



# Expansion of the AIS Ambassador Education Program to Observe Watercraft Operators and AIS Control Behaviors at Public Accesses

AIS Prevention, Hennepin County – 2023 Season Report

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## Executive Summary

The second season of the AIS Ambassador project was geared towards building upon observations and statistical findings from the 2022 season. The primary focus was to develop methods that are effective at increasing the public's compliance with self-inspecting their watercraft and water-related equipment before and after utilizing a body of water. The engagement was structured to be an educational contact with boaters at launches rather than the currently required inspection interaction with boaters at launches only when an inspector is present. The goal was to positively change boat owners' behaviors to increase self-inspection thoroughness and AIS compliance by boaters when an inspector is not present at the access holding them accountable.

Minnesota mandates the public to complete a visual inspection of their watercraft and all water-related equipment at public launches via DNR-authorized Level 1 and/or Level 2 watercraft inspectors. The current process provides an authority presence with a watercraft inspector as boaters enter a public launch and engage boaters in survey questions.

Alternatively, this project utilized a model like that of a DNR AIS Ambassador. Their role was to be an educator. The ambassadors observed first, and then engaged boaters in conversation rather than approaching them as a watercraft inspector. Also, instead of asking survey questions, ambassadors only documented and logged observable boater details, such as watercraft type, drain plug in or out upon arrival, any plant or animal found, water or mud, and towing vehicle license plate state. These recorded observations allowed the project to better understand and analyze the trends and opportunities at each launch site.

The project was accomplished via inspection education materials, AIS prevention messaging, training through the DNR ambassador program, and providing education during the early half of the boating season, where it is shown that AIS violation rates are the highest. The inspectors also provide education on other Hennepin County AIS initiatives such as waterless cleaning stations (CD3), the Lake Pledge app, Weaver Lake Hydrosweep, and launch signage.

Four public access sites were selected to be staffed by AIS Ambassadors in Hennepin County based on location, traffic volumes, presence of watercraft inspectors in the past, or current seasons, and AIS risks. From those factors, the four launches that AIS Ambassadors were staffed at were the following:

**Surfside Park (Cooks Bay, Lake Minnetonka) in Mound, MN**  
**Long Lake, Nelson Lakeside Park in Long Lake, MN**  
**Weaver Lake, Public Water Access Site in Maple Grove, MN**  
**Mississippi River, Point Park Public Water Access Site in Champlin, MN**

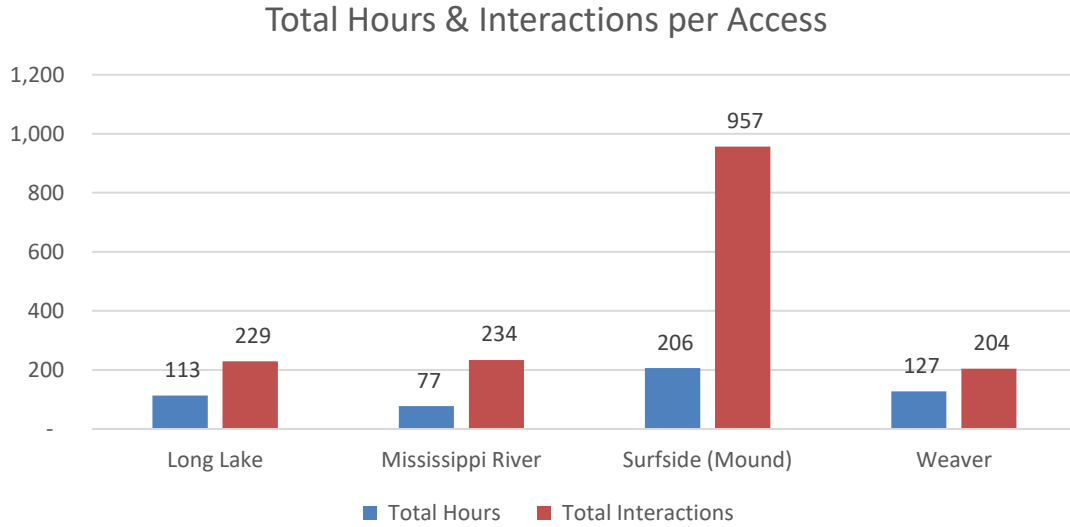
The observations made by ambassadors were recorded in a form from their mobile devices. The form can be viewed here: [AIS Ambassador Survey](#)

Throughout the program, regular monthly updates were provided to Hennepin County. Each in-season report can be found [HERE](#).

The remainder of this program report will summarize the full season results while going into greater detail about the observations, behaviors, aquatic invasive species found, feedback, and data points collected through the form by the AIS Ambassadors.

# AIS Ambassador Interaction Results

## Total Interactions and Hours at Each Access

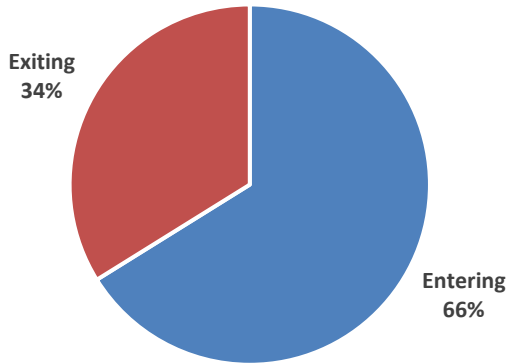


The graph above demonstrates the importance of using data to staff the busiest launches to maximize interactions. As trends were identified during the season, we adjusted staffing accordingly. The table below shows the rate of average interactions per hour for each access.

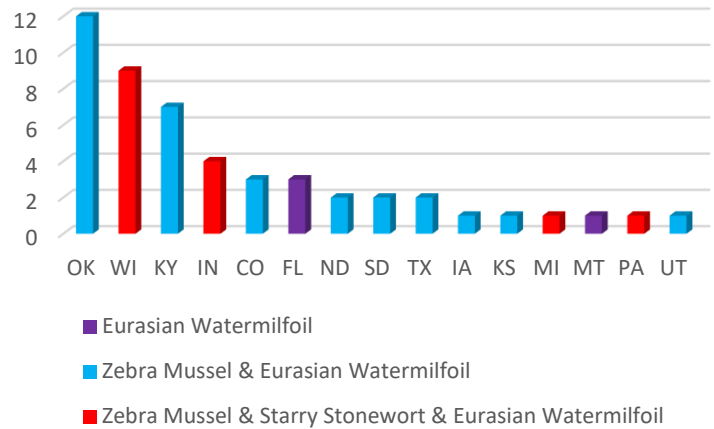
Access Name	Total Interactions	Total Hours	Avg. Interaction per Hour
Long Lake	229	113	2.0
Mississippi River	234	77	3.0
Surfside (Mound)	957	206	4.6
Weaver	204	127	1.6
<b>Total</b>	<b>1,624</b>	<b>523</b>	<b>3.1</b>

## Boater Demographics

Entering vs. Exiting Interactions

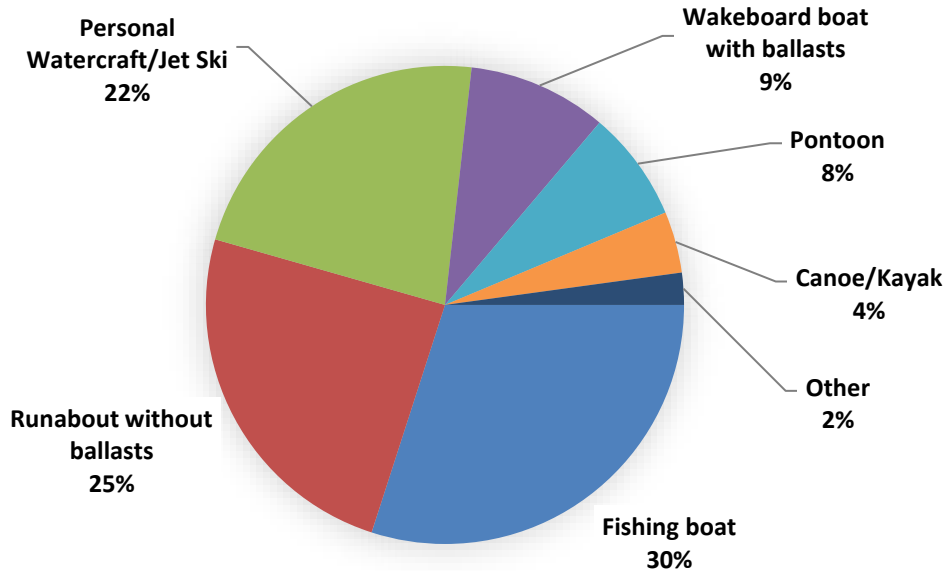


Number of Out-of-state Watercraft Owners Interacted With



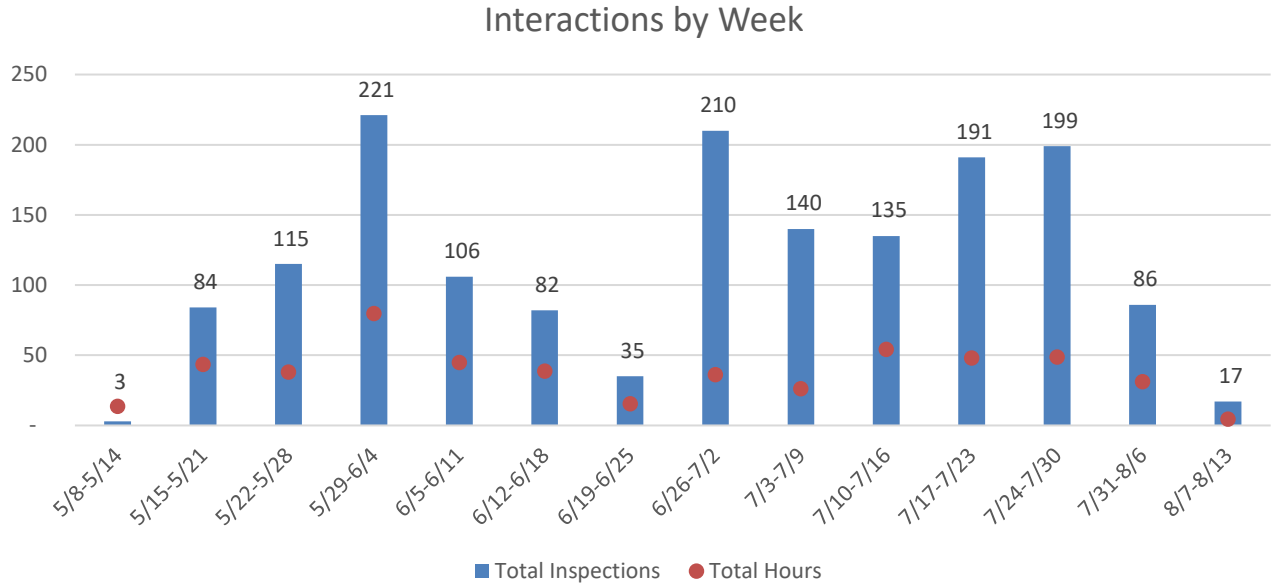
Our ambassadors encountered more boaters entering the water than exiting. Most boaters had Minnesota license plates, but fifty out-of-state boaters had the opportunity to engage with the ambassadors about Minnesota’s unique AIS laws and their importance. In the graphs above, each state is color-coded to indicate certain AIS that has been reported in each state.

## Type of Watercraft

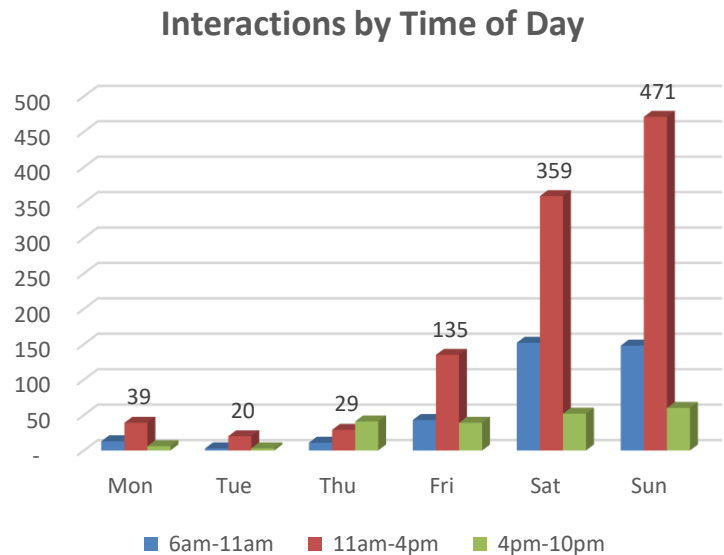
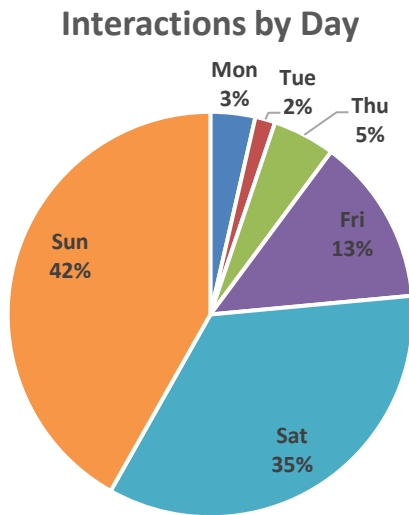


The above chart shows the watercraft type of each boater. The large portion of fishing boats provided a terrific opportunity to engage anglers in the many locations on their watercraft that are capable of transporting AIS.

Expanded detail of all location interactions by week can be found in the chart below, where it shows that the last week of May has the highest count of interactions at 221. Having ambassadors present at the launches over the busy holiday weekends (Memorial Day and 4<sup>th</sup> of July) was important due to the high traffic.

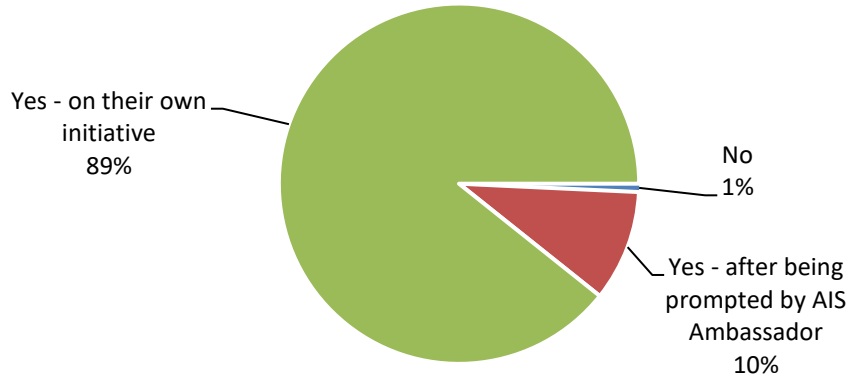


The data shows that the busiest days for interactions were Sunday, which accounted for 42% of interactions. Saturday and Friday followed with 35% and 13% of the total interactions, respectively. On Fridays, Saturdays, and Sundays alike, the data shows that the busiest time of day for inspections is between 11 A.M. to 4 P.M.



## Participation of Boaters in Self-Inspections

**Did the boater conduct a self-inspection of their watercraft and any water related equipment?**



Ambassadors were trained to watch and see if the boater performed a self-inspection before the ambassador approached them. In the chart above we can see that 89% of all boaters participated in a self-inspection without needing a prompt from the ambassador. 10% would have forgotten if not for the ambassador’s reminder but complied after being prompted. Only 1% refused to conduct a self-inspection. Of those who refused, the reason is as follows:

- The boater drove off in an apparent hurry.
- Did not seem to care, entered the lake fast.
- Did not think it was necessary.
- First time on the lake
- I did it for them, just one plant
- Rushed to get into the lake, no opportunity for engagement.
- Seemed to be in a rush to enter the river. Did not wish to engage.
- Was not familiar. Had inflatable paddle boards so it was not the typical demographic.
- Went straight into water from road without stopping. Boat was not even strapped in the trailer :/

Self-Inspection?	2022	2023	% Improvement
Yes – on their own initiative	1223 (60% of total)	1450 (89% of total)	48%
Yes – after being prompted	730 (35% of total)	162 (10% of total)	-71%
No	91 (4.5% of total)	12 (1% of total)	-78%

**If the boater did NOT self-inspect, what was their reaction to you after you encouraged them to do so?**



(Left) This chart again regards all boaters who did not self-inspect without a reminder. In only 22 cases was the ambassador's advice ill-received.

**Observed Violation and Self-inspection Rates Over Time**

Percentage of boaters with AIS violations					
	Long Lake	Weaver Lake	Surfside	West Bush	Point Park Mississippi
2017	20.30%	20.40%	21.80%		
2018	9.90%				
2022	14%	17%	32%	8%	1%
2023	8.30%	10.80%	5.40%		5.10%

Percentage of boaters who self-inspect without a reminder from the ambassador					
	Long Lake	Weaver Lake	Surfside	West Bush	Point Park Mississippi
2017	48.00%	57.00%	64.00%		
2018	63.00%				
2022	55%	90%	52%	50%	94%
2023	82.10%	79.90%	94.57%		82.91%

(Data from 2017 and 2018 thanks to Tony Brough and Hennepin County)

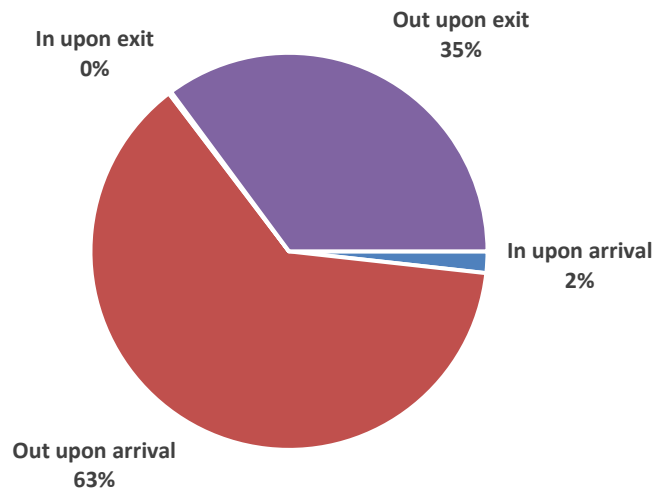
## Potential AIS Identified

	On Trailer	On Watercraft Exterior	In Watercraft Interior	Total
Plants	80	32	3	115
Zebra Mussels	1	0	0	1
Water	4	1	18	23
Total	85	33	21	139

8.6% of all the interactions had AIS violations which the ambassador was able to resolve with the boat owner while using the violation as an opportunity to educate the boater. The most common contaminant was plants, and the most likely area to find contamination was on the trailer. One zebra mussel entering violation was prevented through the ambassador program at Weaver Lake. Hopefully, a positive impact was made on the boater about the seriousness of preventing the spread of zebra mussels that they will complete thorough self-inspections every time in the future.

## Drain Plug Status

### Drain Plug Status of Arriving and Departing Watercraft

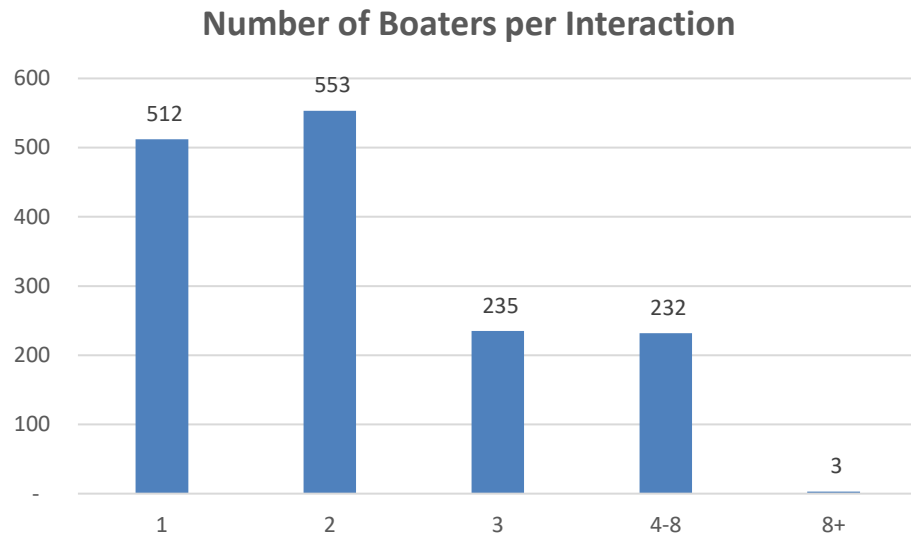


Only 25 (2%) of all boaters had drain plug violations, which included arriving at the launch with the drain plug still in or leaving the launch without removing the plug.



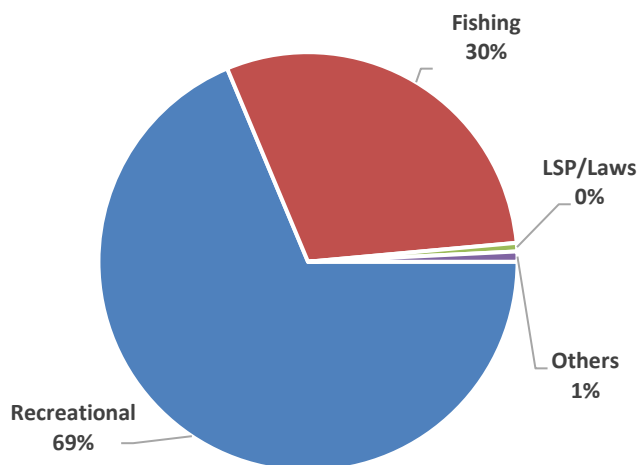
# Boater Engagement Analysis

## Number of Boaters



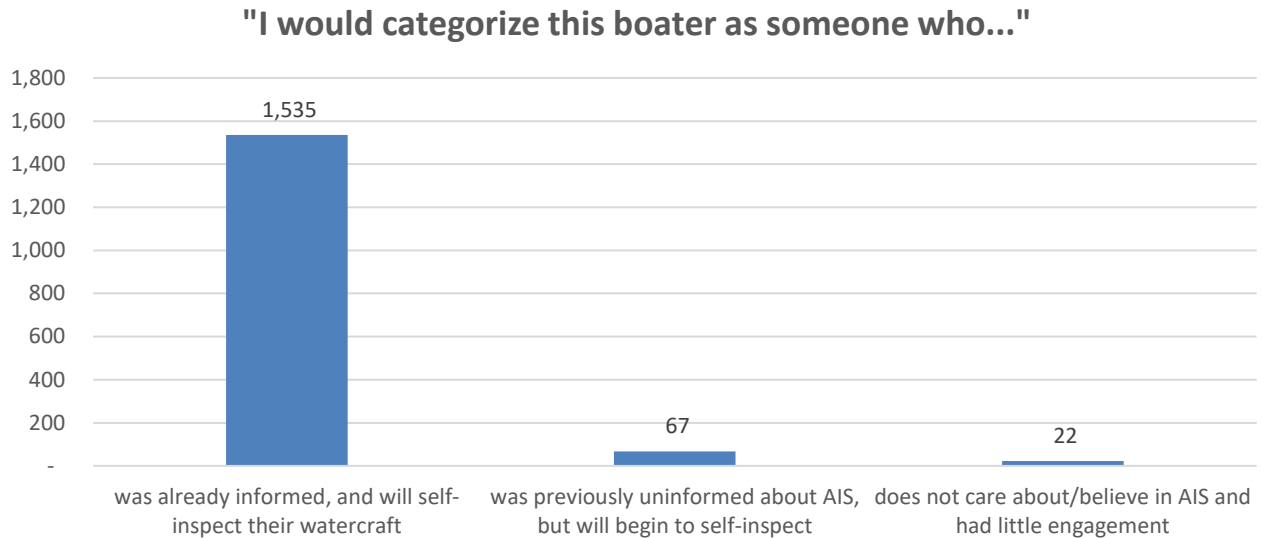
The total number of boaters who had an interaction with an ambassador was 3,739 across 1,624 interactions. An interaction was counted as a single boat/trailer/vehicle at the launch site. Boaters were counted as the number of people involved in each interaction. On average there were 2.4 people (boaters) that engaged with our ambassadors during each interaction.

## Activity of Boaters



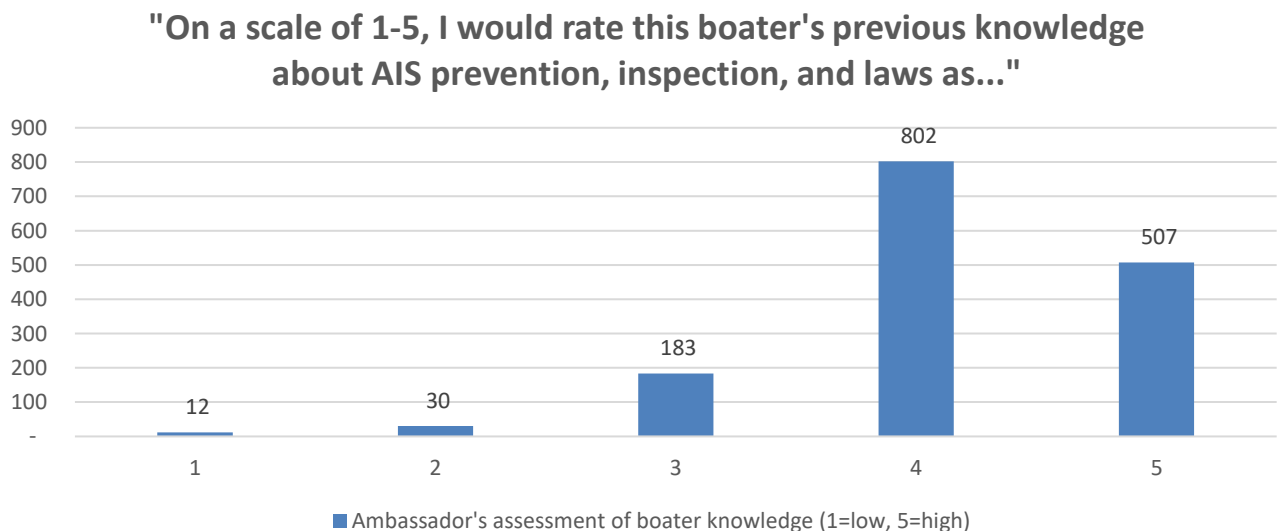
(Left) Most boaters were utilizing the water for recreational purposes. It is critical for these recreational boaters to understand the importance of keeping our lakes natural to support recreation. Ambassadors found that most anglers knew the laws well and abided by them. LSPs were most likely to give ambassadors trouble or grief.

## Categorization of Boater



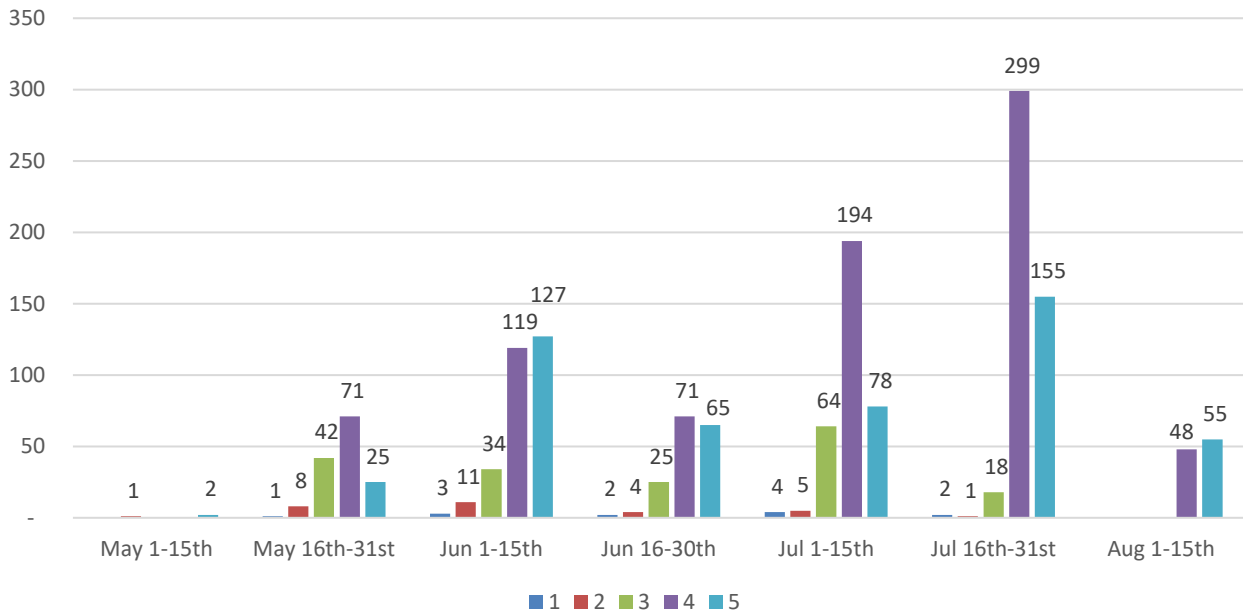
As the season progressed, we saw the frequency increase of already informed boaters who proactively self-inspected their watercraft. This can be attributed to the presence of an ambassador/inspector on previous trips out with the watercraft. Another reason is the educational efforts may have started positively impacting them. Lastly, the fear of a citation for not following state AIS statutes became more of a concern for them.

## Rating of Previous AIS Knowledge



*This graph shows the ratings across the entire 2023 season.*

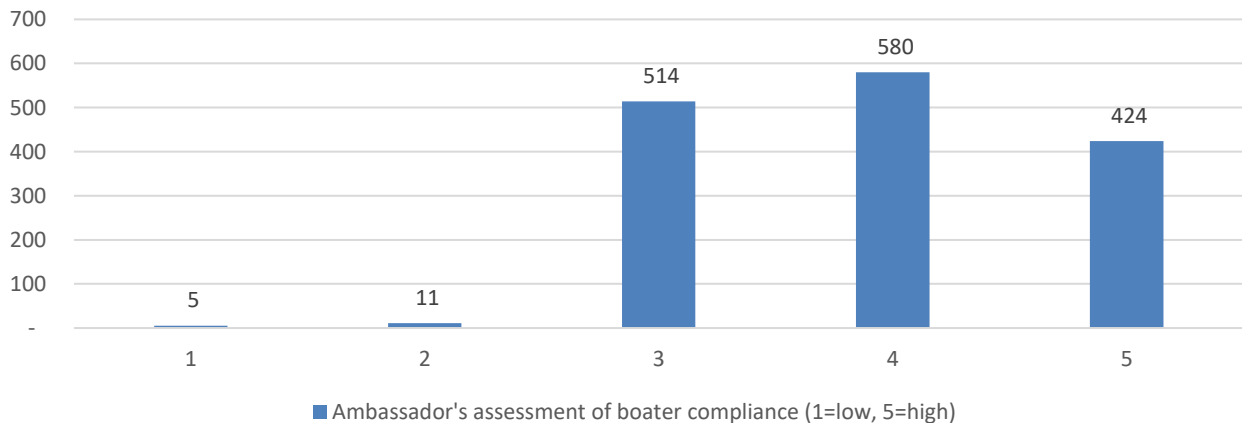
### Rating of AIS Knowledge Over Time



*This graph shows the AIS knowledge rating mixture for each 2-week period throughout the season. We can see here that scores of either 4 or 5 increase significantly throughout the season. In the last period, there were no scores of 1, 2 or 3.*

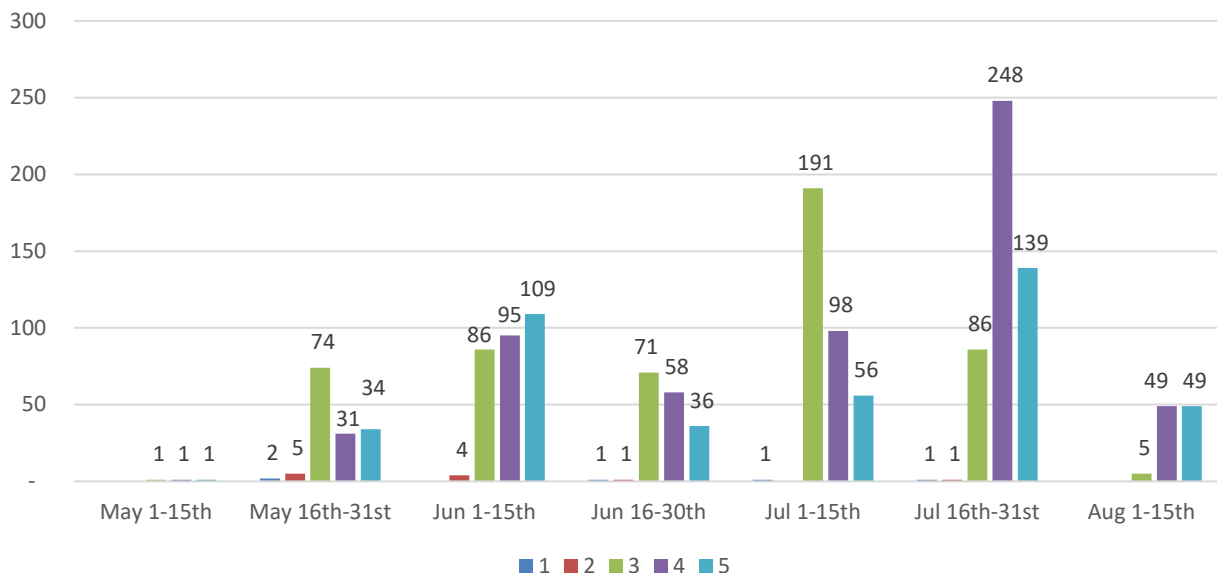
### Rating of Compliance

**"On a scale of 1-5, I would rate this boater's compliance and willingness to participate in the inspection as..."**



*This chart shows the compliance rating from the entire 2023 season.*

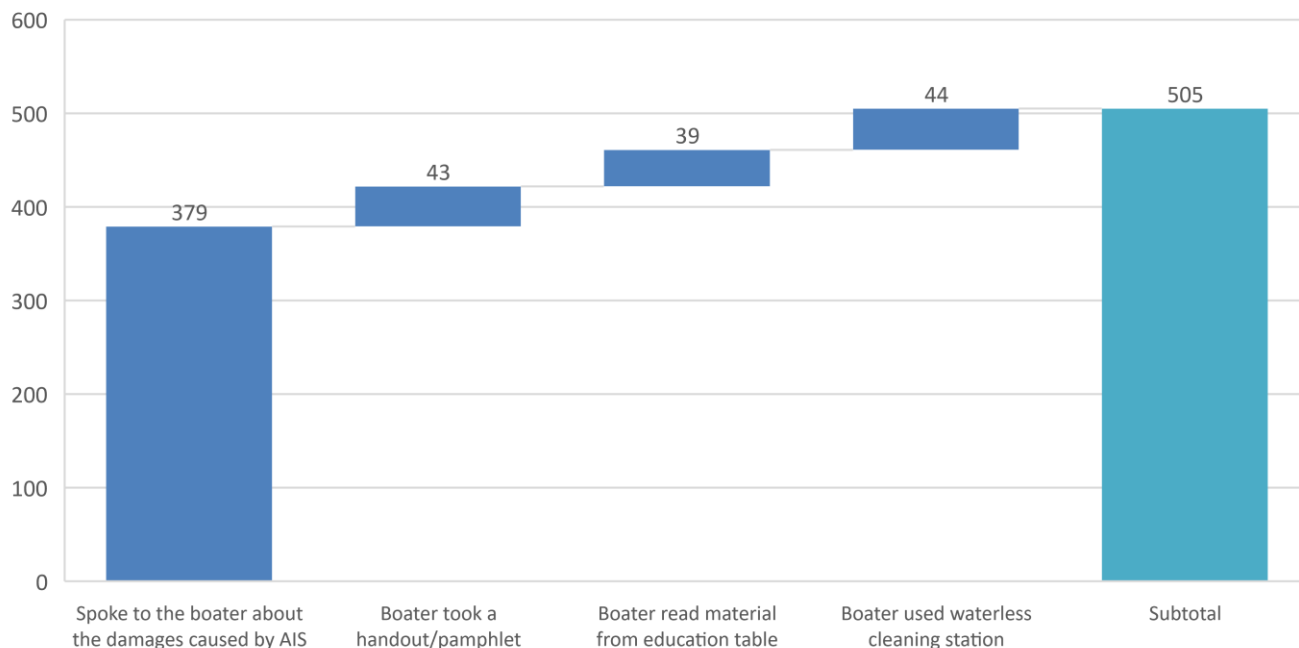
### Rating of Boater Compliance Over Time



*This graph shows the rating of boater compliance for each two-week time period. Here, we can see a trend of ratings of '4' and '5' increasing, and 1 through 3 ratings decreasing as the season progresses.*

### Educational Interaction

#### Educational Interaction Between Ambassador and Public



Ambassadors were able to engage the public with their educational tables and materials. Pin buttons, stickers, pamphlets, and posters all helped to draw attention to their displays and start conversations.

# Best Practices to Encourage Self-Inspections - Activity 1

## Overview

During the 2022 season, Weaver Lake and the Point Park Mississippi launches had the highest rates of self-inspections by boaters. 90% of boaters at Weaver Lake and 94% of boaters at Point Park were observed self-inspecting without a reminder from the AIS Ambassador.

Unfortunately, during the 2023 season, the rate of self-inspections without a reminder from an ambassador decreased to 80% at Weaver Lake and 83% at Point Park.

During the 2022 season, Long Lake and Surfside Park in Mound had the lowest rates of self-inspections by boaters. 55% of boaters at Long Lake and 52% of boaters at Surfside Park were observed self-inspecting without a reminder from the AIS Ambassador.

Significant increases were observed during the 2023 season in the rate of self-inspections without a reminder from an ambassador. Long Lake improved to 82%, and Surfside Park jumped to 94%!

Based on the AIS Ambassador's observations at each of these four public water access sites we developed theories as to why boaters are more likely to self-inspect or not. Remember, changing behavior often requires a multifaceted and sustained effort. Continuously assessing and being prepared to pivot on strategies based on feedback and results is critical. If done correctly, there is a much better chance of fostering a wide culture of responsible boating and effective AIS prevention.

## Best Practices to Improve Self-Inspection Rates

Below are key points to positively influence boater's self-inspection behaviors:

### 1. Education and Outreach:

- Informational Campaigns: Launch public awareness campaigns through various channels, such as social media, websites, brochures, and signage at boat launches, to educate boaters about the importance of AIS prevention.
- The orange MN DNR signs that show what known infestations the body of water has in it are a great reference for the public but need to be accurate and on display.
- Workshops and Training: Organize workshops or training sessions to demonstrate proper self-inspection techniques and provide information about specific invasive species in the region. Every boater should be aware of AIS such as Eurasian Watermilfoil, Zebra Mussels, and Starry Stonewort among many others.
- The more readily available information is the better. Many people were observed taking the AIS brochures from AIS Ambassadors, reading them, and then giving them to others in their group to read and learn from.

### 2. Regulations and Enforcement:

- Raise public awareness and enforcement of AIS regulations: Establish clear regulations mandating self-inspections before launching watercraft. Enforce these regulations through regular patrols, inspections, and penalties for non-compliance.
- The boaters that did not perform self-inspections on their own, or even after being prompted by an ambassador, gave the impression of not caring or even the least bit concerned about any type of consequences.
- Public messaging could be updated to state what is at stake if someone illegally transports AIS such as a citation, fine, watercraft registration being revoked, etc.

### 3. Accessible Information:

- Online Resources: Provide easily accessible online resources, including maps of infested areas, guidelines for self-inspection, and contact information for local authorities or organizations involved in AIS prevention.
- Print Resources: Any form of visual AIS material can have a positive impact on a boater's knowledge. Colored pictures and examples of various AIS are engaging for adults. Younger boaters enjoyed the smaller AIS cards and stickers.
- QR Codes: Easy to scan and open online links to AIS sites with educational material is a simple way to build engagement. QR codes can be added to AIS data cards, boat trailer winch post stickers, or existing launch signage.

#### **4. Community Involvement:**

- Boater Organizations: Collaborate with boater organizations to spread awareness and encourage self-inspection. These organizations can play a key role in promoting responsible boating practices within their communities.
- School and/or community programs such as Boy Scouts and Girl Scouts involvement in AIS education. Frequently the AIS Ambassadors found engagement in the educational material provided to be the highest with the youngest boaters.

#### **5. Incentives:**

- Recognition Programs: Establish recognition programs or certificates for boaters who consistently demonstrate responsible behavior by conducting thorough self-inspections. Positive reinforcement can motivate others to follow suit.

#### **6. Inspection Stations:**

- Install Cleaning Stations: Set up cleaning stations equipped with brushes, hoses, and information at popular boat launches. Make it convenient for boaters to perform self-inspections and cleaning before entering or leaving the water.
- The combination of Clean Drain Dry Dispose stations (or even a more basic station), proper signage, and the occasional presence of AIS inspectors or ambassadors can have a substantial impact.
- Pull-off lanes, signage, or marked locations in a parking lot to help aid the flow of vehicles towing watercraft on/off the body of water can be impactful. Boaters tend to skip their self-inspection if they are more worried about causing a delay or congestion at the launch lanes.

#### **7. Partnerships with Marinas, Water Patrol, and Other Industry Businesses:**

- Marina Involvement: Partner with marinas to promote AIS prevention practices. Encourage marinas to include information about self-inspections in their boater orientation programs.
- Businesses in the boating, fishing, and lake, industry all have a personal stake in preserving natural resources. Their engagement with their customers can be vital to effecting positive behavior changes.

#### **8. Mobile Apps:**

- Develop AIS Apps: Create mobile applications that boaters can use to access information about invasive species, self-inspection checklists, and reporting tools. Mobile apps can make information readily available and easy to use. Lake Pledge is an excellent example of this.
- Every boater has a mobile device, so providing them with educational content on their phone to reference at any time and place is a great tool for further education.

#### **9. Engage Local Stakeholders:**

- Involve Local Stakeholders: Engage local environmental groups, businesses, and schools in AIS prevention efforts. Encourage collaboration to organize events, workshops, and

outreach activities within the community.

#### 10. Regular Communication:

- Newsletters and Updates: Establish regular communication channels, such as newsletters or email updates, to keep boaters informed about the latest developments, new invasive species threats, and best practices for prevention.

## AIS Ambassador Presence at Surfside Park Launch, Cooks Bay, Lake Minnetonka - Activity 2

Establishing a regular presence and improving the AIS compliance at the Surfside Park Launch at Cooks Bay on Lake Minnetonka in Mound, MN was a primary focus of the 2023 program.

Until the inception of this AIS Ambassador program in 2022, the City of Mound had not allowed any watercraft inspectors to be staffed at the Surfside Park public water access for the previous 5+ boating seasons. The City of Mound reasoned that the model of having individuals at the launch as part of a poorly integrated inspection program did not have proven efficacy as a model of control or prevention of AIS. There were concerns about what can be done, by what authorities, and who pays for the traditional inspection program.

The Surfside Park launch is one of the busiest launches on Lake Minnetonka, so not having any AIS prevention there for many years was a significant issue. As part of this program, Waterfront Restoration obtained approval from the Mound City Council in both 2022 and 2023 to re-establish an education and data-driven program that attempts to change boater behaviors regarding AIS.

Overall, the AIS Ambassador program has been a great success at Surfside Park! During our second season, the ambassador hours were increased, more interactions were had, and significant improvements were observed in the percentage of boaters with AIS violations and the number of people who proactively self-inspected their watercraft and water-related equipment.

Surfside Park Launch Statistics:

	2022	2023	% Change
<b>Ambassador Hours</b>	164	206	26%
<b>Interactions</b>	836	957	14%
<b>Avg Interactions Per Hour</b>	5.1	4.6	-10%
<b>% of Boaters with AIS Violations</b>	32%	5.4%	-83%
<b>% of Boaters Who Self-Inspected</b>	52%	94%	81%

There were a couple of common boater misconceptions of AIS at the Surfside Park launch. One misconception was that Lake Minnetonka was already infested with all the invasive species. This was an opportunity for ambassadors to educate the public about the threat of Starry Stonewort and Spiny Water Fleas which have not yet been identified in the lake. Another was that my boat only goes in and out of Lake Minnetonka, so it does not matter if I clean it off every time or not. Again, this was an opportunity for ambassadors to educate the public that the state AIS statutes do not differentiate which lake(s) they boat on and that if any form of plants, animals, mud, or water is transported on the roadways it could lead to a citation and fine. Lastly, at a busy launch site like Surfside Park people would state that they do not have time, or do not want to hold up traffic to self-inspect. In these situations, ambassadors would inform the boater of the negative impact if they did not make time to conduct a self-inspection and direct them to the pull-off lane where they would not impede other traffic.

Even though some of the boaters using the Surfside Park launch were impatient and unwilling to self-inspect, ambassadors experienced many positive interactions and gratitude for their efforts at the launch.

The improvements from 2022 and 2023 were a rewarding outcome of the ambassadors' efforts! Feedback from the City of Mound included the following statements:

"I can say I personally had positive interactions with the AIS Ambassadors the last two years."

Jason H, Mound Mayor

"Ambassadors were friendly and knowledgeable and did not disrupt timing or circulation at this congested location. This approach is becoming the commonplace standard for AIS continuing education. Most of us know about the problem. Most of us know our obligations as agents in prevention. Most of us know the best practices... Ambassadors set the right tone to help, remind, and share knowledge."

Eric H, Mound City Manager



*AIS Ambassador James set-up with AIS educational material at the busy Surfside Park launch in Mound, MN*



## **Continued Education for Boaters and All People Accessing the Water Body - Activity 3**

During both seasons of the AIS Ambassador program boater's AIS knowledge seemed to improve (see graphs on pages 17 and 18). This data is telling that early boating season AIS messaging, inspections, and awareness campaigns can have a potentially significant impact on a boater's self-inspection behaviors throughout the rest of the boating season. Additionally, depending on the species, AIS can be less abundant in May than it is in July. Therefore, making an early, and lasting impression on a boater's responsibility towards AIS prevention aligns with the natural increase in the threat of moving AIS later in the Minnesota boating season.

Another trend that has been identified over the past two seasons is that AIS is most identified and found on trailers during the entering and exiting of watercraft from a body of water. Observed AIS violations were found on trailers during the 2022 season 76% of the time, and 61% of the occurrences in 2023. This is NOT suggesting that AIS cannot be or is not transported elsewhere on the interior/exterior of the watercraft, water-related equipment, or by other means. There are many parts of a trailer that AIS can hide and be transported on, so educating and showing the boaters where to look, feel, and inspect their trailers for AIS is critical. Plants and other aquatic vegetation are what type of AIS is typically found on trailers; ambassadors were trained to further educate the boat owners about how easy it is to transport an AIS animal such as an adult reproductive zebra mussel that has attached itself to the plant stem if they are not thorough with their self-inspections. An example of one of these important interactions is detailed below:

On July 2nd, 2023, AIS Ambassador Leah found zebra mussels tangled in some plants on the trailer of the watercraft. The boater had no idea about any AIS laws or prevention techniques. Leah instructed the boater on the various rules and regulations and how it is illegal to transport zebra mussels, or any other animals, plants, water, etc. The boater was very compliant and with the teaching of Leah, was able to successfully remove all plants and zebra mussels from the watercraft by using the CD3 station. This was an incredibly important interaction in stopping a possible new infestation of zebra mussels into Weaver Lake, while also teaching a boater the proper ways to clean their boat every time out going forward.

Changing the behavior of the 1%-5% of boaters who do not responsibly self-inspect their watercraft is challenging. The primary excuses ambassadors observed, or were told by this small, but potentially large threat to the spread of the AIS, group of boaters was that they were in a hurry, or did not have the time, or patience to conduct a self-inspection. Despite the ambassadors' efforts to explain state AIS statutes to them, and their responsibilities as registered watercraft owners, it seemed to have minimal to no effect on their future commitment to self-inspect for AIS. This group of boaters may eventually come around and fulfill their role in preventing the spread of AIS, but it would likely take a citation or more severe consequences.

Ambassador observations have found that anywhere from 10% to 36% of boaters may need a reminder to conduct self-inspections before entering or as they exit a body of water. It is this group of boaters that are most influenced by educational material, frequent AIS awareness campaigns, the presence and interactions with inspectors/ambassadors, and signage at the launches. Consistency is key with this group of boaters as they typically mean well, but do not always have AIS on their mind as a priority when using their watercraft. The AIS Ambassador Program is pleased to observe the reduction in the number of boaters who needed reminders to self-inspect by approximately 16% from 2022 to 2023.

## Recommendations and Improvements for Future Seasons

- 1. Lake-wide AIS effort on Lake Minnetonka:** With how many boaters made comments about Lake Minnetonka already being infested with every AIS, and thinking it is a lost cause there could be value in a larger scale lake-wide effort to educate the public on what AIS is not yet in the lake, or AIS that is contained to certain locations on the lake. Additionally, with Lake Minnetonka being one of the most trafficked lakes in the state of Minnesota, everyone who uses the lake should be made aware of the threat they pose from transporting the known AIS in Minnetonka to any of the other many thousands of clean lakes across the state and beyond.
- 2. Maintaining a presence at the busiest launches during the busiest times of day:** having ambassadors at the Surfside Park launch in Mound had significant benefits. More ambassadors, or even traditional inspectors with the right approach, at these busy launches across the county, and early in the boating season will pay dividends throughout the entire boating season.

## Scope of Season Impacts

The second season of the AIS Ambassador Program was another success. With over 3,700 boaters interacting with our ambassadors, the impact of public engagement and education was widespread. One zebra mussel violation was addressed and decontaminated, and countless more were avoided through education. Most interactions were positive encounters with boaters willing to learn more to protect our lakes.

The three activities that were set out to be addressed in 2023 were summarized in a manner that is hopefully meaningful to other organizations and is repeatable, scalable, and sustainable.

As the second year of our program, there were again many questions answered as the season progressed. We learned more about the best ways to educate and interact with the public. We reaffirmed a crucial trend from 2022 that saw an increase in boater compliance and AIS awareness as the season progressed, showing the direct impact of our ambassador program. Scheduling tactics and dataanalysis allowed us to adapt to changing needs as the summer unfolded to maximize effectiveness. We look forward to continuing our work with Hennepin County in the years to come as we build the program and expand the impact even further.

*Thank you for trusting Waterfront Restoration to develop this AIS prevention program in Hennepin County! It is our sincere hope that the efforts of this program are rewarded with more informed, educated, and responsible boaters that help preserve our natural water bodies long into the future.*