



**Minnesota
F-29-RP-36-1
Objective 3
Job 1149**

MINNESOTA DEPARTMENT OF NATURAL RESOURCES

DIVISION OF FISH AND WILDLIFE

COMPLETION REPORT

**Summer 2023 and Winter 2023/24 Creel Survey of North and South Lida Lakes,
Otter Tail County, Minnesota.**

By

Luke N. Schalekamp

Funded under Federal Aid by the Sport Fish Restoration Act to Minnesota, F-29-RP-36-1

TABLE OF CONTENTS

List of Tables.....	0.
List of Appendices.....	0.
Abstract.....	1.
Introduction.....	4.
Study Area.....	7.
Methods.....	9.
Results and Discussion.....	13.
Acknowledgements.....	29.
References.....	30.
Tables.....	32.
Appendices.....	76.

LIST OF TABLES

<u>Table</u>	<u>Page(s)</u>
1. Selected descriptive characteristics of North and South Lida Lakes, Otter Tail County, Minnesota.....	32.
2. Creel survey sampling summary by stratum for North Lida Lake, Otter Tail County, Minnesota from May 13 to October 10, 2023.....	33.
3. Creel survey sampling summary by stratum for North Lida Lake, Otter Tail County, Minnesota from December 15, 2023 to March 31, 2024.....	34.
4. Creel survey sampling summary by stratum for South Lida Lake, Otter Tail County, Minnesota from May 13 to October 10, 2023.....	35.
5. Creel survey sampling summary by stratum for South Lida Lake, Otter Tail County, Minnesota from December 15, 2023 to March 14, 2024.	36.
6. Total angling pressure estimates for North and South Lida Lakes, Otter Tail County, Minnesota from May 13 to October 10, 2023.....	37.
7. Total angling pressure estimates for North and South Lida Lakes, Otter Tail County, Minnesota from December 15, 2023 to March 31, 2024.....	38.
8. Total angling pressure estimates by angler type for North and South Lida Pine Lakes, Otter Tail County, Minnesota from December 15, 2023 to March 31, 2024.....	39.
9. Total angling pressure estimates from all open water and winter creel surveys for North and South Lida Lakes, Otter Tail County, Minnesota.....	40.
10. Estimated catch rates for all anglers by stratum for North Lida Lake, Otter Tail County, Minnesota from May 13 to October 10, 2023.....	41.
11. Estimated catch rates for targeting species by stratum for North Lida Lake Lake, Otter Tail County, Minnesota from May 13 to October 10, 2023.....	42.
12. Estimated catch numbers for all anglers for North Lida Lake, Otter Tail County, Minnesota from May 13 to October 10, 2023.....	43.
13. Total catch numbers for North Lida Lake, Otter Tail County, Minnesota from May 13 to October 10, 2023.....	44.
14. Estimated harvest weight for all anglers for North Lida Lake, Otter Tail County, Minnesota from May 13 to October 10, 2023.....	45.

15.	Mean length and weight of fish caught, harvested, and released on North Lida Lake, Otter Tail County, Minnesota from May 13 to October 10, 2023.....	46.
16.	Estimated weight of fish caught on North Lida Lake, Otter Tail County, Minnesota from May 13 to October 10, 2023.....	47.
17.	Length Frequency distribution of the angler harvested and released fish from North Lida Lake, Otter Tail County, Minnesota from May 13 to October 10, 2023	48.
18.	Estimated catch rates for all anglers by stratum for North Lida Lake, Otter Tail County, Minnesota from December 15, 2023 to March 31, 2024.....	49.
19.	Estimated catch rates for all anglers by angler type for North Lida Lake, Otter Tail County, Minnesota from December 15, 2023 to March 31, 2024.....	50.
20.	Estimated catch rates for targeting species by angler type for North Lida Lake, Otter Tail County, Minnesota from December 15, 2023 to March 31, 2024.....	51.
21.	Estimated catch numbers for all anglers by angler type for North Lida Lake, Otter Tail County, Minnesota from December 15, 2023 to March 31, 2024.....	52.
22.	Total catch numbers for North Lida Lake, Otter Tail County, Minnesota from December 15, 2023 to March 31, 2024.....	53.
23.	Estimated harvest weight for all anglers for North Lida Lake, Otter Tail County, Minnesota from December 15, 2023 to March 31, 2024.....	54.
24.	Mean length and weight of fish caught, harvested, and released on North Lida Lake, Otter Tail County, Minnesota from December 15, 2023 to March 31, 2024.....	55.
25.	Estimated weight of fish caught on North Lida Lake, Otter Tail County, Minnesota from December 15, 2023, to March 31, 2024.....	56.
26.	Length Frequency distribution of the angler harvested and released fish from North Lida Lake, Otter Tail County, Minnesota from December 15, 2023 to March 31, 2024.	57.
27.	Estimated catch rates for all anglers by stratum for South Lida Lake, Otter Tail County, Minnesota from May 13 to October 10, 2023.....	58.
28.	Estimated catch rates for targeting species by stratum for South Lida Lake, Otter Tail County, Minnesota from May 13 to October 10, 2023.....	59.

29.	Estimated catch numbers for all anglers for South Lida Lake, Otter Tail County, Minnesota from May 13 to October 10, 2023.....	60.
30.	Total catch numbers for South Lida Lake, Otter Tail County, Minnesota from May 13 to October 10, 2023.....	61.
31.	Estimated harvest weight for all anglers for South Lida Lake, Otter Tail County, Minnesota from May 13 to October 10, 2023.....	62.
32.	Mean length and weight of fish caught, harvested, and released on South Lida Lake, Otter Tail County, Minnesota from May 13 to October 10, 2023.....	63.
33.	Estimated weight of fish caught on South Lida Lake, Otter Tail County, Minnesota from May 13 to October 10, 2023.....	64.
34.	Length Frequency distribution of the angler harvested and released fish from South Lida Lake, Otter Tail County, Minnesota from May 13 to October 10, 2023.....	65.
35.	Total catch numbers for South Lida Lake, Otter Tail County, Minnesota from December 15, 2023 to March 14, 2024.....	66.
36.	Length Frequency distribution of the angler harvested and released fish from South Lida Lake, Otter Tail County, Minnesota from December 15, 2023 to March 14, 2024.....	67.
37.	The percentage of angling parties primary targeted species of fish for the 2023-2024 summer and winter creel survey on North and South Lida Lakes, Otter Tail County, Minnesota.....	68.
38.	Estimated summer angling pressure, angler hours per acre and overall Walleye harvest rate for North and South Lida Lakes and other Otter Tail County lakes of similar lake class.....	69.
39.	Estimated winter angling pressure, angler hours per acre and overall Walleye harvest rate for North and South Lida Lakes and other Otter Tail County lakes of similar lake class.....	70.
40.	Estimated winter spearing pressure, spearing hours per acre and overall Northern Pike harvest rate for North and South Lida Lakes and other Otter Tail County lakes of similar lake class.....	71.
41.	State of residence for all anglers fishing North and South Lida Lakes, Otter Tail County, Minnesota from May 13 to October 10, 2023 and December 10, 2022 to March 31, 2023.....	72.

42.	Angler demographics by gender and age groups for all anglers on North and South Lida Lakes, Otter Tail County, Minnesota from May 13 to October 10, 2023 and December 15, 2023 to March 31, 2024.....	73.
43.	Walleye special regulation questions and responses for the 2023-2024 summer and winter creel survey on North Lida Lake, Otter Tail County, Minnesota..	74.
44.	Walleye special regulation questions and responses for the 2023-2024 summer and winter creel survey on South Lida Lake, Otter Tail County, Minnesota..	75.

LIST OF APPENDICES

<u>Appendix</u>	<u>Page(s)</u>
A. Summer interview sheet including Walleye regulation angler input questions for 2023 lake creels.....	76.
B. Winter interview sheet including Walleye regulation angler input questions for 2023-2024 lake creels.....	77.
C. Summer count sheet for North and South Lida Lakes 2023 creel surveys.....	78.
D. Winter count sheet for North and South Lida Lakes 2023-2024 creel surveys.....	79.
E. Creel Survey Harvest Summary for North Lida Lake.....	80.
F. Creel Survey Harvest Summary for South Lida Lake.....	82.

ABSTRACT

A summer and winter creel survey were conducted on North and South Lida Lakes, Otter Tail County, Minnesota during the 2023 – 2024 angling seasons. The summer creel survey began on May 13, 2023, and continued through October 10, 2023. It consisted of a stratified random, instantaneous boat count, roving and incomplete trip design. The winter creel survey began on December 15, 2023, and continued through March 31, 2024. It consisted of a stratified random, roving house count and incomplete trip design. Previous North and South Lida Lakes creel surveys have been conducted in 2003-2004, 1995-1996 and 1985. The main objectives of the creel survey were to measure angling pressure, catch and release rates, total harvest by species, size structure of harvested and released fish, as well as winter angling and spearing activity. Secondary objectives included estimating angler demographics, angler response and compliance to the North and South Lida Lakes 17-26-inch protected slot limit, with one allowed over 26 inches regulation for Walleye, daily bag limit of ten Sunfish, 11-inch minimum size limit for Crappie and the North-central zone Northern Pike regulations.

Total estimated 2023 summer angling effort on North Lida Lake (13,286 hours, 2.39 hours/acre) was much lower than estimates from 2003 (42,875 hours, 7.7 hours/acre), 2002 (40,017 hours, 7.19 hours/acre), 1996 (33,736, 6.10 hours/acre), 1995 (33,565, 6.00 hours/acre) and 1985 (60,782 hours, 9.70 hours/acre). The majority of summer angling effort was directed at Walleye (45.4 %), followed by no particular species (31.0%), Largemouth Bass (5.9%), Northern Pike (5.1%), Black Crappie (4.5%), Bluegill/Sunfish (4.1%), and Smallmouth Bass (3.9%). The estimated number and weight of Walleye harvested in 2023 was 681 fish or 0.12 fish/acre, weighing 954 pounds, respectively. The estimated number and weight of Black Crappie harvested in 2023 was 367 or 0.07 fish/acre, weighing 309 pounds, respectively. The estimated number and weight of Bluegill/Sunfish harvested in 2023 was 505 or 0.09 fish/acre, weighing 196 pounds, respectively. Angler compliance for the 17-26" protected slot length

limit with 1 >26" Walleye regulation was (86%). There was an 88% compliance with the 11-inch minimum Black Crappie regulation. The North-central Northern Pike regulation had 100% compliance. The Sunfish reduced bag limit of 10 is still being analyzed.

Total estimated winter angling effort for 2022-2023 on North Lida Lake (19,210 hours, 3.45 hours/acre) was higher than estimates from 2002-2003 (15,589 hours, 2.80 hours/acre) and 1996-1997 (3,003, 0.5 hours/acre) but lower than 2003-2004 (32,620 hours, 6.04 hours/acre) and 1995-1996 (23,193 hours, 4.20 hours/acre). The majority of winter angling effort was directed at Black Crappie (57.4 %), followed by no particular species (17.2%), Bluegill/Sunfish (14.9%), and Walleye (9.6%). The estimated number and weight of Black Crappie harvested in 2023-2024 was 1,537 or 0.28 fish/acre, weighing 1,419 pounds, respectively. The estimated number and weight of Bluegill/Sunfish harvested in 2023-2024 was 1,371 fish or 0.25 fish/acre, weighing 688 pounds, respectively. The estimated number and weight of Walleye harvested in 2023-2024 was 125 fish or 0.02 fish/acre, weighing 160 pounds, respectively. Angler compliance for the 17-26" protected slot length limit with 1 >26" Walleye regulation was (77%). There was a 90% compliance with the 11-inch minimum Black Crappie regulation. The North-central Northern Pike regulation had 94% compliance. The Sunfish reduced bag limit of 10 is still being analyzed.

Estimated winter spearing effort for 2023-2024 on North Lida Lake (29 hours, 0.01 hours/acre) was the lowest of all previous creel surveys; 2003-2004 (998 hours, 0.18 hours/acre), 2002-2003 (387 hours, 0.07 hours/acre), 1996-1997 (247, 0.05 hours/acre) and 1995-1996 (1,876 hours, 0.4 hours/acre).

Total estimated summer angling effort for 2023 on South Lida Lake (7,399 hours, 3.12 hours/acre) was the lowest of all previous creel surveys; 2003 (19,012 hours, 3.42 hours/acre), 2002 (18,011 hours, 3.24 hours/acre), 1996 (23,432 hours, 4.21 hours/acre), 1995 (19,079 hours, 3.43 hours/acre), and 1985 (30,251 hours, 5.44 hours/acre). The majority of summer angling effort was

directed at Walleye (31.2 %), followed by No Particular Species (29.6%), Black Crappie (17.4%), Largemouth Bass (12.9%), Northern Pike (5.2%), and Bluegill/Sunfish (4.2%). The estimated number and weight of Walleye harvested in 2023 was 112 fish or 0.13 fish/acre, weighing 140 pounds, respectively. The estimated number and weight of Black Crappie harvested in 2023 was 326 or 0.38 fish/acre, weighing 300 pounds, respectively, and the estimated number and weight of Bluegill/Sunfish harvested in 2023 was 272 or 0.32 fish/acre, weighing 90 pounds, respectively. Angler compliance for the 17-26" protected slot length limit with 1 >26" Walleye regulation was (100%). There was 100% compliance with the 11-inch minimum Black Crappie regulation. The North-central Northern Pike regulation had 75% compliance. The Sunfish reduced bag limit of 10 is still being analyzed.

Total estimated winter angling effort for 2023-2024 on South Lida Lake (3,230 hours, 3.77 hours/acre) was comparable to estimates from 2003-2004 (3,829 hours, 0.69 hours/acre), 2002-2003 (3,033 hours, 0.55 hours/acre) but lower than 1996-1997 (1,839 hours, 0.33 hours/acre) and 1995-1996 (4,005 hours, 0.72 hours/acre) creel surveys. The majority of winter angling effort was directed at Black Crappie (91.3 %), followed by Northern Pike (4.3%), and No Particular Species (4.3%). Due to unsafe ice conditions, the creel clerk was able to count but not interview most anglers. This contributed to low and unreliable catch, harvest, and release data.

INTRODUCTION

North and South Lida Lakes are very popular fishing lakes in Otter Tail County and offer numerous recreational opportunities for Minnesota residents and nonresidents alike. The game fish population in North and South Lida Lakes is primarily made up of Walleye, Black Crappie, Bluegill, Northern Pike, Smallmouth Bass, Largemouth Bass, Rock Bass and Yellow Perch. Both lakes are historically known as excellent Walleye angling lakes, although concern is being expressed due to the DNR Fisheries and anglers catch and harvest rates. Panfish populations seem to be thriving in the lake, indicative of effective DNR Black Crappie and Sunfish regulations.

Walleye stocking was discontinued in both lakes after 1989 due to documentation of excellent Walleye natural reproduction. Prior to the 2018 standard survey, long term age and catch data indicated that natural reproduction and recruitment was substantial and consistent enough to maintain a self-sustaining Walleye population that consistently met or exceeded the management objective (10.0/net). Walleye gill net CPUE's in the 2018 and 2021 surveys were historical lows and catch data from the seven most recent fall electrofishing surveys (2015 to 2021) indicate that the strength of these year classes is weak to moderate. A biennial fry stocking plan was initiated in 2019, in an attempt to increase Walleye gill net CPUE to the management objective. Walleye fry (1.2 million) were stocked in 2019 and the ensuing fall electrofishing CPUE was only 8.8 per hour, indicating a weak year class. That fall, 1,198 pounds (N=36,531) of surplus Walleye fingerlings were stocked. In this survey, only ten fish from the 2019-year class were represented in the Walleye age-class distribution. The biennial fry stocking plan continued in 2021 and will be evaluated in future gillnetting surveys. Lida Lakes Association stocks Walleye fingerlings intermittently.

Population assessments are conducted every three years and fall electrofishing assessments have been conducted annually on North Lida Lake since 1992 to monitor estimate natural reproduction.

In 2000, members of the Lake Association approached the Minnesota Department of Natural Resources, Fisheries Section, to discuss ways to improve the size structure or average size of Walleye in the two lakes. Various experimental regulation options were discussed, and it was decided that more information was needed, in addition to the standard survey data, to pursue this issue any further. A creel survey was conducted in 2002-2004 to gather data on angler pressure and Walleye harvest on North and South Lida Lakes during the summer and winter angling seasons. The creel data was used in conjunction with other data to develop an experimental regulation proposal package for these two lakes. The final proposal recommended by the MN DNR Fisheries and supported by the two Lake Associations and other interested constituents was a 17" to 26" protected slot length limit, with one over 26" for Walleye. The goal of this regulation was to increase the average size of Walleye sampled in test net gear and caught by anglers. A public input meeting in the fall of 2004 documented support for this regulation proposal and the regulation went into effect May 10, 2005.

An 11-inch minimum length limit for Black Crappie was proposed in 1996 and implemented in 1997 to improve the size structure of the Black Crappie population on North and South Lida Lakes. Based on data from spring trap net assessments and public input, the regulation was made permanent in 2005. Target (spring trap netting) surveys are conducted every three years on North and South Lida Lakes to analyze the Black Crappie population.

As part of the Quality Sunfish Initiative (QSI), North and South Lida Lakes were proposed as candidate lakes for this regulation process due to the ability to produce quality size Bluegill. In 2021, a public hearing took place, as well as an online survey to determine the support for the proposal. During the spring of 2022, targeted trap netting surveys were conducted to obtain data on the Bluegill populations. The spring target survey data was used in conjunction with other data to develop a regulation proposal package for North and South Lida Lakes. The final proposal recommended by the MN DNR Fisheries and supported by most constituents, was a reduced bag limit of ten Sunfish. The goal

of this regulation was to improve and protect a high-quality Bluegill fishery on North and South Lida Lakes, as well as communicate the vulnerability of spawning Bluegill to harvest and the importance of protecting and limiting the harvest of large Bluegill.

The primary objectives of this creel surveys was to:

- i. Obtain an estimate of fishing and spearing pressure, catch and release rates, yields and size structure of game fish from North and South Lida Lakes during the 2023-2024 winter season.
- ii. Document changes in quality, yield and angling and spearing pressure from the 1985, 1995, 1996, 2002, 2003, and 2004 creel surveys.
- iii. Document angler compliance to the 17-26-inch protected slot limit, with one allowed over 26 inches regulation for Walleye, 11-inch minimum length limit for Black Crappie, daily bag limit of ten Sunfish, and the north-central zone Northern Pike regulations.
- iv. Collect data on other species harvested and released including Largemouth Bass, Rock Bass, Smallmouth Bass and Yellow Perch.

This creel survey did include Venstrom Lake and Bass Harbor of North Lida Lake.

Zebra mussels were discovered in North and South Lida Lakes in 2014, thus data from this creel will be instrumental in monitoring any changes to the lake's fish population.

North Lida Lake is part of a statewide project examining the effects zebra mussels have on Walleye populations.

STUDY AREA

North Lida Lake is a 5,564-acre mesotrophic (moderately fertile) lake located in northwestern Otter Tail County approximately five miles east of Pelican Rapids, MN. North Lida Lake is connected to South Lida Lake by a navigable culvert under State Highway 108 along the south shoreline. North Lida Lake is also connected to Lizzie Lake via a non-navigable culvert under County Road 4. The immediate watershed is composed primarily of agricultural land interspersed with hardwood woodlots. The maximum depth is 58 feet; however, 43% of the lake is 15 feet or less in depth. The secchi disk reading during the 2021 survey was 10.0 feet. Previous secchi disk readings have ranged from 6.0 to 14.5 feet. The dissolved oxygen was 7.1 mg/L at 33 feet. A majority of the shoreline on North Lida Lake has been developed. Homes, cabins, and resorts compose the majority of the development. A DNR owned concrete public water access is located off of County Road 4 along the north shoreline. North Lida Lake is primarily managed for Walleye, Black Crappie, and Bluegill with secondary management for Largemouth Bass, Northern Pike, Smallmouth Bass, and Yellow Perch. Currently, Walleye fry are stocked at a rate of 500 per littoral acre (1,190,000) on a biennial basis (2025 and 2027).

South Lida Lake is an 856-acre mesotrophic (moderately fertile) lake located in northwestern Otter Tail County approximately five miles east of Pelican Rapids, MN. South Lida Lake is connected to North Lida Lake by a navigable culvert under State Highway 108 along the north shoreline of the lake. The immediate watershed is composed primarily of hardwood forest. The maximum depth is 48 feet; however, 42% of the lake is 15 feet or less in depth. The secchi disk reading during the 2021 survey was 9.2 feet. Historical secchi disk readings have ranged from 2.9 to 9.3 feet. The dissolved oxygen was 3.9 mg/L at 15 feet. The south and west shorelines of South Lida Lake have been extensively developed with homes and cabins. A majority of the east shoreline is located within the boundaries of Maplewood State Park. A DNR owned public water access is located within the state park along the southeast

shoreline. A public swimming beach and campground are also located along the east shoreline in the state park. South Lida Lake is primarily managed for Walleye, Black Crappie, and Bluegill with secondary management for Largemouth Bass, Northern Pike, Smallmouth Bass, and Yellow Perch. Currently, Walleye fry are stocked at a rate of 500 per littoral acre (178,000) on a biennial basis (2025 and 2027).

METHODS

Estimates of angler hours (pressure), harvest, release and catch rates by species, total number and pounds harvested, released and caught, and average length and weight for individual species were calculated individually for each lake and for the open water and winter creel surveys. Spearing pressure was also calculated.

Identical supplemental questions were asked to open water and winter anglers regarding the Walleye special regulation. The questions asked included:

- ☐ Are you aware of the Walleye special regulation for this lake?
- ☐ Do you support or oppose the Walleye special regulation?
- ☐ If the special regulation is showing improved size structure for Walleye, do you support maintaining the special regulation?

All interviewees were given the response option of; No comment, Support/Yes, Oppose/No. The creel clerk also recorded specific codes for “previously asked” anglers, and “second party member” to comply with supplemental question formatting (Table 43 and 44, Appendices A and B).

Methods used for determining sample periods for the open water and winter creels are presented separately below. Strata statistics for the open water and winter creel seasons are summarized in Tables 2 - 5.

OPEN WATER

The 2023 summer creel survey on North and South Lida Lakes utilized a stratified random, instantaneous boat count, roving, incomplete trip design (Malvestuto, 1983). It was up to the discretion of the creel clerk in deciding which lake to conduct most interviews based on activity level, but the

general rule was to spend approximately 66% of sampling effort on North Lida Lake and 33% of sampling effort on South Lida Lake. The summer creel clerk reported to Maplewood State Park where he then drove a state-issued vehicle to the designated lake.

Workdays were randomly selected among weekdays and adjusted to sample roughly the same number of each within each time period stratum. All weekend days were scheduled as workdays. The fishing season was divided into six time period strata corresponding to month. The May time period began on the opening of the gamefish season. The length of the fishing day was unique to each stratum based upon day-length tables from the United States Naval Observatory. The fishing day was split into randomly chosen early and late shift. Shift times changed with time period and depended on day length. The creel clerk generally worked five, eight-hour workdays, but the creel sampling day remained at seven hours due to the distance needed to travel from the reporting station. This allowed 0.5 hours each before and after the sampling period for travel, data management, refueling and other tasks.

Two instantaneous pressure counts were performed during each sampling day at randomly selected times with a minimum of 60 minutes between counts. The clerk would circumnavigate the lake at each count time recording both angling activity and recreational boating activity separately (Appendix C). The clerk was instructed to observe boats underway to determine as best as possible if they were fishing or not.

Angler interviews were conducted between pressure counts. All interviews were optional. The interview data included time of the interview, time the party started angling, complete or incomplete trip, primary species sought, secondary species sought (if applicable), party size, age group, and zip code. The clerk was instructed to measure as many harvested fish as possible to the nearest mm. Lengths of released fish were provided by the angling party. The creel clerk asked anglers supplemental Walleye special regulation questions (Appendix A).

WINTER

The 2023-2024 winter creel survey on North and South Lida Lakes utilized a stratified random, roving house count and incomplete trip design (Malvestuto, 1983). A single creel clerk walked on foot from shore or used a snowmobile/ATV to interview anglers on the lake and to conduct instantaneous counts. The winter creel clerk reported to the Fergus Falls Area DNR Office where he then drove a state-issued vehicle to the designated lake.

Workdays were randomly selected among weekdays and adjusted to sample roughly the same number of each within each time period stratum. All weekend days were scheduled as workdays and holidays were given the same statistical weight as a weekend day. The fishing season was divided into time period strata corresponding to month. The December time period began on December 15, 2023, when ice conditions were safe for foot travel. The length of the fishing day was unique to each stratum based upon day-length tables from the United States Naval Observatory. The fishing day was split into randomly chosen early and late shift. Shift times changed with time period and depended on day length. The creel clerk generally worked five, six-hour workdays, but the creel sampling day remained at five hours due to the distance needed to travel from the reporting station. This allowed 0.5 hours each before and after the sampling period for travel, data management, refueling and other tasks.

Two instantaneous pressure counts were performed during each sampling day at randomly selected times with a minimum of 60 minutes between counts. The clerk would circumnavigate the lake at each count time recording both fishing activity and fishing type counts (Appendix D).

Angler interviews were conducted between pressure counts. All interviews were optional. The interview data included time of the interview, time the party started angling, type of fishing, whether they were finished angling, primary species sought, secondary species sought (if applicable), party size, age group, and zip code. The clerk was instructed to measure as many harvested fish as possible to the

nearest mm. Lengths of released fish were provided by the angling party. The creel clerk asked supplemental Walleye special regulation questions (Appendix B). Anglers were only interviewed once per angling trip; however, angling parties were eligible for an updated interview if they were encountered again upon completion of the fishing trip. The clerk was instructed to put an emphasis on maximizing complete trip interviews, while obtaining incomplete trips if necessary.

DATA ANALYSIS

Data analysis for the summer and winter creel surveys were completed correspondingly. All statistical analysis were generated by Creel Survey Module and Excel spreadsheet.

RESULTS AND DISCUSSION

NORTH LIDA OPEN WATER

Angling Effort

Total estimated angling effort for the open water period (May 13 – October 10, 2023) was 13,286 hours, which equates to be 2.39 hours/acre (Table 6). In comparison, the 2003 open water creel survey had an angling effort estimate of 42,875 hours or 7.7 hours/acre, the 2002 open water angling effort estimate was 40,017 hours or 7.19 hours/acre, the 1996 open water angling effort estimate was 33,736 or 6.10 hours/acre, the 1995 open water angling effort was 33,565 or 6.00 hours/acre and the 1985 open water creel had an angling effort estimate of 60,782 hours or 9.70 hours/acre. (Table 9). The 2023 open water creel survey sample periods were similar for all North Lida Lake open water creels conducted: mid-May through mid-October.

In 2023, fishing pressure was greatest during the month of July (3,892 hours) followed by June (2,646 hours), May (2,570 hours), and August (2,283 hours) (Table 6). The majority of summer angling effort was directed at Walleye (50.4 %), followed by no particular species (28.9%), Largemouth Bass (6.1%), Black Crappie (4.1%), Northern Pike (3.9%), Smallmouth Bass (3.6%), and Bluegill/Sunfish (2.9%) (Table 37). Estimated angling effort for other Otter Tail County lakes of similar lake class are presented in Table 38. The number of interviews are represented in Table 2.

The distribution of angler's age was highest in the 35-44 (31.0%) age group followed by 45-54 (24.9%) age group and lowest in the 65+ age group (3.9%). The age distribution was rather uniform in age groups from 0-15, 16-24, 25-34, and 55-64 age groups. Angler gender was heavily skewed towards male; of the 2,686 total anglers interviewed, 80.4% or 2,160 were males. (Table 42). Anglers from Minnesota comprised 67% of all angler's state of residence followed by North Dakota (19%) (Table 41).

Harvest and Catch-Overall

During the 2023 open water creel, the total estimated catch was 11,340 fish or 2.04 fish/ acre, while the total estimated weight was 17,644 pounds or 3.17 pounds/acre (Table 16). Anglers harvested an estimated 1,985 fish (0.36 fish/acre) weighing 2,112 pounds (0.38 pounds/acre) (Tables 12 and 14). The highest catch rates were Northern Pike (0.254 fish/hour) followed by Walleye (0.166 fish/hour) and Black Crappie (0.155 fish/hour). The highest overall harvest rate was Walleye (0.051 fish/hour) followed by Black Crappie (0.028 fish/hour) and Bluegill (0.025 fish/hour) while the highest release rate was Northern Pike (0.245 fish/hour) followed by Largemouth Bass (0.142 fish/hour) and Walleye (0.114 fish/hour) (Table 10). Walleye accounted for 35% of the total number of fish that were harvested followed by Bluegill (18%) and Black Crappie (16%) (Table 12).

Length frequency distributions for fish harvested and released during the open water season are presented in Tables 17.

Harvest and Catch-Species

Overall, the estimated number and pounds of Walleye caught in 2023 was 2,198 (0.39 fish/acre) and 4,758 pounds (0.86 pounds/acre), while the estimated number and pounds of Walleye harvested was 681 fish (0.12 fish/acre) and 954 pounds (0.17 pounds/acre) (Tables 12 and 14). The estimated harvest rate in 2023 was 0.051 fish/hour, while the estimated release rate was 0.114 fish/hour (Table 10). Walleyes caught in 2023 ranged in length from 6.0 inches to 26.0 inches (Table 17). The average length and weight of a caught Walleye on North Lida Lake was 18.1 inches and 2.2 pounds, respectively. The mean length of Walleye reported released was 19.0 inches, weighing 2.5 pounds. The mean length and weight of Walleye harvested in 2023 was 15.9 inches and 1.4 pounds (Table 15). This is comparable to the 2003 (15.8 inches, 1.3 pounds) and 2002 (16.0 inches, 1.4 pounds) open water creel surveys (Wolters, 2004; Wolters, 2003).

It was projected that 643 Bluegill (0.12 fish/acre), weighing 200 pounds (0.04 pounds/acre) were caught during the 2023 open water creel survey on North Lida Lake. The estimated number and pounds of Bluegill harvested was 337 fish (0.06 fish/acre) and 131 pounds (0.06 pounds/acre) (Tables 12 and 14). The estimated harvest rate in 2023 was 0.025 fish/hour, while the estimated release rate was 0.023 fish/hour (Table 10). The average length and weight of a caught Bluegill on North Lida Lake was 7.1 inches and 0.3 pounds, respectively. The mean length of Bluegill reported released was 6.5 inches, weighing 0.2 pounds. The mean length and weight of Bluegill harvested in 2023 was 7.7 inches and 0.4 pounds (Table 15). This is smaller than the 2003 (8.2 inches, 0.5 pounds) and 2002 (7.9 inches, 0.4 pounds) open water creel surveys (Wolters, 2004; Wolters, 2003).

The estimated number and pounds of Black Crappie caught in 2023 was 1,120 (0.20 fish/acre) and 793 pounds (0.14 pounds/acre), while the estimated number and pounds of Black Crappie harvested was 367 fish (0.07 fish/acre) and 309 pounds (0.06 pounds/acre) (Tables 12 and 14). The estimated harvest rate in 2023 was 0.028 fish/hour, while the estimated release rate was 0.057 fish/hour (Table 10). The average length and weight of a caught Black Crappie on North Lida Lake was 10.7 inches and 0.7 pounds, respectively. The mean length of Black Crappie reported released was 10.1 inches, weighing 0.6 pounds. The mean length and weight of Black Crappie harvested in 2023 was 11.3 inches and 0.8 pounds (Table 15). This is slightly smaller than the 2003 (11.8 inches, 1.0 pounds) and 2002 (11.6 inches, 1.0 pounds) open water creel surveys (Wolters, 2004; Wolters, 2003).

Northern Pike total estimated catch was 3,375 fish (0.61 fish/acre) with an estimated harvest of 121 fish (0.02 fish/acre) (Tables 12 and 13). The estimated pounds of Northern Pike harvested in 2023 was 209 (0.04 pounds/acre) (Table 14). In May of 2018, a 22-26 inch protected slot limit with 2 over 26" and up to 10 under 22" went into effect. There were four Northern Pike harvested and measured within the 22-26 inch protected slot limit. Harvested Northern Pike ranged in length from 17.0 inches to 24.0 inches with a mean harvest length of 20.0 inches and 1.7 pounds (Table 16).

There were an estimated 2,063 Largemouth Bass (0.37 fish/acre), weighing 4,277 pounds (0.77 pounds/acre) caught during the 2023 open water creel survey on North Lida Lake. The estimated number and pounds of Largemouth Bass harvested was 173 fish (0.03 fish/acre) and 362 pounds (0.07 pounds/acre) (Tables 12 and 14). The estimated harvest rate in 2023 was 0.013 fish/hour, while the estimated release rate was 0.142 fish/hour (Table 10). The average length and weight of a caught Largemouth Bass on North Lida Lake was 15.2 inches and 2.1 pounds, respectively. The mean length of Largemouth Bass reported released was 15.2 inches, weighing 2.1 pounds. The mean length and weight of Largemouth Bass harvested in 2023 was 15.6 inches and 2.1 pounds (Table 15). This is larger than the 2003 (12.2 inches, 1.0 pounds) and 2002 (13.6 inches, 1.4 pounds) open water creel surveys (Wolters, 2004; Wolters, 2003).

The estimated number and pounds of Smallmouth Bass caught in 2023 was 882 (0.16 fish/acre) and 1,701 pounds (0.31 pounds/acre), while the estimated number and pounds of Smallmouth Bass harvested was 53 fish (0.01 fish/acre) and 114 pounds (0.02 pounds/acre) (Tables 12 and 14). The estimated harvest rate in 2023 was 0.004 fish/hour, while the estimated release rate was 0.062 fish/hour (Table 10). The average length and weight of a caught Smallmouth Bass on North Lida Lake was 14.9 inches and 1.9 pounds, respectively. The mean length of Smallmouth Bass reported released was 14.8 inches, weighing 1.9 pounds. The mean length and weight of Smallmouth Bass harvested in 2023 was 15.6 inches and 2.2 pounds (Table 15). This is much larger than the 2003 (13.1 inches, 1.3 pounds) and 2002 (13.8 inches, 1.5 pounds) open water creel surveys (Wolters, 2004; Wolters, 2003).

An estimated 113 Yellow Perch were caught during the 2023 summer creel survey and none of those were harvested (Table 12). This was considerably the lowest number of Yellow Perch harvested of any North Lida Lake open water creel (Wolters, 2003; Wolters, 2002; Wolters, 1997; Wolters, 1996; Kavanaugh, 1990).

Other species of fish that were caught during the 2023 open water creel are indicated in Table 13, including an estimated catch of 204 Rock Bass, 168 Sunfish species, and 67 Pumpkinseed.

NORTH LIDA WINTER

Angling Effort

In 2023 and 2024, a winter creel survey (December 15, 2023 – March 31, 2024) was conducted on North Lida Lake. A total of 230 interviews were obtained during the four-month creel. The overall mean party size was 1.8 (Table 3). Total estimated angling effort for the winter period was 19,210 hours or 3.45 hours/acre, which was lower than the 2003-2004 (32,620 hours, 6.04 hours/acre) and 1995-1996 (23,193 hours, 4.20 hours/acre) winter creel surveys but higher than the 2002-2003 (15,589 hours, 2.809 hours/acre) and the 1996-1997 (3,003 hours, 0.50 hours/acre) winter creel surveys (Tables 9). Angling pressure was highest for permanent icehouse users (12,043 hours, 2.16 hours/acre) (Table 8 and 39). The 2003-2004 Lida Lakes winter creel survey started mid-December and ended late-March. Previous winter creel surveys on the Lida Lakes began in early-mid December and ended late February or mid-April. The 2023-2024 Lida Lakes winter creel survey was extended through March to obtain information on Black Crappie and Bluegill fishing pressure and harvest estimates. Spearing effort in 2023-2024 (29 hours, 0.01 hours/acre) was the lowest of any previous creel survey. In comparison, the 2003-2004 (998 hours, 0.18 hours/acre), 2002-2003 (387 hours, 0.07 hours/acre), 1996-1997 (247 hours, 0.04 hours/acre), 1995-1996 (1,876 hours, 0.34 hours/acre) winter creel estimates (Table 8 and 39).

The majority of angling pressure in 2023-2024 was directed at Black Crappie (41.0%) followed by Walleye (22.6%), no particular species (17.6%), Bluegill/Sunfish (15.9%), and Northern Pike (2.5%) (Table 37). The distribution of angler's age was highest in the 16-24 age-group at 27.4% and the lowest age was under 65+ years of age at 4.5%. Angler gender was heavily skewed towards male; of the 1,000

anglers interviewed, 940 or 92% were males (Table 42). Anglers from Minnesota comprised 77% of all angler's state of residence (Table 41).

Technology

Technological use was stratified into three categories: none, 2D/Down Imaging, and Forward Facing. There was a total of 2,078 fish harvested and released throughout the winter creel survey. Only 36 fish (1.7%) were harvested, and 120 fish (5.8%) released from anglers using no technology. Anglers using 2D/Down Imaging harvested 262 fish (12.6%) and released 768 fish (37.0%). Notable species/number of fish harvested with this technology include Black Crappie (86), Bluegill/Sunfish (128), Largemouth Bass (23), Northern Pike (12), and Walleye (9). Notable species/number of fish released with 2D/Down Imaging include Black Crappie (266), Bluegill/Sunfish (203), Largemouth Bass (39), Northern Pike (168), Walleye (35), and Yellow Perch (53). Forward Facing Sonar (FFS) contributed to a total of 127 fish (6.1%) harvested and 765 fish (36.8%) released. FFS harvested species/number include Black Crappie (91), Bluegill/Sunfish (21), Largemouth Bass (4), Northern Pike (6), and Walleye (5), while FFS released species/number consisted of Black Crappie (453), Bluegill/Sunfish (74), Largemouth Bass (27), Northern Pike (114), Walleye (42), and Yellow Perch (53).

Harvest and Catch

Catch estimates for the North Lida Lake winter creel survey are presented in Table 18. Anglers caught an estimated 17,872 fish (3.21 fish/acre) weighing 12,841 pounds (2.31 pounds/acre) (Tables 20 and 25). Anglers harvested an estimated 3,539 fish (0.64 fish/acre) weighing 2,737 pounds (0.49 pounds/acre) (Tables 21 and 23). Black Crappie accounted for 43% of the harvest, followed by Bluegill/Sunfish (39%), Largemouth Bass (7%), Northern Pike (5%) and Walleye (4%) (Table 21). In comparison, during the 2003-2004 North Lida Lake winter creel survey, Bluegill accounted for 73% of the harvest, while Northern Pike, Walleye, and Black Crappie only accounted for 8%, 7%, and 7% of the

harvest, respectively (Wolters, 2004). Anglers harvested only 20% of the fish they caught during the 2023-2024 winter creel on North Lida Lake (Table 21 and 22). Harvest per species was highest for Bluegill/Sunfish (81%) followed by Rock Bass (51%), Pumpkinseed (35%), Bluegill (20%), Walleye (17%), and Largemouth Bass (17%). Only 7% of the Northern Pike caught were harvested throughout the 2023-2024 winter creel survey (Table 22).

Overall, an estimated 7,569 Black Crappie were caught (1.36 fish/acre) during the 2023-24 winter creel survey on North Lida Lake, while the estimated number of Black Crappie harvested was 1,539 fish or 0.28 fish/acre (Table 21 and 22). The estimated catch rate was 0.394 fish/hr and the estimated harvest rate was 0.080 fish/hour for Black Crappie (Table 19). The average length of a harvested Black Crappie on North Lida Lake was 11.7 inches and 0.9 pounds while the mean length reported released was 10.2 inches and 0.6 pounds. The mean length and weight of a caught Black Crappie in 2023-2024 was 10.5 inches and 0.7 pounds, respectively (Tables 24). During the 2003-2004 winter creel survey, the mean length and weight of a harvested Black Crappie was 12.2 inches and 1.1 pounds, respectively. The mean length and weight of a released Black Crappie was 9.9 inches and 0.6 pounds. The mean length and weight of a harvested Black Crappie during the 2002-2003 winter creel survey was 12.0 inches and 1.05 pounds, while the mean length and weight of a released Black Crappie was 10.8 inches and 0.78 pounds, respectively (Wolters, 2004; Wolters, 2003). Twenty-one harvested Black Crappies were under the 11-inch minimum length limit.

Overall, an estimated 1,032 Bluegill were caught (0.19 fish/acre) during the 2023-24 winter creel survey on North Lida Lake, while the estimated number of Bluegill harvested was 622 fish or 0.11 fish/acre and released was 410 fish or 0.07 fish/acre (Table 21 and 22). The estimated Bluegill catch rates for all anglers was 0.054 fish/hour and the estimated harvest rate was 0.032 fish/hour (Table 19). The average length of a harvested Bluegill on North Lida Lake was 8.5 inches and 0.50 pounds, and the mean length reported released was 8.7 inches and 0.60 pounds (Tables 24). During the 2003-2004

winter creel survey, the mean length and weight of a harvested Bluegill was 7.5 inches and 0.35 pounds while the mean length and weight of a released Bluegill was 4.8 inches and 0.08 pounds. The mean length and weight of a harvested Bluegill during the 2002-2003 winter creel survey was 7.5 inches and 0.35 pounds, while the mean length and weight of a released Bluegill was 4.9 inches and 0.09 pounds, respectively (Wolters, 2004; Wolters 2003).

Winter anglers caught an estimated 743 Walleye (0.13 fish/acre) weighing 1,609 pounds (0.29 pounds/acre) (Tables 21 and 22). This is far less than the 1,291 Walleye (0.23 fish/acre) and 981 Walleye (0.18 fish/acre) in the 2003-2004 and 2002-2003 winter creel surveys (Wolters 2004, Wolters, 2003). The catch and harvest rate for Walleye was 0.039 fish/hour and 0.007 fish/hour, respectively (Table 18). The length of Walleye caught during the North Lida winter creel survey ranged from 9.0 inches to 25.0 inches with a mean length of 18.1 inches and 2.2 pounds. The mean length of a Walleye harvested and released was 15.6 inches and 18.6 inches, respectively. The mean weight of a harvested Walleye was 1.3 pounds, and the mean weight of a released Walleye was 2.4 pounds (Tables 24). Three harvested Walleyes were within the 17–26-inch protected slot.

The total number of Northern Pike harvested by anglers in 2023-2024 was 184 fish (0.03 fish/acre) weighing 306 pounds (0.05 pounds/acre) (Tables 21 and 23). The length of Northern Pike caught during the North Lida Lake winter creel survey ranged from 9.0 inches to 31.0 inches with a mean length of 17.0 inches, weighing 1.2 pounds. The mean size of a Northern Pike harvested was 19.5 inches and 1.7 pounds while the mean length of a released Northern Pike was 16.8 inches and 1.1 pounds (Tables 24). There was only an estimated 29 hours of spearing effort during the 2023-2024 winter creel survey. Estimated spearing effort for other Otter Tail County lakes of similar lake class are presented in Table 40. The total number of Northern Pike harvested in 2003-2004 was 1,591 fish (0.29 fish/acre) and 982 fish (0.18 fish/acre) in 2002-2003 (Wolters, 2004; Wolters, 2003).

There were no Yellow Perch harvested during the 2023-2024 survey (Table 21). Similarly, during the 2003-2004 winter season, an estimated 26 Yellow Perch (0.00 fish/acre) were harvested, and zero Yellow Perch were harvested in 2002-2003 (Wolters, 2004; Wolters, 2003).

Other species of fish that were caught during the 2023-2024 winter creel survey are shown in Table 21.

SOUTH LIDA OPEN WATER

Angling Effort

Total estimated angling effort for the open water period (May 13 – October 10, 2023) was 7,399 hours, which equates to be 8.64 hours/acre (Table 6). In comparison, the 2003 open water creel survey had an angling effort estimate of 19,012 hours or 22.21 hours/acre, the 2002 open water angling effort estimate was 18,011 hours or 21.03 hours/acre, the 1996 open water angling effort estimate was 23,432 or 27.40 hours/acre, the 1995 open water angling effort was 19,079 or 22.30 hours/acre and the 1985 open water creel had an angling effort estimate of 30,251 hours or 35.30 hours/acre. (Table 9). The 2023 open water creel survey sample periods were similar for all South Lida Lake open water creels conducted: mid-May through mid-October.

In 2023, fishing pressure was greatest during the month of July (1,971 hours) followed by June (1,768 hours) and May (1,519 hours) (Table 6). The majority of angling effort for the open water season was directed at Walleye (74.1%) followed by no particular species (11.1%), Black Crappie (10.0%), Northern Pike (1.7%), and Largemouth Bass (1.4%) (Table 37). Estimated angling effort for other Otter Tail County lakes of similar lake class are presented in Table 38. The number of interviews are represented in Table 4. The distribution of angler's age was highest in the 35-44 (34.0%) age group and lowest in the 65+ age group (3.9%). Angler gender was heavily skewed towards male; of the 1,419 total

anglers interviewed, 81.0% or 1,149 were males. (Table 42). Anglers from Minnesota and North Dakota comprised 65.5% and 20.4% of all angler's state of residence, respectively (Table 41).

Harvest and Catch-Overall

During the 2023 open water creel, the total estimated catch was 8,382 fish or 9.79 fish/ acre, while the total estimated weight was 10,752 pounds or 12.56 pounds/acre (Tables 29, 30 and 33). Anglers harvested an estimated 872 fish (1.02 fish/acre) weighing 882.2 pounds (1.03 pounds/acre) (Tables 29 and 31). The highest catch rates were Sunfish (0.314 fish/hour) followed by Northern Pike (0.286 fish/hour) and Largemouth Bass (0.267 fish/hour). The highest overall harvest rate was for Black Crappie (0.044 fish/hour) followed by Bluegill (0.019 fish/hour), Sunfish (0.018 fish/hour), and Walleye (0.015 fish/hour) while the highest release rate was Sunfish (0.296 fish/hour) followed by Northern Pike (0.279 fish/hour), and Largemouth Bass (0.254 fish/hour) (Table 27). Black Crappie accounted for 37% of the total number of fish that were harvested followed Bluegill/Sunfish and Walleye, 31% and 15% respectively (Table 29). Length frequency distributions for fish harvested and during the open water season are presented in Table 34.

Harvest and Catch-Species

Overall, the estimated number and pounds of Walleye caught in 2023 was 653 (0.76 fish/acre) and 1,798 pounds (2.10 pounds/acre), while the estimated number and pounds of Walleye harvested was 112 fish (0.13 fish/acre) and 140.4 pounds (0.16 pounds/acre) (Tables 29, 30, 31, and 33). The estimated harvest rate in 2023 was 0.015 fish/hour, while the estimated release rate was 0.073 fish/hour (Table 27). Walleyes caught in 2023 ranged in length from 14.5 inches to 16.7 inches (Table 34). The average length and weight of a caught Walleye on South Lida Lake was 19.6 inches and 2.8 pounds. The mean length of Walleye reported released was 20.4 inches, weighing 3.1 pounds. The mean length and weight of Walleye harvested in 2023 was 15.6 inches and 1.3 pounds (Table 32). This is

comparable to the 2003 (16.7 inches, 1.6 pounds) and 2002 (16.4 inches, 1.5 pounds) open water creel surveys (Wolters, 2004; Wolters, 2003).

It was projected that 313 Bluegill (0.37 fish/acre), weighing 95 pounds (0.11 pounds/acre) were caught during the 2023 open water creel survey on South Lida Lake. The estimated number and pounds of Bluegill harvested was 139 fish (0.16 fish/acre) and 46.3 pounds (0.05 pounds/acre) (Tables 29, 30, 31, and 33). The estimated harvest rate in 2023 was 0.019 fish/hour, while the estimated release rate was 0.024 fish/hour (Table 27). The average length and weight of a caught Bluegill on South Lida Lake was 7.1 inches and 0.3 pounds, respectively. The mean length of Bluegill reported released was 7.0 inches, weighing 0.3 pounds. The mean length and weight of Bluegill harvested in 2023 was 7.3 inches and 0.3 pounds (Table 32). This is similar to the 2003 (7.6 inches, 0.4 pounds) survey and larger than the 2002 (5.5 inches, 0.1 pounds) open water creel survey (Wolters, 2004; Wolters, 2003).

There were 2,320 fish (2.71 fish/acre) caught that were identified as sunfish species during the 2023 South Lida open water creel survey. Anglers harvested 133 (0.16 fish/acre) of the 2,320 sunfish (6%). The mean length of a caught, released, and harvested sunfish was 6.9 inches, 6.8 inches, and 7.9 inches, respectively. There is no length-weight correlation on sunfish species. Sunfish species include; hybrid sunfish, green sunfish, or unable to identify sunfish species.

The estimated number and pounds of Black Crappie caught in 2023 was 773 (0.90 fish/acre) and 584 pounds (0.68 pounds/acre), while the estimated number and pounds of Black Crappie harvested was 326 fish (0.38 fish/acre) and 300.2 pounds (0.35 pounds/acre) (Tables 29, 30, 31, and 33). The estimated harvest rate in 2023 was 0.044 fish/hour, while the estimated release rate was 0.060 fish/hour (Table 27). The average length and weight of a caught Black Crappie on South Lida Lake was 10.9 inches and 0.8 pounds, respectively. The mean length of Black Crappie reported released was 10.2 inches, weighing 0.6 pounds. The mean length and weight of Black Crappie harvested in 2023 was 11.7 inches and 0.9 pounds

(Table 32). This is equivalent to the 2003 (11.7 inches, 1.0 pounds) and slightly smaller than the 2002 (12.0 inches, 1.1 pounds) open water creel surveys (Wolters, 2004; Wolters, 2003).

Northern Pike total estimated catch was 2,119 fish (2.48 fish/acre) with an estimated harvest of 54 fish (0.06 fish/acre) (Tables 29 and 30). The estimated pounds of Northern Pike harvested in 2023 was 164.3 (0.19 pounds/acre) (Table 31). In May of 2018, a 22-26 inch protected slot limit with 2 over 26" and up to 10 under 22" went into effect. There was one Northern Pike harvested and measured within the 22-26 inch protected slot limit. Harvested Northern Pike ranged in length from 20.2 inches to 29.2 inches with a mean harvest length of 24.2 inches and 3.1 pounds (Tables 32 and 34).

There were an estimated 1,973 Largemouth Bass (2.30 fish/acre), weighing 4,142 pounds (4.84 pounds/acre) caught during the 2023 open water creel survey on South Lida Lake. The estimated number and pounds of Largemouth Bass harvested was 94 fish (0.11 fish/acre) and 220.1 pounds (0.26 pounds/acre) (Tables 29, 30, 31, and 33). The estimated harvest rate in 2023 was 0.013 fish/hour, while the estimated release rate was 0.254 fish/hour (Table 27). The average length and weight of a caught Largemouth Bass on North Lida Lake was 15.3 inches and 2.1 pounds. The mean length of a Largemouth Bass reported released was 15.2 inches, weighing 2.1 pounds. The mean length and weight of Largemouth Bass harvested in 2023 was 16.1 inches and 2.3 pounds (Table 32). This is larger than the 2003 (13.2 inches, 1.3 pounds) and 2002 (14.4 inches, 1.7 pounds) open water creel surveys (Wolters, 2004; Wolters, 2003).

The estimated number and pounds of Smallmouth Bass caught in 2023 was 108 (0.13 fish/acre) and 184 pounds (0.22 pounds/acre) (Tables 29 and 30). The estimated catch rate in 2023 was 0.015 fish/hour (Table 27). The average length and weight of a caught Smallmouth Bass on South Lida Lake was 14.4 inches and 1.7 pounds. This is much larger than the 2003 (12.2 inches, 1.2 pounds) and comparative to the 2002 (14.7 inches, 1.8 pounds) open water creel surveys (Wolters, 2004; Wolters,

2003). There were no reported harvested Smallmouth Bass during the 2023 South Lida open water creel.

An estimated 57 Yellow Perch were caught during the 2023 summer creel survey and none of those were harvested (Table 29 and 30). This was the only time Yellow Perch have not been harvested of any South Lida Lake open water creel surveys (Wolters, 2003; Wolters, 2002; Wolters, 1997; Wolters, 1996; Kavanaugh, 1990).

Other species of fish that were caught during the 2023 open water creel are indicated in Tables 29 and 30, including an estimated catch of 14 Pumpkinseed and 52 Rock Bass.

SOUTH LIDA WINTER

Angling Effort

In 2023 and 2024, a winter creel survey (December 15, 2023 – March 14, 2024) was conducted on South Lida Lake. A total of 17 interviews were obtained during the four-month creel. The overall mean party size was 1.4 (Table 5). Total estimated angling effort for the winter period was 3,231 hours or 3.77 hours/acre, which was lower than the 2003-2004 (38,297 hours, 44.74 hours/acre) and 1995-1996 (4,005 hours, 4.70 hours/acre) winter creel surveys but slightly higher than the 2002-2003 (3,030 hours, 3.54 hours/acre) and the 1996-1997 (1,839 hours, 2.20 hours/acre) winter creel surveys (Tables 9 and 39). Angling pressure was highest for portable icehouse users (2,384 hours, 2.79 hours/acre) (Table 8). The 2003-2004 Lida Lakes winter creel survey started mid-December and ended late-March. Previous winter creel surveys on the Lida Lakes began in early-mid December and ended late February or mid-April. The 2023-2024 Lida Lakes winter creel survey was extended into March to obtain information on Black Crappie and Bluegill fishing pressure and harvest estimates. Spearing effort in 2023-2024 (14 hours, 0.02 hours/acre) was the second lowest of any previous creel survey. In comparison, the 2003-2004 (278 hours, 0.33 hours/acre), 2002-2003 (0 hours, 0.00 hours/acre), 1996-

1997 (579 hours, 0.70 hours/acre), 1995-1996 (1,478 hours, 1.70 hours/acre) winter creel estimates (Table 40).

The majority of angling pressure in 2023-2024 was directed at Black Crappie (94.0%) followed by no particular species (3.0%), and Northern Pike (3.0%) (Table 37). The distribution of angler's age was highest in the 65+ age-group at 25% and the lowest age was under 16-25 years of age at 0%. Angler gender was heavily skewed towards male; of the 65 anglers interviewed, 59 or 91% were males (Table 42). Anglers from Minnesota comprised 57% of all angler's state of residence (Table 41). Due to poor ice conditions throughout the creel survey, the creel clerk was able to count, but incapable of interviewing most anglers, leading to catch, harvest, and release rates and numbers with high variances.

Technology

Technological use was stratified into three categories: none, 2D/Down Imaging, and Forward Facing. There was a total of 33 fish harvested and released throughout the winter creel survey. There were no fish harvested and released from anglers using no technology. Anglers using 2D/Down Imaging harvested 2 fish (6.1%) and released 3 fish (9.1%). The only species harvested with this technology was Northern Pike (2). Notable species/number of fish released with 2D/Down Imaging include Black Largemouth Bass (1) and Yellow Perch (2). Forward Facing Sonar (FFS) contributed to a total of 2 fish (6.1%) harvested and 24 fish (72.7%) released. FFS harvested species/number include Black Crappie (2) while FFS released species/number consisted of Largemouth Bass (24). These numbers may be misleading due to the low number of angler interviews and catch data.

Harvest and Catch

The estimated catch, harvest, and release rates and numbers will not be presented in this report due to the small sample size of interviews resulting in inaccurate estimates. The actual number of fish caught, as well as the length frequency distribution of caught fish is depicted in Table 36

FUTURE CONSIDERATIONS

Data to monitor moving forward may include asking technology questions during the open water creel. Another consideration could be to specify the broad sunfish category into species. Additionally, if there are poor ice conditions throughout the next winter creel survey it may be beneficial to have a contingency lake access point.

ADDITIONAL INFORMATION

There were reports of a few muskellunge caught during the open water creel survey, but no data was collected by our creel clerk.

SUPPLEMENTAL WALLEYE INFORMATION

Anglers were asked a series of three questions pertaining to the Walleye special regulation on North and South Lida Lakes (Table 47 and Appendix B). During the summer and winter creel survey on North Lida Lake, the Walleye supplemental questions were asked to 350 and 180 anglers, respectively, who hadn't been previously asked the series of questions. Based on the series and number of supplemental questions, data entry of the supplemental questions was limited in order to obtain accurate demographic information. An overwhelming majority of anglers supported the Walleye special regulation and supported maintaining the special regulation if the size structure of Walleye is improving (Table 47).

During the summer and winter creel survey on South Lida Lake, the Walleye supplemental questions were asked to 156 and 24 anglers, respectively, who hadn't been previously asked the series of questions. Based on the series and number of supplemental questions, data entry of the supplemental questions was limited in order to obtain accurate demographic information. The majority

of anglers supported the Walleye special regulation and supported maintaining the special regulation if the size structure of Walleye is improving (Table 48).

Numerous anglers supported the idea of a Walleye regulation but would prefer to have the protected slot limit liberalized to allow more harvest of Walleye.

ACKNOWLEDGEMENTS

I would like to thank the following people: Bryce Siepel for his work as creel clerk throughout the 2023 open water creel and Jake Jensen for his work as creel clerk throughout the 2023-2024 winter creel survey. Jim Wolters, Ethan Rasset, Steve Kubeny, Ben Johnson, and Tom Mauer for their review of the creel survey report draft. Their comments and suggestions have been incorporated into this report to make it a better document. All the anglers and spearers of North and South Lida Lakes who took the time from their fishing experience to talk to the DNR creel clerks to provide information making this document important. This project was funded under Federal Aid by the Sport Fish Restoration Act to Minnesota, F-29-RP-36-1.

REFERENCES

- Fierstine, H. L. 1985a. Creel survey of West Battle and Clitherall Lakes, Otter Tail, County, Minnesota, May 14-October 23, 1983. Minnesota Department of Natural Resources, Section of Fisheries Completion Report, F-29-R(P)-3, Study 5, St. Paul, Minnesota.
- Fierstine, H. L. 1985b. Creel study of Otter Tail Lake, Otter Tail Lake, Otter Tail, County, Minnesota 1983-1984. Minnesota Department of Natural Resources, Section of Fisheries Completion Report, F-29-R(P)-4, Study 5, Job 2, St. Paul, Minnesota.
- Fierstine, H. L. and C. M. Kavanaugh. 1986. Creel survey of North and South Lida Lakes, Otter Tail County, Minnesota, May 18 – September 15, 1985. Minnesota Department of Natural Resources, Section of Fisheries Completion Report, F—29-R(P)-4, Study 5, Job 19, St. Paul, Minnesota.
- Fullhart, H. G. and Wolters, J. D. 2008. A Summer Creel Survey of Rush and Little McDonald Lakes, Otter Tail County, Minnesota, 2008. Minnesota Department of Natural Resources, Section of Fisheries, Completion Report, F-29-R(P)-27, Study 4, Job 776.
- Kavanaugh, C. M. 1988. Creel survey of Dead and Star Lakes, Otter Tail County, Minnesota, May 16 – September 7, 1987. Minnesota Department of Natural Resources, Section of Fisheries Completion Report, F-29-R(P)-7, Study 5, Job 83, St. Paul, Minnesota.
- Kavanaugh, C. M. 1990. Creel survey of Big Pine and Little Pine Lakes, Otter Tail County, May – September 1989 and December 1989 – February 1990. Minnesota Department of Natural Resources, Section of Fisheries, Completion Report, F-29-R(P)-9, Study 4, Job 156, St. Paul, Minnesota.
- Kavanaugh, C. M. and H. L. Fierstine. 1987. 1986 – 1987 creel survey of Heilberger, Jewett, Long, Swan, Tonseth and Wall Lakes, Otter Tail County, Minnesota. Minnesota Department of Natural Resources, Section of Fisheries Completion Report, F-29-R(P)-7-, Study 5, Job 51, St. Paul, Minnesota.
- Malvestuto, S. P. 1983. Sampling the recreational fishery. Pages 397 – 419 in L.A. Nielsen and D.L. Johnson, editors. Fisheries Techniques. American Fisheries Society, Bethesda, Maryland.
- Marwitz, T. D. 1997. Lida Lakes Creel Survey Report, May 11, 1996 – February 28, 1997. Minnesota Department of Natural Resources, Section of Fisheries Completion Report to the Legislative Commission on Minnesota Resources. 55 pp.
- Marwitz, T. D. 1996. Lida Lakes Creel Survey Report, May 13, 1995 – April 18, 1996. Minnesota Department of Natural Resources, Section of Fisheries, Completion Report to the Legislative Commission on Minnesota Resources. 49 pp.

- Schalekamp, L. S. 2020. A Summer and Winter Creel Survey of Otter Tail Lake, Otter Tail County, Minnesota, 2019 - 2020. Minnesota Department of Natural Resources, Section of Fisheries, Completion Report, F-29-RP-34-1, Study IV, Job 1076, St Paul, Minnesota.
- Schreiner, D. R. 1983. Analysis of Historical Walleye Information on Otter Tail Lake. Minnesota Department of Natural Resources, Section of Fisheries, Completion Report. F-29-R(P)-6, Study 5, Job 49.
- Schupp, D. H. 1992. An ecological classification of Minnesota lakes with associated fish communities. Minnesota Department of Natural Resources, Section of Fisheries Investigational Report 417. 28 pp.
- Wolters, J. D. 1992. Creel Survey of Crystal, Franklin and Lizzie Lakes, Otter Tail County, May – September, 1991, and December 1, 1991 – February 15, 1992. Minnesota Department of Natural Resources, Section of Fisheries, Completion Report, F-29-R(P) 10, Study 4, Job 189, St. Paul, Minnesota.
- Wolters, J. D. 1995. A Summer and Winter Creel Survey of Otter Tail Lake, Otter Tail County, Minnesota, 1994 - 1995. Minnesota Department of Natural Resources, Section of Fisheries, Completion Report, F-29-R(P)-14, Study 4, Job 326, St Paul, Minnesota.
- Wolters, J. D. 1996. A Summer and Winter Creel Survey of Otter Tail Lake, Otter Tail County, Minnesota, 1994 - 1995. Minnesota Department of Natural Resources, Section of Fisheries, Completion Report, F-29-R(P)-15, Study 4, Job 326, St Paul, Minnesota.
- Wolters, J. D. 2001. A Winter and Summer Creel Survey of Clitherall and West Battle Lakes, Otter Tail County, Minnesota, 1999 - 2000. Minnesota Department of Natural Resources, Section of Fisheries, Completion Report, F-29-R(P)-20, Study 4, Job 523, St. Paul, Minnesota.
- Wolters, J. D. 2003. A Summer and Winter Creel Survey of Big and Little Pine Lakes, Otter Tail County, Minnesota, 2001 – 2002. Minnesota Department of Natural Resources, Section of Fisheries, Completion Report, F-29-R(P)-22, Study 4, Job 633, St Paul, Minnesota.
- Wolters, J. D. 2004. A Summer and Winter Creel Survey of North and South Lida Lakes, Otter Tail County, Minnesota, 2002 – 2003. Minnesota Department of Natural Resources, Division of Fisheries, Completion Report, F-29-R(P)-23, Study 4, Job 641, St. Paul, Minnesota.
- Wolters, J. D. 2005. A Summer and Winter Creel Survey of North and South Lida Lakes, Otter Tail County, Minnesota, 2002 – 2003. Minnesota Department of Natural Resources, Division of Fisheries, Completion Report, F-29-R(P)-24, Study 4, Job 704, St. Paul, Minnesota.

Table 1. Selected descriptive characteristics of North and South Lida Lakes, Otter Tail County, Minnesota.

Characteristic	North Lida	South Lida
DOW Number	56-747-1	56-747-2
Minnesota lake class	27	25
Total surface area (acres)	5,564	856
Littoral area (acres)	2,393	360
Maximum Depth	58	48

^a Schupp (1992, revised)

^b 2018 Lake survey data

Table 2. Creel survey sampling summary by stratum for North Lida Lake, Otter Tail County, Minnesota from May 13 to October 10, 2023. Standard errors appear in parentheses.

Statistic	May	June	July	August	September	October	Season Total
Start Date of Stratum	5/13/2023	6/1/2023	7/1/2023	8/1/2023	9/1/2023	10/1/2023	5/13/2023
End Date of Stratum	5/31/2023	6/30/2023	7/31/2023	8/31/2023	9/30/2023	10/16/2023	10/10/2023
Length of Fishing Day	14	14	14	14	14	14	
Days in Stratum	19	30	31	31	30	10	151
High Use Days	6	9	10	8	10	3	46
Low Use Days	13	21	21	23	20	7	105
Number of Counts	22	34	38	34	34	14	176
Number of Interviews	89	141	170	76	67	17	560
Completed Trip Interviews	11	2	1	0	0	0	14
Completed Trip Percentage	12%	1%	1%	0%	0%	0%	3%
Average Angler Count (SE)	1.81 (0.69)	1.86 (0.00)	2.25 (0.00)	2.13 (0.62)	1.90 (0.51)	1.76 (0.52)	1.95
Average Completed Trip Length (SE)	3.35 (0.00)	7.69 (0.00)	4.10 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	--

Table 3. Creel survey sampling summary by stratum for North Lida Lake, Otter Tail County, Minnesota from December 15, 2023, to March 31, 2024. Standard errors appear in parentheses.

Statistic	December	January	February	March	Season Total
Start Date of Stratum	12/15/2023	1/1/2024	2/1/2024	3/1/2024	12/15/2023
End Date of Stratum	12/31/2023	1/31/2024	2/28/2024	3/31/2024	3/31/2024
Length of Fishing Day	10	10	10	10	
Days in Stratum	17	31	29	31	108
High Use Days	6	8	8	10	32
Low Use Days	11	23	21	21	76
Number of Counts	6	36	28	18	88
Number of Interviews	10	126	86	8	230
Completed Trip Interviews	1	0	5	1	7
Completed Trip Percentage	10%	0%	6%	13%	3%
Average Angler Count (SE)	1.94 (0.00)	1.69 (0.00)	1.87 (0.00)	1.55 (0.00)	1.76
Average Completed Trip Length (SE)	0.67 (0.00)	0.00 (0.00)	3.21 (0.00)	4.43 (0.00)	--

Table 4. Creel survey sampling summary by stratum for South Lida Lake, Otter Tail County, Minnesota from May 13 to October 10, 2023. Standard errors appear in parentheses.

Start Date of Stratum	05/13/2023	06/01/2023	07/01/2023	08/01/2023	09/01/2023	10/01/2023	05/13/2023
End Date of Stratum	05/31/2023	06/30/2023	07/31/2023	08/31/2023	09/30/2023	10/10/2023	10/10/2023
Length of Fishing Day	14.0	14.0	14.0	14.0	14.0	14.0	
Days in Stratum	19	30	31	31	30	10	151
High Use Days	6	9	10	8	10	3	46
Low Use Days	13	21	21	23	20	7	105
Number of Counts	22	36	37	33	34	14	176
Number of Interviews	59	88	85	45	56	8	341
Completed Trip Interviews	0	1	1	0	0	1	3
Completed Trip Percentage	0%	1%	1%	0%	0%	13%	1%
Average Angler Count (SE)	1.91 (0.68)	1.66 (0.00)	1.92 (0.00)	1.96 (0.00)	1.94 (0.58)	1.68 (0.69)	1.85
Average Completed Trip Length (SE)	0.0 (0.00)	6.0 (0.00)	2.25 (0.00)	0.0 (0.00)	0.0 (0.00)	3.17 (0.00)	--

Table 5. Creel survey sampling summary by stratum for South Lida Lake, Otter Tail County, Minnesota from December 15, 2023, to March 14, 2024. Standard errors appear in parentheses.

Statistic	December	January	February	March
Start Date of Stratum	12/15/2023	01/01/2024	02/01/2024	03/01/2024
End Date of Stratum	12/31/2023	01/31/2024	02/29/2024	03/14/2024
Length of Fishing Day	10.0	15.0	10.0	15.0
Days in Stratum	17	31	29	14
High Use Days	6	8	8	4
Low Use Days	11	23	21	10
Number of Counts	6	36	28	18
Number of Interviews	0	12	5	0
Completed Trip Interviews	0	2	0	0
Completed Trip Percentage	0%	17%	0%	0%
Average Angler Count (SE)	--	1.34 (0.00)	1.46 (0.00)	1.40
Average Completed Trip Length (SE)	--	2.45 (0.00)	0.0 (0.00)	--

Table 6. Total angling pressure estimates (hours) for North and South Lida Lakes, Otter Tail County, Minnesota from May 13 to October 10, 2023.

Statistic	May	June	July	August	September	October	Season Total
North Lida							
Weekdays	798	1,959	2,153	1,490	804	135	7,339
Weekend days	1,772	778	1,739	793	698	169	5,947
Total	2,570	2,736	3,892	2,283	1,501	304	13,286
Total (per acre)	0.23	0.25	0.35	0.21	0.13	0.03	2.39
South Lida							
Weekdays	521	1,133	1,070	647	335	107	3,813
Weekend days	998	634	901	470	541	42	3,586
Total	1,519	1,768	1,971	1,117	876	149	7,399
Total (per acre)	1.77	2.06	2.30	1.31	1.02	0.17	8.64

Table 7. Total angling pressure estimates (hours) for North and South Lida Lakes, Otter Tail County, Minnesota from December 15, 2023, to March 31, 2024.

Statistic	December	January	February	March	Season Total
North Lida					
Weekdays	110	7,366	1,173	140	8,788
Weekend days	330	7,843	1,936	313	10,422
Total	440	15,209	3,109	453	19,210
Total (per acre)	0.04	1.37	0.28	0.04	3.45
South Lida					
Weekdays	--	2,233	79	10	2,322
Weekend days	--	766	143	--	909
Total	--	2,999	222	10	3,231
Total (per acre)	--	3.50	0.26	0.01	3.77

Table 8. Total angling pressure estimates by angler type for North and South Lida Lakes, Otter Tail County, Minnesota from December 15, 2023, to March 31, 2024.

Statistic		December		January		February		March		Season Total	
North Lida	Angler Type	Hours	/acre	Hours	/acre	Hours	/acre	Hours	/acre	Hours	/acre
	Permanent	--	--	11,863	1.07	180	0.02	--	--	12,043	2.16
	Portable	180	0.02	2,700	0.24	2,206	0.20	340	0.03	5,426	0.98
	Spear	-	--	29	0.01	-	--	--	--	29	0.01
	Open-Ice	260	0.02	617	0.06	723	0.06	1478	0.31	1,712	0.31
	Total	440	0.04	15,209	1.37	3,109	0.28	453	0.04	19,210	3.45
South Lida	Permanent	--	--	--	--	--	--	--	--	--	--
	Portable	--	--	2,200	2.57	184	0.21	--	--	2,384	2.79
	Spear	--	--	134	0.16	--	--	--	--	134	0.16
	Open-Ice	--	--	665	0.78	38	0.04	10	0.01	713	0.83
	Total	--	--	2,999	3.51	222	0.26	10	0.01	3,231	3.77

Table 9. Total angling pressure estimates from all open water and winter creel surveys for North and South Lida Lakes, Otter Tail County, Minnesota.

Year	North Lida OW		North Lida Winter		South Lida OW		South Lida Winter	
	Hours	Hours/Acre	Hours	Hours/Acre	Hours	Hours/Acre	Hours	Hours/Acre
2023-2024	13,286	2.39	19,210	3.45	7,399	8.64	3,231	3.77
2003-2004	42,875	7.70	32,620	5.86	19,012	22.21	38,297	4.47
2002-2003	40,017	7.19	15,589	2.80	18,011	21.04	3,033	3.54
1996-1997	33,736	6.10	3,003	0.50	23,432	27.40	1,839	2.20
1995-1996	33,565	6.00	23,193	4.2	19,079	22.30	4,005	4.70
1985	60,782	9.70	--	--	30,251	35.30	--	--

Table 10. Estimated catch rates (fish/hour) for all anglers by stratum for North Lida Lake, Otter Tail County, Minnesota from May 13 to October 10, 2023.

		May	June	July	August	September	October	Season Total	
Species		Rate	Rate	Rate	Rate	Rate	Rate	Rate	SE
Black Crappie	Harvest	0.132	0.003	0.001	0.008	--	--	0.028	0.000
	Release	0.245	0.015	--	0.036	--	--	0.057	0.002
	Catch	0.376	0.017	0.002	0.043	--	--	0.084	0.002
Bluegill	Harvest	0.062	0.004	0.003	0.044	0.035	--	0.025	0.000
	Release	0.009	0.003	0.022	0.065	0.028	--	0.023	0.000
	Catch	0.072	0.007	0.025	0.109	0.064	--	0.048	0.000
Largemouth Bass	Harvest	0.021	0.014	0.001	0.020	0.022	--	0.013	0.000
	Release	0.102	0.188	0.141	0.113	0.171	0.163	0.142	0.001
	Catch	0.123	0.203	0.142	0.133	0.193	0.163	0.155	0.001
Northern Pike	Harvest	0.003	--	0.009	0.023	0.019	--	0.009	0.000
	Release	0.215	0.366	0.105	0.311	0.322	0.317	0.245	0.001
	Catch	0.218	0.366	0.113	0.335	0.341	0.317	0.254	0.001
Pumpkinseed	Harvest	0.003	--	0.005	0.012	0.008	--	0.005	0.000
	Release	--	--	0.005	--	--	--	0.001	--
	Catch	0.003	--	0.010	0.012	0.008	--	0.006	--
Rock Bass	Harvest	--	--	--	0.008	--	--	0.001	0.000
	Release	--	0.016	0.011	0.036	0.012	--	0.014	0.000
	Catch	--	0.016	0.011	0.044	0.095	--	0.015	--
Smallmouth Bass	Harvest	--	--	0.003	0.008	0.015	--	0.004	0.000
	Release	0.039	0.053	0.072	0.097	0.034	0.105	0.062	0.000
	Catch	0.039	0.053	0.075	0.105	0.049	0.105	0.066	--
Sunfish	Harvest	0.009	0.013	0.012	0.027	--	--	0.013	0.000
	Release	--	0.070	0.053	0.019	0.032	--	0.037	0.000
	Catch	0.009	0.083	0.065	0.046	0.032	--	0.049	--
Walleye	Harvest	0.056	0.049	0.051	0.060	0.045	--	0.051	0.000
	Release	0.171	0.175	0.064	0.080	0.082	0.135	0.114	0.000
	Catch	0.227	0.224	0.116	0.140	0.127	0.135	0.165	0.001
Yellow Perch	Harvest	--	--	--	--	--	--	--	--
	Release	0.003	0.008	0.010	0.008	0.017	--	0.009	0.000
	Catch	0.003	0.008	0.010	0.008	0.017	--	0.009	0.000

Table 11. Estimated catch rates (fish/hour) for targeting species by stratum for North Lida Lake, Otter Tail County, Minnesota from May 13 to October 10, 2023.

		May	June	July	August	September	October	Season Total	
Species		Rate	Rate	Rate	Rate	Rate	Rate	Rate	SE
Black Crappie	Harvest	0.924	0.333	0.187	--	--	--	0.525	0.158
	Release	4.255	0.667	--	0.425	--	--	1.645	0.441
	Catch	5.173	1.000	0.187	0.425	--	--	1.783	0.258
Bluegill	Harvest	3.030	--	0.661	0.370	--	--	1.158	0.151
	Release	--	--	--	0.648	--	--	0.648	0.234
	Catch	3.030	--	0.661	1.018	--	--	1.509	0.096
Largemouth Bass	Harvest	1.232	0.074	0.092	0.187	--	--	0.234	0.083
	Release	1.122	0.519	2.885	1.515	1.955	--	1.645	0.348
	Catch	1.049	0.573	2.915	1.654	1.955	--	1.684	0.341
Northern Pike	Harvest	--	--	0.164	0.946	0.533	--	0.552	0.278
	Release	--	1.485	0.644	--	0.292	--	1.037	0.247
	Catch	--	1.485	0.600	0.946	0.533	0.292	0.920	0.223
Smallmouth Bass	Harvest	--	--	--	--	0.348	--	0.348	0.227
	Release	0.292		0.825	1.514	0.246	1.333	0.965	0.481
	Catch	0.292	--	0.825	1.514	0.422	1.333	0.878	0.395
Sunfish	Harvest	--	0.222	0.415	0.158	--	--	0.272	0.223
	Release	--	--	0.512	--	--	--	0.512	0.258
	Catch	--	0.222	0.723	0.158	--	--	0.449	0.135
Walleye	Harvest	0.060	0.074	0.127	0.151	0.152	--	0.117	0.018
	Release	0.443	0.279	0.152	0.218	0.245	0.377	0.225	0.046
	Catch	0.503	0.352	0.279	0.369	0.396	0.377	0.369	0.035

Table 12. Estimated catch numbers for all anglers for North Lida Lake, Otter Tail County, Minnesota from May 13 to October 10, 2023.

		May	June	July	August	September	October	Season Total	% of Harvest
Species		N	N	N	N	N	N	N	
Black Crappie	Harvest	338	7	5	17	--	--	367	18
	Release	629	41	1	82	--	--	752	
	Catch	967	48	6	99	--	--	1,120	
Bluegill	Harvest	160	11	11	101	53	--	337	17
	Release	24	7	86	147	42	--	306	
	Catch	185	18	97	249	95	--	643	
Largemouth Bass	Harvest	54	39	4	45	32	--	173	9
	Release	262	516	547	259	257	49	1,890	
	Catch	316	554	551	303	290	49	2,063	
Northern Pike	Harvest	7	--	33	53	28	--	121	6
	Release	553	1,002	408	711	483	97	3,254	
	Catch	560	1,002	441	764	512	97	3,375	
Pumpkinseed	Harvest	88	--	19	28	12	--	67	3
	Release	--	--	19	--	--	--	19	
	Catch	8	--	--	18	--	--	85	
Rock Bass	Harvest	--	--	--	18	--	--	18	1
	Release	--	45	41	82	18	--	186	
	Catch	--	45	41	100	18	--	205	
Smallmouth Bass	Harvest	--	--	12	18	22	--	53	3
	Release	100	145	280	222	51	32	829	
	Catch	100	145	292	241	73	32	882	
Sunfish	Harvest	24	36	46	62	--	--	168	8
	Release	49	190	206	44	--	--	489	
	Catch	24	226	252	105	49	--	657	
Walleye	Harvest	144	133	199	137	67	--	680	34
	Release	440	478	251	183	124	41	1,517	
	Catch	584	612	450	321	191	41	2,198	
Yellow Perch	Harvest	--	--	--	--	--	--	--	0
	Release	8	22	39	17	26	--	113	
	Catch	8	22	39	17	26	--	113	
Total Harvest		11,340							

Table 13. Total catch numbers for North Lida Lake, Otter Tail County, Minnesota from May 13 to October 10, 2023.

Species	Total Caught	Fish/Acre	% Harvested
Black Crappie	1,120	0.20	33
Bluegill	643	0.12	52
Largemouth Bass	2,063	0.37	8
Northern Pike	3,375	0.61	4
Pumpkinseed	85	0.02	78
Rock Bass	204	0.04	9
Smallmouth Bass	882	0.16	6
Sunfish	657	0.12	26
Walleye	2,198	0.39	31
Yellow Perch	113	0.02	0
	11,340	2.04	

Table 14. Estimated harvest weight (pounds) for all anglers for North Lida Lake, Otter Tail County, Minnesota from May 13 to October 10, 2023.

Species		May	June	July	August	September	October	Season Total	
Black Crappie	Harvest	281.1	6.0	4.8	17.5	--	--	309.4	0.06
Bluegill	Harvest	80.1	4.3	4.1	24.6	18.0	--	131.1	0.02
Largemouth Bass	Harvest	111.4	85.1	6.3	94.1	65.4	--	362.3	0.07
Northern Pike	Harvest	11.4	--	61.3	82.3	54.0	--	209.1	0.04
Pumpkinseed	Harvest	4.1	--	8.7	13.9	5.6	--	32.3	0.01
Smallmouth Bass	Harvest	--	--	13.8	39.9	59.9	--	113.6	0.02
Walleye	Harvest	300.4	169.8	243.4	162.5	78.3	--	954.3	0.17
								2,112.1	0.38

Table 15. Mean length (inches) and weight (pounds) of fish caught, harvested, and released on North Lida Lake, Otter Tail County, Minnesota from May 13 to October 10, 2023.

Species	Caught		Harvest		Released	
	Avg Length	Avg Weight	Avg Length	Avg Weight	Avg Length	Avg Weight
Black Crappie	10.7	0.7	11.3	0.8	10.1	0.6
Bluegill	7.1	0.3	7.7	0.4	6.5	0.2
Largemouth Bass	15.2	2.1	15.6	2.1	15.2	2.1
Northern Pike	19.4	1.7	20.0	1.7	19.3	1.6
Pumpkinseed	7.0	0.4	8.1	0.5	5.0	0.1
Rock Bass	11.3	1.3	--	--	11.4	1.4
Smallmouth Bass	14.9	1.9	15.6	2.2	14.8	1.9
Sunfish	7.2	--	7.8	--	6.9	--
Walleye	18.1	2.2	15.9	1.4	19.0	2.5
Yellow Perch	4.3	--	--	--	4.3	0.0

Table 16. Estimated weight (pounds) of fish caught on North Lida Lake, Otter Tail County, Minnesota from May 13 to October 10, 2023.

Species	Total Weight	Pounds/Acre
Black Crappie	793	0.14
Bluegill	200	0.04
Largemouth Bass	4,277	0.77
Northern Pike	5,608	1.01
Pumpkinseed	30	0.01
Rock Bass	272	0.05
Smallmouth Bass	1,701	0.31
Sunfish	--	--
Walleye	4,758	0.86
Yellow Perch	5	--
	17,644	3.17

Table 17. Length frequency distribution of the angler harvested and released fish from North Lida Lake, Otter Tail County, Minnesota from May 13 to October 10, 2023. Red font indicates illegally harvested fish.

Length Inches	Black Crappie		Bluegill/Sunfish		Largemouth Bass		Northern Pike		Smallmouth Bass		Walleye		Yellow Perch	
	Harvest	Release	Harvest	Release	Harvest	Release	Harvest	Release	Harvest	Release	Harvest	Release	Harvest	Release
<3														
4													1	
5		1	2	19										42
6			6	38						18		2		113
7			31	21						34		3		89
8		2	33	10		1				89		4		35
9	2		8	1		1				14		24		4
10	5	31	1		1	11				70		42		3
11	16	1				5				28	1	32		6
12	10	1				20			1		2	57		1
13	3				3	10		3	1	2		54		
14					1	28		5	1		15	39		
15					8	48		10	1		36	50		
16					7	47		74	1		40	36		
17					1	37	3	71	1		8	18		
18					2	10	3	221	1			53		
19						4	1	189				62		
20						12	3	325			2	62		
21							3	113				34		
22							1	173				41		
23							2	25			2	23		
24							1	35				14		
25								19				8		
26								12			1	3		
27								6						
28								7						
29								1						
>30								7						
Total	36	36	81	89	23	234	17	1,296	7	255	107	661	0	294
Max	13.6	12.0	10.0	9.0	18.0	20.0	24.0	35.0	18.1	13.4	26.0	26.5	--	12.0
Mean								19.8	10.0	8.7	14.9	16.3	--	6.6

Table 18. Estimated catch rates (fish/hour) for all anglers by stratum for North Lida Lake, Otter Tail County, Minnesota from December 15, 2023, to March 31, 2024.

		December		January		February		March		Season Total	
Species		Rate	SE	Rate	SE	Rate	SE	Rate	SE	Rate	SE
Black Crappie	Harvest	0.057	0.002	0.088	0.001	0.054	0.001	--	--	0.080	--
	Release	0.927	--	0.304	0.001	0.319	0.027	0.021	0.001	0.314	--
	Catch	0.984	--	0.393	0.014	0.372	0.033	0.021	0.001	0.394	--
Bluegill	Harvest	--	--	0.007	--	0.024	0.001	0.968	--	0.032	--
	Release	0.533	--	0.011	--	0.004	--	--	--	0.021	--
	Catch	0.533	--	0.018	--	0.028	0.001	0.968	--	0.054	--
Largemouth Bass	Harvest	0.160	--	0.010	--	0.016	--	--	--	0.014	--
	Release	0.184	--	0.070	--	0.046	0.001	0.021	0.001	0.068	--
	Catch	0.344	--	0.080	0.001	0.061	0.001	0.021	0.003	0.081	--
Northern Pike	Harvest	--	--	0.011	--	0.004	--	--	--	0.010	--
	Release	0.217	0.002	0.110	0.002	0.160	0.006	0.168	0.025	0.122	--
	Catch	0.217	0.002	0.121	0.003	0.164	0.001	--	--	0.131	--
Pumpkinseed	Harvest	--	--	0.001	--	--	--	--	--	0.001	--
	Release	0.083	--	--	--	--	--	--	--	0.002	--
	Catch	0.083	--	0.001	--	--	--	--	--	0.003	--
Rock Bass	Harvest	--	--	0.003	--	--	--	--	--	0.002	--
	Release			0.001	--	0.006	--	--	--	0.002	--
	Catch	--	--	0.004	--	0.006	--	--	--	0.004	--
Smallmouth Bass	Harvest	--	--	--	--	--	--	--	--	--	--
	Release	--	--	0.001	--	0.002	--	--	--	0.001	--
	Catch	--	--	0.001	--	0.002	--	--	--	0.001	--
Sunfish	Harvest	0.019	0.001	0.034	--	0.016	--	0.400	--	0.039	--
	Release	0.038	0.001	0.121	0.002	0.018	--	1.925	1.923	0.145	--
	Catch	0.057	--	0.155	0.003	0.034	--	2.325	--	0.184	--
Walleye	Harvest	--	--	0.008	--	0.001	--	--	--	0.007	--
	Release	0.019	0.001	0.035	--	0.023	--	--	--	0.032	--
	Catch	0.019	0.001	0.043	--	0.024	--	--	--	0.039	--
Yellow Perch	Harvest	--	--	--	--	--	--	--	--	--	--
	Release	0.248	--	0.018	--	0.121	0.005	--	--	0.039	--
	Catch	0.248	--	0.018	--	0.121	0.005	--	--	0.039	--

Table 19. Estimated catch rates (fish/hour) for all anglers by angler type for North Lida Lake, Otter Tail County, Minnesota from December 15, 2023, to March 31, 2024.

Species		Permanent		Portable		Open Ice		All Anglers	
		Rate	SE	Rate	SE	Rate	SE	Rate	SE
Black Crappie	Harvest	0.086	0.002	0.068	0.001	0.074	0.002	0.080	0.027
	Release	0.297	0.015	0.255	0.008	0.628	0.067	0.314	0.079
	Catch	0.383	0.025	0.323	0.010	0.701	0.080	0.394	0.099
Bluegill	Harvest	0.001	--	0.052	0.001	0.192	0.195	0.032	0.009
	Release	0.013	--	0.005	--	0.133	0.001	0.021	0.006
	Catch	0.013	--	0.057	0.001	0.314	0.328	0.054	0.013
Largemouth Bass	Harvest	0.010	--	0.010	--	0.005	--	0.014	0.005
	Release	0.047	0.001	0.064	0.001	0.226	0.003	0.068	0.017
	Catch	0.057	0.001	0.073	0.001	0.280	0.004	0.081	0.020
Northern Pike	Harvest	0.010	--	0.011	--	--	--	0.010	0.003
	Release	0.104	0.003	0.139	0.001	0.197	0.010	0.122	0.040
	Catch	0.114	0.004	0.151	0.002	0.197	0.010	0.131	0.042
Pumpkinseed	Harvest	--	--	0.004	--	--	--	0.001	0.001
	Release	--	--	--	--	0.021	--	0.002	--
	Catch	--	--	0.004	--	0.021	--	0.003	0.001
Rock Bass	Harvest	0.003	--	--	--	--	--	0.002	0.002
	Release	0.002	--	0.002	--	0.003	--	0.002	0.001
	Catch	0.005	--	0.002	--	0.003	--	0.004	0.003
Smallmouth Bass	Harvest	--	--	--	--	--	--	--	--
	Release	--	--	0.003	--	0.003	--	0.001	0.001
	Catch	--	--	0.003	--	0.003	--	0.001	0.001
Sunfish	Harvest	0.019	--	0.089	0.002	0.024	--	0.039	0.013
	Release	0.071	0.002	0.247	0.011	0.350	0.006	0.145	0.045
	Catch	0.089	0.003	0.336	0.016	0.373	0.007	0.184	0.048
Walleye	Harvest	0.007	--	0.008	--	--	--	0.007	0.003
	Release	0.040	--	0.019	--	0.017	--	0.032	0.010
	Catch	0.047	--	0.027	--	0.017	--	0.039	0.012
Yellow Perch	Harvest	--	--	--	--	--	--	--	--
	Release	0.005	--	0.073	0.002	0.169	0.003	0.039	0.013
	Catch	0.005	--	0.073	0.002	0.169	0.003	0.039	0.013

Table 20. Estimated catch rates (fish/hour) for targeting species by angler type for North Lida Lake, Otter Tail County, Minnesota from December 15, 2023, to March 31, 2024.

Species		Permanent		Portable		Open Ice		Target Anglers	
		Rate	SE	Rate	SE	Rate	SE	Rate	SE
Black Crappie	Harvest	0.163	0.029	0.132	0.068	0.302	0.121	0.143	0.025
	Release	0.537	0.084	0.383	0.132	0.794	0.300	0.588	0.151
	Catch	0.699	0.088	0.495	0.147	0.926	0.323	0.697	0.095
Bluegill	Harvest	--	--	--	--	--	--	--	--
	Release	--	--	0.252	0.017	--	--	0.252	0.017
	Catch	--	--	0.252	0.017	--	--	0.252	0.017
Largemouth Bass	Harvest	--	--	--	--	--	--	--	--
	Release	--	--	0.504	--	--	--	0.504	--
	Catch	--	--	0.504	--	--	--	0.504	--
Northern Pike	Harvest	--	--	--	--	--	--	--	--
	Release	--	--	0.314	0.003	--	--	0.314	0.003
	Catch	--	--	0.314	0.003	--	--	0.314	0.003
Pumpkinseed	Harvest	--	--	--	--	--	--	--	--
	Release	--	--	--	--	--	--	--	--
	Catch	--	--	--	--	--	--	--	--
Rock Bass	Harvest	--	--	--	--	--	--	--	--
	Release	--	--	--	--	--	--	--	--
	Catch	--	--	--	--	--	--	--	--
Smallmouth Bass	Harvest	--	--	--	--	--	--	--	--
	Release	--	--	--	--	--	--	--	--
	Catch	--	--	--	--	--	--	--	--
Sunfish	Harvest	0.107	0.071	0.470	0.103	0.024	--	0.039	0.013
	Release	0.929	0.216	1.620	0.304	0.595	0.197	1.526	0.190
	Catch	0.824	0.210	1.520	0.170	0.551	0.156	1.221	0.073
Walleye	Harvest	0.007	0.006	0.055	0.032	0.062	0.038	0.007	0.003
	Release	0.055	0.032	0.052	0.017	0.323	--	0.147	0.012
	Catch	0.062	0.038	0.068	0.024	0.323	--	0.153	0.009
Yellow Perch	Harvest	--	--	--	--	--	--	--	--
	Release	--	--	--	--	--	--	--	--
	Catch	--	--	--	--	--	--	--	--

Table 21. Estimated catch numbers and standard deviation for all anglers by angler type for North Lida Lake, Otter Tail County, Minnesota from December 15, 2023, to March 31, 2024.

		Permanent		Portable		Open Ice		All Anglers		% of Harvest
Species		Number	SD	Number	SD	Number	SD	Number	SD	
Black Crappie	Harvest	1,040	421	371	120	126	68	1,537	443	43
	Release	3,576	1,124	1,382	430	1,074	385	6,032	1,089	
	Catch	4,617	1,430	1,752	462	1,200	421	7,569	1,372	
Bluegill	Harvest	7	8	282	191	334	10	622	126	4
	Release	154	99	28	14	228	6	410	99	
	Catch	160	99	310	192	562	12	1,032	160	
Largemouth Bass	Harvest	116	70	53	25	94	19	263	76	7
	Release	569	276	345	113	386	41	1,300	230	
	Catch	685	310	398	121	480	45	1,563	276	
Northern Pike	Harvest	122	50	62	26	--	--	184	56	5
	Release	1,247	609	755	161	338	161	2,340	650	
	Catch	1,369	643	817	168	338	161	2,524	684	
Pumpkinseed	Harvest	--	--	19	18	--	--	19	18	1
	Release	--	--	--	--	36	--	36	--	
	Catch	--	--	19	18	36	--	56	18	
Rock Bass	Harvest	39	34	--	--	--	--	39	34	1
	Release	19	17	13	6	5	4	37	18	
	Catch	58	49	13	6	5	4	76	50	
Smallmouth Bass	Harvest	--	--	--	--	--	--	--	--	--
	Release	--	--	15	18	5	5	20	19	
	Catch	--	--	15	18	5	5	20	19	
Sunfish	Harvest	225	110	484	198	40	27	749	224	21
	Release	849	546	1,341	516	599	47	2,788	710	
	Catch	1,073	619	1,825	624	639	54	3,538	677	
Walleye	Harvest	84	36	41	28	--	--	125	46	4
	Release	485	156	103	38	30	30	617	164	
	Catch	569	179	144	52	30	30	743	189	
Yellow Perch	Harvest	--	--	--	--	--	--	--	--	--
	Release	64	55	398	200	290	77	753	221	
	Catch	64	55	398	200	290	77	753	221	
Total Harvest 3,538										

Table 22. Estimated catch numbers for North Lida Lake, Otter Tail County, Minnesota from December 15, 2023, to March 31, 2024.

Species	Total Caught	Fish/Acre	% Harvested
Black Crappie	7,569	1.36	23
Bluegill	1,032	0.19	60
Largemouth Bass	1,563	0.28	17
Northern Pike	2,524	0.43	7
Pumpkinseed	56	0.01	36
Rock Bass	76	0.01	51
Smallmouth Bass	20	<0.01	0
Sunfish	3,538	0.64	21
Walleye	743	0.13	17
Yellow Perch	753	0.14	0
	17,874	3.21	

Table 23. Estimated harvest weight (pounds) for all anglers for North Lida Lake, Otter Tail County, Minnesota from December 15, 2023, to March 31, 2024.

Species		Permanent	Portable	Open-Ice	All Anglers
Black Crappie	Harvest	958.9	350.8	108.9	1,418.7
Bluegill	Harvest	3.3	137.8	170.7	311.7
Largemouth Bass	Harvest	226.7	70.2	167.9	464.9
Northern Pike	Harvest	1382.5	691.0	276.4	306.0
Pumpkinseed	Harvest	--	8.1	--	8.1
Rock Bass	Harvest	67.2	--	--	67.2
Sunfish	Harvest	N/A	N/A	N/A	N/A
Walleye	Harvest	111.1	49.3	--	160.3

Table 24. Mean length (inches) and weight (pounds) of fish caught, harvested, and released on North Lida Lake, Otter Tail County, Minnesota from December 15, 2023, to March 31, 2024.

Species	Caught		Harvest		Released	
	Avg Length	Avg Weight	Avg Length	Avg Weight	Avg Length	Avg Weight
Black Crappie	10.5	0.7	11.7	0.9	10.2	0.6
Bluegill	8.6	0.5	8.5	0.5	8.7	0.6
Largemouth Bass	13.6	1.6	14.6	1.8	13.7	1.6
Northern Pike	17.0	1.2	19.5	1.7	16.8	1.1
Pumpkinseed	8.0	0.5	7.7	0.4	--	--
Rock Bass	11.0	1.3	12.9	1.7	7.5	0.6
Smallmouth Bass	15.0	1.9	--	--	15.0	1.9
Sunfish	6.9	--	8.3	--	6.5	--
Walleye	18.1	2.2	15.6	1.3	18.6	2.4
Yellow Perch	4.0	--	--	--	4.0	--

Table 25. Estimated weight (pounds) of fish caught on North Lida Lake, Otter Tail County, Minnesota from December 15, 2023, to March 31, 2024.

Species	Total Weight	Pounds/Acre
Black Crappie	5,069	0.91
Bluegill	545	0.10
Largemouth Bass	2,434	0.44
Northern Pike	3,000	0.54
Pumpkinseed	26	<0.01
Rock Bass	97	0.02
Smallmouth Bass	38	0.01
Sunfish	--	--
Walleye	1,609	0.29
Yellow Perch	23	<0.01
	12,841	2.31

Table 26. Length frequency distribution of the angler harvested and released fish from North Lida Lake, Otter Tail County, Minnesota from December 15, 2023, to March 31, 2024. Red font indicates illegally harvested fish.

Length	Black Crappie		Bluegill/Sunfish		Largemouth Bass		Northern Pike		Rock Bass		Walleye		Yellow Perch	
Inches	Harvest	Release	Harvest	Release	Harvest	Release	Harvest	Release	Harvest	Release	Harvest	Release	Harvest	Release
<3				1						1				13
4				29										85
5				95										11
6				91										
7		5	37	46										1
8	1	11	107	32							1		1	1
9	2	117	26	20	1	2		1			2		2	2
10	18	499	6	3		2		3		1	4			
11	105	95			1	1		1	1		1			
12	46	17			4	15		31	2	1				
13	7	3			5	14		13	1		1			
14	4				4	22		48			3	1		
15	2				7	8		14			6			
16	1				4	10	3	36			1	2		
17					2	2	1	5			3	5		
18					2	5	4	47				19		
19						1	4	8				16		
20						2	3	34				10		
21							1	3				8		
22							1	18				4		
23							1	2				2		
24								24				1		
25								4				1		
26								4						
27														
28							1	1						
29														
>30								2						
Total	186	747	171	319	32	84	19	299	4	3	14	77	0	113
Max	16.3	13.5	10.0	10.0	18.0	20.0	28.0	30.0	13.8	12.5	17.3	25.0	--	9.0
Mean	11.7	10.2	8.4	7.6	14.6	13.7	19.5	16.8	12.9	7.5	15.6	18.6	--	4.0

Table 27. Estimated catch rates (fish/hour) for all anglers by stratum for South Lida Lake, Otter Tail County, Minnesota from May 13 to October 10, 2023.

		May	June	July	August	September	October	Season Total	
Species		Rate	Rate	Rate	Rate	Rate	Rate	Rate	SE
Black Crappie	Harvest	0.133	--	0.003	--	0.122	0.067	0.044	--
	Release	0.120	0.027	0.027	0.037	0.100	0.244	0.060	--
	Catch	0.253	0.027	0.030	0.037	0.223	0.311	0.105	0.001
Bluegill	Harvest	--	0.004	--	0.087	0.040	--	0.019	--
	Release	0.040	--	0.014	0.051	0.034	--	0.024	--
	Catch	0.040	0.004	0.014	0.138	0.074	--	0.042	--
Largemouth Bass	Harvest	--	0.023	0.007	0.025	0.008	0.043	0.013	--
	Release	0.150	0.513	0.241	0.133	0.119	0.110	0.254	0.002
	Catch	0.150	0.535	0.247	0.158	0.128	0.152	0.267	0.002
Northern Pike	Harvest	0.017	0.005	--	0.007	0.013	--	0.007	--
	Release	0.286	0.386	0.231	0.273	0.180	0.213	0.279	0.003
	Catch	0.302	0.391	0.231	0.280	0.193	0.213	0.286	0.003
Pumpkinseed	Harvest	--	--	--	--	--	--	--	
	Release	--	--	0.003	--	0.008	--	0.002	--
	Catch	--	--	0.003	--	0.008	--	0.002	--
Rock Bass	Harvest	--	0.008	--	--	--	--	0.002	--
	Release	--	0.010	0.003	--	0.008	0.043	0.005	--
	Catch	--	0.018	0.003	--	0.008	0.043	0.007	--
Smallmouth Bass	Harvest	--	--	--	--	--	--	--	
	Release	0.011	0.029	0.003	0.022	0.010	--	0.015	--
	Catch	0.011	0.029	0.003	0.022	0.010	--	0.015	--
Sunfish	Harvest	0.006	--	0.063	--	--	--	0.018	--
	Release	0.023	0.885	0.173	0.098	0.134	0.128	0.296	0.001
	Catch	0.029	0.885	0.236	0.098	0.134	0.128	0.314	0.001
Walleye	Harvest	0.005	0.010	0.020	0.032	0.013	--	0.015	--
	Release	0.031	0.105	0.104	0.068	0.032	--	0.073	--
	Catch	0.036	0.115	0.124	0.100	0.045	--	0.088	--
Yellow Perch	Harvest	--	--	--	--	--	--	--	--
	Release	--	--	--	0.051	--	--	0.008	--
	Catch	--	--	--	0.051	--	--	0.008	--

Table 28. Estimated catch rates (fish/hour) for targeting species by stratum for South Lida Lake, Otter Tail County, Minnesota from May 13 to October 10, 2023.

		May		June		July		August		September		October		Season Total	
Species		Rate	SE	Rate	SE	Rate	SE	Rate	SE	Rate	SE	Rate	SE	Rate	SE
Black Crappie	Harvest	0.130		--		--		--		0.283		0.352		0.240	0.007
	Release	0.715		0.098		0.570		0.278		0.281		0.825		0.418	0.008
	Catch	0.845		0.098		0.570		0.278		0.564		1.072		0.518	0.007
Bluegill	Harvest	--		--		--		1.879		--		--		1.879	--
	Release	--		--		--		--		--		--		--	--
	Catch	--		--		--		1.879		--		--		1.879	--
Largemouth Bass	Harvest	--		0.132		0.084		--		--		--		0.109	0.005
	Release	0.256		0.886		1.164		0.282		0.969		--		0.755	0.015
	Catch	0.256		0.984		1.221		0.282		0.969		--		0.792	0.013
Northern Pike	Harvest	--		0.036		--		--		--		--		0.036	0.001
	Release	2.128		1.008		1.087		2.660		0.949		--		1.498	0.002
	Catch	2.128		1.034		1.087		2.660		0.949		--		1.505	0.002
Sunfish	Harvest	--		--		0.082		--		--		--		0.082	--
	Release	--		2.407		0.245		0.429		0.800				1.002	0.079
	Catch	--		2.407		0.327		0.429		0.800		--		1.025	0.079
Walleye	Harvest	--		0.022		0.131		0.235		0.246		--		0.131	0.001
	Release	0.090		0.227		0.281		0.197		0.448		--		0.261	0.002
	Catch	0.090		0.248		0.370		0.258		0.620		--		0.335	0.002

Table 29. Estimated catch numbers for all anglers for South Lida Lake, Otter Tail County, Minnesota from May 15 to October 10, 2023.

		May	June	July	August	September	October	Season Total		% of Harvest
Species		N	N	N	N	N	N	N	SD	
Black Crappie	Harvest	202	--	7	--	107	10	326	153	37
	Release	183	47	53	41	88	36	447	159	
	Catch	385	47	59	41	195	46	773	234	
Bluegill	Harvest	--	7	--	97	35	--	139	86	16
	Release	60	--	27	57	30	--	174	89	
	Catch	60	7	27	154	65	--	313	125	
Largemouth Bass	Harvest	--	40	13	28	7	6	94	36	11
	Release	228	906	474	149	105	16	1,878	266	
	Catch	228	946	487	177	112	23	1,973	267	
Northern Pike	Harvest	25	9	--	8	12	--	54	25	6
	Release	434	682	455	305	158	32	2,065	351	
	Catch	459	691	455	313	169	32	2,119	353	
Pumpkinseed	Harvest	--	--	--	--	--	--	--	--	0
	Release	--	--	--	7	7	--	14	10	
	Catch	--	--	--	7	7	--	14	10	
Rock Bass	Harvest	--	14	--	--	--	--	14	12	2
	Release	--	18	7		7	6	38	19	
	Catch	--	32	7	--	7	6	52	19	
Smallmouth Bass	Harvest	--	--	--	--	--	--	--	--	0
	Release	16	52	7	25	9	--	108	37	
	Catch	16	52	7	25	9	--	108	37	
Sunfish	Harvest	9	--	124	--	--	--	133	63	15
	Release	35	1,565	341	110	117	19	2,187	155	
	Catch	44	1,565	466	110	117	19	2,320	189	
Walleye	Harvest	8	18	39	35	12	--	112	57	13
	Release	48	185	205	76	28	--	542	88	
	Catch	55	203	244	112	39	--	653	107	
Yellow Perch	Harvest	--	--	--	--	--	--	--	--	0
	Release	--	--	--	57	--	--	57	56	
	Catch	--	--	--	57	--	--	57	56	
Total Harvest		872								

Table 30. Estimated catch numbers for South Lida Lake, Otter Tail County, Minnesota from May 13 to October 10, 2023.

Species	Total Caught	Fish/Acre	% Harvested
Black Crappie	773	0.90	42
Bluegill	313	0.37	44
Largemouth Bass	1,973	2.30	5
Northern Pike	2,119	2.48	3
Pumpkinseed	14	0.02	0
Rock Bass	52	0.06	26
Smallmouth Bass	108	0.13	0
Sunfish	2,320	2.71	6
Walleye	653	0.76	17
Yellow Perch	57	0.07	0
	8,382	9.79	

Table 31. Estimated harvest weight (pounds) for all anglers for South Lida Lake, Otter Tail County, Minnesota from May 13 to October 10, 2023.

Species		May	June	July	August	September	October	Season Total	lbs/acre
Black Crappie	Harvest	182.5	--	6.3	--	102.0	9.3	300.2	0.35
Bluegill	Harvest	--	2.3	--	32.8	11.3	--	46.3	0.05
Largemouth Bass	Harvest	--	97.8	31.4	58.6	17.1	15.3	220.1	0.26
Northern Pike	Harvest	46.9	30.5	--	26.2	60.7	--	164.3	0.19
Rock Bass	Harvest	--	10.9	--	--	--	--	10.9	0.01
Walleye	Harvest	9.6	22.4	51.4	43.2	13.8	--	140.4	0.16
								882.2	

Table 32. Mean length and weight (pounds) of fish caught, harvested, and released on South Lida Lake, Otter Tail County, Minnesota from May 13 to October 10, 2023.

Species	Caught		Harvest		Released	
	Avg Length	Avg Weight	Avg Length	Avg Weight	Avg Length	Avg Weight
Black Crappie	10.9	0.8	11.7	0.9	10.2	0.6
Bluegill	7.1	0.3	7.3	0.3	7.0	0.3
Largemouth Bass	15.3	2.1	16.1	2.3	15.2	2.1
Northern Pike	20.1	1.8	24.2	3.1	19.9	1.8
Pumpkinseed	8.0	0.5	--	--	8.0	0.5
Rock Bass	10.7	1.0	10.0	0.8	13.0	1.8
Smallmouth Bass	14.4	1.7	--	--	14.4	1.7
Sunfish	6.9	--	7.9	--	6.8	--
Walleye	19.6	2.8	15.6	1.7	20.4	3.1
Yellow Perch	--	--	--	--	--	--

Table 33. Estimated weight (pounds) of fish caught on South Lida Lake, Otter Tail County, Minnesota from May 13 to October 10, 2023.

Species	Total Weight	Pounds/Acre
Black Crappie	584	0.68
Bluegill	95	0.11
Largemouth Bass	4,142	4.84
Northern Pike	3,888	4.54
Pumpkinseed	7	0.01
Rock Bass	53	0.06
Smallmouth Bass	184	0.22
Sunfish	--	0.00
Walleye	1,798	2.10
Yellow Perch		0.00
	12,841	12.56

Table 34. Length Frequency distribution of the angler harvested and released fish from South Lida Lake, Otter Tail County, Minnesota from May 13 to October 10, 2023.

Length	Black Crappie		Bluegill/Sunfish		Largemouth Bass		Northern Pike		Smallmouth Bass		Walleye		Yellow Perch	
Inches	Harvest	Release	Harvest	Release	Harvest	Release	Harvest	Release	Harvest	Release	Harvest	Release	Harvest	Release
<3														
4														
5			2	14		1								
6			4	26										
7		4	9	17										4
8		3	11	16										3
9		6	3	5										6
10	4	23		3		7		1		1			4	23
11	23	7				2		1					23	7
12	6	11				26		4		1			6	11
13	2					12		1					2	
14	1				2	26		2		6	1		1	
15					6	38		10		2	7			
16					3	39		14		6	4	1		
17						16		33		2		6		
18					1	13		23				12		
19					1	5		12				12		
20					1	2	3	56				18		
21							1	13				4		
22						1		42				14		
23								13				3		
24							1	14				1		
25								6				3		
26								2						
27							1	5						
28							1	2				1		
29							1	2						
>30								1						
Total	37	54	29	81	15	188	8	257	0	18	12	76	37	54
Max	14.1	12.5	9.5	10.0	20.0	22.0	29.2	30.0	--	17.0	16.7	28.0	14.1	12.5
Mean	11.7	10.2	7.7	6.9	16.2	14.8	24.2	20.0	--	14.8	15.6	20.4	11.7	10.2

Table 35. Total catch numbers for South Lida Lake, Otter Tail County, Minnesota from December 15, 2023, to March 14, 2024.

Species	Total Caught	Fish/Acre	% Harvested
Black Crappie	2	<0.01	100
Largemouth Bass	25	0.03	0
Northern Pike	4	0.01	75
Yellow Perch	2	<0.01	0
	33	0.04	

Table 36. Length Frequency distribution of the angler harvested and released fish from South Lida Lake, Otter Tail County, Minnesota from December 15, 2023, to March 14, 2024.

Length Inches	Black Crappie		Largemouth Bass		Northern Pike		Yellow Perch	
	Harvest	Release	Harvest	Release	Harvest	Release	Harvest	Release
<3								2
4								
5								
6								
7								
8								
9								
10								
11	2							
12				2		1		
13				2				
14				2				
15								
16								
17								
18				1				
19								
20								
21								
22					1			
23								
24								
25								
26								
27					2			
28								
29								
>30								
Total	2	--	--	5	3	1	--	2
Max	11.0	--	--	18.0	27.0	12.0	--	3.0
Mean	11.0	--	--	13.7	22.0	12.0	--	3.0

Table 37. The percentage of angling parties primary targeted species of fish for the 2023-2024 summer and winter creel survey on North and South Lida Lakes, Otter Tail County, Minnesota.

Species	North Lida OW	North Lida Winter	South Lida OW	South Lida Winter
Black Crappie	4.1	41.0	18.4	48.0
Bluegill	1.1	1.3	0.9	--
Largemouth Bass	6.1	--	9.4	--
Northern Pike	3.9	2.5	4.4	40.0
Rock Bass	--	--	--	--
Smallmouth Bass	3.6	--	0.3	--
Sunfish	1.8	14.2	3.2	--
Walleye	50.4	22.6	28.4	4.0
Yellow Perch	--	--	--	--
No Particular Species	28.9	17.6	35.1	8.0
Total number of interviews	561	239	342	17

Table 38. Estimated summer angling pressure, angler hours per acre and overall Walleye harvest rate for North and South Lida Lakes and other Otter Tail County lakes of similar lake class.

Lake	Lake Class	Creel Year	Estimated Pressure	Hours/acre	Overall WAE harvest rate
North Lida	27	2023	13,286	2.4	0.01
South Lida	25	2023	7,399	8.6	0.02
Big Pine	27	2022	32,065	6.8	0.11
Little Pine	27	2022	14,681	7.5	0.11
Otter Tail	26	2019	57,282	4.2	0.25
Rush	27	2008	31,072	5.8	0.11
Little McDonald	27	2008	7,560	6.4	0.03
Otter Tail	26	2007	77,732	5.7	0.23
Otter Tail	26	2006	88,205	6.4	0.30
North Lida	27	2003	42,627	7.7	0.11
South Lida	25	2003	19,012	22.2	0.05
North Lida	27	2002	40,017	7.2	0.17
South Lida	25	2002	18,011	21.0	0.09
Big Pine	27	2001	41,970	8.9	0.16
Little Pine	27	2001	14,122	7.2	0.18
West Battle	27	2000	27,416	4.9	0.03
Clitherall	22	2000	30,252	12.1	0.08
North Lida	27	1996	33,736	6.1	0.03
South Lida	25	1996	23,432	27.4	0.05
North Lida	27	1995	33,565	6.0	0.02
South Lida	25	1995	19,079	22.3	0.04
Otter Tail	26	1995	113,640	8.3	0.36
Otter Tail	26	1994	121,479	8.9	0.28
Crystal	27	1991	18,347	13.9	0.05
Franklin	27	1991	26,181	19.6	0.07
Lizzie	27	1991	25,749	6.4	0.04
Big Pine	27	1989	96,804	20.3	0.24
Little Pine	27	1989	28,440	14.4	0.19
Star	22	1987	103,501	21.9	0.13
Jewett	27	1986	22,140	30.0	0.12
Long (56-784)	27	1986	26,144	34.6	0.07
Swan	25	1986	24,345	35.3	0.01
North Lida	27	1985	60,782	9.7	0.11
South Lida	25	1985	30,251	35.3	0.08
Otter Tail	26	1984	114,286	8.3	0.35
Otter Tail	26	1983	126,760	9.2	0.38
West Battle	27	1983	51,771	9.4	0.16
Clitherall	22	1983	33,558	13.2	0.08

Table 39. Estimated winter angling pressure, angler hours per acre and overall Walleye harvest rate for North and South Lida Lakes and other Otter Tail County lakes of similar lake class.

Lake	Lake Class	Creel Year	Estimated Pressure	Hours/acre	Overall WAE harvest rate
North Lida	27	2023-2024	19,210	3.45	0.01
South Lida	25	2023-2024	3,231	3.77	--
Big Pine	27	2022-2023	43,665	9.23	0.02
Little Pine	27	2022-2023	10,233	5.20	0.02
Otter Tail	26	2019-2020	14,449	1.05	0.13
Otter Tail	26	2006-2007	91,200	6.64	0.08
North Lida	27	2003-2004	32,620	5.86	0.04
South Lida	25	2003-2004	38,297	4.47	0.01
North Lida	27	2002-2003	15,589	2.80	0.06
South Lida	25	2002-2003	3,033	3.54	0.004
Big Pine	27	2001-2002	18,540	3.92	0.05
Little Pine	27	2001-2002	5,523	2.81	0.04
West Battle	27	1999-2000	5,898	1.1	0.02
Clitherall	22	1999-2000	1,252	0.5	0.04
North Lida	27	1996-1997	3,003	0.5	0.02
South Lida	25	1996-1997	1,839	2.2	0.10
North Lida	27	1995-1996	23,193	4.2	0.01
South Lida	25	1995-1996	4,005	4.7	0.01
Otter Tail	26	1994-1995	60,097	4.4	0.23
Crystal	27	1991-1992	8,307	6.3	0.04
Franklin	27	1991-1992	5,677	4.2	0.01
Lizzie	27	1991-1992	11,370	6.1	0.04
Big Pine	27	1989-1990	63,544	13.3	0.07
Little Pine	27	1989-1990	13,079	6.6	0.09

Table 40. Estimated winter spearing pressure, spearing hours per acre and overall Northern Pike harvest rate for Otter Tail Lake and other Otter Tail County lakes of similar lake class.

Lake	Lake Class	Creel Year	Estimated Pressure	Hours/acre	Overall NOP harvest rate
North Lida	27	2023-2024	29	0.01	--
South Lida	25	2023-2024	134	0.16	--
Big Pine	27	2022-2023	2,514	0.53	0.18
Little Pine	27	2022-2023	949	0.48	0.33
Otter Tail	26	2019-2020	1,068	0.07	---
Otter Tail ^a	26	2006-2007	1,158	0.08	0.03
North Lida ^b	27	2003-2004	998	0.18	0.20
South Lida ^b	25	2003-2004	278	0.33	0.25
North Lida ^c	27	2002-2003	387	0.07	0.13
South Lida ^c	25	2002-2003	0	0.00	0
Big Pine ^d	27	2001-2002	3,225	0.7	0.13
Little Pine ^d	27	2001-2002	2,442	1.2	0.17
West Battle ^e	27	1999-2000	N/A	N/A	N/A
Clitherall ^e	22	1999-2000	617	0.3	0.12
North Lida ^f	27	1996-1997	247	0.5	0.21
South Lida ^f	25	1996-1997	579	0.7	0.14
North Lida ^g	27	1995-1996	1,876	0.4	0.15
South Lida ^g	25	1995-1996	1,478	1.7	0.15
Otter Tail ^h	26	1994-1995	1,719	0.1	0.08
Crystal ⁱ	27	1991-1992	1,778	1.4	0.31
Franklin ⁱ	27	1991-1992	1,687	1.3	0.38
Lizzie ⁱ	27	1991-1992	1,482	1.0	0.19
Big Pine ^j	27	1989-1990	25,887	5.4	0.34
Little Pine ^j	27	1989-1990	3,905	2.0	0.17

Table 41. State of residence for all anglers fishing North and South Lida Lakes, Otter Tail County, Minnesota from May 13 to October 10, 2023, and December 15, 2023 to March 31, 2024.

State	North Lida OW	North Lida Winter	South Lida OW	South Lida Winter
Alaska	3	--	--	--
Arizona	4	--	--	--
Colorado	2	--	6	--
Florida	2	10	16	--
Georgia	6	--	--	--
Iowa	107	12	39	--
Idaho	--	--	--	--
Illinois	35	2	58	--
Indiana	44	--	4	--
Kansas	24	--	--	--
Minnesota	1,794	783	930	38
Missouri	12	--	2	--
Montana	2	--	5	--
North Carolina	--	2	--	--
North Dakota	512	183	290	21
Nebraska	85	1	55	--
New Mexico	--	--	--	--
Oklahoma	--	--	--	--
South Carolina	--	2	--	--
South Dakota	23	4	8	--
Texas	4	--	--	--
Wisconsin	14	11	--	6
Unknown	6	16	--	--
Total	2,685	1,024	1,419	65

Table 42. Angler demographics by gender and age groups for all anglers on North and South Lida Lakes, Otter Tail County, Minnesota from May 13 to October 10, 2023, and December 15, 2023, to March 31, 2024.

Gender Age Group	North Lida OW	North Lida Winter	South Lida OW	South Lida Winter
Female				
0-15	9	10	11	--
16-24	17	23	9	--
25-34	31	7	46	--
35-44	63	5	102	--
45-54	38	11	58	--
55-64	27	2	32	--
Over 65	5	2	8	6
N	190	60	266	6
Male				
0-15	185	83	66	9
16-24	221	251	68	--
25-34	297	183	151	9
35-44	766	163	380	5
45-54	627	96	335	14
55-64	294	75	101	12
Over 65	99	74	48	10
N	2,486	940	1,149	59
Total				
0-15	190	93	77	9
16-24	238	274	77	--
25-34	328	190	197	9
35-44	829	168	482	5
45-54	665	107	393	14
55-64	321	77	133	12
Over 65	104	76	56	16
N	2,676	1,000	1,415	65

Table 43. Walleye special regulation questions and responses for the 2023-2024 summer and winter creel survey on North and South Lida Lake, Otter Tail County, Minnesota.

North Lida			
	Question	Support/Yes	Oppose/No
Summer	Aware of regulation?	314	36
	%	90	10
	Support/Oppose?	279	71
	%	80	20
	Support maintaining?	290	50
	%	85	15
Winter	Aware of regulation?	159	25
	%	86	14
	Support/Oppose?	138	42
	%	77	23
	Support maintaining?	169	11
	%	94	6

Table 44. Walleye special regulation questions and responses for the 2023-2024 summer and winter creel survey on South Lake, Otter Tail County, Minnesota.

South Lida			
	Question	Support/Yes	Oppose/No
Summer	Aware of regulation?	181	29
	%	86	14
	Support/Oppose?	153	21
	%	88	12
	Support maintaining?	169	13
	%	92	8
Winter	Aware of regulation?	19	5
	%	80	20
	Support/Oppose?	17	7
	%	71	29
	Support maintaining?	24	0
	%	100	0

Appendix A. Summer interview sheet including Walleye regulation angler input questions for 2023 lake creels.



Minnesota Department of Natural Resources
Section of Fisheries
Interview Report

Office Use Only	
Interview ID	
Creel Clerk Use	
Interview #	

DOW or Stream Number		Date		Creel Clerk	Time (Military) Interview	Refused Interview (✓)	Time (Military)		Completed (✓)	Boat Shore	Fish Species Sought		Party Size
Month	Day	2023	Started Fishing				Stopped Fishing (if different from Interview Time)	1			2		
5	6												

Angler	Gender (M/F)	Age	Zip Code	State	Question Series	Question 1			
						a	b	c	d
1					0 1				
2									

Note: Questions should be asked of one representative of each angling party only!

Fish Species:	ANY	BLC	BLG	BLH	BOF	BUB
CAP	LKS	LMB	NOP	RHS	RKB	SMB
SUN	TLC	WAE	WTS	YEP		

*****Have I asked you about the Walleye special regulation before? If yes, do not ask again

Question 1a: Overall, how satisfied were you with your fishing trip today? Scale 1-5

Question 1b: Are you aware of the Walleye special regulation for this lake?
01-Yes 02-No

Question 1c: Do you support or oppose the regulation?
01-support 02-oppose

Question 1d: If the special regulation is showing improved size structure for Walleye, do you support maintaining the special regulation?
01-yes 02-no

NOTE: 99-no comment for any of the above questions!

Species	M-N-R	Number	Length (mm)	Species	M-N-R	Number	Length (mm)	Species	M-N-R	Number	Length (mm)
1				11				21			
2				12				22			
3				13				23			
4				14				24			
5				15				25			
6				16				26			
7				17				27			
8				18				28			
9				19				29			
10				20				30			

Measured codes: M=kept and measured, N=kept and not measured, R=released

Comments: _____

Appendix B. Winter interview sheet including Walleye regulation angler input questions for 2023-2024 lake creels.



Minnesota Department of Natural Resources
Section of Fisheries
Interview Report

Office Use Only	
Interview ID	
Creel Clerk Use	
Interview #	

DOW or Stream Number		Date		Creel Clerk	Time (Military) Interview	Refused Interview (✓)	Time (Military)		Completed (✓)	Fishing Type 1) Permanent 2) Portable 3) Open Ice	Fish Species Sought	Party Size
Month	Day	2019	Started Fishing				East Or West	1			2	
5	6											

Angler	Gender (M/F)	Age	Zip Code	State	Question Series	Question 1			
						a	b	c	d
1					0 1				
2									

Note: Questions should be asked of one representative of each angling party only!

Fish Species: ANY	BLC	BLG	BLH	BOF	BUB
CAP	LKS	LMB	NOP	PMK	RHS
SUN	TLC	WAE	WTS	YEP	

*****Have I asked you about the Walleye special regulation before?

Question 1a: Are you aware of the Walleye special regulation for this lake?
01-Yes 02-No

Question 1b: If yes, could you recite the Walleye special regulation?
01-correct 02-incorrect

Question 1c: Do you support or oppose the regulation?
01-support 02-oppose

Question 1d: If the special regulation is showing improved size structure for Walleye, do you support maintaining the special regulation?
01-yes 02-no

NOTE: 99-no comment for any of the above questions!

Species	M-N-R	Number	Length (mm)	Species	M-N-R	Number	Length (mm)	Species	M-N-R	Number	Length (mm)
1				11				21			
2				12				22			
3				13				23			
4				14				24			
5				15				25			
6				16				26			
7				17				27			
8				18				28			
9				19				29			
10				20				30			

Measured codes: M=kept and measured, N=kept and not measured, R=released

Comments: _____

Appendix C. Summer count sheet for North and South Lida Lakes 2023 creel surveys.



Minnesota Department of Natural Resources
Section of Fisheries
Count Report

Office Use Only	
Interview ID	
Creel Clerk Use	
Interview #	

DOW or Stream Number	Date			Creel Clerk	Time (Military) Interview	Refused Interview ()
	Month	Day	2023-2024			

Count Number	N. Lida 1	N. Lida 2	S. Lida 1	S. Lida 2		
Count Time						
	ALL	ALL	OCC	OCC		
Boat						
Shore						

Appendix D. Winter count sheet for North and South Lida Lakes 2023-2024 creel surveys.



Minnesota Department of Natural Resources
Section of Fisheries
Count Report

Office Use Only	
Interview ID	
Creel Clerk Use	
Interview #	

DOW or Stream Number	Date			Creel Clerk	Time (Military) Interview	Refused Interview ()
	Month	Day	2023-2024			

Count Number	N. Lida 1	N. Lida 2	S. Lida 1	S. Lida 2		
Count Time						
	ALL	ALL	OCC	OCC		
Permanent						
Portable						
Open Ice						
Spear						
Spear/Angling						

Minnesota Department of Natural Resources
Section of Fisheries
Creel Survey Harvest Estimate Summary For North Lida Lake

DOW number: 56-747-01	Lake Class: 27	Fish Management Area: Fergus Falls F115	Acres: 5,564	Year Surveyed: Summer/Winter 2023-2024
	Summer		Winter	
Angler-hours	13,286		19,210	
Angler-hours per Acre	2.39		3.45	
Average Party Size	1.95		1.76	
Average Trip Length	2.52		1.39	
Harvest by Species:	Number	Pounds	Number	Pounds
Black Crappie	367	309	1,537	1,419
Bluegill	337	131	622	312
Largemouth Bass	173	362	263	465
Northern Pike	121	209	184	306
Pumpkinseed	67	32	19	8
Rock Bass	18	N/A	39	67
Smallmouth Bass	53	114	N/A	N/A
Sunfish species	168	65	749	376
Walleye	681	954	125	160
Yellow Perch	N/A	N/A	N/A	N/A
All species	1,985	2,111	3,538	2,737
Harvest by Species:	Mean Weight	Pounds/Acre	Mean Weight	Pounds/Acre
Black Crappie	0.84	0.06	0.92	0.26
Bluegill	0.39	0.08	0.50	0.06
Largemouth Bass	2.09	0.07	1.77	0.08
Northern Pike	1.73	0.04	1.66	0.05
Pumpkinseed	0.48	0.01	0.42	0.00
Rock Bass	N/A	0.06	1.74	0.01
Smallmouth Bass	2.16	0.02	N/A	N/A
Sunfish species	N/A	N/A	N/A	N/A
Walleye	1.40	0.17	1.28	0.03
Yellow Perch	N/A	N/A	N/A	N/A

Creel Survey Harvest Summary For North Lida Lake

	Summer		Winter				
Harvest by Species	All Anglers No./Hour	Targeting No./Hour	All Anglers No./Hour	Targeting No./Hour			
Black Crappie	0.028	0.525	0.080	0.143			
Bluegill	0.025	1.185	0.032	N/A			
Largemouth Bass	0.013	0.234	0.014	N/A			
Northern Pike	0.009	0.552	0.010	N/A			
Pumpkinseed	0.005	N/A	0.001	N/A			
Rock Bass	0.001	N/A	0.002	N/A			
Smallmouth Bass	0.004	0.348	N/A	N/A			
Sunfish species	0.013	0.272	0.039	0.390			
Walleye	0.051	0.117	0.007	0.012			
Yellow Perch	N/A	N/A	N/A	N/A			

Length Frequency Summary for Harvested fish (Inch Groups) Summer & Winter ()							
Strata/Species	BLC	BLG	LMB	NOP	SMB	SUN	WAE
0 - 4.9							
5.0 - 5.9							
6.0 - 6.9		4					
7.0 - 7.9		13 (7)				14 (13)	
8.0 - 8.9	(1)	14(30)				9 (41)	
9.0 - 9.9	(1)	1 (6)	(1)			(13)	
10.0 - 10.9	3 (14)	3				1 (1)	
11.0 - 11.9	10 (88)						1
12.0 - 12.9	9 (44)		(4)				2
13.0 - 13.9	2 (7)		2 (5)		1		
14.0 - 14.9	(4)		(4)		1		12 (3)
15.0 - 15.9	(1)		7 (6)		1		35 (6)
16.0 - 16.9	(1)		4 (3)	(2)	1		27 (1)
17.0 - 17.9			(2)	2 (1)			4 (3)
18.0 - 18.9			(2)	(4)	1		
19.0 - 19.9				(4)			
20.0 - 20.9				3 (3)			2
21.0 - 21.9				1 (1)			
22.0 - 22.9							
23.0 - 23.9				(1)			2
24.0 - 24.9							
25.0 - 25.9							
26.0 - 26.9							1
27.0 - 27.9							
28.0 - 28.9							
29.0 - 29.9							
30.0 - 30.9							

Citation: Schalekamp, L.S, Wolters, J.D. 2023-2024. A summer and Winter Creel Survey of North and South Lida Lakes, Otter Tail County, Minnesota, 2023-2024. Minnesota Department of Natural Resources, Fish and Wildlife Division, Completion Report, F-29-R(P)-36-1, Study 4, Job 1149, St. Paul, Minnesota.

Minnesota Department of Natural Resources
Section of Fisheries
Creel Survey Harvest Estimate Summary For South Lida Lake

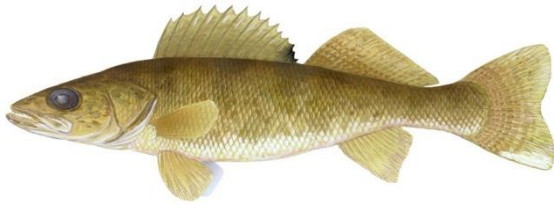
DOW number: 56-747-02	Lake Class: 25	Fish Management Area: Fergus Falls F115	Acres: 856	Year Surveyed: Summer/Winter 2023-2024
	Summer		Winter	
Angler-hours	7,399		3,230	
Angler-hours per Acre	8.64		3.77	
Average Party Size	1.85		1.4	
Average Trip Length	1.90		2.45	
Harvest by Species:	Number	Pounds	Number	Pounds
Black Crappie	326	300	2	N/A
Bluegill	139	46	N/A	N/A
Largemouth Bass	94	220	N/A	N/A
Northern Pike	54	164	14	N/A
Rock Bass	14	N/A	N/A	N/A
Sunfish species	133	44	N/A	N/A
Walleye	112	140	N/A	N/A
Yellow Perch	N/A	N/A	N/A	N/A
All species	872	870		
Harvest by Species:	Mean Weight	Pounds/Acre	Mean Weight	Pounds/Acre
Black Crappie	0.92	0.35	0.76	N/A
Bluegill	0.33	0.05	N/A	N/A
Largemouth Bass	2.33	0.26	N/A	N/A
Northern Pike	3.06	0.19	2.23	N/A
Sunfish species	N/A	N/A	N/A	N/A
Walleye	1.26	0.16	N/A	N/A
Yellow Perch	N/A	N/A	N/A	N/A

Creel Survey Harvest Summary For South Lida Lake

	Summer		Winter			
Harvest by Species	All Anglers No./Hour	Targeting No./Hour	All Anglers No./Hour	Targeting No./Hour		
Black Crappie	0.044	0.240	0.097	0.097		
Bluegill	0.019	1.879	N/A	N/A		
Largemouth Bass	0.013	0.109	N/A	N/A		
Northern Pike	0.007	0.036	0.103	0.103		
Rock Bass	0.002	N/A	N/A	N/A		
Sunfish species	0.018	0.082	N/A	N/A		
Walleye	0.015	0.131	N/A	N/A		
Yellow Perch	N/A	N/A	N/A	N/A		

Length Frequency Summary for Harvested fish (Inch Groups) Summer & Winter ()						
Strata/Species	BLC	BLG	LMB	NOP	SUN	WAE
0 - 4.9						
5.0 - 5.9						
6.0 - 6.9		2			1	
7.0 - 7.9		2			3	
8.0 - 8.9		3			7	
9.0 - 9.9		2			1	
10.0 - 10.9						
11.0 - 11.9	17 (2)					
12.0 - 12.9	6					
13.0 - 13.9	2					
14.0 - 14.9	1		2			1
15.0 - 15.9			5			4
16.0 - 16.9			3			4
17.0 - 17.9						
18.0 - 18.9						
19.0 - 19.9			1			
20.0 - 20.9			1	2		
21.0 - 21.9						
22.0 - 22.9				(1)		
23.0 - 23.9						
24.0 - 24.9				1		
25.0 - 25.9						
26.0 - 26.9						
27.0 - 27.9				(2)		
28.0 - 28.9						
29.0 - 29.9				1		
30.0 - 30.9						

Citation: Schalekamp, L.S, Wolters, J.D. 2023-2024. A summer and Winter Creel Survey of North and South Lida Lakes, Otter Tail County, Minnesota, 2023-2024. Minnesota Department of Natural Resources, Fish and Wildlife Division, Completion Report, F-29-R(P)-36-1, Study 4, Job 1149, St. Paul, Minnesota.



**Minnesota
F-29-RP-36-1
Objective 3
Job 1149**

MINNESOTA DEPARTMENT OF NATURAL RESOURCES

DIVISION OF FISH AND WILDLIFE

COMPLETION REPORT

**Summer 2023 and Winter 2023/24 Creel Survey of North and South Lida Lakes,
Otter Tail County, Minnesota.**

Prepared by: _____ **DATE** _____

Approved by: _____ **DATE** _____

Approved by: _____ **DATE** _____