

Recreation Use Within the Intermediate Pool, Pool 1, and Upper Pool 2 of the Upper Mississippi River 2012-2023

Twin Cities Metropolitan Area

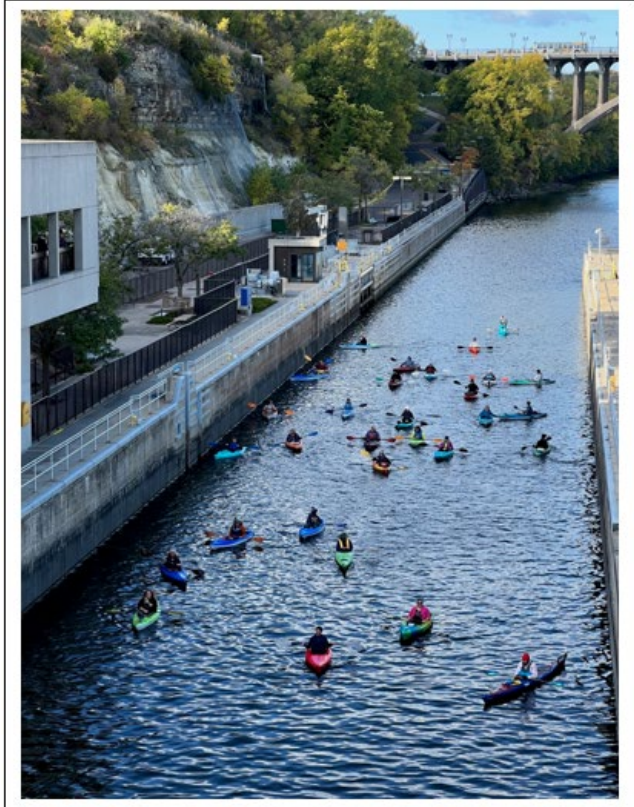


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Recreation

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Executive Summary

This report provides a baseline description of recreation use for the Lower St. Anthony Falls Lock and Dam (LSAFLD) and Lock and Dam 1 (LD1) Disposition Study currently underway by the U.S. Army Corps of Engineers (USACE), St. Paul District. The disposition study is authorized under Section 216 of the Flood Control Act of 1970 for investigating modifications of completed projects or their operations when found advisable due to significantly changed physical or economic conditions and for improving the quality of the environment in the overall public interest. This study was conducted by USACE, St. Paul District, and the National Park Service (NPS). Water-based recreation use from 2012 to 2023 was assessed in the Intermediate Pool, Pool 1, and upper Pool 2 of the Upper Mississippi River within the Minneapolis/St. Paul metropolitan area.

Data for this assessment were compiled by USACE and NPS and included the following:

- Special interest groups usage in 2022, primarily for Pool 1;
- Summer pool use (visual observations) in 2023 for the Intermediate Pool, Pool 1, and upper Pool 2;
- Visitor counts at Upper St. Anthony Falls Lock and Dam (USAFLD) from 2016 to 2023, LD1 from 2014 to 2019 and in 2023, and Bohemian Flats Public Water Access in 2023; and,
- Lock use at LSAFLD and LD1 from 2012 to 2023.

Results indicate the prevalence of a variety of recreation activities throughout the study area oriented from either the shoreline or open water. Shoreline-oriented activities were predominantly fishing, dog use and water play. Swimming also occurred but was less prevalent. Open-water oriented activities involved operation/use of motorized or non-motorized personal watercraft and commercial tourist paddlewheel boats. Non-motorized personal watercraft was dominated by kayaks, canoes, or sport-rowing vessels. Both motorized and non-motorized watercraft moved between pools using the locks at LSAFLD and LD1 throughout this period.

There were differences in recreation use across pools. The differences appear to be attributed to access (or lack thereof) and characteristics of the pool. The Intermediate Pool experienced very little use and was limited to shoreline-oriented activities. This is a very small pool (50 acres in size) with high-velocity flows and limited access. On occasion, this pool was visited by a commercial paddlewheel excursion boat, which offered clientele a view of downtown Minneapolis and USAFLD from the vessel as well as experience a lockage. A significant number of walk-in visitors accessed USAFLD, utilizing the facility to view the river and dam operations within the recreation study area.

Relative to the entire study area, use in Pool 1 was moderate. Due to flow being distributed across a wide area, Pool 1 has low-velocity flows conducive for use by the sport rowing clientele. Open water activities also included use by canoes, kayaks, and motorized vessels. This is also the area where a commercial paddlewheel boat moors. Despite moderate use by watercraft, access is limited for motorized boats, as there are no public boat launches within the pool. Motorized boats are either seasonally stationed in the pool or access it from downstream, with a lockage required through LD1. Access from upstream is not possible, as the lock at USAFLD is closed and there are no boat launches in the Intermediate Pool. Vessel passage from Pool 1 to the Intermediate Pool experienced a decline after USAFLD was closed to

commercial navigation in 2015. However, this appears to have stabilized since 2020 by recreational users and tourist paddlewheel excursions. For shoreline-oriented activities, popular activities included fishing, dog use and water play. Recreation use appeared to be distributed throughout the pool, but with some areas being more concentrated than others. The significant number of walk-in visitors to LD1 suggest the public enjoyed viewing the river as well as lock and dam operations.

Upper Pool 2 is a more riverine environment that experienced the highest concentration of recreation use. Activities were distributed throughout the reach, though the highest densities were associated with existing parks, dog use areas, or beaches. Most of the activities were shoreline oriented with a focus on fishing, dog use, and waterplay. Open-water activities involved motorized and non-motorized watercraft. The high use of this area relative to the Intermediate Pool and Pool 1 is likely attributable to ease of access via public lands and a developed motorized boat launch.

Based on the results of this analysis and observed trends over the last decade, the following discussion addresses the key questions posed at the onset of the study:

What recreation currently takes place in the study area, and are different sites conducive to specific types of activity? A wide variety of river-oriented recreation activities occur throughout the study area either from the shore or on the river. Shore-based activities are dominated by fishing, dog use, water play, and swimming. Open-water activities (i.e., on the river) are dominated by motorized or non-motorized personal watercraft operation/use and commercial tourist boats. The high-velocity flows, limited access, and small size of the Intermediate Pool are likely the reason why shoreline activities dominate over that of open water. Pool 1 and upper Pool 2 have many recreational uses in common for both shoreline and open water types. However, a key difference is that Pool 1 is much larger, is longer, and has low-velocity flows, which is conducive to sport rowing and lake-oriented uses. Upper Pool 2 is narrower, has higher-velocity flows, and is more sinuous. These two pools offer users a stark contrast between a lake- and river-like environment, which may also be a driver of the different recreation uses.

What data are currently available for these activities? Data collected specifically for this study included 2023 information on pool use and a shoreline counter at Bohemian Flats. This information was NOT collected during other years nor are there any plans to continue doing so. Other known sources of data collected independent of this study included sport rowing clubs, the Paddle Share program, and commercial river paddlewheel excursion boats. In addition, daily visitor data exist for USAFLD, LSAFLD, and LD1 and lock use at LSAFLD and LD1. While it is likely other sources of recreation exist within the study area, this assessment relied on known and readily available data sources.

1 Background

This recreation assessment was conducted as part of the Lower St. Anthony Falls Lock and Dam (LSAFLD) and Lock and Dam 1 (LD1) Section 216 Disposition Study currently in progress. The disposition study will assess whether LSAFLD, LD1, and the associated federally authorized Navigation Channel are serving their authorized purpose, and if not, whether sufficient federal interest exists for the federal government to continue to own, operate and maintain the project. The study will examine opportunities for different purposes such as ecosystem restoration or recreation. This assessment provides baseline recreation information to help answer the question of how recreation use could be impacted by changes in the status quo of LSAFLD and/or LD1 and the associated navigation channel considering the scope of the disposition study.

The objective of this recreation study was to collect, compile, analyze, and report on recent, readily available, and major water-based recreation use associated with the LSAFLD/LD1 Disposition Study. This information is necessary for the purpose of determining baseline conditions and assessing potential effects of action alternatives relative to the continued use of this reach as currently authorized (i.e., no action alternative). Recreation use data are important when considering the four accounts detailed in the Economic and Environmental Principles and Guidelines for Water and Related Land Resources Implementation Studies, U.S. Water Resources Council, 1983. This information is also considered for the National Environmental Policy Act (NEPA), which ensures the impacts of recreation-related activities are assessed in promoting a balance between recreation and environmental protection.

This report is intended as a stand-alone document describing the recreation use and will be appended to USACE's forthcoming LSAFLD/LD1 Integrated Disposition Study/Environmental Assessment report.

1.1 Key Questions

Data for the recreation study were used to address key questions for the study, including the following:

1. What recreation currently takes place in the study area (specifically related to the project sites), and are different sites conducive to different types of activity?
2. What data are currently available for these activities?

This report summarizes recreation use based on historic data over the past decade or so and a targeted assessment of pool use during the 2023 summer season.

1.2 Study Area

The recreation study area encompasses a 10-mile reach of the Upper Mississippi River and is a portion of the larger LSAFLD/LD1 Disposition Study Area. It includes the Intermediate Pool (located between USALD and LSAFLD), Pool 1, and upper Pool 2 (River Miles 844 to 854) (Figure 1-1). The upper portion of Pool 2 upstream of river mile 844 is included to allow a contrast between pool-oriented recreation and river-oriented recreation use.

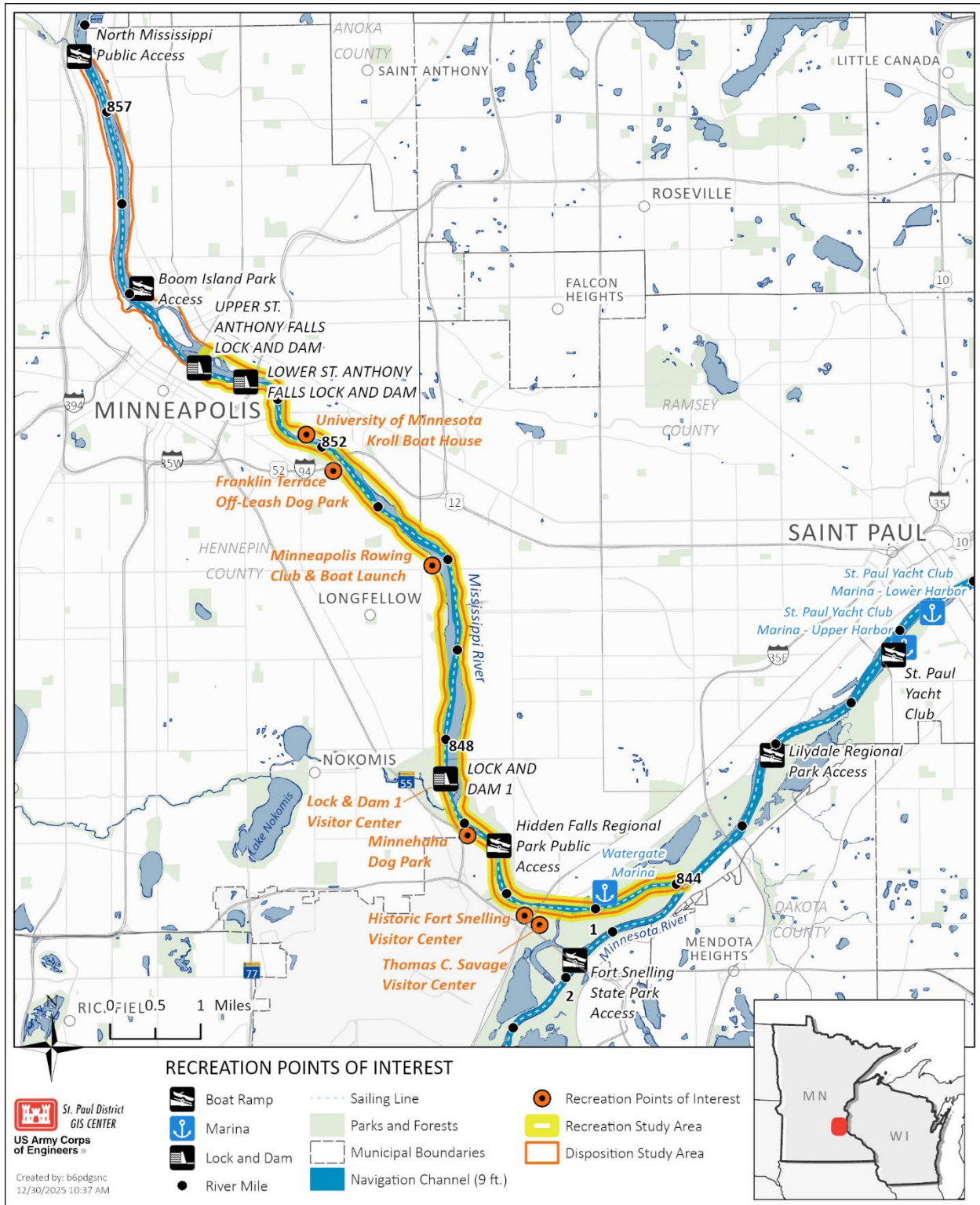


Figure 1-1. Study area for the 2023 recreational assessment

The study area also includes the associated water access trails. Only recreation activities that have a direct interaction with the river were assessed. This study area is contained within that of the disposition study but it did not extend upstream of the Upper St. Anthony Falls Lock and Dam (USAFLD) because the lock was closed in 2015.

2 Methods

USACE, in collaboration with the National Park Service (NPS), collected, compiled, and analyzed recreation use in the study area. This effort involved a variety of sources from USACE, NPS, or other entities:

- Special interest groups usage in 2022, primarily for Pool 1;
- Summer pool use (visual observations) in 2023 for the Intermediate Pool, Pool 1, and upper Pool 2;
- Visitor counts at USAFLD from 2016 to 2023, LD1 from 2014 to 2019 and in 2023, and Bohemian Flats Public Water Access in 2023; and,
- Lock use at LSAFLD and LD1 from 2012 to 2023.

More details on these sources follows.

2.1 Special Interest Groups

Special interest group usage data were obtained from two rowing clubs with permanent facilities in Pool 1. Data were also obtained from one river tourist paddlewheel boat company that held public excursions throughout the study area¹. Information was also obtained for the Red Bull Urban Portage Challenge, a special event that combines paddling on the river with land portaging. Lastly, data were obtained from the Paddle Share Program, a self-serve kayak rental system in Twin Cities. Annual activity reports provided by these groups were compiled for the year 2022 and summarized to ascertain river use type, amount, timing (morning, afternoon, evening), seasonality, and pool location (i.e., Pool 1, Upper Pool 2).

2.2 Summer Pool Use - Visual Observations

Visual observations of river-based recreation were noted on twelve days throughout the summer of 2023 by USACE and the NPS staff. Boat surveys were completed in 6-hour shifts from a motorized vessel moving through the study area on ten different days, included weekdays, weekends, holidays, and one special event (Aquatennial) (Table 2-1). Pools 1 and 2 were always included in the boat surveys; however, the Intermediate Pool was only assessed on three days due to time constraints and limited access that required lockage through LSAFLD. The latter was supplemented with foot surveys by NPS staff walking over the Stone Arch Bridge

¹ Three companies known to operate in the study area were contacted: Magnolia Blossom Cruises (Pools 1 and 2), Paddleford Cruises (Pool 2), and Paradise Charter/Mississippi Queen (Intermediate Pool and Pool 1). All were contacted and asked to provide information; one responded.

Table 2-1. Dates, times, locations and other information for recreation observations within the study area in 2023

Day/Date	Time	Pools	Weather	Observations per Hour	Comments
Mon, May 29^a	9:00 am – 3:00 pm	1, 2	Hi 87 Lo 65 Cloudy	16.0	Boat survey
Wed, Jun 21	12:30 pm – 6:30 pm	1, 2	Hi 91 Lo 69 Sunny	15.6	Boat survey
Fri, Jun 30	3:00 pm – 3:30 pm	Intermediate	Hi 86 Lo 69 Cloudy	4.0	Foot survey from Stone Arch Bridge
Sat, Jul 1	9:30 am – 3:30 pm	1, 2	Hi 86 Lo 68 Cloudy	21.0	Boat survey
Tue, Jul 4^a	11:30 am – 5:30 pm	1, 2	Hi 81 Lo 68 Thunderstorm	16.7	Boat survey
Sun, Jul 16	3:00 pm – 3:30 pm	Intermediate	Hi 79 Lo 61 Smoke	6.0	Foot survey from Stone Arch Bridge
Sat, Jul 22	10:30 am – 4:30 pm	1, 2	Hi 87 Lo 65 Cloudy	14.7	Boat survey
Sun, Jul 30	2:30 pm – 10:30 pm	1, 2	Hi 80 Lo 64 Cloudy	17.4	Aquatennial; boat survey
Tue, Aug 1	10:30 am – 4:30 pm	1, 2	Hi 85 Lo 66 Cloudy	8.5	Boat survey
Sat, Aug 12	2:00 pm – 8:00 pm	Intermediate, 1, 2	Hi 81 Lo 64 Sunny	25.2	Boat survey
Sun, Sept 17	12:00 pm – 6:00 pm	Intermediate, 1, 2	Hi 71 Lo 52 Sunny	23.5	Boat survey
Fri, Sept 22	9:30 am – 3:30 pm	Intermediate, 1, 2	Hi 74 Lo 65 Cloudy	5.5	Boat survey

^a Federal holiday.

that was completed in 30-minute shifts over two days in June and July². Surveys began on Memorial Day and ended late September. Shifts were completed during daylight hours, between the hours of 9:00 am and 8:00 pm.

For data collection, the SURVEY123 mobile application was used to gather and store information such as date, time, location, river use type, and number of individuals observed. A total of seven major categories and 16 subcategories were identified for types of river usage (Table 2-1). Observations recorded time of day, location, type of use, party size, and the presence of adults/children. Further information such as type of watercraft, method of fishing, and number of dogs was also noted. Intermediate Pool data were supplemented with two days of observation data from NPS staff made during approximately 30-minute shifts as they walked across the Stone Arch Bridge. All observers were instructed to only document recreation with direct water interaction. For example, people observed sunbathing on a beach were not included unless they were wearing swimwear (and thus assumed to be partaking in swimming/wading/interacting with the water). In relation to the category “dog use,” there are two public off-leash dog areas within the study area that are used by visitors to exercise their dogs in the river. Similar to people near the water, dogs that showed evidence of interacting with the river were counted along with the people with them.

Table 2-1. Categories of recreation

Category	Subcategory
Watercraft	Large Commercial Vessel* – Industrial
	Large Commercial Vessel* – Passenger Boat
	Government Vessel
	Recreation – Canoe
	Recreation – Kayak
	Recreation – Motorized Open Cabin
	Recreation – Motorized Closed Cabin
	Recreation – Paddleboard
	Recreation – Paddle Share Kayak
	Recreation – Sailboat
	Recreation – Sport Rowing Craft
	Recreation – Wind Surfer
	Swimming
Shore fishing	Rod/Reel
	Fly Fishing
Boat fishing	Motorized Vessel
	Non-motorized Vessel
Dog use	
Water play	
Other	

*Total number of individuals aboard these vessels was estimated based on visible passenger density.

² There were three additional days foot surveys were conducted but yielded no observations on recreation. It was observed that on those days, air quality was unhealthy or it was windy.

2.3 Visitor Counters

Visitor traffic data were collected concurrent with the 2023 recreation survey at Bohemian Flats using a TrafX infrared counter, a device commonly used to aid in recreation studies that utilizes an infrared beam to count how many individuals pass by the study area. The Bohemian Flats location was chosen as it was the only location where non-motorized and non-sport rowing craft were consistently observed launching. However, it was noted that many visitors used the area for recreation other than the launching of non-motorized watercraft. Therefore, the numbers shown in the Bohemian Flats counts also include visitors using the area for shore fishing, dog use, and water play. This information is important for visitor trends over time and not actual visitation numbers as it relates to a specific type of activity.

2.4 Lockages

Data regarding lock usage that included recreational watercraft were obtained from the USACE St. Paul District navigation team for LSAF and LD1, dating back to 2012. Lock operators note the type and direction (upbound or downbound) of each vessel passing through the lock. These data sets were summarized to reflect annual passage. Three categories of watercraft were recognized for data reporting: commercial navigation, passenger ferry (e.g., paddle wheel), and recreational. Notably, the lockage data contained within this study may differ slightly than that presented in the disposition study report. The data utilized herein counted each vessel that passed through the lock (oftentimes several vessels at a time), while the disposition study report is anticipated to include data solely accounting for lockages or the number of times the lock was operated (which included several vessels per lockage).

2.5 Visitor Centers

Visitation data were collected from both USAF and LD1 to track public usage of the properties from people that walk into these sites. Data from USAF, which is not included in the study area, are utilized in this report to serve as a point of comparison for the LD1 data. These data are obtained either by placing a TrafX infrared pedestrian counter at a strategic location at USAFLD or pedestrian counter at LD1, which counts each time a person crosses its infrared beam.

The USAF data date back to 2016 and were obtained by placing a TrafX counter at the only visitor entrance to the lock platform. As there is only one visitor entrance, visitors were counted as they entered and exited USAFLD. The data shared from the NPS show the total count by the TrafX counter divided by two to account for the double count of visitors (entering/exiting). The counts were verified to be 100% accurate in a calibration test where a researcher watched and counted visitors manually for an hour and the compared those counts to the TrafX pedestrian counter. The count data also include counts from when NPS staff would pass by the infrared beam; however, that number is estimated to be negligible.

Pedestrian count data for LD1 include years 2014 through 2019 and the year 2023. The counter was placed at the entrance of the property from the parking lot. However, there was no separate counter for pedestrians entering the visitor center itself, which is part of a separate building on the property. While these data accurately depict pedestrians that toured portions of the larger property, it likely overestimates the visits specifically to the visitor center. The visitor center was closed to the public from 2020 to 2022 due to Covid-19; therefore, no data were collected.

3 Results

3.1 Special Interest Groups

3.1.1 Rowing Clubs/Non-Motorized Paddle Share

All rowing clubs that use Pool 1 were identified and contacted to obtain use data, which is summarized in Table 3-1. Data from the Paddle Share program, a self-serve kayak rental system, are based on actual usage records. The Minneapolis Rowing Club provided usage statistics for daily usage and also for a regatta event. The University of Minnesota data were derived from coaching records. Estimated usage was also obtained for the Red Bull event. In general, these clubs and organizations utilize the pool yearly from March to November for the year 2022. Rowing clubs typically utilized the area during the early morning hours, outside of the timeframes used in the USACE and NPS visual observation surveys. Thus, the level of usage by rowing clubs would not have been adequately captured in the observation periods detailed in Table 3-1.

Table 3-1. Pool 1 sport rowing recreation use data for 2022

Who	Type of Craft	Number of Times Watercraft Used Pool 1	Number of People in Watercrafts (Not Unique Individuals)
Paddle Share	Kayaks	360	540
University of Minnesota Rowing Program	Rowing Shells	432	1,950
Minneapolis Rowing Club – Normal Operations	Rowing Shells	6,213	15,230
Minneapolis Rowing Club – Regatta ^a	Rowing Shells	235	579
Minneapolis Rowing Club – Middle School Program	Rowing Shells	10	45
Red Bull Urban Portage Challenge ^b	Various Boats	50	75
	Totals	7,300	18,419

^a Meeting of 24 regional rowing clubs from four states.

^b This event occurred on August 26 and featured both marathon and half marathon distance paddle and portage races.

Source: Minneapolis Rowing Club 2023.

Results indicate a total of 7,300 times that sport rowing craft were used in Pool 1 during 2022 by an estimated 18,000 people. Use during this period was substantially higher by the Minneapolis Rowing Club than other sources.

3.1.2 Tourist Riverboat Cruises

Of the three known riverboat cruise companies, one provided data on use for 2022 (Table 3-2). This was from Magnolia Blossom Cruises, which provides cruises for the general public as well as special event charter cruises and has destinations targeting Minneapolis, the St. Paul Skyline, and the Minnesota River. The vessel has a capacity of 110 plus its crew and has several decks, restrooms, a full bar, main dining room, and galley.

Results indicate over 7,000 tourists over the course of 125 excursions in 2022. This is likely underestimating use by this group, as data were lacking for the other two known companies. Although typical daily use is within Pool 1 and Pool 2, there was one occasion where the vessel was observed locking through LSAFLD to tour the Intermediate Pool as a part of the summer pool observation data collection.

Table 3-2. Recreation tourist boat usage within the study area in 2022

Tourist Boat Company	Operation Location	Charters	Tourist Counts	Typical Daily Pool Use (Not Including Charters)
Magnolia Blossom Cruises (2022)	St Paul (moored in Watergate Marina) up to LSAF Lock and Dam	125	7,612	Pool 1, Pool 2

Source: Magnolia Blossom Cruises.

3.2 Summer Pool Use – Visual Observations

A total of 1,024 observations of recreation use throughout all three pools were recorded using the methods described in Section 2.2. A heat map displaying the variability in use indicated dense use in upper Pool 2 and the middle of Pool 1 (between river miles 850.3 and 850.7) and sparse use in the lower portion of Pool 1 (between river miles 847.8 and 849.0) and in the Intermediate Pool (Figure 3-1). The total number of observations across all surveys in the Intermediate Pool, Pool 1, and Pool 2 were 10, 330, 684 respectively (Figure 3-2). Of the 4,631 individuals observed using the river for recreation, 3,916 were adults and 715 were children. Most river users were observed between the hours of 1:00 pm and 3:00 pm (Figure 3-3).

The average rate of observations per hour on the twelve survey days range from 4.0 to 25.2. On days when only the Intermediate Pool was surveyed, the average observation rate was 5.0 per hour. The average observation rate on days when both Pool 1 and upper Pool 2 were surveyed was 15.7 per hour. On days when all three pools were surveyed, the average rate of observation was 18.1 per hour.

The most frequent types of recreation use were watercraft (42%), dog use (24%), and shore fishing (16%) (Figure 3-4). Individuals on commercial vessels comprise the majority of watercraft users. Out of the 1,919 people seen using watercraft, 757 (39%) were on large commercial crafts. Motorized boats dominated counts of recreational watercraft use, making up 67% of the category (Figure 3-5).

3.2.1 Intermediate Pool

A total of surveys by foot (foot survey) from the Stone Arch Bridge were completed over the five days in this small pool. A foot survey consisted of observations made during a single pass by a ranger. Three of these surveys did not note the presence of any river users, as two days were hindered by poor air quality, and another day was exceptionally windy. During the other days, weather was not a factor and the heaviest use was noted along the south shoreline in close proximity to USAFLD (Figure 3-6).

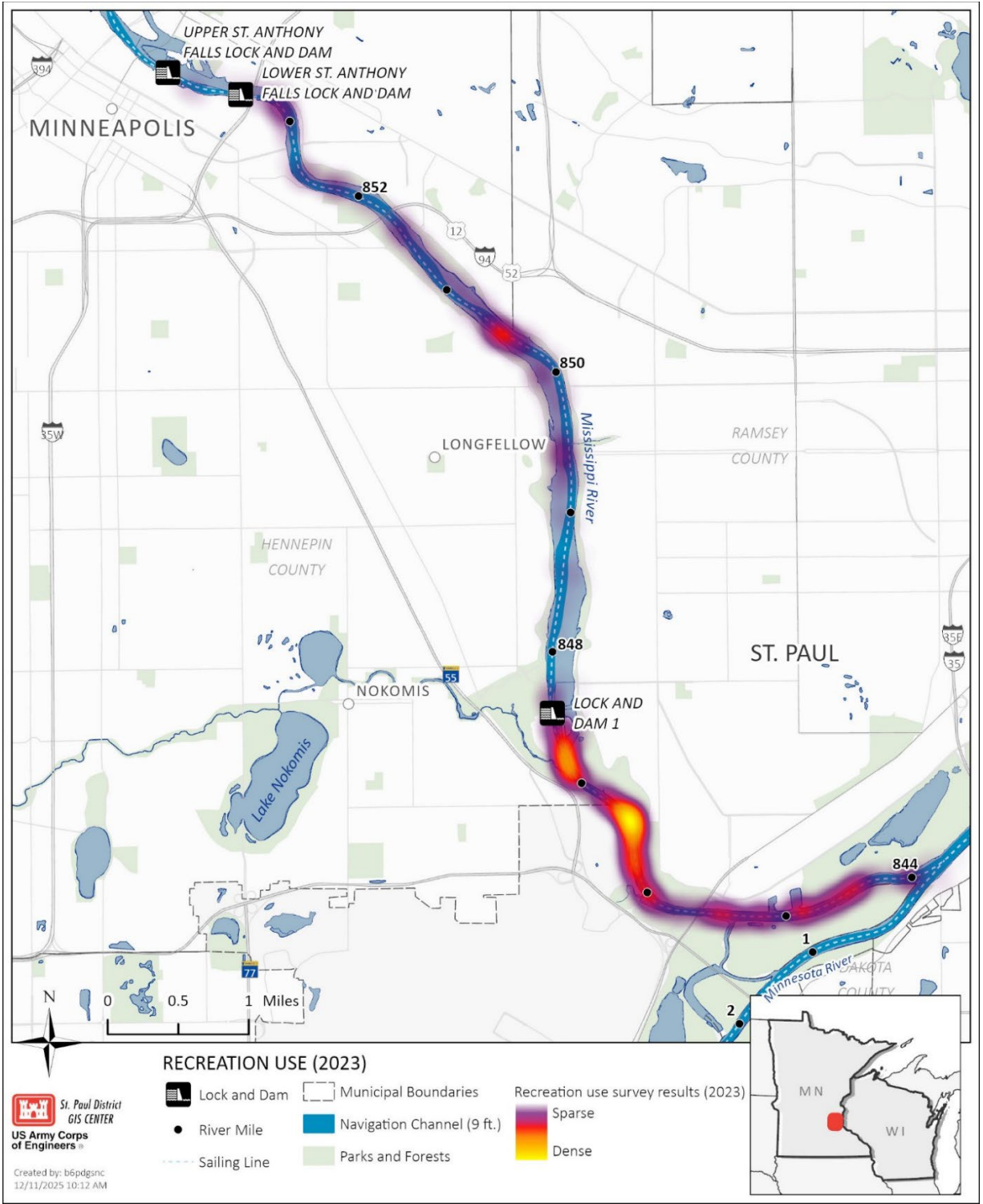


Figure 3-1. Heat map of recreation use observations (all pools)

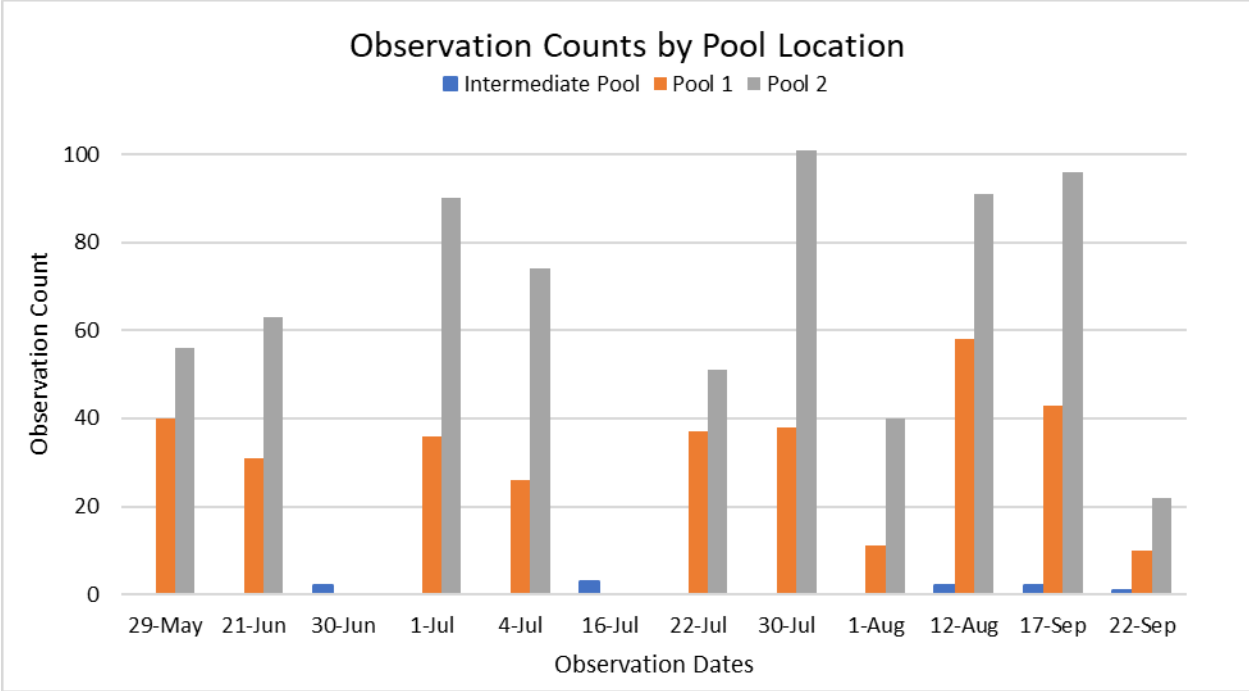


Figure 3-2. Dates and observation counts by pool for recreation surveys

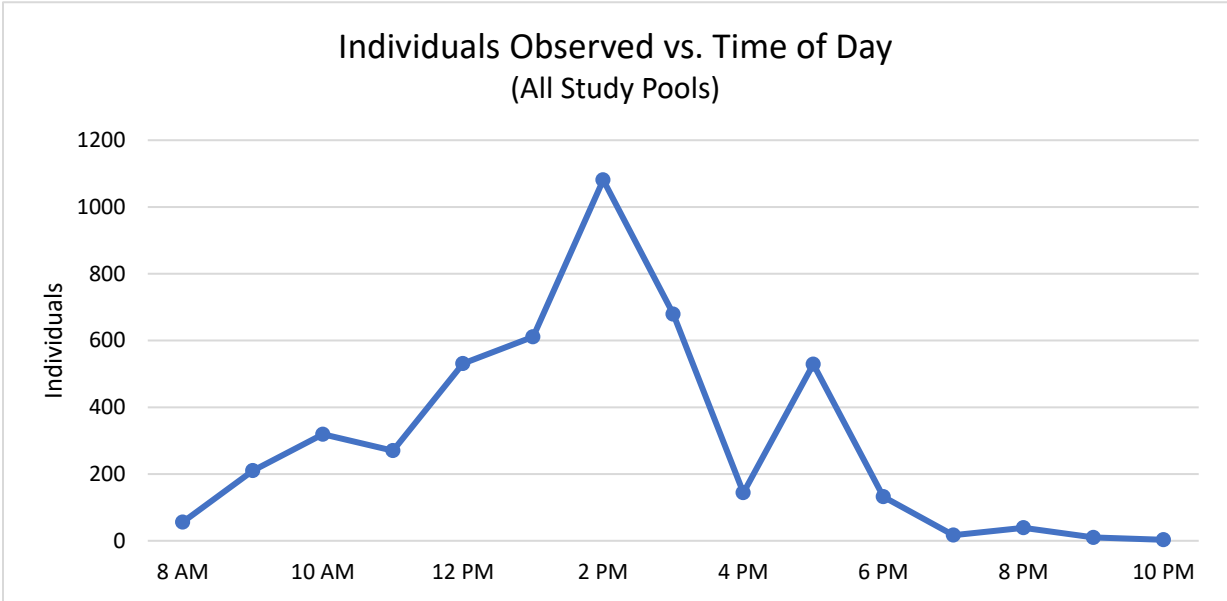


Figure 3-3. Count of individuals observed versus time of day (all pools)

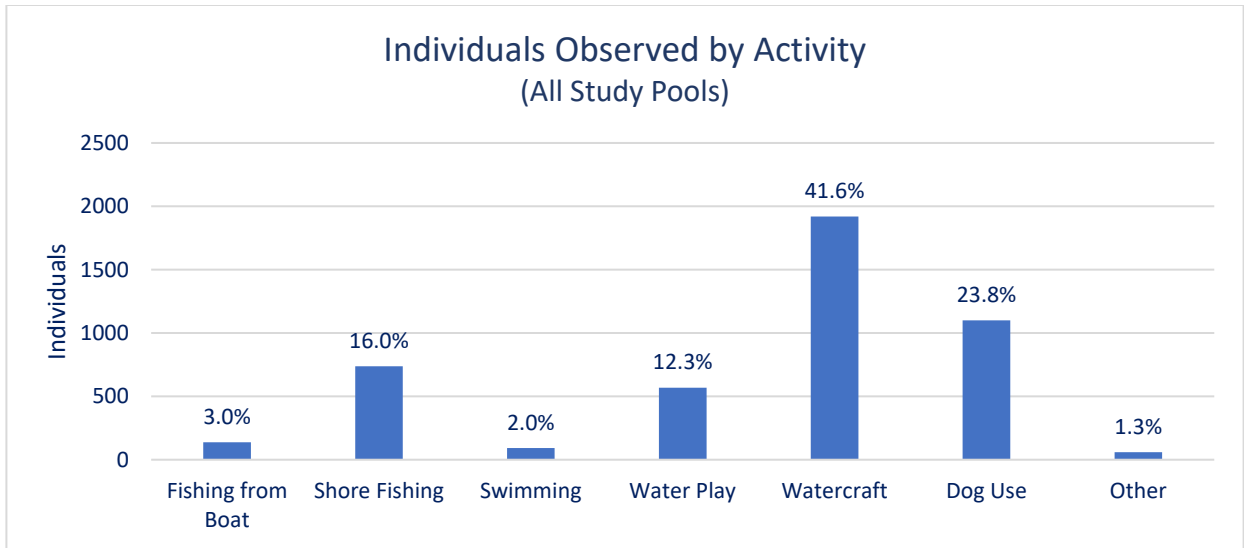


Figure 3-4. Count of individuals observed engaging in various water-based activities (all pools)

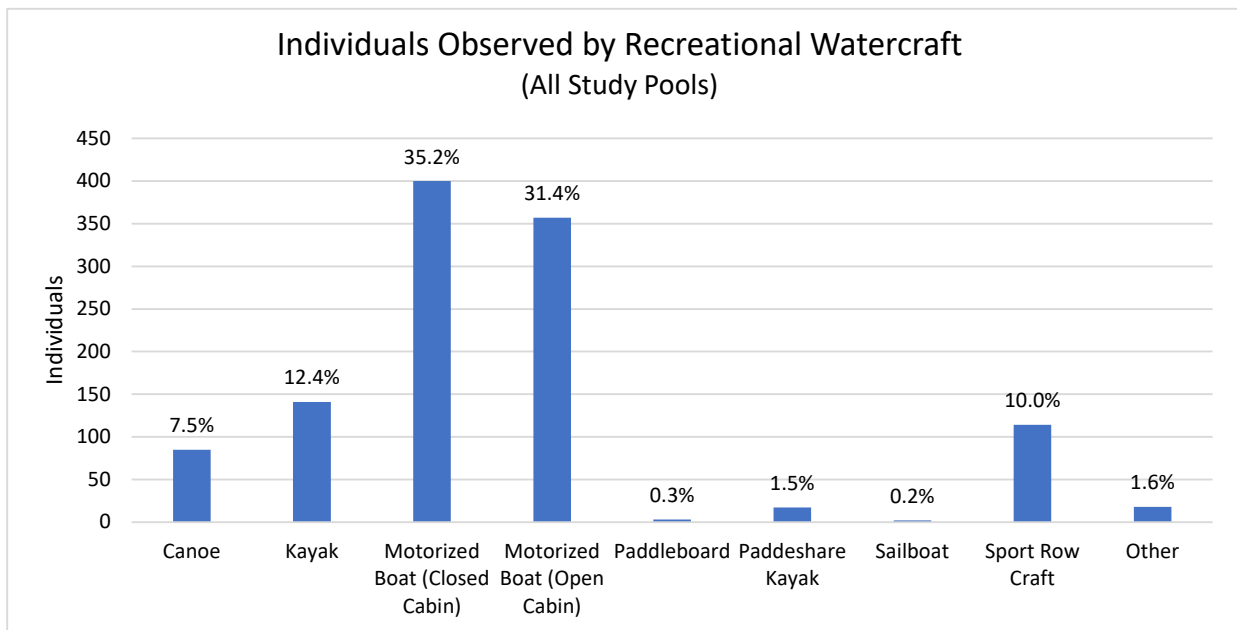


Figure 3-5. Count of individuals observed using recreational watercraft (all pools)

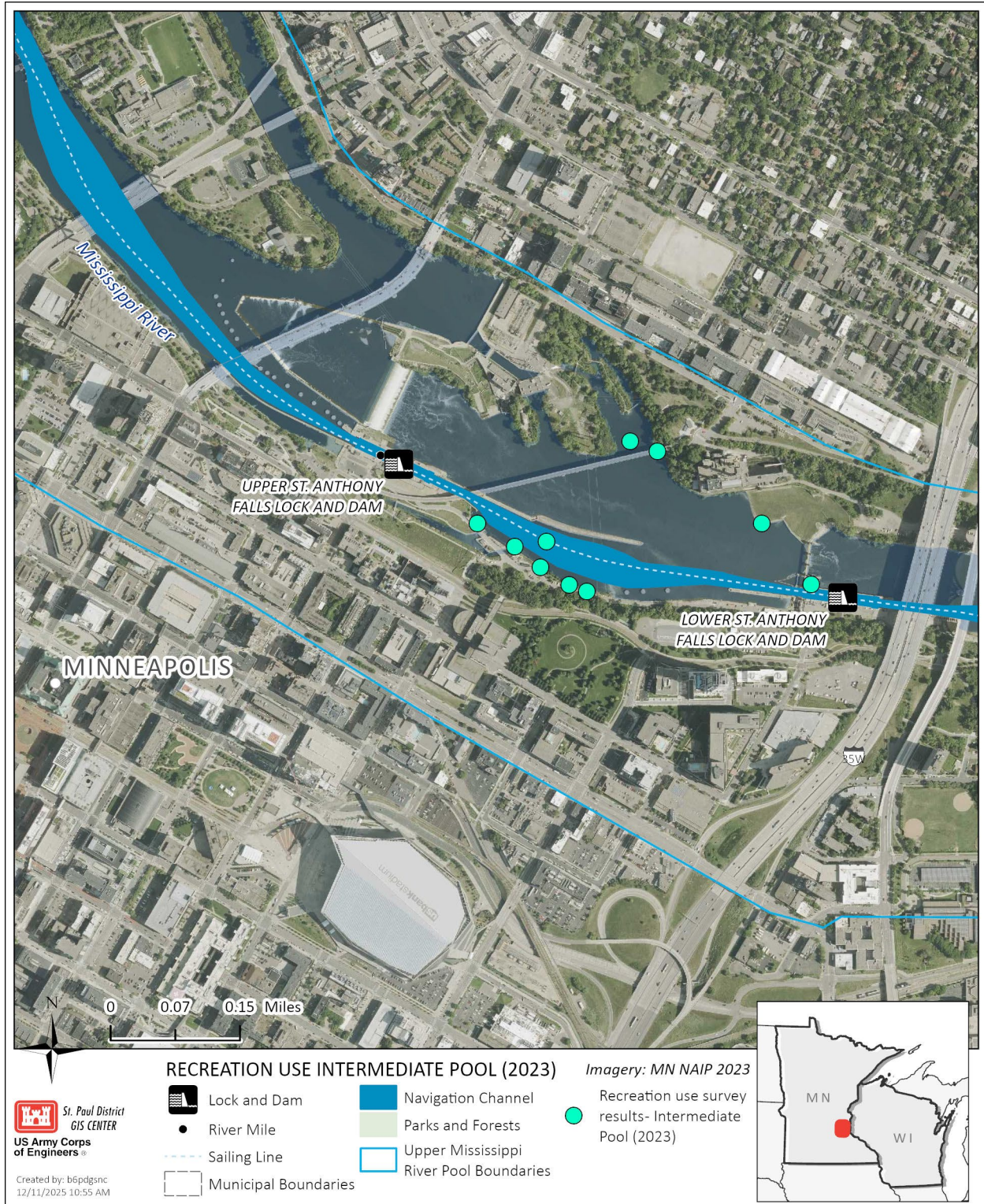


Figure 3-6. Location of observed recreation use in the Intermediate Pool

Note: A heat map of the Intermediate Pool was not possible with the low number of observations.

The SURVEY123 data collected by boat or foot indicated that 61 adults and 51 children used the pool, for a total of 112 individuals over the course of the five survey days. The predominant recreational uses of this pool were watercraft (89%) and shore fishing (10%) (Figure 3-7).

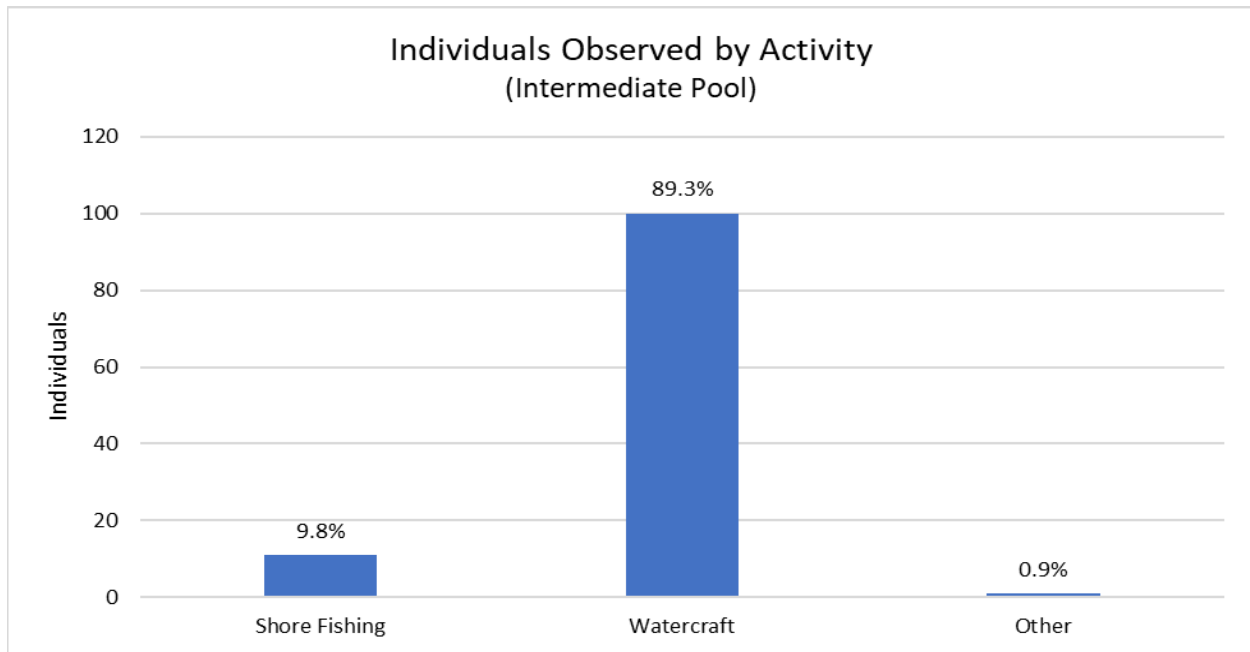


Figure 3-7. Count of individuals observed engaging in various water-based activities (Intermediate Pool)

Note: The 100 individuals noted within the watercraft category are an estimate of passengers aboard a commercial paddleboat seen in this pool.

3.2.2 Pool 1

There was a total of 330 observations of recreation use in Pool 1 across all boat survey days. These observations were scattered throughout the pool and are shown in Figure 3-8. However, there were some reaches of the pool where use was notably absent or diminished, especially just upstream of LD1.

Over the ten days of data collection, 1,454 individuals were observed. The majority of individuals were adults, with a count of 1,355, while only 99 were children. The dominant activity in this river reach was the use of watercraft (63.2%)—more specifically, large commercial vessels (Figure 3-9). While the recorded number of individuals aboard large commercial vessels was estimated, this recreation subcategory made up 43% of all observed individuals in the pool. Recreational watercraft uses involving sport row crafts, kayaks, and motorized boats were also observed frequently (Figure 3-10).

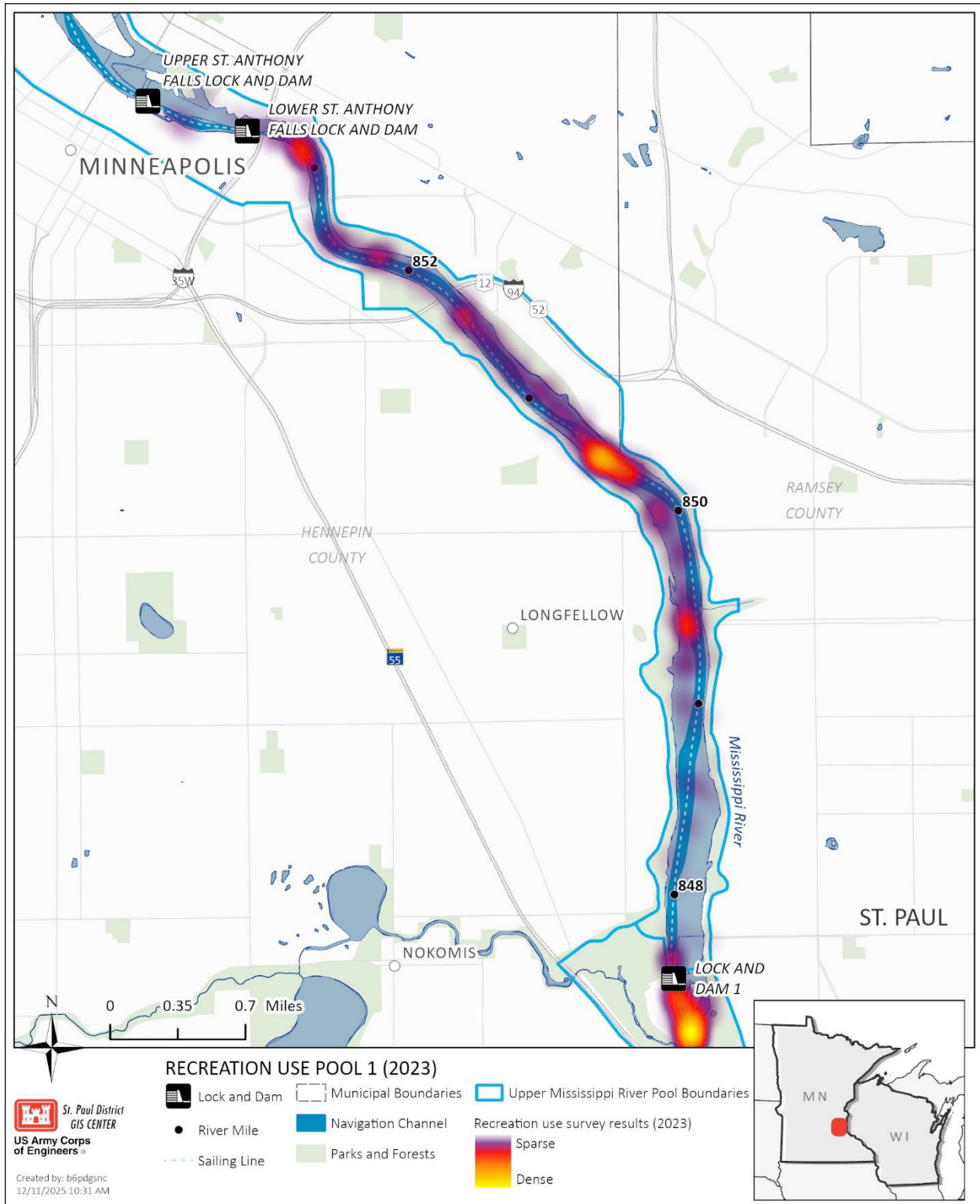


Figure 3-8. Heat map of recreation use observations in Pool 1

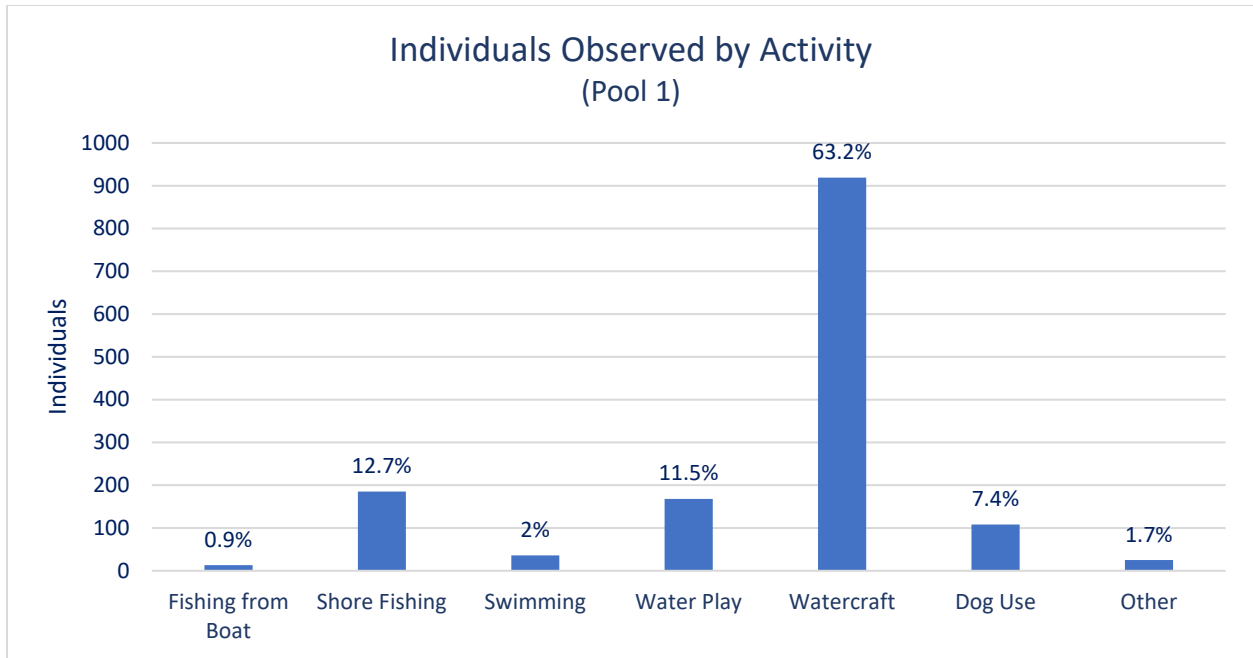


Figure 3-9. Count of individuals observed engaging in various water-based activities in Pool 1
Note: Watercraft includes commercial vessels

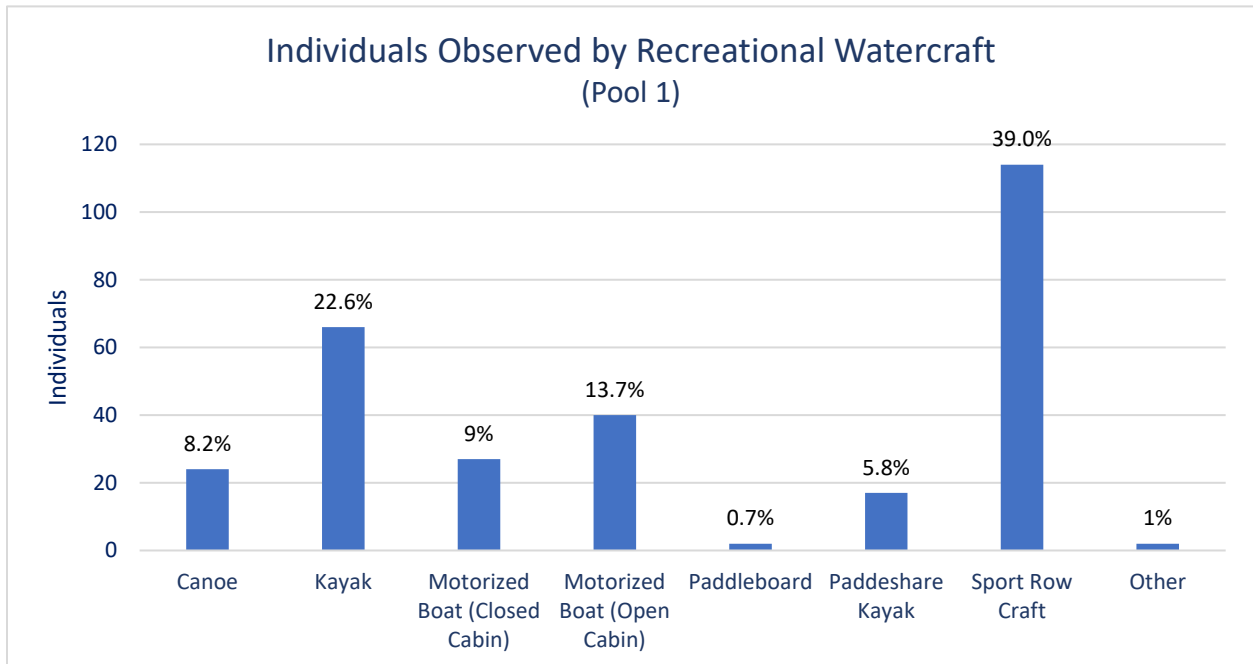


Figure 3-10. Count of Individuals Observed Using Recreational Watercrafts in Pool 1

3.2.3 Upper Pool 2

There was a total of 684 observations of recreation use in upper Pool 2 across all boat survey days. The observation locations indicated heavy use throughout this reach (Figure 3-11). The

total count of individuals was 3,065; this comprised of 2,500 adults and 565 children. The most popular recreational interactions with the river were dog use (32%), watercraft (29%), and shore fishing (18%) (Figure 3-12). The recreational watercraft subcategory was dominated by closed and open cabin motorized boats, accounting for over 81% of the group when combined (Figure 3-13).

3.3 Water Access Use

Data recorded by a TrafX counter strategically located in the Bohemian Flats area to assess water access use are shown in Figure 3-14. Monthly visitation totals for the year 2023 are noted in Table 3-3. Data were collected from June through December 2023.

Visitor trends show highest use in August with a precipitous decline in the fall/winter months. As expected, weekend use was also highest compared to weekdays, as was times during the middle of the day compared to early morning or late evening.

Table 3-3. TRAFx visitor counts by month of 2023 at Bohemian Flats

Month	Visitor Count
June	4,487
July	4,930
August	5,475
September	2,440
October	2,063
November	812
December	605

Source: NPS

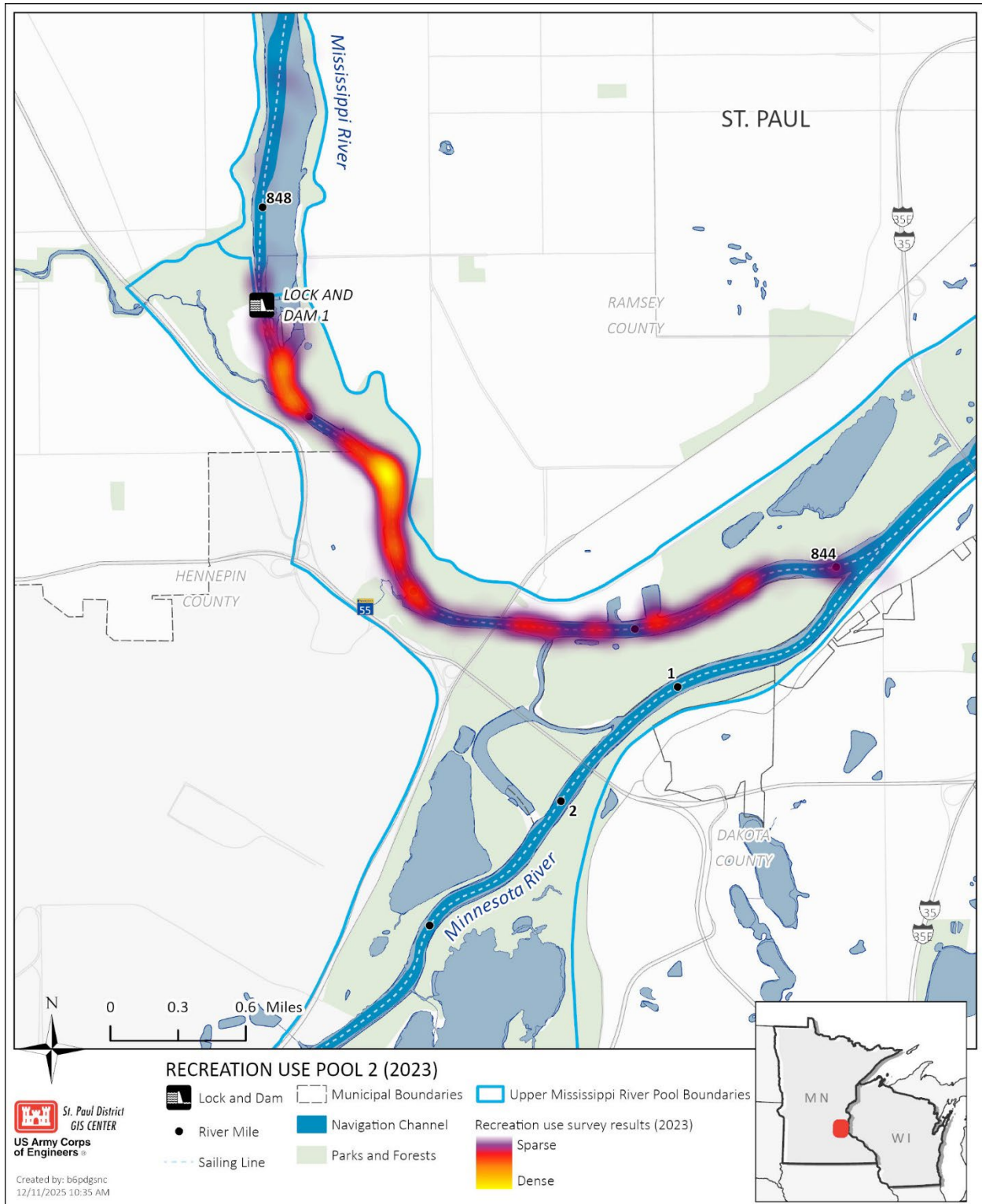


Figure 3-11. Heat map of recreation use observations in Upper Pool 2.

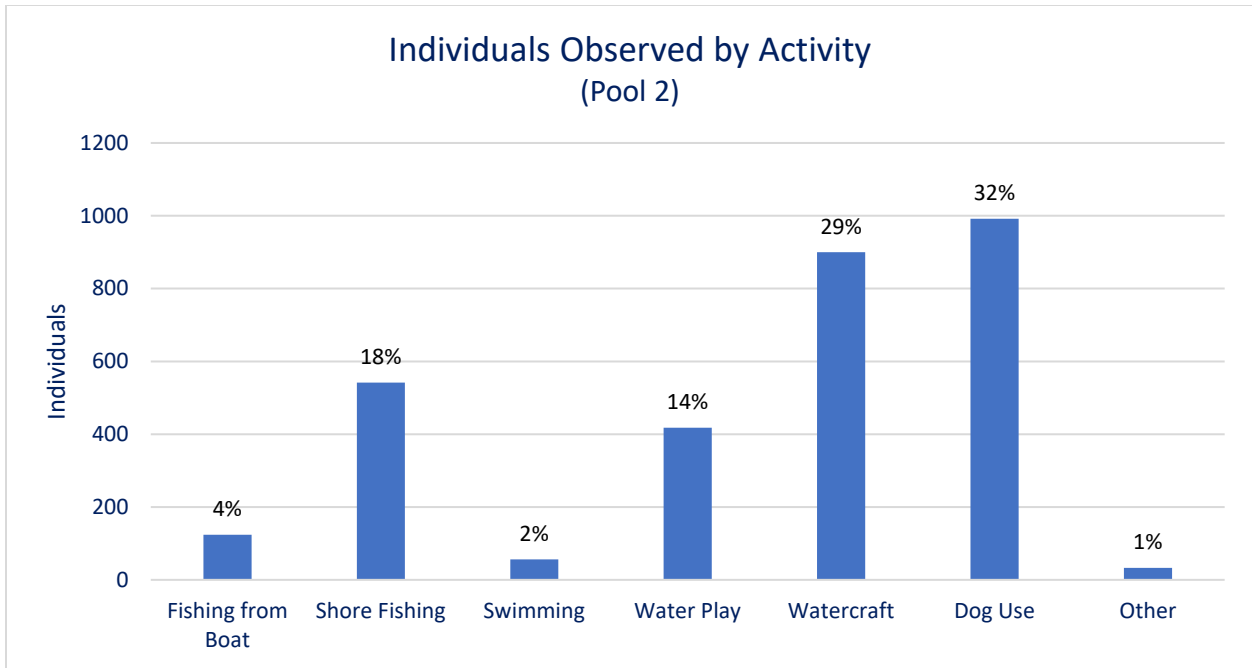


Figure 3-12. Count of individuals observed engaging in various water-based activities (Pool 2)

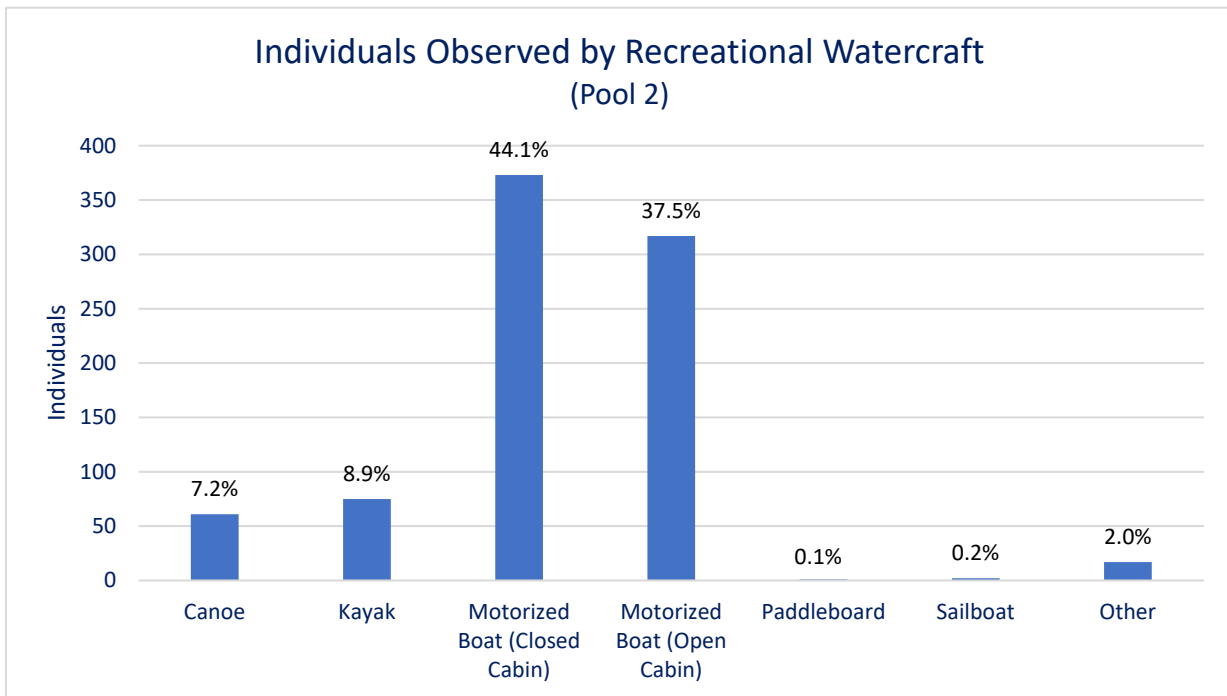


Figure 3-13. Count of individuals observed using recreational watercraft (Pool 2)

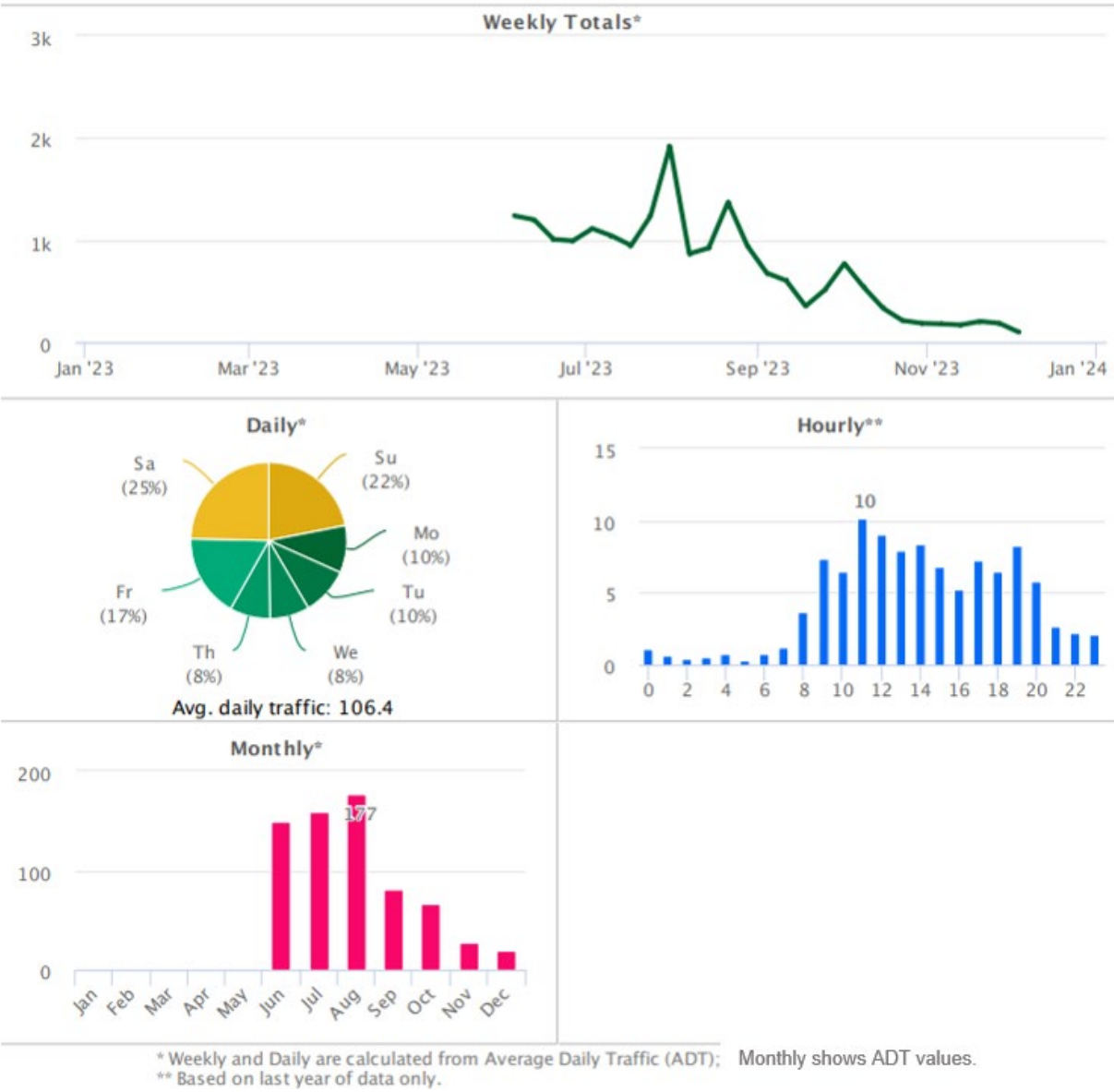


Figure 3-14. TRAFx visitor count data collected at Bohemian Flats (Pool 1)
 Note: These data may include instances of duplicative counting if individuals walked past the tracker several times. It should be primarily used to understand trends in usage frequency.

3.4 Lock Use

3.4.1 Lower St. Anthony Falls

Data collected and provided by lock operators are shown in Figure 3-15. The data depict the total number of vessels that passed upstream and downstream through the LSAF Lock from years 2012 through 2023. The vessels were classified into three categories: recreational, passenger ferry, and commercial.

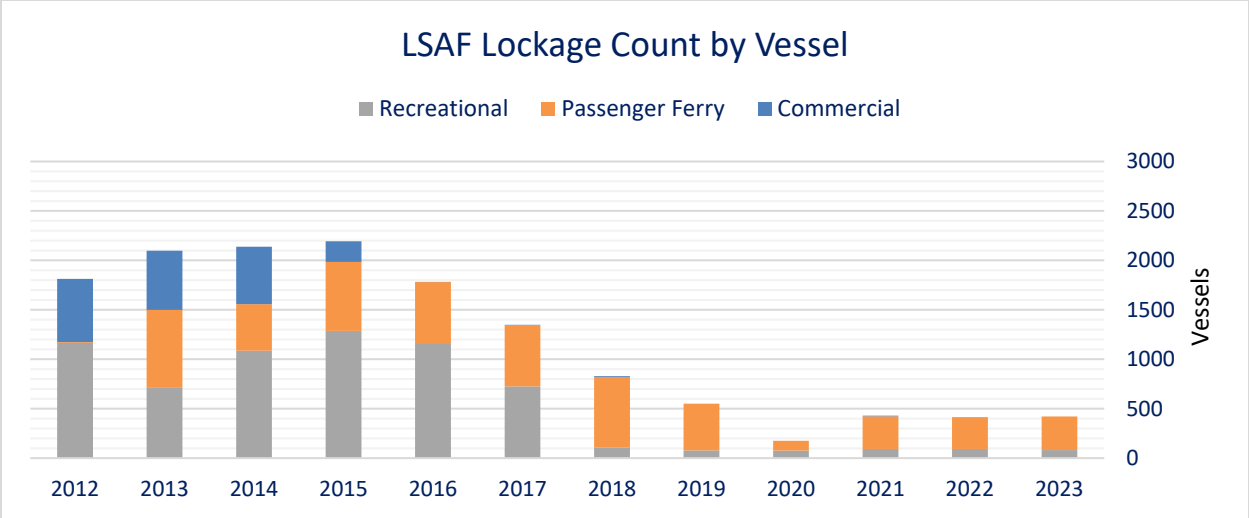


Figure 3-15. Count of vessel passage through lockage at the Lower St. Anthony Falls Lock and Dam (up/downstream)

Source: Lock Performance Monitoring System).

All types of lock use at LSAFLD declined precipitously after the USAFLD was closed in 2015. Use of LSAFLD by commercial boats largely ceased at this time. Recreation use declined from 2016 to 2020 but seems to have stabilized over the last three years. Passenger ferry use seems consistent except for 2020, likely due to the COVID-19 pandemic.

3.4.2 Lock and Dam 1

Data collected and provided by the lock operator are shown in Figure 3-16. The data show the types and total number of vessels that passed upstream and downstream through LD1, from the calendar year 2012 through 2023.

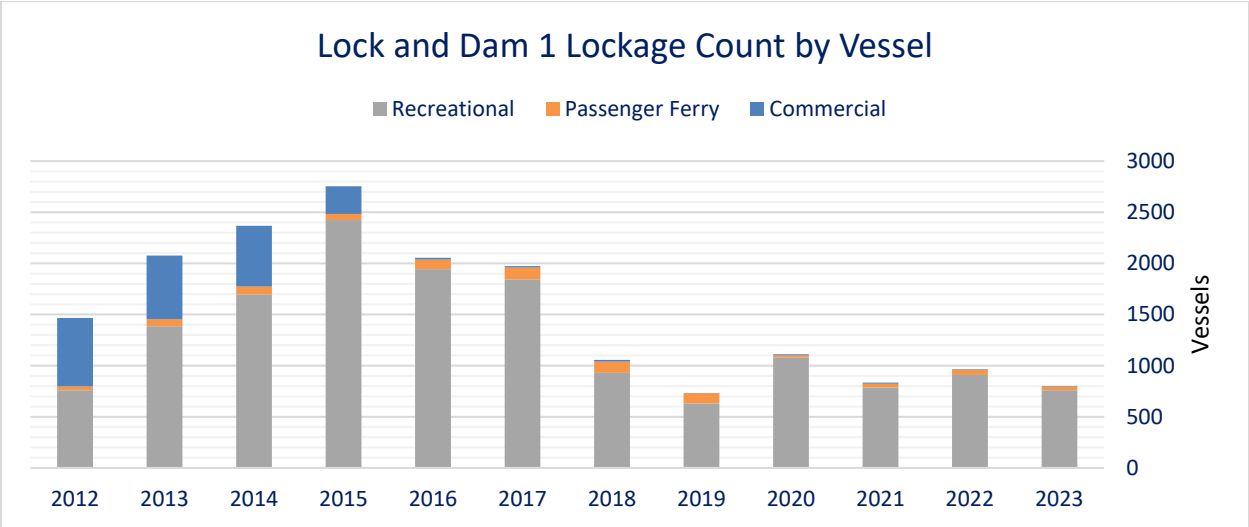


Figure 3-16. Count of vessel passage through lockage at Lock and Dam 1 (up/downstream)

3.5 Visitation

Table 3-4 summarizes seven years of TrafX visitor count data taken at LD1. The data record breaks prior to completing the 2020 fiscal year, as the site was closed for the Covid-19 pandemic. However, one year of post-Covid-19 data was collected in 2023. Results indicate the lowest use for the year 2023 (5,314), which was the first year it opened after the Covid-19 crisis. The highest use was for the year 2015 (28,725), which was the first year that USAFLD was closed to navigation. The average for this period, not including years it was closed, was 16,501.

Table 3-4. Lock and Dam 1 visitor center visitation data

Fiscal Year^a	Visitor Count
2023	5,314
2022	0
2021	0
2020	0
2019	10,858
2018	11,179
2017	13,867
2016	20,613
2015	28,725
2014	22,128
Average^b	16,501

^a Fiscal year is from October 1 to September 30.

^b Does not include years the Visitor Center was closed.

Source: USACE's Visitation Estimation and Reporting System.

Table 3-5 summarizes eight consecutive years of TrafX visitor count data taken at USAFLD starting in 2016. Results indicate the lowest use in 2020 (4,666) and highest use in 2022 (30,562), which correspond to the first and last years of the Covid-19 crisis, respectively. The average during this period was 20,042.

Table 3-5. Upper St. Anthony Falls visitor center visitation data

Fiscal Year^a	Visitor Count
2023	17,127
2022	30,562
2021	24,872
2020	4,666
2019	25,587
2018	18,015
2017	21,154
2016	15,441
Average	20,042

^a Fiscal year is from October 1 to September 30.

Source: NPS.

4 Discussion

4.1 Special Interest Groups

4.1.1 Rowing Club/Paddle Share

The rowing clubs and Paddle Share (Section 3.1.1) data suggest there is substantial annual recreation by kayakers, rowers, and various other non-motorized boaters in the Pool 1 segment of the disposition study area. Users of kayaks and canoes frequently utilized the lock at LD1; however, sport rowing vessels were never observed. This suggests that sport rowing is limited to Pool 1 where lake-like conditions are more conducive to this activity than the other pools. This type of recreation was not observed in the Intermediate Pool, which has more riverine conditions and is too small for this type of activity. Nor was this observed in upper Pool 2, which also has high velocities and the river is fairly narrow. Moreover, Pool 1 has permanent facilities for sport rowing by the Minneapolis Rowing Club and the University of Minnesota.

4.1.2 Tourist Boats

The data provided by the Magnolia Blossom Cruise line demonstrate that there are businesses and tourists interacting, at a minimum, with LSAFLD. It is likely that tourists using this service are attracted to the unique experience associated with the river, downtown Minneapolis, and a lockage with all the amenities a large commercial vessel offers (e.g., dining, bar, open deck). Anecdotally, commercial paddlewheel vessels were observed at LD1 as well.

4.2 Summer Pool Use - Visual Observations

USACE and NPS collected river use data throughout the summer of 2023 via 1,024 visual observations. Data were recorded on twelve days via boat and foot surveys, ten of which included Pools 1 and 2. Three days reflect surveys across all three pools. A total of 684 observations were recorded in Upper Pool 2, which is more than double that of Pool 1, with 330. Very little use was noted in the Intermediate Pool, with just 10 observations. Although this pool was surveyed less frequently than the others, demonstrates that usage was comparatively much lower, even on days where all three pools were surveyed.

The majority of individuals were observed in the early afternoons, between 1:00 pm and 3:00 pm. Adults were the largest demographic, accounting for over 84% of the 4,631 individuals recorded. As the number of individuals observed increased from the Intermediate Pool to Pool 1 and Upper Pool 2, the median number of people per group across these locations also increased from 1.5 to 2 and 3, respectively.

In terms of individuals, the river throughout these three pools was predominantly used for watercraft, dog recreation, and shore fishing. The dominant category of watercraft use can be subdivided into two major groups: large commercial vessels and recreational crafts. Large commercial vessels, although estimated due to visibility constraints, constituted 15.3% of all river-goers. Recreational crafts accounted for 24% of all individuals surveyed. The most popular recreational watercraft were found to be closed-cabin motorized boats, open-cabin motorized boats, kayaks, and canoes.

4.2.1 Intermediate Pool

There were little data collected in the Intermediate Pool, likely due to its relatively small area and poor access. A total of 10 observations were made in the Intermediate Pool. Out of the 112 individuals noted recreating in the area, an estimated 100 of them were aboard a large commercial vessel. The large remainder of observed individuals were surveyed shore fishing. The median number of individuals per group in this area was 1.5.

4.2.2 Pool 1

The data collected in Pool 1 include 330 observations, which note a total of 1,454 individuals. Adults are overwhelmingly the largest age demographic compared to children, at over 93% of the survey population. Watercraft use was by far the most popular recreational activity in this reach of the river. This category constituted over 63% of all activity, with 919 individuals. Out of these watercraft users, an estimated 623 adults were observed aboard large commercial vessels (43% of all activity). Recreational watercraft was the other category of watercraft observed in Pool 1 (about 20% of all activity) and these included sport row crafts, kayaks, motorized boats, and canoes. The proportion of individuals observed in motorized boats to other recreational crafts is much lower in Pool 1 than in Upper Pool 2. This is likely due to limited access—it lacks a public boat launch for motorized boats and vessels from downstream would require locking through LD1. The median number of people per group in this pool was two.

4.2.3 Upper Pool 2

The majority of visual survey observations were recorded at Upper Pool 2. A total of 684 instances of recreation were noted. The sums of adults and children observed were 2,500 and 565 respectively, for a total of 3,065 individuals. The most frequently observed activities in this pool were dog recreation, watercraft use, and shore fishing. The watercraft use was primarily personal motorized boats. This is in contrast to Pool 1, with its higher volume of large commercial vessels and more non-motorized personal watercraft. These findings are likely due to the designated dog park and Hidden Falls boat launch in the area. The median group size in this region was three individuals.

4.3 Water Access Use

The TRAFx infrared counter placed at Bohemian flats counted a total of 20,812 passersby from June through December of 2023. Visitor counts were high in the summer, peaking in August, until dropping steadily through the end of the calendar year. Weekends accounted for 27% of the total traffic, and the most popular times of the day to recreate in this area were 10:00-12:00 am and 7:00 pm.

4.4 Lock Use

The data provided by the Lock Operator show the use of the locks. A noticeable decline in the lockage since 2015 can be contributed to the closure of USAFLD in 2015. Commercial vessels going through the locks was drastically lower after 2015. Since 2015, the LSAF Lock has been used by recreational vessels and passenger ferries, with more use by the passenger ferries.

A significant drop in use of the locks during the year 2020 can be contributed to the COVID-19 Pandemic.

4.5 Visitor Centers

Records from the LD1 Visitor Center indicate a steady demand from the public to see the locks and dams and learn about the facilities. However, there has been a decline since 2015, which corresponds to the year that USAF Lock was closed to navigation. No data were given for the years of 2020 to 2022 due to the Covid-19 pandemic. The data do not reflect the number of people that visit the surrounding area for recreational activities.

During the boat surveys, we noticed audiences would gather over the lock chamber at LD1, seemingly to observe the process of locking boats between Pool 1 and Pool 2.

5 Answers to Key Questions

5.1 What recreation currently takes place in the study area (specifically related to the project sites), and are different sites conducive to specific types of activity?

Recreation observed on the different pools included boat and shore fishing, swimming, dog use and watercraft. Watercraft use is one of the most popular recreation uses in the study area. This includes motorized, non-motorized private and commercial vessels. Recreation observed on the river's edge included dog use and shore fishing.

There are differences in the levels and types of recreation use across the pools. The Intermediate Pool experiences the lowest levels of use and is primarily limited to shoreline activities such as fishing. Reasons for this are likely due to its small size and limited access. However, a tourist paddlewheel vessel with multiple passengers was observed accessing the Intermediate Pool via lockage at LSAFLD. The Intermediate Pool also resembles more of a riverine environment, with flows being restricted within a narrow canyon. Pool 1 has higher and more variable use spread out over much of the pool. This pool is much more indicative of a lake setting, with flat water with low velocity dominating much of the area. Fishing, swimming, dog use, and watercraft use were all observed in Pool 1. The most notable unique recreation use in Pool 1 is sport rowing, which was not observed in the other pools within the study area. Upper Pool 2 experiences the highest and most variable use. Like the Intermediate Pool, it is characteristic of a riverine environment (sinuous and narrow channel) and has very good public access. Fishing opportunities are ample. The difference between Pool 1 and upper Pool 2 is a stark contrast between a lake- and river-like environment.

5.2 What data are currently available for these activities?

The following summarizes the best and readily available data on recent recreation use within the study area. This information is used to describe baseline conditions that will be used as part of the LSAFLD and LD1 Disposition Study.

USACE has collected data for all vessel lockages at LSAFLD and LD1 and will continue to do so as long as they are in use through the Lock Performance Monitoring System.

USACE has historic visitor data for LD1 and USAFLD and will continue to do so as long as these sites remain open to the public and funding allows. Visitation at USAFLD is likely to change with modifications to the site that is proposed by the city of Minneapolis, if implemented.

USACE and NPS collected pool use data in the summer of 2023. There are no collaborative plans to continue this study; however, NPS is continuing to collect observations of recreation use throughout the Mississippi National River and Recreation Area.

The NPS collected trail use data at Bohemian Flats in 2023. There are no plans to continue this study.

USACE has been provided with Minneapolis Rowing Club data for the year 2022. Although more recent data have not been obtained, it is anticipated that the club will continue to track their pool usage. Statistics on the University of Minnesota Rowing Program and other sport rowing groups/events were also acquired for 2022 and are expected to be available in the future.

USACE was only provided 2022 usage statistics from the Magnolia Blossom Cruises tourist boat company. It is understood that all commercial tourist companies that operate in the study area track their tourist counts and will continue to do so.

6 Summary

Water-based recreation use from 2012 to 2023 was assessed in the Intermediate Pool, Pool 1, and upper Pool 2 of the Upper Mississippi River within the Minneapolis/St. Paul metropolitan area. These data provide a baseline for recreation that will be factored into the disposition study that is currently underway. Readily available data that were collected by USACE, NPS, and special interest groups/businesses were used.

Results indicate the prevalence of a variety of recreation activities throughout the study area oriented from either the shoreline or open water. Shoreline-oriented activities were predominantly fishing, dog use, water play, and swimming. Open-water oriented activities involved motorized or non-motorized personal watercraft operation/use and commercial tourist paddlewheel boats. Non-motorized personal watercraft was dominated by kayaks, canoes, or sport-rowing vessels. Both motorized and non-motorized watercraft moved between pools using the locks at LSAFLD and LD1 throughout this period.

Results also indicated notable differences in recreation use across pools and are attributed to access (or lack thereof) and characteristics of the pool. The Intermediate Pool experienced very little use and was limited to shoreline-oriented activities. This is a very small pool (50 acres in size) with riverine conditions and limited access. Use in Pool 1 was moderate. Pool 1 has lake-like conditions conducive for use by the sport rowing clientele. Open water activities also included use by canoes, kayaks, and motorized vessels, including a commercial paddlewheel vessel. Despite moderate use by watercraft, access is limited for motorized boats as there are currently no public motorized boat launches within the pool. For shoreline-oriented activities, popular activities included fishing, dog use and water play. Recreation use appeared to be distributed throughout the pool, but with some areas being more concentrated than others. Upper Pool 2 is a more riverine environment that experienced the highest concentration of recreation use. Activities were distributed throughout the reach, though the highest densities were associated with existing parks, dog use areas, or beaches. Most of the activities were shoreline oriented with a focus on fishing, dog use, and waterplay. Open-water activities involved motorized and non-motorized watercraft. The high use of this area relative to the Intermediate Pool and Pool 1 is likely attributable to ease of access via public lands and a developed motorized boat launch.

7 References

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