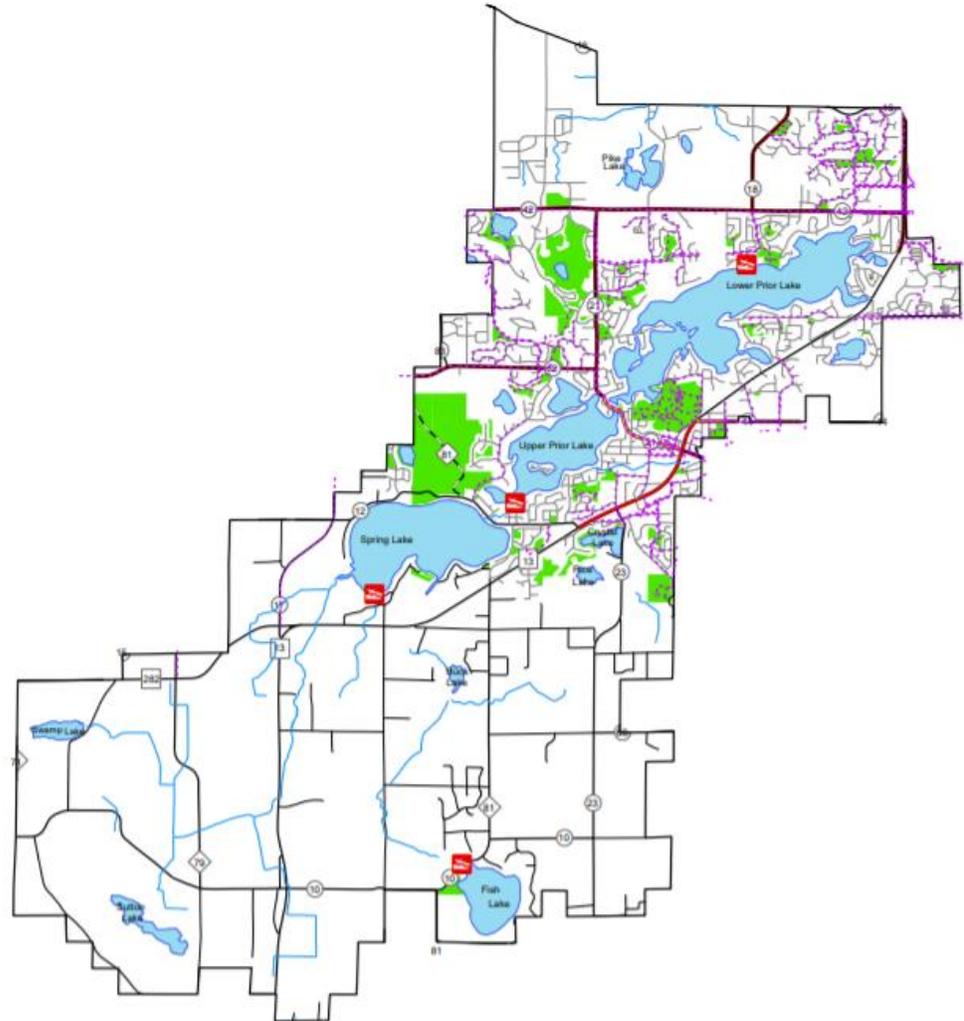




2021 Season Report



Prior Lake Spring Lake Watershed District Watercraft Inspections

Waterfront Restoration, LLC
December 8, 2021

Prior Lake Spring Lake Watershed District Watercraft Inspection Survey Data Table of Contents

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2021 Prior Lake Spring Lake Watershed District Watercraft Inspection Program

Watercraft Inspection Summary

Waterfront Restoration was contracted to administer the Prior Lake Spring Lake Watershed District’s 2021 Aquatic Invasive Species (AIS) watercraft inspection program. The city provided a list of the three lake launches on which they desired watercraft inspector coverage, as well as the days and hours during which the inspector coverage was to take place. The staffed launches were located at Fish Lake, Lower Prior Lake, Upper Prior Lake and Spring Lake. For the majority of the season (5/14/21 through 9/18/21) it was requested that Fish Lake have full Friday, Saturday and Sunday and occasional Monday (Memorial Day and Labor Day) coverage, from 8 A.M. – 4.30 P.M. Fish Lake was requested to have a total of 16 inspector hours each month.

Table 1: 2021 Watercraft Inspection Totals

Lake Name	Inspections	Inspection Hours
Fish Lake	79	49
Lower Prior Lake	1,720	225
Upper Prior Lake	1,348	302
Spring Lake	1,670	424
Total	4,817	1,000

The 2021 AIS inspection program kicked-off on MN Fishing Opener, Saturday May 14th and concluded on Saturday September 25th. According to official MN DNR inspector survey data, 4,817 watercraft inspections were completed during the 2021 program season (Table 1). Of that total, 3,136 were entering inspections, 1,670 were exiting inspections. There were also 9 lift and 2 courtesy inspections. Lower Prior Lake accounted for the largest portion of inspections at 36%, (Figure 1). Spring Lake and Upper Prior Lake accounted for 35% and 28% respectively.

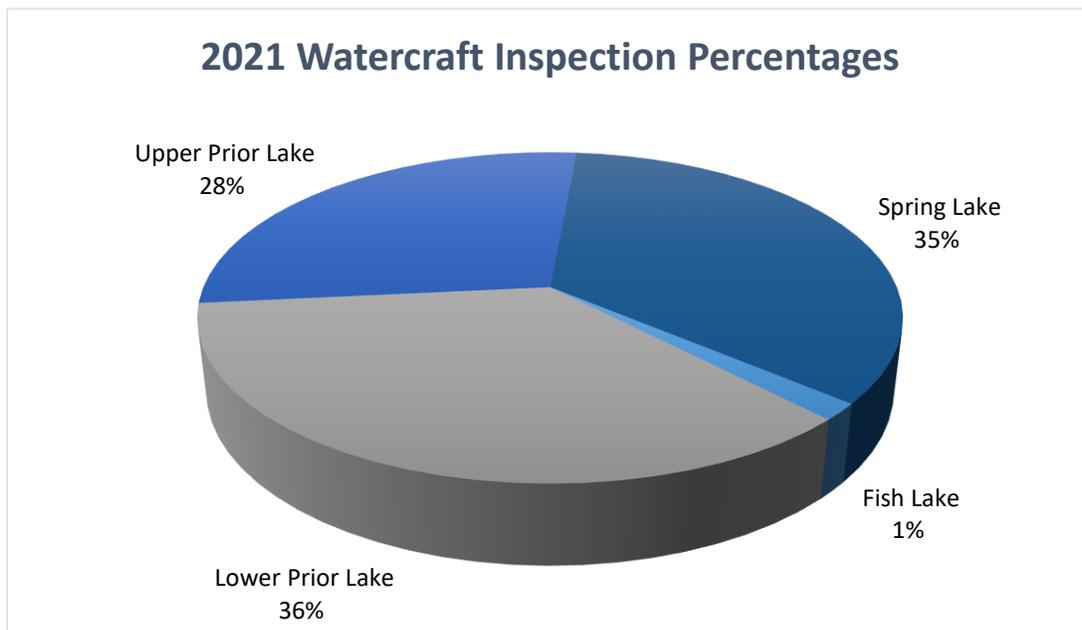


Figure 1: Chart (above) reflects the percentage of total inspections completed at each lake during the 2021 inspection season.

The inspection survey data reveals that 41% of all inspections were conducted on fishing boats, while runabouts were the second most inspected watercraft at 31% (Figure 2). Personal watercrafts, pontoons and wakeboards accounted for 10%, 10%, and 6% of the total inspections, respectively. Canoe/kayaks, Jon boats, Sailboats and Boat Lifts/Docks accounted for 1%, 1%, 0% and 0% respectively.

Type of Watercraft

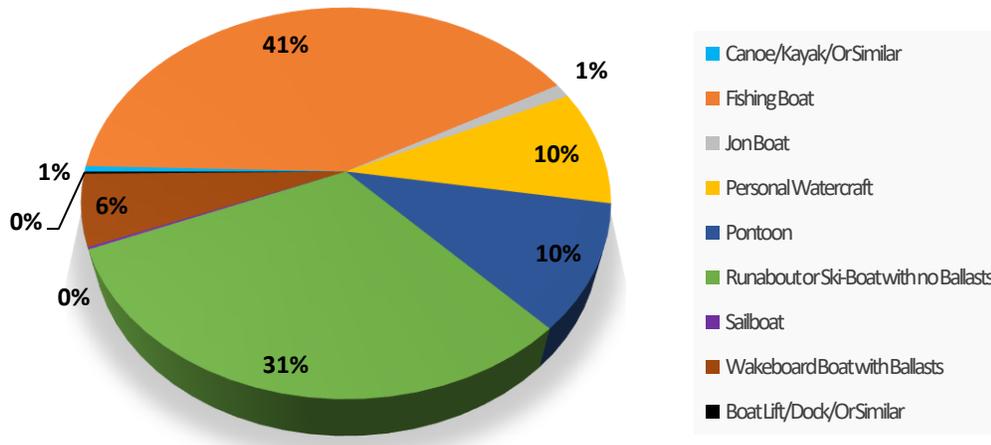
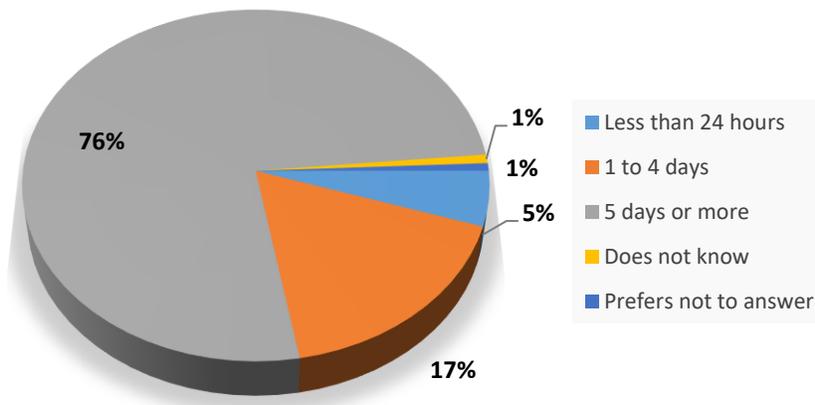


Figure 2: Chart (above) reflects the percentage of total inspections conducted on watercraft types during the 2021 inspection season.

Time out of Water Before Entering



The data also shows that throughout the 2021 inspection season 76% of watercrafts entering had been kept out water for the recommended 5 days or more, while 17% were reported as only being out for 1-4 days (Figure 3). However, 5% of entering watercrafts were reported as being out of the water for less than 24 hours. The remaining 2% of boaters reported that they either did not know how long the watercraft had been out of the water for, or they preferred not to answer.

Figure 3: Chart (above) reflects the percent of responses from entering boaters regarding the amount of time their watercraft had been out of the water prior to entering a staffed lake.

While the majority of inspected watercrafts were recorded as being trailered by vehicles from Minnesota, the remaining watercrafts were recorded as being brought in by out-of-state vehicles. The most common out-of-state vehicles trailering a watercraft were from Wisconsin at 10, followed by Iowa at 9 (Figure 4). Note that when determining what state, a watercraft is from, only the license number of the vehicle pulling the watercraft is recorded.

Number of Out-of-state Watercraft inspected

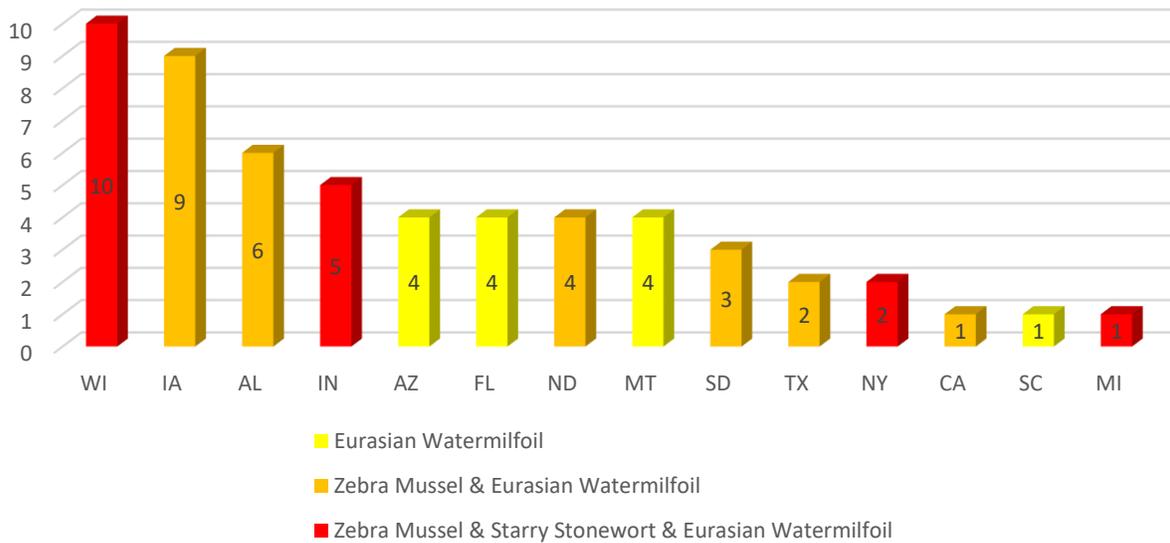


Figure 4: Graph (above) reflects the number of watercrafts recorded as being from out-of-state. Each state is color coded to indicate certain AIS that have been reported in each state. Note, “No infestation” only suggests that neither zebra mussels, Eurasian Watermilfoil nor Starry Stonewort have been recorded in the given state.

The four Prior Lake Spring Lake Watershed District launches were staffed for a total of 1,000 hours in 2021. Spring Lake received the highest percent of inspection hours at 42% (424 hours). (Figure 5). Upper Prior Lake received around 30% (302 hours) and Lower Prior Lake received around 23% (225 hours) of the inspection hours. Fish Lake received 5% (49 hours) of the inspection hours.

2021 Watercraft Inspection Staffing Allocation Percentages

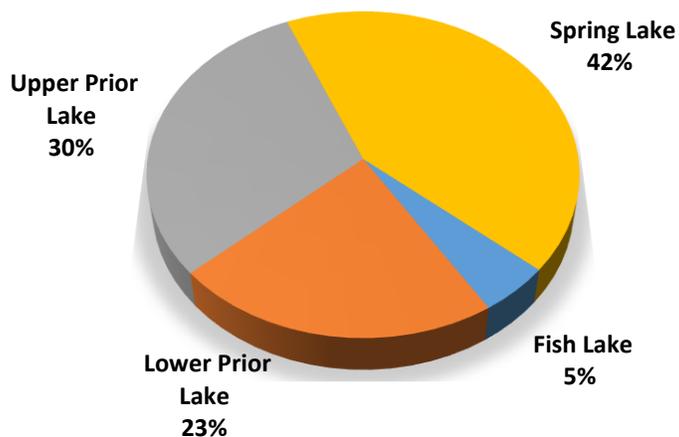


Figure 5: Chart (above) reflects the percent of total hours received by each lake during the 2021 inspection season.

From the survey data we determined that the busiest month for watercraft inspections was July, with 1,524 completed surveys. June and May followed close by at 1,405 and 1,254 surveys logged (Figure 6). August and September have understandably lower inspection counts since coverage hours significantly decreased and it is at the end of the season. Further detail by week can be found in Figure 7, where it shows that the last week of May has the highest count of inspection surveys at 638.

Inspections by Month

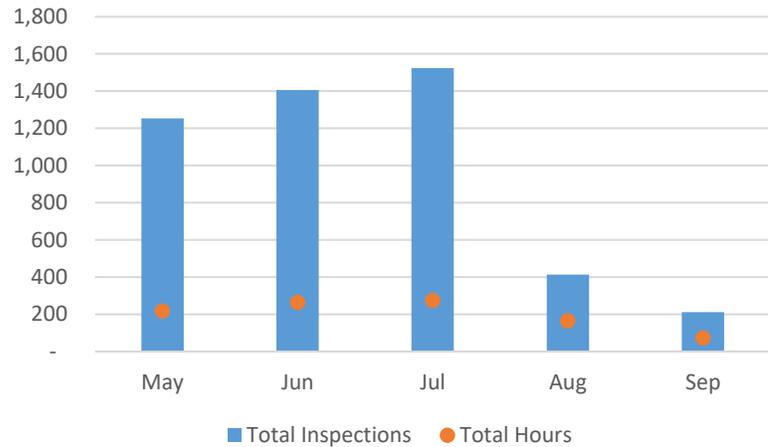


Figure 6: Graph (above) reflects the number of inspection surveys, and the hours of inspector coverage logged each month during the 2021 inspection season.

Inspections by Week

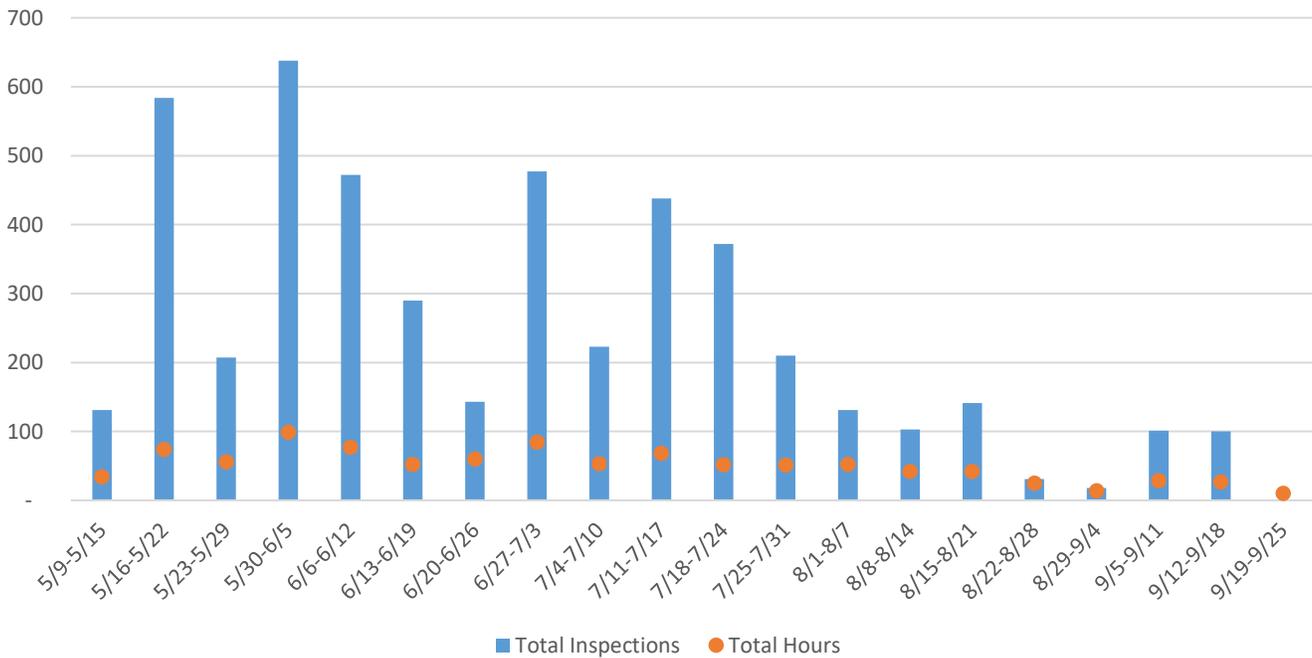
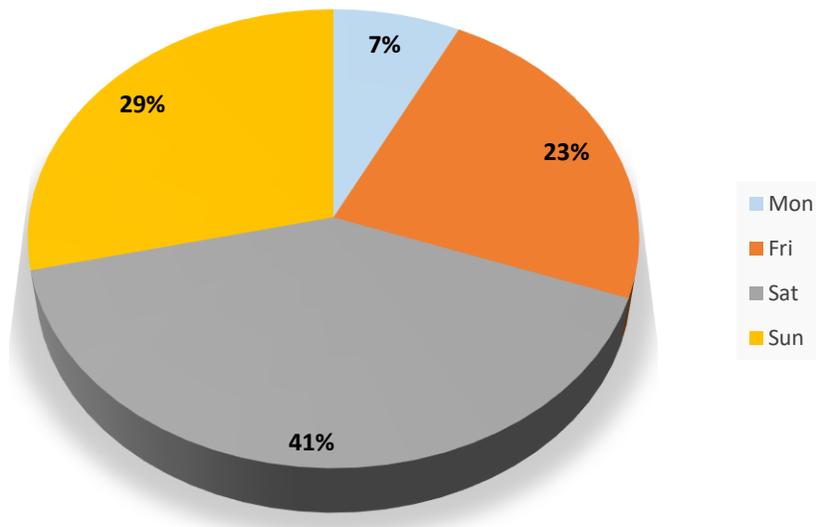


Figure 7: Graph (above) reflects the number of inspection surveys, and the hours of inspector coverage logged each week during the 2021 inspection season.

Inspections by Week Day



The data shows that the busiest days for inspections were Saturday, which accounted for 41% of inspections (Figure 8). Sunday and Friday followed with 29% and 23% of the total inspections being complete, 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. (Figure 9).

Figure 8: Chart (above) reflects the distribution of completed inspection surveys by day of week during the 2021 inspection season.

Inspections by Time of Day

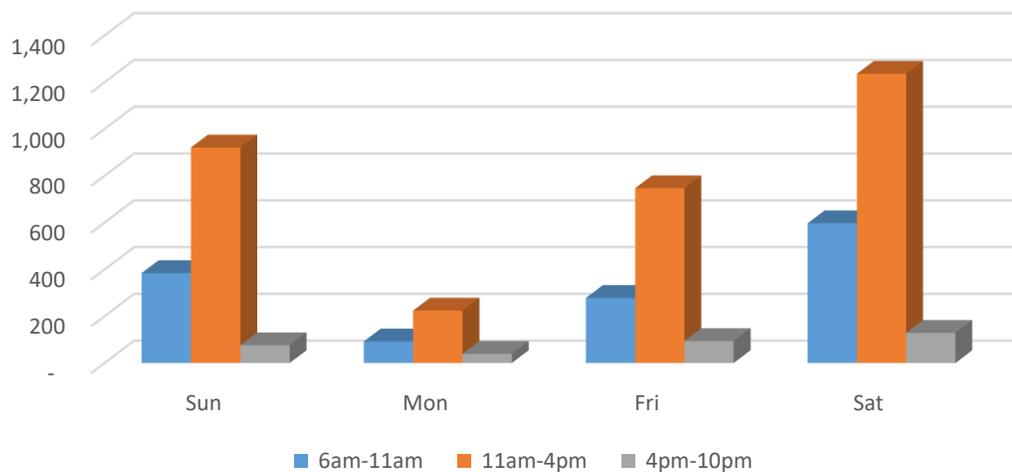


Figure 9: Graph (above) reflects the number of inspection surveys completed at specific times of day, and by day of week during the 2021 inspection season.

Of the entering inspections, the waterbody most visited by boaters prior to entering an inspector staffed launch within the Prior Lake Spring Lake Watershed District was Lower Prior Lake, with 645 boaters reporting last being there (Figure 10). The other most common responses were Upper Prior (517), Spring (463), Schneider (91), and Marion (66). This information can help us understand where new AIS infestations arise from since AIS are often unintentionally transported between bodies of water via watercrafts, trailers, and other water-related equipment.

LAST Body of Water Visited

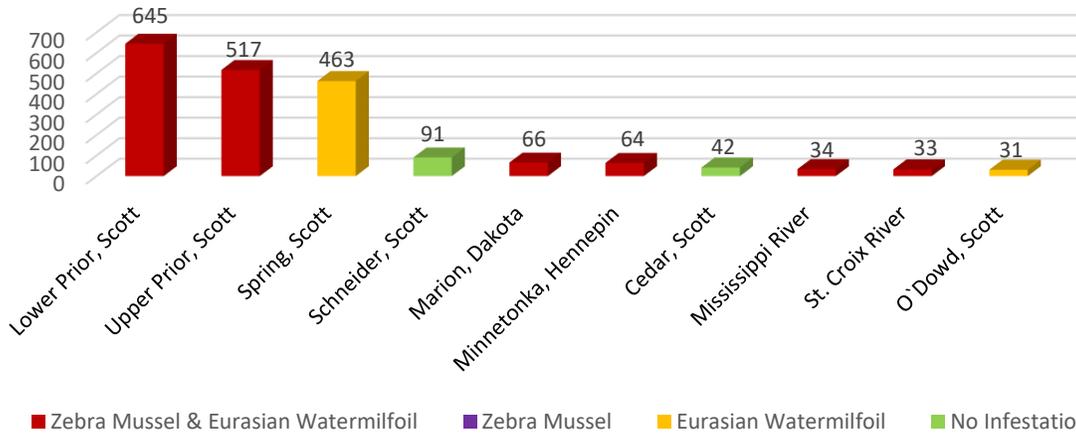


Figure 10: Graph (above) reflects the number of boaters that reported the last lake visited prior to entering another waterbody via one of the Prior Lake Spring Lake Watershed District staffed launches during the 2021 inspection season. Note: “No infestation” only means that such lakes are not infested with the mentioned AIS. Graph only shows the top ten responses.

Likewise, of the same entering inspections, the boater responses pertaining to which waterbody they would be visiting next, showed that the majority of boaters leaving an inspector staffed launch within the Prior Lake Spring Lake Watershed District would head to Lower Prior (306), Spring (240), Upper Prior (203), Minnetonka (33) and Schneider (31) (Figure 11).

NEXT Body of Water Planning to Visit

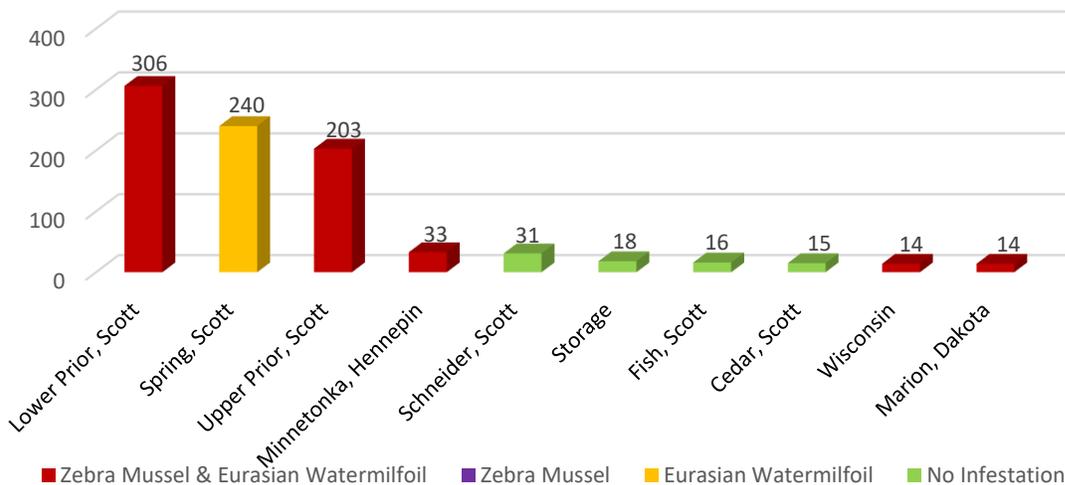


Figure 11: Graph (above) reflects the number of boaters that reported the next lake they expected to visit after exiting a Prior Lake Spring Lake Watershed District inspector staffed launch during the 2021 inspection season. Note: “No infestation” only means that such lakes are not infested with the mentioned AIS. Graph only shows the top ten

Inspection Findings, Violations, and Decontaminations

There were 39 entering inspections that were in violation of Minnesota AIS laws (nearly 1% of all inspections), of which 30 were drain plug violations. On 104 exiting watercrafts there were at least one finding on and/or in the watercraft, trailer, or equipment. However, exiting inspection findings are not considered AIS violations since they were caught prior to the boater leaving the launch. Regardless, these findings during exiting inspections provide useful information when determining what could be leaving an infested lake and entering a new lake.

89% of the 9 entering inspections were plants (removeable by hand) (Figure 12). The rest were zebra mussels (will require decon).

Findings During Entering Inspections

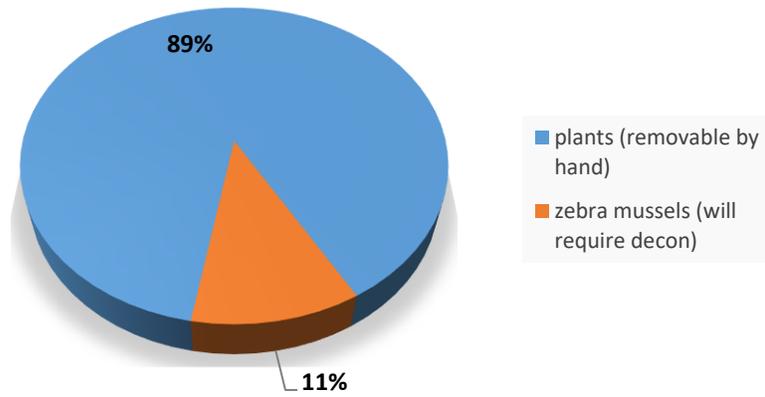
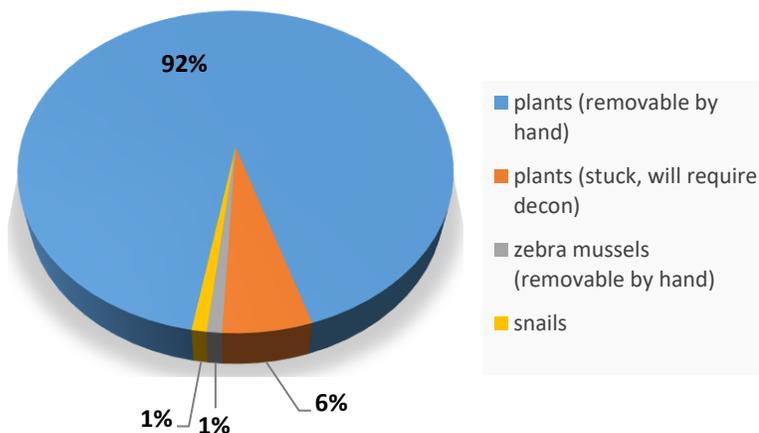


Figure 12: Chart (above) reflects the distribution of findings during entering inspections during the 2021 inspector season.

Findings During Exiting Inspections



The most common finding during exiting inspections were plants (removable by hand) at 96 (Figure 13). However, there were 6 instances (6%) with zebra mussels and 1 instance of snail and zebra mussels each. None of the 104 exiting inspections that contained findings were deemed as AIS violations since they were caught and resolved prior to the watercraft leaving the launch.

Figure 13: Chart (above) reflects the distribution of findings during exiting inspections during the 2021 inspection season. Watercraft requiring decontamination were encouraged to go to a nearby decon station (i.e., DNR staffed decon or Christmas Lake), or to a professional watercraft dealer service for cleaning before entering the next body of water.

The data shows that all 4 entering findings were reported from Upper Prior Lake and 3 entering findings were reported from Lower Prior Lake. (Figure 14).

Entering Violations by Lake

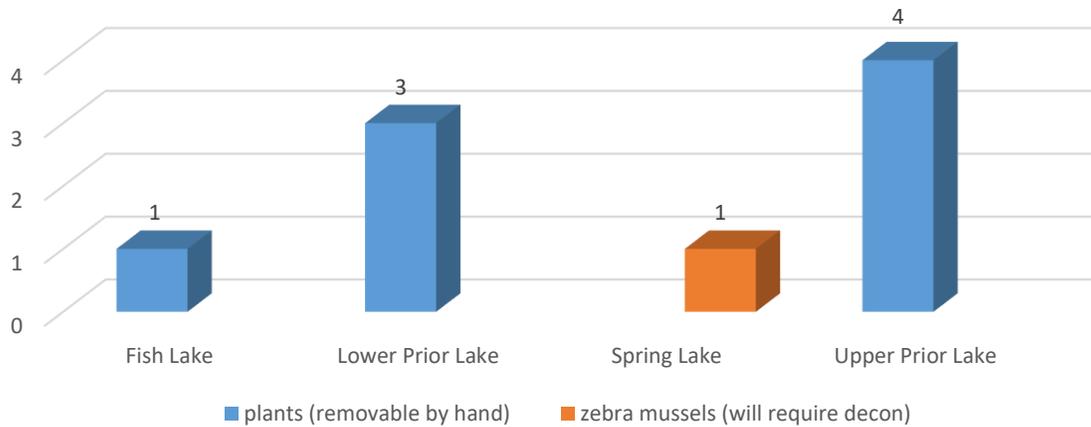


Figure 14: Graph (above) reflects the number of findings by lake during entering inspections during the 2021 inspection season.

Looking at potential exiting violations, Spring Lake comes in with the highest number of “plants (removable by hand)” at 32 (Figure 15). The second most common lake reporting findings of “plants (removable by hand)” was Lower Prior at 27, followed by Fish at 24.

Exiting Violations by Lake

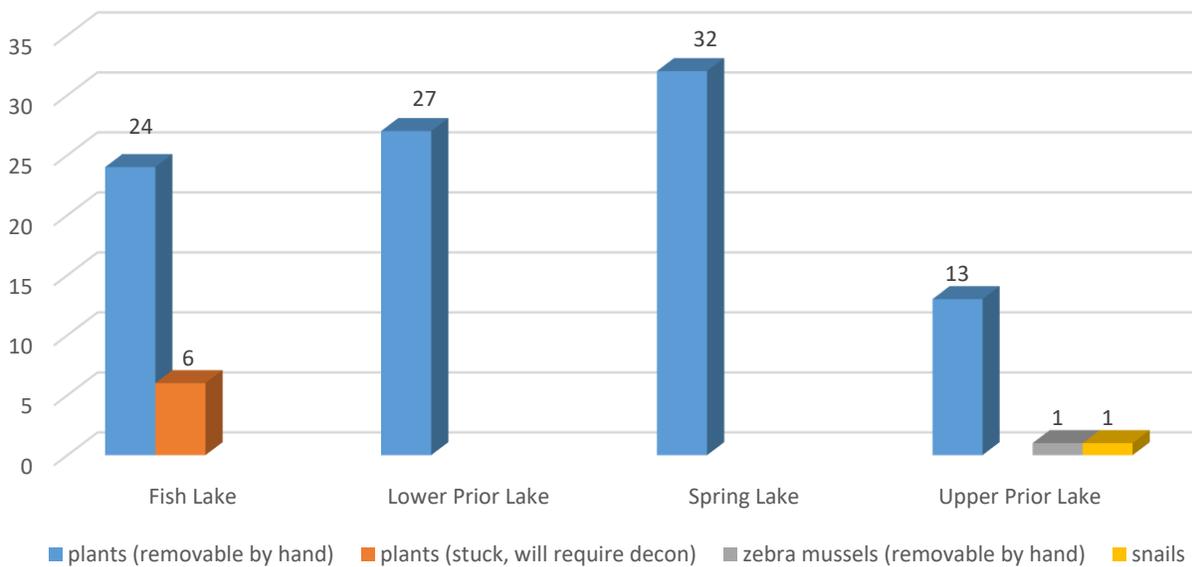
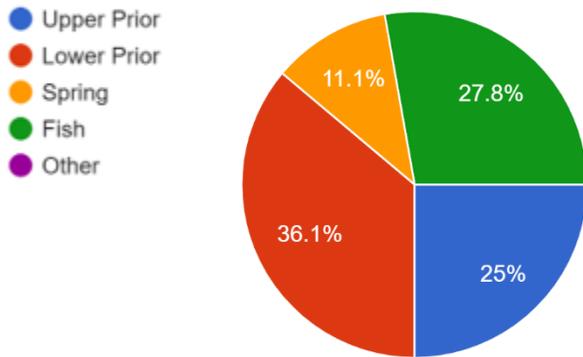


Figure 15: Graph (above) reflects the distribution of findings during exiting inspections during the 2021 inspection season. Watercraft requiring decontamination were encouraged to go to a decontamination site (i.e., the DNR staffed location or the Christmas Lake launch), or to a professional watercraft dealer service for cleaning before entering the next body of water.

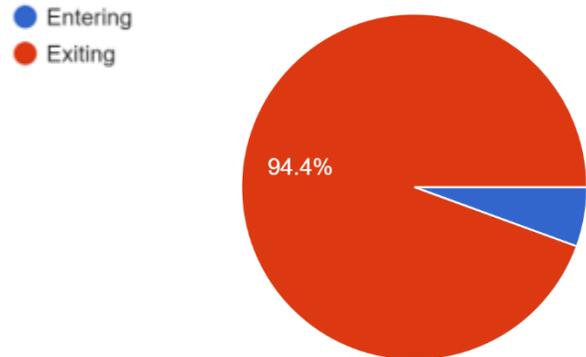
As a method to gather more information on the common finding of plants during watercraft inspections a separate survey was created that inspectors were asked to complete throughout the season. This additional survey included which launch the inspector was working at, if it was an entering or exiting inspection, what their assessment was of species identification, and a photo(s) of the finding. Inspectors completed these additional surveys as possible given the traffic and line-up at the launch. For example, if an inspector found plants removable by hand such as filamentous algae on an exiting inspection, but there were four watercrafts waiting for entering inspections before launching. They would not complete the additional survey, and instead, once completed with the standard inspection survey, go right away to inspect the other watercraft to better serve the public quickly and thoroughly with their inspections.

The charts below are the responses gathered from the additional species identification survey. The survey responses and pictures were also shared with PLSLWD staff throughout the season.

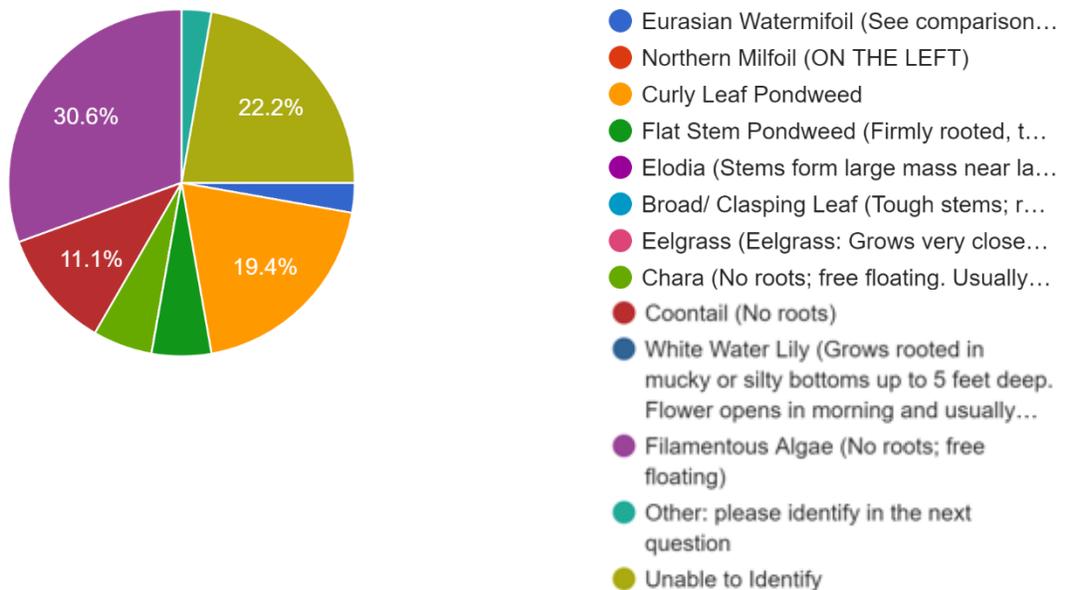
What lake launch are you working at?



Is this an entering or exiting inspection?



What is the identity of the plant?



Fish Lake

Fish Lake had the lowest count of inspection surveys compared to the other three staffed lakes in the Prior Lake Spring Lake Watershed District. In total, Fish Lake was staffed for 49 hours from June 12th through August 27th and had 79 inspections completed over this period (Table 2).

Table 2: Fish Lake 2021 Inspection Types

Month	Enter	Exit	Inspection Hours
Jun	12	21	17
Jul	22	20	16
Aug	2	2	16
Total	36	43	49

The survey data reveals that 65% of all inspections were conducted on fishing boats, while john boats were the second most inspected watercraft at 11% (Figure 19). Personal watercrafts and canoe/kayaks accounted for 9% and 6% of the total inspections, respectively. Pontoons and Runabouts accounted for 5% and 4% of the total inspections, respectively.

Type of Watercraft

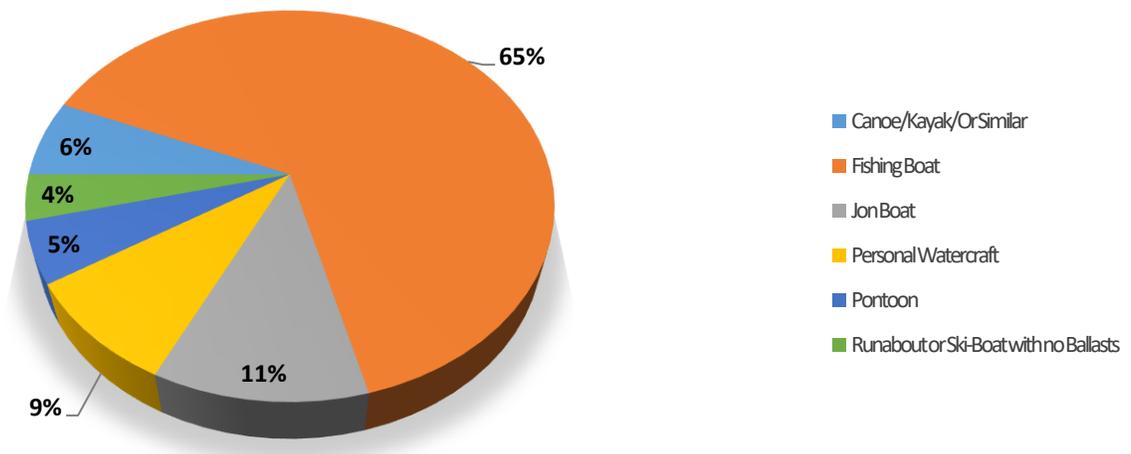
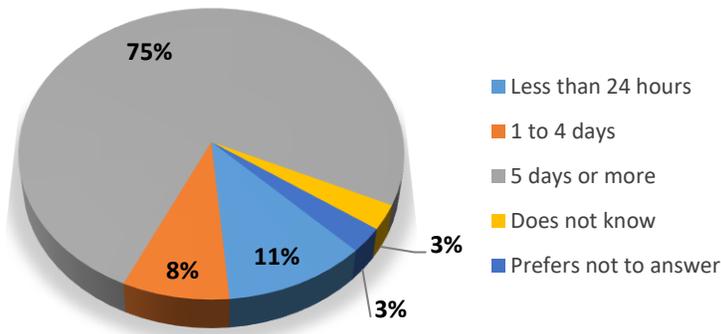


Figure 19: Chart (above) reflects the percentage of total inspections conducted on watercraft types at Fish Lake during the 2021 inspection season.

Time out of Water



The data also shows that throughout the 2021 inspection season 75% of watercrafts entering had been kept out of water for the recommended 5 days or more, while 11% were reported as only being out for 1-4 days (Figure 20). However, another 8% of entering watercrafts were recorded as being out the water for less than 24 hours. The remaining 6% of boaters reported that they either did not know how long the watercraft had been out of the water for or they preferred not to answer.

Figure 20: Chart (above) reflects the percent of responses from entering boaters at Fish Lake regarding the amount of time their watercraft had been out of the water prior to entering.

Inspections by Week

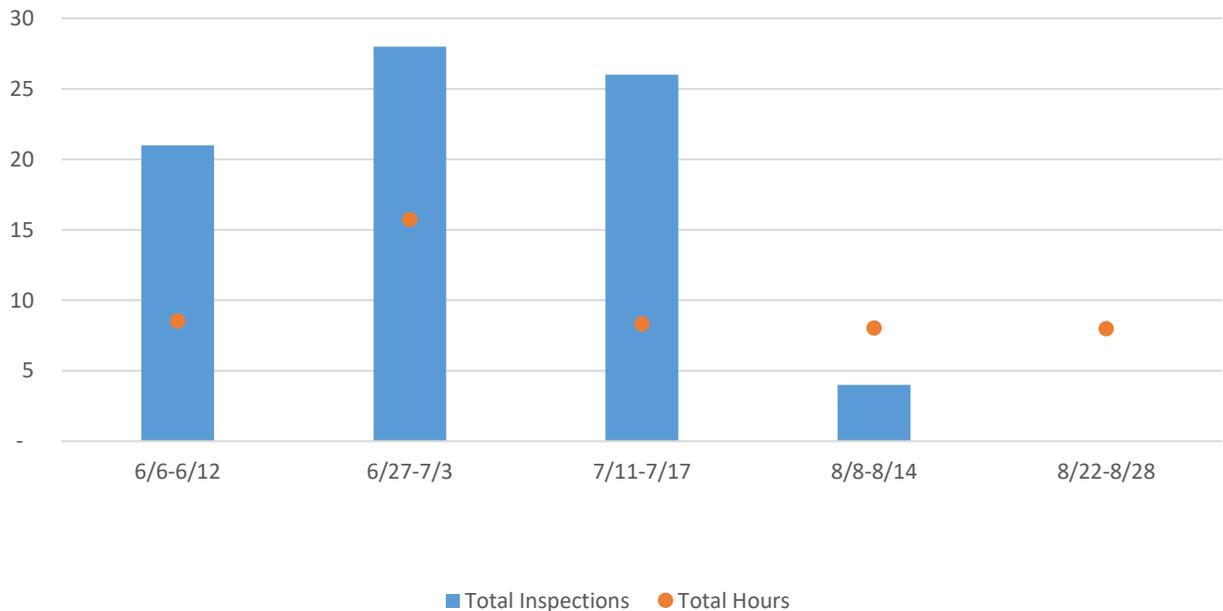


Figure 21: Graph (above) reflects the number of inspection surveys and the hours of inspector coverage logged at Fish Lake each week during the 2021 inspection season.

From the survey data we determined that the busiest month for watercraft inspections at Fish Lake was June. Further detail by week can be found in Figure 21, where it shows that the last week of June has the highest count of inspection surveys of 28.

The data also allowed us to determine the busiest days and busiest times of day over the course of the inspection season. It is shown that the busiest days for inspections were Saturday. (Figure 22).

Inspections by Weekday

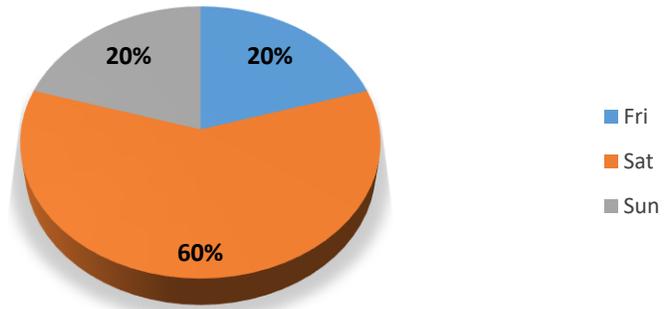
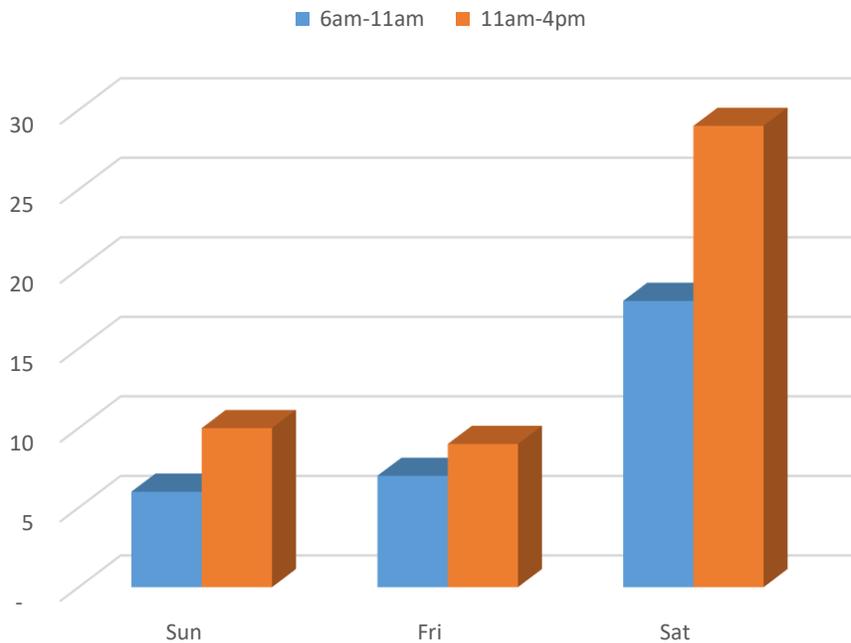


Figure 22: Chart (above) reflects the distribution of completed inspection surveys on Fish Lake by day of week during the 2021 inspection season.

Inspections by Time of Day



On Fridays, Saturdays, and Sundays alike the busiest time of day for inspections was between 11 A.M. to 4 P.M. (Figure 23). The second busiest time of day was shown to be from 6 A.M. to 11 A.M.

Figure 23: Graph (above) reflects the number of inspection surveys reported by the time of day, and day of week at Fish Lake during the 2021 inspection season.

LAST Body of Water Visited

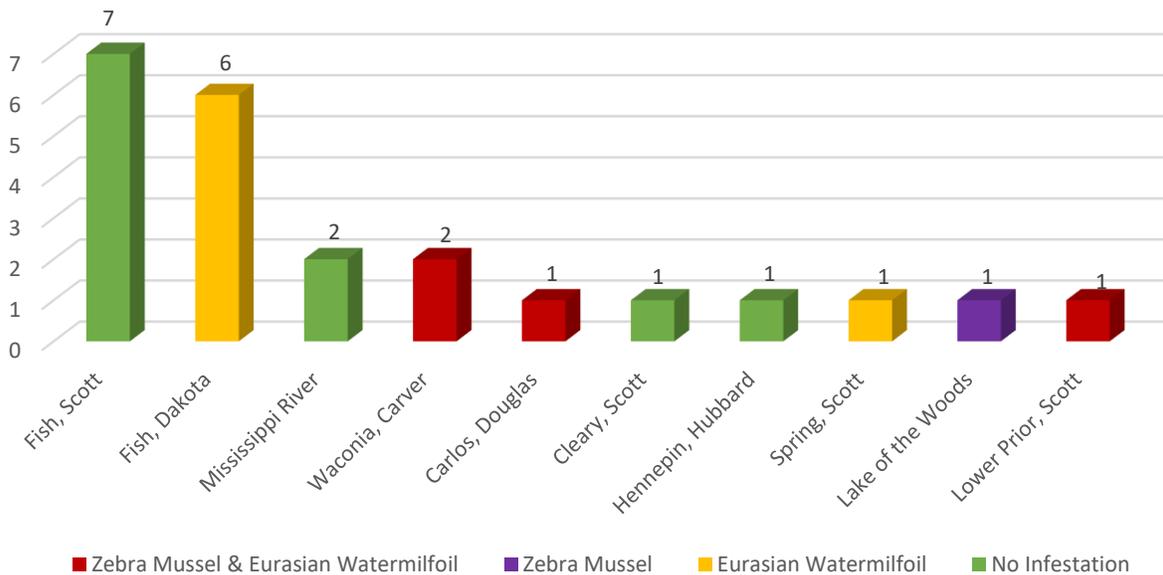


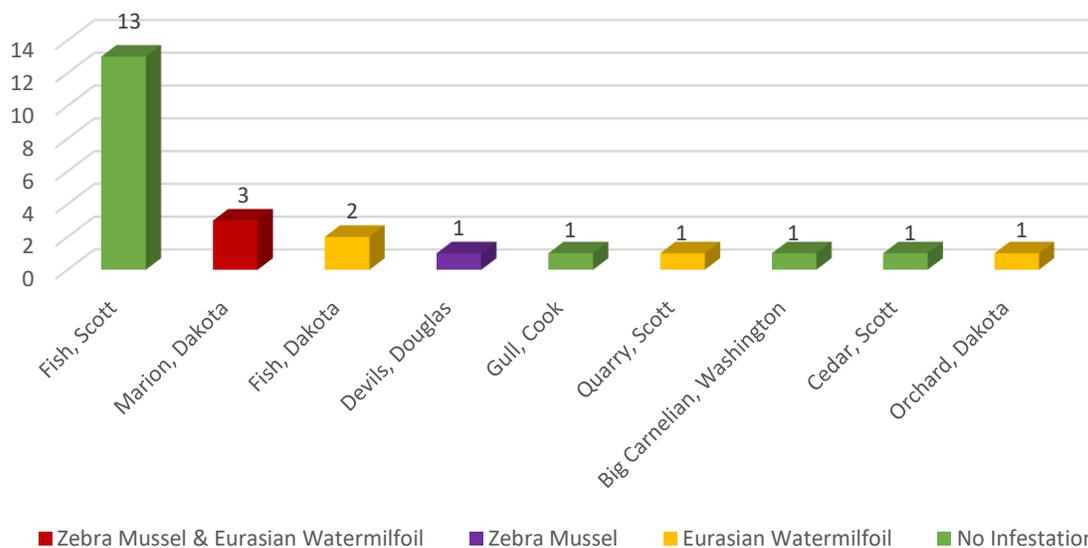
Figure 24: Graph (above) reflects the number of boaters that reported the last lake visited prior to entering Fish Lake during the 2021 inspection season. Note: “No infestation” only means that such lakes are not infested with the mentioned AIS. Graph only shows the top ten responses.

Of the entering inspections, the waterbody most visited by boaters prior to entering Fish Lake was Fish Lake itself, with 7 boaters reporting last being there (Figure 24).

The boater responses pertaining to which waterbody they would be visiting next, showed that most boaters leaving Fish Lake would head back to Fish Lake (13), or go to Lake Marion (3) (Figure 25).

Figure 25: Graph (above) reflects the number of boaters that reported the next lake they expected to visit after Fish Lake

NEXT Body of Water Planning to Visit



during the 2021 inspection season. Note: “No infestation” only means that such lakes are not infested with the mentioned AIS. Graph only shows the top ten responses.

Lower Prior Lake

Lower Prior Lake received 225 hours of inspector coverage from May 14th through September 18th and had 1,938 inspections completed (Table 3). Lower Prior Lake Spring Lake Watershed District required inspector staffing eight and a half hours a day, Friday to Sunday.

Table 3: Lower Prior Lake 2021 Watercraft Inspection Totals

Month	Enter	Exit	Inspection Hours
May	329	180	70
Jun	315	171	60
Jul	374	184	60
Aug	61	9	26
Sep	52	43	10
Total	1,131	587	225

The inspection survey data reveals that more than 40% of all inspections were conducted on Runabouts, while Fishing boats were the second most inspected watercraft at 33% (Figure 26). Pontoons, Personal Watercrafts and Wakeboards accounted for 11%, 8% and 7% of the total inspections, respectively.

Type of Watercraft

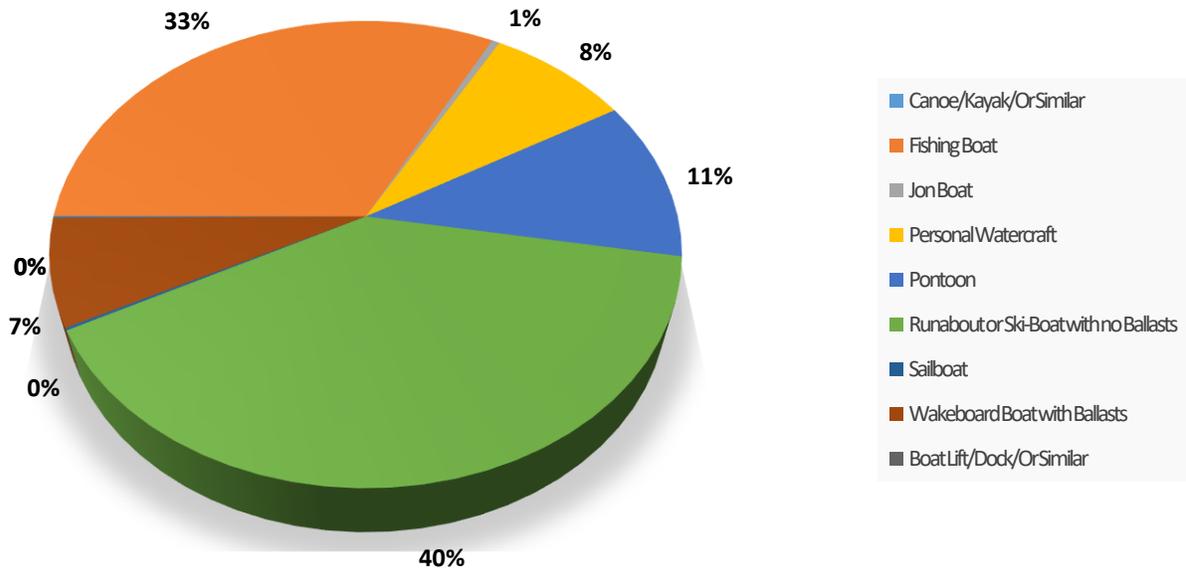
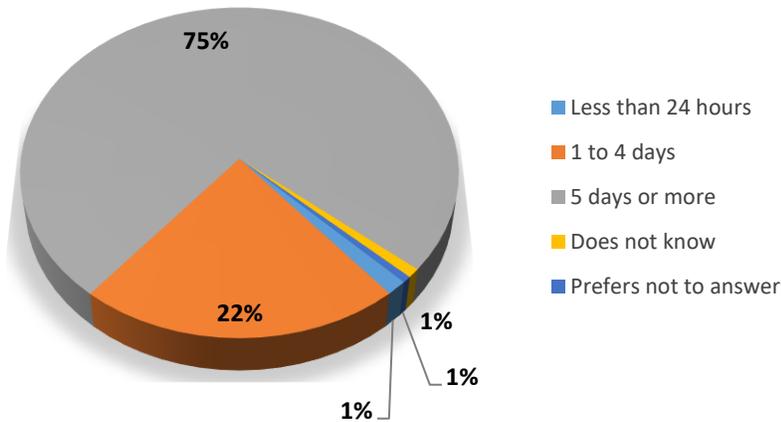


Figure 26: Chart (above) reflects the percentage of total inspections conducted on watercraft types during the 2021 inspection season.

Time out of Water



The data also shows that throughout the 2021 inspection season 75% of watercrafts entering had been left out of any body of water for the recommended 5 days or more, while 22% were reported as only being out for 1-4 days (Figure 27). However, 1% of entering watercrafts were recorded as being out the water for less than 24 hours. 1% of boaters reported that they did not know how long the watercraft had been out of the water for and 1% reported that they preferred not to answer.

Figure 27: Chart (above) reflects the percent of responses from entering boaters at Lower Prior Lake regarding the amount of time their watercraft had been out of the water prior to entering.

Inspections by Week

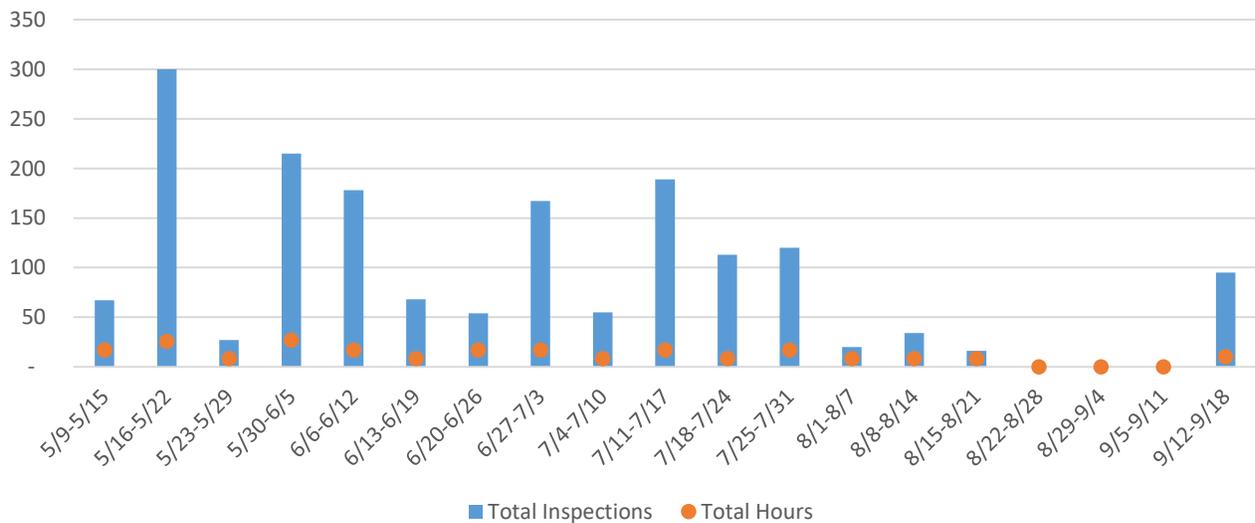


Figure 28: Graph (above) reflects the number of inspection surveys and the hours of inspector coverage logged at Lower Prior Lake each week during the 2021 inspection season.

From the survey data we determined that the busiest month for watercraft inspections was July, with 559 completed surveys. May and June followed close by at 510 and 486 surveys logged. August and September have understandably lower inspection counts since coverage hours significantly decreased and it is at the end of the season. Further detail by week can be found in Figure 28, where it shows that the third week of May had the highest count of inspection surveys.

The data also allowed us to determine the busiest days and busiest times of day over the course of the inspection season. It is shown that the busiest days for inspections were Saturday, followed by Friday and Sunday (Figure 31).

Inspections by Week Day

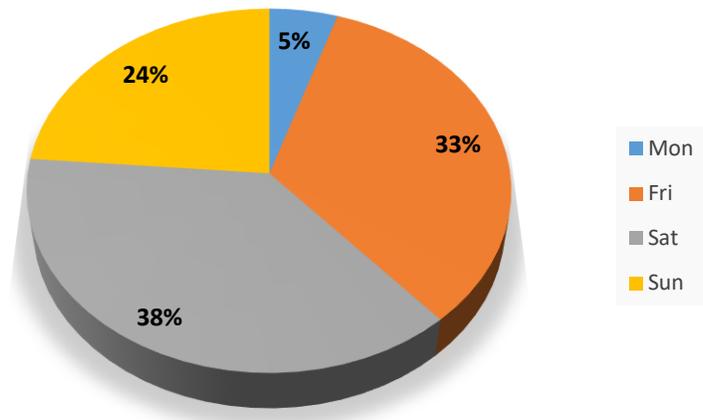
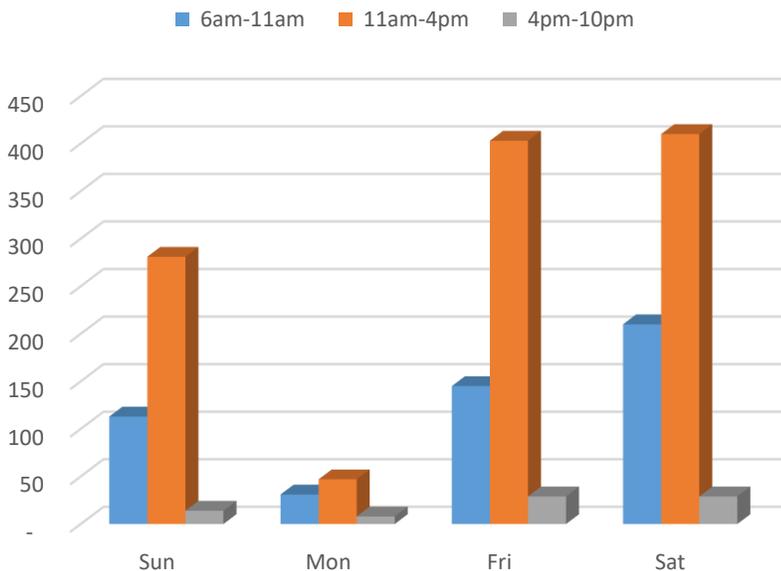


Figure 29: Chart (above) reflects the distribution of completed inspection surveys on Lower Prior Lake by day of week during the 2021 inspection season.

Inspections by Time of Day



On Sunday, Monday, Thursday, and Friday alike, the data shows that the busiest time of day for inspections is between 11AM to 4PM (Figure 30). The second busiest time of day is shown to be from 6AM to 11AM.

Figure 30: Graph (above) reflects the number of inspection surveys reported by day of week at Lower Prior Lake during the 2021 inspection season.

Of the entering inspections, the waterbody most visited by boaters prior to entering Lower Prior Lake was Lower Prior Lake itself, with 610 boaters reporting last being there (Figure 31). The other most common responses were lakes Minnetonka (43) and Marion (32). This information can help us understand where new AIS infestations arise from since AIS are often unintentionally transported between bodies of water via watercrafts, trailers, and other water-related equipment.

LAST Body of Water Visited

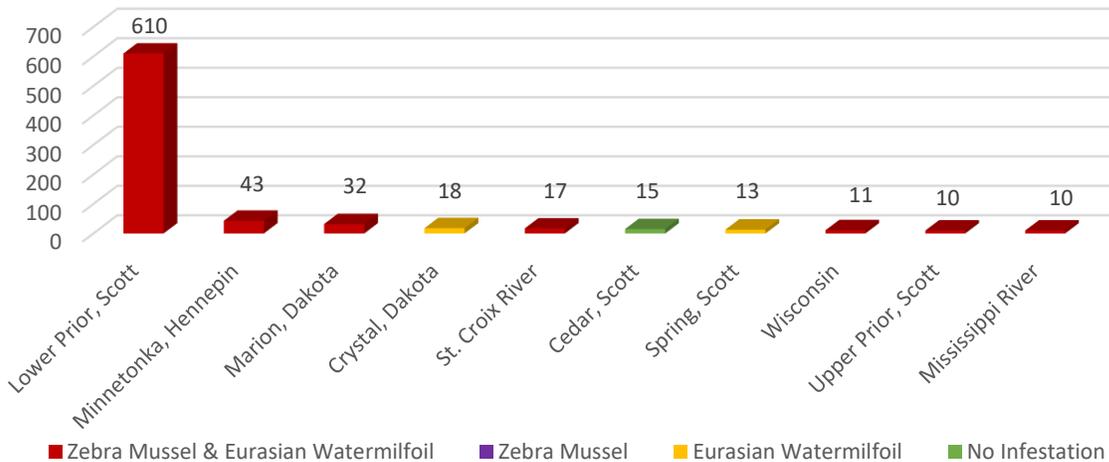


Figure 31: Graph (above) reflects the number of boaters that reported the last lake visited prior to entering Lower Prior Lake during the 2021 inspection season. Note: “No infestation” only means that such lakes are not infested with the mentioned AIS. Graph only shows the top ten responses.

Likewise, of the same entering inspections, the boater responses pertaining to which waterbody they would be visiting next, showed that the majority of boaters leaving Lower Prior Lake would be heading right back to Lower Prior Lake (297). (Figure 32).

NEXT Body of Water Planning to Visit



Figure 32: Graph (above) reflects the number of boaters that reported the next lake they expected to visit after Lower Prior Lake during the 2021 inspection season. Note: “No infestation” only means that such lakes are not infested with the mentioned AIS.

Upper Prior Lake

In total, Upper Prior Lake was staffed for 302 hours from May 16th through September 6th and had 1,343 inspections completed (Table 4). Prior Lake Spring Lake Watershed District required inspector staffing eight and a half hours a day. This schedule was accomplished and weekend launch coverage was maximized.

Table 4: Upper Prior Lake 2021 Watercraft Inspection Totals

Month	Enter	Exit	Inspection Hours
May	248	124	62
Jun	270	143	85
Jul	269	105	87
Aug	111	38	59
Sep	31	4	10
Total	929	414	302

The inspection survey data reveals that one third (36%) of all inspections were conducted on fishing boats, while runabouts were the second most inspected watercraft at 31% (Figure 33). Personal watercrafts, pontoons and wakeboards accounted for 12%, 11% and 9% of the total inspections, respectively.

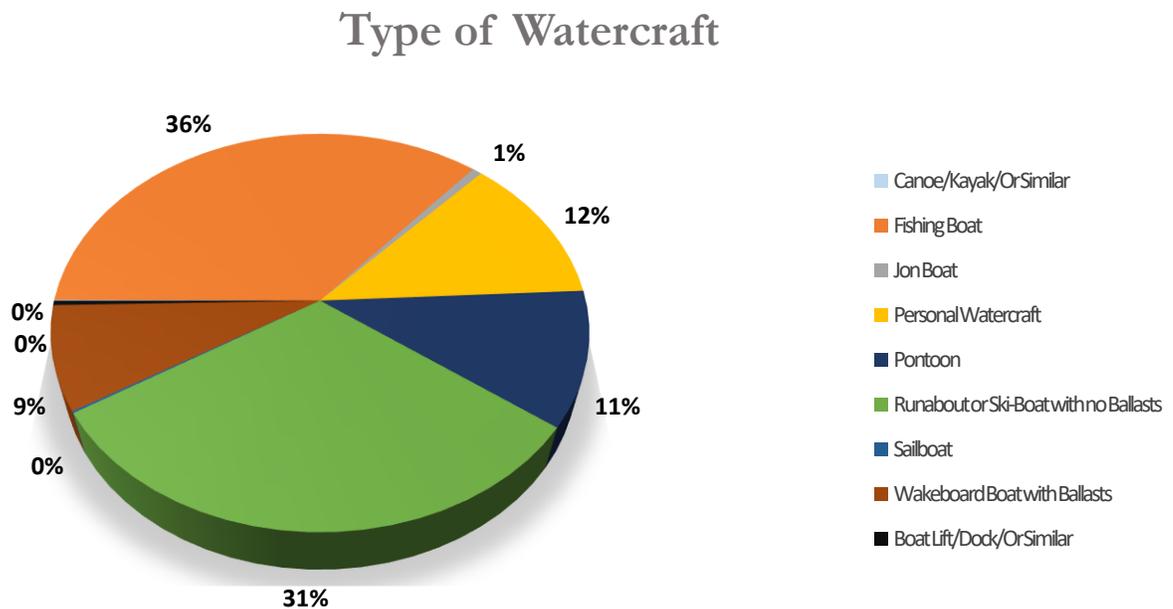
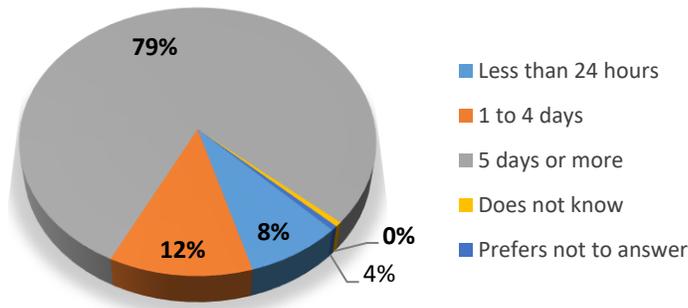


Figure 33: Chart (above) reflects the percentage of total inspections conducted on watercraft types during the 2021 inspection season.

Time out of Water



The data also shows that throughout the 2021 inspection season 79% of watercrafts entering had been kept out of any body of water for the recommended 5 days or more, while 12% were reported as only being out for 1-4 days. However, another 8% of entering watercrafts were recorded as being out the water for less than 24 hours. The remaining 4% of boaters reported that they preferred not to answer. (Figure 34).

Figure 34: Chart (above) reflects the percent of responses from entering boaters at Upper Prior Lake regarding the amount of time their watercraft had been out of the water prior to entering.

Inspections by Week

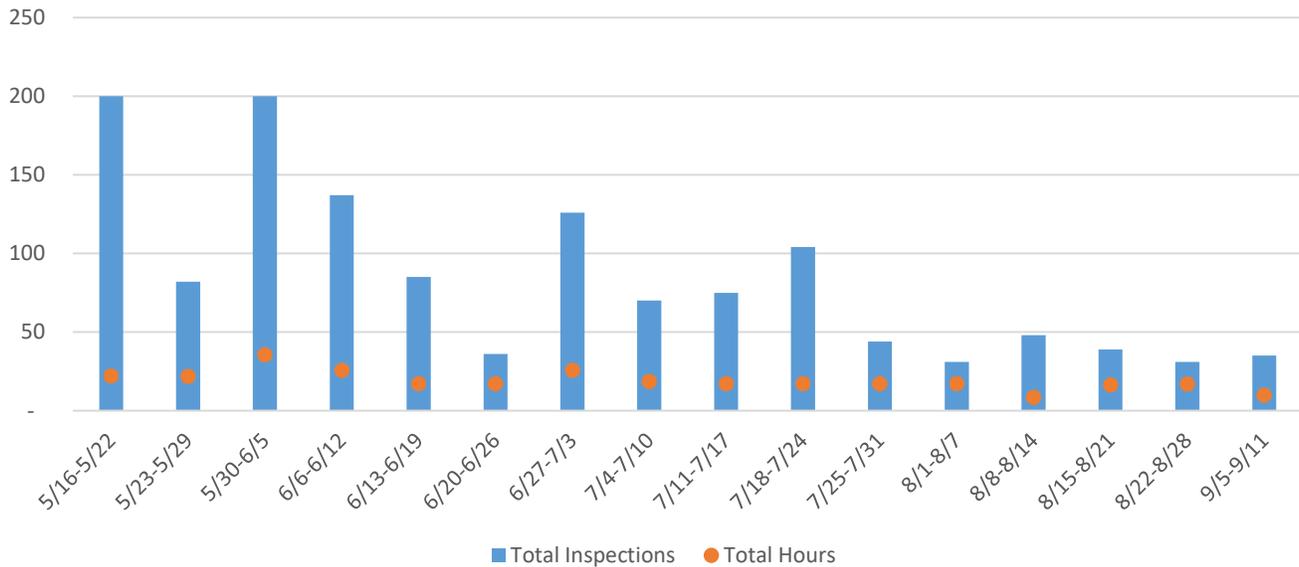


Figure 35: Graph (above) reflects the number of inspection surveys and the hours of inspector coverage logged at Upper Prior Lake each week during the 2021 inspection season

From the survey data we determined that the busiest month for watercraft inspections was June, with 414 completed surveys. May and July followed close by at 375 surveys each. August and September have understandably lower inspection counts since coverage hours significantly decreased and it is at the end of the season. Further detail by week can be found in Figure 35, where it shows that the third and last week of May had the highest count of inspection surveys.

The data also allowed us to determine the busiest days and busiest times of day over the course of the inspection season. It is shown that the busiest days for inspections were Saturdays, followed by Sundays. (Figure 36).

Inspections by Week Day

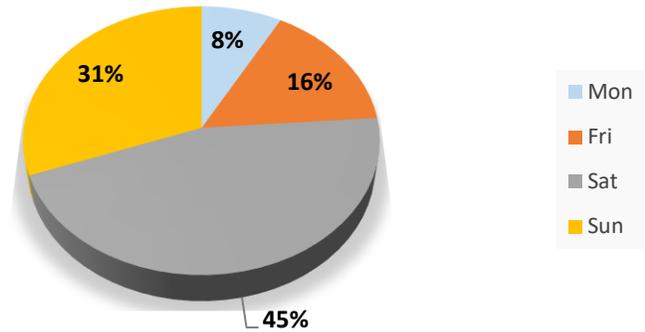
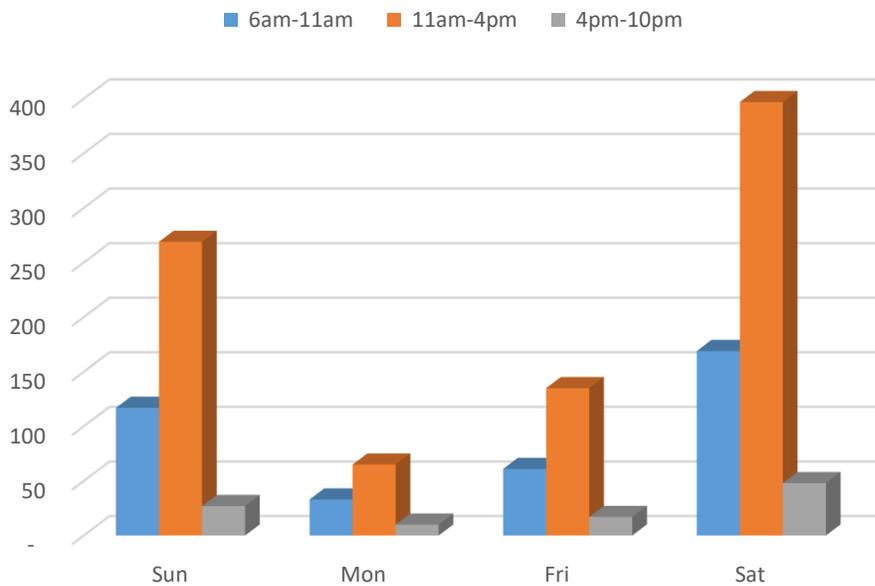


Figure 36: Chart (above) reflects the distribution of completed inspection surveys at Upper Prior Lake by day of week during the 2021 inspection season.

Inspections by Time of Day



On Mondays, 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. (Figure 37). The second busiest time of day is shown to be from 6 A.M. to 11 A.M.

Figure 37: Graph (above) reflects the number of inspection surveys reported by day of week at Upper Prior Lake during the 2021 inspection season.

Of the entering inspections, the waterbody most visited by boaters prior to entering Upper Prior Lake was Upper Prior Lake itself, with 422 boaters reporting last being there (Figure 38). The other most common responses were lakes Schneider (90) and Marion (16). This boater traffic and lake specific AIS knowledge can help us understand where new AIS infestations arise from since AIS are often unintentionally transported between bodies of water via watercrafts, trailers, and other water-related equipment.

LAST Body of Water Visited

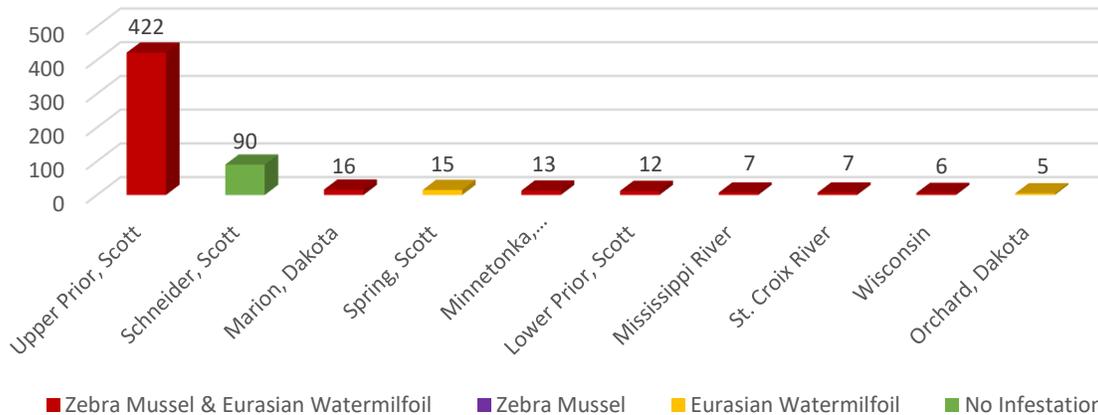


Figure 38: Graph (above) reflects the number of boaters that reported the last lake visited prior to entering Upper Prior Lake during the 2021 inspection season.

Likewise, of the same entering inspections, the boater responses pertaining to which waterbody they would be visiting next, showed that the majority of boaters leaving Upper Prior Lake would be going back to Upper Prior Lake (161) (Figure 39).

NEXT Body of Water Planning to Visit

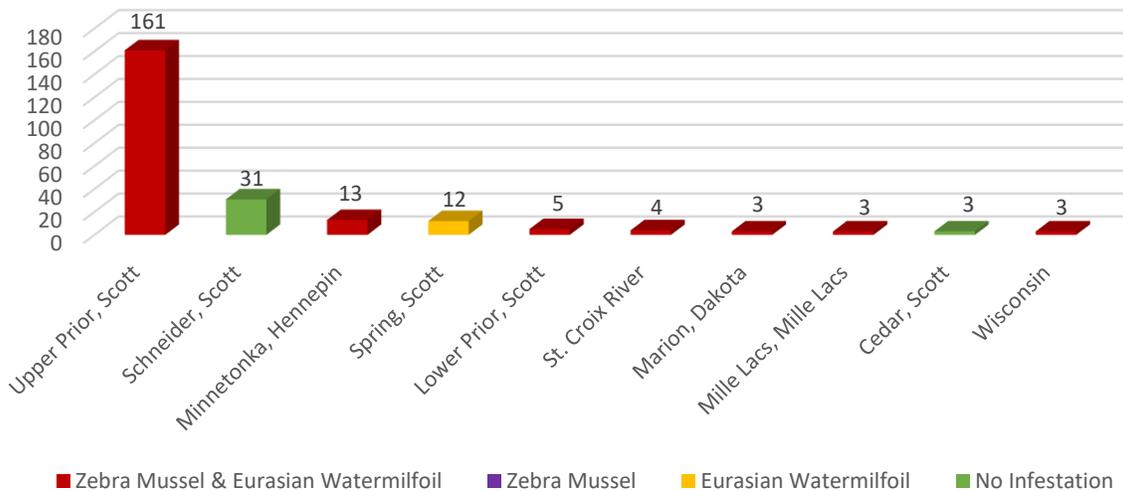


Figure 39: Graph (above) reflects the number of boaters that reported the next lake they expected to visit after Upper Prior Lake during the 2021 inspection season. Note: “No infestation” only means that such lakes are not infested with the mentioned AIS. Graph only shows the top ten responses.

Spring Lake

In total, Spring Lake was staffed for 424 hours from May 14th through September 25th and had 1,666 inspections completed (Table 4). Prior Lake Spring Lake Watershed District required inspector staffing eight and a half hours a day. This schedule was accomplished, and weekend launch coverage at peak traffic times was achieved.

Table 4: Upper Prior Lake 2021 Watercraft Inspection Totals

Month	Enter	Exit	Inspection Hours
May	231	142	88
Jun	291	182	104
Jul	353	196	112
Aug	109	80	66
Sep	56	26	54
Total	1,040	626	424

The inspection survey data reveals that more than half (54%) of all inspections were conducted on fishing boats, while runabouts were the second most inspected watercraft at 23% (Figure 40). Pontoons and personal watercrafts accounted for 9% and 8% of the total inspections, respectively. The rest of the inspections were conducted on Wakeboards (3%), Jon boats (2%), boat lifts (2%) and canoe/kayaks (1%).

Type of Watercraft

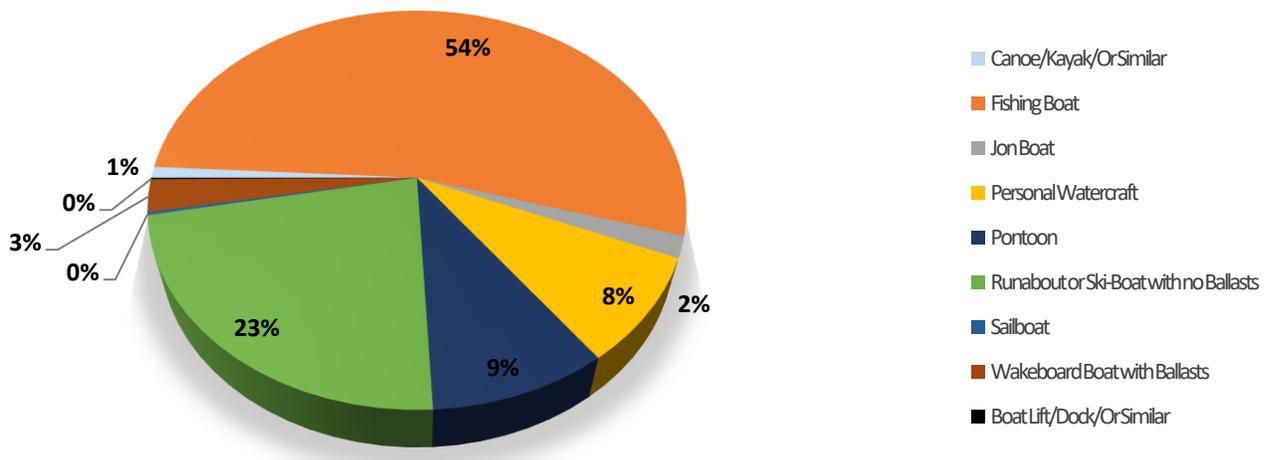
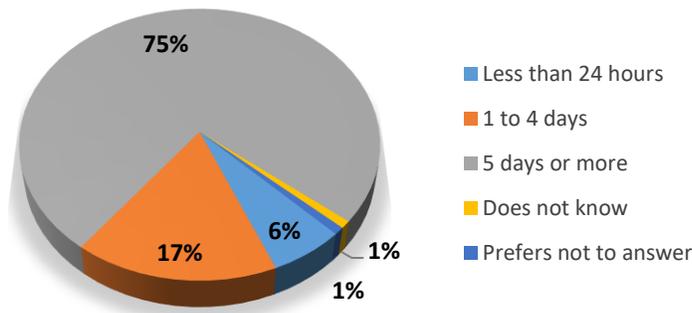


Figure 40: Chart (above) reflects the percentage of total inspections conducted on watercraft types during the 2021 inspection season.

Time out of Water



The data also shows that throughout the 2021 inspection season 75% of watercrafts entering had been kept out of any body of water for the recommended 5 days or more, while 17% were reported as only being out for 1-4 days. However, another 6% of entering watercrafts were recorded as being out the water for less than 24 hours. The remaining 2% of boaters reported that they did not know or preferred not to answer. (Figure 41).

Figure 41: Chart (above) reflects the percent of responses from entering boaters at Spring Lake regarding the amount of time their watercraft had been out of the water prior to entering.

Inspections by Week

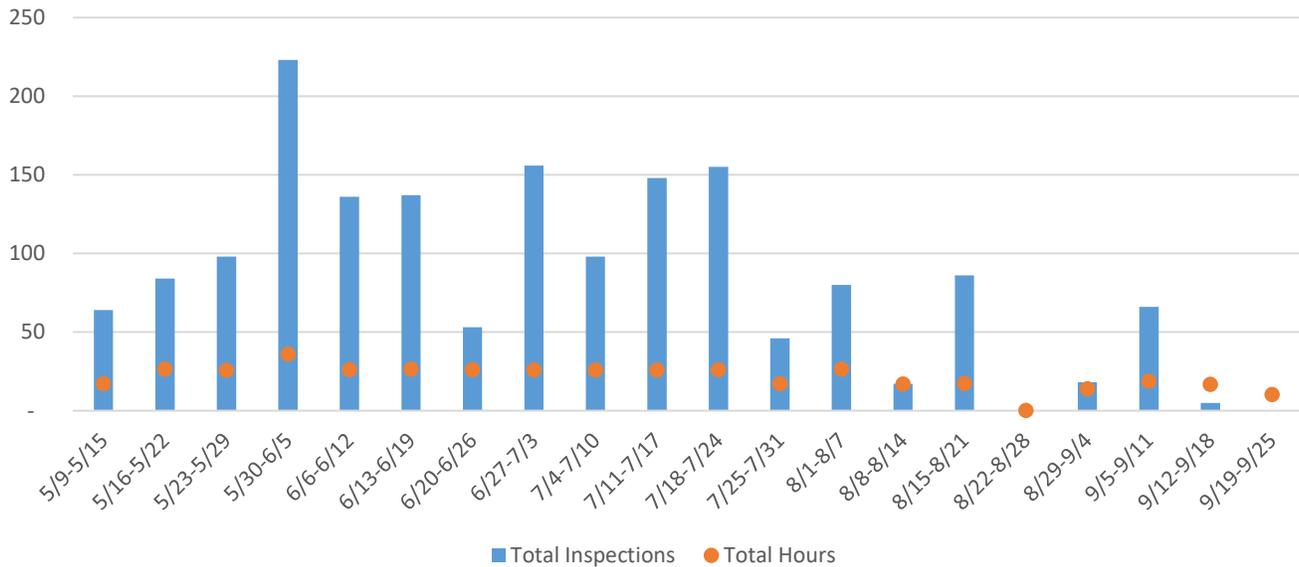


Figure 42: Graph (above) reflects the number of inspection surveys and the hours of inspector coverage logged at Spring Lake each week during the 2021 inspection season

From the survey data we determined that the busiest month for watercraft inspections was July, with 550 completed surveys. June and May followed close by at 475 and 373 surveys logged. August and September have understandably lower inspection counts since coverage hours significantly decreased and it is at the end of the season. Further detail by week can be found in Figure 42, where it shows that the last week of May had the highest count of inspection surveys.

The data also allowed us to determine the busiest days and busiest times of day over the course of the inspection season. It is shown that the busiest days for inspections were Saturdays, followed by Sundays. (Figure 43).

Inspections by Week Day

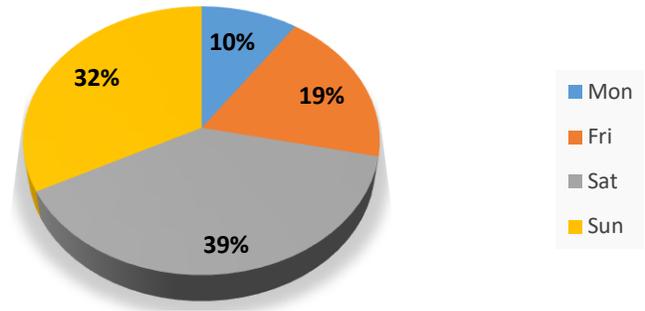
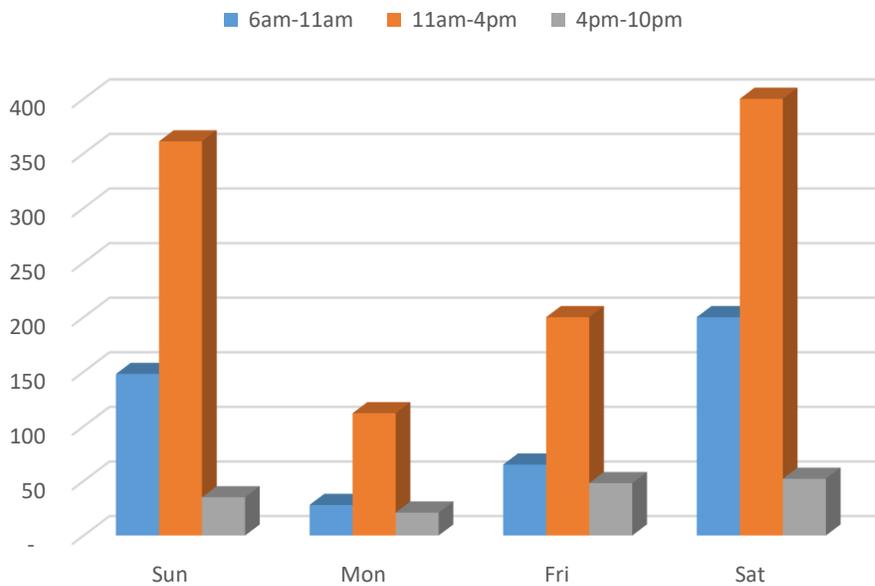


Figure 43: Chart (above) reflects the distribution of completed inspection surveys at Spring Lake by day of week during the 2021 inspection season.

Inspections by Time of Day



On Mondays, 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. (Figure 44). The second busiest time of day is shown to be from 6 A.M. to 11 A.M.

Figure 44: Graph (above) reflects the number of inspection surveys reported by day of week at Spring Lake during the 2021 inspection season.

Of the entering inspections, the waterbody most visited by boaters prior to entering Spring Lake was Spring Lake itself, with 434 boaters reporting last being there (Figure 45). The other most common responses were Upper Prior (85) and Cedar (25). This boater traffic and lake specific AIS knowledge can help us understand where new AIS infestations arise from since AIS are often unintentionally transported between bodies of water via watercrafts, trailers, and other water-related equipment.

LAST Body of Water Visited

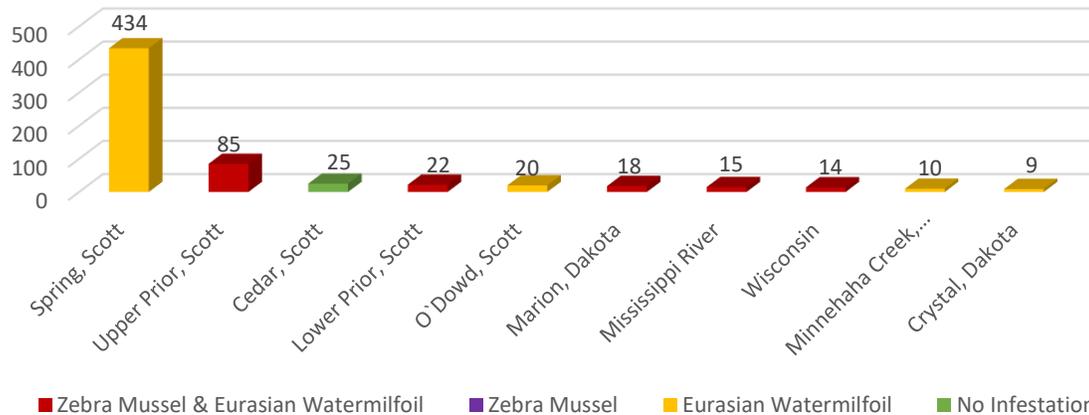


Figure 45: Graph (above) reflects the number of boaters that reported the last lake visited prior to entering Spring Lake during the 2021 inspection season.

Likewise, of the same entering inspections, the boater responses pertaining to which waterbody they would be visiting next, showed that the majority of boaters leaving Spring Lake would be going back to Spring Lake (225) (Figure 46).

NEXT Body of Water Planning to Visit

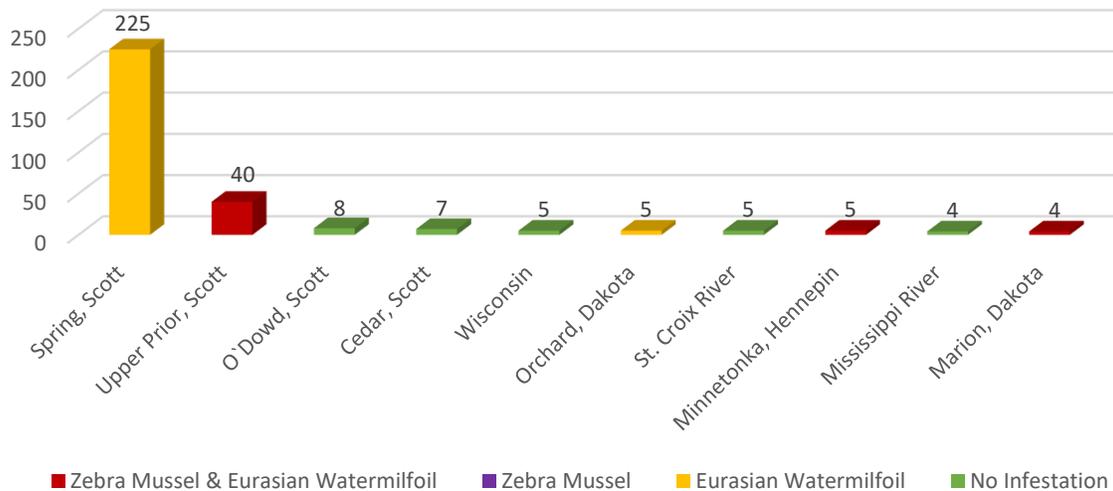


Figure 46: Graph (above) reflects the number of boaters that reported the next lake they expected to visit after Spring Lake during the 2021 inspection season. Note: “No infestation” only means that such lakes are not infested with the mentioned AIS. Graph only shows the top ten responses.

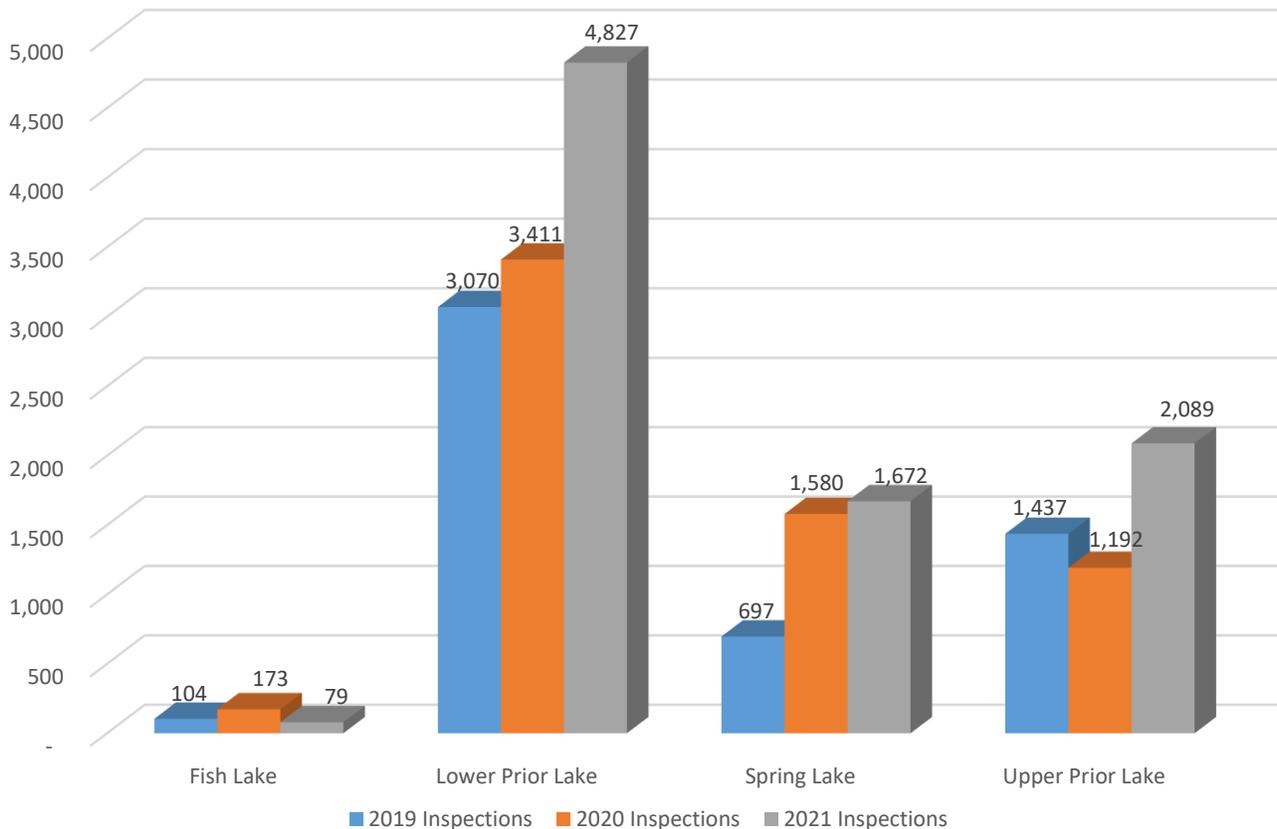
Trends

The following graphs were created using the data gathered from the 2021 watercraft inspection program administered by Waterfront Restoration. To show a true year over year comparison the MN DNR inspector surveys are included in the 2019, 2020, and 2021 total counts. Note regarding the inspector coverage hours; Waterfront Restoration staffed the 2021 hours and the 2019 hours at Spring Lake. Staffing hours in 2020 were shared for this report by PLSLWD staff.

Using this watercraft inspections survey data, we can create the following graphs and analyze them to check for trends from season to season within the inspections program. The knowledge gathered from the provided information can then be used by Prior Lake Spring Lake Watershed District to adjust and improve the inspection program as desired.

The volume of watercraft traffic on Lower Prior Lake and Upper Prior Lake increased significantly in 2021. The volume of traffic on Spring Lake slightly increased in 2021, while traffic on Fish Lake, decreased (Figure 47). Lower Prior Lake remains by far the busiest lake.

Survey Totals and Staffing Hours



Total inspections by year (all launches, all inspectors):

- 2019 – 5,308
- 2020 – 6,356 – increase of 19.7%
- 2021 – 8,667 – increase of 36.3%

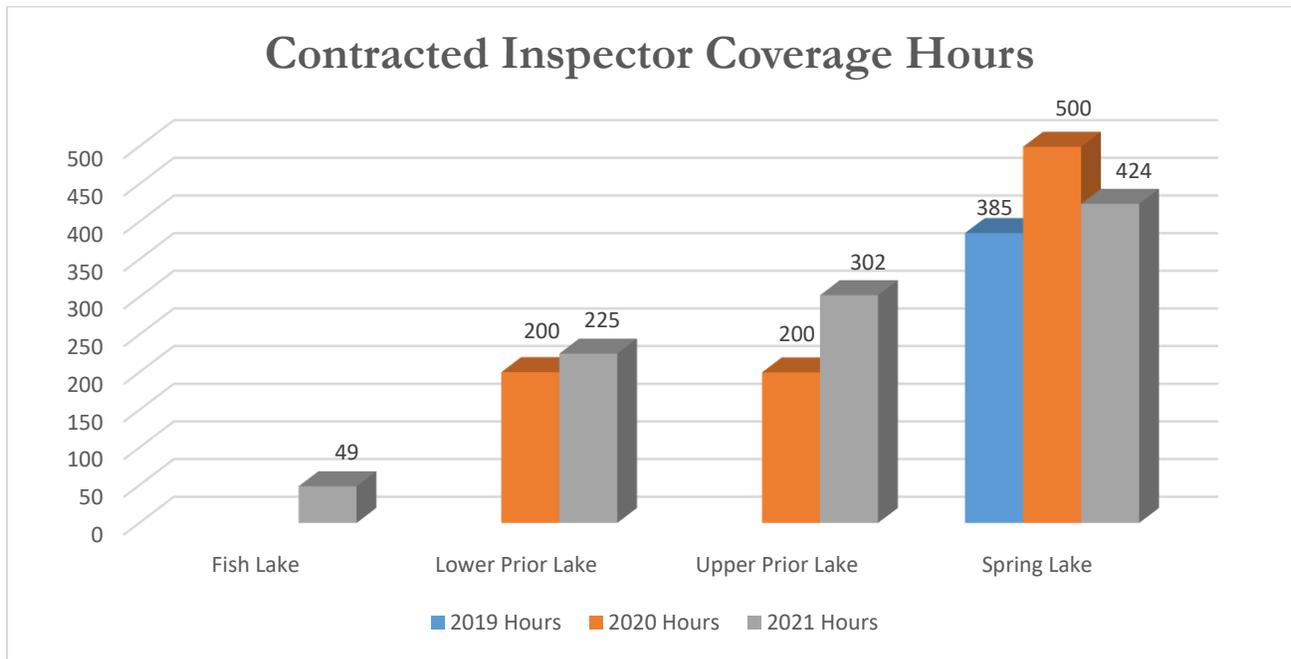


Figure 47: Graph (above) shows the comparison of inspection surveys completed (both contracted inspectors and DNR inspectors) and inspection hours (contracted inspectors only) at each lake between 2019, 2020 and 2021

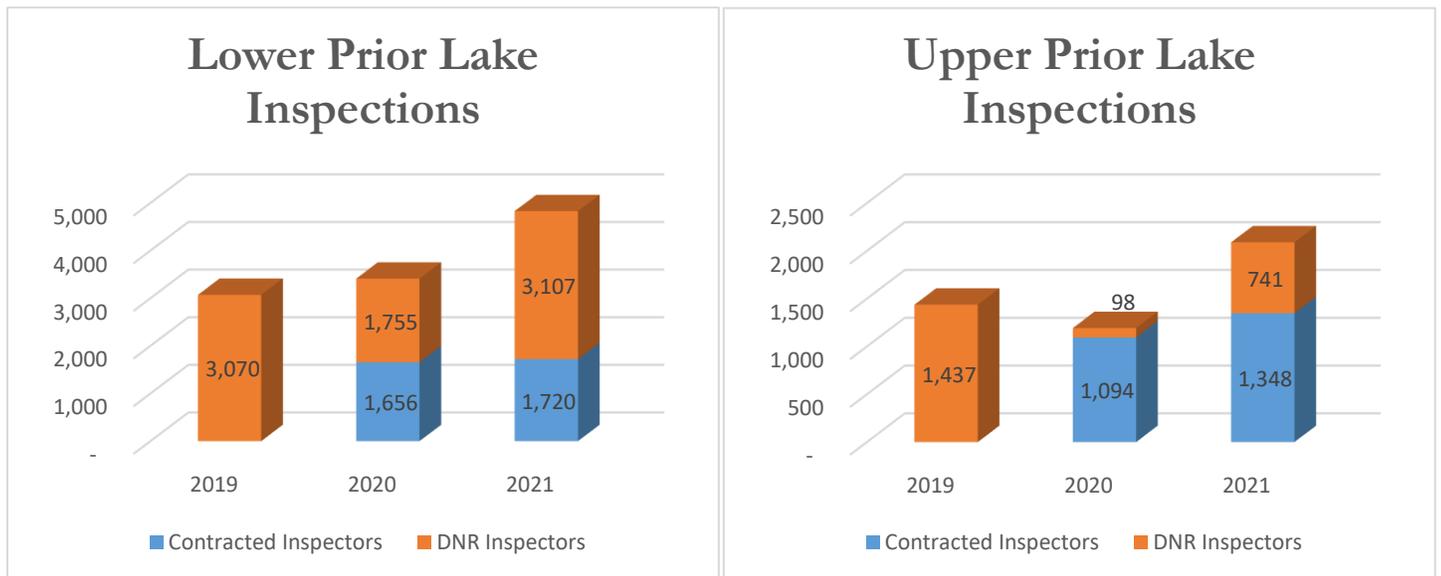


Figure 48: Graphs (above) shows the comparison of inspection surveys completed for contracted inspectors and DNR inspectors at Lower Prior Lake and Upper Prior Lake between 2019, 2020 and 2021.

Inspections by Month 2019, 2020 and 2021

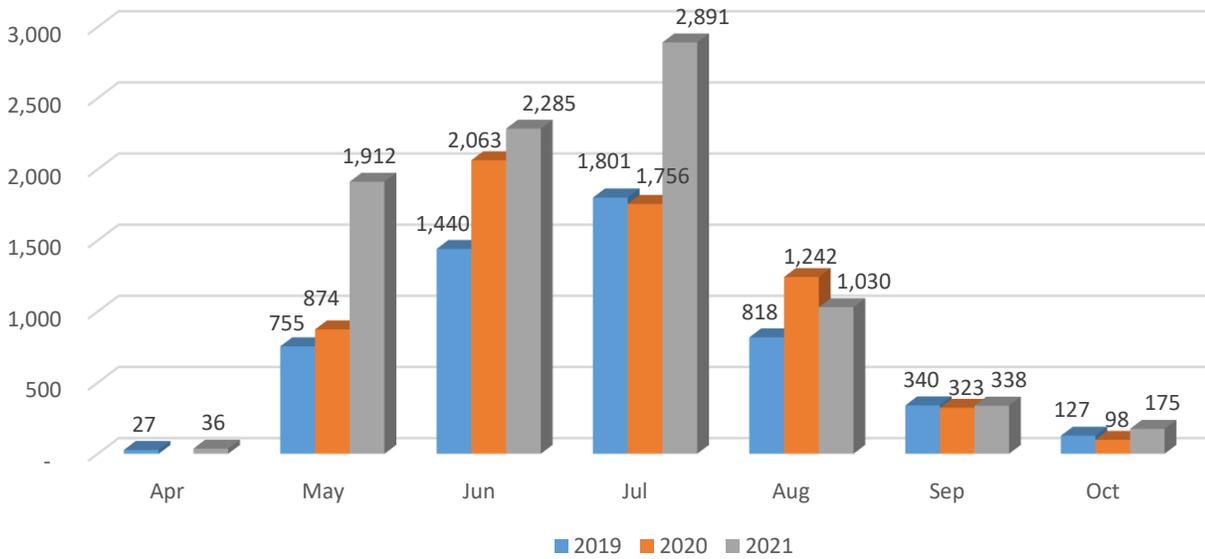


Figure 49: Graph (above) shows the comparison of inspection surveys completed by month in 2019, 2020 and 2021

Inspections by Week 2019, 2020 and 2021

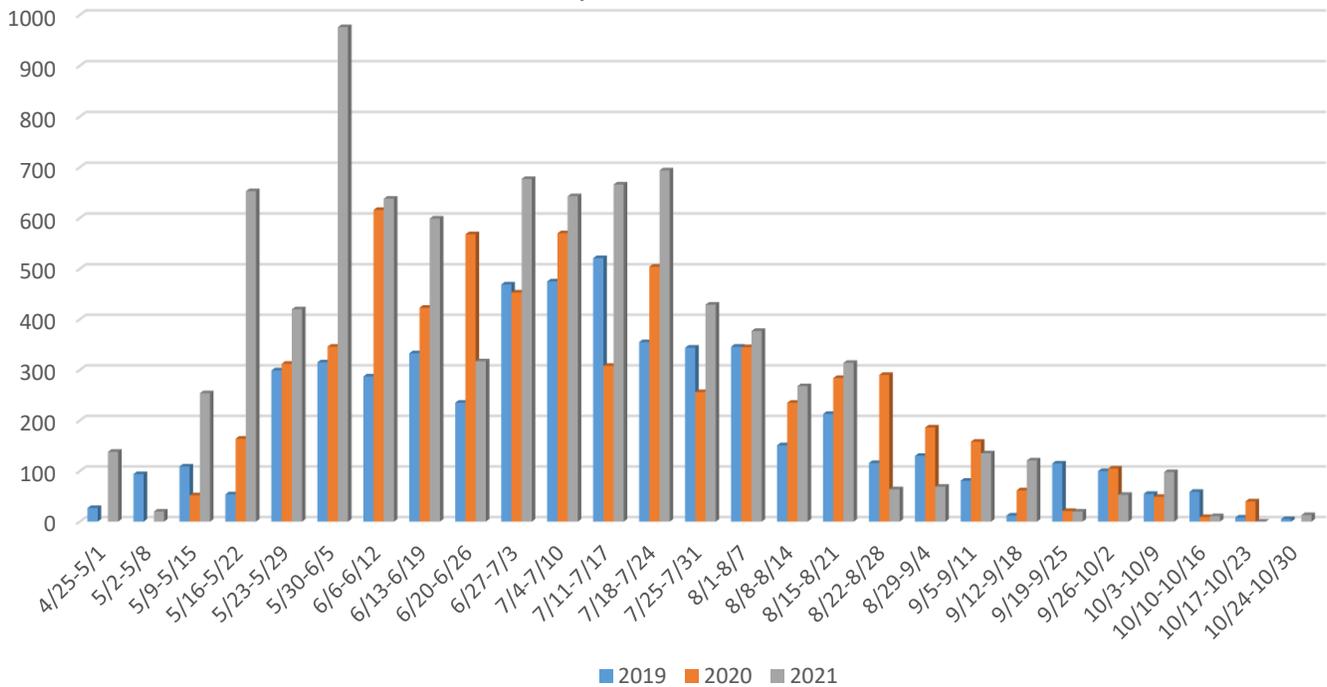


Figure 50: Graph (above) shows the comparison of inspection surveys completed by week in 2019, 2020 and 2021

Entering watercraft that arrive at a lake access with their drain-plug in and/or arrive with aquatic plants, water, or mud in or on their watercraft are in violation of MN AIS law. Figure 51 shows the number of these cases reported over the last three years as a percentage of all inspections completed. In 2021, MN AIS law violations decreased by 0.69% while drain plug violations decreased by 0.74% from 2020.

Comparison of MN AIS Law Violation

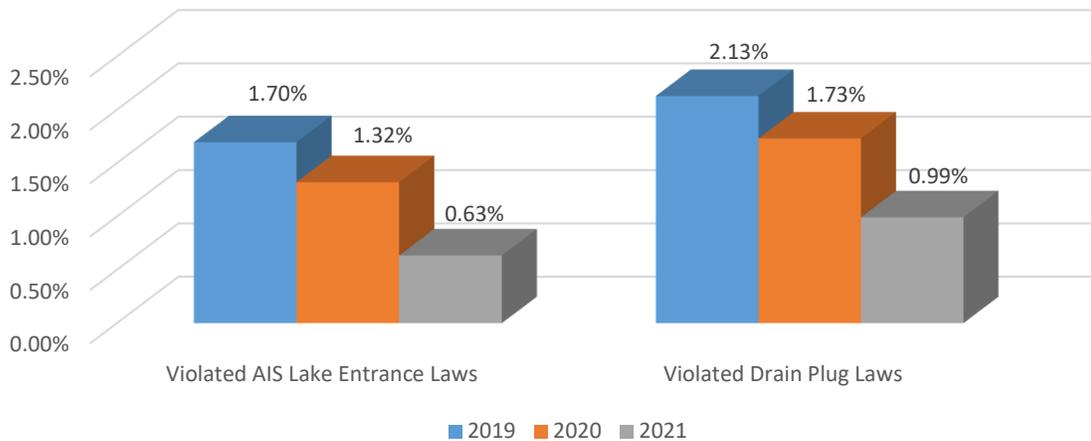


Figure 51: Graph (above) shows the comparison of the percent of total boaters that violated Minnesota Aquatic Invasive Species (AIS) Laws between 2019, 2020, and 2021.

Over the past three years, the most common finding remains to be plants removable by hands (Figure 52). It also appears that in 2021 plants (removable by hand) have dropped significantly compared to 2020.

Comparison of Findings at Entrance by Year

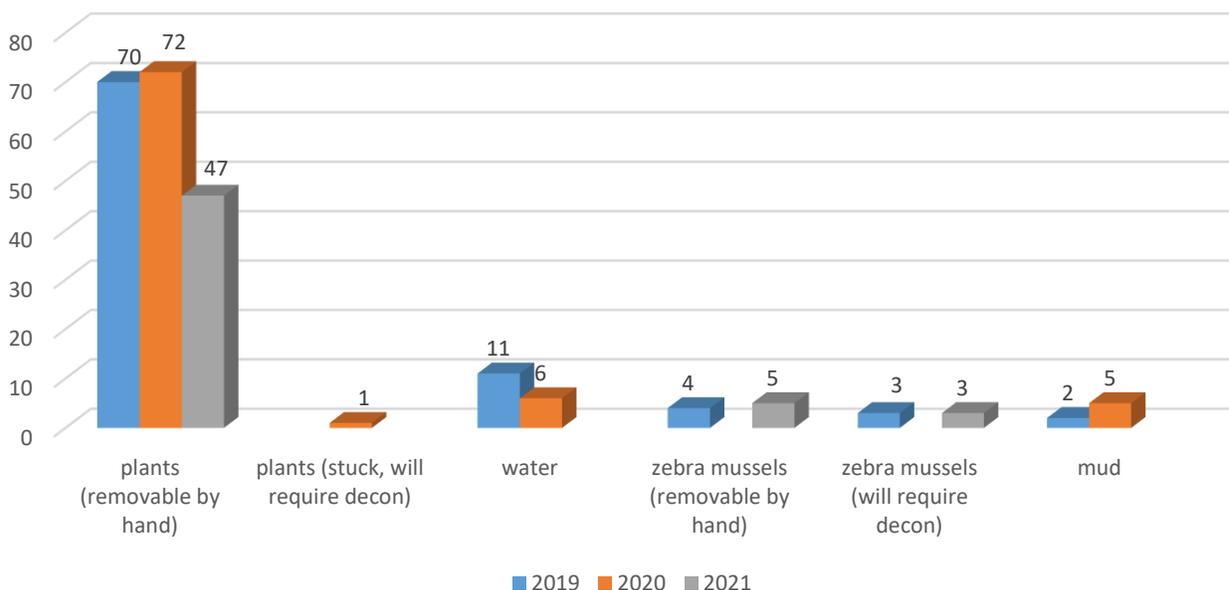


Figure 52: Graph (above) the comparison of findings during entering inspections between 2019, 2020, and 2021.

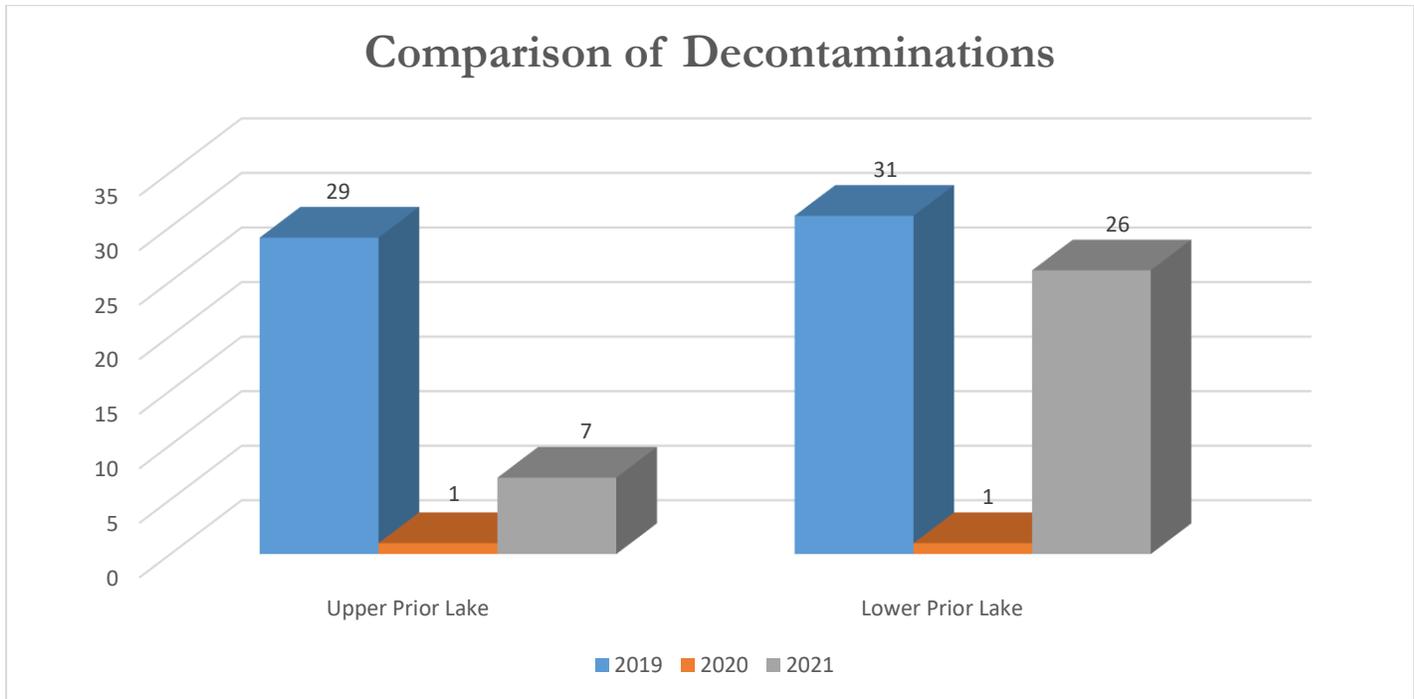


Figure 53: Graph (above) shows the comparison of decons performed at Upper Prior Lake and Lower Prior Lake by DNR inspector staff during the 2019, 2020, and 2021 seasons.

Collaboration with the DNR inspectors is an important aspect to the overall success of the program and protection of the water from the spread of AIS. As the data represents, the DNR inspectors in tandem with the contracted inspectors deliver much greater coverage of the busy Prior Lake launch locations. Throughout the season Waterfront Restoration coordinated the inspector's scheduled shifts around the DNR inspector shifts, so that at no time were contracted inspectors doubled up with DNR inspectors at the same launch. This allowed both organizations to maximize the impact of the watercraft inspection programs.

Another vital component to the partnership with the DNR is it gives the Level 1 inspectors a nearby location to recommend watercraft owners go to for a decontamination service on their watercrafts and water related equipment. Having a staffed decon unit within a close range of the launches is important in situations in which plants, animals, and/or water cannot be removed by hand. Another example of when quick access to a decon is important is when watercraft have been on a zebra mussel infested body of water for longer than 24 hours, or when they were last on a zebra mussel lake within the past 24 hours and are entering a clean body of water, or when exiting a zebra mussel infested body of water and plan to launch again within 5 days (recommended dry time).

Summary and Comments

The 2021 watercraft inspection staffing began on May 15th and concluded on October 24th. The 1,000 contracted inspector hours for the season were all fulfilled (100% of all contract hours).

Key impacts from 2021 watercraft inspection season:

- In total, Waterfront Restoration Inspectors conducted 4.8 inspections per hour.
- AIS law compliance and drain plug compliance improved overall. Inspectors made numerous comments to management throughout the season that most boaters seem to have a strong understanding on their responsibility in preventing the spread of AIS.
- Inspectors offered public assistance at the boat ramp. At times this included directing traffic in the parking lots, holding a watercraft on the dock while a vehicle was retrieved, and sharing launch and lake specific information with the public.
- Represented the company and Prior Lake Spring Lake Watershed District in a polite and professional manner.
- Successfully enforced the state AIS statutes.

Recommendations for 2022 watercraft inspection season:

- Continue with at least the same level of coverage and consider more weekday coverage throughout the season.
- Expand inspector coverage to other Prior Lake Spring Lake Watershed District lakes.
- Continue to provide and refresh educational AIS material handouts that Inspectors can give to boaters.

Overall, the watercraft inspection season was a success! Thank you for trusting Waterfront Restoration to recruit, staff, train, and manage a team of dedicated inspectors to help protect the Prior Lake Spring Lake Watershed District lakes. We look forward to serving the watershed district, and the people who enjoy all the lakes next season.

Appendix

Why do watercraft inspections?

County Funding - How it works

Entering Inspection

How are your watercraft inspectors trained and what is your inspection protocol?

Little known facts about inspections

Should our county or lake consider expanding inspections to include more weekday shifts?

Watercraft Inspection Checklist

What are some of the AIS CURRENTLY on other lakes within Hennepin County?

What are some of the AIS laws and Penalties?

What risks are on the horizon in terms of AIS?

Other questions