

# AQUATIC INVASIVE SPECIES

2020 ANNUAL REPORT  
St. Louis County, Minnesota



Norwegian Bay Public Access  
Lake Vermilion

# CONTENTS



*Life of Riley Resort, Lake Vermilion*



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St. Louis County Planning and Community Development

### Date

January 2021

Rev. 1.0

SOURCES: Content generated from grant recipients' project reports.

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# AIS — EXECUTIVE SUMMARY 01



## SUMMARY

Aquatic invasive species (AIS) threaten our waters. These non-native species harm natural resources, fishing, and cultural heritage, industries, agribusiness, recreation, and the economy. By addressing pathways through which AIS spread, it is possible to prevent, control, and minimize impact of AIS within the county and limit their spread elsewhere.

- **Projects:** Each grant year begins in the early spring which allows recipients to plan for the year ahead. The majority of prevention work is completed during the recreational boating season from fishing opener in May to Labor Day weekend in September. The fall and winter months allow recipients to wrap up their prevention work, analyze the data they have collected, submit year-end reports, and begin their pre-planning proposals for the following year. This report will detail AIS prevention accomplishments through lake association prevention programs, habitat awareness, species control, early detection, watercraft inspections and decontaminations, education, and public outreach that are ongoing and continue from year to year. Projects are implemented throughout the County and their effects have direct impacts within the county.
- **Funds Since Program Inception:** Since 2014, the County has received \$5,239,540 from the State to be used towards AIS prevention. Each year the County awards these funds to organizations that propose and implement projects that address the associated actions in the St. Louis County AIS Prevention Plan to prevent, slow, and minimize the spread of AIS.
- **Leveraged Dollars:** In the 2019 and 2020 program years, St. Louis County awarded \$657,000 and \$661,962 respectively to grant recipients for AIS prevention. Grant recipients were also able to leverage \$538,826 in additional funding towards their projects provided by other stakeholders, partners, through in-kind volunteer hours worked, and other sources.
- **Lakes Monitored:** The number of lakes with watercraft inspectors increased from 8 in 2019, to 14 in 2020. The total number of access covered by inspectors is at 42 (30 public accesses, 12 private access). These access sites are also being monitored by AIS detectors conducting aquatic plant surveys. Additionally, the St. Louis County Sheriff are conducting AIS patrols covering up to 83 different lakes and rivers at public access sites throughout the County. During 2019 and 2020 seasons, no new infestations were discovered.
- **Watercraft Inspections:** Outside of the DNR's efforts, there are three additional organizations conducting watercraft inspections throughout the county. Inspection numbers showed the lakes were busier in 2020 compared to 2019, believed to be because the public could participate in boating and angling while safely distancing. The lakes provided a good escape for locals and visitors to enjoy the outdoors during the COVID-19 pandemic. In 2019, there were 22,000 watercraft inspections performed and in 2020, the number of inspections increased to 29,561.
- **Outreach:** From community outreach events to print, digital, and media advertising with clear and consistent messaging produce millions of impressions each year on AIS prevention best management practices.

# 02 BACKGROUND — ABOUT STATE PROGRAM AID



## ABOUT STATE PROGRAM AID

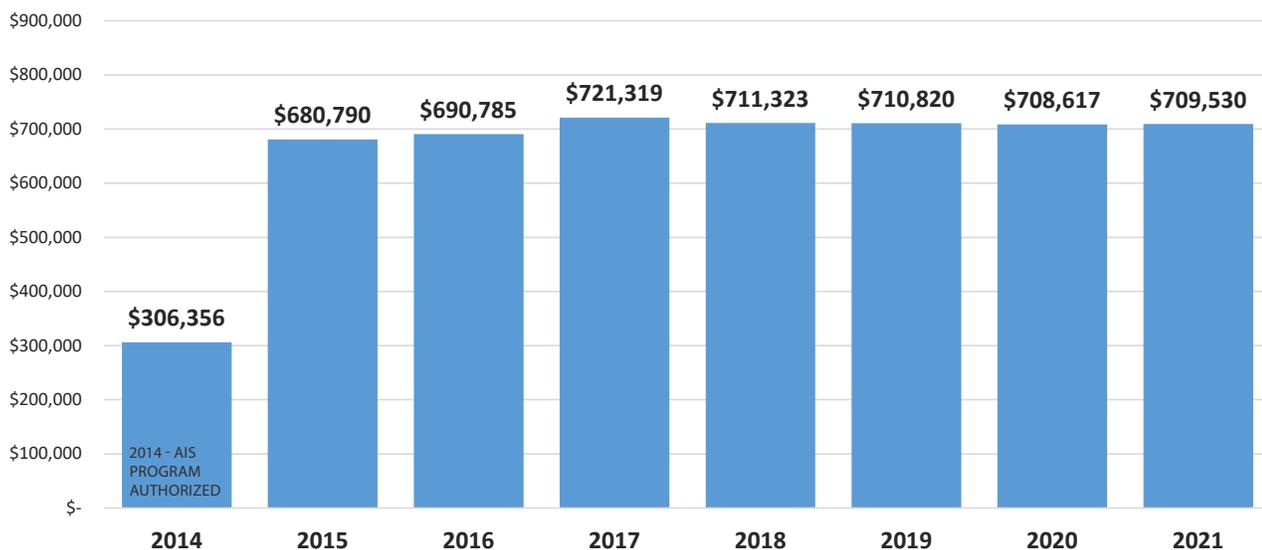
Beginning in 2014, the Minnesota State Legislature (Law Chapter 308) authorized funding to all Minnesota counties to implement plans to prevent, slow and minimize impacts of AIS. The purpose of these funds is to “prevent the introduction or limit the spread of AIS at all access sites within the county” (MN Statutes 477A.19). In 2014, \$4.5 million was appropriated for 2014 and \$10 million in 2015 annually thereafter. The funds under this program are allocated to counties based on 50 percent of each county’s share of watercraft trailer launches and 50 percent on county’s share

of watercraft trailer parking spaces.

St. Louis County manages its AIS Prevention Program as a grant program. Each year, the County invites and encourages organizations, through an application proposal process, to address AIS issues with multidisciplinary, integrated solutions based on science, related to natural resources sustainability, and social and economic concerns. The County supports projects that address one or more of the seven categories and associated actions outlined in the St. Louis County AIS Prevention Plan.

## STATE OF MINNESOTA AIS FUNDING ALLOCATION

TO ST. LOUIS COUNTY BY YEAR



Source: State of Minnesota

# WHAT IS AIS — BACKGROUND 02

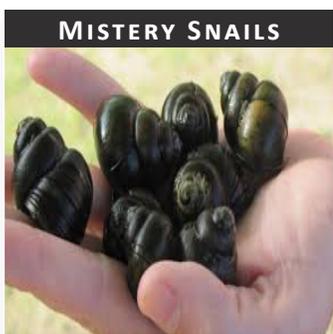
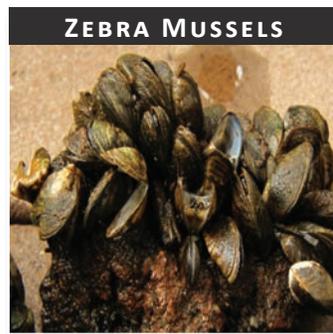
## What are Aquatic Invasive Species?

Aquatic invasive species (AIS) are non-native aquatic organisms that invade water beyond their natural and historic range that may harm economic, environmental or human health and can threaten our natural resources.

- Definition from MN Statute Chapter 84D



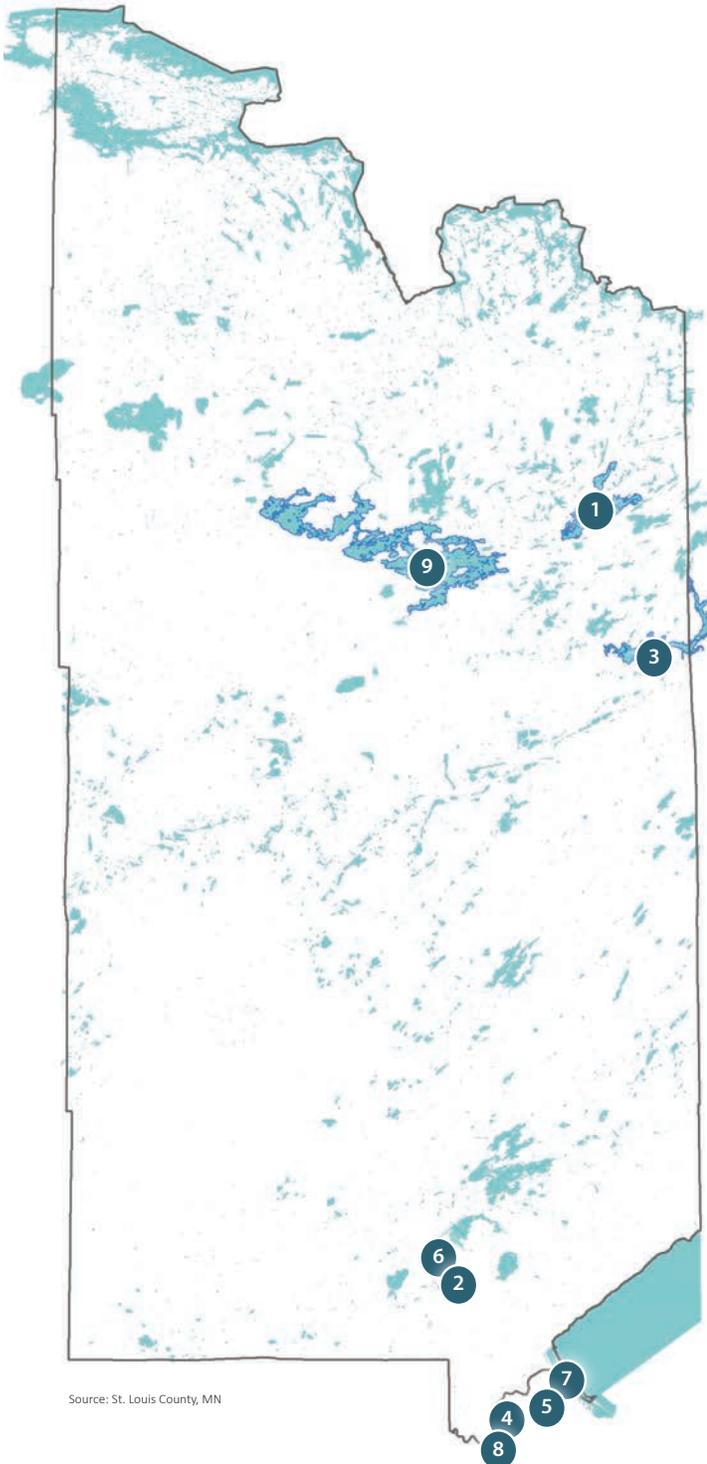
### AQUATIC INVASIVE SPECIES OF CONCERN



# 03 AIS GRANT RECIPIENTS — LOCATIONS

## AIS GRANT RECIPIENTS - LOCATIONS

ST. LOUIS COUNTY, MN



- 1 Burntside Lake Association**  
Burntside Lake AIS Prevention Program
- 2 Canosia Township**  
Pike and Caribou Lakes Inspection Program
- 3 City of Babbitt**  
Birch Lake AIS Prevention Project
- 4 City of Duluth**  
AIS Prevention at Munger Landing
- 5 Community Action Duluth**  
St. Louis River Estuary  
Non-native Phragmites Control
- 6 Grand Lake Township**  
Caribou Lake Inspection Program  
Birch Point Access
- 7 Izaak Walton League of America**  
Rapid Response Mobile Ballast Water  
Treatment for Lake Superior Harbors
- 8 St. Louis River Alliance**  
1. Non-native phragmites control  
2. AIS Sentry Program
- 9 Vermilion Lake Association**  
Lake Vermilion AIS Prevention Program

### County Wide Projects

#### North St. Louis Soil & Water Conservation District

Watercraft Inspection and Decontamination

#### Wildlife Forever

Clean Drain Dry Education and Outreach Campaign

#### Natural Resources Research Institute (NRRI)

1. Baseline surveys and geospatial modeling  
-George Host
2. AIS Introduction Risk Assessment  
-Josh Dumke
3. What gear on your boat is most likely to spread spiny water flea?  
-Donn Branstrator

# ORGANIZATIONS — AIS GRANT RECIPIENTS 03

## AIS GRANT RECIPIENTS- ORGANIZATIONS

St. Louis County manages its AIS Prevention Program as a grant program. Each year, the County invites and encourages organizations, through an application proposal process, to address AIS issues with multidisciplinary, integrated solutions based on science, related to natural resources sustainability, and social and economic concerns. The County supports projects that address one or more of the seven categories and associated actions outlined in the St. Louis County AIS Prevention Plan.

The County supports implementation of projects that address one or more of the following seven actions:

1. Assess county resources and risks for AIS introduction and spread.
2. Increase resources for county-wide education and enforcement.
3. Increase public awareness and participation in prevention.
4. Raise available resources and leverage partnerships.
5. Broaden knowledge of and participation in early detection and rapid response activities.
6. Manage existing populations of AIS.
7. Address specific pathways for AIS introduction.

AIS GRANT RECIPIENTS ST. LOUIS COUNTY, MN									
Organization	2014	2015	2016	2017	2018	2019	2020	Total	
 Burntside Lake Association			\$189,857	\$43,075	\$26,000	\$16,000	\$25,100	\$300,032	
 Canosia Township			\$16,000	\$55,114	\$22,500	\$15,000	\$25,000	\$133,614	
 City of Babbitt	\$55,114		\$50,000				\$32,625	\$137,739	
 City of Duluth						\$10,000		\$10,000	
 Community Action Duluth				\$45,000		\$60,000		\$105,000	
 Grand Lake Township					\$14,900	\$15,000	\$20,100	\$50,000	
 Izaak Walton League of America	\$50,000				\$50,000			\$100,000	
 University of Minnesota Duluth		\$126,281		\$95,387				\$221,668	
 North St. Louis SWCD	\$60,000			\$281,600	\$391,350	\$378,000	\$398,600	\$1,509,550	
 St. Louis County Sheriff			\$30,000	\$40,000	\$40,000	\$40,000	\$30,000	\$180,000	
 St. Louis River Alliance		\$118,380		\$46,900				\$165,280	
 Minnesota Sea Grant	\$11,754		\$24,817	\$19,659	\$22,248	\$20,000	\$20,000	\$118,478	
 Vermilion Lake Association		\$23,441	\$48,380	\$107,000	\$59,000	\$36,000	\$62,537	\$336,358	
 Wildlife Forever	\$107,000	\$102,500	\$90,177		\$114,000	\$75,000	\$98,000	\$586,677	
<b>TOTALS</b>	<b>\$283,868</b>	<b>\$370,602</b>	<b>\$449,231</b>	<b>\$733,795</b>	<b>\$686,898</b>	<b>\$665,000</b>	<b>\$711,962</b>	<b>\$3,774,396</b>	

Source: St Louis County, MN

# 04 BUILDING PARTNERSHIPS



Boat Inspection, Pehrson Lodge Resort on Lake Vermilion. Photo credit: Initiative Foundation

## BUILDING PARTNERSHIPS

The success of St. Louis County's AIS program can really be attributed to all the partnerships that have been created and leveraged with each other and other organizations engaged in AIS prevention. Interestingly, nearly all of the recipients of the County AIS Prevention funding have leveraged partnerships with each other. It is highlighted many times within this report. Additionally, the grant recipients have also partnered with many other organizations that do not receive county funding, but are actively engaged in AIS prevention. The building and leveraging of these great partnerships has really been the backbone for the success of St. Louis County's AIS Prevention Program.

Year after year, creating and leveraging partnerships with other organizations while trying to reach a common goal has been very effective and a key aspect which makes the entirety of the St. Louis County AIS Prevention Program a success. Credit goes out to all grant recipients, in that many are partnering with each other and other organizations that have common interest in AIS prevention.

Additional partners that participated in AIS related activities are but not limited to:

- AIS Detector Volunteers
- CD3 Waterless Cleaning Systems
- Duluth CISMA
- Duluth Stream Corps
- Duluth-Superior Port Authority
- Ely Area Invasives Team
- Ely Chamber of Commerce
- Ely Community Resource
- Fayal Township
- Fishing Tournament Directors
- Fortune Bay Resort and Marina
- Great Lakes Indian Fish and Wildlife Commission
- Initiative Foundation
- Kabetogama Lake Association
- Koochiching SWCD
- Lake County SWCD
- MN Conservation Corps
- MN DNR
- MAISRC
- MN Lakes & Rivers
- National Park Service
- Natural Resources Research Institute (NRRI)
- Lake Superior Zoo
- Pelican Lakeshore Owners Association
- RMB Environmental
- St. Louis County Sheriff
- St. Louis River Alliance
- Vermilion Community College
- Vermilion Resort Association
- White Iron Chain of Lakes Association
- Wisconsin DNR
- 1854 Treaty Authority

# BUILDING PARTNERSHIPS 04



Gruben's Marina Private Access on Lake Vermilion. Photo credit: Vermilion Lake Association

## PRIVATE ACCESS PARTNERSHIPS

A one of a kind partnership has developed over the years with Vermilion Lake Association, North St. Louis SWCD and private resort owners. In 2020, 13 resorts, campgrounds, and marinas engaged in watercraft inspections at their private access. Eleven partners at Lake Vermilion and two partners at Pelican Lake completed 1,640 inspections at their private accesses. All for good reason, data analysis from previous years has indicated that boats using these accesses are more likely to come from lakes outside the region that are infested with AIS. North St. Louis SWCD has been providing resorts with tablets to complete watercraft inspection surveys, and compensating resorts for every inspection completed.

Lake	Resort Name
Vermilion	Aronson Boat Works
Vermilion	Forest Lane Resort
Vermilion	Ludlow's Island Resort
Vermilion	Pehrson Lodge
Vermilion	Shamrock Marina
Vermilion	Timbuktu Marina
Vermilion	White Eagle Resort
Vermilion	Your Boat Club
Pelican	Aspen Resort & Campground
Pelican	Cabin O' Pines Resort
Pelican	Grey Wold Lodge
Pelican	Pine Acres Resort

Lake	Resort Name	# of Inspections
Vermilion	Gruben's Marina	1
Vermilion	Pike Bay Lodge	1
Vermilion	Miskego Point Resort	23
Vermilion	Spring Bay Resort	43
Vermilion	Glenmore Resort	64
Vermilion	Vermilion Houseboats	89
Vermilion	Life of Riley Resort	99
Vermilion	Retreat Lodge	191
Vermilion	Whispering Winds Resort	204
Vermilion	Head-O-Lakes Resort	206
Vermilion	Fortune Bay Resort Casino	591
Pelican	Shangri-La Resort	38
Pelican	Birch Forest Lodge	90
TOTAL		1,640

Additionally, there are 12 other private access owners that have varying ability to participate in inspections, and provide AIS prevention information to their guests. Eight partners at Lake Vermilion and four partners at Pelican Lake provide their guests AIS updates and informational pamphlets. Some of these partners do indeed inspect their guest's watercraft, however don't record their inspections on the survey, and therefore are not represented in the data. Nonetheless, the additional presence and awareness is a win.

# 05 ACCOMPLISHMENTS — MEASURABLE SUCCESS



Head of the Lakes Bay, Lake Vermilion

Category	2019	2020	Metrics
 <b>AIS Prevention Aid Used</b>	<u>\$600,820</u> <u>\$50,000</u>	<u>\$756,962</u> <u>\$50,000</u>	AIS Prevention Aid used in calendar year. Saved in a contingency fund.
 <b>People Doing AIS Work</b>	<u>30</u> <u>26</u> <u>20</u> <u>44</u> <u>17</u> <u>\$524,100</u> <u>24</u> <u>4,339</u>	<u>27</u> <u>16</u> <u>6</u> <u>55</u> <u>8</u> <u>\$442,897</u> <u>16</u> <u>2,707</u>	Full-time staff dedicated to AIS work Part-time staff dedicated to AIS work Seasonal staff with AIS duties (other than inspectors) Level 1 Inspectors Level 2 Inspectors Spent on staff wages Volunteers conducting AIS work Volunteer hours served
 <b>Partnerships</b>	Organizations engaged and/or actively conducting AIS work using AIS Prevention Aid (Grant Recipients) <u>2</u> <u>4</u> <u>N/A</u> <u>5</u> Partnerships leveraged by grant recipients with other organizations <u>6</u> <u>20</u>	<u>2</u> <u>1</u> <u>N/A</u> <u>4</u> <u>6</u> <u>33</u>	Lake Associations Conservation non-profits and outdoor groups (angling, hunting, paddling, sailing, etc.) Businesses Local Governments Grant recipient to grant recipient partnerships Organizations engaged and/or actively conducting AIS work
 <b>Funds Distributed &amp; Leveraged</b>	<u>\$657,000</u> <u>10</u> <u>\$275,826</u> <u>8</u> <u>\$105,000</u>	<u>\$661,962</u> <u>7</u> <u>\$263,000</u> <u>5</u> <u>\$95,000</u>	In grants awarded (AIS Prevention Aid to other organizations) Organizations awarded grants In additional funds leveraged Organizations contributing additional funds Administrative Funding *
 <b>Communities Engaged</b>	<u>20</u> <u>5,355</u> <u>1</u> <u>115</u>	<u>3</u> <u>1,169</u> <u>N/A</u> <u>N/A</u>	Events held about AIS or that included AIS topics Residents and visitors reached about AIS during events In-school presentation(s) about AIS Children taught about AIS

\*Includes contract with University of Minnesota Sea Grant for outreach, prevention, and technical assistance, funding to St. Louis County Sheriff Water and Launch Patrol for AIS outreach efforts, and Planning and Community Development for planning and program administration.

# MEASURABLE SUCCESS 05

Caribou Lake

Category	2019	2020	Metrics
 <b>Watercraft Inspected</b>	<u>22,000</u>	<u>29,561</u>	Inspections Performed
	<u>14,000</u>	<u>13,804</u>	Hours of inspections performed
	<u>34</u>	<u>42</u>	Accesses covered by inspectors
	<u>22</u>	<u>30</u>	Public Accesses
	<u>12</u>	<u>12</u>	Private Accesses
	<u>8</u>	<u>14</u>	Waterbodies covered by inspectors
	<u>98.7%</u>	<u>97%</u>	% of watercraft recorded as arriving with drain plugs out
	<u>5</u>	<u>5</u>	Decontamination units in operation
	<u>125</u>	<u>1,640</u>	Boaters engaged by AIS Volunteers/Ambassadors at water accesses
 <b>Law Enforcement Supported</b>	<u>23</u>	<u>16</u>	Local law enforcement officers trained on AIS laws
	<u>23</u>	<u>16</u>	Local law enforcement officers conducting AIS work
	<u>592</u>	<u>487.5</u>	Hours law enforcement officers conducting boat checks
	<u>444</u>	<u>322</u>	Boaters checked by local law enforcement
	<u>98.2%</u>	<u>99.7%</u>	% of boaters in compliance with AIS laws*
*AIS prevention aid funds used by the St. Louis County Sheriff Department to increase water and landing patrols for AIS purposes. Watercraft and AIS enforcement will remain the primary function of the DNR.			
 <b>Monitoring Conducted</b>	<u>2</u>	<u>11</u>	Lakes and rivers surveyed for AIS
	<u>N/A</u>	<u>1</u>	Zebra mussel settling plates deployed
	<u>N/A</u>	<u>1</u>	Water bodies where veliger tows were taken
	<u>180</u>	<u>132</u>	Aquatic plant surveys conducted (early detection surveys w/ rake toss)
	<u>28</u>	<u>12</u>	Volunteers trained and/or active AIS Detectors
	<u>6</u>	<u>N/A</u>	People participated in the MAISRC "Starry Trek" event
 <b>New Infestation Response Planning</b>	<u>N/A</u>	<u>N/A</u>	Spent on new infestation response(s)
	<u>N/A</u>	<u>N/A</u>	New infestation response(s) coordinated
	<u>0</u>	<u>0</u>	New infestation discovered
 <b>Invasive Aquatic Plant Management (IAPM)</b>	<u>0</u>	<u>0</u>	Water bodies with IAPM activities (funded with AIS Prevention Aid)*
	*A 2 acre curly-leaf pondweed infestation on Lake Vermilion is being monitored. It is not expanding geographically and not overwhelming native vegetations. No chemical treatment is planned.		
 <b>Marketing &amp; Outreach for Behavioral Change Clean Drain Dry Initiative</b>	<u>6</u>	<u>6</u>	Highway billboards at targeted locations
	<u>1,564</u>	<u>732</u>	Radio public service announcement airings
	<u>865</u>	<u>742</u>	Television commercial PSA airings
	<u>185,421</u>	<u>141,000</u>	Television PSAs on streaming services
	<u>35</u>	<u>43</u>	Print advertising ads
	<u>13.2 M</u>	<u>6.6 M</u>	Total Impressions (Million)

# 06 PROJECTS — LAKE ASSOCIATIONS



*Underwater Early Detection, Burntside Lake. Photo Credit: VCC / BLA Sentry Program Students*

## LAKE ASSOCIATION AIS PREVENTION PROGRAMS

Burntside and Vermilion Lake Associations have very well established AIS prevention programs for their respective lakes. Prevention efforts have been built on everything learned from one year to the next. Their AIS prevention programs are a multi-faceted and comprehensive effort that focus on watercraft inspection and decontamination, habitat evaluation and risk assessment, public awareness and education, early detection and monitoring, AIS management and control, and building of partnerships. They are model programs that set the bar for AIS prevention work at the lake association level.

### BURNTSIDE LAKE ASSOCIATION

#### Inspections and Decontaminations

Burntside Lake Association (BLA) continues to partner with North St. Louis SWCD for watercraft inspections and decontamination on Burntside Lake and the Ely area. Each year BLA evaluates the inspection data and has determined the inspections a success. BLA continues to build on their local partnerships and have successfully provided the 3rd Enhanced Inspection Training Class for all SWCD inspectors. The training complements the DNR Level 1 / Level 2 inspector training. The training concentrates on more detailed AIS identification specific to the region, customer service, and tools for managing interactions with boaters. This training has been instrumental in giving boat inspectors the skill to interact with the public in a professional and respectful manner.

#### Education and Awareness

BLA has also partnered with Wildlife Forever with the broadcasting and advertisement of the Clean Drain Dry message and distribution of materials to local resorts and retailers. They have also partnered with the Ely Chamber of Commerce to participate in raising the public awareness in AIS prevention and distribution of AIS prevention materials to Chamber members and citizens throughout the Ely area. BLA continues to send out awareness letters to Burntside

Lake residents reminding them of their role in helping prevent the introduction and spread of AIS.



*Clean, Drain, Dry Messaging, Wildlife Forever*

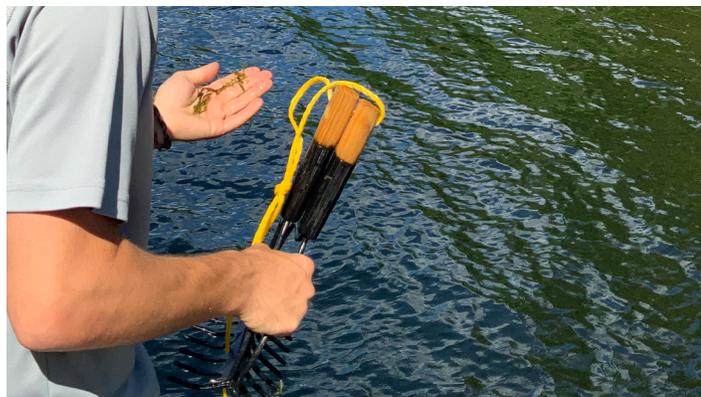
#### Monitoring and Early Detection

A major emphasis for BLA has been the expansion of their Sentry Program. The Sentry Program includes monitoring 11 high risk AIS hot spots on Burntside Lake on a monthly basis. An additional eight volunteers were trained as sentries on Burntside Lake and were assigned a specific area to monitor. This has increased the number of volunteer sentries on the lake to 20. Another addition in lake monitoring and early detection has been the use of an underwater drone. Burntside Lake is a very clear lake and ideal for viewing by a



*Trident Underwater Drone, Used by VCC / BLA Sentry Program Photo Credit: Interesting Engineering*

drone to better evaluate the aquatic plant life in littoral areas of the lake. In 2019 and 2020, no infestations were found. The goal of the sentry program is to ensure a rapid response to AIS management and control if a new AIS is detected on the lake.



*Sampling Rake Early Detection  
VCC / BLA Sentry Program, Burntside Lake*

## Community Partnerships

BLA has really utilized the use of community partnerships in their AIS prevention efforts. They continue to work with Vermilion Community College by providing enhanced inspector training and sentry program work. They have leveraged a partnership with the Ely Chamber of Commerce to distribute AIS materials provided by Wildlife Forever. They have even utilized the work of Ely Community Resource for rusty crayfish trapping in the Burntside River. They have also worked together with Lake County SWCD through jointly funding spiny waterflea monitoring in Burntside Lake. These partnerships remain vital to BLA's success year in and year out.

## VERMILION LAKE ASSOCIATION

### Habitat Evaluation and Risk Assessment

Vermilion's water chemistry sets it apart from most MN lakes. From previous habitat evaluation and water sampling, Vermilion Lake has low calcium and low pH which gives low risk for zebra mussels. However, the recent discovery of zebra mussel veligers found at Lake of the Woods (also known to have low calcium and pH) re-opens the question on whether zebras might get a foothold on Vermilion Lake. East Two River, which empties into Vermilion Lake's east basin, has widely varying calcium concentrations which conceivably could support a local zebra mussel infestation. Vermilion Lake Association (VLA) began veliger sampling in 2020 at the outlet of East Two River to monitor the possible presence of zebra mussel veligers in the water system. Samples were tested by RBM Environmental Labs, which reported no evidence of veligers.



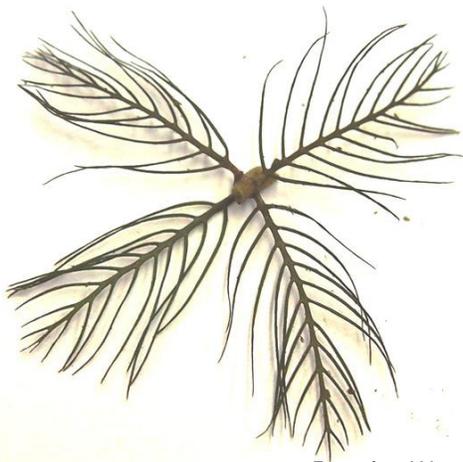
*Veliger Sampling on Vermilion Lake*

# 06 PROJECTS — LAKE ASSOCIATIONS



Resort Owner, Head-O-Lake Resort on Lake Vermilion

Research is underway on hybrids between invasive Eurasian watermilfoil and native northern watermilfoil. Anecdotal reports suggest increased invasiveness and evidence of herbicide resistance. To better understand the risk of Eurasian or Hybrid watermilfoil, VLA asked RMB Environmental Labs to conduct a research study to compare the Eurasian watermilfoil infestation at the Gilbert Pit for evidence of northern or hybrid watermilfoil. Research is ongoing and results are pending. At this time, native watermilfoil co-exists with other native vegetation and there is no known Eurasian or Hybrid milfoil present.



Eurasian Watermilfoil Sample

The key to an efficient inspection program is deploying inspectors at the busiest accesses with the ‘riskiest’ boaters. Through traffic analysis and inspector surveys, VLA and NSLSWCD are analyzing the data to determine which accesses have higher risk levels. Some accesses, like Everett Bay, resemble a private resort access at times. Others, like Stuntz Bay, are used predominantly by local Vermilion boats. The risk level will be used to further improve staffing efficiency.



Private Resort Access Signage  
Spring Bay Resort on Lake Vermilion

## Watercraft Inspection and Decontamination

VLA continues to partner with NSLSWCD in its watercraft inspections and decontaminations. They are working together to improve the inspection process and extend into new areas. Inspectors have been present at all 17 public accesses and have extended into 11 private accesses at resorts, campgrounds, and marinas.

Private access inspections continued in 2019 and 2020. Early analysis from inspector surveys showed that boats belonging to resort guests have an elevated risk, as they are 20% more likely to have come from other lakes with known invasive species. VLA is determined to reach a 100% inspection rate for incoming boats at resorts.

Fishing tournament boat inspections have been a special



*Early Detection, Lake Vermilion*

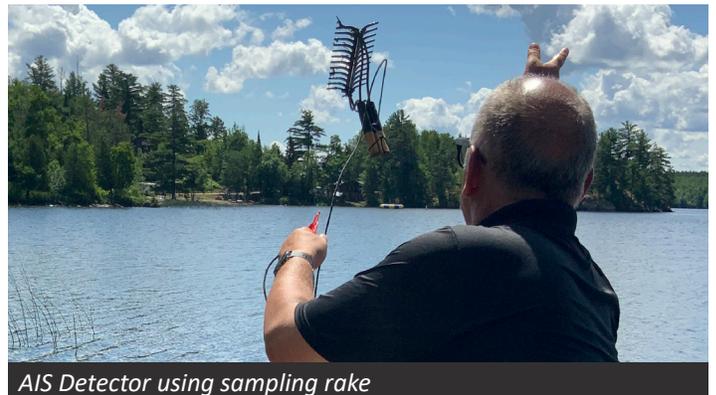
challenge. Lake Vermilion hosts up to eight fishing tournaments throughout the year and attract fishermen from all over the state and across the country. The key is inspecting participant boats when they first arrive for “pre-fishing” the week prior to the tournament. Cooperation by tournament directors has been excellent, achieving near 100% inspection rates.

## Education & Awareness

All who use Lake Vermilion play an important role in protecting it from AIS. Building watercraft users understanding of AIS with self-inspection skills and stewardship is vital. VLA reaches out to them in many ways; through business partners such as neighborhood restaurants and resorts by offering AIS distribution materials; at public events; hosting an AIS information table at their local boat show at Lake Vermilion; through a quarterly newsletter with distribution at local businesses and resorts; on their website and Facebook page; and through their involvement with other civic organizations, boards, and committees.

## Early Detection & Population Management

In 2019, VLA expanded its sentry program to include all 17 public accesses, where each is monitored once a month during June, July, and August. In 2019 and 2020, no new invasives were found. In 2020, the sentry program was expanded again to include early detection monitoring at participating resorts.



*AIS Detector using sampling rake*

VLA and RMB Environmental Labs are working together to check for undiscovered Eurasian/hybrid watermilfoil and starry stonewort. In July 2019, they spent two days in weed friendly bays and high traffic accesses. No infestations were found.

The DNR has been monitoring the lake’s known curly-leaf pondweed infestation at Everett Bay. While the two acre infestation changes shape a bit each year, it is not expanding or overwhelming native vegetation. No chemical treatment is planned.

## Partnership Development

As noted, VLA has strong AIS partners at all levels of their AIS Prevention Program with each one playing a vital role. VLA has also been working statewide to influence AIS research direction and AIS prevention ideas among leaders in the field. VLA members serve on the MAISRC Advisory Board and the Walleye Advisory Committee. St. Louis County and VLA are both benefitting from the accelerated learning.

# 06 PROJECTS — WATERCRAFT INSPECTIONS



*NSLSWCD Watercraft Inspection, Hoodoo Point Landing on Lake Vermilion*

## WATERCRAFT INSPECTION AND DECONTAMINATION

Watercraft inspection and decontamination continues to be one of the most important tools to prevent the spread of new infestations. North St. Louis Soil and Water Conservation District (NSLSWCD), Canosia Township, and Grand Lake Township have been leading the watercraft inspection and decontaminations on lakes in St. Louis County. In 2019, inspections were happening at 34 (22 public and 12 private) accesses on eight different lakes. In 2020, it expanded to 42 accesses (30 public and 12 private) on 14 different lakes. Again, a lot of the success can be attributed to the partnerships that have developed.

## CANOSIA AND GRAND LAKE TOWNSHIPS

### Pike & Caribou Lakes Inspections

Outside the efforts of NSLSWCD, Canosia and Grand Lake Townships continue to coordinate inspections and education on Pike and Caribou Lakes. Pike Lake was designated as a zebra mussel infested water in 2009. Its close proximity to St. Louis River Estuary, a source of multiple AIS species, and the high frequency of use by recreational boaters in the Duluth area poses a risk for transmission of additional species. Caribou Lake does not have any AIS, but is susceptible to the same risk at Pike Lake. Canosia Township is managing the busy Carmen's Way public access on Pike Lake and the Holly Ln access on Caribou Lake. In 2019 and 2020, inspectors logged a total of 2,924 inspection hours from fishing opener to Labor Day of each year.

Grand Lake Township is managing the Birch Point access on Caribou Lake. In 2019 and 2020, inspectors and supervisor inspector logged 2,486 hours and completed 2,552 watercraft inspections. During the inspections, no AIS were found on boats exiting the lake.



*Pike Lake Public Access CD3 Signage Vermilion*

# WATERCRAFT INSPECTIONS — PROJECTS 06



NSLSWCD Watercraft Inspection, Black Duck Bay Landing on Lake Vermilion

## NORTH ST. LOUIS SWCD Inspections by the Numbers

Outside of the DNR, NSLSWCD coordinates the largest in the state inspection and decontamination program for the northern region of St. Louis County. The District partners with multiple organizations to get the job done. Every year they hire between 40-50 Level 1/Level 2 inspectors. In 2019, they were able to complete 20,847 inspections at 29 water accesses on six different lakes. This included 18,574 inspections at 17 public accesses, and 2,273 inspections at 12 private accesses. In 2020, the District increased their outreach of the program and completed 25,301 inspections at 39 water accesses on 12 different lakes. The District managed inspections, decontaminations, and public education on Bear Island, Birch, Burntside, Crane, Ely, Gilbert-Pit, Johnson, Kabetogama, One

Pine, Pelican, Shagawa, and Vermilion Lakes.

### Risk Analysis

A Risk Assessment was conducted based on collected survey data at both public and private accesses. The percent of boats arriving from out of state is significantly higher at Pelican (56.25%) and Vermilion (32.43%) private accesses. The next highest percent is Pelican public accesses (18.27%). The percent of boats that should be decontaminated is highest at Vermilion private accesses (17.99%), then Pelican public accesses (14.51%), followed by Ely Lake public accesses (12.67%). This risk assessment helped to determine where to deploy inspectors and decontamination units in 2020, and where to emphasize private access partnerships.

2019 St. Louis County Watercraft Inspection and Decontamination Summary									
Number of Inspection: 20,847					Hours: 11,547.4				
Location	Total Number of Inspections	Surveyed 5x or more	Spoke to Inspector within last month	Same Last Lake	Same Next Lake	Species Found Entering	Drain Plug Violation	Arriving from Out of State	Should get Decon
Burntside	1,696	13.95%	40.39%	50.47%	51.83%	0.05%	0.37%	16.76%	10.79%
Ely	754	13.75%	42.40%	59.24%	59.53%	0.20%	4.08%	3.85%	12.67%
Gilbert	221	11.76%	63.80%	43.12%	53.29%	0.65%	0.65%	1.81%	6.28%
Pelican	1,137	14.57%	38.96%	46.27%	42.39%	1.03%	1.96%	18.27%	14.61%
Pelican Private	96	0.00%	39.38%	8.13%	3.75%	0.63%	0.00%	56.25%	7.78%
Shagawa	1,426	31.14%	47.05%	66.39%	69.70%	0.12%	0.60%	12.13%	9.68%
Vermilion	13,340	22.11%	41.14%	60.54%	63.16%	0.97%	2.53%	11.41%	5.17%
Vermilion Private	2,177	4.05%	48.38%	41.52%	38.67%	0.18%	0.17%	32.54%	17.99%
<b>TOTAL</b>	<b>20,847</b>	<b>13.92%</b>	<b>45.19%</b>	<b>46.96%</b>	<b>47.97%</b>	<b>0.48%</b>	<b>1.29%</b>	<b>19.13%</b>	<b>10.62%</b>

Note: The District observed a 98.7% compliance with the drain plug law.

# 06 PROJECTS — WATERCRAFT INSPECTIONS



*NSLSWCD Watercraft Inspection, Hoodoo Point Landing on Lake Vermilion*

## Traffic Analysis

Motion censored trail cameras were used at public accesses to count boat traffic. After the data analysis was compiled, traffic forecasts were made based on busy days, busy times, and sunrise and sunset times. Traffic forecasts were then used to determine when and where to schedule inspectors to most efficiently staff public accesses. The goal for each access was to perform no less than 1.5 inspections per hour. By scheduling inspectors using the traffic forecasts, there was an average of 1.61 inspections per hour. The traffic analysis proved to be a great success that really optimized the use of AIS funds. The District continues to use traffic analysis approaches to efficiently staff public water accesses as the outreach of their inspection program grows to an increasing number of lakes.



*VLA member checking trail camera photos used for traffic analysis on Lake Vermilion*



*Watercraft Inspection Tablet usage*

## Private Access Partnerships

In 2019 and 2020, 13 resorts, campgrounds and marinas were engaged in watercraft inspections at their private access. Eleven partners at Lake Vermilion and two partners at Pelican Lake have completed 3,656 inspections. Private access partners have varying abilities to provide staff for inspections. However, once staff are certified they are given inspection equipment, including a tablet to collect survey data. Resorts utilizing a tablet to record inspections have an option to be paid \$7 per inspection uploaded. Most partners take this incentive in order to cover the costs of having a staff person conduct inspections.

## Fishing Tournament Partnerships

The District collaborated with the DNR, 1854 Treaty Authority, and VLA to work with fishing tournament directors to strive for a 100% inspection rate of all tournament boats prior to their launch into Lake Vermilion. For each tournament, the District provided an inspection and decontamination schedule for pre-fishing days and tournament day. Tournament anglers received AIS rules and a compliance certification form. All participant boats were required to obtain an inspection, and submit the completed form. Some challenges persisted, however there was a strong sense that participants are complying and have favorable behavior and support towards AIS prevention.



*Private Resort Access Signage  
Life of Riley Resort on Lake Vermilion*



*NSLSWCD Watercraft Decontamination, Hoodoo Point Landing on Lake Vermilion*

## DECONTAMINATION

All five decontamination units were placed at public accesses throughout 2019 and 2020. The number of decontaminations in 2020 dropped to 126, in 2019 dropped to 241, from 546 (44%) in 2018 and from 594 (40%) in 2017. The reasons for the decline in 2020 was related to not having enough level 2 inspectors to operate the decontamination units. This was because level 2 training was delayed until late into the season due to COVID-19 restrictions.

Prior to 2020, the decline in decontaminations were unclear despite analysis that looked at inspector surveys, traffic

patterns, and inspector schedules. However, similar declines in decontamination are being observed by different agencies across Minnesota. The majority of decontaminations conducted in 2019 were of exiting boats. However, with the goal of protecting lakes that have no, or few existing AIS, the 2020 target majority included entering decontaminations. Community based social marketing initiatives were planned and implemented in 2020 to influence behavioral change and increase the number of decontaminations. These behavioral change initiatives will continue into the 2021 season.



*Decontamination Station Signage, Community Based Social Marketing*

# 06 PROJECTS — CD3 WATERLESS CLEANING



Birch Lake CD3

## OVERVIEW

Traditionally, St. Louis County has supported projects that include the installation of CD3 waterless cleaning stations. CD3 cleaning stations empowers boaters to perform best management practices of cleaning, draining, drying, and disposing. CD3 stations provide waterless, user operated cleaning equipment and includes a wet/dry vacuum, blower, and tethered hand tools that are accessible and user friendly.

## CITY OF BABBITT

The City of Babbitt installed a CD3 station at the Birch Lake public access. This is the third CD3 station that has been installed in the county. The County has generally supported CD3 stations when CD3 leverages local partners to install, manage, and maintain the system long term. The City of Duluth and Canosia Township partnered with CD3 to bring a station at the Munger Landing on the St. Louis River (2018) and Pike Lake public access (2017). The City of Babbitt received funding in 2016 where they greatly improved the Birch Lake public access. Adding the CD3 station puts the finishing touch at the improved access and will allow boaters to utilize waterless cleaning to prevent the spread of AIS.

## CITY OF DULUTH

In 2019, the City of Duluth actively managed, monitored, and staffed the Munger Landing to educate boaters on the use of the CD3 waterless cleaning station. Staff provided boaters instructions on proper usage of machine tools, an overview of the CD3 website and mobile app, and interacted with 125 boaters. From its installation in August 2018 through September 2019, the Munger Landing CD3 system was used 2,381 times by the public to prevent spread of AIS. The use of the station averaged 374 uses a month. The tools are used to remove debris, weeds, and residual water from watercraft and trailers. The data collected demonstrated that the public are voluntarily cleaning their boats at this CD3 system without inspectors present.



Pike Lake CD3



Munger Landing CD3



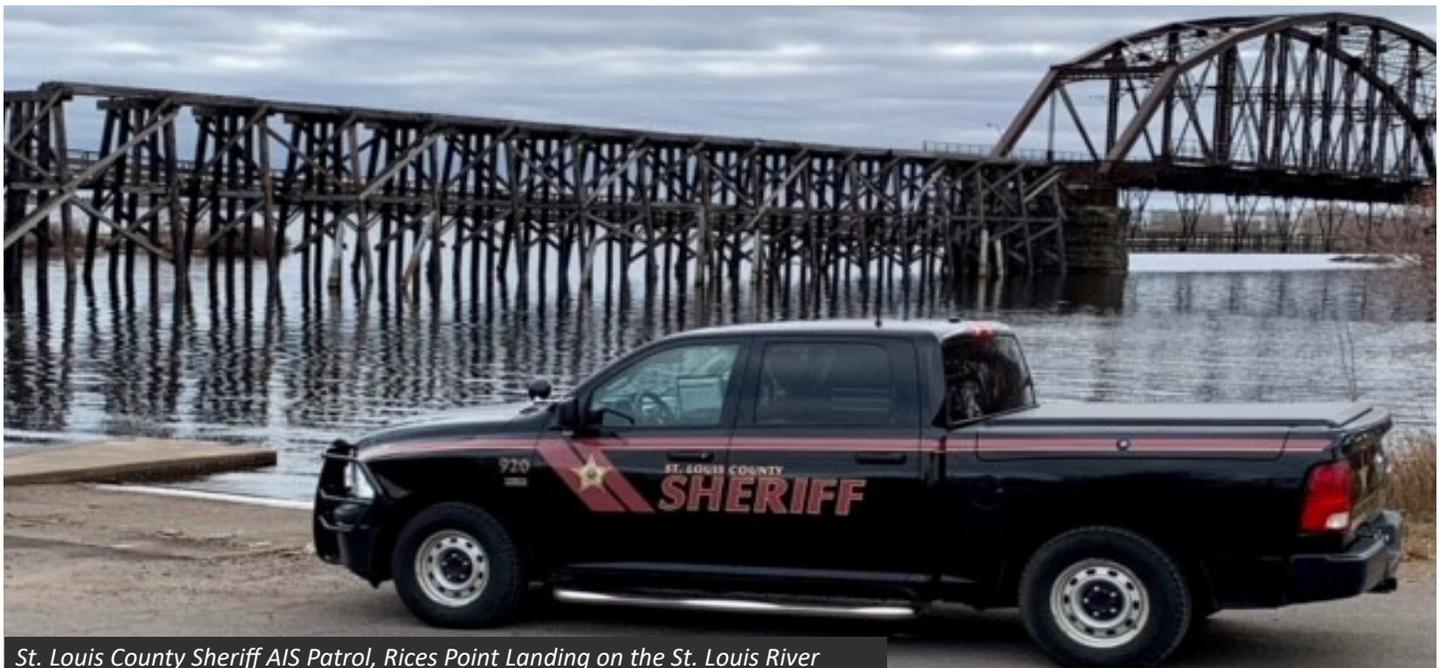
*St. Louis County Sheriff AIS Patrol, Rices Point Landing on the St. Louis River*

## OVERVIEW

Every year the County sets aside administrative dollars for AIS prevention work. Part of these administrative funds are dedicated to the St. Louis County Sheriff Department for public access patrols, boat checks, and distributing AIS information.

## ST. LOUIS COUNTY SHERIFF

The St. Louis County Sheriff Department also patrols public water accesses and perform random boat checks throughout the county. In the 2019 and 2020 boating seasons, sheriff deputies patrolled 82 different lakes and rivers. Deputies checked 766 watercraft. Of those watercraft checked, 98.8% were compliant with the drain plug law. This is above the state average of 97%. The presence of having sheriff's deputies making these patrols is having a positive effect in AIS prevention and reminds boaters to adhere to the AIS and boating laws. It is noted that AIS prevention aid funds used by the Sheriff Department is to increase water and landing patrols for AIS prevention purposes. Watercraft and AIS enforcement will remain the primary function of the DNR. During their AIS patrols, sheriff deputies also distributed AIS Prevention materials at different access sites to educate boaters of the laws and best management practices to prevent and limit the spread of AIS.



*St. Louis County Sheriff AIS Patrol, Rices Point Landing on the St. Louis River*

# 06 PROJECTS — COMMUNITY OUTREACH



Highway 53 Billboard - Clean Drain Dry messaging, Photo credit: Wildlife Forever

## WILDLIFE FOREVER

Wildlife Forever is a not for profit conservation charity which promotes conservation through education, preservation of habitat and management of fish and wildlife. They work in partnership with federal, state, and local agencies, as well as many of the recipients of St. Louis County AIS funds. They continue to provide comprehensive media and outreach programs to promote behavioral change in AIS prevention. Their Clean Drain Dry initiative campaign includes billboards, radio ads, print ads, TV commercials, digital and streaming ads, fuel station and indoor advertising. They also produce

distribution material for boaters and provide them to local partners for distribution to the public.

Wildlife Forever is a major catalyst and driving force in bringing AIS prevention awareness to the Northland. Their Clean Drain Dry initiative campaign has become a household name to the region. They have successfully spread their message and have reached tens of millions of residents, tourists, and water recreationists over the years.

Media	Impressions (2019-2020)
<b>Radio:</b> 7 local broadcast stations aired 2,296 PSAs	4.2 Million
<b>TV:</b> 6 stations aired 1,607 commercials	3.9 Million
<b>TV Streaming:</b> Non-skippable content and 434 clicks	236 Thousand
<b>Print Advertising:</b> 4 publications displayed 77 ads	890 Thousand
<b>Highway Billboards:</b> 6 targeted locations	5.8 Million
<b>Gas Station &amp; Indoor Advertising:</b> 22 gas station pump toppers and 22 restaurants	5.9 Million
<b>Community Events:</b> Tails & Ales Crawfish boil	500+
<b>Products &amp; Handouts:</b> Outreach materials distributed over the course of the year to partners.	800 bobbers, 500 key floats, 600 plug dock packs, 1,100 bar coasters, 90 posters, 12 banners, 4 sidewalk signs, 1,000 Clean Drain Dry decals, 30 aqua weed sticks, 20 boat/boot brushes, 100 rally towels





AIS Landing Blitz Event at Hoodoo Point Landing, Photo Credit: NSLSWCD

## MINNESOTA SEA GRANT

Minnesota Sea Grant has provided their technical expertise and community outreach in AIS prevention. The County values the direct outreach that Sea Grant leads at dozens of events throughout the year. Sea Grant has visited schools, North and South St. Louis County Fairs, and many other local festivals and events around the region. Sea Grant also provides an internship program to support their ongoing AIS community outreach, education, prevention, management, and research efforts. They continue to plan and promote

many other events throughout the year while partnering with other organizations which educate thousands of people each year about AIS prevention. They have been developing and providing other educational resources tailored for partners for distribution by them and issuing news releases, resulting in additional media coverage by TV, radio, web, and social platforms that promote “Stop Aquatic Hitchhikers!” and “Clean Drain Dry” messages to the region and statewide.



Habitattitude Surrender Event, MN Sea Grant

### Community Event

### Impressions

Great Lakes Aquatic Invasive Species Landing Blitz	1,159
Lakewood Elementary Environmental Science Day	115
Pokagama Lake Freshwater Fair	169
Lake Superior Zoo – Earth Tracks	100
Enhanced WCI Presentation	70
South St. Louis County Fair	358
Lake Superior Days	751
KEY Zone H2O	25
Ely Blueberry Festival	374
North St. Louis County Fair	1,423
Duluth Harvest Fest	254
Chester Bowl Fall Fest	417

TOTAL 5,215

# 06 PROJECTS — SPECIES REMOVAL



*Non-native Phragmites spring re-growth, St. Louis River Estuary*

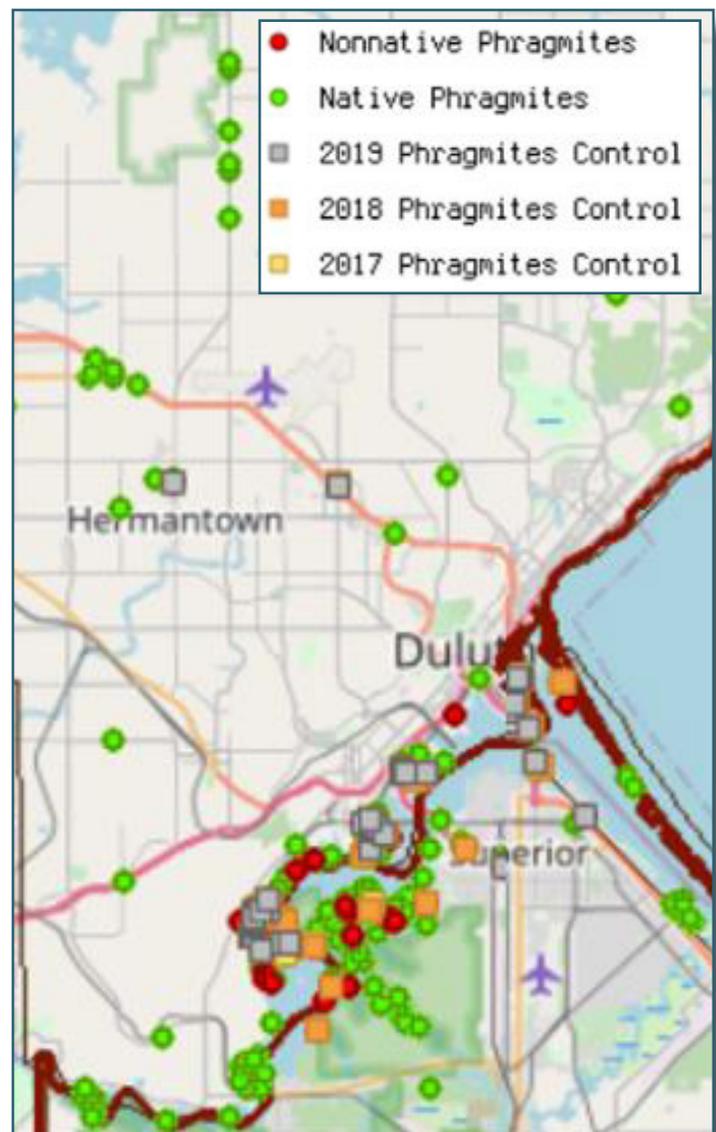
## COMMUNITY ACTION DULUTH

### St. Louis River Non-Native Phragmites Management Project

*Phragmites australis* (aka. Non-native Phragmites) is a tall wetland grass that grows prolifically. It can quickly develop monocultures, pushing out native plant species. Infestations can occur rapidly and cause extremely negative impacts to ecology, economy, industry, and recreation. Community Action Duluth identified and manages 67 sites within the St. Louis River Estuary where species removal and chemical treatment has been taking place since 2016. Management is a yearly cycle that consists of the following:

- Summer Months- Chemical treatment
- Fall Months- Monitor for re-growth
- Winter/Spring Months- Mechanical knockdown

Work completed in 2019 and 2020 has been a continuation of the efforts by Community Action Duluth since it originally began in 2016. Community Action Duluth and Duluth Stream Corps have been providing management, treatment, outreach, and education to property owners, technical team coordination, and mapping of non-native phragmites sites. In 2019 and 2020, Community Action Duluth completed chemical treatment on 44 of the 67 mapped non-native phragmites sites. Complete species removal and eradication requires ongoing management to continue gains to prevent species from growing back.





AIS Detector using Sampling Rake, Lake Vermilion

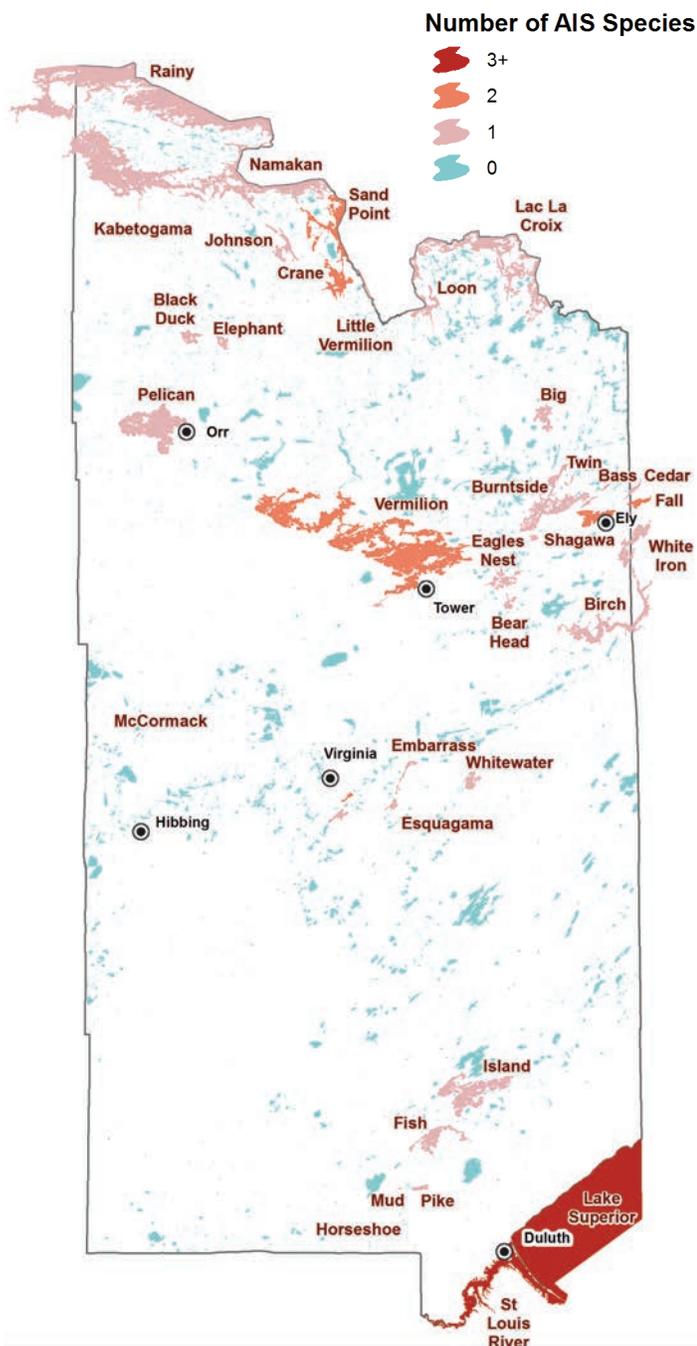
## EARLY DETECTION AND MONITORING

### Early Detection for new AIS infestations

Early detection and rapid response is crucial for minimizing impacts of invasive species as there may be a greater likelihood of containment and/or control if a new infestation were to ever be discovered. Ongoing effort from NSLSWCD, VLA, BLA, Canosia and Grand Lake Townships, and private resorts are having watercraft inspectors, AIS detectors, sentries, and staff continually monitor access sites for any potential new AIS infestations. In 2020, 11 Lakes were monitored for new AIS infestations. Birch, Burntside, Caribou, Ely, Gilbert-Pit, Johnson, One Pine, Pelican, Pike, Shagawa and Vermilion were monitored once or twice each in May, June and July. AIS Detectors threw a double-headed rake, attached to a rope, into the lake in three different directions while standing on a dock. The rake is pulled back to shore after each throw. All vegetation attached to the rake was identified. Any vegetation that looked like an invasive species was collected for further investigation. There have been zero new confirmed AIS infestations in the lakes that were monitored in 2020.

There were two concerning identifications that required follow up. One identification was of a possible Eurasian Watermilfoil on One Pine Lake. A DNR Aquatic Invasive Species Specialist, who visited One Pine and identified the sample as Whorled Milfoil.

There were several reports from anglers on Birch Lake that Spiny waterflea had been identified. The District interns could not find any samples to identify. 1854 Treaty Authority followed up on the report and completed several zooplankton tows. No spiny waterflea was found, but leptodora was found which may have been confused for spiny waterflea by an untrained eye.



# 07 LOOKING AHEAD — BUILDING ON SUCCESS



Van Vac Landing Public Access, Burntside Lake

## BUILDING ON SUCCESS

The 2019 and 2020 seasons once again proved to be successful with AIS prevention in St. Louis County. With our more than 1,000 lakes, hundreds of miles of rivers, and 170 boat launches, the County touts one of the lowest rates of spread of AIS in the state. During 2019 and 2020 seasons, no new infestations were discovered. Over the years, the AIS Program has matured into what it has become today. Much of its success relies on the partnerships that have been created with the many organizations involved.

St. Louis County always has an eye on what lies ahead. The County encourages new and innovative projects to help with AIS Prevention. The County is also looking into ways to increase outreach with prevention efforts targeted towards more access sites.



Starry Stonewort





Life of Riley Resort, Lake Vermilion

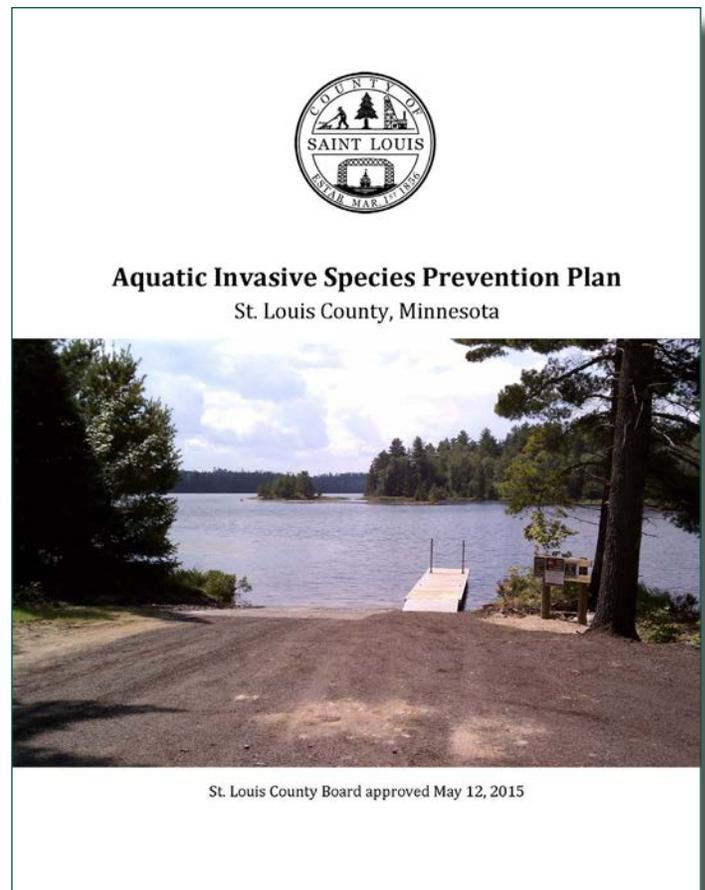
## COUNTY PLAN UPDATE

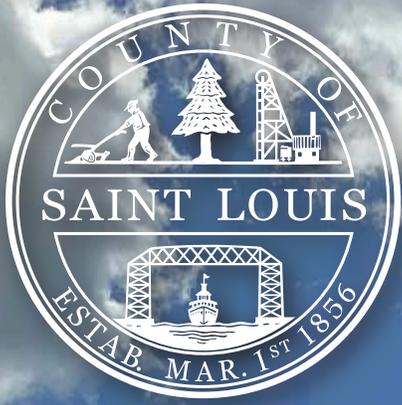
St. Louis County in 2015, with assistance from Minnesota Sea Grant, developed an AIS Prevention Plan. St. Louis County has 1,068 lakes and AIS pose a great threat to our pristine waters. County supported actions to prevent the spread of AIS are identified in the plan. The plan cross references the Minnesota Department of Natural Resources (DNR) Local AIS Plan framework, actions and elements from a Minnesota State Management Plan for Aquatic Invasive Species.

The purpose of the plan is two-fold:

1. Define actions for which the allocated funds may be used to prevent the spread of AIS.
2. Guide St. Louis County AIS Prevention response.

In 2021, the County will be re-focusing efforts with updating the St. Louis County AIS Prevention Plan. A component of the plan update will include updating the list of new AIS that were not addressed in the original draft. Five new species of concern have been identified and will be addressed in the plan update. One species in particular is starry stonewort. Starry stonewort is a large green algae (macro-algae) that form dense surface mats in shallow lakes and rivers. It overtakes habitat and outcompetes native aquatic plants, potentially lowering diversity. It was first confirmed in west central Minnesota in 2015. As of 2019, 13 lakes in Minnesota are listed as infested with starry stonewort, however, there are no known infestations of it in St. Louis County.





*Norwegian Bay Public Access  
Lake Vermilion*