

2021 Final Report for Door County AIS Control: Riparian Control of Non-native *Phragmites Australis*
Grant# ACEI22519. 1
Door County Soil & Water Conservation Department
10/25/2021

This document outlines to the accomplishments of Door County Soil & Water Conservation Department (SWCD) pertaining to riparian invasive species inventory and non-native *Phragmites australis* control during the Door County 2019 Wisconsin DNR AIS control grant (4/15/2019-12/31/2021).

Inventoried riparian invasive species on private properties



Figure 1. Map of named streams and creeks inventoried by SWCD staff & LTEs

Funding from this grant was utilized to inventory and update the Door County Web Map Invasive Species layers. SWCD over the course of the grant and according to grant proposal targeted two high priority invasive species, Japanese knotweed and *Phragmites* along creeks and streams. SWCD LTEs over the course of the grant inventoried 94% of all the named creeks and streams (186.8 miles) in Door County. LTEs traveled along stream/river/creek corridors and documented invasive species that they encountered in and near stream/river/creek channels. Streams and creeks were surveyed using the Arc Collector App and populations were documented via polygons denoting species and density. Additional

inventory data was provided by volunteer reports gathered through the GLEDN app, EDDMaps, SWCD site visits, and SWCD windshield survey efforts. Additional funding for inventory efforts were provided by a Great Lakes Restoration Initiative Cooperative Weed Management Area (GLRI CWMA) Grant, NFWF Sustain Our Great Lakes (SOGL) grant and a DNR Aquatic Invasive Species Education and Prevention Grant (AIS Education).

Chemically treated *Phragmites australis*

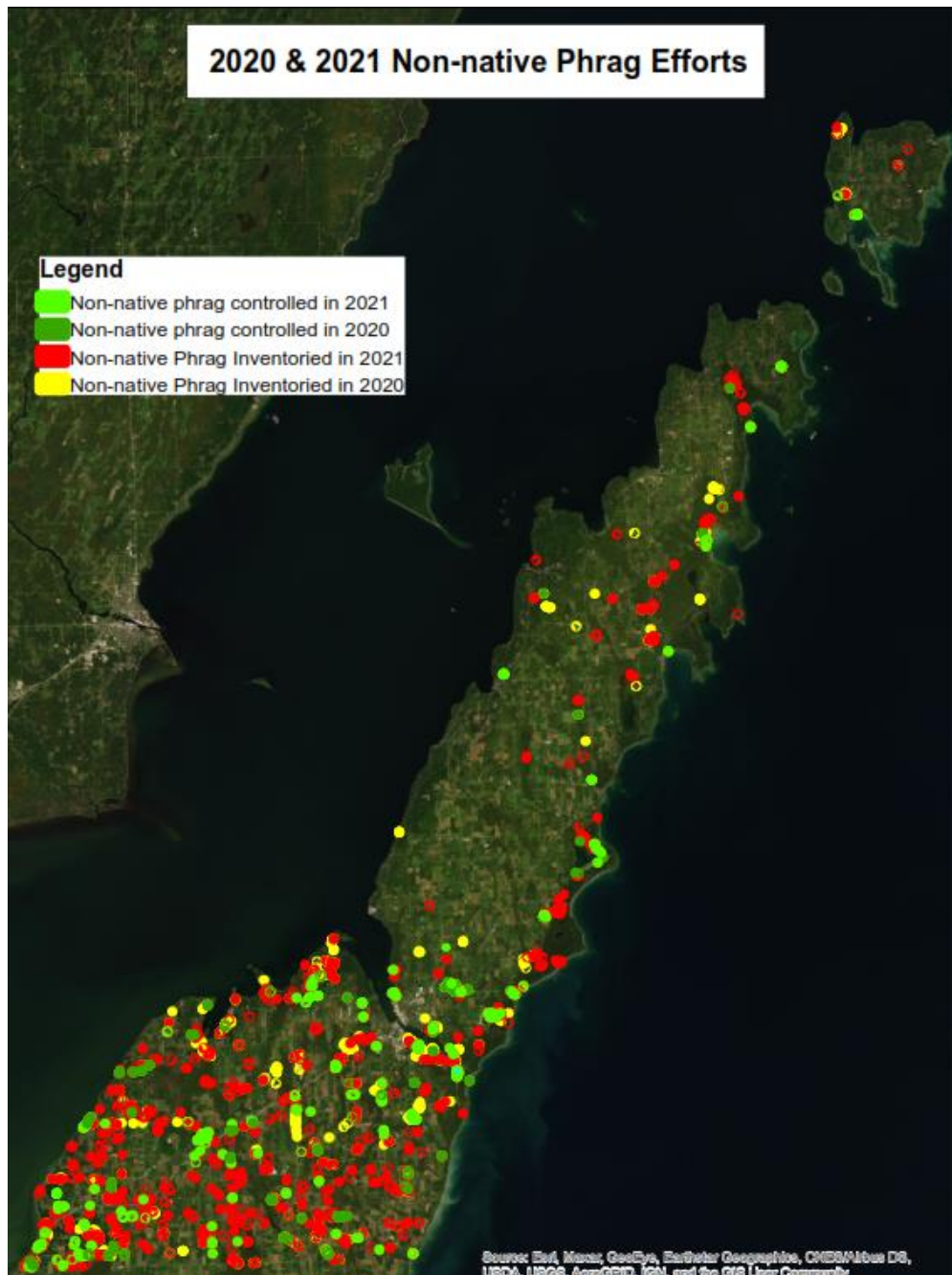


Figure 2. Map of 2020 & 2021 Non-native Phragmites Efforts.

Funding from this grant was utilized to inventory and treat Phragmites populations during the field seasons of 2019, 2020, and 2021 (June-October). Additional funding for control efforts were provided by two federal grant which provided match. All grant related control data was included even if it was not funded by this funding source.

Prior to treatments during this reporting period SWCD had documented and treated 106 acres of *Phragmites australis* during the fall of 2019, post treatment monitoring in 2020 indicated 40 acres were showing no re-growth and 66 acres had significant population decreases of at least 60%. In 2020 SWCD inventoried 96 acres and treated 54 of those acres. According to monitoring in 2021, SWCD met the expected deliverable goal of 45 acres of full eradication of phragmites. Additionally, SWCD inventoried and treated an additional 49 acres in 2020, according to 2021 post treatment monitoring efforts, these initial treatments show a success rate of at least 85%.

A map of the 2020 & 2021 inventory and treatments can be found in Figure 2. The same inventory and treatment information can be found online on the Door County WebMap: <http://map.co.door.wi.us/map/>, and through EDDmaps (pending EDDmaps approval of the bulk upload). Once data has been shared through EDDmaps the same dataset will be made available to the SWIMs network.

Species	2019 Inventory	2019 Treatment	2020 Inventory	2020 Treatment	2021 Inventory	2021 Treatment	Completed since start of Grant
Phragmites (Metric goals outlined in proposal: Treat 45 acres)	Total: 106 acres	Total: 106 acres	<u>2019 re-sprouts:</u> 66 acres <u>2019 successfully restored:</u> 40 acres <u>New pop:</u> 30 acres Total: 96 acres	<u>SWCD Staff:</u> 31 acres <u>Contractor:</u> 23 acres Total: 54 acres	<u>2020 re-sprouts:</u> 49 acres (showing 85% success) <u>2020 successfully restored:</u> 5 acres <u>New pop/previously untreated due to permissions:</u> 142 acres Total: 191 acres	<u>SWCD Staff:</u> 26.5 acres <u>Contractor:</u> 28.5 acres Total: 55 acres	<u>Initially treated with 85% success:</u> 49 acres <u>Successfully Restored (100% success):</u> 45 Acres

Table 1. Summary of inventory and treatment data by year. Funding for all work completed in 2021 was provided by a variety of grants including several federal grants providing match.

The main limitation to treating all populations was landowner permissions. SWCD modified their approaches from 2019 to 2020 to 2021. During 2020 SWCD performed two landowner outreach activities to engage all property owners with phragmites. The first outreach activity consisted of a mailing (Appendix A) informing landowners about invasive species identification and information, and providing them with a permission slip for SWCD to control identified populations. Additionally, SWCD followed up with local non-responsive residents via home visits to help understand and address why landowners were not granting permission. In 2021 SWCD modified their approach again by sending out land owner permissions early February of 2021, and by providing landowners with self-addressed prepaid envelopes for permission slips. In 2021 there was an improved public response. An additional 6 acres worth of permissions were secured. Additionally, SWCD identified an additional 95 acres of phragmites in 2021. The increase in inventory was a result of decreasing lake levels allowing historic

populations to re-emerge, and that SWCD was able to monitor additional private properties through other grants expanding areas SWCD was able to inventory.

Monitor treatment progress

Modifications during the 2020 & 2021 field season included establishing a data collection system to more accurately monitor populations, utilization of the Phragmites Adaptive Management Framework (PAMF) database, and increasing the percent active herbicide. As discussed in the previous section on pages 2 & 3 under the deliverable category: *chemically treated Phragmites australis* SWCD met the expected deliverable goal of 45 acres of 100% eradication of phragmites, and additionally, was able to exceed goals by treating an additional 49 acres with a success rate of at least 85%. Additionally, through funding and efforts from other grants SWCD was able to grow monitoring efforts by gaining access to additional private properties and through these efforts were able to identify an additional 95 acres of phragmites.

Additional post treatment monitoring occurred for 2021, however, due to limitations of the fall season the impacts of the 2021 treatments are unknown. Die back could be attributed to seasonal senescing or could be a result of the impacts of control efforts. SWCD plans to monitor in 2022 subject to available funding.

The Door County WebMap has been updated with the 2019 and 2020 data. The 2021 data will be posted by the end of January 2021. Additionally, 2020 (still pending EDD maps publishing as of 10/26/2021) & 2021 data will be shared with the SWIMS database through EDD Maps. SWCD has been able to share bulk uploaded data (inventory and control) with EDD maps and will continue to share data through EDD maps which will allow the data to be readily shared to SWIMs. Once EDD maps publishes their updated inventories and SWIMS gathers the information of these efforts there will be three public databases (SWIMS, EDD maps, and the County WebMap) containing the inventory and control results of this grant.

Engage private landowners and the public through outreach campaigns

In 2019, 364 landowners were identified and contacted by SWCD staff. All of these landowners were identified as having riparian invasive species populations. In 2020 SWCD identified 41 landowners with Japanese knotweed on their properties and approximately 200 landowners with phragmites on their property and contacted them via mailings. In 2021 SWCD identified 58 landowners with Japanese knotweed and 211 landowners with phragmites on their properties and contacted them via postal mail. These mailings provided the private landowners with identification techniques, control methods, and how to report invasive species. Examples of the mailings are displayed in Appendix A.

Over the course of this grant SWCD staff conducted 656 landowner visits to aid in the identification of *Phragmites australis* and Japanese knotweed, of these 448 visits occurred during the field season of 2021. These visits consisted of staff visiting private properties. Depending on landowner preference SWCD met with landowners one-on-one or provided landowners with information through no contact means. No contact interaction meant staff left informational datasheets and handouts on landowners' doors, and/or provided follow up phone calls to discuss findings. Information provided to landowners included information on the invasive species identified during the site visit and training information on how to use Great Lakes Early Detection Network. In total, the area covered by these site visits was over 5,000-acres of land in Door County.

Volunteer Hours

SWCD reported 111 volunteer hours in 2019 pertaining to riparian invasive species control and inventory. 72.5 volunteer hours were recorded by the Clark Lake association and efforts put towards

inventory and treatment of phragmites. Additional hours included time in controlling riparian invasive species along where Geisel Creek meets Dunes lake and several volunteer efforts mapping phragmites in Door County.

SWCD reported 44.5 volunteer hours in 2020 pertaining to riparian invasive species control and inventory. All of these volunteer hours were recorded by the Clark Lake association and efforts put towards inventory and treatment of phragmites.

Appendix A

Examples of Permission Mailings Provided to the Public



County of Door SOIL & WATER CONSERVATION DEPT

County Government Center
421 Nebraska Street
Sturgeon Bay, WI 54235

(920) 746-2214
Fax: (920) 746-2369
swcd@co.door.wi.us

January 25, 2021

Dear Landowner,

The purpose of this letter is to inform you of opportunities to learn more about the invasive species *Phragmites australis* and appropriate management techniques. Door County Soil & Water Conservation Department (SWCD), along with the, Door County Invasive Species Team (DCIST), has been mapping and treating *Phragmites* within county and town right-of-ways and mapping those same species viewable from the road within private lands since 2009. With the help of federal, state, and local grants as well as donations generously provided by landowners like you SWCD has treated *Phragmites* using private contractors and limited term staff along right of ways and on private properties totaling more than 300 miles of shoreline and more than 100 acres throughout the county. The team has a record of *Phragmites australis* on or near your property and would like to work with you to control these populations. To learn about the location of the population please visit the Door County Web Map at <http://map.co.door.wi.us/map/>, open the invasive plants folder under conservation to see the locations of non-native *Phragmites* populations.

What is *Phragmites*?

Phragmites is a perennial aggressive wetland grass that outcompetes native plants and displaces native animals. The presence of large stands can even change the hydrology of an area. Due to its height and its distinctive, fluffy seed heads, *Phragmites* is easy to spot, even by traveling motorists. *Phragmites* has spread throughout Door County along right-of-ways, in wetlands, and along shorelines.

My property was treated in the past, aren't I done with *Phragmites*?

Unfortunately, no. The treatment is just the beginning of control. *Phragmites* will continue to grow until the rhizomes of the plant are exhausted and/or conditions are no longer suitable for the seeds in the soil; this can take a minimum of three years. To help with this effort please sign the permission form to receive treatment from SWCD/DCIST or reach out to a contractor.

SWCD will be engaging landowners in grant project areas to control non-native populations. Treatments will follow best management practices and adhere to all state and federal rules and regulations. All applicators treating on behalf of SWCD will have specialized training and state issued certifications and licenses. If you have any additional questions or concerns or for more information about best management practices please visit www.doorinvasives.org or feel free to contact me.

Regards,



Samantha Koyen | Conservationist & Coordinator for the Door County Invasive Species Team
DCIST message line: 920-746-5955
skoyen@co.door.wi.us



The Door County Invasive Species Team

Empowering Door County citizens and municipalities with the information, tools, and skills to tackle invasive species.

A Quick Guide to Phragmites (*Phragmites australis*)

What is Phragmites?



Phragmites is an herbaceous perennial grass. It is an aquatic invader, colonizing riparian, wetland, and shoreline areas. It can look like other grasses and plants, but an easy diagnostic tool is to look at where the leaves meet the stem. Phragmites will have prominent white hairs at this juncture. The hairs become more prominent when the leaf is gently pulled away from the stem.

Phragmites can grow up to 20' tall and becomes more prominent

in late summer/fall when the feather plume flower heads/seed heads form. Like most invasive species phragmites has a vast root system that can grow 6' deep and 10' wide resulting in a large underground energy source, making control difficult.



Phragmites consumes a lot of water as it grows and has been documented lowering water levels in wetlands. Phragmites stands grow densely and quickly, shading out native species and preventing movement through well-established populations. Its dense stems can alter the flow of water and even clog drainage ditches. Additionally, these changes in hydrology and the dense impenetrable wall of growth limit water access, impede wildlife movement, alter water fowl habitat, and can decrease property values. There are a few look alike plants to non-native phragmites including native phragmites. The important features to differentiate phragmites from other grasses is to look for the prominent white hairs at leaf and stem junctures.

Native Vs. Non-Native Phragmites



Non-native phragmites can look quite similar to native phragmites. There are many guides to differentiate the two subspecies. For a direct comparison, search online for the Great Lakes Phragmites Collaborative Identifying Native Vs. Invasive Phragmites. Always get confirmation from an expert and report all populations (native & non-native) to the Door County Invasive Species Team. Mature non-native stems can be up to 20' tall and robust. Native stems reach about 10' with other native grass growing 8' or less.

Leaf shape/color: non-native phragmites has bluish-green leaves compared to native phragmites which has yellow-green stiff flat leaves.



Leaf sheaths: This is the area where the leaf meets the stem and wraps around the stem. The leaf sheath persists on dead non-native phragmites stems during winter months where as native phragmites typically sheds its leaf sheaths during those time periods. Underneath the leaf sheath native phragmites have smooth shiny stems speckled with black dot fungus.



Seed head: non-native phragmites has large, dense, thick, purple/brown/tan, seed heads approximately 6-20" long. Native plumes are feathery, small, sparse, and never purple. Both tops contain long silky hairs that remain present throughout winter.



Stems: Native phragmites have smooth shiny stems and only show black, dot fungus under its leaf sheaths. Stems of native phragmites are purplish/red, and senesce (die back seasonally) earlier than its non-native counterpart. Non-native phragmites stems are ridged and a dull green, with indistinct blackish mold spots.



Non-Native Phragmites WI DNR Classification



Phragmites is listed under Wisconsin's Invasive Species Rule Chapter NR 40 as a restricted species in some counties and as prohibited in others. Restricted species are those that are already present throughout the state of Wisconsin and are not likely to be eradicated. Prohibited species are not currently found in Wisconsin or are found in very low density and few areas. Both restricted and prohibited species are likely to cause significant environmental and economic harm or harm to human health. The NR 40 Rule makes it illegal to transport, transfer, or introduce invasive species listed as restricted and prohibited species in Wisconsin, and it is illegal to possess prohibited species in Wisconsin.

How to Control Non-Native Phragmites

There are mechanical and chemical control options available. Please note that manual and mechanical options can be used to reduce the abundance and area of a phragmites infestation, but there are few instances of these methods being shown to completely eradicate the species from a site and these methods take many years to see results. Mechanical methods include: hand cutting, mowing, digging/pulling, burning, & covering populations. Chemical control is recommended for larger more established populations. It is important when doing any treatment to be careful not to spread root fragments, as these have the potential to re-sprout. Chemical control options include foliar applications, hand swiping, and bundle cut applications.



Many herbicides, herbicide combinations and application methods have been tried on phragmites and work to a greater or lesser degree. Like any other weed control method, herbicides will fail if used incorrectly. Using herbicide correctly means: using an herbicide that specialized for site conditions & designated for target species, using correct concentration (rate) of herbicides active ingredient, using an adjuvant if recommended (adjuvants are spray additives which may help the herbicide work more effectively), using the right application method made under the appropriate conditions, and applying herbicide during the correct timing to coincide with plant susceptibility. Make sure to read and follow all directions and follow any restrictions or precautions listed on the product label. Additionally, depending on population location applicators may be required to have a specialized certification, use site specific approved herbicides, and acquire permits prior to treatment (example: treatments in aquatic habitats). More information is available at the Great Lakes Phragmites Collaborative management page: <https://www.greatlakesphragmites.net/management/techniques/>.

Control Efforts in Door County and How to Help

The Door County Invasive Species Team (DCIST) is a group of natural resource professionals and interested public members that are concerned about the preservation of Door County's natural environment. DCIST seeks to halt the invasion of exotic, non-native plants by empowering citizens with the education, tools and skills necessary to control invasive species. DCIST is committed to educating, preventing, minimizing, and eradicating invasive plants and reducing their impact on Door County's natural resources, economic viability, and human welfare. The partnership promotes an open exchange of information, public and private sector coordination, and citizen involvement.



Non-native phragmites is one of four priority invasive species that the County targets year to year. Additionally, most municipalities within Door County have adopted noxious weed ordinances targeting phragmites. These municipalities can participate in the County Invasive Species Cost Share Program. If you would like to participate in the Municipal Cost Share Program reach out to your municipal clerk to inquire. DCIST also secures control grants to treat populations within specific project areas, landowner permission slips are mailed out for all populations inventoried within DCIST project areas. To see populations that have been inventoried please visit the Door County Web Map at: <http://map.co.door.wi.us/map/>.

Please report any invasive species population to DCIST via their website at www.Doorinvasives.org or using the Great Lakes Early Detection Network (GLEDN) app <https://apps.bugwood.org/apps/gledn/>, or by reaching out to the DCIST coordinator via email at DCIST1@gmail.com or leave a message on the DCIST message line at (920) 746-5955. These reports help keep inventories up to date and allow landowners to benefit by participating in the Municipal Cost Share Program and/or receive educational resources and potential control resources through grant funding.



County of Door SOIL & WATER CONSERVATION DEPT.

County Government Center
421 Nebraska Street
Sturgeon Bay, WI 54235

Phone: (920) 746-2214

Fax: (920) 746-2369

swcd@co.door.wi.us

DOOR COUNTY NON-NATIVE PHRAGMITES CONTROL PROGRAM

Application Form (TO BE COMPLETED BY LANDOWNER)

Landowner _____

Address _____

City/State/Zip _____

Phone Number _____

*By signing below, I authorize the chemical treatment at **no cost** to myself as the land owner, of non-native phragmites found on private in accordance with Door County Non-Native Phragmites (*Phragmites australis*) control efforts starting from the date of my signature until December 31, 2021.

I, _____ on this _____ day of _____, 2021 understand that this is primarily a non-native Phragmites control program and that treatments occur in early fall. I understand that treatment efforts are not guaranteed and limited by available grant funding in specific grant project areas. I understand these control efforts may not be available the following year, and for successful control follow up treatments may be needed. Slips received before June 1, 2021 will receive priority, slips returned after will receive treatment as funding allows.

SWCD: Door County Soil and Water Conservation Department <http://map.co.door.wi.us/swcd/>

DCIST: Door County Invasive Species Team www.doorinvasives.org

USDA Forest Service Northeastern Area <http://www.na.fs.fed.us/>



In accordance with Federal civil rights law and U.S. Department of Agriculture (USDA) civil rights regulations and policies, the USDA, its Agencies, offices, and employees, and institutions participating in or administering USDA programs are prohibited from discriminating based on race, color, national origin, religion, sex, gender identity (including gender expression), sexual orientation, disability, age, marital status, family/parental status, income derived from a public assistance program, political beliefs, or reprisal or retaliation for prior civil rights activity, in any program or activity conducted or funded by USDA (not all bases apply to all programs). Remedies and complaint filing deadlines vary by program or incident.

Persons with disabilities who require alternative means of communication for program information (e.g., Braille, large print, audiotape, American Sign Language, etc.) should contact the responsible Agency or USDA's TARGET Center at (202) 720-2600 (voice and TTY) or contact USDA through the Federal Relay Service at (800) 877-8339. Additionally, program information may be made available in languages other than English.

To file a program discrimination complaint, complete the USDA Program Discrimination Complaint Form, AD-3027, found online at [How to File a Program Discrimination Complaint](http://www.usda.gov) and at any USDA office or write a letter addressed to USDA and provide in the letter all of the information requested in the form. To request a copy of the complaint form, call (866) 632-9992. Submit your completed form or letter to USDA by: (1) mail: U.S. Department of Agriculture, Office of the Assistant Secretary for Civil Rights, 1400 Independence Avenue, SW, Washington, D.C. 20250-9410; (2) fax: (202) 690-7442; or (3) email: program.intake@usda.gov.

"Organized in 1946 by the County Board to assist Landowners in conserving their Soil, Water and Related Resources"