County, SWCD Treasurer | \$7,515.00 | Renville County SWCD – Wild Parsnip |
| Level 1 | Scott SWCD | \$10,000.00 | Wild Parsnip Removal in Scott CWMA |
| Level 1 | St. Louis County Public Works Dept. | \$8,000.00 | St. Louis County Knotweed Eradication Effort |
| Level 1 | Stearns County | \$7,000.00 | Stearns County Weed Grant |
| Level 1 | Todd County | \$10,000.00 | Palmer Amaranth in Township ROW and Wild Parsnip in Township and County ROW |
| Level 1 | Wadena SWCD | \$10,000.00 | Wadena County Noxious Weed Mapping and Inventory Project |
| Level 1 | Wright County | \$10,000.00 | Non-Native Phragmites Control and Mitigation |
| Level 2 | Aitkin County SWCD | \$12,000.00 | Aitkin County Gravel Pit Noxious Weed Certification |
| Level 2 | Anoka Conservation District | \$49,705.00 | Metro Wide Treatment of Non-Native Phragmites |
| Level 2 | Becker SWCD | \$10,000.00 | Becker, Clay, Hubbard, Mahnomen, West Otter Tail Collaboration |
| Level 2 | Bridgewater Township | \$49,883.00 | Cannon Valley Noxious Weed Collaboration Group |
| Level 2 | Clay SWCD | \$10,000.00 | Becker, Clay, Hubbard, Mahnomen, West Otter Tail Collaboration |
| Level 2 | Hubbard County | \$10,000.00 | Becker, Clay, Hubbard, Mahnomen, West Otter Tail Collaboration |

| | | | |
|---------|------------------------------------|-------------|--|
| Level 2 | Mahnomen County | \$10,000.00 | Becker, Clay, Hubbard, Mahnomen, West Otter Tail Collaboration |
| Level 2 | Ramsey County Parks and Recreation | \$24,900.00 | Ramsey County Noxious Weed Grant |
| Level 2 | Traverse SWCD | \$50,000.00 | Traverse-Wilkin Weed Management Partnership |
| Level 2 | Washington Conservation District | \$50,000.00 | Grecian Foxglove, Oriental Bittersweet, and Black Swallow-wort Eradication |
| Level 2 | West Otter Tail SWCD | \$10,000.00 | Becker, Clay, Hubbard, Mahnomen, West Otter Tail Collaboration |
| Level 2 | Winona County | \$50,000.00 | Southeast MN Regional Invasive Species Eradication Initiative |

Development of the FY21 Request For Proposals (RFP) is in progress, and we anticipate opening the RFP in September 2020. The FY21 RFP will be similar to the FY20 Level 1 grant.

Third Update January 29, 2021

Fiscal Year 2020 (FY20) Level 1 grants are 48% (11/23) closed, with nine extended through 2021 and three pending closeout documents. The 12 Level 2 grants are currently in progress with expiration dates at the end of calendar year 2021. We expect to receive mid-grant progress reports from the 12 Level 2 grants by early March.

The Fiscal Year 2021 (FY21) grant RFP was developed and approved according to the Office of Grants Management protocol. FY21 grants will be maximum award of \$5,000 and applications are currently under review.

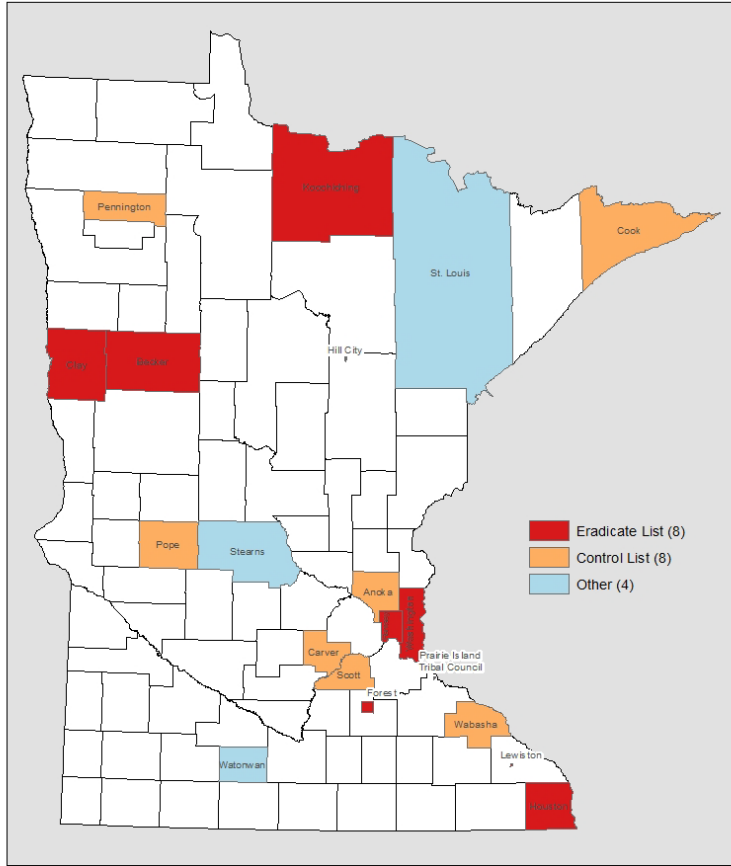
Fourth Update July 30, 2021

All Fiscal Year 21 (FY21) awards have been fully signed and executed. Twenty projects were funded and a [news release](#) announcing the awardees was issued on July 15, 2021. Several local newspapers inquired about the awardees and ran stories about local projects. Awards were given to one Tribal Council, one Township, two Cities, and 16 Counties/SWCDs.

Nearly all the \$650,000 dedicated to the noxious weed grants has been either encumbered or disbursed. While our budget report only shows \$255,816 expended towards grants, an additional \$352,764 have been awarded and are encumbered awaiting disbursement. "Other species" refers to a species in the Restricted or Specially Regulated categories, or not listed but of special concern; "other" may also refer to outreach or equipment purchases.

The grant coordinator has been visiting FY20 Level 2 grant projects to check on progress and visit field sites. Overall, grantees are meeting their objectives and seeing reductions in noxious weeds in their areas.

2021 Noxious Weed Grant Awardees



Awards were given to one Tribal Council, one Township, two Cities, and 16 Counties/SWCDs



The grant recipients for 2021 are as follows:

| Organization | Award Amount | Project Title |
|---------------------------------------|--------------|--|
| Anoka Conservation District | \$5,000 | Invasive Species Control in Anoka County Phase 2 |
| Becker SWCD | \$5,000 | 2021 Becker County Noxious Weed and Invasive Plant MDA Grant |
| Carver County | \$5,000 | Carver County Noxious Weed Management Project |
| City of Hill City | \$3,100 | Hill City Buckthorn Control |
| City of Lewiston | \$5,000 | Prairie Trails Park Cleanup |
| Clay SWCD | \$5,000 | Eradicate Poison Hemlock |
| Cook County SWCD | \$5,000 | Protecting the Intrinsic Qualities of the Gunflint Trail Scenic Byway by Managing Invasive Species |
| Forest Township | \$5,000 | Forest Township: Noxious Weed Eradication, Treatment, and Education |
| Houston County Environmental Services | \$5,000 | Control of Japanese Hops Along the Root River Corridor in Houston County |
| Koochiching County | \$5,000 | 2021 Koochiching County Noxious Weed Grant |

| | | |
|----------------------------------|---------|---|
| North St. Louis SWCD | \$5,000 | Ely Area Woody Invasive Species Removal Project |
| Pennington SWCD | \$5,000 | Pennington County Noxious Weed and Invasive Plant Inventory |
| Pope SWCD | \$5,000 | Pope-Swift CWMA 2021 |
| Prairie Island Indian Community | \$5,000 | Tribal Noxious Weed Management Project |
| Ramsey County | \$5,000 | Ramsey County Noxious Weed Grant 2021 |
| Scott SWCD | \$2,000 | Scott CWMA Wild Parsnip Management |
| Stearns County | \$5,000 | Stearns County Rough Potato |
| Wabasha SWCD | \$5,000 | Bohemian Knotweed Management at Hammond Creek |
| Washington Conservation District | \$5,000 | Emerging Invasive Species in Washington County |
| Watsonwan County | \$5,000 | Watsonwan County Noxious Weed Program |



Successful treatment of non-native phragmites supported by MDA noxious weed grant

Fifth Update January 31, 2022

Fiscal Year 2021 (FY21) grants are 66% (14/21) closed, with five that have extended through June 30, 2022 and two pending closeout documents. FY20 Level 2 grants are 66% closed (8/12), with three that have extended through June 30, 2022 and one pending closeout documents.

The Fiscal Year 2022 (FY22) grant RFP was developed and approved according to the Office of Grant Management protocol. FY22 grants will be maximum award of \$5,000 and applications are currently under review.

Update as of June 30, 2022:

Project extended to June 30, 2023 by LCCMR 6/30/22 as a result of M.L. 2022, Chp.94, Sec. 2, Subd. 19, legislative extension criteria being met.

Sixth Update as of July 1, 2022:

Waived per LCCMR Staff on 6/8/2022

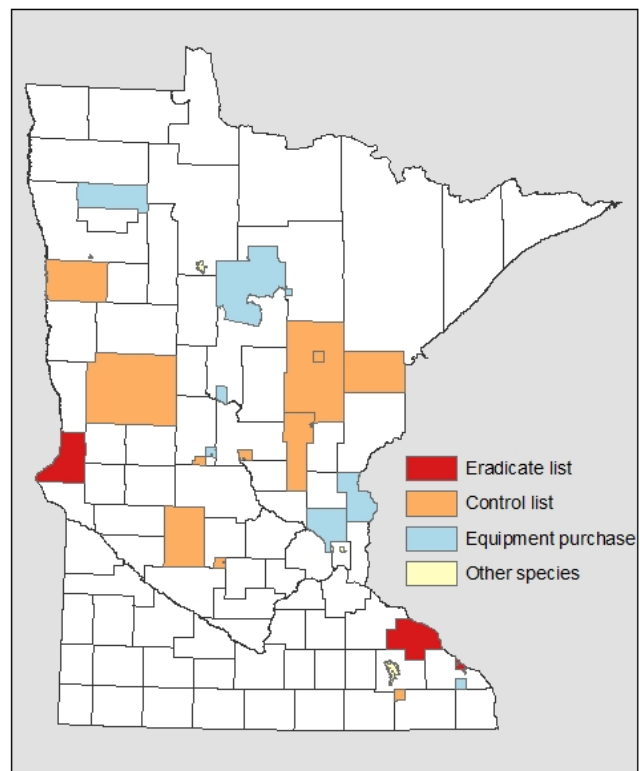
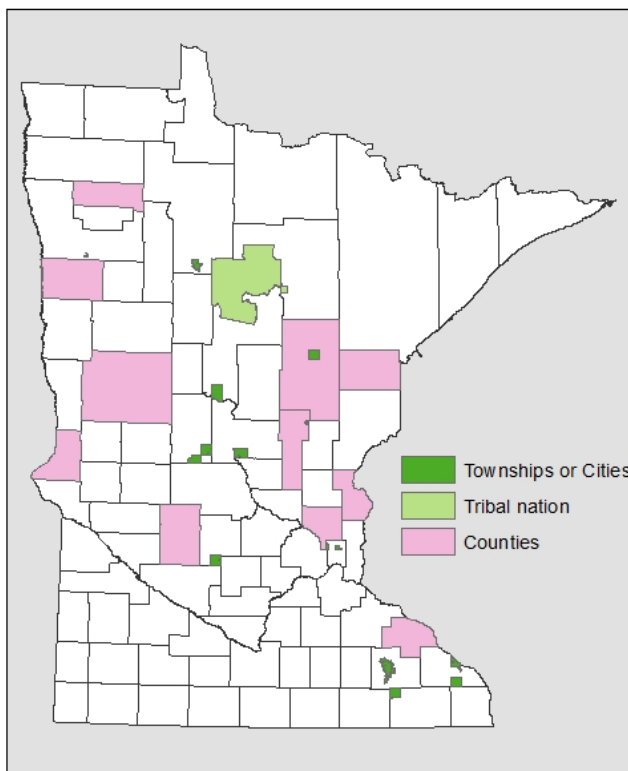
Seventh Update as of January 1, 2023:

Fiscal Year 2020 (FY20) Level 1 grants are 96% (22/23) closed, with one extended through 2022 and pending closeout documents. The 12 Level 2 grants are 83% (10/12 closed, with two extended through 2022 and pending closeout documents.

The Fiscal Year 2021 (FY21) grants are 95% (20/21) closed with one extended through 2022 and pending closeout documents.

The Fiscal Year 2022 (FY22) awarded 28 grant projects. 64% (18/28) of the grants have closed, and the 10 remaining are pending closing documents. "Other species" refers to a species in the Restricted or Specially Regulated categories, or not listed but of special concern; "other" may also refer to outreach or equipment purchases.

2022 Noxious Weed Grant Recipients



Awards were given to one Tribal Council, 6 cities, 8 townships, and 13 counties/SWCDs



The 2022 grant recipients are as follows:

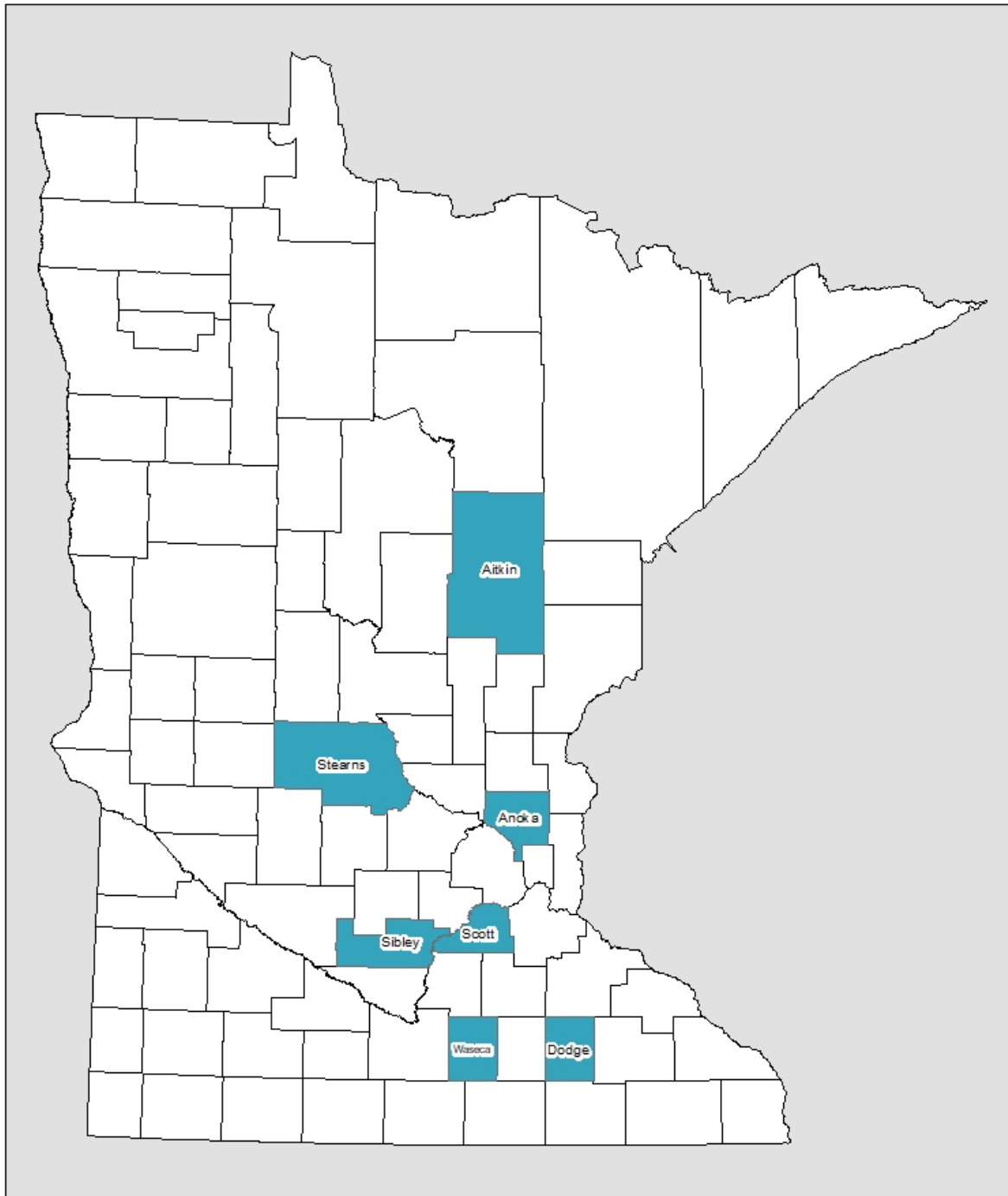
| Organization | County | Award Amount | Project Title |
|---|------------|--------------|--|
| Aitkin SWCD | Aitkin | \$4,500 | Expansion of noxious weed control at gravel pits to include surrounding properties/rights of way |
| Anoka County Parks | Anoka | \$5,000 | UTV tank sprayers for noxious and invasive plant control |
| Bellevue Township | Morrison | \$5,000 | Weed control |
| Bemidji Parks | Beltrami | \$4,950 | Lake Boulevard |
| Birchdale Township | Stearns | \$5,000 | Weed spraying project |
| Burnhamville Township | Todd | \$1,625 | Spray ivy |
| Carlton SWCD | Carlton | \$5,000 | CWMA, partners, and local citizens tackle invasives |
| Cedar Mills Township | Meeker | \$5,000 | 2022 ditch spraying |
| Chisago SWCD | Chisago | \$5,000 | CWMA program enhancement for wild parsnip control |
| City of Fertile | Polk | \$4,636 | Fertile sand hills buckthorn control |
| City of Isle | Mille Lacs | \$2,500 | Noxious weed plants |
| City of New Brighton | Ramsey | \$5,000 | Creekview Park buckthorn removal |
| City of Winona | Winona | \$5,000 | Sugar Loaf oriental bittersweet control |
| Kandiyohi SWCD | Kandiyohi | \$5,000 | Weed grant |
| Leech Lake Band of Ojibway | | \$5,000 | Controlling Bakaan ingoji ga-ondaadag (non-local beings) on the Leech Lake Reservation |
| May Township | Cass | \$5,000 | Noxious weed removal 2022 |
| Mille Lacs SWCD | Mille Lacs | \$1,000 | Targeted eradication and control 2022 |
| Norman SWCD | Norman | \$5,000 | 2022 Noxious weed and invasive plant inventory, treatment, and education |
| Pennington SWCD | Pennington | \$1,100 | Tools for Pennington buckthorn removal |
| Sumner Township | Fillmore | \$5,000 | Project wipeout: ending the wild parsnip pandemic |
| Traverse County | Traverse | \$3,600 | Weed control |
| Traverse SWCD | Traverse | \$4,280 | Poison hemlock eradication project |
| Vadnais Lake Area Water Management Organization | Ramsey | \$5,000 | City hall wooded wetland restoration |
| Wabasha SWCD | Wabasha | \$5,000 | Management of common tansy and poison hemlock |

| | | | |
|----------------------|------------|---------|--|
| West Otter Tail SWCD | Otter Tail | \$5,000 | Road right of way noxious weed control |
| Wiscoy Township | Winona | \$5,000 | Invasive species sprayer |
| Workman Township | Aitkin | \$1,900 | Noxious weed reduction |

Final Report as of June 30, 2023 (to be submitted before August 15, 2023):

With the remaining funds in Fiscal Year 2023 (FY23), we awarded seven grants to fund treatments, outreach materials, and equipment or supply purchases.

2023 Noxious Weed Grant Recipients



Awards were given to four counties and three SWCDs.



The 2023 grant recipients are as follows:

| Organization | County | Award Amount | Project Title |
|--------------|--------|--------------|---------------|
|--------------|--------|--------------|---------------|

| | | | |
|-----------------------------|---------|----------|---|
| Aitkin SWCD | Aitkin | \$2,000 | Noxious Weed and Invasive Species Outreach Infographics |
| Anoka Conservation District | Anoka | \$15,000 | Andover Rum River |
| Dodge County | Dodge | \$5,000 | Dodge County Ag Inspector Equipment Grant |
| Scott SWCD | Scott | \$7,500 | Scott CWMA – Pilot Township Spray Program |
| Sibley County | Sibley | \$700 | Noxious Weed Control |
| Stearns County | Stearns | \$3,500 | Stearns County 2023 (Outreach) |
| Waseca County | Waseca | \$5,000 | Noxious Weed Maintenance Along Public Drainage Systems |

We awarded 91 total projects through this appropriation. All projects have been completed and the grant POs are closed.

- Grantees surveyed over 10,000 acres and roadside miles to document locations of noxious weeds.
- Grantees treated over 5,000 acres and roadside miles infested with noxious weeds.
- Grantees held over 75 trainings/workshops focused on noxious weed ID, management strategies, and noxious weed law enforcement protocol with 350 participants.

Grantees also purchased equipment and supplies, such as herbicide sprayers, herbicide, tools, mowers, and other equipment used for noxious weed management.

Qualitative benefits were achieved through providing funding to local units of government and tribes as well:

- Reductions of weed infestations.
- Increased coordination between municipalities and private landowners who become motivated to treat infestations on their own lands.
- Facilitated connections and provide resources to help landowners who need assistance.
- Breadth of grant allows flexibility to address changes as they come up.
- Dollar amount allowed continuity in treating sites.
- Continuity in funding for consecutive years was critical for developing relationships with landowners and reducing populations of infestations.
- Provided resources to educate public and private landowners on managing noxious weeds.
- Motivated landowners that were excited to keep working on weed management.
- Increased engagement from community volunteers for noxious weed management.
- Developed strong partnerships with groups outside their districts.
- Purchased and distributed Minnesota Department of Transportation noxious weed books for project partners, which were well received.
- Formed a cooperative invasive species management area which was then able to purchase supplies to continue project.
- Developed locally relevant outreach materials.
- Communities came together to solve weed problems, working to protect our urban landscapes, farmlands, and natural resources.

Testimonials

Through these grants, the MDA has seen many positive impacts not only with reductions of weed infestations, but also increased coordination between municipalities and private landowners who become motivated to treat infestations on their own lands.

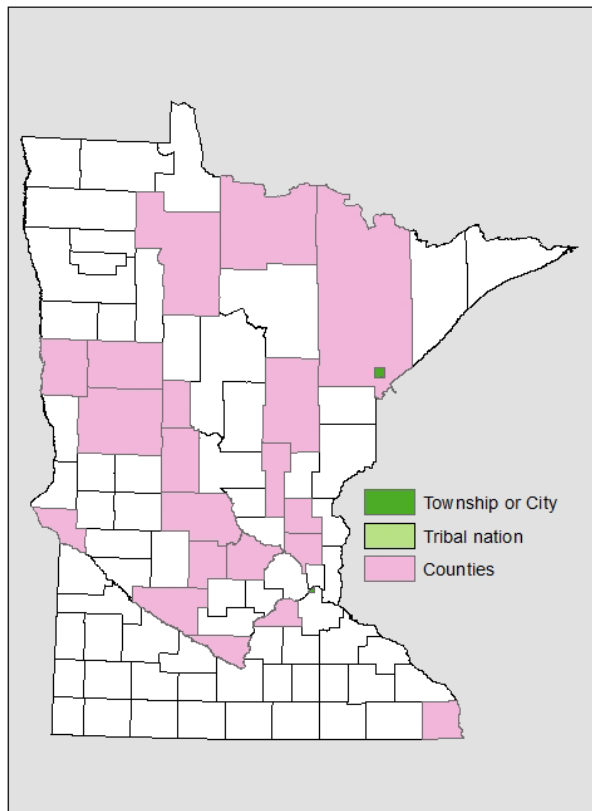
One group that came together to focus on mitigating wild parsnip infestations is the Cannon Valley Noxious Weed Group (CVNWG). The CVNWG encompasses four townships in Rice and Dakota counties: Bridgewater (Rice), Northfield (Rice), Greenvale (Dakota), and Waterford (Dakota). The group focused on treating wild parsnip and found that treatments alone would not be the most effective approach to ridding these townships of wild parsnip. The group took a new approach and focused more on outreach and education, starting with county and state highway departments. The group met with Rice County staff, MnDOT roadside staff to educate and encourage cooperation. The result was improved wild parsnip management along roadsides.

Private landowner engagement has also been a key component to grant recipients' success with managing noxious weeds. Grant recipients who work with private landowners face a different set of challenges than recipients who focus on roadsides or public lands. Landowners may not be aware that a noxious weed is growing on their property, and many lack the technical knowledge, tools, or physical ability to treat or manage noxious weeds. These grants facilitate connections and provide resources to help landowners who need assistance. Additionally, the grant funding enabled grantees to make sure outreach and knowledge for technical expertise reached underserved neighborhoods. Private landowner engagement has also led to landowners learning to manage noxious weeds on their private without assistance from municipalities.

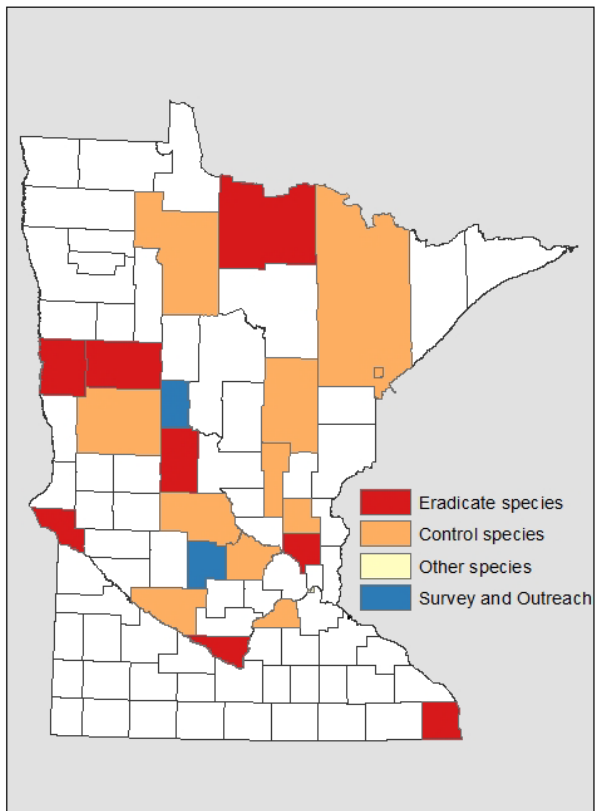
The grants enabled collaboration with public landowners. Groups developed strong partnerships outside their districts and were able to map and treat noxious weeds throughout the state. Grant recipients have worked on collaborative projects with other counties or municipalities, numerous private landowners, and have developed locally relevant outreach materials. The impacts of the Noxious Weed and Invasive Plant Grant go beyond the number of acres or roadside miles treated. Communities come together to solve weed problems, working to protect our urban landscapes, farmlands, and natural resources.

The maps on the following pages show the recipients by year and in what categories they focused their grants funds. "Other species" refers to a species in the Restricted or Specially Regulated categories, or not listed but of special concern.

2020 Level 1 Grant Recipients



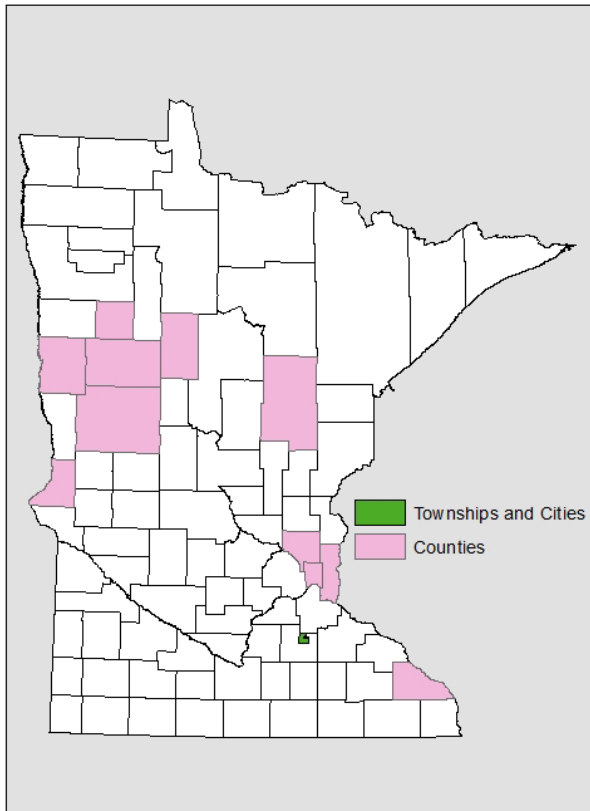
Level 1 awards were given to 20 counties, 1 township, 1 city, and 1 tribal nation



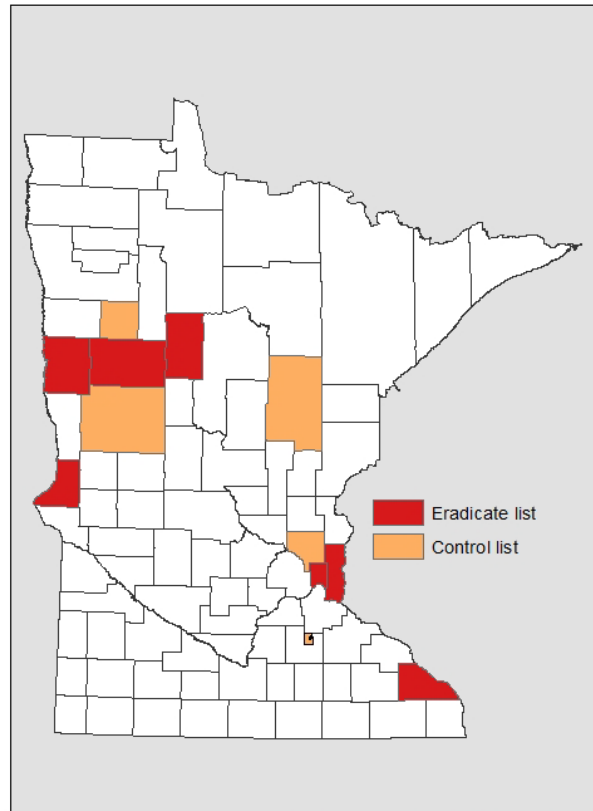
mi DEPARTMENT OF AGRICULTURE

Figure 1: Statewide maps of counties and municipalities that received a Level 1 grant in 2020.

2020 Level 2 Grant Recipients



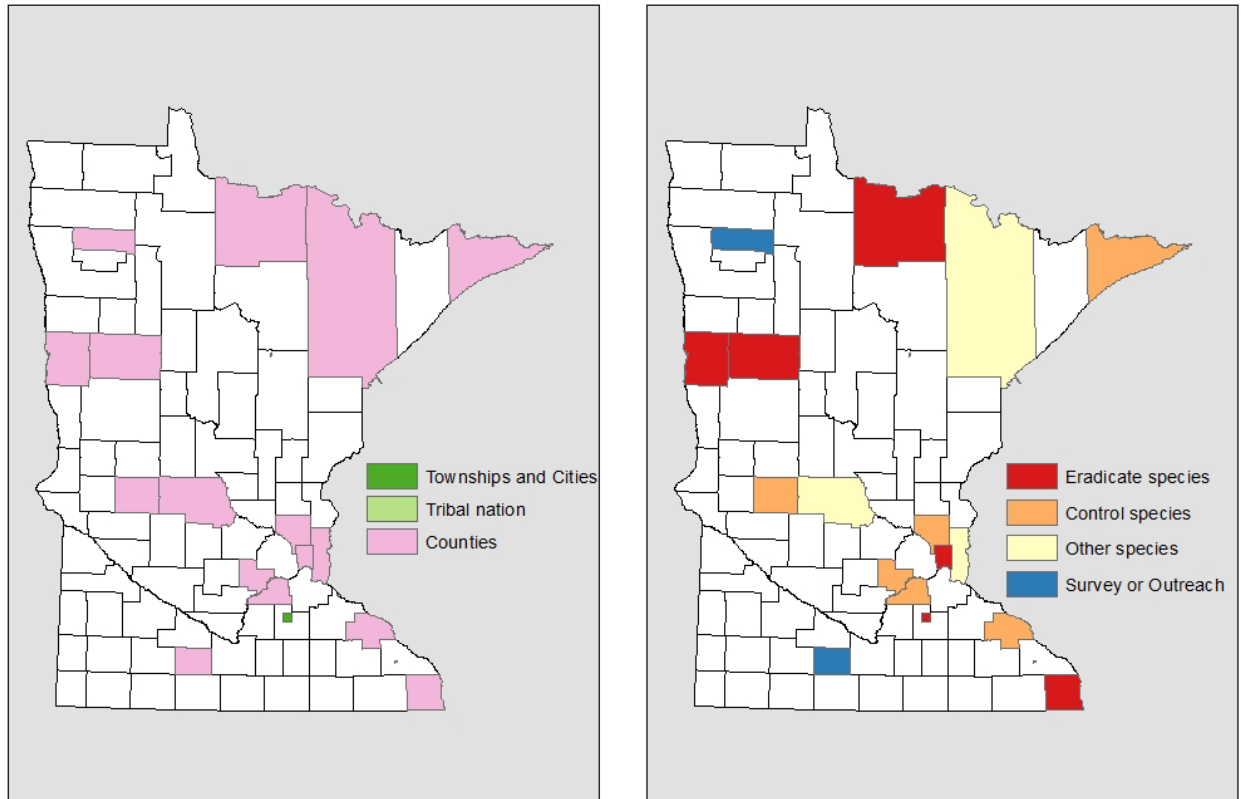
Level 2 awards were given to 11 counties and 1 township



mi DEPARTMENT OF AGRICULTURE

Figure 2: Statewide maps of counties and municipalities that received a Level 2 grant in 2020.

2021 Noxious Weed Grant Recipients



Awards were given to one Tribal Council, one Township, two Cities, and 16 Counties/SWCDs



Figure 3: Statewide map of counties, municipalities, and tribes that received grants in 2021.

2022 Noxious Weed Grant Recipients

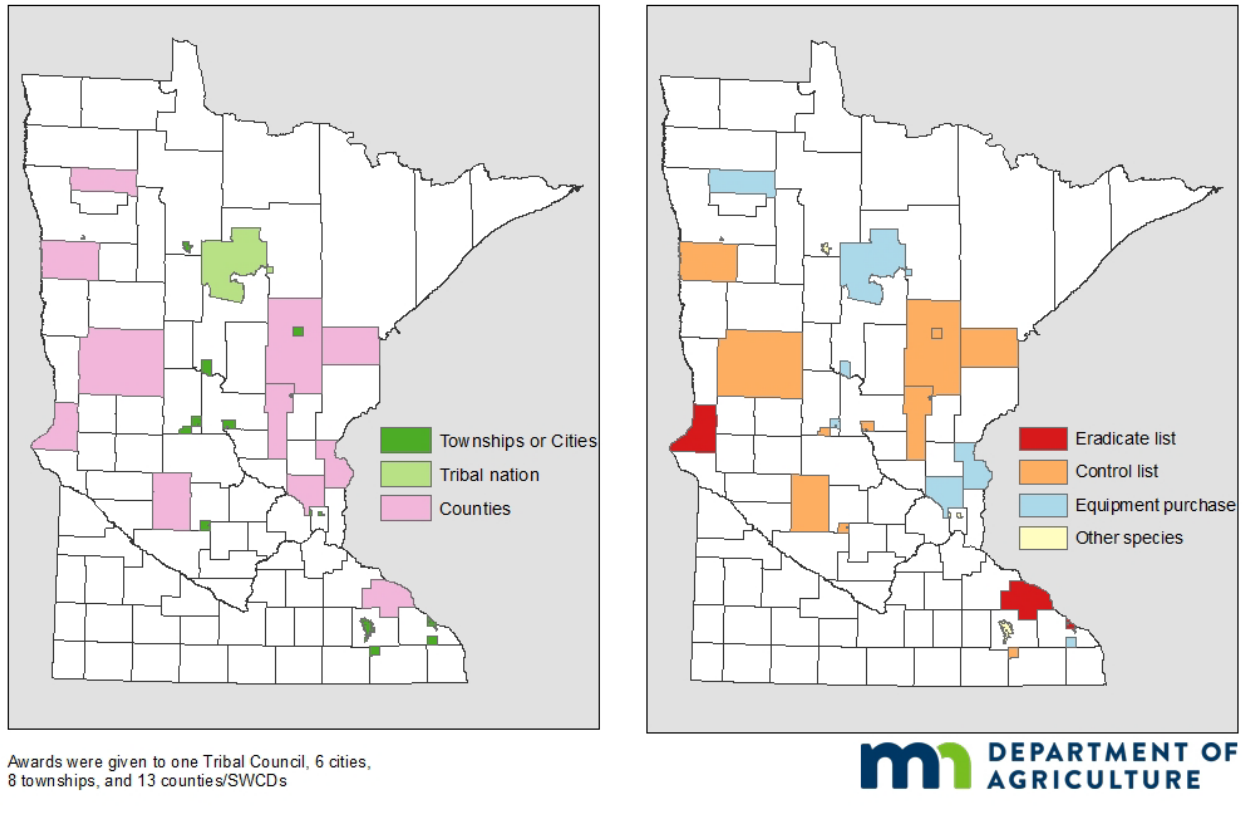


Figure 4: Statewide map of counties, municipalities, and tribes that received grants in 2022.

ACTIVITY 2 Title: Communicate management priorities, coordinate efforts to control priority infestations

Description: The MDA will identify areas where state-led weed management work is needed using information developed by past and current ENRTF projects and consultation with partners and stakeholders. To manage these priority infestations, MDA staff will engage affected public and private landowners, compile best management practices and develop materials to support weed control and eradication efforts. The MDA will coordinate weed control and removal work carried out under contract by the Conservation Corps of Minnesota and other partners.

The MDA has experience conducting work of this nature since 2013 through the project *Elimination of Target Invasive Plant Species (ETIPS)*. Using the management model developed by this project the MDA has led efforts to identify, control and remove plant species on the Noxious Weed Eradicate list including black swallow-wort, brown knapweed, meadow knapweed, Dalmatian toadflax, common teasel, cutleaf teasel, Japanese hops, Oriental bittersweet, Grecian foxglove, poison hemlock and Palmer amaranth. In particular, when Palmer amaranth was detected in conservation planting in 2016 and 2017, the MDA was prepared to quickly implement eradication measures using the *ETIPS* model. By 2018, Palmer amaranth was no longer found in any of the affected plantings. The MDA will continue this approach for weed problems that are not practical for local governments to address.

This work will leverage sophisticated mapping systems in EDDMapS and ISMTrack to coordinate work and keep all project partners informed about weed distributions, management activities and their outcomes. CCM will review bioagent release locations and link them to corresponding infestations by creating sites in ISMTrack. If

no infestation was recorded previously, they will create an infestation record. Organizing this historical biocontrol data will allow us to see where infestations and releases have occurred and where new biocontrol efforts should be targeted.

ACTIVITY 2 ENRTF BUDGET: \$257,952

Amount Spent: \$257,952

Balance: \$0

We will utilize funds from M.L. 2016 and M.L. 2017 ENRTF appropriations for this activity in FY20. Once M.L. 2016 and M.L. 2017 funds are spent, we will begin using M.L. 2019 funds for this activity.

| Outcome | Completion Date |
|--|-----------------|
| 1. Coordinate control of priority infestations with public and private landowners. | 06/30/22 |
| 2. Outreach materials with best management practices are developed and distributed | 06/30/22 |
| 3. Contract control and removal of weeds through CCM | 06/30/22 |
| 4. Management activities are tracked in ISMTrack and biocontrol data are organized | 06/30/22 |

First Update January 31, 2020

Work begun on the ENRTF project Elimination of Target invasive species project will continue as part of this project. MDA Plant Health Specialists transitioned work to this project in the fall of 2019. Our first effort was to follow up on outlier reports of oriental bittersweet in southeast Minnesota and in Washington County. The aim is to eliminate these outlier populations before they spread. Some reports were incorrect. Correct reports were prioritized for control. Landowner permission for control has been obtained for some infestations and is a work in progress for others. CCM began control work on 01/21/20 and treated 9.1 acres of bittersweet.

Control work will resume in March after new crew members are trained. MDA and Extension will provide weed training to new CCM members on 02/20, 02/25 and 02/27.

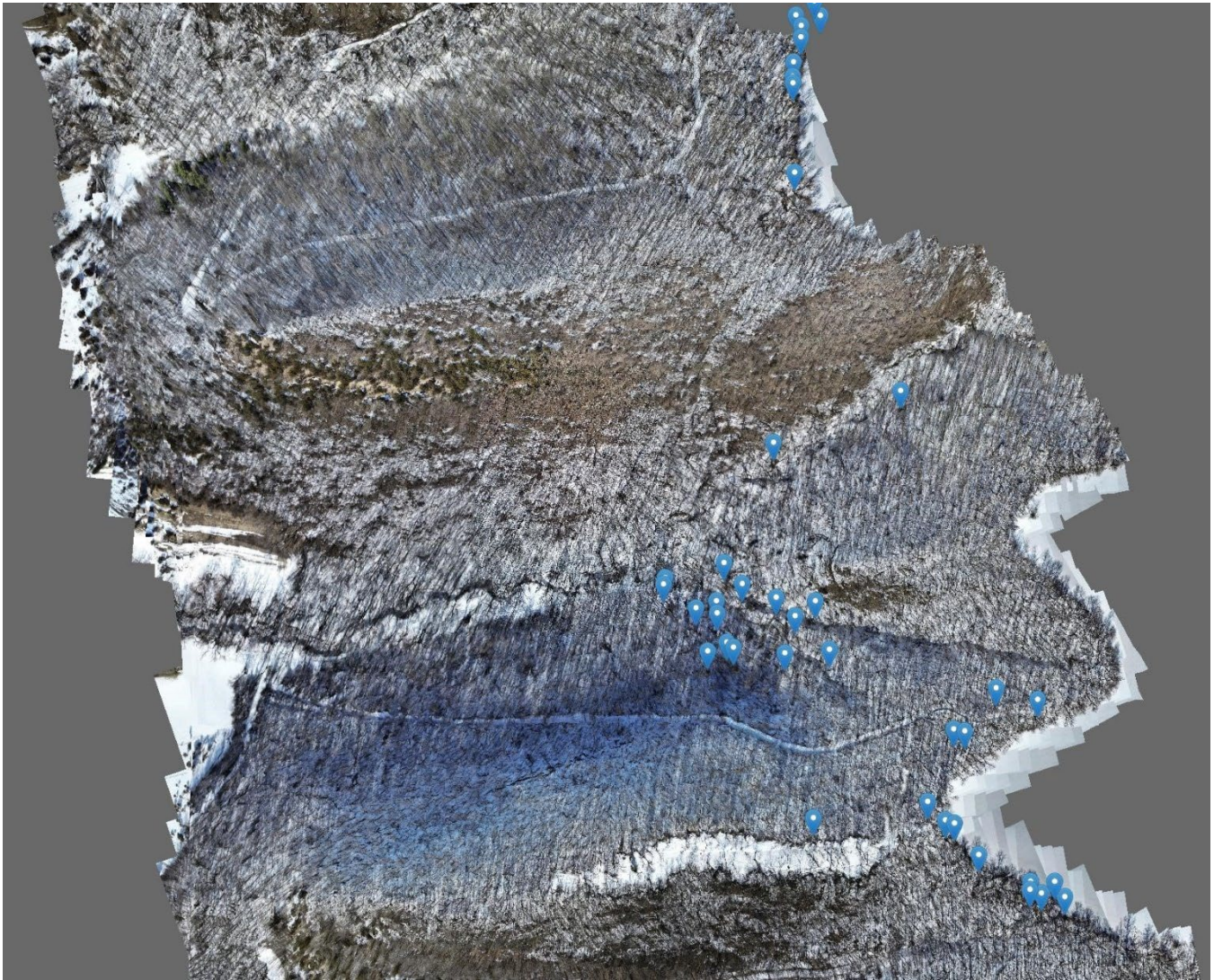
We are in the process of updating webpages for outreach and are developing a brochure on Japanese barberry.

Second Update July 31, 2020

We prepared to begin 2020 field operations with CCM. CCM crew weed identification and herbicide application safety training occurred on 02/24/20 (metro crews & youth program leaders) and 02/27/20 (SE crews). MDA taught weed identification and Extension taught herbicide application safety. Some oriental bittersweet treatments occurred before field operations were suspended due to COVID 19 on 03/16/20. We scrambled to find useful, alternate work that would keep field specialists engaged and employed. In May, we began easing back into field operations with COVID safety practices and equipment.

The project team proposed that field specialists would review aerial images of oriental bittersweet (this project) and Palmer amaranth (Palmer project) and link biocontrol release data with infestations (this project). LCCMR staff speedily approved the amended work plan. Field specialists were trained on 03/30/20. Zoinverse (www.zoinverse.org) was the online platform used for reviewing images. Nine people reviewed 25,632 images and marked probable bittersweet locations. They were accurate overall at bittersweet identification but not at Palmer amaranth. We hope to use these classifications to develop crude artificial intelligence that would rule out images where bittersweet is unlikely. This would reduce the number of images that must be examined by a person. Field specialists created 351 leafy spurge and 310 spotted knapweed biocontrol sites in ISMTrack linking infestations and biocontrol insect releases. These were previously incomplete and separate data sets.

Here is a mosaic of 2,812 images from the Winona area with potential oriental bittersweet plants flagged by field specialists reviewing images in Zoinverse.



Oriental bittersweet

- Between 01/13/20 and 03/11/20, bittersweet vines were cut and treated throughout approximately 99 acres at 8 sites. This included a site where vines locations were found by aerial survey. This allowed us to ground truth. We learned that neither ground nor aerial survey found every vine. The combination approach improved accuracy.
- Mari Hardel (MDA) followed up on a report and found oriental bittersweet at a Halloween theme park. The park staff will control the vines. Mari also confirmed a new infestation in Chisago County on both MnDOT and private land. MnDOT will treat the infestation on their land in the fall. The next step is to line up an agreement with the private landowner.
- Christina and a crew followed up on 2016 reports of oriental bittersweet at Whitewater WMA. At the time they were found by an intern and were cut and treated. Our crew found that most of the vines were American bittersweet, a similar native species. This highlights the importance of correctly identifying target species.
- Additional bittersweet treatments were done at Memorial Park in Red Wing (06/03 - 06/04 and 06/15), in the St. Charles area on 06/16 - 06/17, in Sherburne County on 06/18, and in St. Peter 06/07 – 06/09. These treatments have not been entered into ISMTrack yet so we don't have exact acres treated.

Poison hemlock

- Between 05/05/20 and 06/01/20, 172 acres of poison hemlock were treated at 9 sites in southeast Minnesota. These were follow-up spot treatments so little herbicide was used over the acreage. Populations were greatly reduced from previous treatments.
- An intern hired by the Traverse Soil Water Conservation District and funded by a grant from this project began mapping poison hemlock. The more he looked, the more he found. They could control the plants in areas accessible with an ATV. They requested our assistance with controlling less accessible plants. A CCM crew completed this work the week of 07/13/20 to 07/16/20.
- We are concerned that poison hemlock is spreading and the source is not clear. Christina Basch (MDA) found infestations in 6 counties where it had not been reported previously, including a large infestation in Waseca County. The infestation areas total approximately 15 acres. Additional poison hemlock infestations were found during a Root River survey. Since many of the infestations are single plants or a small number of plants and many of infestations are below utility lines, we suspect that birds are spreading the seed.

Black swallow-wort

- An infestation in Ramsey County was treated 06/08 - 06/09. Infestations in Washington and Chisago counties were treated on 06/17. The Chisago infestation had been treated last year and already there was a noticeable increase in plant diversity.
- Black swallow-wort engulfed a residential yard in Edina (Hennepin County) while the owner was away on a family emergency. This infestation was treated on 06/16.

Cutleaf and common teasels

- Cutleaf teasel plants were treated in Winona County on 06/08 and 06/13 – 06/16, in Mankato 06/07 – 06/09, in Houston County 06/20 – 06/21, and in Rochester on 06/22.
- We continue to make good progress and reduce teasel infestations.
- Christina found two new teasel infestations – one in Rochester and one in Money Creek.

Japanese hops

- A crew treated hops along the Root River trail and did on river monitoring the week of 07/07 – 07/09. Additional monitoring and work on the trail was done 07/16 and 07/20 – 07/23.
- Hops infestations were not as dense as the previous two years.

Dalmatian toadflax

- Mari monitored a site in Cook County. There were not many toadflax plants so she hand pulled them. Forest Service will have a seasonal person revisit this site later in the summer and spray any remaining toadflax plants.
- A CCM crew hand pulled and sprayed Dalmatian toadflax plants in Kittson County 06/22 – 06/26.

Grecian foxglove

- Washington Conservation District has a grant from this project and is handling treatments.
- Overall, Grecian foxglove populations continue to decrease. Christina mapped a couple of areas where foxglove is spreading. There is a need to do additional outreach and control in these areas.
- DNR had funding for Grecian foxglove treatments at Afton State Park but there was no crew time available. We freed up our dedicated crew to do this work (06/29 – 06/30) and DNR paid the cost.

Diffuse, brown and meadow knapweeds

- Mari pulled diffuse knapweed and potential hybrid diffuse and spotted knapweed at the one known site with diffuse knapweed.
- A crew worked on meadow knapweed control in Koochiching County 07/27 – 07/30.

Knotweeds

- Mari followed up on a knotweed report in Virginia. It appeared that the knotweed was being well managed by the landowner. She found a few other knotweeds in the Virginia area. Given that there are only a handful of knotweed plants in the area, they are a priority for control.
- A Mankato knotweed population was treated in mid-July.

Third Update January 29, 2021

To our surprise, two new vining milkweeds appeared this summer.

- There was a first report of pale swallow-wort, *Cynanchum rossicum*, at Eagle Creek Aquatic Management Area and adjacent MnDOT right of way on Hwy 13 (Scott Co.). It is similar to black swallow-wort, *C. louiseae*, that is a priority target species. Based upon available information, a 2012 risk assessment of pale swallow-wort indicated that it would not be hardy in Minnesota. The vines proved they are plenty hardy.
- Another first report was of rough potato, *Metaplexis japonica*, a species that has not been reported in North America since 1958 in Iowa cornfields near the Iowa State University campus where it might have been a WWII research subject. The vines were found by a Master Naturalist on the Lake Wobegon Trail in Holdingford (Stearns Co.).
- In both cases, flowers and seedpods had already formed by the time the vines were found. The immediate aim was to prevent seed spread so seedpods were collected then incinerated. MnDOT, DNR, CCM, Stearns County, Master Naturalists and area residents worked together to remove pods in 2020. The plan is to herbicide treat the vines in 2021.



Rough potato vines overtaking a fence and trees in Holdingford.



CCM crew with bags of rough potato pods. The pods were incinerated.

Tree of heaven was found for the second time in Minnesota. This is of particular concern because it is an important host of spotted lanternfly, an invasive insect. No spotted lanternfly populations have been documented in Minnesota. Control work was initiated on the tree of heaven.

For the first time, CCM had summer crews. Normally, crew members commit to one year. A summer crew was dedicated to this project and accomplished much over the summer. The crew effectively functioned as a strike team to control emerging invasive plant populations across the state – from Japanese hops in the southeast to poison hemlock in the west to meadow knapweed in the far north. Most of these efforts supported MDA grant funded projects. For example, they worked on meadow knapweed in Koochiching County. The project manager had MDA grant funds but there is a lack of contractors in this area to do this work. We were able to bridge this gap with the summer crew. All involved were pleased with what the summer crew accomplished, especially because they overcame the added challenge of operating safely during the pandemic.

The following treatments were coordinated by MDA specialists. Funds for the treatments came from MDA grant funds and DNR grant funds in addition to our joint powers agreement with CCM.

| Plant Name | # Treatments | Acres Treated |
|--------------------|--------------|---|
| Black swallow-wort | 4 | 14.4 |
| Common teasel | 5 | 57.6 |
| Cutleaf teasel | 4 | 6.2 |
| Knotweeds | 66 | 358 plus spot infestations along the Zumbro River (460 acres) |
| Japanese hop | 9 | Infestations treated along the Root River and trail (1,668 acres) |
| Meadow knapweed | 2 | 19.1 |
| Poison hemlock | 4 | 68.8 |
| Tree of heaven | 1 | 0.08 |

Most project funds for CCM were spent. We hope to use remaining CCM funds on the Palmer amaranth detection and eradication project to continue these efforts.

Fourth Update July 30, 2021

We have drafts of new lifecycle graphics for barberries, black and pale swallow-worts, Japanese hops, oriental bittersweet, and Palmer amaranth.

We have little remaining funds for CCM to do control work on this project. However, Christina Basch coordinated 6 weeks of poison hemlock, teasel, Japanese hops and moth mullein treatments using funding from the DNR nongame program. This partnership allowed us to continue to make eradication progress.

We conducted a poison hemlock survey along Hwy 169 from Savage to Mankato and along Hwy 14 from Mankato to the South Dakota border. This resulted in new discoveries of poison hemlock in three counties.

Mari Hardel could not remain on this project because she had worked for three years in the same temporary unclassified position and there was budget uncertainty plus a hiring freeze. She left MDA in May but has continued with natural resource management work.

Knotweed, teasel and poison hemlock infestations that were treated last year were monitored this spring.

Knotweed treatment monitoring



Before treatment 10/02/20



Follow up monitoring 07/15/21

Fifth Update January 31, 2022

We did not do invasive plant control on this project during this period. Most of the funds were spent already, but we will use remaining funds (\$1,539) before project end.

Update as of June 30, 2022:

Project extended to June 30, 2023 by LCCMR 6/30/22 as a result of M.L. 2022, Chp.94, Sec. 2, Subd. 19, legislative extension criteria being met.

Sixth Update as of July 1, 2022:

Waived per LCCMR Staff on 6/8/2022

Seventh Update as of January 1, 2023:

Work for this activity was completed prior to this update, January 1, 2023.

Final Report as of June 30, 2023 (to be submitted before August 15, 2023):

In addition to the importance of controlling highly damaging invasive plants, this project helped to train the next generation of natural resource managers through their work with Conservation Corps Minnesota and Iowa (CCMI). They were trained in plant identification as well as infestation mapping and reporting. They also learned control tactics for herbaceous and woody species in different habitats. Thirty-five CCMI crew members and leaders worked on this project for a collective 4,500 hours of infestation control. They quickly controlled emerging infestations of black and pale swallowworts, common and cutleaf teasels, Grecian foxglove, knotweeds, Japanese hops, meadow knapweed, poison hemlock, rough potato round leaf bittersweet (formerly oriental bittersweet) and tree of heaven. Crews controlled infestations on approximately 1,215 acres, primarily

in natural areas such as forests and grasslands. Infestations were reduced and spread was minimal. There is an ongoing need to sustain this effort but we made good progress.

Covid was a setback during this project period but with the help of LCCMR staff, we pivoted the project to work on aerial imagery analysis to help us refine detection of round leaf bittersweet and Palmer amaranth using drones. Nine people reviewed 25,632 images and marked probable bittersweet and Palmer amaranth locations. They were accurate overall at bittersweet identification but not at Palmer amaranth. This validation check informed us that our methods were working for bittersweet detection but methods such as drone height needed to be adjusted for amaranth detection. Subsequent testing with a low flying drone improved the subject (plants) clarity but the trade off was that the drone needed to be flown manually at a low height rather than programmed to fly a pattern over an area.

Our commitments were the following.

| Outcome | Completion Date |
|--|-----------------|
| 1. Coordinate control of priority infestations with public and private landowners. | 06/30/22 |
| 2. Outreach materials with best management practices are developed and distributed | 06/30/22 |
| 3. Contract control and removal of weeds through CCMI | 06/30/22 |
| 4. Management activities are tracked in ISMTrack and biocontrol data are organized | 06/30/22 |

We met these commitments by working with public and private landowners to enable CCMI to do control work of priority infestations on their property. For permission to do this work on private land, we used a written agreement signed by the landowner, MDA and CCMI. It was a process to inform landowners about infestations, control methods, timing and when a crew would be available to do the work. Sometimes it was necessary to meet a crew onsite to make sure crew members learned how to identify the target plants. Communication and relationship building for trust and helping each other are necessary for success.

We consistently receive feedback that the best outreach materials we have for teaching plant identification are pressed plant samples. We are training people who have not seen these plants before so actual plant samples are very helpful. Over time that includes this project period, we amassed a collection of 87 botanical mounts of plant samples. This collection will continue to grow and be utilized. These botanical mounts were brought to meetings and trainings. For this project, we had fact sheets on target species and their management. They were provided to impacted landowners. We started to develop lifecycle graphics for several target species, but the artists drawing the plants moved to other positions. Hence the harder push to get plant samples instead. Improving best management practices is ongoing. There was little information about the biology and management of most target species. For example, we learned that black swallow-wort and Japanese hops seed germinates throughout the growing season. This is important for management because there must be two control efforts at a site during the growing season. The first treatment in the spring/early summer prevents seed maturation and development. The second in the late summer/fall controls the plants that germinated after the first treatment. We have also evaluated treatments to learn what worked. This learned by experience information was and will continue to be shared with people who manage these species in Minnesota.

Invasive plant management activities for this project were entered into ISMTrack. During this project period, there were 2,154 reports of control treatments and monitoring. Biological control release data for purple loosestrife, spotted knapweed and leafy spurge are in EDDMapS, the umbrella database ISMTrack is within. During the covid related suspension of fieldwork, CCMI members linked biocontrol releases to specific infestations for over 600 leafy spurge and spotted knapweed biocontrol sites. This did not cover all of the sites where biocontrol agents were released but it was an important start.

Activity 3 Title: Complete full development of mobile computing for ISMTrack and add capacity for tracking biological control based management

Description: ISMTrack is an Invasive Species Management Tracking System originally developed with ENRTF

support. In the initial Tactical Plan project, we refined ISMTrack, built queries and began development of a mobile app. In this project we will expand the capabilities of the mobile app and add features for biocontrol tracking. As a result of these enhancements, we will add more users and make it easier for land managers to track weed management activity. The ability to track and measure the success of management is critical to understanding the performance of these initiatives to identify, control and remove noxious weeds in Minnesota.

The University of Georgia is the creator of ISMTrack and we will contract with them for this work. The MDA and University of Georgia have a proven history of successful development related to ISMTrack and EDDMapS and this activity has a high likelihood of success.

ENRTF BUDGET: \$28,137
Amount Spent: \$28,137
Balance: \$0

| Outcome | Completion Date |
|--|-----------------|
| 1. Deploy mobile app and include at least 10 testers in other agencies | 04/30/22 |
| 2. Add biological control tracking capacity | 06/30/22 |

First Update January 31, 2020

Work begun on the ENRTF project Tactical Invasive Plant Management Plan Development will continue as part of this project and the scope will be expanded to include biological control data. We have used our remaining Tactical Plan funds for development this fall. We are working on a contract with University of Georgia to continue ISMTrack development.

Second Update July 31, 2020

Our contract with the University of Georgia was executed on 04/27/20. User level permissions were finalized, and many small fixes were made. Issues with user level permissions had been holding us back from increasing the number of users. We are ready to begin implementation with additional users.

Third Update January 29, 2021

We are getting ready to roll out ISMTrack at an EDDMapS Summit that will be hosted by the North American Invasive Species Management Association. The summit is tentatively scheduled for 03/31/21 and 04/01/21. EDDMapS users from US states and Canadian provinces are the anticipated audience. Many small fixes continue in the meantime.

Fourth Update July 30, 2021

We participated in the EDDMapS Summit on 04/01/2021. The summit was recorded and is available online. To demonstrate ISMTrack, we created a video for the summit that was added to the [ISMTrack landing page](#).

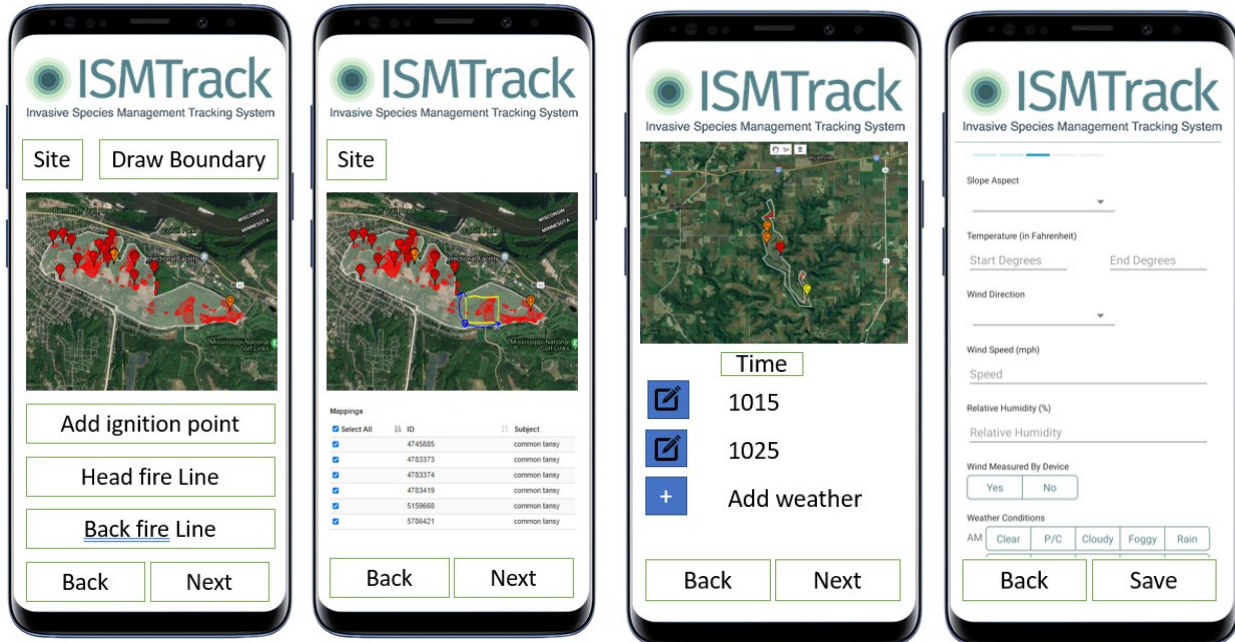
A significant update is planned for the Android app then programming will begin for an Apple version. The update will help the user navigate the app and biological control monitoring capability will be added.

Seven individual ISMTrack training sessions were held online for counties and natural resource professionals who requested them. There was a training session at the annual County Agricultural Inspector short course.

Fifth Update January 31, 2022

Our focus is on developing a dashboard with invasive plant management summaries, a means for users to download data from ISMTrack, and an Apple version of the app. A significant update to the Android app was released on 01/01/2021. We have ideas for enhancing biological control and prescribed fire activity

documentation. Prescribed fire is the most complicated to document because weather conditions must be recorded every 10-15 minutes, and we plan to add ignition points. A mockup is below.



Update as of June 30, 2022:

Project extended to June 30, 2023 by LCCMR 6/30/22 as a result of M.L. 2022, Chp.94, Sec. 2, Subd. 19, legislative extension criteria being met.

Sixth Update as of July 1, 2022:

Waived per LCCMR Staff on 6/8/2022

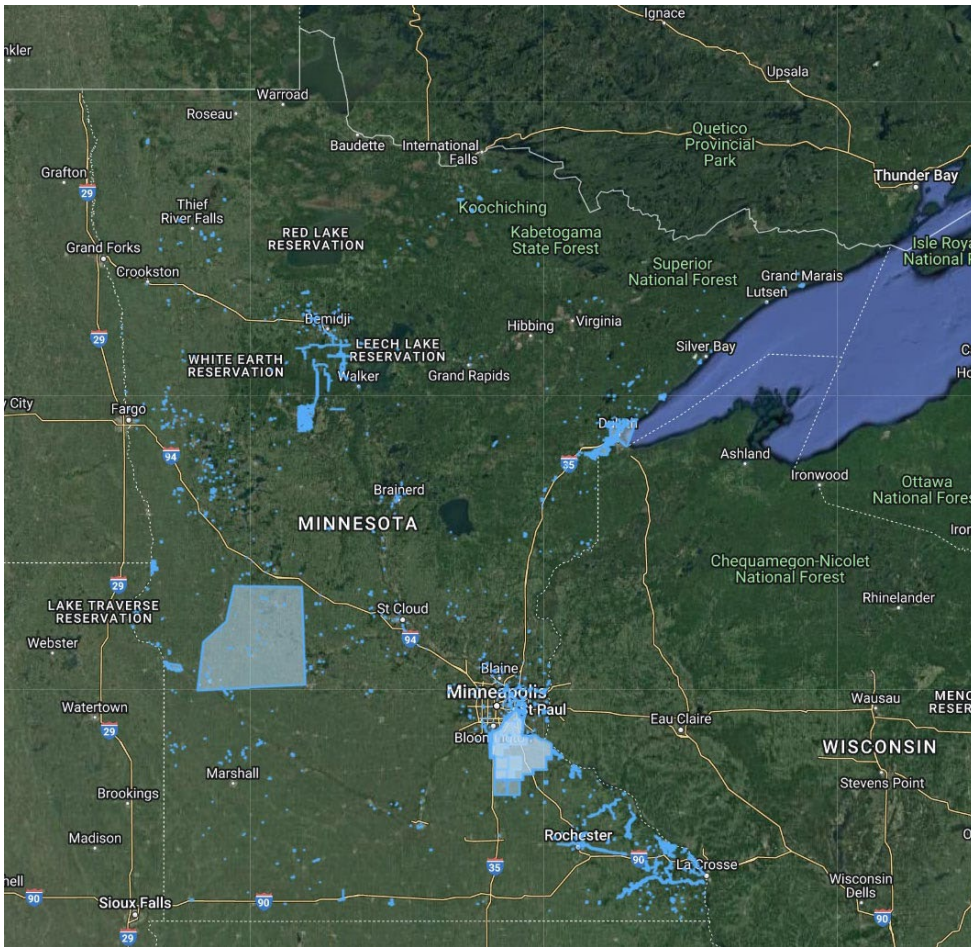
Seventh Update as of January 1, 2023:

Work on this activity was completed prior to June 30, 2022

Final Report as of June 30, 2023 (to be submitted before August 15, 2023):

ISMTrack is now being utilized across the state.

- There are over 200 users who have created 1,795 sites and recorded 3,934 individual invasive plant management activities. Previously, management activities were recorded by and stored at the offices of the individuals overseeing the work. This made it difficult to share information across organizations and maintain continuity as personnel changed. Now we can share information across organizations and see what work had been done previously. The map below shows site locations in light blue. Many sites are small and appear as dots.



- ISMTrack apps were developed for both Android and Apple and are available for free at the Google Play and Apple App stores.
- Weed biocontrol data from MDA and DNR was entered into EDDMapS and sites were set up in ISMTrack for leafy spurge and spotted knapweed biocontrol. This is the only developed online tool for monitoring and documenting long-term infestation changes as a result of biocontrol.
- As of 2022, Starland County in Alberta, Canada began testing ISMTrack for the Alberta Invasive Species Council. This is beneficial. They have helpful suggested improvements and funding to pay for them.
- [ISMTrack](#) website and [YouTube video on ISMTrack](#)

IV. DISSEMINATION:

Description: Regional and local collaboration require excellent communication with partners. The MDA will develop a communications plan to facilitate weed management planning with the public, CWMA, land managers, and researchers. The communication plan will leverage webpages, news media (print, television, and radio) and social media. Updates and findings will be presented at the 2020 Upper Midwest Invasive Species Conference, and other meetings (LCCMR funding will not be used for meeting registration). For the grant program, the MDA will notify the public and solicit requests for the grant RFPs by posting the RFP on the MDA website, notifying County Agricultural Inspectors, local units of government, FY18 and FY19 MDA weed grant recipients, and targeting underrepresented groups. Annual reports of grant outcomes, including metrics to measure impact, will be disseminated at the completion of each grant cycle through press releases from the MDA Commissioner’s office.

The Minnesota Environment and Natural Resources Trust Fund (ENRTF) will be acknowledged through use of the trust fund logo or attribution language on project print and electronic media, publications, signage, and other communications per the [ENRTF Acknowledgement Guidelines](#).

First Update January 31, 2020

- Chandler, M. provided project update at MDA's Noxious Weed Advisory Committee meeting on December 3, 2020 in Arden Hills. (18 participants)
- Basch, C and M. Chandler provided 3 hours of noxious weed training to building inspectors at the 64th Annual Institute for Building Officials in Brooklyn Center. (50 participants)
- Justen, E. provided grant RFP information with a news release sent out by MDA to a large audience.

Second Update July 31, 2020

- COVID 19 diminished dissemination opportunities during this period.
- We continued our Weed of the Month article series with the following articles: How Did That Weed Get Here? (March), Siberian Peashrub (April), Pesky Plant Trackers (May), Tree of Heaven (June) and Recreation and Invasive Plant – What You Can Do (July).
- A [news release](#) went out on June 29, 2020 announcing the FY20 grant awardees.

Third Update January 29, 2021

- Chandler, M. and E. Justen provided a project update at MDA's Noxious Weed Advisory Committee meetings on September 29 (23 participants), November 17 (26 participants) and December 10 (24 participants).
- We continued our Weed of the Month article series with the following articles: An Update on Palmer Amaranth After Years of Treatment in Minnesota (August), Invasive Knotweeds (September), Winged Burning Bush (October), Norway Maple (November) and Japanese Honeysuckle (December).
- There was a media release on rough potato on September 22, 2020. It was picked up by numerous media outlets and the story ran for weeks generating a lot of interest from the public and one new infestation find.
- Chandler, M. gave project updates at the Ramsey Cooperative Weed Management Area meetings on October 2 (9 participants) and January 15 (11 participants).
- At the Upper Midwest Invasive Species Conference (11/02/20 – 11/06/20), an interactive poster on ISMTrack (M. Hardel lead author) and a talk on the ISMTrack app (C. Basch lead author) were presented.
- An update was given to the Minnesota Association of County Agricultural Inspectors executive board on December 19 (16 participants).
- Mari Hardel provided virtual ISMTrack training to County Agricultural Inspectors on 01/28/21. (3 participants)

Fourth Update July 30, 2021

- Monika Chandler and Emilie Justen provided a project update at MDA's Noxious Weed Advisory Committee meetings on May 5 (29 participants).
- Christina Basch presented Challenges of Riverside Japanese Hop (*Humulus japonicus*) Eradication in Southeast Minnesota at the Upper Midwest Fish and Wildlife Conference, February 3 (375 participants).
- Media release on new eradicate species finds February 8, 2021
 - New Noxious Weed Confirmed in Dakota County: MDA Report <https://patch.com/minnesota/eagan/new-noxious-weed-confirmed-dakota-county-md-report> on February 8, 2021

- 6 dangerous weeds were confirmed in new areas of Minnesota in 2020
<https://bringmethenews.com/minnesota-news/6-dangerous-weeds-were-confirmed-in-new-areas-of-minnesota-in-2020> on February 8, 2021
- Noxious weed found in Rosemount
https://www.hometownsource.com/sun_thisweek/community/rosemount/noxious-weed-found-in-rosemount/article_c0e86c88-6cb7-11eb-a823-8bc8ee5b9607.html on February 14 on February 14, 2021
- Media release on Tactical Plan on February 9, 2021
 - Interview on 02/10/21 with Mark Askelson with KRJB/KKCQ radio
 - The story: <http://www.rjbroadcasting.com/2021/02/15/common-buckthorn-a-growing-concern-in-minnesota/>
 - The full interview: <http://www.rjbroadcasting.com/2021/02/11/kaleidoscope-2-11-21-monika-chandler-with-mda/#page-content>
 - Both the story and full interview were also linked on the KRJB KRJM KKCQ Radio Facebook page.
 - International Falls Journal https://www.ifallsjournal.com/news/outdoors/february-weed-of-the-month-tactical-plan-for-invasive-plant-prioritization/article_0db0945a-12ae-5944-b597-95c2c877fecd.html on 03/01/21
- Due to covid, an online training model was developed to train new County Agricultural Inspectors about noxious and invasive plants. This was followed by a participatory web meeting on 02/24/21.
- [Media release](#) on non-native Phragmites status change on 03/04/21.
- Christina Basch and Mari Hardel presented to citizen scientists at a Pesky Plant Trackers Tea Time. They discussed lifecycle graphic creation for knotweed and wild parsnip (18 Participants).
- Monika Chandler presented an overview of the noxious weed listing process as an informal chat with Forest Pest First Detectors on 03/10/21. There were 21 participants.
- Monika Chandler co-presented Leafy Spurge and Spotted Knapweed Biological Control with Sascha Lodge (DNR) for the U of M's Sustainable Forests Education Cooperative. There were 60 participants. This presentation recording has 109 views and was used in a U of M weed science class on 03/15/21.
- Monika Chandler presented Noxious Weed Update at the Shade Tree Short Course (virtual). There were 207 participants.
- ISMTrack was presented in videos created by Christina Basch, Mari Hardel, Monika Chandler and Bob Dunning (Stearns Co. Ag. Insp.) on Day 2 of the EDDMapS Summit on 04/01/21. Monika was also a session panelist. There were 249 participants. <https://naisma.org/programs/eddmeps-summit-2021/>
- Mari Hardel presented Invasive Plants in the Garden for Benton County Master Gardener's Spring Seminar on 04/15/21. Monika Chandler answered questions behind the scenes. There were 130 participants.
- Christina Basch presented on ISMTrack and EDDMapS and Monika Chandler presented on the Tactical Plan at the annual County Agricultural Inspector short course on 07/29/21. There were 48 participants.
- We continued our Weed of the Month article series with the following articles: Tactical Plan for Invasive Plant Prioritization(February), Change to the 2021 Noxious Weed List (March), Habitat Restoration (April), Gardening with Non-Invasive Plants (May), Vining Milkweeds and Rough Potato (June) and Pale Swallow-wort (July).

Fifth Update January 31, 2022

- Updates were presented to the Noxious Weed Advisory Committee at meetings on 09/14/2022, 11/16/2022 and 12/14/2022.
- ISMTrack was discussed with Ramsey Cooperative Weed Management Area on 12/10/2021 and Anoka Cooperative Weed Management Area on 01/25/2022. Both are planning spring ISMTrack trainings.

- Weed of the Month articles continued with Palmer Amaranth is in my Field, Now What? (September), Red Hailstone (October) Noxious Weed Grant Achievements (December) and Assess the Risk of Invasive Plants in Minnesota (January).

Update as of June 30, 2022:

Project extended to June 30, 2023 by LCCMR 6/30/22 as a result of M.L. 2022, Chp.94, Sec. 2, Subd. 19, legislative extension criteria being met.

Sixth Update as of July 1, 2022:

Waived per LCCMR Staff on 6/8/2022

Seventh Update as of January 1, 2023:

A media release was sent in July on the 2022 Grant Recipients: <https://www.mda.state.mn.us/mda-awards-120000-combat-noxious-weeds>.

Final Report as of June 30, 2023 (to be submitted before August 15, 2023):

Results from this project reached Minnesotans in several different ways. The broadest impact would have been through four media releases. In addition, a presentation on ISMTrack was made at the Upper Midwest Invasive Species Conference and three ISMTrack events were held reaching 262 participants. Seven presentations were made on the project reaching 1,044 participants. Finally, project updates were provided at four Noxious Weed Advisory Committee meetings each year and also at Cooperative Weed Management Area meetings.

V. ADDITIONAL BUDGET INFORMATION:

A. Personnel and Capital Expenditures

Explanation of Capital Expenditures Greater Than \$5,000: Not applicable

Explanation of Use of Classified Staff: Not applicable

Total Number of Full-time Equivalents (FTE) Directly Funded with this ENRTF Appropriation:

| | |
|--|---|
| Total Personnel Hours for entire duration of project: 3,120 | Divide total personnel hours by 2,080 hours in 1 yr = TOTAL FTE: 1.5 |
|--|---|

Total Number of Full-time Equivalents (FTE) Estimated to Be Funded through Contracts with this ENRTF

Appropriation: We cannot accurately estimate the number of FTEs for the grant program. Funds will not be used for recipient salaries and overhead but they may hire interns or other short-term personnel. We estimated 1,000 hours for interns or other short-term personnel for the grant program. We estimate an additional 500 hours for contracted invasive plant control.

| | |
|--|---|
| Enter Total Estimated Contract Personnel Hours for entire duration of project: 1,500 | Divide total contract hours by 2,080 hours in 1 yr = TOTAL FTE: 0.72 |
|--|---|

VI. PROJECT PARTNERS:

A. Partners outside of project manager's organization receiving ENRTF funding

Local government units will receive grant funds. Contracts, with priority for Conservation Corps Minnesota will be developed for invasive plant control. Depending upon CCM capacity, this may include private companies. Chuck Barger (UGA) will direct ISMTrack development.

B. Partners outside of project manager's organization NOT receiving ENRTF funding

Angela Gupta (Extension), Trent McCorkle (MN Assoc. of County Ag. Inspectors), Laura Van Riper (DNR Invasive Species), David Hanson (MnDOT Vegetation Mgmt), Daniel Shaw (BWSR CWMA Program), James Calkins (MN Nursery Landscape Assoc.), Roger Becker (U of M Weed Scientist), and Robert Venette (MN Invasive Terrestrial Plants and Pests Center Director) will provide technical expertise.

VII. LONG-TERM- IMPLEMENTATION AND FUNDING:

A coordinated effort to reduce the impact of noxious weeds in Minnesota will require a long-term strategy and investment. This funding creates an opportunity for the Noxious Weed Program to prioritize, coordinate and fund regional and local efforts that are the essential components of a long-term program. This work represents the culmination of the first Tactical Plan and Elimination of Target Invasive Plant Species projects and will continue during and after this project. Development of educational materials that synthesize research findings and best management practices into easy to understand guidelines are important components of a coordinated effort and this work is ongoing. These materials will be available online once this project is completed. We will collaborate with our network of private and public land managers, Cooperative Weed Management Areas and weed inspectors about managing invasion fronts and priority infestations. The grant program will enable communities to actively manage priority infestations. This will enhance local weed management efforts and better connect state and local activities. Ultimately, the long-term success will depend on permanent funding from the legislature for the greatest impact.

VIII. REPORTING REQUIREMENTS:

- Project status update reports will be submitted January 31 and July 31 each year of the project
- A final report and associated products will be submitted between June 30 and August 15, 2023

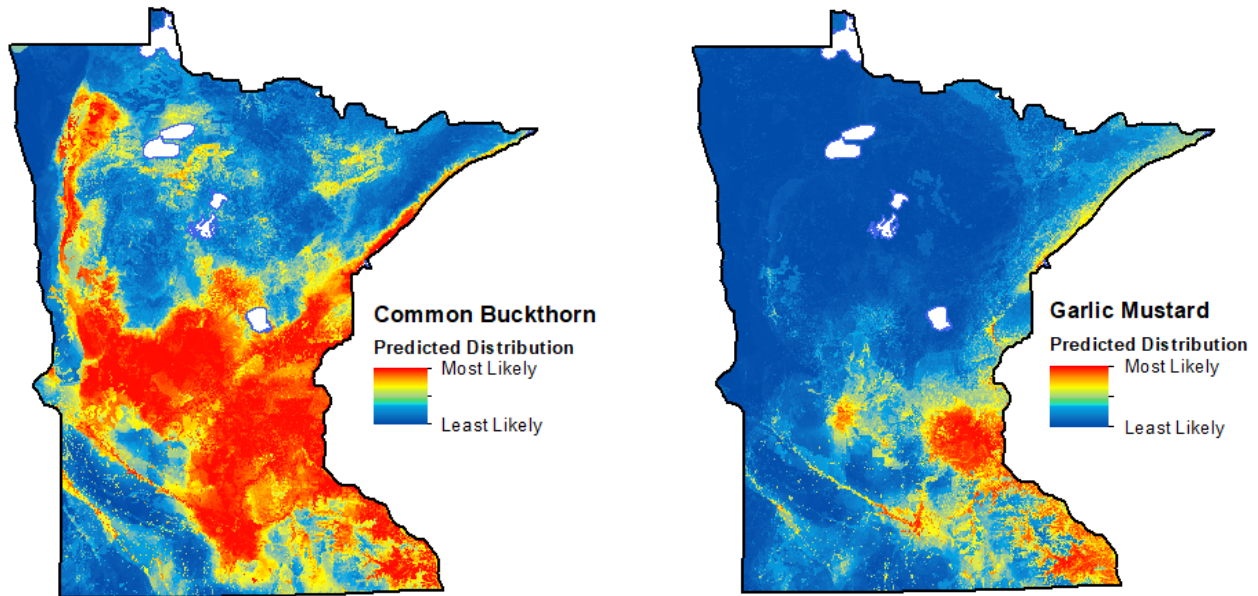
IX. SEE ADDITIONAL WORK PLAN COMPONENTS:

A. Budget Spreadsheet

B. Visual Component or Map

Monitor, Detect and Eradicate Noxious Weeds

Systematically identify, prioritize, coordinate control and eliminate high priority invasive plant infestations



Distribution maps inform management priorities by defining invasion fronts and showing areas of small, isolated infestations that could be controlled before they spread.



Japanese barberry's green leaves stand out in this infestation that overwhelmed native wildflowers and other understory plants. The infestation threatens forest regeneration and is ideal deer tick habitat.

Attachment A:

Environment and Natural Resources Trust Fund

M.L. 2019 Project Budget - Final

Legal Citation: M.L. 2019, First Special Session, Chp. 4, Art. 2, Sec. 2, Subd. 06c

Project Manager: Mark Abrahamson

Project Title: Monitor, detect and eradicate noxious weeds

Organization: Minnesota Department of Agriculture

Project Budget: \$1,000,000

Project Length and Completion Date: 4 years, June 30, 2023

Today's Date: August 15, 2023



| ENVIRONMENT AND NATURAL RESOURCES TRUST FUND BUDGET | Revised Budget 12/28/2022 | Amount Spent | Balance |
|---|------------------------------|--------------|---------|
| BUDGET ITEM | | | |
| Personnel (Wages and Benefits) | \$ 128,673 | \$ 128,673 | \$ (0) |
| Two 2 year 60% time Plant Health Specialist estimated salary \$45,800/yr plus fringe benefits @ 33% for Activity 2 communicate priorities, assess infestations and coordinate control. These are supplementary positions. | | | |
| Professional/Technical/Service Contracts | | | |
| Contract Conservation Corps Minnesota for noxious weed control and linking weed biocontrol data in ISMTrack | \$ 122,130 | \$ 122,130 | \$ - |
| Contract with University of Georgia, creator of the technology already in use by MDA, to improve ISMTrack and add biocontrol data capacity | \$ 28,137 | \$ 28,137 | \$ - |
| Communications | | | |
| Mailing expenses related to grant program activities. | \$ 504 | \$ 504 | \$ - |
| Travel expenses in Minnesota | | | |
| Mileage (\$36,200) & approximately 180 days of meals and 45 overnight lodging for Activity 2 | \$ 6,645 | \$ 6,645 | \$ - |
| Other | | | |
| Noxious weed management grants to local government units | \$ 713,911 | \$ 712,985 | \$ 926 |
| COLUMN TOTAL | \$ 1,000,000 | \$ 999,074 | \$ 926 |

| OTHER FUNDS CONTRIBUTED TO THE PROJECT | Status (secured or pending) | Budget | Spent | Balance |
|--|--------------------------------|-----------|-----------|-------------|
| Non-State: | | \$ - | \$ - | \$ - |
| State: | | \$ - | \$ - | \$ - |
| In kind: Computing/software, GIS and data management, grant management and project management for 3 years | | \$ 70,000 | \$ 86,261 | \$ (16,261) |

| PAST AND CURRENT ENRTF APPROPRIATIONS | Amount legally obligated but not yet spent | Budget | Spent | Balance |
|---|--|------------|------------|---------|
| Current appropriations | | | | |
| Past appropriations | | | | |
| M.L. 2018, Chp. 214, Art. 4, Sec. 02, Subd. 06b Palmer amaranth detection and eradication continuation | | \$ 431,000 | \$ 431,000 | \$ - |
| M.L. 2013, Chp. 52, Sec. 2, Subd. 06d Elimination of Target Invasive Plant Species | | \$ 350,000 | \$ 350,000 | \$ - |
| M.L. 2015, Chp. 76, Sec. 2, Subd. 10 - Emerging Issues Account and M.L. 2017, Chapter 96, Section 2, Subdivision 18 Palmer amaranth detection and eradication | | \$ 173,000 | \$ 173,000 | \$ - |