

Beltrami County Aquatic Invasive Species Inspection Program 2022

Introduction

Beltrami County's watercraft inspection program is in place to help boaters stop the spread of aquatic invasive species (AIS). The most efficient way to reduce the threat of AIS is to prevent introductions of these harmful species. Once an AIS is established, it changes and degrades the habitat it invades, and it is not very cost-effective to remove from the environment. The main pathway of AIS spread within Minnesota is from humans transporting water-related equipment from one location to another. The equipment can hold live invasive species, including adults, their young, and eggs/seeds. One-on-one contact with an inspector at a public access is the best way to educate boaters in the proper way to prevent the spread of AIS. Our inspection program trains inspectors to educate the public, to demonstrate how to properly inspect equipment, and to ensure that water-related equipment is prepared to be introduced into the waterbody.

Most of our inspectors are returners from previous years. The DNR required them to take an online training. We also had the inspectors take enhanced training. We had Dr. Donna Pawlowski, Professor of Communication Studies, from Bemidji State University do a training on communication, one on one contact, and handling tough situation. We also had Dr. Debbie Guelda PhD talk on invasive invertebrate life cycles, modes of transportation and environmental effects. Dr. Richard Koch PhD had a program on plant identification and the why plants can become problematic. The inspectors worked an 8-hour shift, with most inspectors working full time, 40 hours a week. We had a few part-time people to cover extra hours if needed. Shifts were 8 a.m. to 4 p.m. and 12 p.m. to 8 p.m. For the 2021 season we had a total of nine inspectors.

Inspection process

The inspection process involves the watercraft inspector visually and manually searching for aquatic invasive species or anything else that could potentially spread AIS such as water, mud, plants, or other debris. The inspectors teach the laws to prevent AIS, but they also teach best management practices, teaching people how to best prevent spreading aquatic plants and animals. During the inspection process, the inspectors also conduct a survey on behalf of the MN DNR. The survey focuses on boater knowledge and behavior and provides information on the impacts of AIS and what can be done to prevent their spread. The results in this report are from that survey. Inspectors have handouts and handbooks to show boaters what some invasive species look like and what to do if they find something questionable.

From the 2022 MN fishing regulations

“What should I expect from an inspection?”

Inspectors are trained to:

- Introduce themselves as a watercraft inspector.
- Provide you tips on how to inspect your own equipment (page 9).

- Physically inspect your boat, trailer and any other water-related equipment— meaning they may touch your boat or trailer to feel for tiny attached zebra mussels or other invasive species.
- Physically inspect compartments that may hold water, such as live wells or bilge areas.
- Deny launch if: 1) the inspector finds invasive species or any plants attached, and until the invasive species or plants are removed; or 2) you refuse an inspection.
 - › Although inspectors have the authority to deny launch, they will work with you to try to bring your watercraft into compliance.
 - › Inspectors will not deny launch based solely on where, or when, you last used your watercraft.
- Ask questions to help improve the DNR’s inspection program. You are not required to answer these questions.”

Inspection results: 10,434 (Belt 7,651; DNR 2,783)

Belt stands for Beltrami County inspectors and DNR is the Department of Natural Resources inspectors.

Our decontamination operators work at accesses when not performing decontaminations. When a decontamination is needed, the operators will meet the boaters at the Decontamination (Decon) Hut. There they perform a decontamination using a machine to apply hot water (140 degrees) to kill and high-pressure to remove any AIS from water-related equipment. Their surveys and hours are included in the inspection summary table. The DNR also works in the Beltrami County area with inspectors and their own decontamination crew. DNR inspections are not included in inspections per hour but are included in most other cases.

Cass Number, Access	Courtesy	Entering	Exiting	Lift	Grand Total	Belt only	DNR only
29007101, GRACE		987	787	7	1781	1781	
4000000, BELTRAMI COUNTY, DECON	15				15	15	
4001101, MOOSE		7	8		15	15	
4003003, CASS, KNUTSON DAM		158	157		315	315	
4003201, PIMUSHE		9	12		21	21	
4003501, UPPER RED, ST. FISH HATCHERY		148	189		337	224	113
4003502, UPPER RED, HOMESTEAD	4	843	656	1	1504	21	1483
4003801, ANDRUSIA, ANDRUSIA		49	43	1	93	88	5
4004901, BIG		206	173		379	379	
4006901, BLACKDUCK, EAST		136	103		239	239	
4007901, WOLF, WOLF LAKE		200	123		323	316	7
4011101, TURTLE RIVER, TURTLE RIVER LAKE HWY 21		85	95		180	180	
4012001, GULL		69	73	1	143	142	1
4013001, BEMIDJI, BEMIDJI STATE PARK		54	25		79	69	10
4013002, BEMIDJI, SOUTH (NYMORE)		732	585	5	1322	894	428
4013004, BEMIDJI, CAMERON PARK	2	516	431	2	951	762	189

4013005, BEMIDJI, NORTHWOODS		701	531		1232	716	516
4013006, BEMIDJI, LAVINIA		12	6		18	18	
4013201, BIG BASS		80	58	2	140	140	
4013401, THREE ISLAND LAKE		7	4		11	11	
4013501, BELTRAMI		261	203	5	469	469	
4014001, IRVING		54	24		78	78	
4015901, TURTLE, BIG TURTLE		402	326	7	735	704	31
4016601, JULIA		15	13		28	28	
4019601, CAMPBELL		11	11		22	22	
4023001, DEER			1		1	1	
4032901, BALM		1	2		3	3	
Grand Total	21	5743	4639	31	10434	7651	2783

Bold lakes are infested waters.

Italics are accesses that had DNR inspections.

Case Number - The unique number assigned by the DNR to each access on a lake. The number comes from the DNR Fishery Lake ID number with the last number indicating the access.

Courtesy - An inspection at the decon hut so the watercraft is not entering or exiting a waterbody. There are a few tournaments that require their participants to sign off on a form saying they were inspected by an authorized inspector that would be in this category if the boater just came in for an inspection.

Entering - The inspection of a watercraft and related equipment entering the lake.

Exiting - The inspection of a watercraft and related equipment leaving the lake.

Lift - Inspection of a dock or lift, either entering or exiting the lake.

Grand Total - The total number of inspections taking place at that access by Beltrami County inspectors and DNR inspectors.

Belt Only - Inspections done by Beltrami County inspectors.

DNR Only - Inspections done by DNR inspectors.

Decontaminations: 95 (Belt 15; DNR 80)

There was a total of 95 watercraft decontaminations performed in Beltrami County by both county employees and the DNR in 2022. Beltrami County decontaminations were performed at the Decon Hut at 2400 Middle School Drive NW. All other numbers are from the DNR working at the listed access.

Decontaminations	BELTRAMI COUNTY	DNR	Total
DECON HUT	15		15
UR HOMESTEAD		80	80
Grand Total	15	80	95

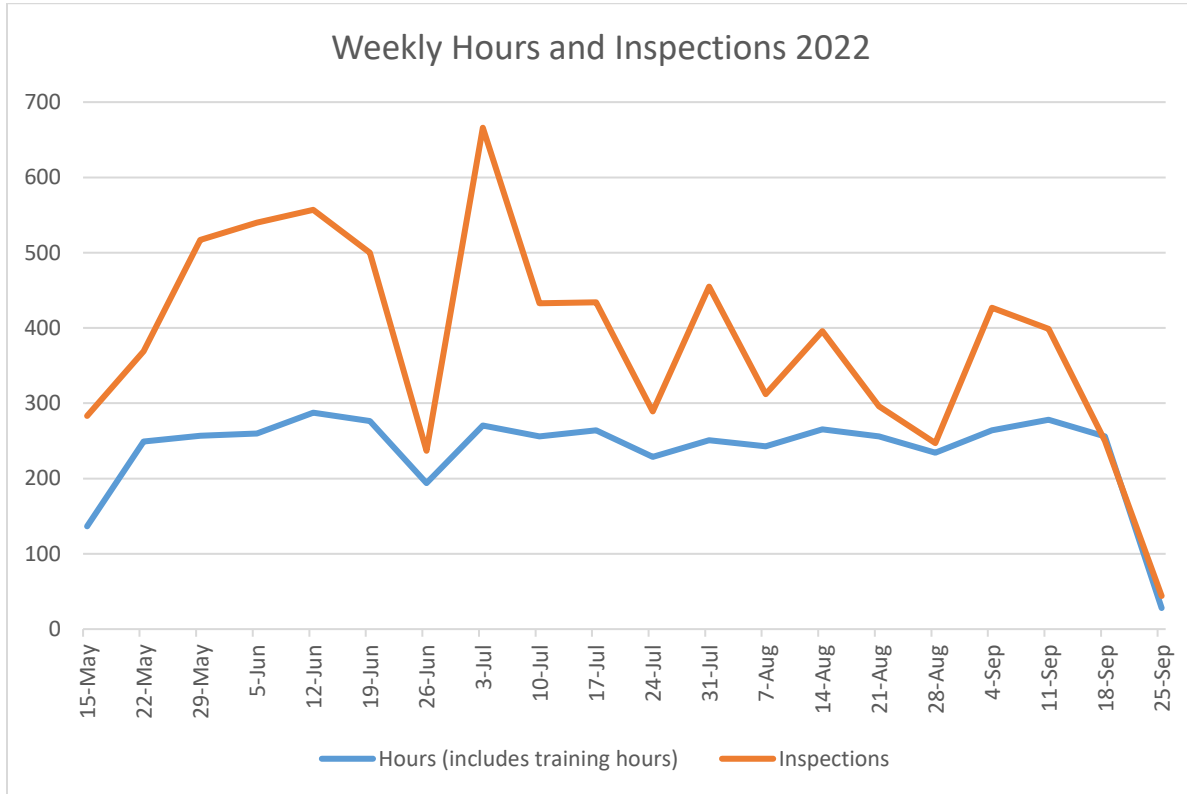
Inspections per hour: 1.65; total hours: 4800

The Beltrami decontamination crew hours are included in calculating inspections per hour even though they may not be at the access for their entire shift. When crew members get a decontamination call, they leave the access and meet the boater at the Decon Hut. Once done, they return to the access to continue performing inspections. Since we do not know the hours spent at the access by the DNR crews, this information is only the Beltrami County inspections.

LAKE NAME	Access Name	Case Number	Insp hrs	Decon Hrs	Totals hrs	Inspections	Ins/Hr
Blackduck Lake	Blackduck east	4006901	150.25		150.25	239	1.59
Cass Lake	Cass Knutson	4003003	316.75		316.75	315	0.99
Grace Lake	Grace	29007101	950		950	1781	1.87
Gull Lake	Gull	4012001	139.5		139.5	142	1.02
Lake Bemidji	Bemidji South (Nymore)	4013002	38.25	408	446.25	894	2.00
Lake Bemidji	Bemidji Northwoods	4013005	71.75	134	205.75	716	3.48
Lake Bemidji	Bemidji Cameron	4013004	66.5	416	482.5	762	1.58
Turtle	Turtle PWA	4015901	273.5		273.5	704	2.57
Upper Red Lake	St. Fish Hatchery-West	4003501	48		48	224	4.67
Upper Red Lake	Homestead-East	4003502	40		40	21	0.53
Andrusia	Andrusia	4003801	125.5		125.5	88	0.70
Balm Lake	Balm	4032901	8		8	3	0.38
Beltrami	Beltrami	4013501	295.5		295.5	469	1.59
Big	Big	4004901	240		240	379	1.58
Big Bass	Big Bass	4013201	151		151	140	0.93
Lake Irving	Irving	4014001	16		16	78	4.88
Turtle River Lake	Hwy 21	4011101	130.5		130.5	180	1.38
Wolf Lake	Wolf	4007901	279.5		279.5	316	1.13
Campbell Lake	Campbell	4019601	32		32	22	0.69
Deer Lake	Deer	4023001	8		8	1	0.13
Julia	Julia	4016601	24		24	28	1.17
Lake Bemidji	State Park	4013001	135		135	69	0.51
Lake Bemidji	Lavinia	4013006	32		32	18	0.56
Moose Lake	Moose	4001101	48		48	15	0.31
Pimushe	Pimushe	4003201	36.5		36.5	21	0.58
Three Island	Three island lake	4013401	23.5		23.5	11	0.47
Movil	Movil south	4015201	11		11	0	0.00
Decon	Decon Hut	4000000	0		0	15	0.00
Totals			3690.5	958	4648.5	7651	1.65
Other hours							
eDNA			31	14	45		
Training		1000	106.5		106.5		
Total inspector hours			3828	972	4800		

Insp./Hr. - Inspections per hour, which only includes Beltrami County inspections and hours. This is an easy way to determine which accesses get used and how often.

eDNA – collecting water samples for the Flathead Lake Biological Stations and University of Montana detecting eDNA (environmental deoxyribonucleic acid) of zebra mussels.



Plug out on arrival to the access: 98.5%

Pulling the plug to drain the watercraft at the access before you leave is the law, so one of the things tracked in the surveys is whether the plug is removed from a watercraft when it arrives at the access. Over the course of the season, 89 people arrived with the drain plug still installed. We had four boaters with the drain plug still installed that had to move away from the ramp to drain (remove the drain plug) because they had excess water. All eight were from Minnesota.

Arrive with Plug in, Drain Required	Yes
29007101, GRACE	1
4006901, BLACKDUCK, EAST	1
4007901, WOLF, WOLF LAKE	1
4013005, BEMIDJI, NORTHWOODS	1
Grand Total	4

Case Number, Access	Plug in on Arrival	Entering	% Violation
29007101, GRACE	18	987	1.82%
4001101, MOOSE	2	7	28.57%
4003003, CASS, KNUTSON DAM	5	158	3.16%
4003201, PIMUSHE		9	0.00%
4003501, UPPER RED, ST. FISH HATCHERY	5	148	3.38%
4003502, UPPER RED, HOMESTEAD	2	843	0.24%
4003801, ANDRUSIA, ANDRUSIA	2	49	4.08%
4004901, BIG	6	206	2.91%
4006901, BLACKDUCK, EAST	4	136	2.94%
4007901, WOLF, WOLF LAKE	10	200	5.00%
4011101, TURTLE RIVER, TURTLE RIVER LAKE HWY 21		85	0.00%
4012001, GULL		69	0.00%
4013001, BEMIDJI, BEMIDJI STATE PARK	2	54	3.70%
4013002, BEMIDJI, SOUTH (NYMORE)	5	732	0.68%
4013004, BEMIDJI, CAMERON PARK	8	516	1.55%
4013005, BEMIDJI, NORTHWOODS	8	701	1.14%
4013006, BEMIDJI, LAVINIA		12	0.00%
4013201, BIG BASS	3	80	3.75%
4013401, THREE ISLAND LAKE		7	0.00%
4013501, BELTRAMI	2	261	0.77%
4014001, IRVING	3	54	5.56%
4015901, TURTLE, BIG TURTLE	4	402	1.00%
4016601, JULIA		15	0.00%
4019601, CAMPBELL		11	0.00%
4032901, BALM		1	0.00%
Grand Total	89	5743	1.55%

Overall, the county is doing well on removing the drain plug at the access to let the boat drain before leaving. There are still a few accesses that have a relatively high percentage of people arriving with the drain plug still installed. Boaters' primary excuse for this is "I only live down the street," or "I only boat on this lake." Boaters must make a habit of pulling the plug; not only is it the law, but if the person does decide to travel someplace, the likelihood that they forget to remove the drain plug increases if they do not regularly practice AIS prevention.

Arriving clean – no plants, animals, water, and/or mud found: 98.1%

Arriving clean to an access is very important to keep from spreading AIS or any other unwanted diseases, plants, or animals. 108 people arrived with unclean watercraft. It is unlawful to transport aquatic plants, zebra mussels, or other prohibited species on any roadway.

Cass Number, Access	Arriving Clean	Plants, Mud or Animals	Req. Drain	Grand Total	% Violation
29007101, GRACE	960	26	1	987	2.74%
4001101, MOOSE	6	1		7	14.29%
4003003, CASS, KNUTSON DAM	158			158	0.00%
4003201, PIMUSHE	9			9	0.00%
4003501, UPPER RED, ST. FISH HATCHERY	148			148	0.00%
4003502, UPPER RED, HOMESTEAD	833	10		843	1.19%
4003801, ANDRUSIA, ANDRUSIA	49			49	0.00%
4004901, BIG	201	5		206	2.43%
4006901, BLACKDUCK, EAST	135		1	136	0.74%
4007901, WOLF, WOLF LAKE	195	4	1	200	2.50%
4011101, TURTLE RIVER, TURTLE RIVER LAKE HWY 21	83	2		85	2.35%
4012001, GULL	69			69	0.00%
4013001, BEMIDJI, BEMIDJI STATE PARK	53	1		54	1.85%
4013002, BEMIDJI, SOUTH (NYMORE)	718	14		732	1.91%
4013004, BEMIDJI, CAMERON PARK	509	7		516	1.36%
4013005, BEMIDJI, NORTHWOODS	679	21	1	701	3.14%
4013006, BEMIDJI, LAVINIA	12			12	0.00%
4013201, BIG BASS	78	2		80	2.50%
4013401, THREE ISLAND LAKE	7			7	0.00%
4013501, BELTRAMI	258	3		261	1.15%
4014001, IRVING	50	4		54	7.41%
4015901, TURTLE, BIG TURTLE	394	8		402	1.99%
4016601, JULIA	15			15	0.00%
4019601, CAMPBELL	11			11	0.00%
4032901, BALM	1			1	0.00%
Grand Total	5631	108	4	5743	1.95%

Plants, Mud, or Animals - The inspector found something that had to be removed before the boater could launch.

Plug in, Req. Drain - The boater was turned away from the ramp and had to drain before launching.

Four people arrived at an access with zebra mussels. Two were launching into lake Bemidji, one into Irving and one into Wolf Lakes and all were out for 5 days or more. Three watercrafts were turned away from the access to get decontaminated because of stuck plants or zebra mussels that could not be removed by hand. Four people had to drain before launching (same set as mentioned above). All of these incidences are a violation of AIS laws. The boaters would have been told that and instructed on how best to follow the AIS laws and best management practices (BMPs).

Launching within 4 or less days, not from the same waterbody: 39.5%

Another high-risk situation is launching a watercraft within 4 days of exiting another waterbody. There is no law prohibiting this, but a boater should take precautions if they do launch within this timeframe by flushing out water-containing compartments with hot water.

Entering Watercraft: 3,375 launching into a Different Waterbody with less than 5 day Drying Time					
Cass Number, Access	Less than 24 hours	1 to 4 days	Totals for <5-day dry time	Total entering form other waters	% Risk
29007101, GRACE	74	147	221	622	35.5%
4001101, MOOSE	1		1	3	33.3%
4003003, CASS, KNOTSON DAM	21	17	38	98	38.8%
4003201, PIMUSHE	3	4	7	9	77.8%
4003501, UPPER RED, ST. FISH HATCHERY	15	19	34	75	45.3%
4003502, UPPER RED, HOMESTEAD	237	66	303	522	58.0%
4003801, ANDRUSIA, ANDRUSIA	9	8	17	33	51.5%
4004901, BIG	42	38	80	204	39.2%
4006901, BLACKDUCK, EAST	23	8	31	85	36.5%
4007901, WOLF, WOLF LAKE	30	12	42	112	37.5%
4011101, TURTLE RIVER, TURTLE RIVER LAKE HWY 21	8	7	15	39	38.5%
4012001, GULL	16	6	22	49	44.9%
4013001, BEMIDJI, BEMIDJI STATE PARK	6	2	8	36	22.2%
4013002, BEMIDJI, SOUTH (NYMORE)	23	75	98	352	27.8%
4013004, BEMIDJI, CAMERON PARK	17	57	74	204	36.3%
4013005, BEMIDJI, NORTHWOODS	34	76	110	353	31.2%
4013006, BEMIDJI, LAVINIA			0	4	0.0%
4013201, BIG BASS	12	12	24	61	39.3%
4013401, THREE ISLAND LAKE		1	1	3	33.3%
4013501, BELTRAMI	28	59	87	208	41.8%
4014001, IRVING	5	4	9	30	30.0%
4015901, TURTLE, BIG TURTLE	32	73	105	258	40.7%
4016601, JULIA		5	5	9	55.6%
4019601, CAMPBELL	1	1	2	5	40.0%
4032901, BALM			0	1	0.0%
Grand Total	637	697	1334	3375	39.5%

Coming from infested waters: 24.6%

Prior to 2017, only boaters coming from zebra mussel-infested waters were included in this category. In 2018 I started looking at boaters coming from all infested waters instead of just zebra mussel-infested waters. This makes more sense because we are trying to prevent the spread of all invasive species, not just zebra mussels. For infested waters, I adjusted the “coming from infested waters” if the boater’s last

waterbody was the one they were launching back into. For example, if someone was launching into Cass and their last waterbody was Cass Lake, I counted Cass Lake as a non-infested water for that access. This way we can see how many people are coming from other infested waters.

A day use boater, someone that takes the boat out on the water for a few hours, is a very low risk of spreading AIS if they clean, drain, dispose, and dry or flush. Following the laws and best management practices reduces the day use boater’s threat level, so there should be no need to avoid infested waters. Moored watercraft or watercraft that are launching within 5 days and not flushing their systems have a higher risk of spreading AIS.

Entering Watercraft from Infested Waters			
Case Number, Access	Entering	Coming from infested waters	% incoming
29007101, GRACE	987	246	24.9%
4001101, MOOSE	7	1	14.3%
4003003, CASS, KNUTSON DAM	158	55	34.8%
4003201, PIMUSHE	9	3	33.3%
4003501, UPPER RED, ST. FISH HATCHERY	148	43	29.1%
4003502, UPPER RED, HOMESTEAD	843	201	23.8%
4003801, ANDRUSIA, ANDRUSIA	49	22	44.9%
4004901, BIG	206	66	32.0%
4006901, BLACKDUCK, EAST	136	51	37.5%
4007901, WOLF, WOLF LAKE	200	57	28.5%
4011101, TURTLE RIVER, TURTLE RIVER LAKE HWY 21	85	30	35.3%
4012001, GULL	69	25	36.2%
4013001, BEMIDJI, BEMIDJI STATE PARK	54	19	35.2%
4013002, BEMIDJI, SOUTH (NYMORE)	732	115	15.7%
4013004, BEMIDJI, CAMERON PARK	516	74	14.3%
4013005, BEMIDJI, NORTHWOODS	701	143	20.4%
4013006, BEMIDJI, LAVINIA	12	2	16.7%
4013201, BIG BASS	80	32	40.0%
4013401, THREE ISLAND LAKE	7	1	14.3%
4013501, BELTRAMI	261	69	26.4%
4014001, IRVING	54	6	11.1%
4015901, TURTLE, BIG TURTLE	402	139	34.6%
4016601, JULIA	15	8	53.3%
4019601, CAMPBELL	11	2	18.2%
4032901, BALM	1	1	100.0%
Grand Total	5743	1411	24.6%

Number of watercrafts that needed further decontamination: 9

There was a total of 9 boaters that were ordered to decontaminate their watercraft this season. Entering watercraft had 3 ordered decontaminations, all of which were at accesses without a decontamination unit. Exiting watercraft had 6 ordered decontaminations with 2 at accesses without a decontamination unit. We had 0 Lifts being transported by Lake Service Providers (LSP) that needed further decontaminations arriving at an access in the surveys data. But I know of two times when inspector called me about a LSP that had ZM or other problems like mud were the LSP had to go clean the lift.

For watercraft at accesses without a decontamination unit present, the inspector would instruct the boater on what to do to get their watercraft ready to launch at the next body of water. The boater was also provided the County’s Decon Hut location/phone (218-760-8519) and the Minnesota DNR’s website (www.mndnr.gov/decon) to find free watercraft decontamination locations throughout the state.

Out-of-state boaters: 9.7%

Beltrami County had 1,016 inspections on out-of-state boaters. The out-of-state boater is a risk because not all states have AIS prevention programs, and boaters visiting Minnesota may not be knowledgeable about the state laws or may not be in the habit of practicing AIS prevention. Most of the out-of-state boaters are from North Dakota (411). North Dakota implemented AIS prevention in 2015. The Grace Lake access had the highest number of out-of-state boaters with 220 inspections (we also had the most hours on Grace Lake).

Case Number, Access	Out of State	MN	Grand Total	% Out of State
29007101, GRACE	220	1561	1781	12.4%
4000000, BELTRAMI COUNTY, DECON	4	11	15	26.7%
4001101, MOOSE	2	13	15	13.3%
4003003, CASS, KNUTSON DAM	43	272	315	13.7%
4003201, PIMUSHE	7	14	21	33.3%
4003501, UPPER RED, ST. FISH HATCHERY	22	315	337	6.5%
4003502, UPPER RED, HOMESTEAD	96	1408	1504	6.4%
4003801, ANDRUSIA, ANDRUSIA	8	85	93	8.6%
4004901, BIG	50	329	379	13.2%
4006901, BLACKDUCK, EAST	32	207	239	13.4%
4007901, WOLF, WOLF LAKE	31	292	323	9.6%
4011101, TURTLE RIVER, TURTLE RIVER LAKE HWY 21	18	162	180	10.0%
4012001, GULL	13	130	143	9.1%
4013001, BEMIDJI, BEMIDJI STATE PARK	16	63	79	20.3%
4013002, BEMIDJI, SOUTH (NYMORE)	97	1225	1322	7.3%
4013004, BEMIDJI, CAMERON PARK	62	889	951	6.5%
4013005, BEMIDJI, NORTHWOODS	115	1117	1232	9.3%
4013006, BEMIDJI, LAVINIA	4	14	18	22.2%
4013201, BIG BASS	9	131	140	6.4%
4013401, THREE ISLAND LAKE	3	8	11	27.3%

4013501, BELTRAMI	69	400	469	14.7%
4014001, IRVING	8	70	78	10.3%
4015901, TURTLE, BIG TURTLE	82	653	735	11.2%
4016601, JULIA	0	28	28	0.0%
4019601, CAMPBELL	5	17	22	22.7%
4023001, DEER	0	1	1	0.0%
4032901, BALM	0	3	3	0.0%
	1016	9418	10434	9.7%

State	Count	State	Count
AK - Alaska	4	ND - North Dakota	411
AZ - Arizona	21	NE - Nebraska	13
CA - California	6	NJ - New Jersey	1
CO - Colorado	11	NM - New Mexico	3
FL - Florida	13	NV - Nevada	6
GA - Georgia	1	OH - Ohio	1
Government	13	OK - Oklahoma	4
IA - Iowa	122	PA - Pennsylvania	14
IL - Illinois	66	SC - South Carolina	2
IN - Indiana	15	SD - South Dakota	54
KS - Kansas	11	TN - Tennessee	1
MD - Maryland	2	Tribe	24
MI - Michigan	17	TX - Texas	23
MO - Missouri	3	UT - Utah	2
MS - Mississippi	4	WA - Washington	5
MT - Montana	7	WI - Wisconsin	123
NC - North Carolina	4	WY - Wyoming	9
Grand Total		1016	

Summary of previous year's inspection data

The tracking of data has changed over the past years. Before 2017, dock/lift inspections were done by DNR staff under a special procedure. Once the inspection of docks/lifts was moved to inspection programs, they started being tracked by the watercraft inspection surveys. From 2017 forward, the data shows less than five-day dry times; before 2017 it was a 24-hour dry time. Starting in 2017, "coming from infested waters" includes all infested waters; before this time it only included zebra mussel-infested waters.

Category	2022	2021	2020	2019	2018	2017	2016	2015
Courtesy	17	8	45	54	47	251	21	*
Entering	4,164	4,434	6,589	5,842	7,712	6,845	9,681	8,163
Exiting	3,442	3,844	5,526	5,202	6,094	5,165	8,192	7,877

Dock/Lift	28	18	43	14	39	16	*	*
Total Inspections	7,651	8,304	12,203	11,112	13,982	12,277	17,928	16,054
Hours	4648.5	4,134.5	5,731.5	5,728	6,482.75	6,871.25	7,199.5	7,053.75
Inspections/Hour	1.65	2.01	2.13	1.94	2.14	1.79	2.22	2.22
% Plug Out	98.5%	98.4%	98.0%	98.7%	97.1%	98.1%	98.6%	98.1%
% Clean	98.1%	97.4%	97.8%	98.3%	98.1%	98.6%	98.8%	97.7%
<5 Days Dry	39.5%	20.6%	23.8%	21.8%	20.1%	24%	*	*
Coming from Infested waters	24.6%	37.0%	21.3%	11.5%	19.4%	12.9%	*6%	*5.1%
Decontaminations Ordered	9	27	28	12	7	2	3	8
Out-of-State	9.7%	10.1%	8.5%	9.3%	9.1%	10.2%	9%	8.9%

*DNR inspections are not included from 2019 on.

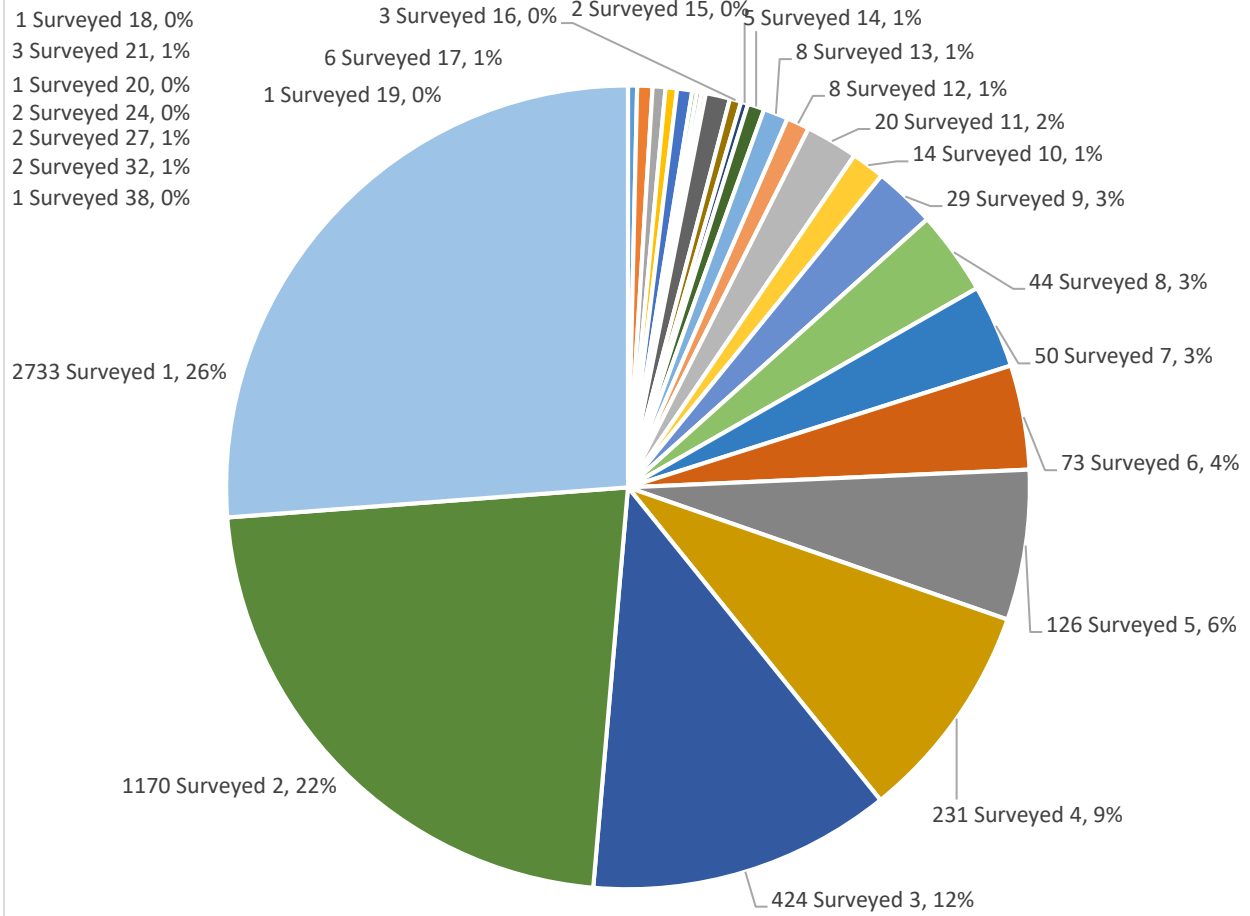
How many times did we meet a boater?

During inspections we will sometimes survey the same person during a day or over the weekend. We track this information by vehicle license plate. In some cases it may be the same vehicle but a different person or the same person but a different vehicle.

In 2023, we surveyed 4,959 individuals (license plates) and 2,733 people were surveyed just once. On the other end of the spectrum, we had one boater get surveyed 38 times over 23 days. This was a lake service provider (LSP). Going to multiple lakes within 4 days. In one of the surveys they had excessive mud launching into Lake Bemidji. There were two boaters surveyed 32 times. One of these was an LSP the other was a boater going between Grace Wolf and Plantagenet Lakes. We inspected the boater on 28 different days. No violations were noted. Multiple days they were launching or planning on launching within 4 day. The LSP had one violation when it had snails on the watercraft while attempting to launch into Grace Lake.

The pie chart below shows the number of boaters and how many times they were surveyed/inspected. As an example, there were 14 people surveyed 10 times making up 140 surveys, which is 1.3% of the total surveys (14, Surveyed 10, 1%). 75% of the inspections were on boaters who had been surveyed 5 times or fewer.

How many times did we meet a boater?

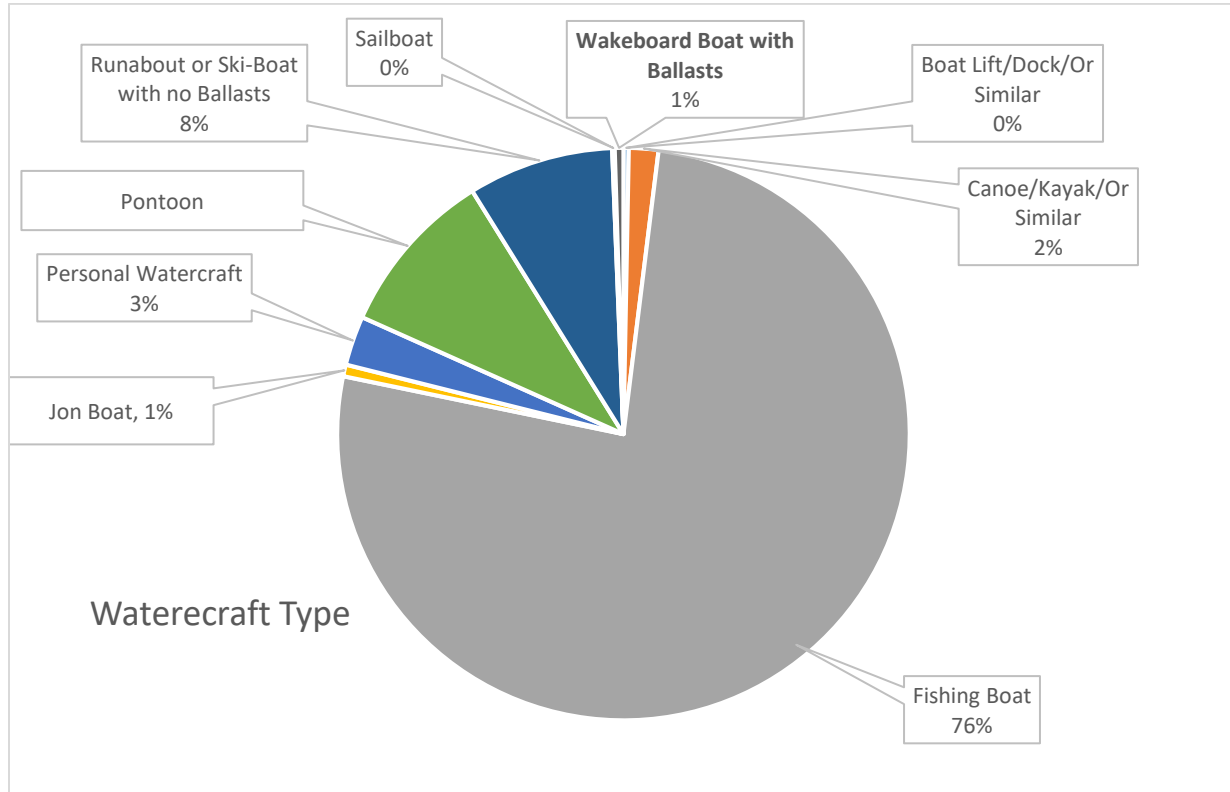


# Boaters	#of times Surveyed	#of Surveys	% of total
1	Surveyed 38	38	0.4%
2	Surveyed 32	64	0.6%
2	Surveyed 27	54	0.5%
2	Surveyed 24	48	0.5%
3	Surveyed 21	63	0.6%
1	Surveyed 20	20	0.2%
1	Surveyed 19	19	0.2%
1	Surveyed 18	18	0.2%
6	Surveyed 17	102	1.0%
3	Surveyed 16	48	0.5%
2	Surveyed 15	30	0.3%
5	Surveyed 14	70	0.7%
8	Surveyed 13	104	1.0%

8	Surveyed 12	96	0.9%
20	Surveyed 11	220	2.1%
14	Surveyed 10	140	1.3%
29	Surveyed 9	261	2.5%
44	Surveyed 8	352	3.4%
50	Surveyed 7	350	3.4%
73	Surveyed 6	438	4.2%
126	Surveyed 5	630	6.0%
231	Surveyed 4	924	8.9%
424	Surveyed 3	1272	12.2%
1170	Surveyed 2	2340	22.4%
2733	Surveyed 1	2733	26.2%
4959		10434	100.0%

Boat type

The most common boat type both county-wide and at individual accesses was a fishing boat. Fishing boats tend to be low-risk as most of them are used for day use boating; very few are moored in the water over night. Our high-risk boats are wakeboarding boats with ballast tanks. These are also day use boaters, but they take on ballast water to make the boat give off a big wake. Ballast tanks are difficult to drain completely and it is very hard to verify how much water is present after draining.



Watercraft Type	Count
Boat Lift/Dock/Or Similar	31
Canoe/Kayak/Or Similar	174
Fishing Boat	7959
Jon Boat	69
Personal Watercraft	291
Pontoon	986
Runabout or Ski-Boat with no Ballasts	858
Sailboat	15
Wakeboard Boat with Ballasts	51
Grand Total	10434

Case Number, Access	Wakeboard Boat with Ballasts
29007101, GRACE	11
4003003, CASS, KNUTSON DAM	3
4003501, UPPER RED, ST. FISH HATCHERY	1
4007901, WOLF, WOLF LAKE	4
4013002, BEMIDJI, SOUTH (NYMORE)	9
4013004, BEMIDJI, CAMERON PARK	5
4013005, BEMIDJI, NORTHWOODS	12
4013501, BELTRAMI	5
4015901, TURTLE, BIG TURTLE	1
Grand Total	51

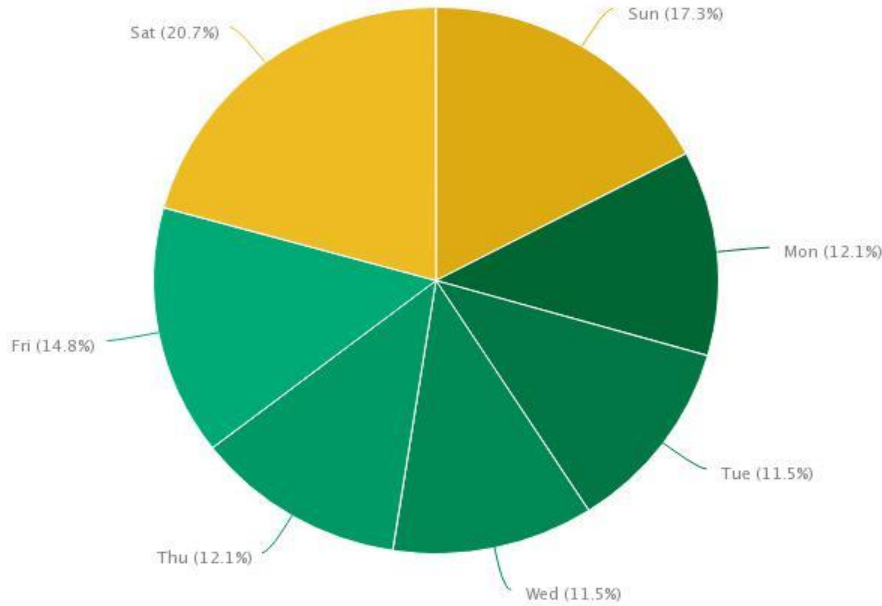
TRAFx car counters

In the 2015 season Beltrami County installed 20 TRAFx car counters at accesses to better understand use times. The car counters show that most of the activity at public water accesses (PWAs) is in the afternoon and on weekends. We are looking at reducing the number of inspection hours again next season and modifying our schedules. Even though the accesses are not as busy on the weekdays, we will be conducting weekday inspections. Using the data from TRAFx car counters, we decided to run two different shifts: 8 a.m. to 4 p.m. and a 12 p.m. to 8 p.m. With this data we will continue to adjust the times inspectors work at the accesses so that we can utilize our inspection/education team more effectively.

For the 2022 season we did not have car counters out. We have had car counters at all the trailered access for at least two years. TRAFx counters will now be placed for special counts. In 2023 we are planning to use them at the access with CD3 machines.

Days of the Week

2015-04-28 to 2021-10-22



Site Name	Mon	Tue	Wed	Thu	Fri	Sat	Sun
Andrusia (FD)	10.5	8.7	9.2	10.4	14.1	21.8	17.7
Balm (F)	11	8.2	8.7	10.2	14.7	25.6	16.6
Beltrami (FD)	7.1	8.5	7.9	8.1	9.2	14.4	12
Bemidji Cameron (FD)	40.8	41.8	43.1	43.7	46.4	54	44.6
Bemidji Lavinia (FD)	6.4	5.9	6.1	6.3	7.4	9.8	9.1
Bemidji Northwoods (F)	59.1	58.1	59.3	64	72.6	103.8	75.9
Bemidji Nymore (FD)	52.3	54.9	55	55.6	62.3	71.4	58
Bemidji State Park (F)	8.2	9.1	7.7	10	11.3	17.5	15.7
Benjamin (F)	3.6	2.6	2.9	3.6	3.8	6.4	4.1
Big (F)	15.8	14.9	15	16.6	26.7	36.3	29.3
Big Bass (FD)	11.9	11.8	11.8	10.7	14.5	18.3	17
Blackduck East (F)	61.6	63.3	62.9	65.1	81	98.2	80.4
Blackduck River (F)	2.3	2.6	1.4	2.4	4.3	11.2	6.5
Blackduck West (FD)	8.6	7.6	8.1	8.9	11.8	16.6	13.1
Buzzle, Little (FD)	5.2	4.1	3.8	4	5.1	8.3	7.6
Campbell (F)	8.7	8.6	8.8	8.7	10.3	12.7	13.8
Cass Knutson Dam (FD)	8	7.2	7.7	8.1	11.5	18.1	13.5
Clearwater (F)	13.7	13.5	13.2	14.9	20.9	30.8	24.8
Deer (D)	7.3	6.8	6.8	7.5	6.9	10.4	11
Dellwater (FD)	3.5	3.4	3.4	3.2	4.6	6	5.2
Gilstad	15.5	14.9	13.3	15.3	21.4	28.8	24.1
Grace (F)	22.4	21.5	20.7	21.5	25.7	38	33
Grant (FD)	12.6	11.4	11.5	11.2	12	18	19.1
Gull (FD)	10.7	11	12.1	12.4	15.6	21.5	17.6
Irving North (D)	34.4	26.8	24.9	26.9	31	51.6	37.3
Irving South (F)	0.5	0.7	0.4	0.7	0.6	0.8	0.5
Island (FD)	1	1	0.4	1	1.2	1.7	1.5
Julia (FD)	14.6	12.5	12.5	13.8	13.9	21	18.4
Medicine (D)	4.2	4.8	4.3	4.4	10	9.2	5.8
Moose (F)	5.7	5.4	4.4	4.4	7.5	11.4	10.2
Movil (FD)	6.1	5.4	5.9	6.4	6.3	8.4	8.4
North Twin (D)	6.1	5	4.2	5.3	7.1	10.2	9.2
Pimushe (FD)	4.9	4.8	6.1	6.4	7.4	9.4	7
Plantangenet N (FD)	4.3	3.6	4	4	4.9	6.1	6
Rabideau (FD)	5.8	5.1	3.8	5.9	7.6	9.7	9
Sandy (D)	6.1	4.7	3.8	5.7	7.8	12.5	9.4
Sandy Debs (FD)	3.1	2.8	2.7	3	3.9	6.3	5.6
South Twin (D)	9.1	9.4	6.8	7.7	8.8	16.2	13.8
Three Island (FD)	9.7	8.8	9.1	8.8	10.3	14.1	13.6
Turtle River Hwy 21 (FD)	13.5	12.6	14.5	12.4	15.3	23.4	17.5
Turtle River Main St (F)	6.5	6.9	5	6.4	7.4	10	7.7
Turtle, Big (FD)	25.8	23.7	24.7	25.9	31.2	44.7	36.9
Upper Red Homestead (F)	63	51.3	64.9	49.4	66.4	108.3	115.7
Upper Red St Fish Hatchery (F)	22.6	21	21.2	23.8	29.9	39.2	29.7
Webster (D)	1.1	1	1.1	1.4	2.5	3.4	2.3
Whitefish (FD)	4.4	3.9	3.7	4	4.4	7.6	7.1
Wolf (F)	12	11.8	11.3	11.7	15	26.8	19.2
Wolf South (F)	8	10	6	n/a	14	9	8

(D) = divide by 2 applied

(F) = filtering applied

Appendices

Access name	Ranking	Case No.	Trafx counter	RMB Risk
Bemidji South (Nymore)	1	4013002	2015, 2016, 2017, 2018, 2019, 2020, 2021	WCI1, ED1
Bemidji, Cameron Park	1	4013004	2015, 2016, 2017, 2018, 2019,2020, 2021	WCI1, ED1
Bemidji, Northwoods	1	4013005	2015, 2016, 2017, 2018, 2019, 2020, 2021	WCI1, ED1
Blackduck East	1	4006901	2015, 2018,2019	WCI2, ED2
Cass Knutson Dam	1	4003003	2015, 2017, 2018, 2019	WCI1,
Grace	1	29007101	2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022	WCI2, ED2
Gull	1	4012001	2015, 2018	WCI1, ED1
Turtle, Big Turtle	1	4015901	2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022	WCI2, ED2
Upper Red, Homestad	1	4003502	2015, 2016, 2017, 2018, 2019, 2020, 2021	WCI1, ED1
Upper Red, St. Fish Hatchery	1	4003501	2015, 2016, 2017, 2018, 2019, 2020, 2021	WCI1, ED1
Andrusia, Andrusia	2	4003801	2015, 2017, 2018, 2019	WCI1, ED1
Balm	2	4032901	2015, 2017, 2020, 2021, 2022	WCI3
Beltrami	2	4013501	2015, 2018, 2022	WCI3
Big	2	4004901	2015, 2018	
Big Bass	2	4013201	2015, 2018	
Blackduck West	2	4006902	2015, 2018, 2019	WCI2, ED2
Irving	2	4014001	2016	WCI3, ED2
Turtle River Lake Hwy 21	2	4011101	2015, 2018,	ED2
Wolf	2	4007901	2015, 2018, 2019,2020, 2021, 2022	ED2
Campbell	3	4019601	2016, 2020, 2021, 2022	WCI3
Deer	3	4023001	2016, 2022	
Dellwater	3	4033101	2016, 2020, 2021, 2022	
Grant	3	4021701	2019, 2020,2021	
Julia	3	4016601	2016, 2020, 2021, 2022	
North Twin	3	4006301	2016, 2022	
South Twin	3	4005301	2016, 2022	
Three Island Lake	3	4013401	2016, 2019, 2020	ED2
Bemidji, Bemidji State Park	4	4013001	2017	WCI1,
Benjamin	4	4003301	2017	
Clearwater (Clearwater County)	4	4034301	2019, 2020,2021	
Gilstad	4	4002401	2016	
Moose	4	4001101	2015, 2017, 2018, 2019, 2022	ED2
Pimushe	4	4003201	2015, 2018, 2022	ED2
Puposky, Puposky North	4	4019801		
Rabideau	4	4003401	2017	
Upper Red, Big Bog	4	4003503		WCI1, ED1
Webster	4	4002201	2016	
Bemidji, Diamond point	5	4013003		WCI1, ED1
Bemidji, Lavinia	5	4013006	2017, 2018, 2019, 2020, 2021	WCI1, ED1

Erick	5	4022901		
Island	5	4026501	2016	
Little Buzzle	5	4029801	2017, 2020, 2021, 2022	
Medicine	5	4012201	2016, 2022	WCI3
River Blackduck	5		2019	
Sandy Debs	5	4030701	2017, 2020, 2021, 2022	
Sandy Red Lake	5	4031201		
Sandy Tenstrike	5	4012401	2016, 2022	
Turtle River Lake Main St.	5	4011100	2017	
Whitefish	5	4030001	2017, 2020, 2021, 2022	
Wolf South (Hubbard County) *	5	4007902	2019	
Movil	6		2021, 2022	ED2
North Plantagenet	6		2020, 2021, 2022	ED2

RMB Risk


- WCI# Watercraft Inspection rank
- ED#- Education rank

Bold is an infested water

Ranking - Beltrami County priority list for education efforts at the access
(County) - Access is in another county

*Wolf south access car counter was flooded out early in 2019

Infested Waters Beltrami County

Minnesota Department of Natural Resources (DNR) List of Infested Waters - October 28, 2022				 DEPARTMENT OF NATURAL RESOURCES	
Water body name	County or counties	Listed for aquatic invasive species	Year listed as infested	Year species was first confirmed, or connected water body	DOW number
Andrusia	Beltrami	zebra mussel	2014	2016	04-0038
Beltrami	Beltrami	starry stonewort	2019	2019	04-0135
Bemidji (includes Stump)	Beltrami	zebra mussel	2018	2018	04-0130
Big	Beltrami	zebra mussel	2021	2021	04-0049
Big Rice	Beltrami	zebra mussel	2014	connected to Cass (04-0030)	04-0031
Blackduck	Beltrami	faucet snail	2018	2018	04-0069
Buck	Beltrami	zebra mussel	2014	2016	04-0042
Carr	Beltrami	zebra mussel	2018	connected to Bemidji (04-0130_	04-0141
Cass	Beltrami	starry stonewort	2016	2016	04-0030

Cass	Beltrami	zebra mussel	2014	2014	04-0030
Irving	Beltrami	zebra mussel	2018	connected to Bemidji (04-0130_	04-0140
Kitchi	Beltrami	zebra mussel	2014	connected to Cass (04-0030)	04-0007
Little Rice	Beltrami	zebra mussel	2014	connected to Cass (04-0030)	04-0015
Marquette	Beltrami	zebra mussel	2018	connected to Bemidji (04-0130_	04-0142
Mississippi River between Wolf Lake (04-0079) and Andrusia Lake (04-0038)	Beltrami	starry stonewort	2021	2021	NA
Mississippi River from Carr (04-0141) to Wolf (04-0079)	Beltrami	zebra mussel	2018	connected to Bemidji (04-0130_	NA
Moose	Beltrami	starry stonewort	2016	2016	04-0011
Pimushe	Beltrami	starry stonewort	2021	2021	04-0032
Pimushe	Beltrami	zebra mussel	2019	2019	04-0032
Pug Hole	Beltrami	zebra mussel	2014	2017	04-0003
Red	Beltrami	zebra mussel	2019	2019 (veligers)	04-0035
Shotley Brook	Beltrami	zebra mussel	2019	connected to Red (04-0035)	NA
Tamarac River	Beltrami	zebra mussel	2019	connected to Red (04-0035)	NA
Turtle (Big Turtle)	Beltrami	starry stonewort	2016	2016	04-0159
Unnamed stream connecting Big Rice, Little Rice and Kitchi Lakes	Beltrami	zebra mussel	2014	connected to Cass (04-0030)	NA
Unnamed stream connecting Kitchi, Pug Hole and Cass Lakes	Beltrami	zebra mussel	2014	connected to Cass (04-0030)	NA
Upper Red	Beltrami	starry stonewort	2016	2016	04-0035-01
Wolf	Beltrami	zebra mussel	2014	connected to Cass (04-0030)	04-0079
Wolf (Big Wolf)	Beltrami	starry stonewort	2018	2018	04-0079
End of Worksheet					