

2020 Invasive Species Program Report

An overview of invasive species work accomplished in the St. Croix River Basin



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Invasive Species Program Overview

Invasive species are a threat to the overall health of the St. Croix River and its tributaries, and to resource management throughout the watershed. One of the original eight nationally designated Wild and Scenic rivers, the St. Croix is one of the cleanest tributaries to the Mississippi River. It is a high value fishery, and the healthy, diverse ecosystem includes at least 40 species of mussels, several of which are rare or endangered. The introduction of aggressive invasive species into this complex system threatens the ecological integrity of the River as well as the unique cultural resources and our outdoor heritage.

Because they have few natural controls in their new habitats, invasive species can spread rapidly. Aggressive aquatic invasive species can impact the ecology of a water body by degrading water quality, reducing species diversity, and altering the food web resulting in a change in game fish populations. Dense infestations and nuisance growth of invasive species can also affect recreational opportunities such as boating, swimming, and fishing. Local economies depend on the pristine nature of the River for the multimillion dollar recreation and tourism business brought to the area by boaters, paddlers, wildlife watchers, cold and warm water anglers, and many others.

The St. Croix River Association is dedicated to protecting the St. Croix River and its watershed from the threats and impacts of invasive species. This document is a summary of our Invasive Species Program and the work that was completed in the 2020 year.

Invasive species that threaten the St. Croix River



Zebra mussels attached to a boat in the lower St. Croix River.



Curlyleaf pondweed from a tributary of the St. Croix River.



Yellow iris, an increasing invader found along the Riverway.



Invasive carp are an increasing threat to the Lower Riverway.



Eurasian watermilfoil in the St. Croix flowage.



Purple loosestrife found throughout the watershed.

2020 COVID-19 Adaptations

This year's COVID-19 pandemic changed many aspects of how the invasive species program functioned. Our team responded with innovative, adaptive ideas and strategies to our programming to reach across the watershed, including the creation of new web-based resources to help stop the spread of invasive species. In-person workshops and trainings turned to online, public invasive species events got postponed and the development of online resources was more critical than ever. Here are a few examples of new 2020 achievements within the invasive species program:

- Development of an online curriculum educating 3-6th graders about invasive species, both terrestrial and aquatic (*videos and resources can be found on SCRA's website in the Rivers Are Alive section under 'Into the Weeds'*)
- Development of SCRA's Scenic Shorts video series educating the public about invasive species threats and concerns (*video series can be found on SCRA's YouTube channel*)
- Online trainings to encourage the general public to volunteer and monitor invasive species on foot, bike and paddle
- Increased time spent monitoring and managing invasive species throughout the St. Croix River watershed
- Development of the St. Croix-Red Cedar Cooperative Weed Management Area bimonthly digital newsletter in partnership with My St. Croix Woods

Although this year was vastly different than years prior, the invasive species program still reached the general public with invasive species education & training, monitored and managed for invasive species as well as developed online resources that will be available indefinitely on SCRA's online platforms.

Outreach to Boaters

Decontamination "blitz" weekend



The following landings were staffed by decontamination units:

- St. Croix Bluffs Regional Park (MN DNR)
- Osceola Landing (Chisago County)

The weekend (August 28-30th) was an effort to raise awareness about the actions boaters can take to stop the spread of invasive species.

Marina Partnerships

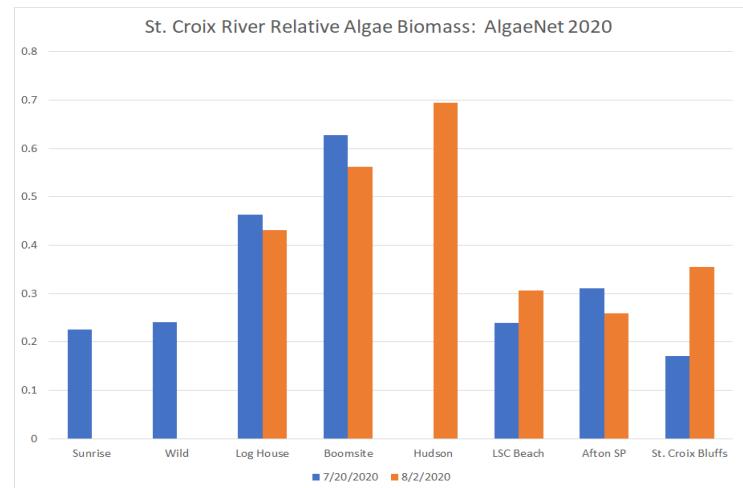
In the Spring of 2020, SCRA's Invasive Species Coordinator reached out to many of the large marinas along the MN & WI sides of the Lower St. Croix River. Due to COVID-19, in-person meetings turned into phone calls or emails & the annual Sunnyside Marina Summer Solstice event was cancelled. SCRA is looking forward to outreach in 2021.

SCRA also partners with the National Park Service in the fall to conduct zebra mussel counts on 100 dry-docked boats at eight marinas to assess population densities along the Lower Riverway.



Algae Alert Network

This summer, volunteers teamed up with SCRA and U.S. Geological Survey to monitor water up and down the St. Croix River for toxic blue-green algae in an effort called Algae Alert Network. Sampling was done at 8 sites along the St. Croix River to assess and track algal blooms every other week throughout the late summer to early fall. **9 volunteers collected a total of 56 samples in 2020.**



Monitoring and Inventory

Yellow Iris Monitoring

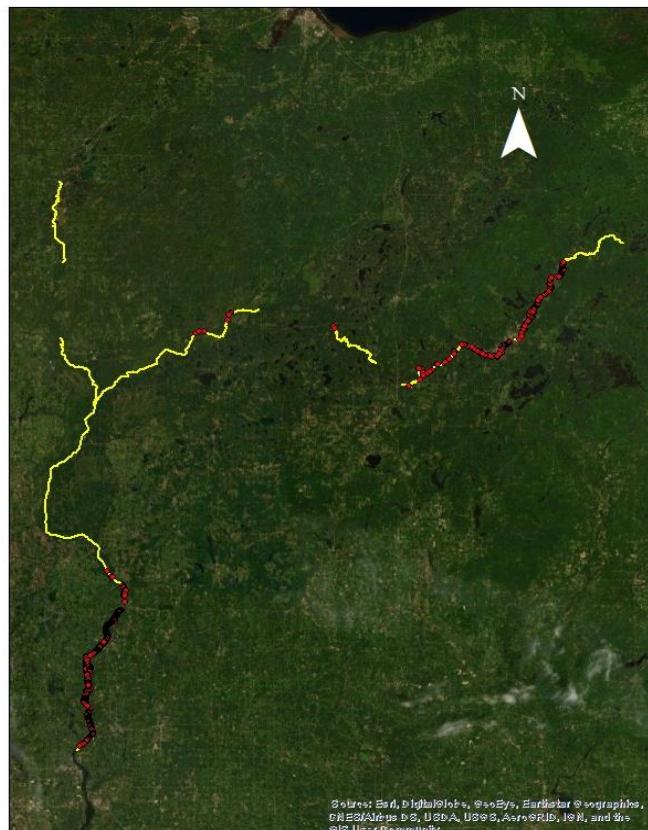
Yellow iris is a non-native plant that invades shorelines and other wet habitats. It is rapidly expanding its range along the St. Croix and Namekagon and today is found throughout the headwaters region as well as from St. Croix Falls to Marine on St. Croix. It is very easy to identify when in bloom after the flowers mature into seed pods, however, it is often mistaken for native Blue flag iris. In 2020, AIS interns and staff monitored **a total of 91 miles of river (52 miles of the St. Croix and 39 miles of the Snake River)** to inventory the presence of Yellow iris.



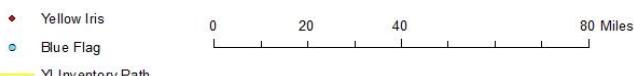
Yellow Iris Inventory



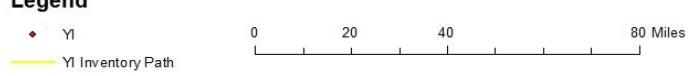
Yellow Iris Inventory Path



Legend



Legend



2017

- Monitored **approximately 100 miles** of the St. Croix River shoreline from Danbury to Stillwater for Yellow iris

2018

- Monitored **approximately 92 miles** of the Namekagon and St. Croix River and **removed 15.3 miles** of Yellow iris along the St. Croix and a mass at Solon Springs

2019

- Monitored **approximately 118 miles** of the Namekagon, St. Croix and Kettle Rivers for Yellow iris

2020

- Monitored **approximately 91 miles** of the St. Croix and Snake Rivers for Yellow iris. Monitoring efforts have now been completed on the entire St. Croix & Namekagon Rivers

Purple Loosestrife Monitoring & Management

In 2020, SCRA teamed up with NPS to monitor and manage **39 miles along the St. Croix and Namekagon Rivers for Purple loosestrife**. Three sections of the St. Croix National Scenic Riverway were monitored for Purple Loosestrife. During these outings, the Purple loosestrife that was found was removed by cutting at the base of the plants before seed dispersal. The invasive plant was then put into large garbage bags and disposed of responsibly. Sections of the Namekagon were also monitored near Phipps flowage. Flower heads were removed on an island with dense Purple loosestrife populations. A second visit was needed for herbicide treatment, approximately **0.8 acres were treated** on Phipps Flowage.

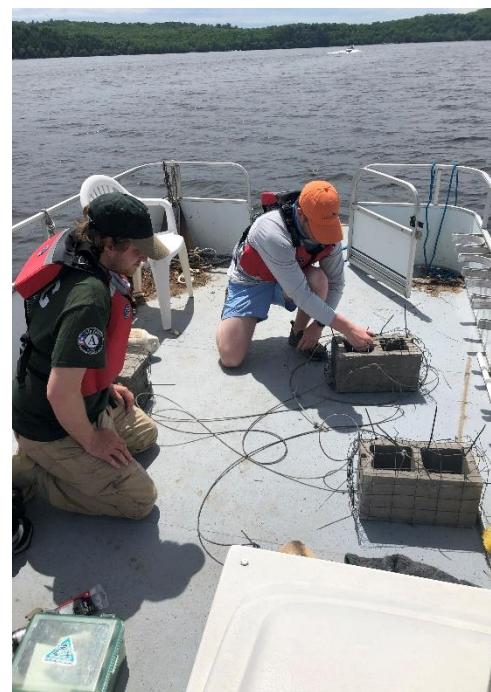


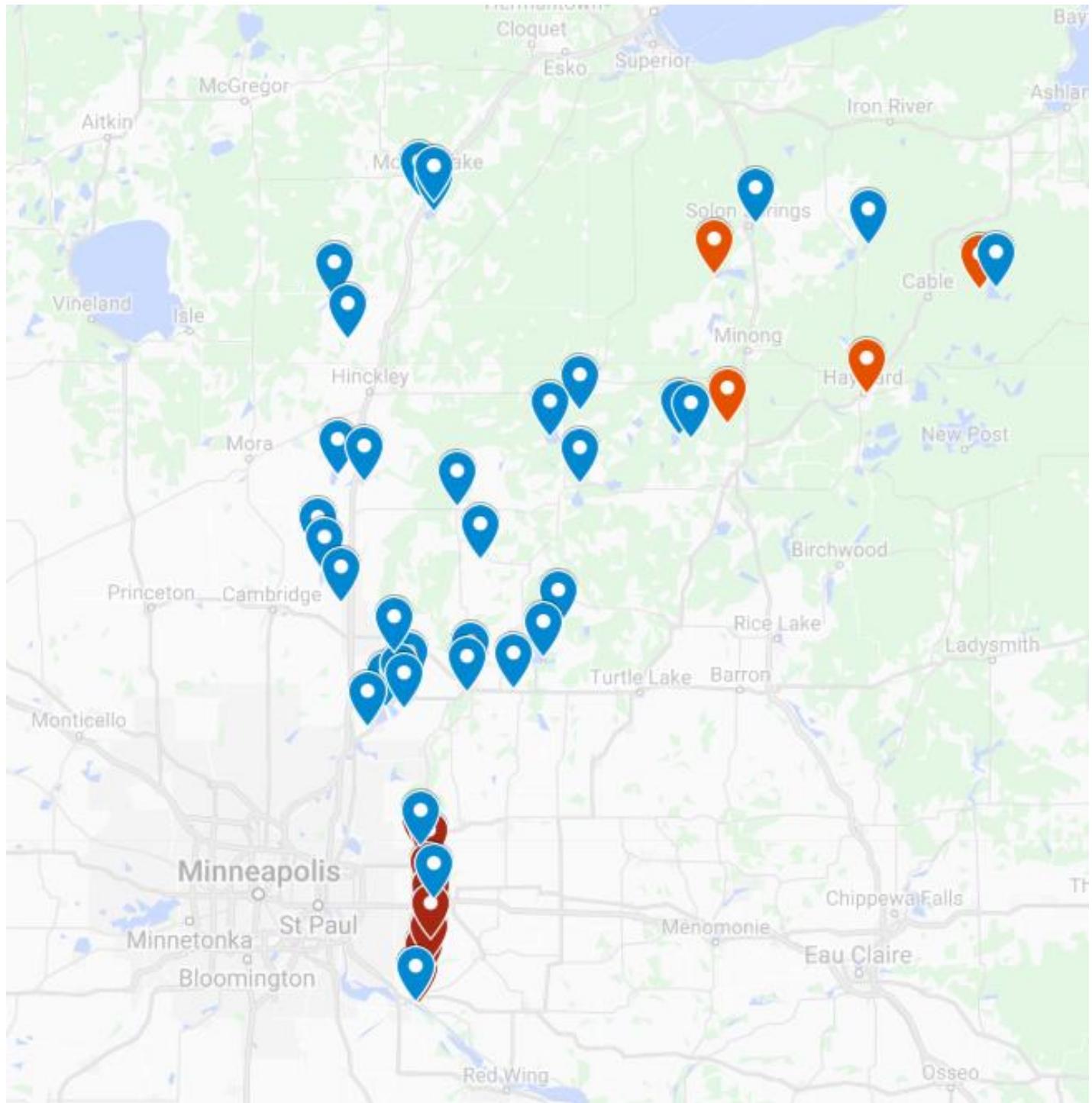
*In 2021 SCRA will be raising
Gallruccella beetles to be
released as a Purple
loosestrife biocontrol agent*



Zebra Mussel and Spiny Waterflea Monitoring

SCRA partnered with NPS, Chisago County Soil and Water Conservation District, Polk County Land and Water Resources Department and WI DNR to monitor for zebra mussels along the Riverway and throughout the watershed. Together, SCRA and partners in 2020: **(1)** placed early detection zebra mussel settling plates at **5 sites throughout the upper watershed**, **(2)** placed caged cinderblocks at **10 sites in the Lower Riverway** to monitor population levels, **(3)** sampled for veliger's in **7 locations along the Riverway** from St. Croix Falls down to Prescott, **(4)** sampled for veliger's **on 30 different lakes**, equaling **27,254.46 surface water acres** throughout the watershed and **(5) sampled 20 lakes** in Pine and Chisago County for Spiny waterfleas.

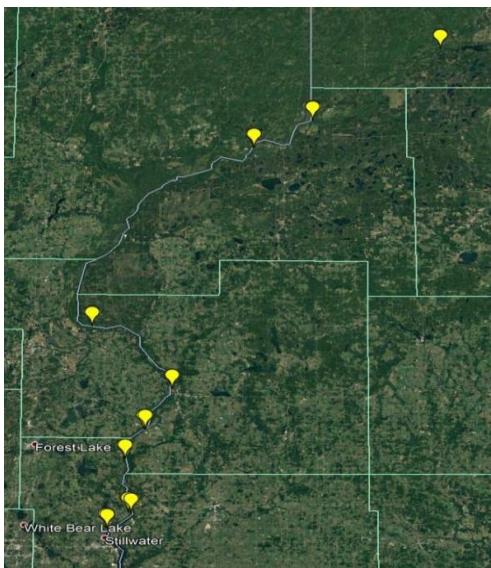




A map of different zebra mussel monitoring activities. Dark red points indicate locations in the Lower Riverway where caged cinderblocks were placed to monitor existing zebra mussel populations. Orange points indicate locations in the upper Riverway (St. Croix and Namekagon) where settling plates were placed in flowages as early detection tools. Blue points indicate lakes that were sampled for zebra mussel veligers.

Emerald Ash Borer Monitoring

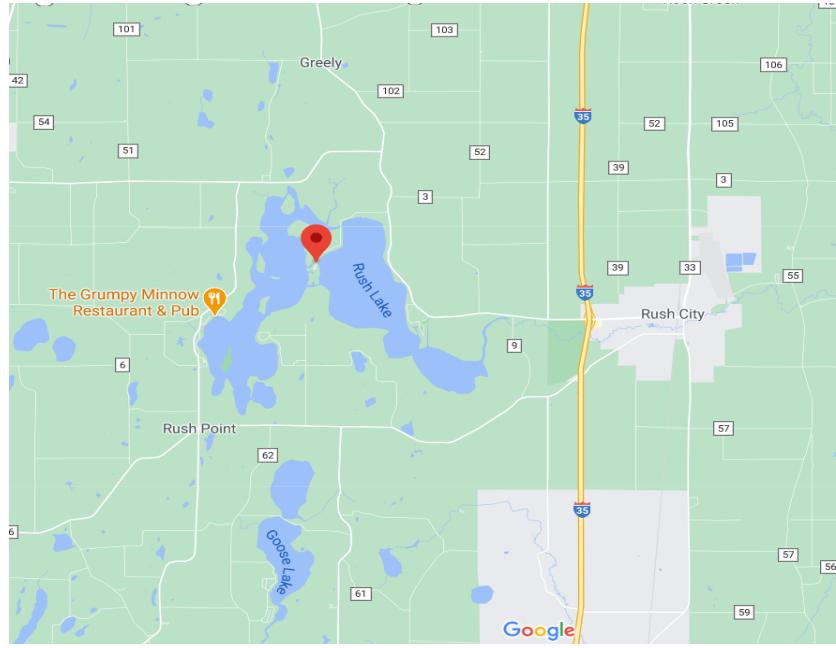
Emerald ash borers (EAB) are non-native invasive insects that threaten native ash trees. SCRA has teamed up with the National Park Service to monitor the likelihood of EAB presence in counties along the St. Croix. Recent findings have suggested that the super cooling point, or the temperature at which the insect will die (98%), is 30F below zero. Since weather stations may not be the best indicator of temperature in the forest, HOBO loggers, which are temperature/ light recording devices, were placed on, or around ash trees to see if EAB is exposed to lethal temperatures during the winter months. From Stillwater, MN to Gordon, Wisconsin, **HOBO loggers were placed at ten sites along the St. Croix River**. This data is used to determine the potential impact that EAB can establish in an area and survive. The results are provided to researchers at the University of Minnesota who are trying to develop controls. Riverway managers hope to find pockets of ash living areas that routinely get cold enough to kill the bugs, and start protections there. This study has been going on since the winter of 2014-15.



On the right, SCRA AIS Seasonal, Jeremiah places a temperature logger on an ash tree at Osceola Landing. Loggers were placed in forests throughout the Riverway at the locations on the map on the left (in yellow).

Phragmites Monitoring

Phragmites australis is an invasive, semi-aquatic, perennial grass native to Europe that is commonly found in wetlands, riparian areas, ditches, and other disturbed areas. Forming dense monocultures by reproducing prolifically and excreting toxins into surrounding soils. Invasive Phragmites crowds out native wetland vegetation and creates substandard habitat for native wildlife. SCRA monitored for invasive Phragmites in Fish and Nessel Townships located in northern Chisago County in early October. It is important to note that this project was focused on only invasive Phragmites populations growing directly along roadsides or readily visible from the road. Populations were identified using morphological characteristics, following the protocol developed by the Minnesota Aquatic Invasive Species Research Center (MAISRC) as part of their MNPhrag project. **In total, 1 previously unreported, invasive *Phragmites australis* populations were found** and full stem samples were collected and sent to MAISRC for identification verification. (Full report available upon request).



Top left: Picture of an invasive *Phragmites* ligule- a key characteristic in identifying native vs. invasive

Top right: SCRA AIS Seasonal, Jeremiah monitoring a stand of *Phragmites*

Lower left: Map of the only identified invasive *Phragmites* population in Nessel township

Lower right: The seed head of an invasive *Phragmites* plant

Youth Education and Outreach

AIS Education in the Schools

In 2020, SCRA continued its partnership with the Rivers Are Alive program to deliver AIS curriculum to 1st-12th graders. Due to COVID-19 and the inability to visit schools or take classes on field trips, efforts went towards the development of online/ virtual AIS resources. This included a professional pre-recorded video educating students in grades 3rd-6th about invasive species such as: zebra mussels, carp, Eurasian watermilfoil, curlyleaf pondweed, purple loosestrife and rusty crayfish. SCRA also offered virtual live classroom activities to grades 7th-12th in which students and teachers interacted with SCRA/NPS staff live to learn about aquatic invasive species and applied their knowledge in a game called, *AIS Jeopardy: A watershed in jeopardy*. Efforts were also used to develop and create invasive species field kits, these kits included a comprehensive ID guide, a lens to help identify species, and a nature journal/ field guide to record observations and take notes. These field kits will help students engage in the outdoors and apply their AIS knowledge learned in the classroom.



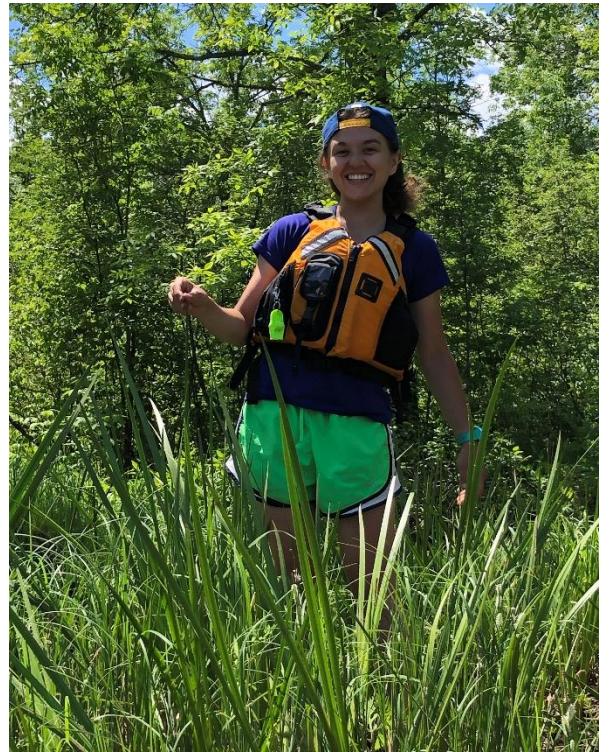
Adaptive Online Learning



AIS Internship Program

Two six-month seasonal staff served as AIS ambassadors to communities, river-based businesses, and Riverway boaters throughout the St. Croix watershed. Throughout the summer, these two incredible seasonals raised awareness about the threats and impacts of AIS, informed people how to prevent the spread of AIS, and increased SCRA's capacity to reach diverse audiences through AIS education. These activities and achievements are summarized below.

- **Total AIS seasonal hours – 821.50**
- Assisted in the development and creation of an online Rivers Are Alive invasive species curriculum
- **Inventoried 136 miles** of the Snake, Namekagon and St. Croix rivers for invasive species
- Sampled **37 lakes and river sites for zebra mussel larvae** and **20 lakes for spiny waterfleas**
- Helped produce two invasive species videos to educate the public, **reaching a total of 220 views**



General Community Outreach

Annual Educational Trainings



Project Riverine Early Detectors (RED):

Taught participants virtually which invasive species threaten local rivers, how to differentiate them from native look-alikes, and how to keep an eye out for them by canoe, kayak, or on foot.

*One virtual training in 2020 reached **13 participants**.*



Snapshot Day:

Learn to identify and search for invasive species including released aquarium and garden plants that could choke out our rivers and streams if undetected.

*One training in 2020 reached **5 participants**.*



AIS Starry Trek Day:

Starry Trek is a statewide event focused on searching for one of Minnesota's newest aquatic invasive species, Starry stonewort (and other invaders).

*One training in 2020 in Chisago County reached **12 participants***



Terrestrial Invasive Species Workshops & Trainings:

The St. Croix-Red Cedar CWMA put together hands-on reporting, management and control trainings. Areas of focus included learning about the threats of invasive species, exploring ways to incorporate invasive species considerations into management and harvest plans while getting hands-on experience using different control methods, including herbicide applications.

- *Buckthorn Herbicide Alternative Workshop (**54 Participants**)*
- *Citizen Based Monitoring Training: Virtual (**12 Attendees, 80 Views**)*
- *Invasive Species Fall Bike Tour (**7 Participants**)*

2020 Public Outreach

The SCRA invasive species program had to adapt and get creative once public outreach events got cancelled or rescheduled via an online platform. The Scenic Shorts video series was created and provides engaging invasive species education to the public on SCRA's YouTube channel. Three virtual Scenic Shorts have already been created, sharing vital information and resources to help prevent the spread of invasive species:

- [Lake Service Provider 101](#) (170 views - pictured to the right)
- [Purple Loosestrife](#) (51 views)
- [Garlic Mustard](#) (159 views)



SCRA's invasive species staff got the opportunity to help out at the Progressive Travel Miles of Smiles event on August 13th educating cognitively challenged adults about invasive species through a fun and engaging game of BINGO! (Event pictured on the left – 14 total attendees)

AIS Stakeholder Partnerships

Current members of the AIS Partnership include:

- St. Croix River Association
- Wisconsin Department of Natural Resources
- Minnesota Department of Natural Resources
- Polk County Land and Water Resources Department
- Burnett County Land and Water Conservation Department
- Washburn County Land and Water Conservation Department
- Local lake associations (Bone Lake, Sand Lake, Deer Lake, Pokegama Lake, Cross Lake, and more)
- Watershed Districts (Comfort Lake Forest Lake and Big Cornelian Marine)
- St. Croix Riverway Marina's (Sunnyside, Wolf, Bayport, St. Croix Marina and many more)
- And individual community members, *among others!*
- National Park Service
- University of Wisconsin Extension
- Sawyer County
- Bayfield County
- Pine County
- Chisago County
- Washington Conservation District

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