Carver County
Water Management Organization

Aquatic Invasive Species Watercraft Inspection Report

2017

1/4/2018
Planning & Water Management

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2017 Inspection Program Summary

General Inspection Information

Carver County's Aquatic Invasive Species (AIS) watercraft inspection program is administered by the Planning and Water Management Department. The county partners with the MN Department of Natural Resources (MN DNR), Minnehaha Creek Watershed District (MCWD), and the City of Chanhassen to provide watercraft inspections at 11 lakes. Five of these lakes are within the Carver County Water Management Organization (CCWMO) boundaries, which include Lake Waconia, Hydes, Eagle, Reitz and Bavaria. Three lakes are in the MCWD, including Lake Minnewashta, Piersons, and Wasserman, and three lakes are in the City of Chanhassen; Lotus, Ann, and Susan.

The 2017 inspection program began on May 14th and concluded on October 30th. According to official MN DNR inspection data, 23,341 watercraft inspections took place in Carver County during this time (Table 1). Overall, there were 13,091 entering inspections, 10,194 exiting inspections, 6 courtesy inspections, and 50 unclassified. Lake Waconia accounted for the largest portion of the inspections at 41% followed by Lake Minnewashta and Lotus Lake at 23% and 16% respectively (Figure 1).

Table 1: 2017 AIS Program Totals

Lake Name	Number of Inspections
Ann	698
Bavaria	1,485
Eagle	38
Hydes	232
Lotus	3,832
Minnewashta	5,337
Piersons	1,603
Reitz	72
Susan	445
Waconia	9,339
Wasserman	260
Total	**23,341**

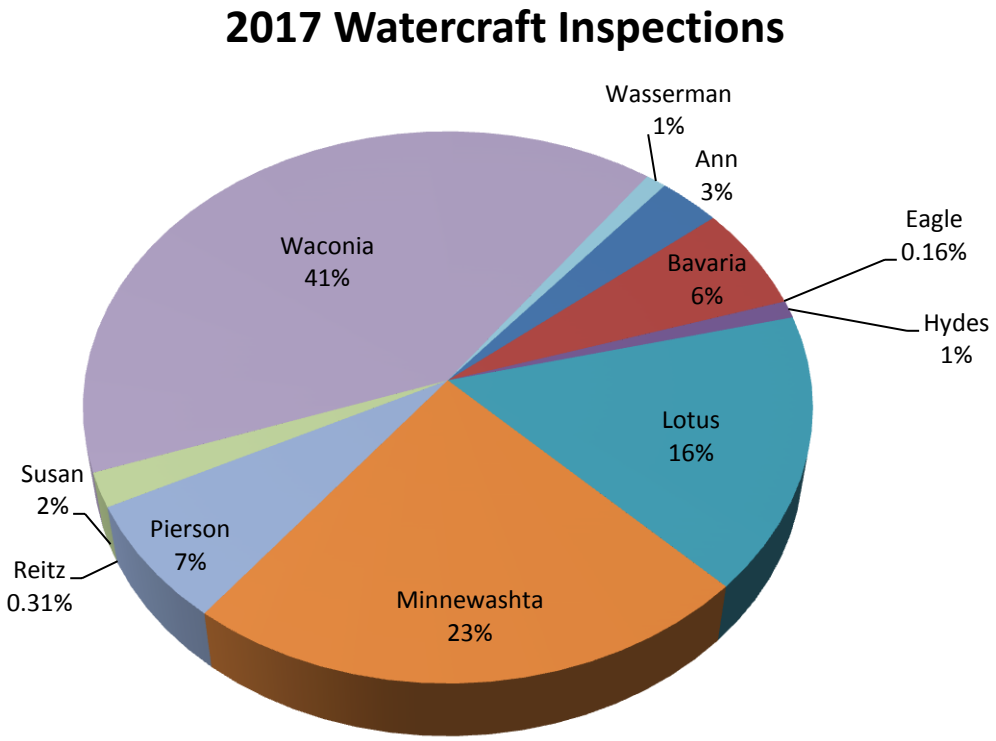

Figure 1: The above chart shows the percent of total inspections conducted in 2017 by lake.

Inspection data shows that 66% of inspections were conducted on fishing boats (Figure 2). The second most common type of watercraft was runabouts (17%). The remaining significant watercraft types were canoes/kayaks, personal watercrafts, wakeboard boats (each accounting for 4% of the total inspections), and pontoons at 3%.

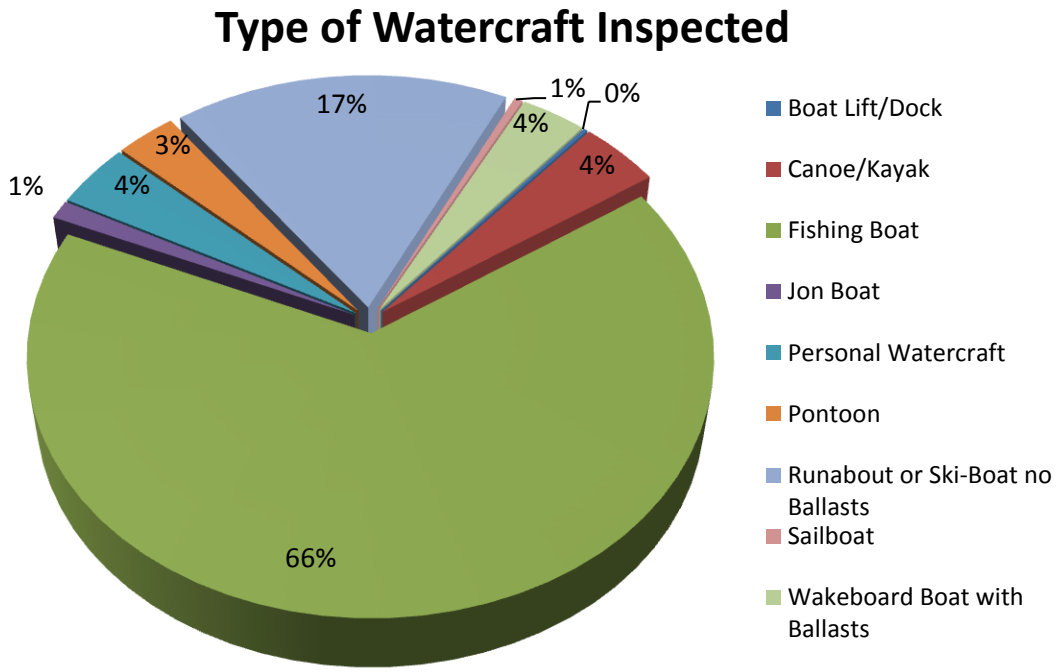

Figure 2: The above chart shows the percent of inspections conducted on each watercraft type throughout the 2017 inspection season.

Throughout the 2017 inspection season, roughly 65% of incoming boaters reported that the watercraft was out of water for the recommended 5 days or more (Figure 3). However, a total of 33% of incoming boaters reported that the watercraft had been out of water for less than that. Twenty six percent reported 1-4 days while 7% reported less than 24 hours.

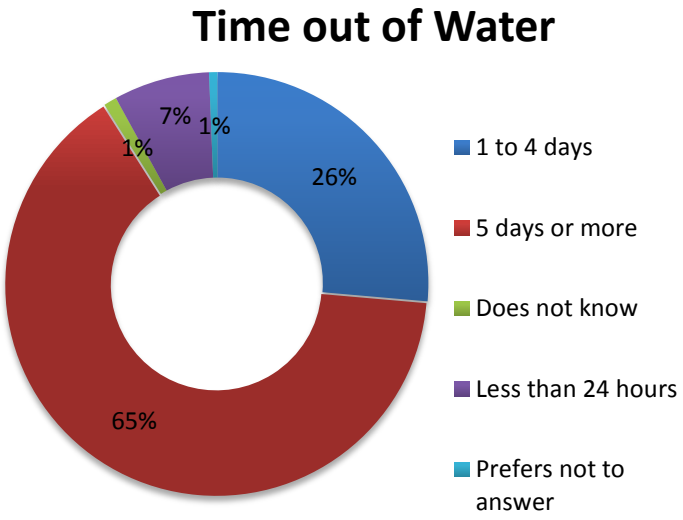

Figure 3: The above chart shows the reported amount of time out of water by incoming boaters throughout the 2017 inspection season.

A majority of the watercrafts were trailered by vehicles from Minnesota (99% or 23,028). The remaining 1% (or 313) of watercrafts came from 30 different states. The state most reported was Wisconsin at a total of 77, followed by Florida and Iowa at 41 and 39 respectively (Figure 4). As AIS laws vary by state, it is important that out-of-state boaters know and adhere to Minnesota laws. This can be done through signage at accesses, through the inspectors, etc. It is important to note that when discussing the state from which the watercraft was from, inspectors look at the trailering vehicle license plate.

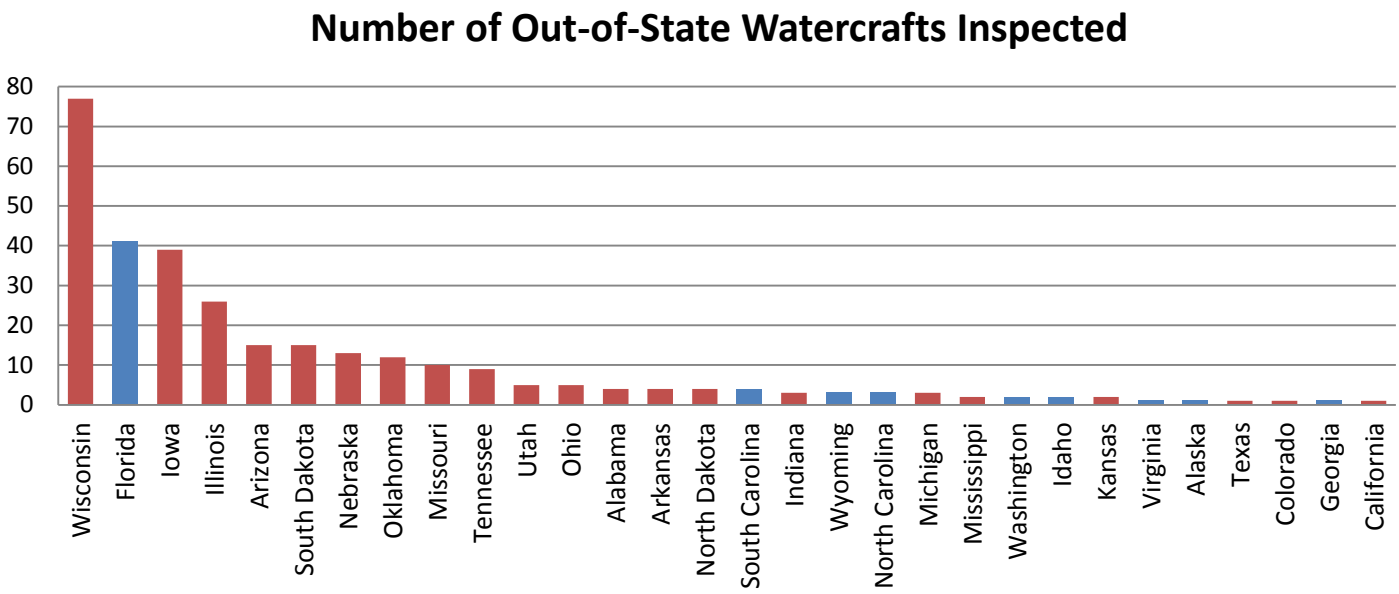

Figure 4: The above chart shows the number of watercrafts inspected by state. States with red bars have waterbodies with confirmed zebra mussel infestation.

According to the survey data, the busiest day of the week for inspections was Sunday accounting for 27% of all inspections (Figure 5). However, Saturday closely followed at 26% (a difference of only 200). It is important to note that some lakes are not staffed during week days, which alters these results.

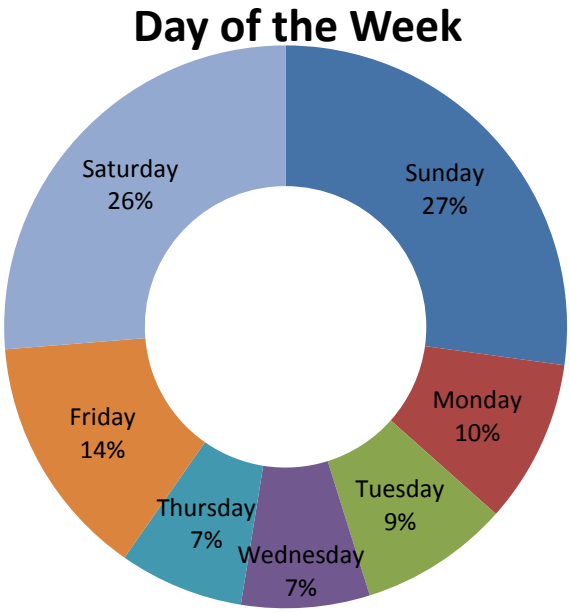

Figure 5: The chart shows the distribution of inspections by day of the week for the entire 2017 inspection season.

Species Found and Violations

There were a total of 527 inspections that were in violation of MN AIS laws (2.3%). This includes species found during entrance inspections which totaled 362 along with drain plug violations which totaled 165. Approximately 2,476 exit inspections resulted in at least one species found on the watercraft, equipment, or trailer. However, these findings are not considered violations as they were caught prior to the watercraft leaving the access.

Of the 362 entrance inspections resulting in a violation, plants (removable by hand) were the most common species found (64%). The second most common violation was standing water in the watercraft (29%) (Figure 6). There were a total of 6 zebra mussel violations, 4 of which required decontamination.

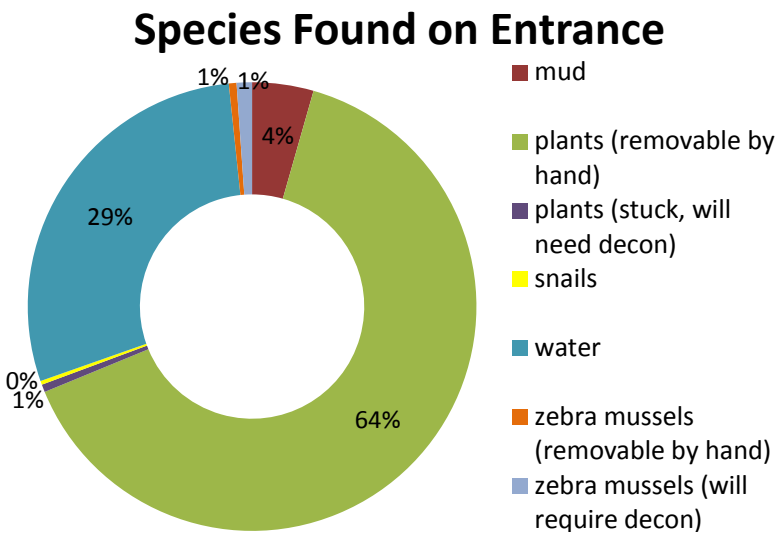

Figure 6: The above chart shows the variety of species found on incoming watercrafts / trailers/ water-related equiptment. These findings are considered violations of MN AIS Laws.

Though it is not a violation, species found on exit inspections are important to know as they help determine what could be leaving a lake and entering a new lake if the inspection program was not in place. Ninety-five percent of species found during exit inspections were plants (removable by hand). The next most common type was standing water at 3% (Figure 7). There were a total of 8 zebra mussel findings during exit inspections, 3 of these findings required decontamination. Species found during both entrance and exit inspections overall can be found in figure 8.

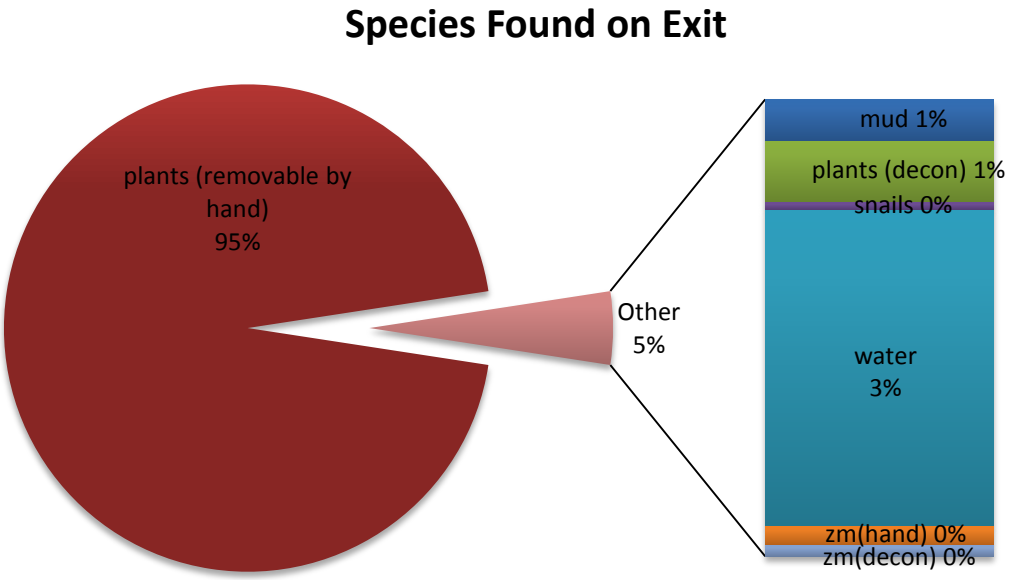

Figure 7: The above chart shows the distribution of species found during exit inspections only. NOTE: These are not counted as violations.

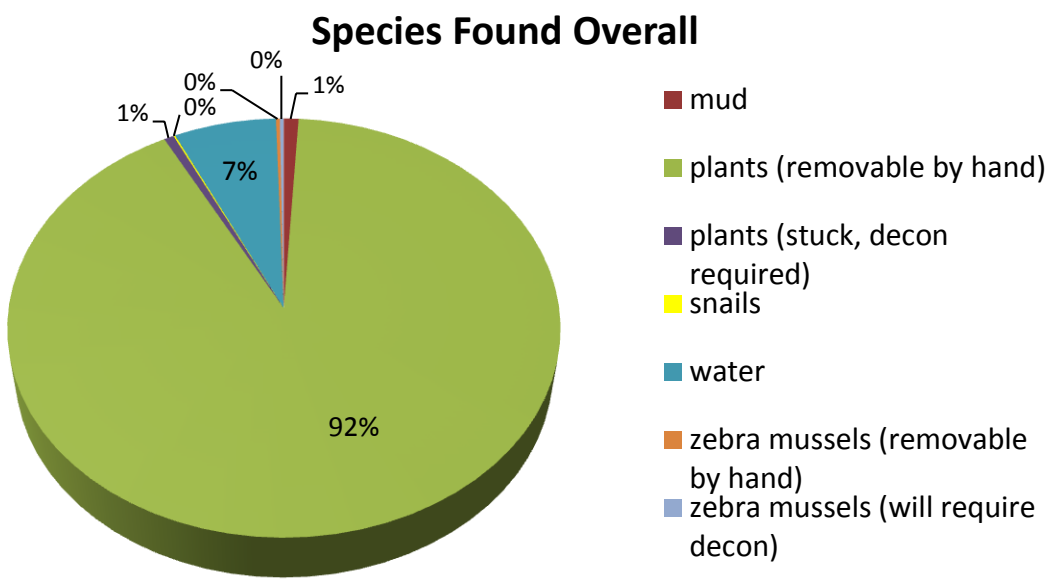

Figure 8: The above chart shows the percent of each species found during both entrance and exit inspections.

Carver County Water Management Organization Lakes

Lake Waconia

General Inspection Information

Lake Waconia was the leading lake in terms of total inspections. However, since Lake Waconia has high levels of traffic it is staffed more often than other lakes. In total, Lake Waconia was staffed for 2,330 hours from May 14th to October 31st. During this time there were 9,339 inspections (Table 2).

The most common type of watercraft inspected at Lake Waconia was fishing boats accounting for 73% of the total inspections. The second most common type of watercraft was runabouts/ski-boats at 16%. Pontoons and personal watercrafts followed at 4% and 3% respectively (Figure 9).

Table 2: **Lake Waconia Inspection Types**

Inspection Type	Count
Entering	5,345
Exiting	3,981
Courtesy	1
Unclassified	12
TOTAL	**9,339**

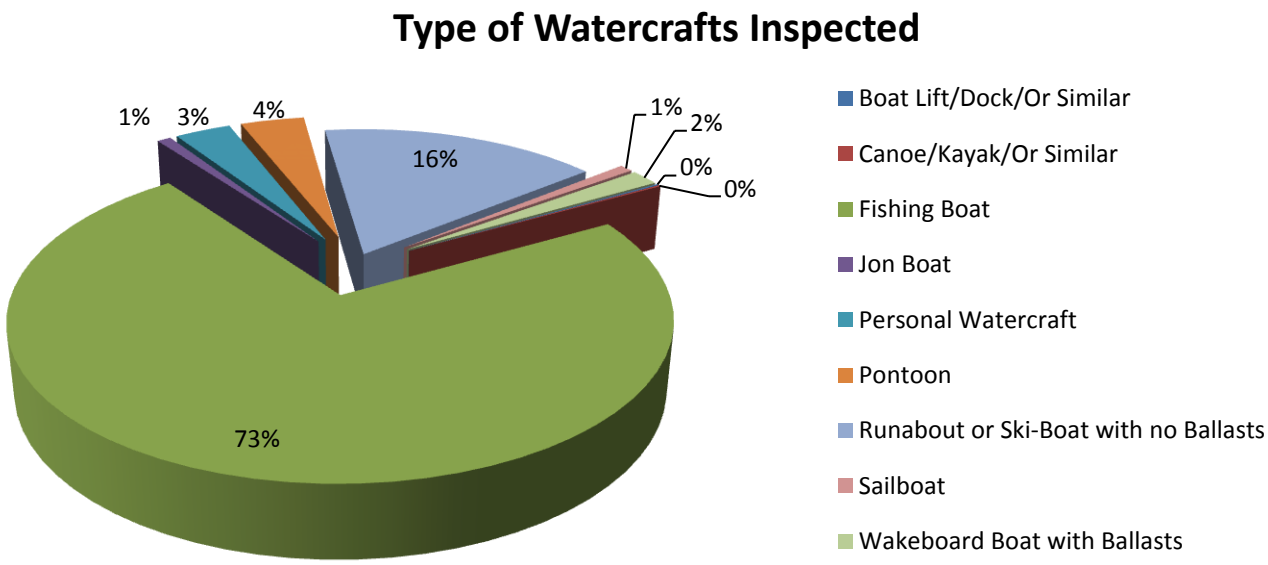

Figure 9: The above chart shows the percent of inspections conducted by type of watercraft.

A majority of entering lake users reported that the watercraft under inspection had been out of water for the recommended 5 days or more (Figure 10). However, 34% reported that the watercraft had been out of water for less than the recommended time (27% reported 1-4 days and 7% less than 24 hours). This leaves room for the potential spread of invasive species.

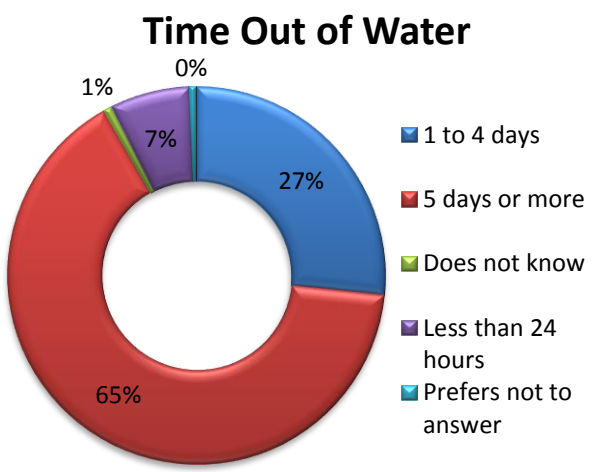

Figure 10: The above chart shows boaters' responses when asked how long the watercraft was out of water during entrance inspections.

Roughly 99% of incoming watercrafts were from Minnesota. The 1% of out-of-state watercrafts encompasses 17 different states (Figure 11). Wisconsin was the most recorded state, making up 29% of all out-of-state watercraft inspections, followed by Illinois and Florida at 18% and 15%. Many of the states from which watercrafts came have waterbodies infested with zebra mussels. It is important to both thoroughly inspect these watercrafts and ensure boaters follow the MN AIS Laws, as they vary from state-to-state.

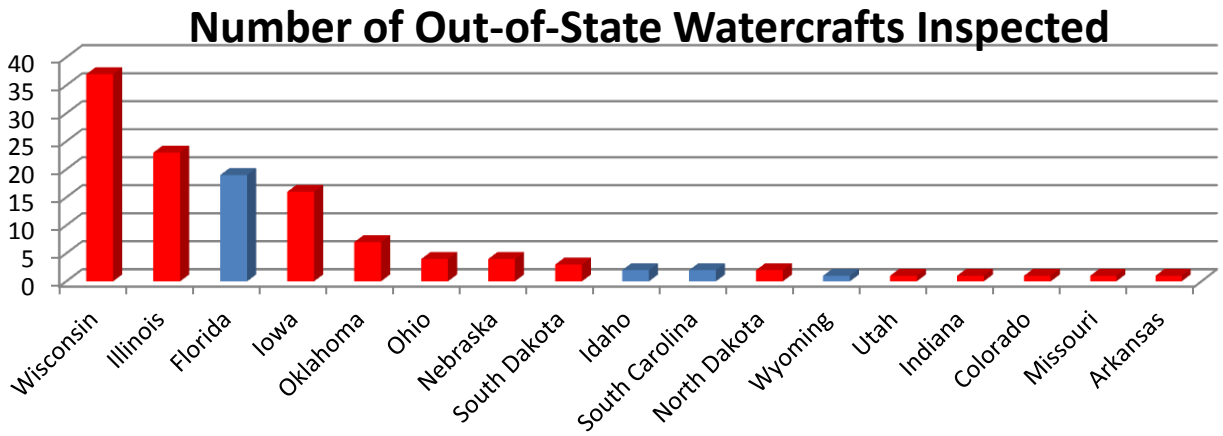

Figure 11: The above chart shows the number of watercrafts from out-of-state that entered Lake Waconia.

During the 5,345 entrance inspections, 52% of boaters reported that the last lake the watercraft had been in was Lake Waconia. However, the most common responses of lakes other than Lake Waconia included Lake Minnetonka, Lake Minnewashta, and Mille Lacs, all of which are infested waters (Figure 12). Invasives are often transferred untintentionally from one lake to another via trailer, watercraft, or water-related equipment.

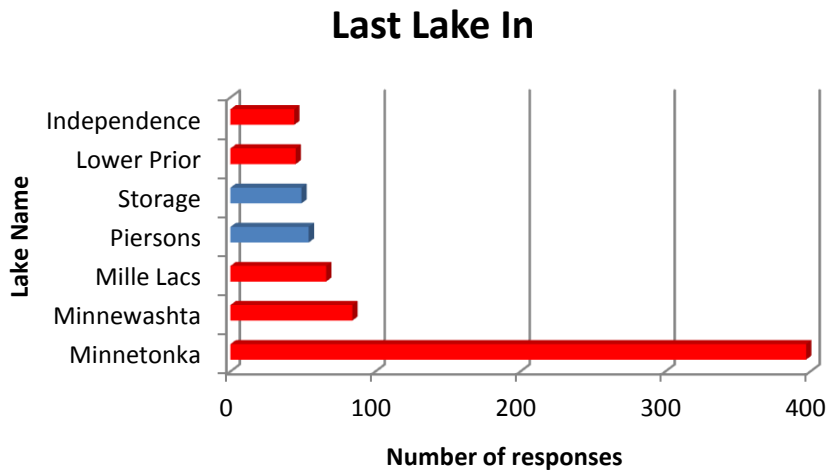

Figure 12: The above chart shows the number of responses for the last lake in.

Lake Waconia had an inspector staffed 7 days a week for at least 12 hours a day. Inspection data shows that most inspections were conducted on Sundays (26%) followed closely by Saturdays (25%), including both entrance and exit inspections (Figure 13).

Inspection surveys were grouped into 1 of 3 timeframes: 4am-10:59am, 11am-3:59pm, and 4pm-12am. Overall, 11am-3:59pm was the busiest time with 43% of all inspections (exit and entrance) conducted during this time frame.

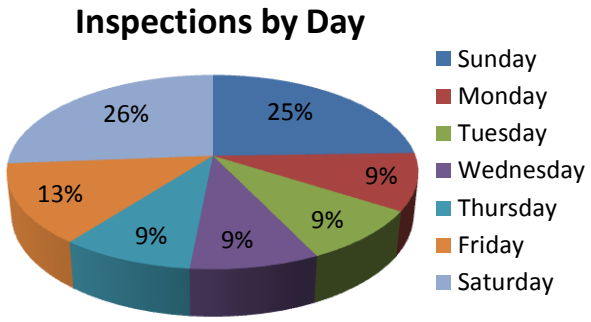

Figure 13: The above chart shows the distribution in number of inspections by day of the week.

Weekend afternoons were the busiest times for Lake Waconia inspectors, more than double the number of inspections on weekdays (Figure 14). During the week, the afternoons (11am-3:59pm) and evenings (4pm-12am) are the busiest times.

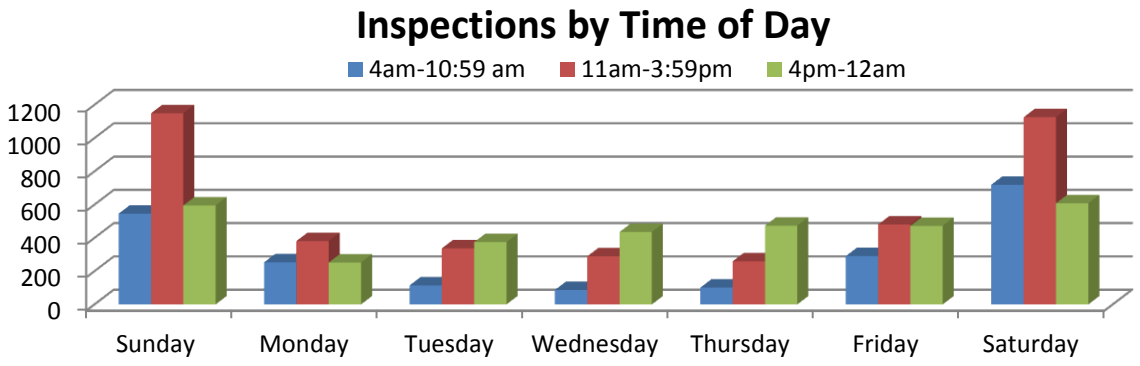

Figure 14: The above chart shows the number of inspections by time of day. Note: this data only shows busy times at the access while inspectors are present.

Species Found and Violations

Overall, there were a total of 88 violations of MN AIS Laws (1% of all inspections conducted). This includes drain plug violations (41) and species found during entrance inspections (47). During entrance inspections, the majority of violations (88%) were due to plants (removable by hand) found on the watercraft, trailer, or equipment (Figure 15). Zebra mussels were found during 2 entrance inspections, both of which required decontamination.

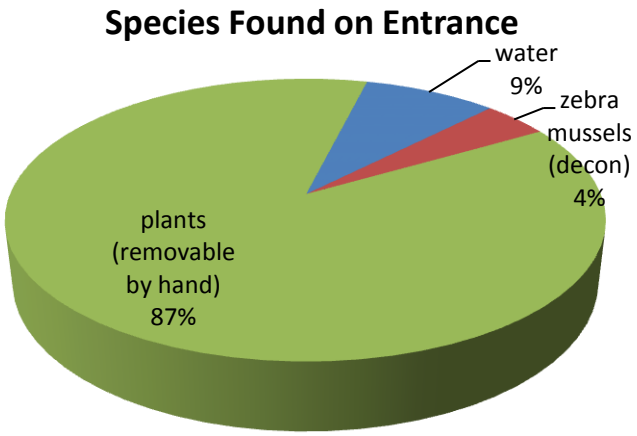

Figure 15: The above chart shows the species found during entrance inspections only. These are considered violations.

Of all the inspections where species were found (926), exit inspections made up 95% (or 879). Though these are not considered violations, it is important to know what is coming out of the lake and could potentially enter another if exit inspections were not in place at the access. The most common species found during exit inspections were plants (removable by hand) making up 95% (or 855). Water was found on exit in 8 cases. A total of 18 inspections resulted in zebra mussel findings (8 would require decontamination while 10 were removable by hand) (Figure 16). Two of the watercrafts that had zebra mussel findings were reportedly in the water for more than 24 hours.

Overall, plants (removable by hand) was the most common species type found during both entrance and exit inspections accounting for 94% followed by water at 2% then zebra mussels (removable by hand) and zebra mussels that require a decontamination both at 1% each. Unfortunately, data does not show whether or not the plants found were invasive.

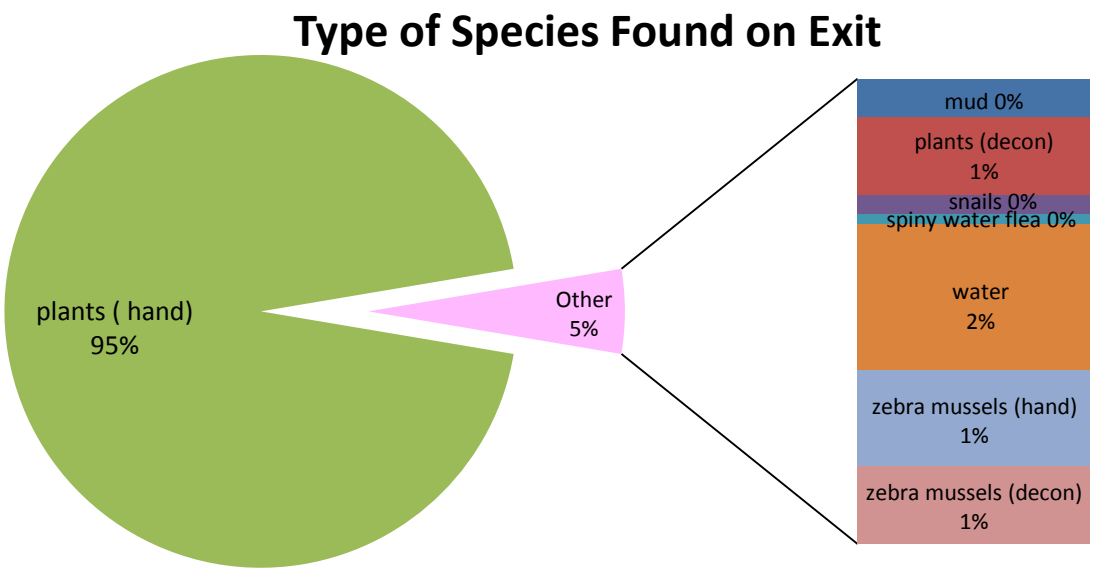

Figure 16: The above chart shows the percent of species found on exit inspections only. These are not considered violations.

Lake Bavaria

General Inspection Information

Lake Bavaria received a total of 937 staffed hours from May 13th to September 5th. During this time, 1,485 inspections were conducted (Table 3). Lake Bavaria is staffed all day on Friday, Saturday, and Sunday. However, during weekdays it is staffed in the morning. Inspection data shows that of the 1,485 inspections at Lake Bavaria, 754 (or 51%) were conducted on fishing boats followed by runabouts/ski boats at 23% (Figure 17).

Table 3: Lake Bavaria Inspection Types

Inspection Type	Count
Entering	810
Exiting	675
TOTAL	1,485

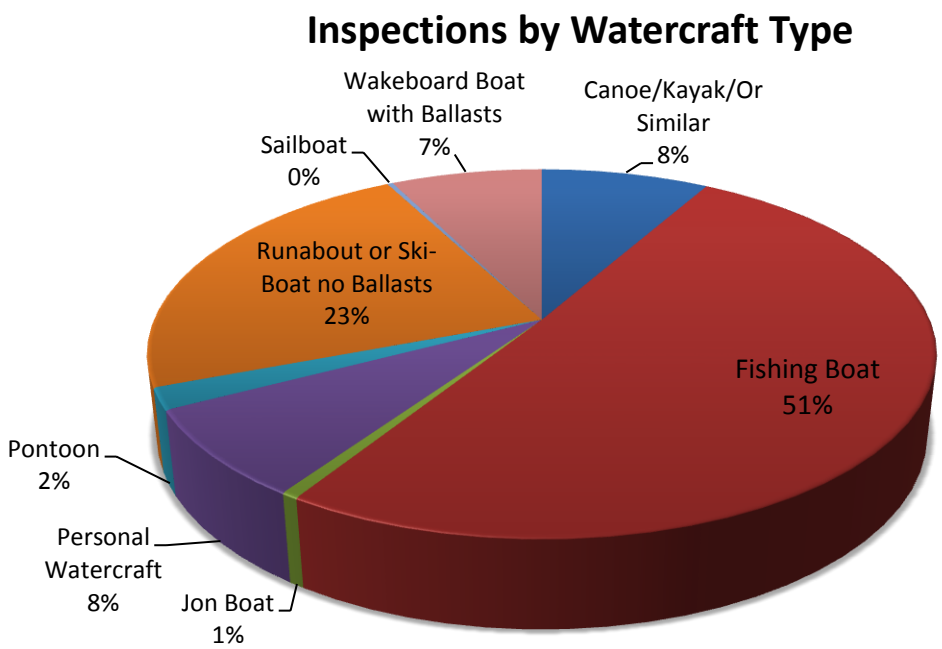

Figure 17: The above chart shows the number distribution of watercrafts inspected.

A majority of incoming watercrafts were reportedly out of water for the recommended 5 days or more (Figure 18). However, 37% (or a total of 295) reported less than 5 days. Of this 37%, 26% reported a dry time of 1-4 days while 11% reported less than 24 hours.

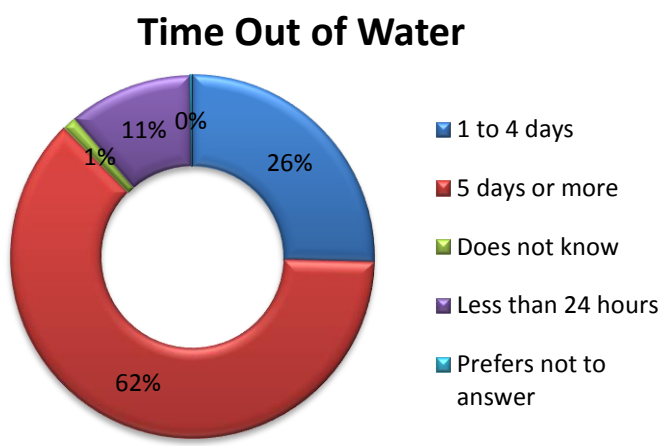

Figure 18: The above chart shows the reported amount of time watercrafts were out of water prior to entering Lake Bavaria.

Ninety-nine percent of all watercrafts were from Minnesota. However, the 1% (15) of out-of-state watercrafts was from 7 different states, 6 of which have waterbodies infested by zebra mussels (Figure 19).

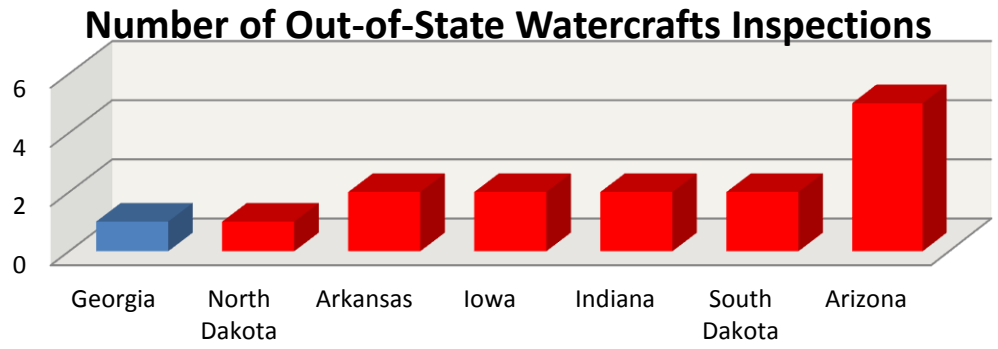

Figure 19: The above chart shows the number of inspections conducted on out-of-state watercrafts entering Lake Bavaria.

Of the 810 incoming watercrafts inspected, 41% (330) had last been on Lake Bavaria. According to inspection data, other than Lake Bavaria, Lake Minnetonka was the most common lake previously visited totaling 58 reports. Lake Minnetonka was closely followed by Lake Waconia at 44 and Lake Minnewashta at 28 (Figure 20). All three of these lakes are infested with zebra mussels. Roughly 30 of the watercrafts coming from 1 of these 3 lakes reported that the time out of water was less than 5 days (19 reported 1-4 days while 11 reported less than 24 hours). Though the watercrafts may have been decontaminated prior to entering Lake Bavaria, not meeting the reccomended dry time increases the potential for infestation of zebra mussels.

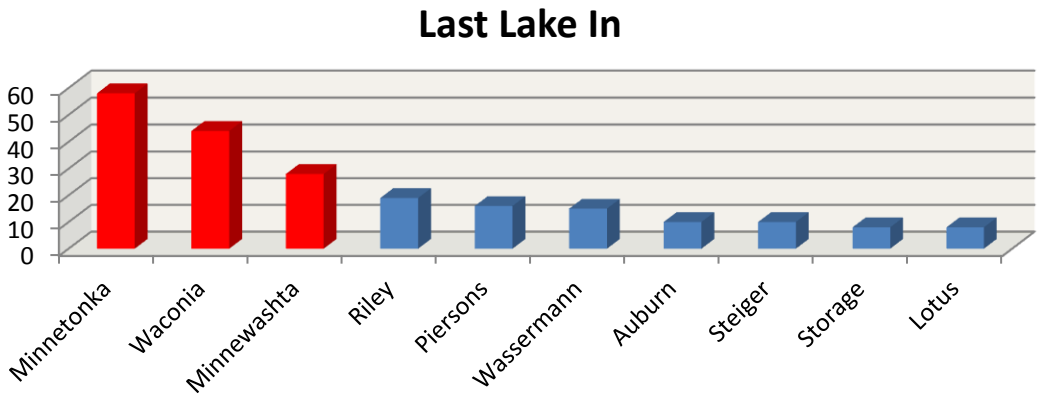

Figure 20: The above chart shows the number of watercrafts that had last been on a lake other than Lake Bavaria. Note: Only shows the top 10 responses by incoming boaters.

Weekends were the busiest for inspectors at Lake Bavaria, specifically Saturdays with a total of 487 inspections conducted (Figure 21). However, as mentioned, the access is staffed all day on weekends and only in the morning during weekdays therefore these numbers may not accurately portray the busy times at the access but rather just the busy times during staffed hours.

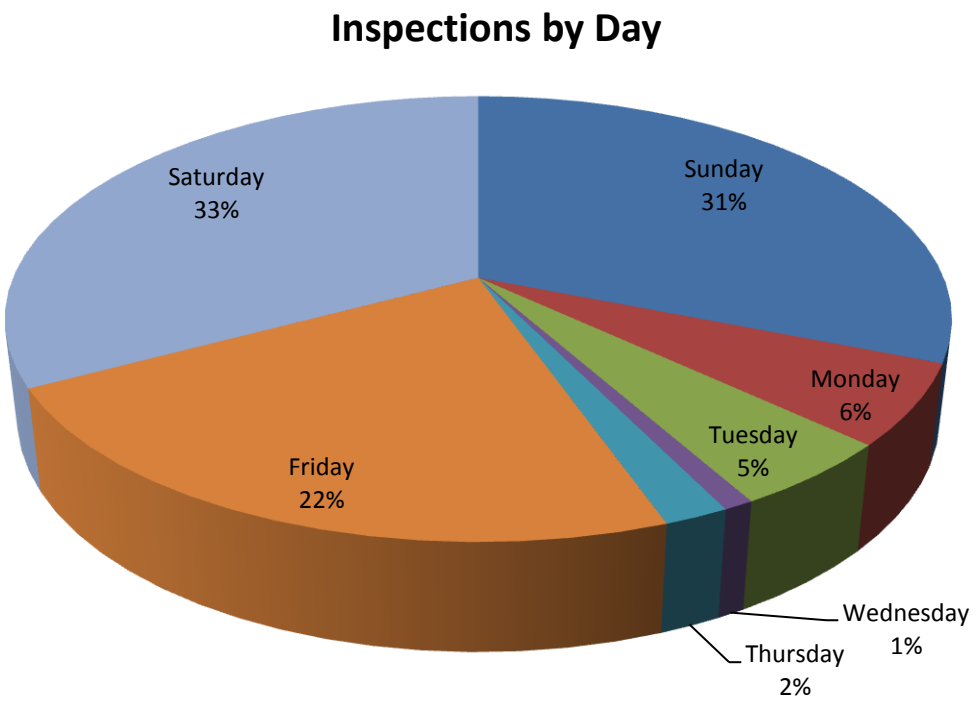

Figure 21: The above chart shows the distribution of inspections by day of the week. Note: Lake Bavaria is staffed all day Friday-Sunday and only morning and afternoons during the week which skews the data.

Inspection data was grouped into 1 of 3 time frames to show what time of day is busiest at the access during staffed time. Overall, Sunday afternoons (11am-3:59pm) had the highest number of inspections conducted with a total of 215, Saturday afternoon closely followed with 200 inspections (Figure 22).

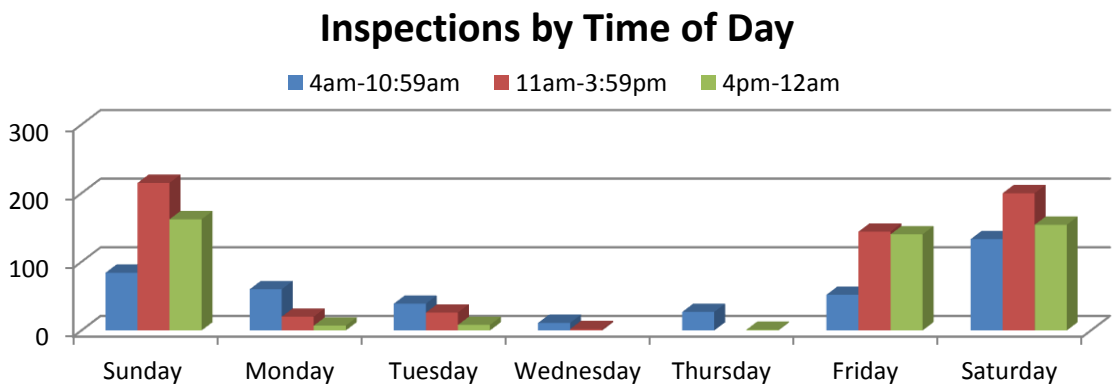

Figure 22: The above figure shows the number of inspections conducted by time of day. Note: Lake Bavaria is staffed all day Friday-Sunday and only morning and afternoons during the week which skews the data.

Species Found and Violations

Overall, only 2% (or 32) of inspections resulted in a violation of MN AIS Laws. This includes 11 drain plug violations and 21 entering inspection violations due to species on the watercraft, trailer, or equipment. Fourteen of the 21 species found were plants (removable by hand), 6 were due to standing water in the boat, and 1 violation due to mud which can contain larvae and small plant fragments (Figure 23).

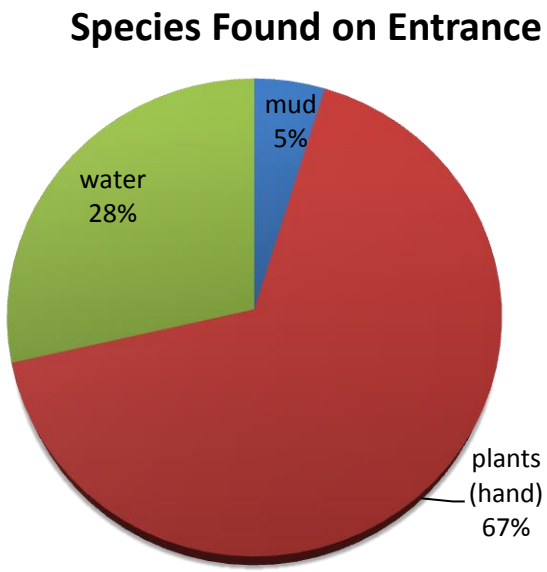

Figure 23: The above chart shows the amount of specie found during entrance inspections. These are violations of MN AIS

A total of 105 exit inspections resulted in species being found. Though these are not considered a violation of MN AIS Laws, these are potential violations that were caught prior to the watercraft leaving the access. Of the 105 potential violations 94 were due to plants (removable by hand), followed by water (9), mud (3), and plants requiring decontamination (1).

Plants (removable by hand) were the most common species found during both entrance and exit inspections accounting for 84% of all species found. However, it is unknown whether or not these plants were invasive. Often times, clumps of vegetation contain larvae and other plant fragments that may be invasive so all plants, invasive or not, are important to remove.

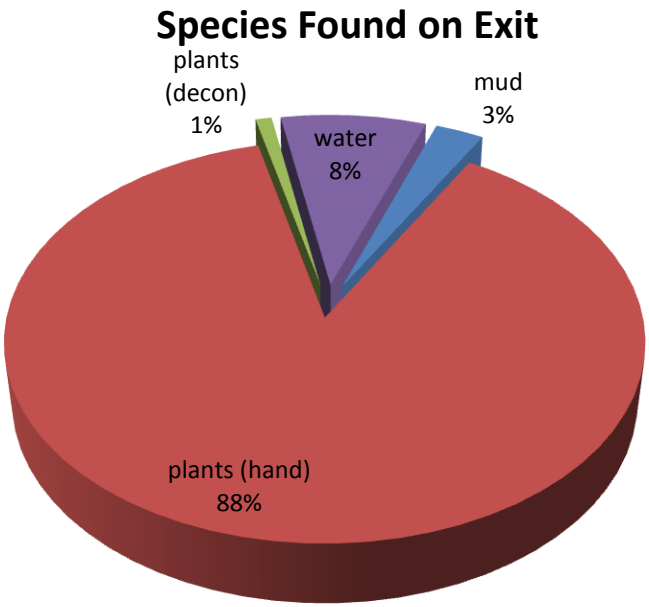

Figure 24: The above chart shows the amount of specie found during exit inspections. These are not violations of MN AIS Law.

Hydes Lake

General Inspection Information

Hydes Lake received 112 staffed hours and ran from May 13th to September 5th. Staff was scheduled from 8am to 4 pm every other Saturday and Sunday. In total, there were 232 inspections conducted at Hydes Lake (Table 3). Of the 232 inspections, fishing boats made up the majority of watercraft accounting for 80% (or 186). Runabouts/ski-boats accounted for roughly 10% (or 19) (Figure 25).

Table 3: Hydes Lake Inspection Types

Inspection Type	Count
Entering	119
Exiting	113
TOTAL	232

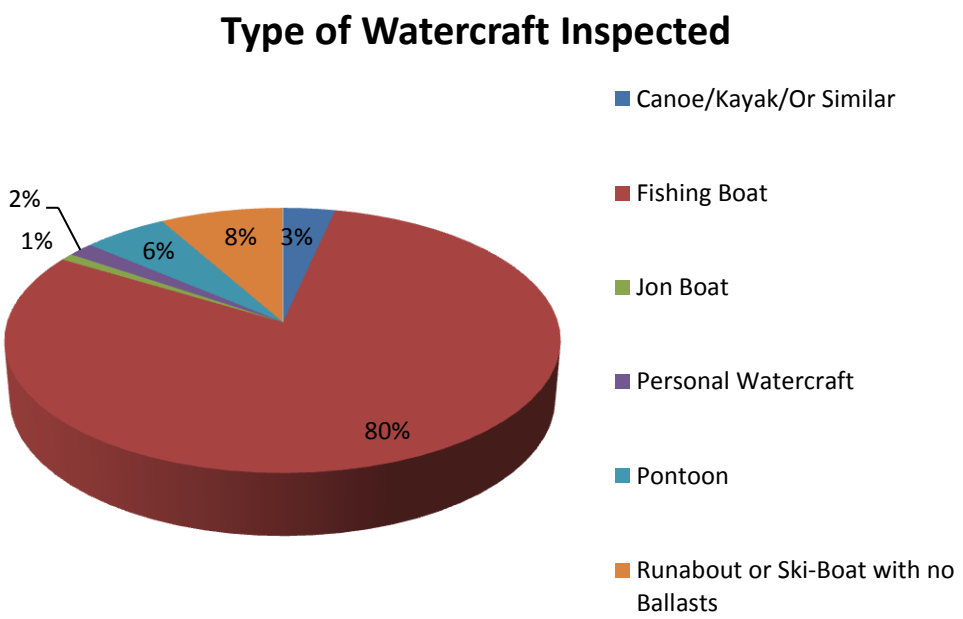

Figure 25: The above chart shows the percent of inspections by watercraft type.

Of the 119 entrance inspections conducted, 76% of boaters reported that the watercraft had been out of water for 5 days or more. A total of 22% of boaters reported that the watercraft had been out of water less than the recommended 5 days (Figure 26).

Out of the 232 inspections, 229 were Minnesota watercraft. The remaining 3 inspections were out of state watercrafts 2 from South Dakota and 1 from Michigan, both of which have waterbodies that contain zebra mussels.

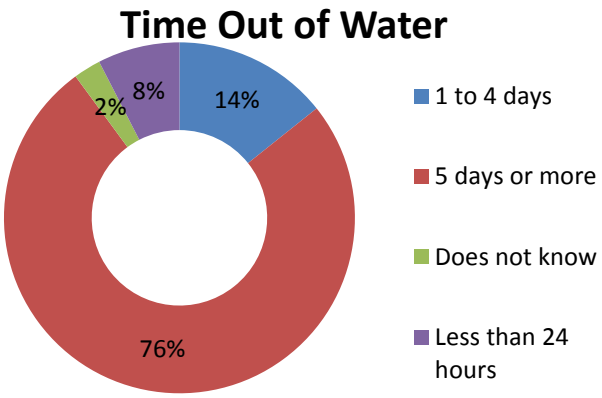

Figure 26: The above chart shows the reported amount of time watercrafts were out of water by incoming boaters.

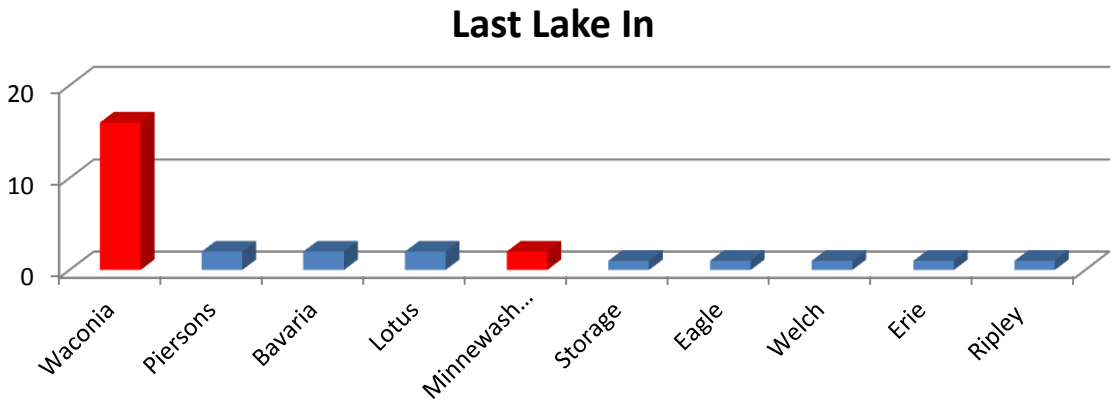

Figure 27: The above chart shows the number of entering boaters that reported the watercraft had been on a different lake. Red bars indicate that the waterbody is infested with zebra mussels.

A majority of incoming boaters reported that Hydes Lake the last lake the watercraft had been on (total of 53 boaters or 45%). Lake Waconia was the second most common lake with 16 reports (14%). According to survey data, 4 of these boaters also reported that they had been out of water for less than the recommended 5 days. Lake Waconia has zebra mussels. However, 20 incoming boaters could not recall the last body of water the watercraft had been on (Figure 27).

As mentioned, Hydes Lake was on a Saturday and Sunday rotating weekly schedule. According to survey data, Sunday had the higher number of inspections at 133 while Saturday had 99. Afternoons were the busiest time for inspectors at the access (Figure 28).

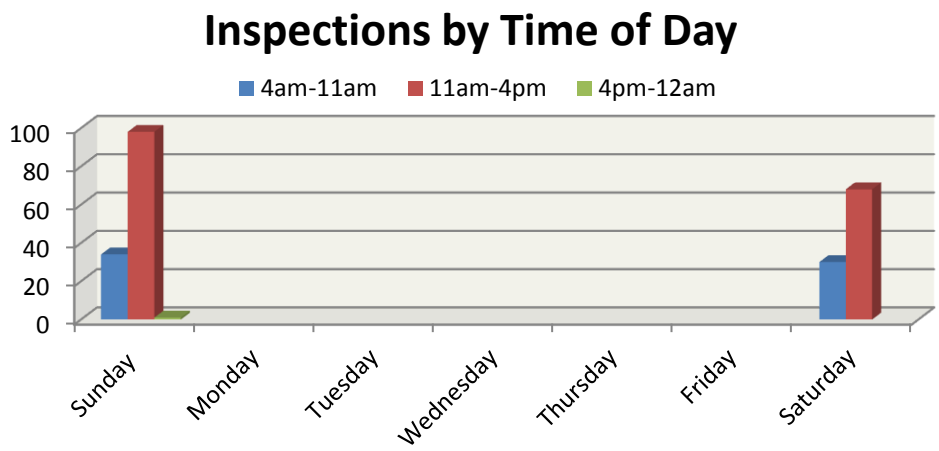

Figure 28: The above chart shows the number of inspections by time of day. Hydes Lake was only staffed by inspectors on Saturday and Sundays therefore data may not accurately represent traffic at the access during unstaffed hours. .

Species Found and Violations

There was only 1 violation at Hydes Lake. One boater arrived at the access with water in his boat from a previous outing. However, there were 19 exit inspections where a specimen was found. Eighteen of these were plants removable by hand and snails were found during the other.

Reitz Lake

General Inspection Information

The inspection program at Reitz Lake ran from May 13th to September 5th. During this time, inspection staff was on a rotating schedule of every other Saturday and Sunday. The total staffed time was 64 hours during which 72 inspections took place; split almost evenly between entrance and exit inspections (Table 4).

Table 4: Reitz Lake Inspection Types

Inspection Type	Count
Entering	35
Exiting	37
TOTAL	72

Of the 72 inspections, 55 of them were conducted on fishing boats. The next most common watercraft was runabouts/ski- boats with a total of 9 inspections (Figure 29).

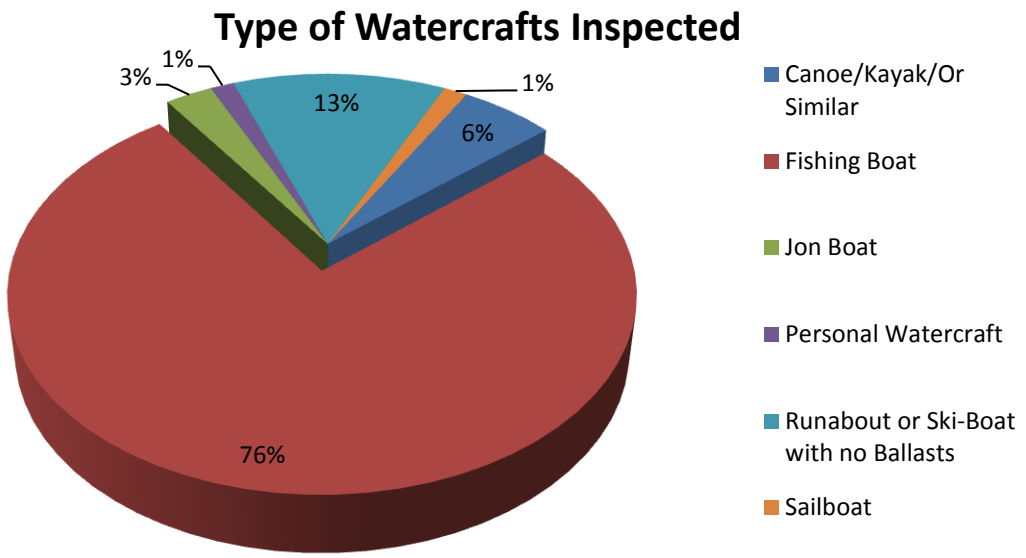

Figure 29: The above chart shows the distribution of inspections conducted by type of watercraft.

Roughly half of all incoming boaters, just over 54%, reported that the watercraft under inspection had been out of water for 5 days or more, the recommended amount of time. However, the other half reported that it had been less than 5 days (Figure 30). When asked, roughly 11 boaters reported that the last lake the watercraft had been in was Reitz Lake. However, the next most common lake reported was Lake Waconia, which is infested with zebra mussels. A total of 7 watercrafts entered Reitz Lake after being in zebra mussel infested waters (Figure 31).

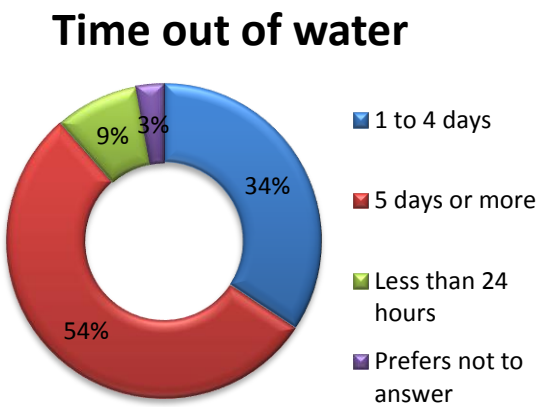

Figure 30: The above chart shows the reported time out of water by incoming boaters.

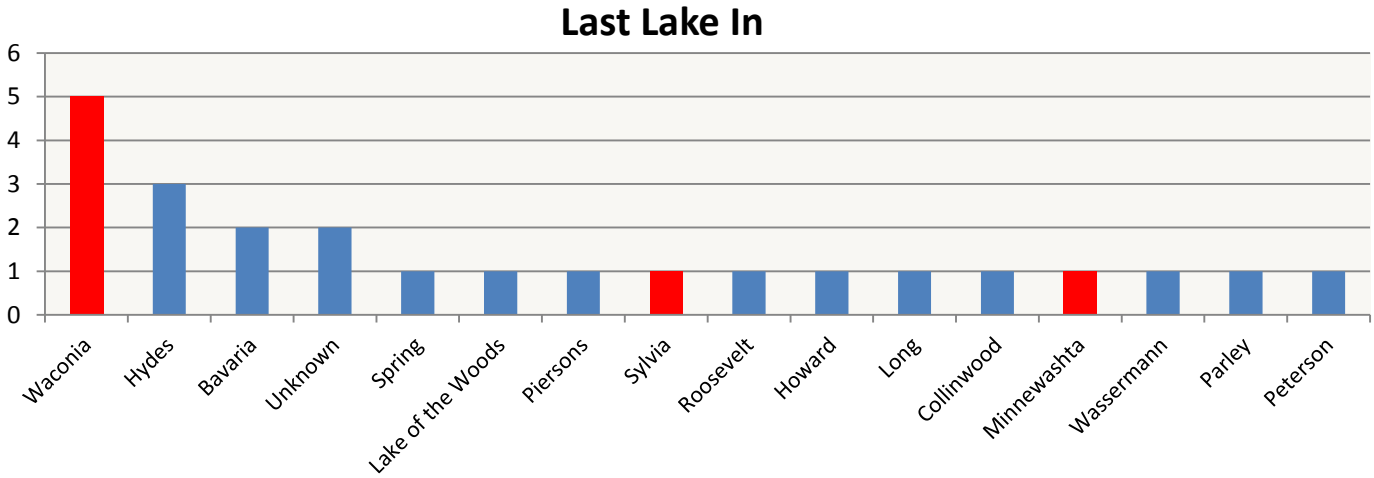

Figure 31: The above chart shows the number of entering watercraft that had been on a different lake prior to entering Reitz Lake. Red bars indicate the waterbody is infested with zebra mussels.

As mentioned, the access at Reitz Lake was staffed on Saturdays and Sundays from 8am-4pm. According to inspection data, Sunday inspections almost doubled those on Saturday. However, when comparing the time of day inspections took place, afternoons lead morning inspections on both Saturday and Sunday (Figure 32).

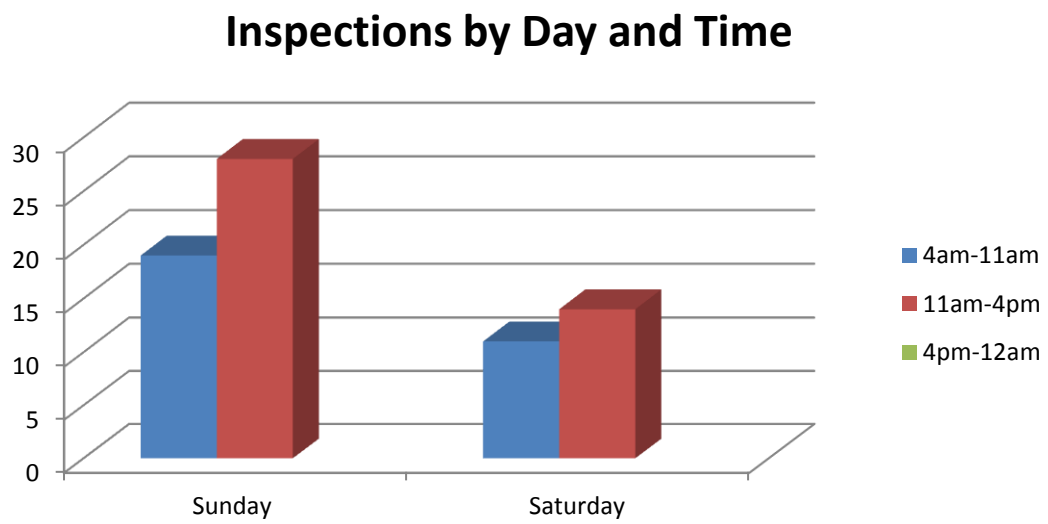

Figure 32: The above chart shows the number of inspection by time of day. Reitz Lake was only staffed on Sundays and Saturdays therefore data may not accurately represent traffic at the access.

Species Found and Violations

There were no violations of MN AIS Law. However, there were 8 instances of plants (removable by hand) being found during exit inspections. These are potential violations that were prevented due to inspectors being at the access.

Eagle Lake

General Inspection Information

The AIS inspection program for Eagle Lake began on May 13th and ended on September 5th. During this time, there was a total of 152 staffed ours with a rotating Saturday and Sunday weekly schedule. There were a total of 38 inspections, almost evenly split between entrance and exit inspections (Table 5).

Table 5: Eagle Lake Inspection Types

Inspection Type	Count
Entering	20
Exiting	18
TOTAL	**38**

A large majority of the 38 inspections were conducted on fishing boats (33 in total). The remaining inspections were conducted on personal watercrafts (2), pontoons (2), and runabouts/ ski-boats (1) (Figure 33). All watercrafts inspected were from Minnesota.

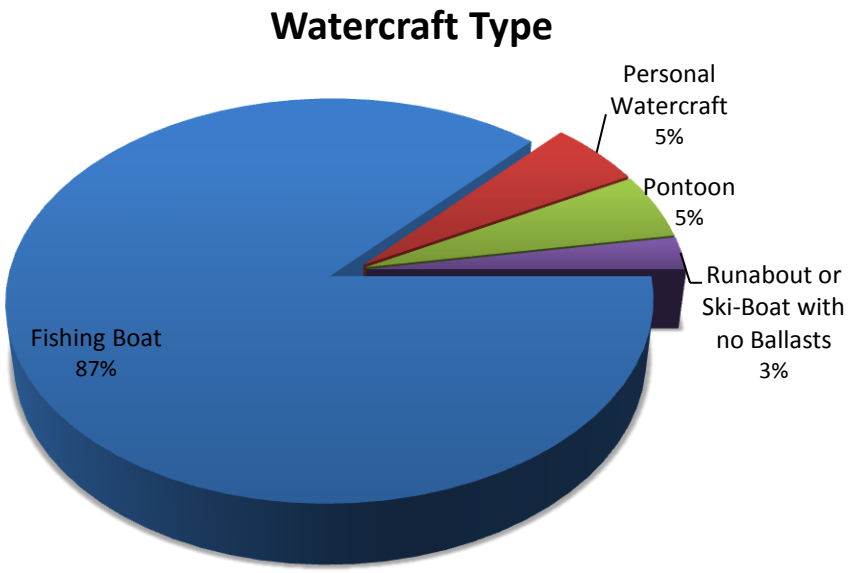

Figure 33: The above chart shows the distribution of inspections by watercraft type.

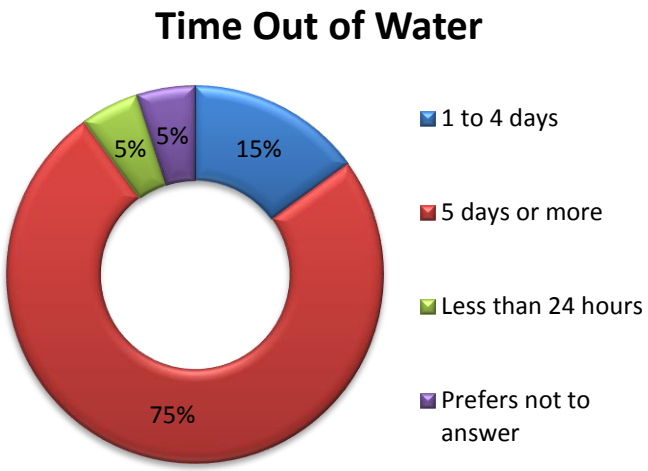

Figure34: The above chart shows the time out of water by incoming boaters.

Of the 20 incoming boaters, 15 (or 75%) reported that the watercraft under inspection had been out of water for the recommended 5 days or more (Figure 34). Only 4 boaters reported less than the recommended dry time (3 reported 1-4 days while 1 reported less than 24 hours.

Almost half of the incoming boaters did not know what lake they had been on last. Of those that did know, Eagle Lake was the most reported (7)(Figure 35). Fortunately, none of the reported lakes are infested with the zebra mussel which greatly decreases the risk of infestation on Eagle Lake.

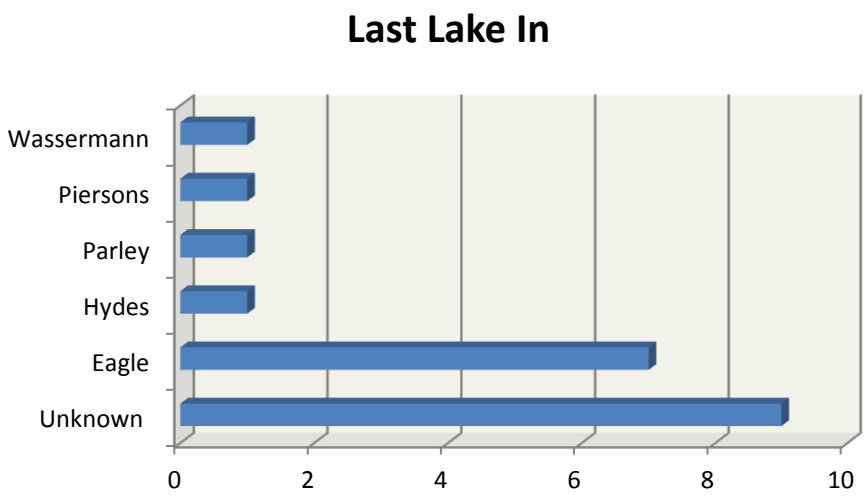

Figure 35: The above chart shows the lakes that incoming watercrafts had previously been on.

As mentioned, Eagle Lake was staffed on a rotating schedule on Saturday and Sundays only from 8am-4pm. Sunday was the busier of the two days with 25 out of 38 inspections. Specifically, Sunday afternoons during which there were 17 inspections conducted within the timeframe of 11am-3:59pm (Figure 36).

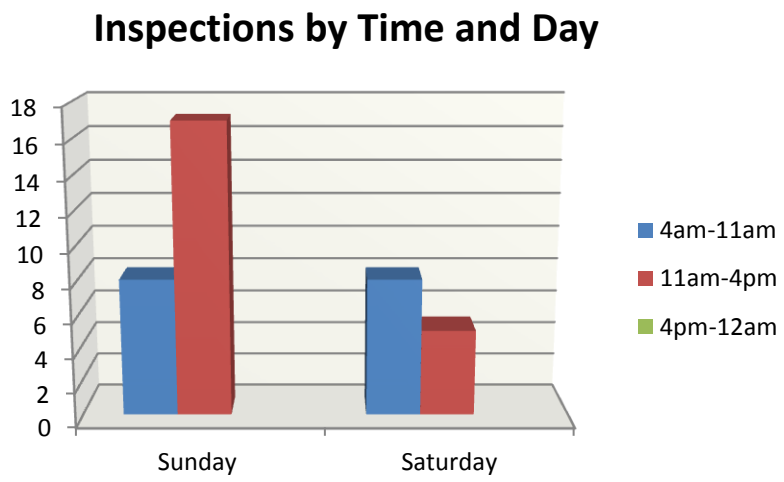

Figure 36: The above chart shows the number of inspections conducted by time of day. Note: Eagle Lake was only staffed on Saturdays and Sundays and may not accurately show traffic at the access.

Species Found and Violations

There were no violations during the inspection season at Eagle Lake. However, there were 7 instances of plants (removable by hand) found on the watercraft during exit inspections along with 1 instance of water in the boat. These are not considered violations according to the MN AIS Laws but they are potential violations that were prevented by our inspectors.

Minnehaha Creek Watershed District Lakes

Lake Minnewashta

General Inspection Information

In total, Lake Minnewashta received 2,238 staffed hours from May 13th to October 31st. According to the Minnesota Department of Natural Resources (MN DNR) inspection data, 5,337 inspections took place at Lake Minnewashta (Table 6). Lake Minnewashta is staffed all day Sunday through Saturday. Approximately 64% of the total inspections were conducted on fishing boats. The second most common watercraft type were runabouts/ ski-boats (18%) (Figure 37).

Table 6: Lake Minnewashta Inspection Types

Inspection Type	Count
Entering	2,898
Exiting	2,412
TOTAL	5,337

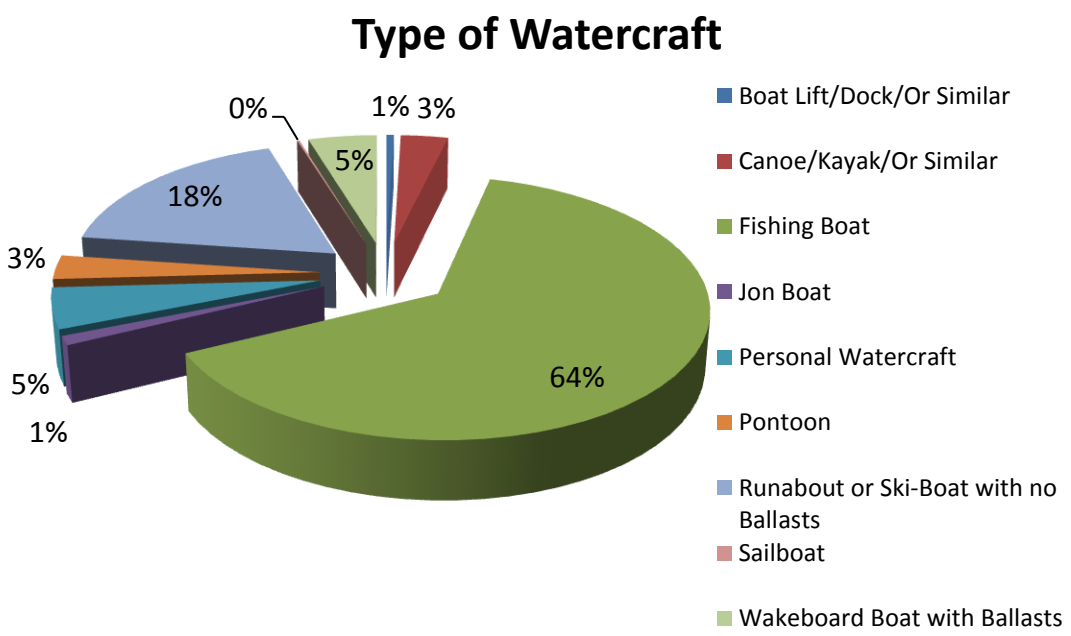

Figure 37: The above chart shows the breakdown of the total inspections by type of watercraft.

A majority (65%) of people entering the lake reported that the watercraft was out of water for the recommended 5 days or more (Figure 38). However, 801 boaters were entering the lake after 1-4 days and 158 after less than 24 hours. Together, roughly 33% of incoming watercraft had not reached the 5 day dry time prior to entering a new lake. This increases the potential for infestations on Lake Minnewashta.

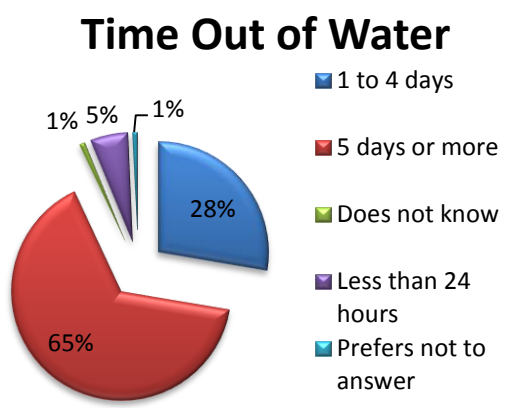

Figure 38: This pie chart shows the reported amount of time out of water for incoming watercraft.

Aside from Lake Minnewashta, inspection data shows that Lake Minnetonka and Lake Waconia were most commonly reported as the last waterbody visited (146 and 75 watercraft respectively)(Figure 39). Both Lake Minnetonka and Waconia are zebra mussel infested waters which increases the potential of new zebra mussel introductions.

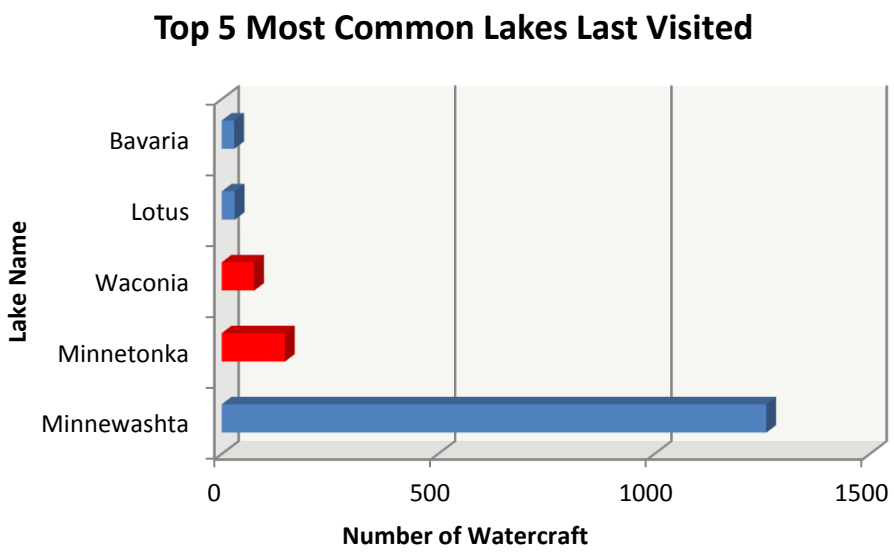

Figure 39: The above graph shows the top 5 most common lakes that incoming watercraft had last been on. The red bars indicate that the lake is infested with zebra mussels.

Fifty six watercrafts from 16 other states entered Lake Minnewashta throughout the 2017 inspection season (less than 2% of all incoming watercraft). This is cause for concern as 13 of the 16 reported states have waterbodies infested by zebra mussels (Figure 40). Of the 56 out-of-state inspections, 5 had species found on arrival, 1 had the drain plug in, and species were found on 9 watercraft during exit inspections. As laws differ from state-to-state it is important to thoroughly inspect all watercraft and ensure out-of-state boaters are following the Minnesota AIS laws.

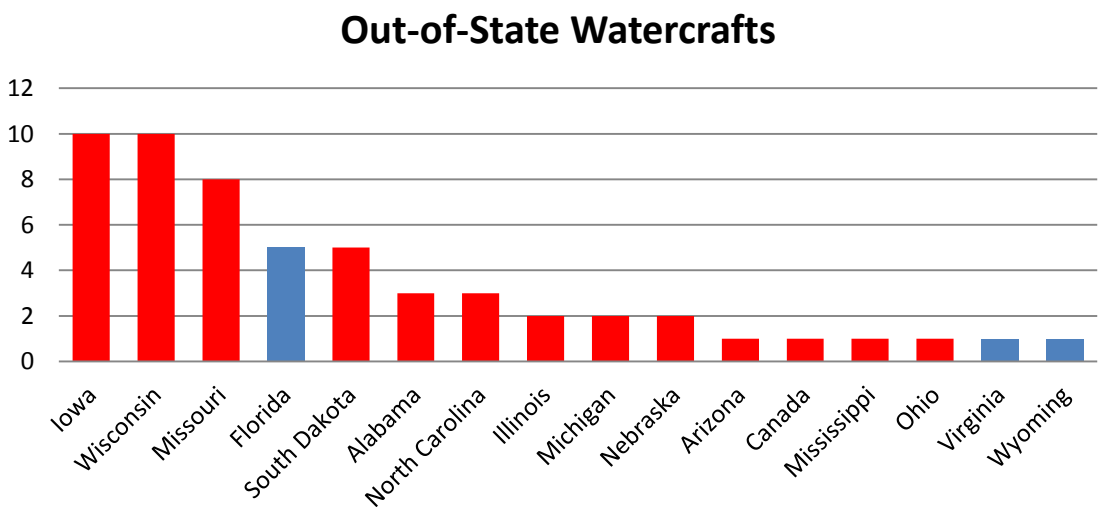

Figure 40: The above graph shows the number of watercrafts entering Lake Minnewashta from a different state. Red bars indicate that the state has waterbodies infested with zebra mussels.

As mentioned, inspection staff was scheduled every day of the week from roughly 5am-8pm. According to inspection data, Saturday and Sunday were the busiest days accounting for 50% of all inspections (25% each) followed by Fridays at 12%. Inspection surveys were sorted into 1 of 3 timeframes: 4am-10:59am, 11am-3:59pm, and 4pm-12am. Afternoons were consistently the leading time for inspections for every day while mornings were the least (Figure 41).

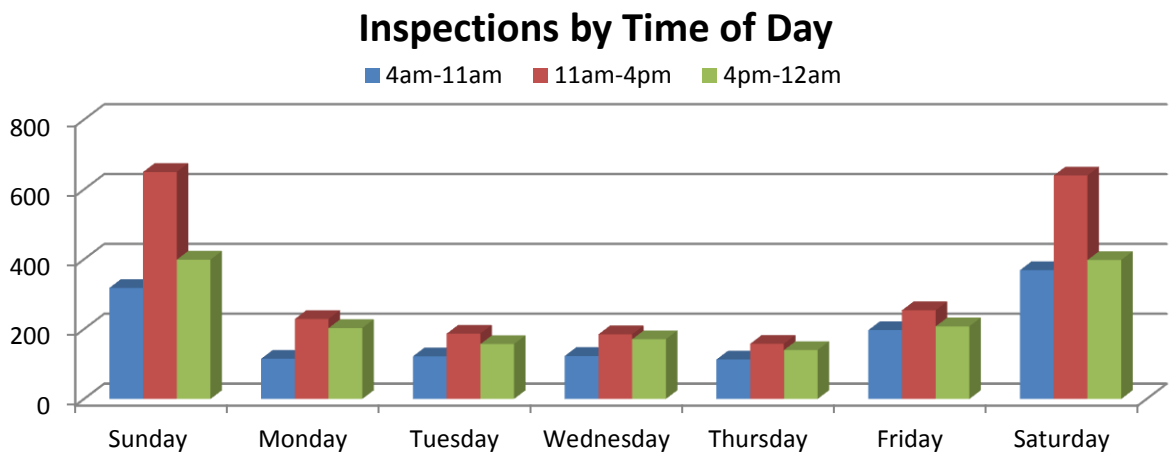

Figure 41: The above chart shows the number of inspections at the access by time of day. Note: Only staffed hours shown

Species Found and Violations

Overall, 78% of the inspections conducted at Lake Minnewashta were free of any species and. However, this leaves 22% (1,152) of inspections with at least one type of species found. A majority (965) of the species were found during exit inspections which are not considered violations. The remaining 187 entering inspections during which species were found are considered violations of the MN AIS Laws. The most common type of species found during entrance and exit inspections were plants removable by hand (88%). However, there were 3 cases of zebra mussel findings on entering watercraft, 2 cases required decontamination (Figure 42). Thirty seven watercrafts entered the access with the drain plug still in which is also a violation of AIS Law.

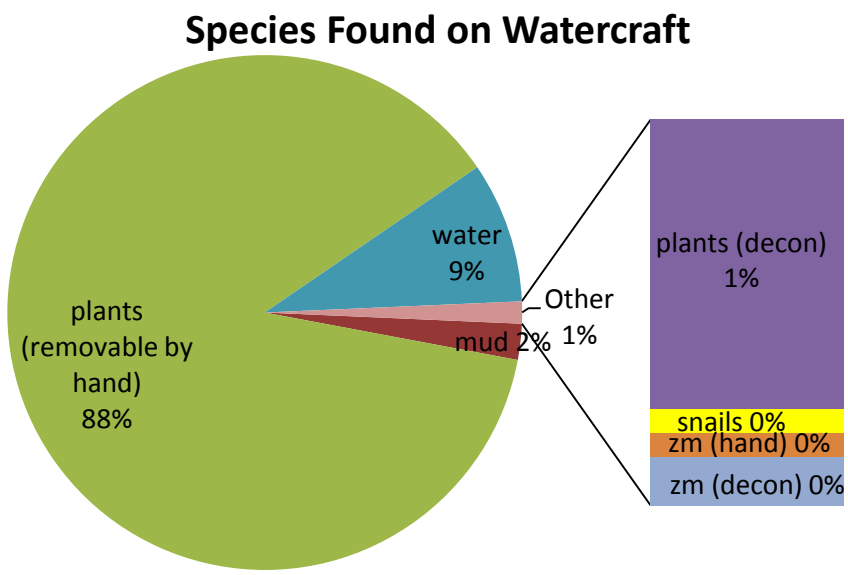

Figure 42: The above chart shows the overall percentages of species found on both entering and exiting watercraft. (zm= zebra mussels).

Other Information

The entire east bay of Lake Minnewashta was treated for zebra mussels in the summer of 2016. Though this treatment was successful, another zebra mussel was found at the access in September 2017. Based on the size, it was determined that the discovered zebra mussel was a new introduction. Another successful treatment was conducted in the immediate area of the main access.

Piersons Lake

General Inspection Information

Piersons Lake received approximately 655 staffed hours from May 14th to September 30th. Piersons Lake was a "Roving Lake" meaning for an additional 600 hours inspectors moved back and forth from Piersons Lake to Wasserman Lake. There were 1,603 watercraft inspections conducted at the access of Piersons Lake during this time (Table 7).

Table 7: Piersons Lake Inspection Types

Inspection Type	Count
Entering	936
Exiting	667
TOTAL	1,603

Fishing boats were the most common type of watercraft inspected at 1,192 inspections (74%). The second most common watercraft type was runabouts/ ski-boats without ballasts at 11% of the total inspections. The remaining 15% of inspections were conducted on a variety of watercraft types (Figure 43).

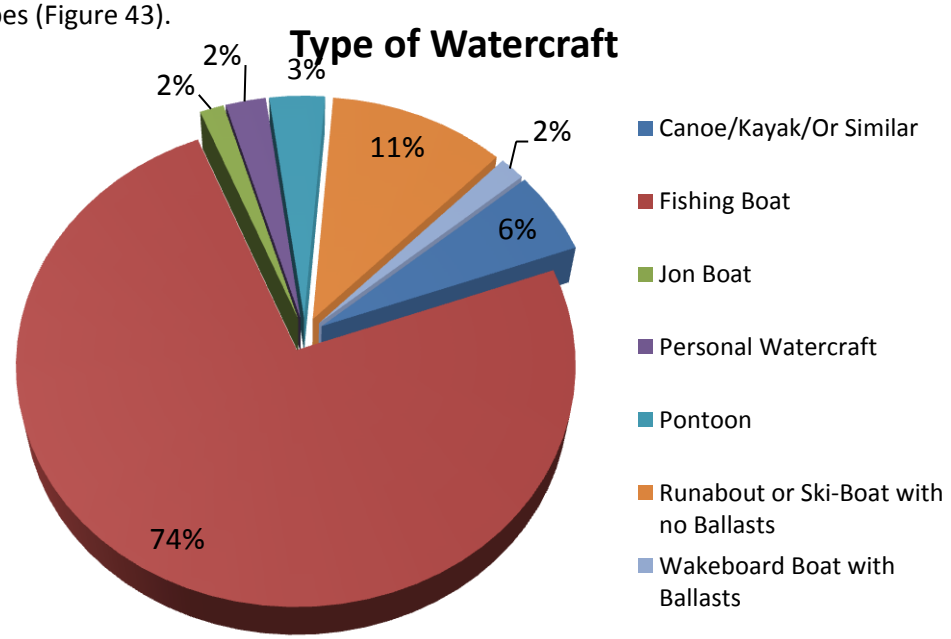

Figure 43: The above chart depicts the variety of watercraft inspected in the 2017 inspection year at Piersons Lake.

Sixty five percent of people entering Piersons Lake reported that the watercraft had been out of water for the recommended 5 or more days (606 inspections). However, 26% reported it had only been 1-4 days while 7% was less than 24 hours since the watercraft had been in water. The remaining 2% did not know or preferred not to answer (Figure 44).

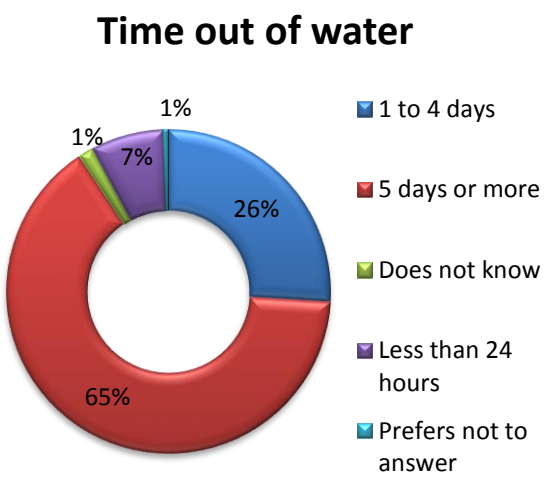

Figure 44: The chart shows the reported time out of water for incoming watercrafts.

According to the inspection data, 524 watercrafts reported that the last lake they had been on was not Piersons. Aside from Piersons Lake, Lake Waconia was the most common lake reported followed by Bavaria, Minnetonka, and Minnewashta. Three of the 5 lakes are infested with zebra mussels which increases the potential of Piersons Lake being infested (Figure 45).

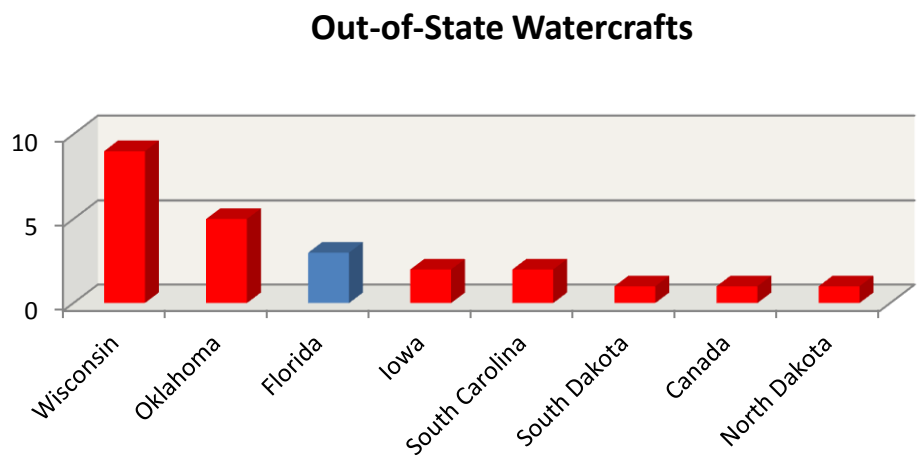

Figure 45: The above graph shows the number of out- of-state watercraft inspected. Red indicates that the state has waterbodies infested with zebra mussels.

Piersons Lake was accessed by 24 out-of-state boaters (1.5%). Though this is not a significant amount, it is important to note that 7 out of the 8 states have waterbodies infested by zebra mussels (Figure 46). No violations were made by out-of-state boaters.

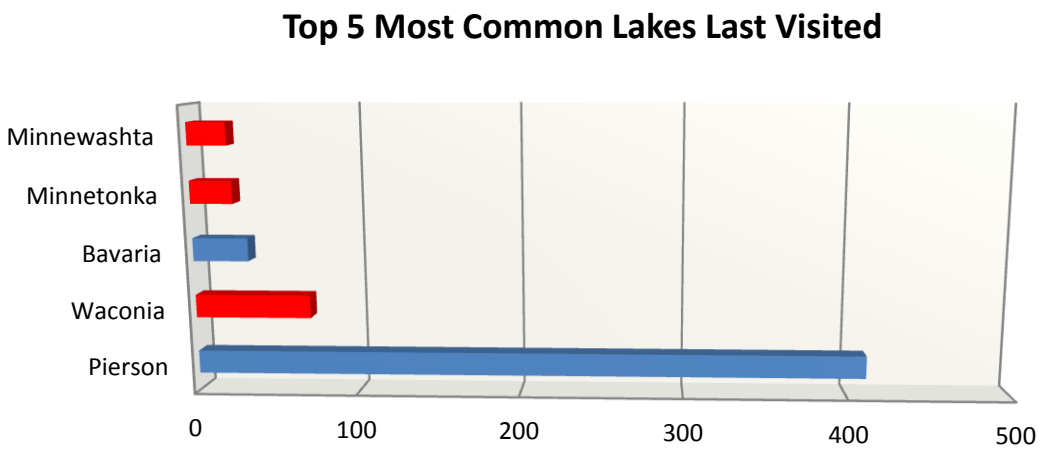

Figure 46: The above graph shows the top 5 most common lakes that the incoming watercraft had last been in. Red indicates that the waterbody is infested with zebra mussels.

According to inspection data, Sundays were the busiest day for inspectors with over 1/3 of all inspections occurring on that day. Saturday and Friday were the next busiest days at 20% and 19% of all inspections. Survey data was sorted into 1 of 3 timeframes (4am-10:59am, 11am-3:59pm, and 4pm-12am) to determine the most active times at the access. Afternoons (11am-3:59pm) were consistently the busiest time for inspectors (with the exception of Saturday during which mornings were slightly higher) with roughly 46% of all inspections falling within this timeframe (Figure 47).

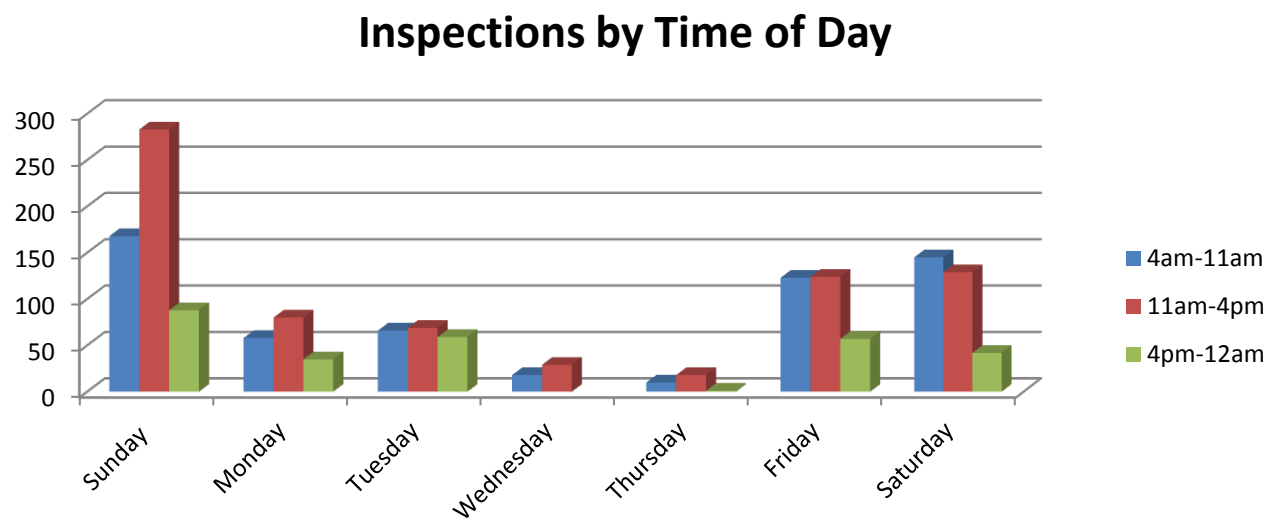

Figure 47: the above chart shows the number of inspections by time of day. Note: only staffed hours shown.

Species Found and Violations

There were a total of 30 violations at Pierson Lake. Of the 30 violations, 17 were the discovery of species being found during entrance inspections while 13 were drain plug violations upon arrival at the access. Roughly 71% of inspections with species violations were due to plants (removable by hand) found on the watercraft/trailer/equipment (Figure 48). One zebra mussel was found but was removable by hand and did not require decontamination.

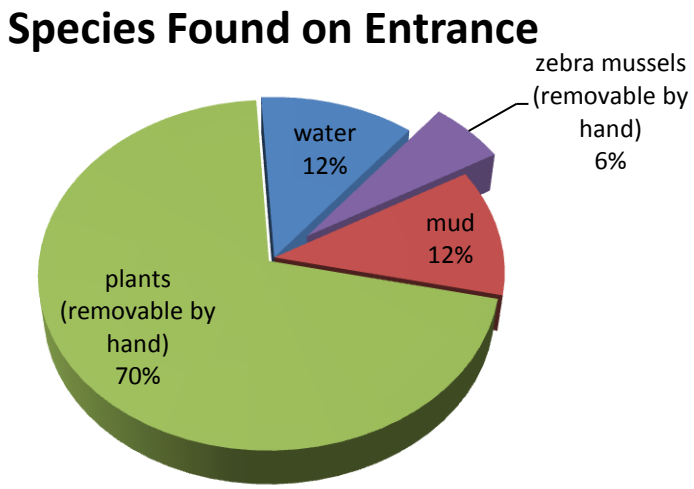

Figure 48: The above chart shows the range of species found during entrance inspections only

A large majority of species found during inspections occurs during exit inspections. Though these are not considered violations, they are important to note because without exit inspections invasive can travel from lake to lake by way of boat and trailer/other water-related equipment. Out of the 155 instances of species found during exit inspections, 148 of them were plants removable by hand (Figure 49).

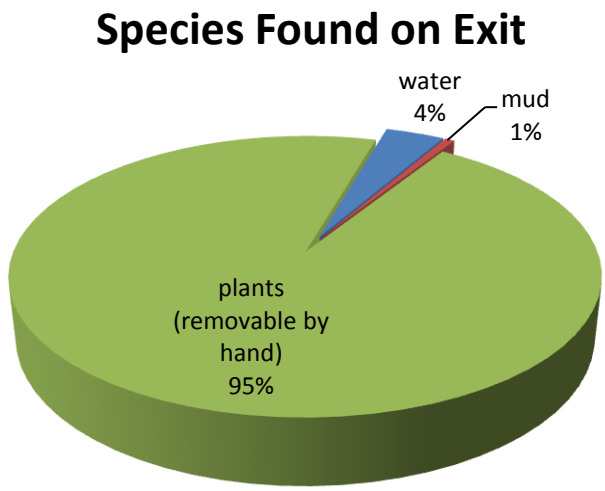

Figure 49: the above chart shows the range of species found during exit inspections only.

Wasserman Lake

General Inspection Information

Wasserman Lake received 307 staffed hours from May 14th to September 30th. Wasserman Lake was a "Roving Lake" meaning for an additional 600 hours inspectors moved back and forth from Wasserman Lake to Piersons Lake. In total, 260 watercraft inspections took place during staffed hours. A majority of the watercrafts were fishing boats (79% or 205), Canoes/Kayaks were the next most common watercraft with 22 inspections conducted (Figure 50).

Table 7: Wasserman Lake Inspection Types

Inspection Type	Count
Entering	127
Exiting	133
TOTAL	**260**

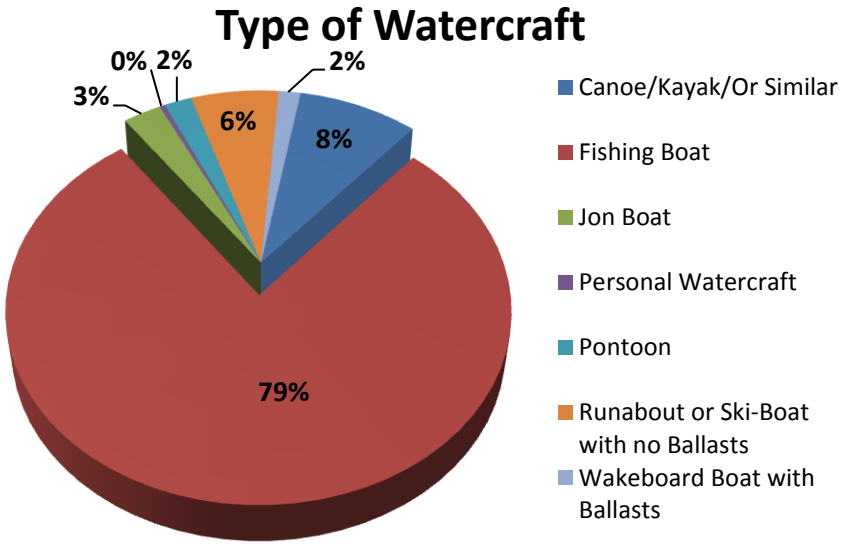

Figure 50: The above chart shows the type of watercrafts inspected.

Seventy seven incoming watercrafts had been out of water for the recommended 5 days or more (roughly 60%). However, 36 boaters reported a dry time of only 1-4 days while 12 reported less than 24 hours (Figure 51). These increase the potential of infestation by incoming watercrafts.

All but 1 watercraft inspected was from Minnesota. The 1 out-of-state watercraft was from Florida, which does not have any waterbodies listed as infested with zebra mussels.

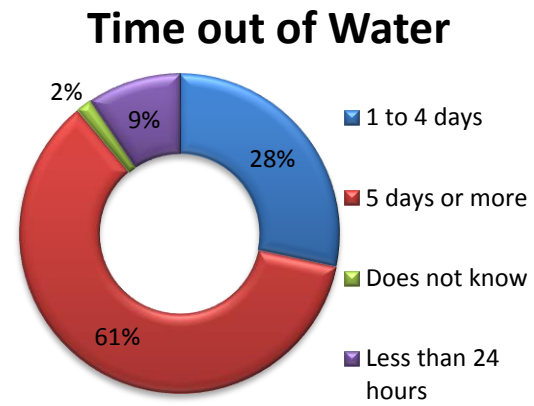

Figure 51: The above chart shows the reported time out of water by incoming boaters.

Of the 127 incoming boaters, the most commonly reported lake last visited was Wasserman. However, this only made up 30% of all responses. The remaining 70% consisted of 35 lakes with Piersons and Waconia tied at 12 reports each (Figure 52).

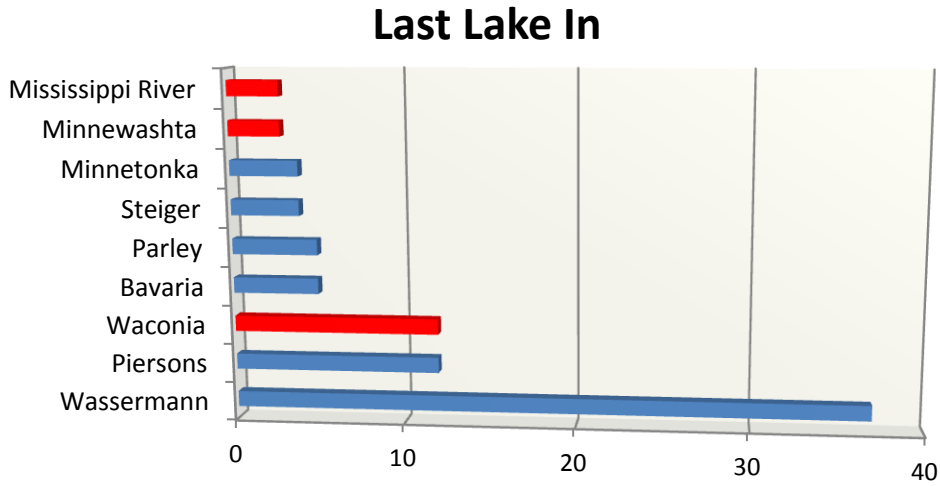

Figure 52: The above chart shows the reported last lake visited for entering watercraft inspections.

Sunday was the busiest day for Wasserman Lake. Afternoons were the busiest time of day for inspectors. However, as mentioned Wasserman was a roving lake during the week.

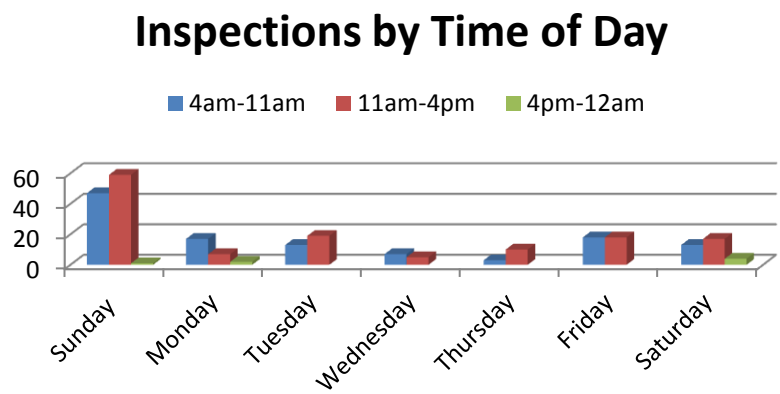

Figure 53: The above chart shows the number of inspections conducted by time of day.

Species Found and Violations

Overall, there were only 6 violations of MN AIS Law at Wasserman Lake. Three of these were drain plug violations while the others were due to the transportation of water (1) or vegetation (2). However, there were 54 potential violations prevented during exit inspections at the access, 94% of these were due to plants (Figure 54). Vegetation was the most common species found on watercraft, trailers, and equipment.

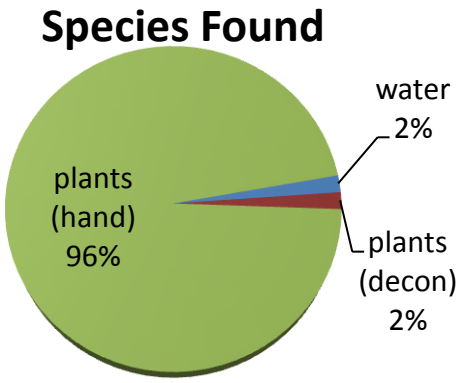

Figure 54: The above chart shows the range of species found during both entrance and exit inspections.

City of Chanhassen Lakes

Lotus Lake

General Inspection Information

Lotus Lake received 2,355 staffed hours from May 14th to November 15th. Lotus Lake was staffed every day of the week from roughly 6am-8pm. During this time, a total of 3,832 inspections took place (Table8). The most common type of watercraft was fishing boats (56% of total). The second most common was runabout/ski boats without ballasts (25%) (Figure 55).

Table 8: Lotus Lake Inspection Types

Inspection Type	Count
Entering	2,147
Exiting	1,671
Courtesy	4
Unclassified	10
TOTAL	2,355

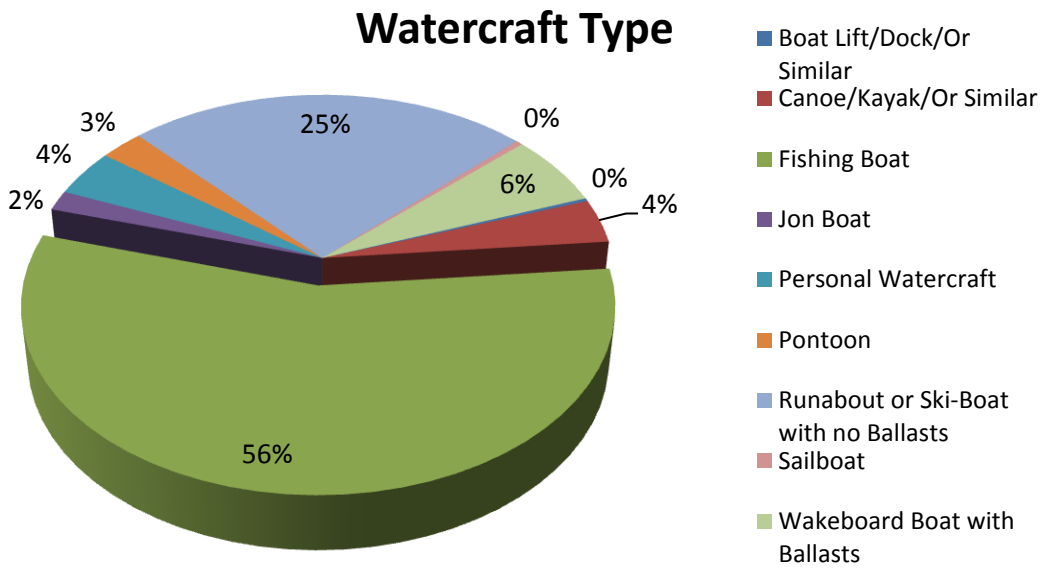

Figure 55: The above chart shows the type and percent of watercrafts that were inspected during the 2017 inspection season.

Of the entering watercrafts, 65% of boaters reported that the watercraft had been out of water for 5 days (the recommended dry time). However, a majority of the remaining responses were less than the recommended (27% of responses for 1-4 days out of water and 8% of responses for less than 24 hours)(Figure 56).

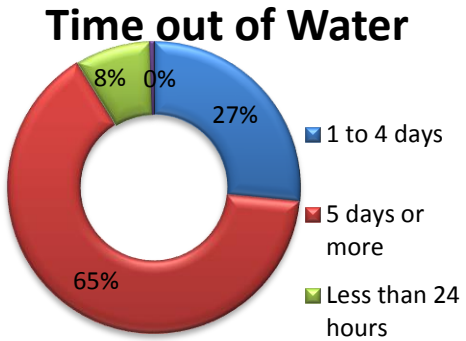

Figure 56: The above chart shows the reported amount of time out of water.

Almost 50% incoming boaters reported that Lotus Lake was the last lake the watercraft had been in. However, the other 50 % comprises of 165 different waterbodies including Lake Minnetonka, Waconia, and Lake Minnewashta, all of which are infested with zebra mussels (Figure 57).

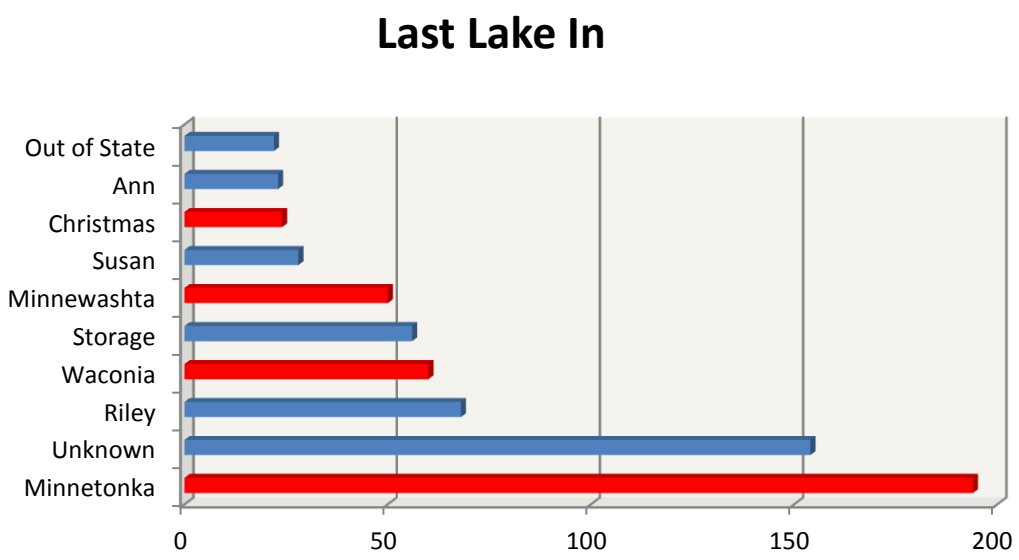

Figure 57: The above graph shows the top 10 responses by boaters when asked what lake/waterbody the watercraft had been in. Red indicates the lake is infested with zebra mussels. NOTE: the chart does not include Lotus as a response.

Lotus Lake is largely visited by Minnesota residents (98%). However, 66 out-of-state watercrafts entered the lake throughout the season (Figure 58). Most of the states from which the watercraft originates have waterbodies infested with zebra mussels. This brings concern that new lakes may be infested.

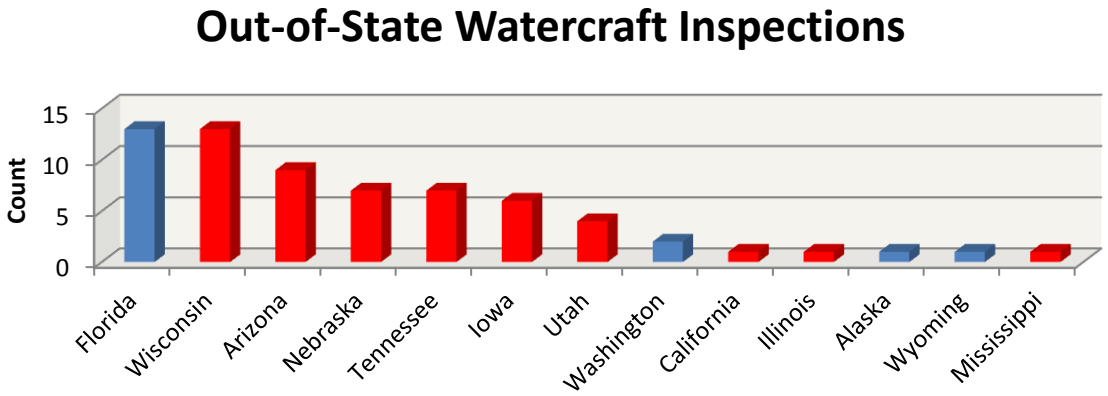

Figure 58: The above graph shows the number of watercraft from out-of-state that entering Lotus Lake during the inspection season. Red indicates the state has waterbodies infested with zebra mussels.

Weekend inspections made up almost half of the total inspections at Lotus Lake (48%) (Figure 59). The busiest day of the week for inspectors at the access was Sunday with a total of 957 inspections. Saturday followed closely with 864.

To determine the busiest time of day for inspectors, the survey data was put into 1 of 3 timeframes: 4am-10:59am, 11am-3:59pm, or 4pm-12am. Data shows that Sunday afternoons (11am-3:59pm) had the leading number of inspections followed by Saturday afternoons (Figure 60).

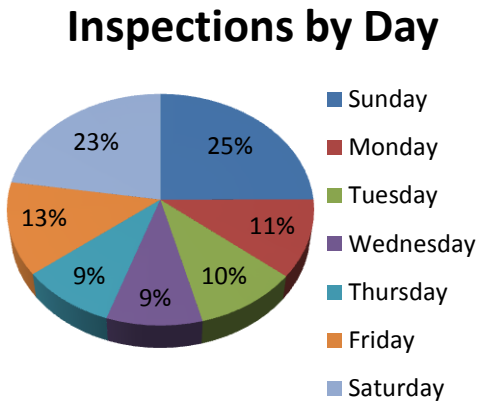

Figure 59: The above chart shows the distribution of inspections by day of the week.

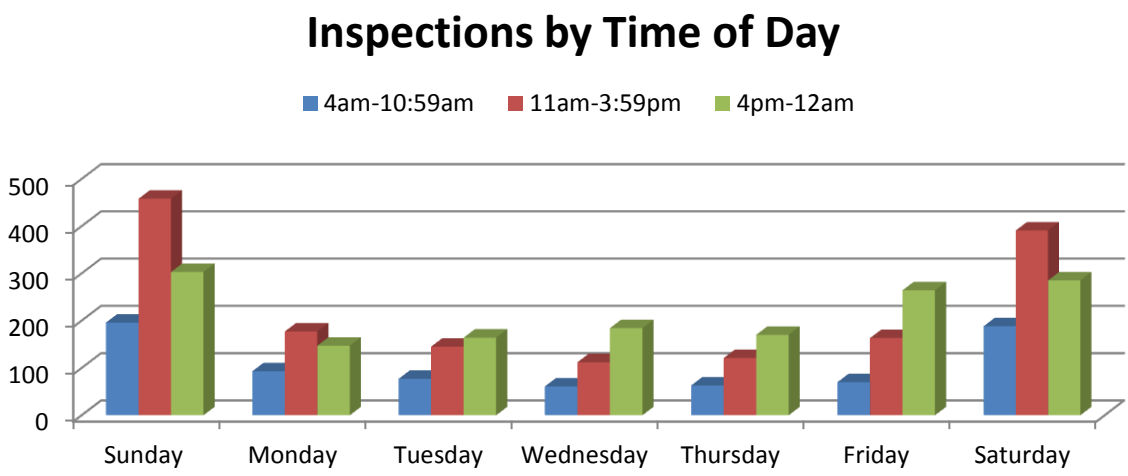

Figure 60: The above chart shows the number of inspections by time of day.

Species Found and Violations

A total of 127 violations were found by inspectors at Lotus Lake. These violations made up 6% of all incoming inspections including 84 cases of species found and 43 watercrafts approaching the access with the drain plug still in. Of the 84 cases of species found, standing water was the most common making up 58% of the violations, followed by plants at 37% (Figure 61). Two inspections resulted in zebra mussels found (1 would require decontamination).

Though exit inspection findings are not considered violations, it shows what is coming out of the lake that could potentially enter another. During the 1,671 exit inspections, there were 265 instances of plants found (11 of these cases would require decontamination). Water was the next most common finding (Figure 62).

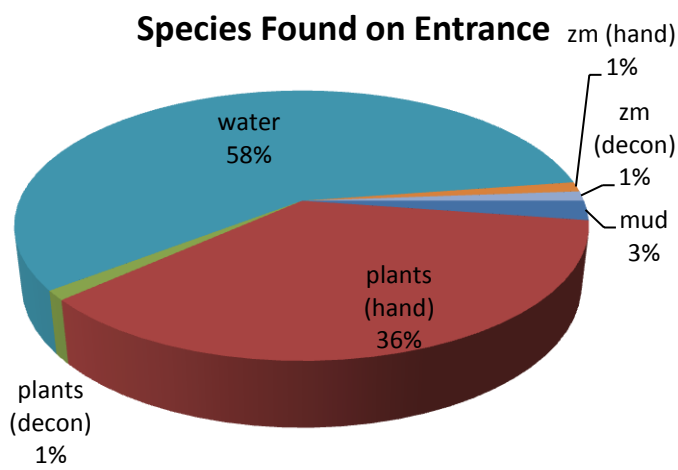

Figure 61: The above chart shows the range of species found during entrance inspections only.

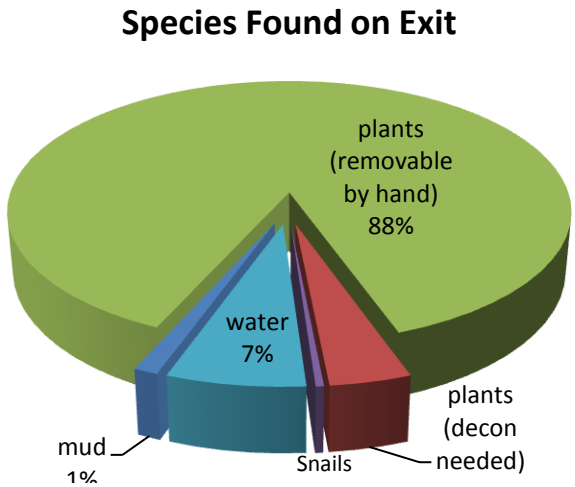

Figure 62: The above chart shows the range of species found during exit inspections only.

Lake Ann

General Inspection Information

Lake Ann was staffed 540 hours from May 27th to September 4th. Generally, Lake Ann was staffed from 6am-8pm every Friday, Saturday, and Sunday and on holidays. During this time, 698 inspections took place (Table 9). In total, 349 (49%) were Canoes/Kayaks. The next most common type of watercraft were fishing boats at 320 (46%)(Figure 63).

Table 9: Lake Ann Inspection Types

Inspection Type	Count
Entering	406
Exiting	292
TOTAL	698

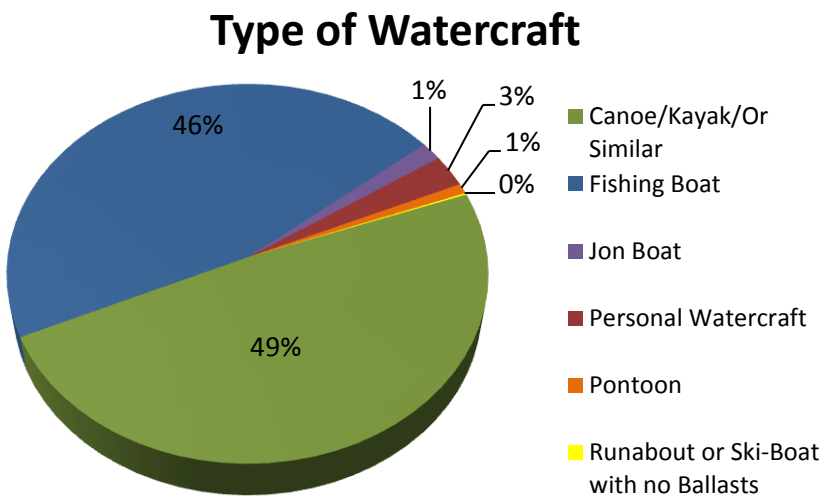

Figure 63: The above chart shows the breakdown of inspections by type of watercraft.

A majority (59%) of people entering Lake Ann reported that the watercraft under inspection had been out of water for 5 days or more, the recommended length (Figure 64). However, 153 watercrafts had been out of water for less than the recommended 5 day dry time. A total of 103 people reported that the watercraft was out of water for 1-4 days while 50 people reported it had been less than 24 hours.

Forty two percent of entering boaters reported that Lake Ann was the last lake the watercraft had been in. Not including the 56 people who reported they were unsure what lake they had last been on, this leaves 179 boaters coming from other lakes. Of these 179 boaters, there was a range of 74 different lakes reported. Lake Minnetonka was the most common lake last visited with a total of 13 reports (Figure 65).

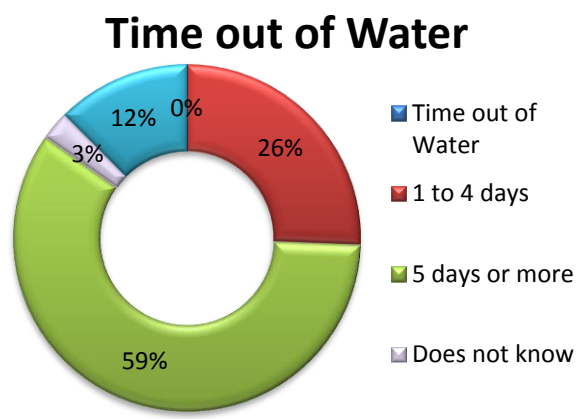

Figure 64: The above chart shows the reported amount of time out of water by incoming boaters only.

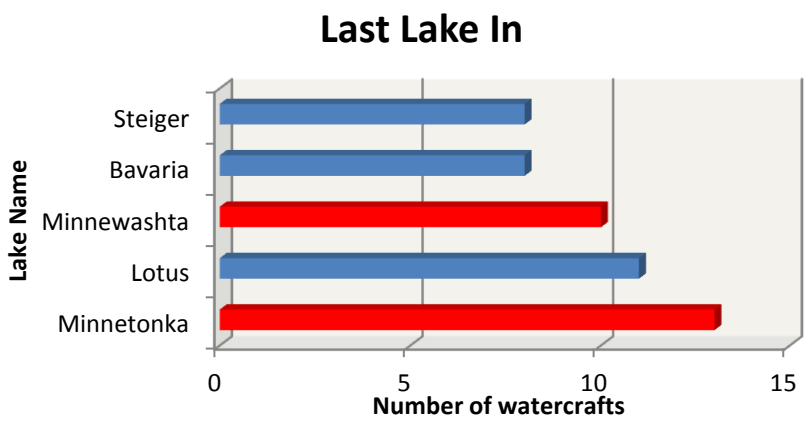

Figure 65: The above graph shows the top 5 responses from entering boaters who had previously been on a different lake. Red indicates that the lake is infested with zebra mussels.

Over 97% of the watercrafts inspected at Lake Ann reside in Minnesota. However, there were 15 watercrafts that were from out-of-state with Wisconsin being the most common (Figure 66). Every state reported contains waterbodies that are infested with zebra mussels.

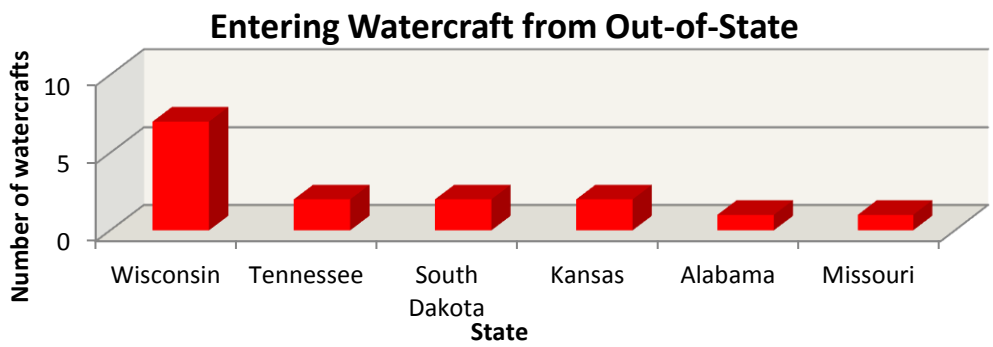

Figure 66: The above graph shows the number of watercraft that entered Lake Ann from out-of-state. The red bars indicate the state is infested with zebra mussels.

Lake Ann was visited most on Saturdays with a total of 265 inspections completed. Sunday was a close second with 240 inspections completed. To compare traffic by time of day survey data was put into 1 of 3 timeframes: 4am-10:59am, 11am-3:59pm, or 4pm-12am. Generally, Saturday and Sunday afternoons were the busiest with roughly 100 inspections falling within that timeframe (Figure 67).

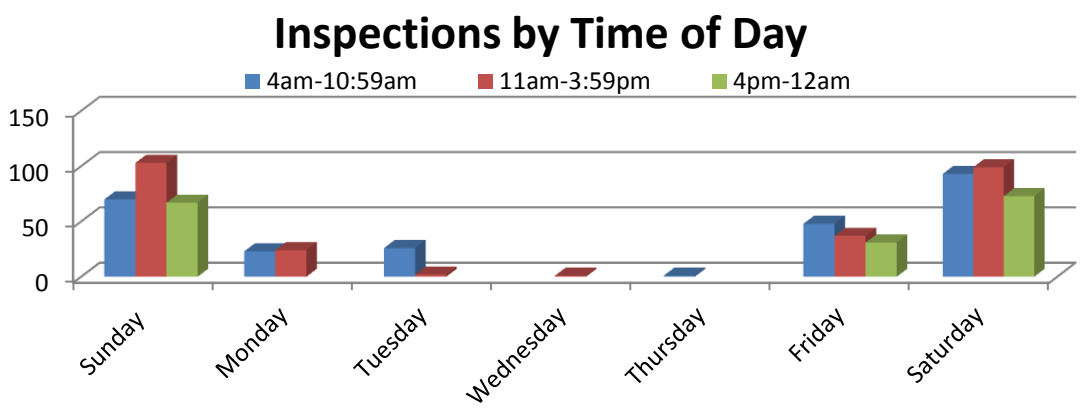

Figure 67: The above chart shows the distribution of inspections by time of day.

Species Found and Violations

There were a total of 9 violations of MN AIS Laws at Lake Ann during the 2017 inspection season. Two of these were species found during entrance inspections while the remaining 7 were drain plug violations. Both species violations were due to standing water in the watercraft. Though not a violation, there were 39 exit inspections during which species were found. A majority of these were plants, 34 cases, while the remaining were water (4) and mud (1). Overall, plants were the most common species found on both entering and exiting watercrafts/trailers/water-related equipment (Figure 68).

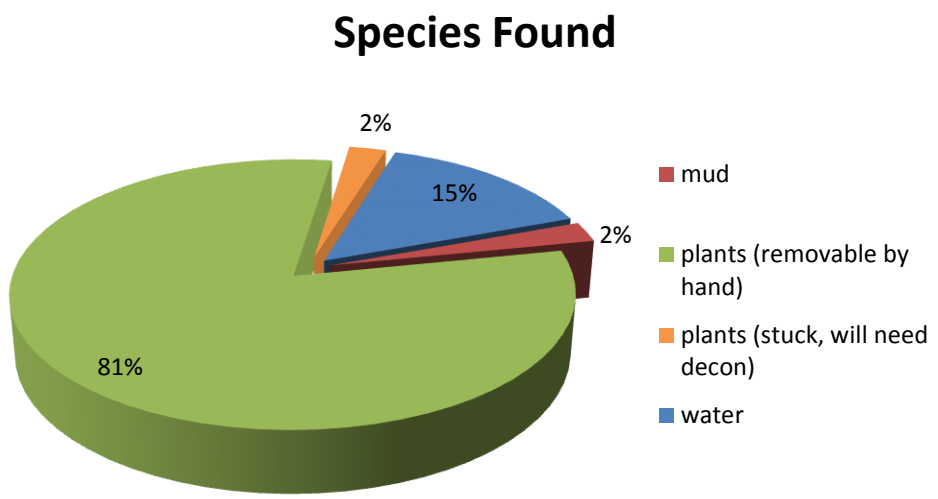

Figure 68: The above chart show the range of species found during both entrance and exit inspections.

Lake Susan

General Inspection Information

Lake Susan received 548 hours from May 27th to September 4th. Inspectors were scheduled every Friday, Saturday, and Sunday from 6am-8pm (including holidays).During this time there were 445 inspections (Table 10). Of the 445 inspections, 58% of them were conducted on fishing boats (Figure 69).

Table 10: Lake Susan Inspection Types

Inspection Type	Count
Entering	249
Exiting	195
Courtesy	1
TOTAL	445

According to the MN DNR Inspection data, a majority of entering lake users (166 or 67%) reported that the watercraft being inspected had been out of water for the recommended 5 days (Figure 70). However, a majority of the remaining incoming boaters had been on the water less than 5 days (13%- less than 24 hours and 19% from 1-4 days).

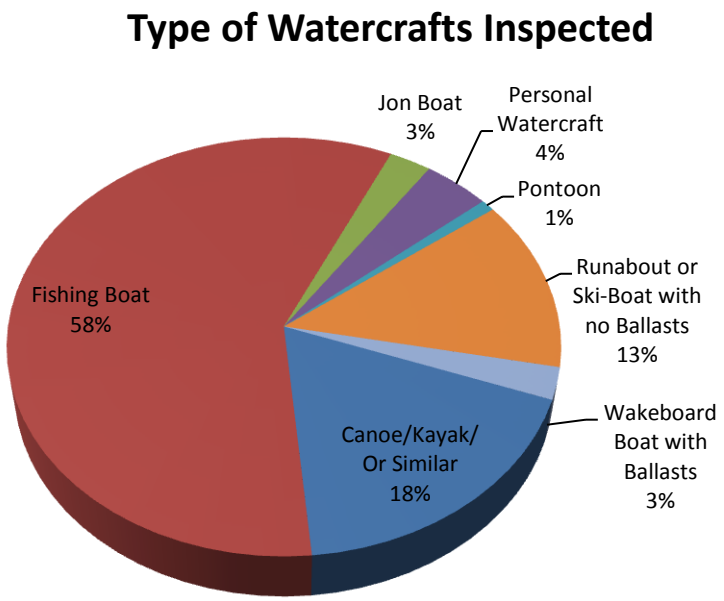

Figure 69: The above chart shows the percent of inspections that were conducted based on watercraft type.

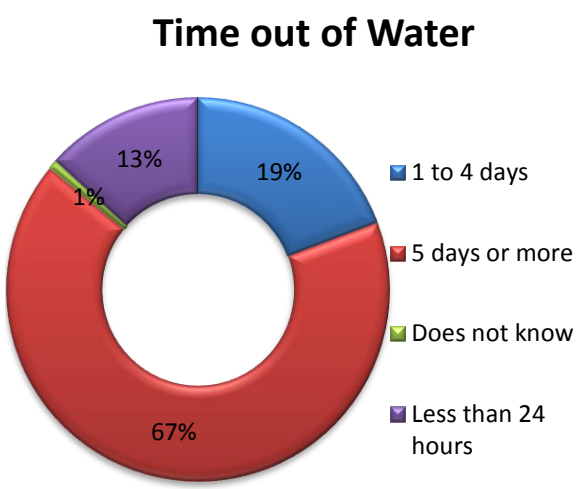

Figure 70: The above chart shows the reported amount of time that incoming watercrafts were out of water prior to reentry.

Of the 249 entrance inspections, 105 people reported that Lake Susan was the most recent lake that the watercraft had been in. Over 50% reported other lakes were visited, some of which are infested with zebra mussels (Figure 71). Minnesota native watercrafts were most frequent accounting for 98% of the total inspections. A total of 6 watercrafts were from out-of-state (3 from Iowa, 1 Wisconsin, 1 Arkansas, and 1 Texas) all of which have zebra mussels.

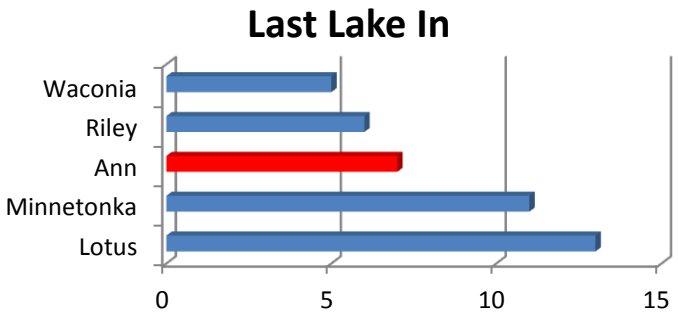

Figure 71: The red bars indicate that the lake is infested with zebra mussels.

Species Found and Violations

There were a total of 19 violations at Lake Susan (10 drain plug violations and 9 species found on entrance). Plant species were found during 7 entrance inspections while standing water was found during 2.

Though not considered a violation of MN AIS Laws, species were found during 33 exit inspections. A majority of these were plants (31) along with water (1), and snails (1). Overall, plants were during the most during both entrance and exit inspections (Figure 72).

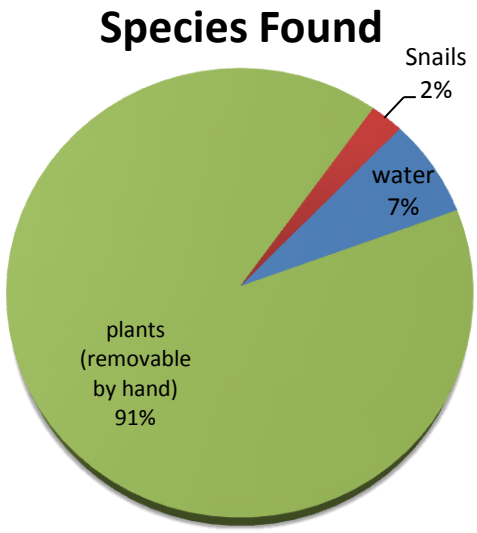

Figure 72: The above chart shows the range of species found during both entrance and exit inspections.