

WISCONSIN DEPARTMENT OF NATURAL RESOURCES

**LAKE NEBAGAMON**

**2022 – 2023 CREEL SURVEY REPORT**

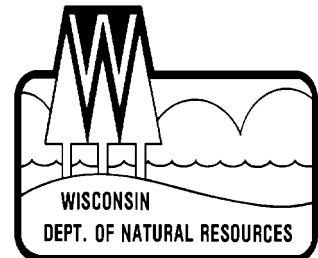
DOUGLAS COUNTY



Treaty Fisheries Publication



Compiled by  
Matthew Kufahl  
DNR Treaty Fisheries Technician



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Fish Graphics: Virgil Beck, Stevens Point, WI

## INTRODUCTION

Fish populations can fluctuate due to a variety of factors including natural forces like climate, reproductive success, predation, and competition. Human activities such as fish harvest, stocking, habitat change, and invasive species introduction can also have significant impacts. Wisconsin Department of Natural Resources (DNR) fisheries crews regularly conduct fishery surveys on lakes and reservoirs to gather the information needed to monitor changes, identify concerns, evaluate past management actions, and to prescribe fishery management strategies. Netting and electrofishing surveys are used to gather data on the status of fish populations and communities, measuring such parameters as species composition, population size, reproductive success, size and age distribution and growth rates.

The other key component of the fishery that we often need to measure is angler harvest to assess its impact on the fishery.

On many lakes in the Ceded Territory of northern Wisconsin, the harvest of fish is divided between sport anglers and the six Ojibwe tribes who harvest fish under rights granted by federal treaties. The tribes harvest fish mostly using a highly efficient method, spearing, during a relatively short time period in the spring. Every fish in the spear harvest is counted – a complete “census” of the harvest.

It would be highly impractical and very costly to conduct a complete census of every angler who fishes on a lake. Therefore, we conduct creel surveys.

A creel survey is an assessment tool used to sample the fishing activities of anglers on a body of water and make projections, or estimates, of harvest and other fishery parameters. Creel survey clerks work on randomly selected days and shifts, forty hours per week. The survey is conducted during the open season for gamefish from the first Saturday in May through the first Sunday

in March. Creel surveys are generally not conducted in November when fishing effort is low and ice conditions are often unsafe. The survey is run during daylight hours, and shift times change from month to month as day length changes.

Creel survey clerks travel their lakes using a boat or snowmobile to count the number of anglers at predetermined times, and to interview anglers who have completed their fishing trip. Data are collected on what species they fished for, catch, harvest, lengths of fish harvested, marks (fin clips or tags), and hours of fishing effort. Collecting information at the end of a fishing trip provides the most accurate assessment of angling activities, and it avoids the need to disturb anglers while they are fishing.

A computer program is used to estimate catch and harvest of each species, catch and harvest rates, and fishing effort by month, as well as for the year in total. Accurate estimates require that we sample a sufficient and representative portion of the angling activity on a lake. The accuracy of creel survey results depends on good cooperation and truthful responses by anglers when a creel clerk interviews them.

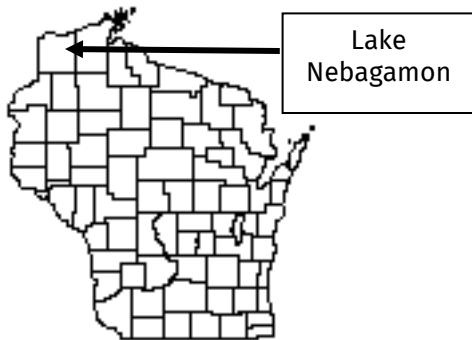
You may have encountered a DNR creel survey clerk on a recent fishing trip. We appreciate your cooperation during an interview. The survey only takes a few minutes of your time, and it gives the DNR valuable information needed for management of the fishery.

This report provides estimates of:

1. Overall fishing effort (pressure)
2. Fishing effort directed at each species
3. Numbers of fish caught and harvested
4. Catch and harvest rates

Also included are a physical description of the lake, discussion of results of the survey, and detailed summaries of fishing effort, catch and harvest.

## GENERAL LAKE INFORMATION



### LOCATION

Lake Nebagamon is located in Douglas County near the village of Lake Nebagamon.

### PHYSICAL CHARACTERISTICS

Lake Nebagamon is a 914-acre drainage lake with a maximum depth of 56 feet. Littoral substrate consists primarily of sand, with lesser amounts of gravel and rock. Nebagamon Lake contains soft, slightly acidic, clear water of moderate transparency.

### SEASONS SURVEYED

The open-water creel survey ran from May 7 through Oct. 31, 2022, and the ice fishing creel survey ran from Dec. 1, 2022 through March 5, 2023.

### WEATHER

Ice-out on Lake Nebagamon was around May 5, 2022. Fishable ice formed around the second week of December.

### FISHING REGULATIONS

The following seasons, daily bag limits, and length limits were in place during the surveyed season:

SPECIES	SEASON	BAG LIMIT	MIN. SIZE
Largemouth Bass	5/ 7-3/ 5	5	14"
Smallmouth Bass	6/ 18-3/ 5	5	14"
Largemouth and Smallmouth Bass Catch and release only all other times of year			
Northern Pike	5/ 7-3/ 5	5	none
Walleye	5/ 7-3/ 5	3	18"
Panfish	year round	25	none
Rock Bass	year round	none	none

## SPECIES CATCH AND HARVEST INFORMATION

Summaries of angling effort, catch and harvest information for each species are in Table 2 and Figures 1-8, along with a comparison of these statistics with the previous creel survey in Table 2, if available. Information about species with fishing seasons extending beyond the season surveyed should be considered minimum estimates. Each species page has up to five graphs depicting the following:

- ESTIMATED FISHING EFFORT**  
 The estimated number of hours during each month that anglers spent fishing for a species.
- ESTIMATED CATCH AND HARVEST**  
 The estimated number of fish of the indicated species caught or harvested by all anglers, regardless of targeted species.
- ESTIMATED SPECIFIC CATCH AND HARVEST RATES**  
 The estimated number of hours it takes an angler to catch or harvest a fish of the indicated species. Only information from anglers who were specifically targeting that species is reported.
- LENGTH DISTRIBUTION OF HARVESTED FISH**  
 All fish of a species that were measured by the clerk during the entire creel survey season.
- LARGEST AND AVERAGE LENGTH OF HARVESTED FISH**  
 The largest and average length of a species of fish harvested that month. Only fish measured by the creel survey clerk are reported.

# CREEL SURVEY RESULTS AND DISCUSSION

## SURVEY LOGISTICS

We encountered no unusual problems conducting the survey or calculating the projections contained in the report.

## GENERAL ANGLER INFORMATION

Anglers spent 7,790 hours, or 8.5 hours per acre, fishing Lake Nebagamon during the 2022-23 season (Table 1). That was less than the Douglas County average of 22.4 hours per acre, and less than the fishing effort documented during the 2005-06 creel survey (17.2 hours per acre). June was the most heavily fished month (1,813 hours), and fishing effort was lightest in February (175 hours). The creel clerks were able to conduct 308 interviews throughout the survey.

## RESULTS BY SPECIES

### WALLEYE (Table 2, Figure 1)

Walleye received 37.8 percent of the fishing effort during the season. Anglers spent 4,435 hours targeting Walleye. The greatest fishing effort for Walleye was in June (1,016 hours). February had the least amount of Walleye fishing effort (117 hours).

Total catch of Walleye was 1,961 fish, with a harvest of 101. Highest catch (758 fish) occurred in June, and highest harvest (27 fish) occurred in August. Anglers fished an average of 2.4 hours to catch and 43.7 hours to harvest a Walleye during the survey. The mean length of harvested Walleye was 19.9 inches, and the largest measured was a 26.2-inch fish.

### NORTHERN PIKE (Table 2, Figure 2)

Fishing effort directed at Northern Pike was 1,078 hours during the season. Northern Pike fishing effort was greatest in May (282 hours). Total catch of Northern Pike was 714 fish, with a harvest of 58. Anglers fished an average of 3.7 hours to catch a Northern Pike during the survey. The mean length of harvested Northern Pike was 23.3 inches, and the largest measured was a 26.2-inch fish.

### SMALLMOUTH BASS (Table 2, Figure 3)

Fishing effort targeted at Smallmouth Bass was 2,379 hours during the season. Smallmouth Bass fishing effort was greatest in June (726 hours). Total catch of Smallmouth Bass was 1,591 fish, with 13 harvested. Highest catch (694 fish) occurred in June. Anglers fished an average of 2.3 hours to catch a Smallmouth Bass during the survey.

### LARGEMOUTH BASS (Table 2, Figure 4)

Fishing effort directed at Largemouth Bass was 1,137 hours during the season. Largemouth Bass fishing effort was greatest in July (353 hours). Total catch of Largemouth Bass was 163 fish, with a harvest of 7. Highest catch (57 fish) occurred in July. Anglers fished an average of 10.8 hours to catch a Largemouth Bass during the survey.

### PANFISH (Table 2, Figures 5-8)

**YELLOW PERCH** received 104 hours of directed fishing effort. Total catch of Yellow Perch was 377 fish, with 4 harvested. The mean length of harvested fish was 9 inches.

**BLUEGILL** received 1,145 hours of directed fishing effort. Total catch of Bluegill was 1,938 fish, with 136 harvested. The mean length of harvested fish was 8.2 inches.

**BLACK CRAPPIE** received 1,439 hours of directed fishing effort. Anglers caught 873 Black Crappie and harvested 314. The mean length of harvested fish was 11.1 inches.

**ROCK BASS** were not specifically targeted by anglers during the survey. However, anglers caught 170 Rock Bass with no documented harvest.

## ACKNOWLEDGMENTS

The DNR would like to thank all the anglers who took the time to offer information about their fishing trip to the survey clerk. Without their cooperation, the survey would not have been possible.

We also thank our cooperator, Tony Coletta, who generously allowed the DNR to keep a boat on their property during this survey.

Completion of this survey was possible because of the efforts of the following treaty fisheries staff: Angelena Sikora, Gene Hatzenbeler, Todd Brecka, Misty Rood, and Bill Sobaski. The creel clerk during the survey period was Chris Coffin.

This creel report was reviewed by Angelena Sikora and Gene Hatzenbeler.

Additional copies of this report, and those covering other local lakes, can be obtained online at:

<http://dnr.wi.gov/topic/Fishing/north/trtycrlsrvys.html>

**Table 1. Sportfishing effort summary, Lake Nebagamon, 2022-23 season; compared to 2005-06 creel results, Douglas County averages, and Ceded Territory averages.**

Month	Number of Angler Party Interviews	Total Angler Hours	Total Angler Hours/Acre	2005-06 Total Angler Hours/Acre	Douglas County Average Hours/Acre	Ceded Territory Average Hours/Acre
May	34	893	1.0	2.2	3.6	4.8
June	44	1,813	2.0	2.9	4.2	6.2
July	59	1,694	1.9	2.7	4.4	6.6
August	51	1,489	1.6	2.0	3.1	5.2
September	41	782	0.9	0.8	1.5	3.2
October	28	376	0.4	0.3	0.5	1.4
December	14	221	0.2	1.3	1.3	1.1
January	13	203	0.2	3.4	2.2	1.7
February	17	175	0.2	1.2	1.4	1.6
March	7	144	0.2	0.3	0.2	0.2
Summer Total	257	7,047	7.7	11.0	17.4	27.4
Winter Total	51	743	0.8	6.2	5.0	4.6
Grand Total	308	7,790	8.5	17.2	22.4	32.0

Note: Summer is May-October; Winter is December-March

**Number of Angler Party Interviews** is the number of groups of anglers interviewed by the creel clerk. A party is considered the members of a group who fish together in the same boat, ice shanty or from shore. The clerk fills out one interview form for each group of anglers. The number of individual anglers actually contacted by the clerk is usually much greater than the number of groups listed in this table since most groups consist of more than one angler.

**Total Angler Hours** is the estimated total number of hours that anglers spent fishing on Lake Nebagamon during each month surveyed.

**Total Angler Hours/Acre** is the total angler hours divided by the area of the lake in acres. This is useful in order to compare effort on Lake Nebagamon to other lakes.

**2005-06 Total Angler Hours/Acre** is the total angler hours divided by the area of the lake in acres. This is from the previous creel survey that took place on Lake Nebagamon.

**County Average Hours/Acre** is the average angler effort in hours per acre for county lakes that have been surveyed since 1990. This value is useful for fishing pressure comparisons with other waters.

**Ceded Territory Average Hours/Acre** is the average angler effort in hours per acre for inland lakes in the Ceded Territory that have been surveyed since 1990. This value can be used to compare Lake Nebagamon to other lakes in northern Wisconsin.

**Table 2. Comparison of creel survey synopses, Lake Nebagamon, 2022-23 and 2005-06 fishing seasons.**

**CREEL YEAR: 2022-2023**

<b>SPECIES</b>	<b>DIRECTED EFFORT (Hours)</b>	<b>PERCENT OF TOTAL</b>	<b>TOTAL CATCH</b>	<b>SPECIFIC CATCH RATE (Hrs/Fish)</b>	<b>TOTAL HARVEST</b>	<b>SPECIFIC HARVEST RATE (Hrs/Fish)</b>	<b>MEAN LENGTH OF HARVESTED FISH</b>
Walleye	4,435	37.9%	1,961	2.4	101	43.7	19.9
Northern Pike	1,078	9.2%	714	3.7	58	153.8	23.3
Smallmouth Bass	2,379	20.3%	1,591	2.3	13	333.3	**
Largemouth Bass	1,137	9.7%	163	10.8	7	151.5	17.9
Yellow Perch	104	0.9%	377	4.2	4	*	9.0
Bluegill	1,145	9.8%	1,938	1.1	136	2.0	8.2
Black Crappie	1,439	12.3%	873	1.7	314	4.7	11.1
Rock Bass	0	0.0%	170	*	0	*	**
White Sucker	0	0.0%	3	*	0	*	**

∞ **CREEL YEAR: 2005-06**

<b>SPECIES</b>	<b>DIRECTED EFFORT (Hours)</b>	<b>PERCENT OF TOTAL</b>	<b>TOTAL CATCH</b>	<b>SPECIFIC CATCH RATE (Hrs/Fish)</b>	<b>TOTAL HARVEST</b>	<b>SPECIFIC HARVEST RATE (Hrs/Fish)</b>	<b>MEAN LENGTH OF HARVESTED FISH</b>
Walleye	6,855	31.7%	1,990	3.7	389	18.9	16.9
Northern Pike	4,235	19.6%	1,361	7.7	275	20.8	22.0
Smallmouth Bass	3,602	16.7%	2,218	2.6	118	30.6	15.9
Largemouth Bass	422	2.0%	41	39.9	8	*	13.1
Yellow Perch	459	2.1%	613	2.5	53	42.7	8.3
Bluegill	2,193	10.2%	3,461	0.8	1,200	2.0	7.5
Black Crappie	3,619	16.8%	1,660	2.2	1,215	3.0	10.4
Pumpkinseed	55	0.3%	11	10.2	11	10.2	7.2
Rock Bass	154	0.7%	124	28.4	32	28.4	8.3

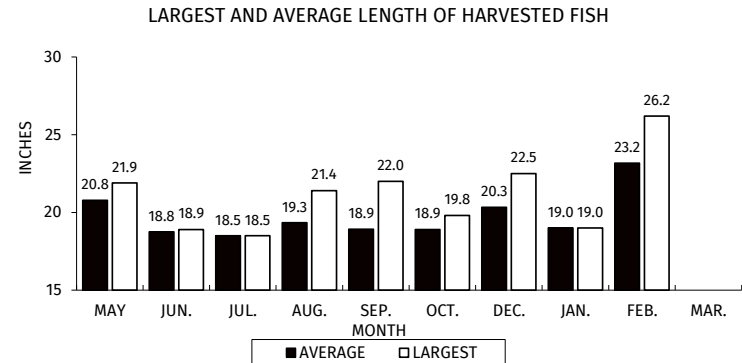
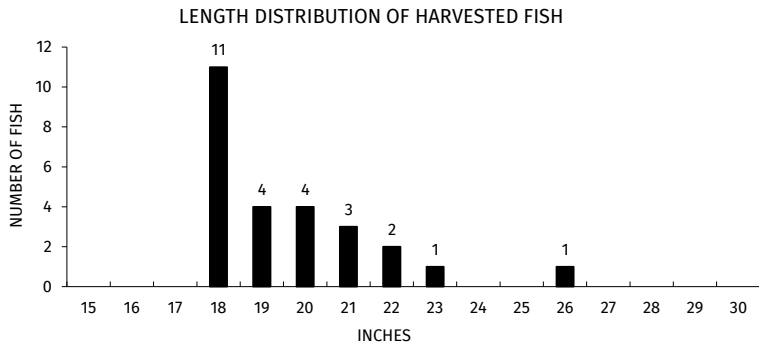
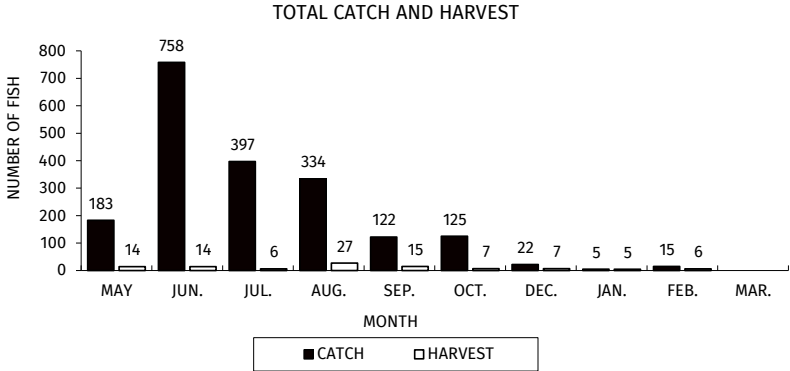
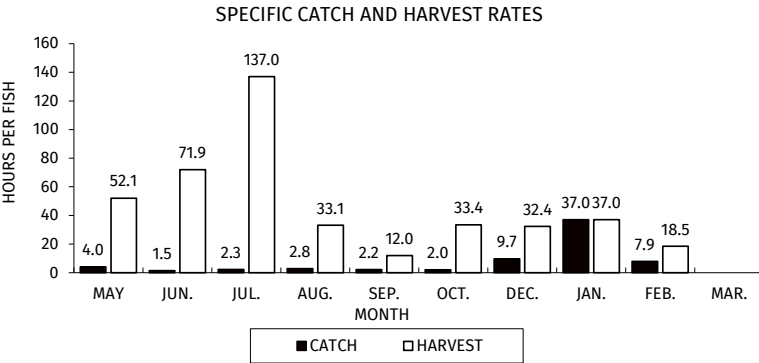
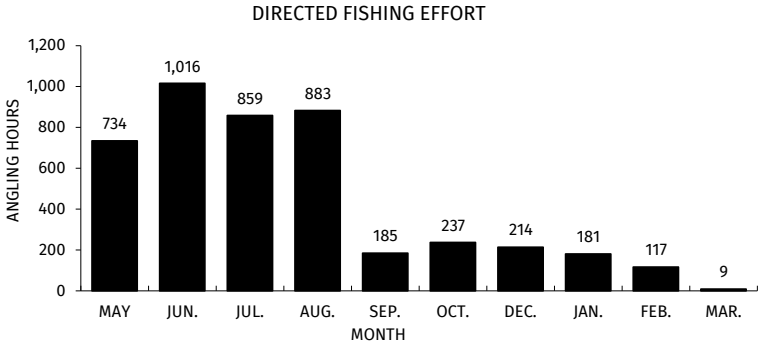
Note: If a species is not shown in a table, no data was collected by the creel clerks for that species.

\* Indicates that no fish of this species were caught or harvested (depending on the column) by anglers who specifically targeted this species.

\*\* Indicates that no fish were measured by the creel clerks for this species



# WALLEYE



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Figure 1. Walleye sportfishing effort, catch, harvest, and length distribution, Lake Nebagamon, during 2022-23.

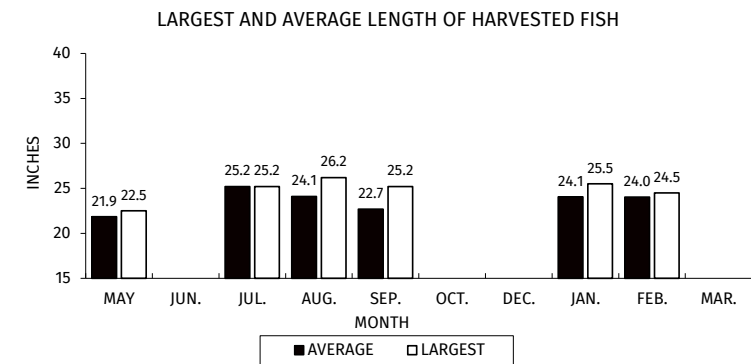
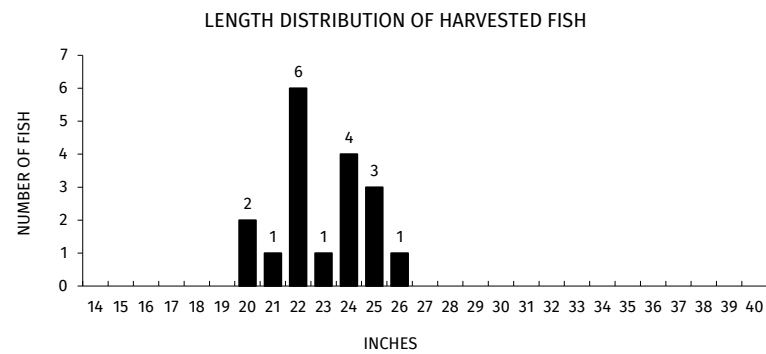
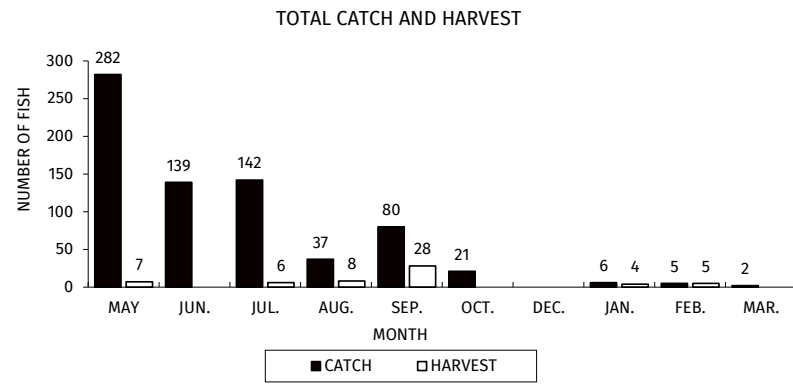
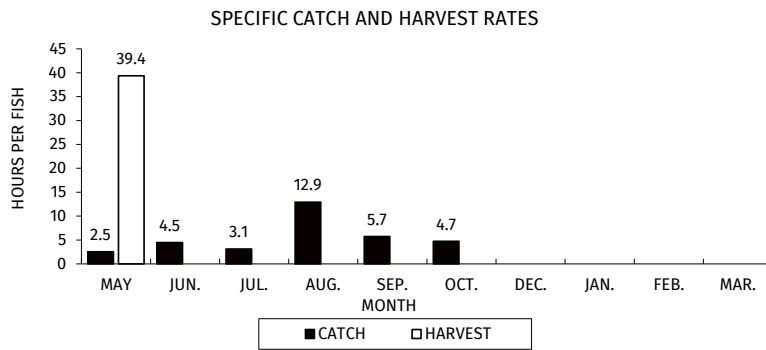
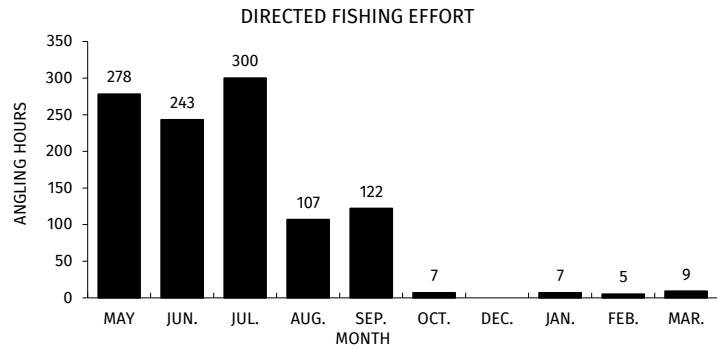


Figure 2. Northern Pike sportfishing effort, catch, harvest, and length distribution, Lake Nebagamon, during 2022-23.

## SMALLMOUTH BASS

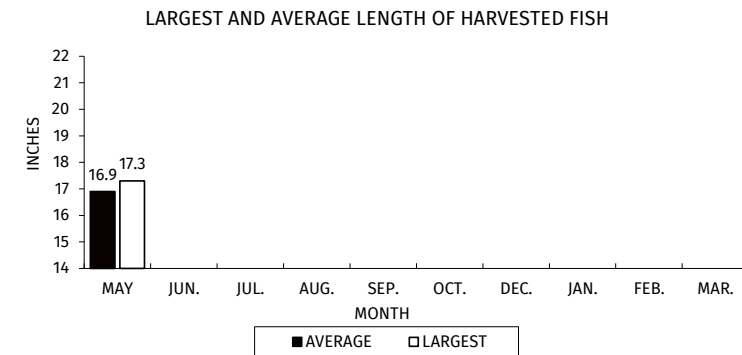
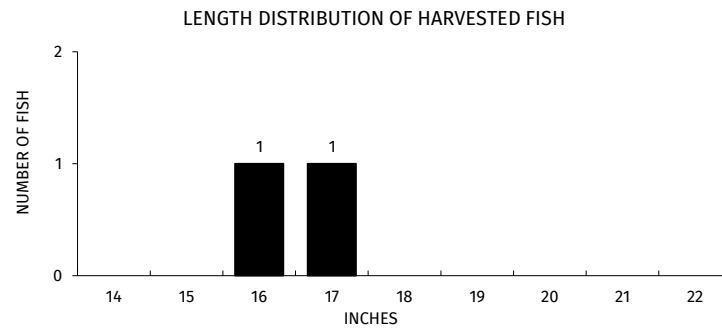
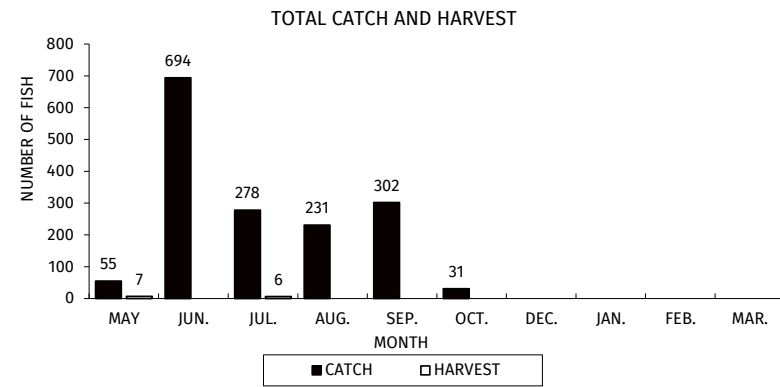
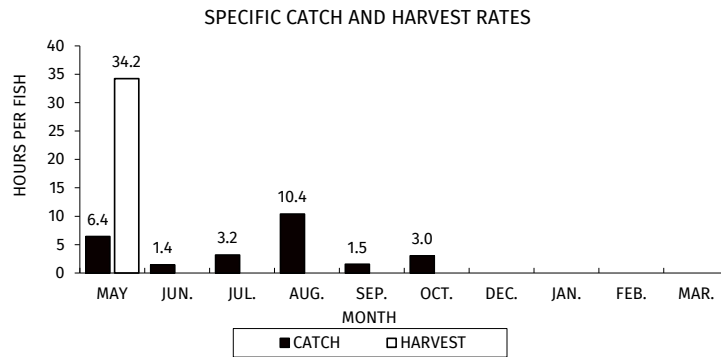
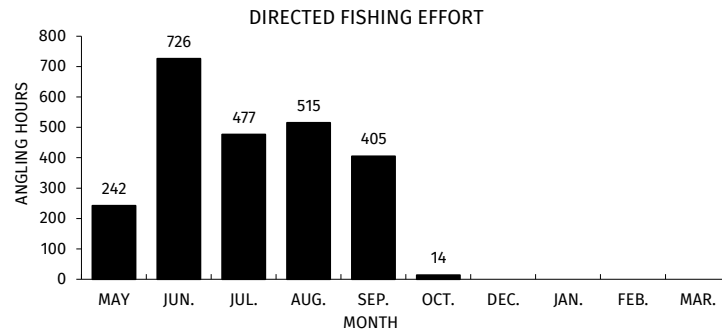


Figure 3. Smallmouth Bass sportfishing effort, catch, harvest, and length distribution, Lake Nebagamon, during 2022-23.

# LARGEMOUTH BASS

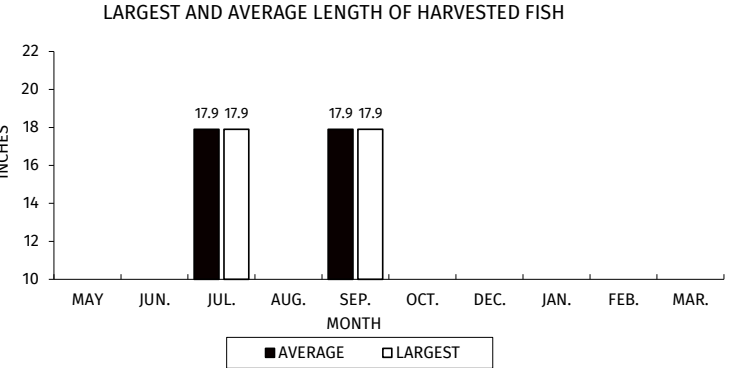
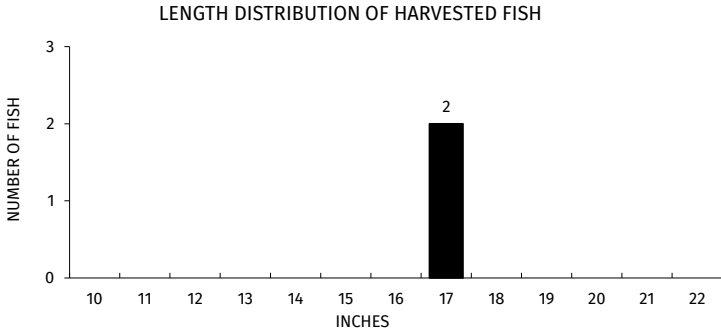
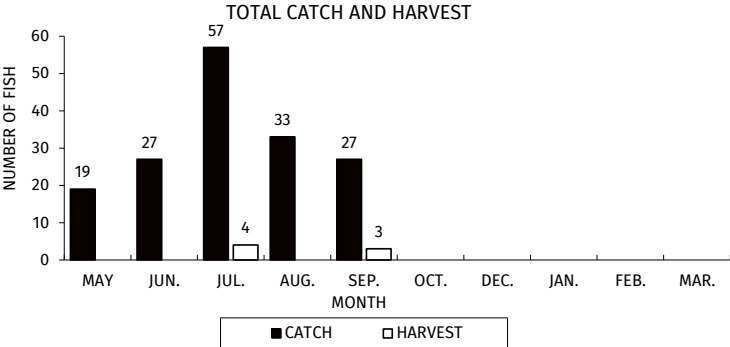
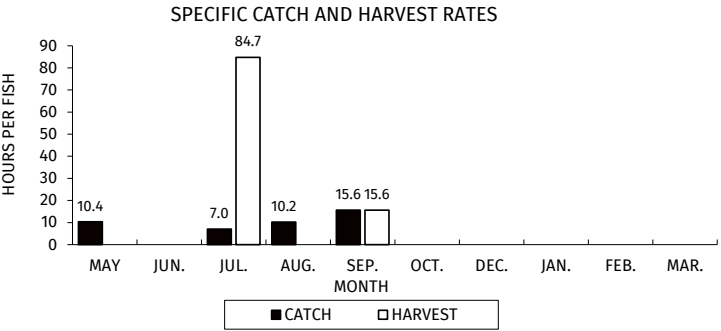
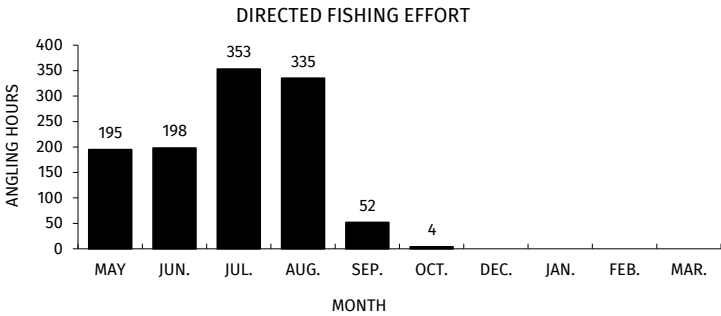


Figure 4. Largemouth Bass sportfishing effort, catch, harvest, and length distribution, Lake Nebagamon, during 2022-23.

## YELLOW PERCH

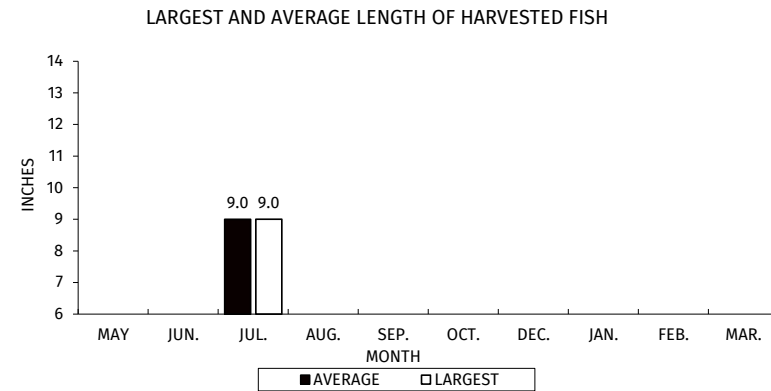
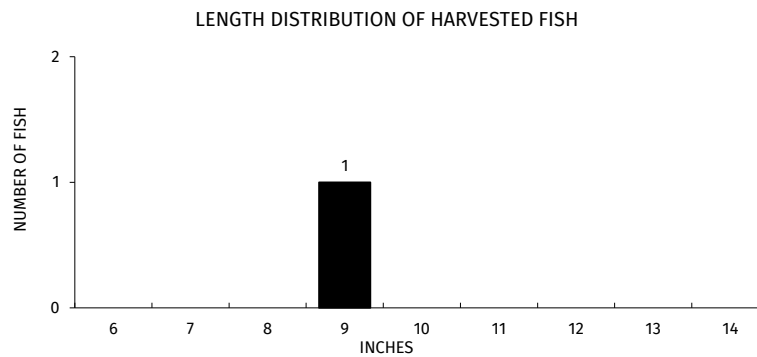
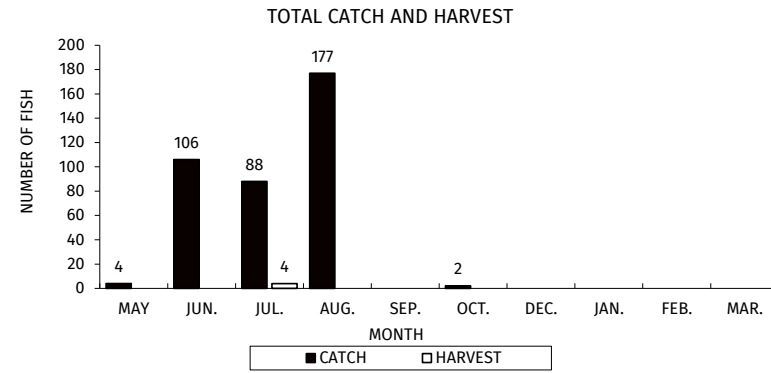
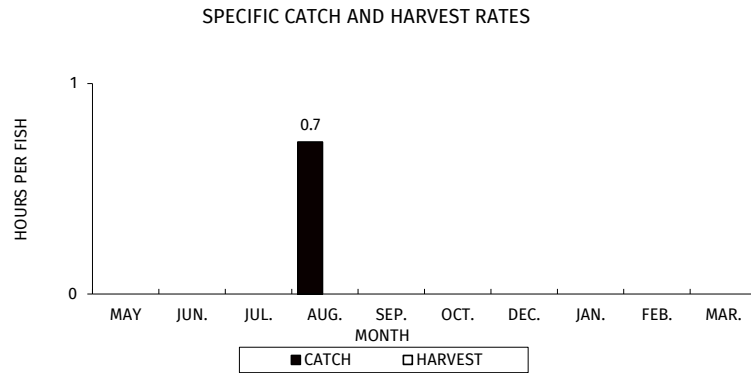
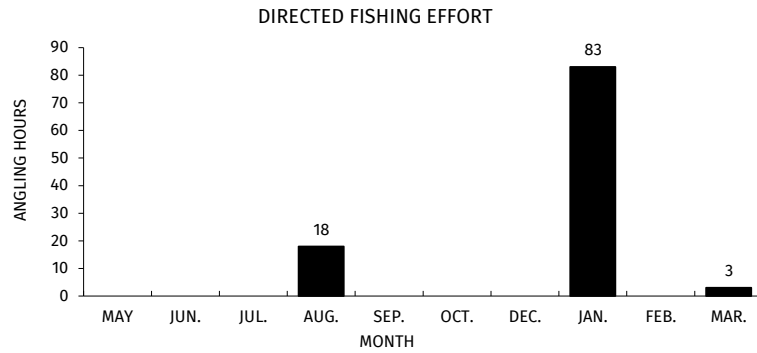


Figure 5. Yellow Perch sportfishing effort, catch, harvest, and length distribution, Lake Nebagamon, during 2022-23.

# BLUEGILL

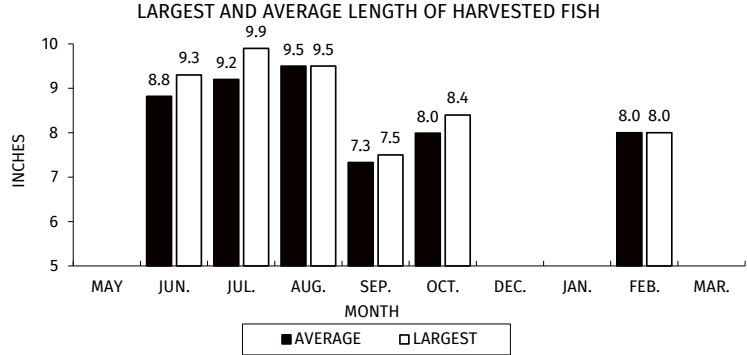
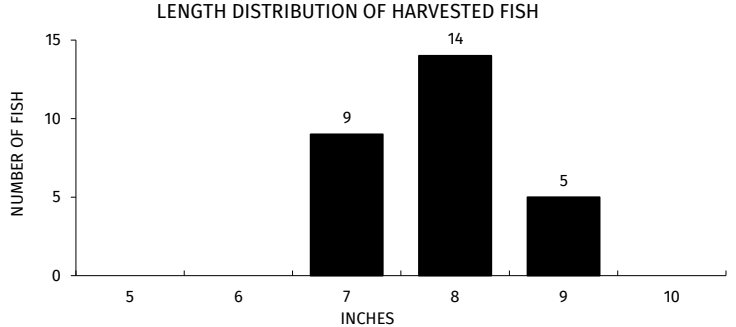
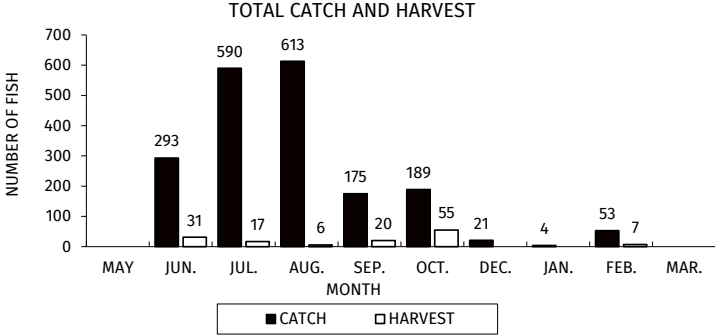
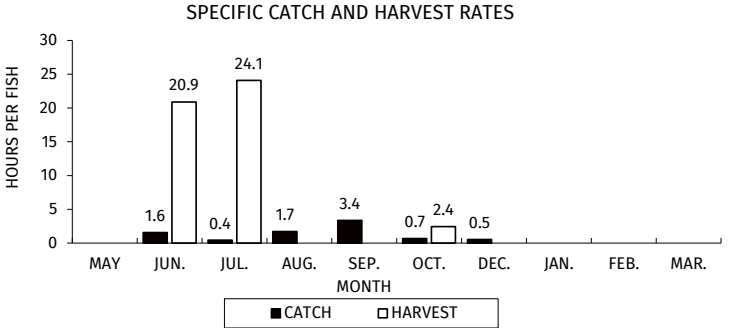
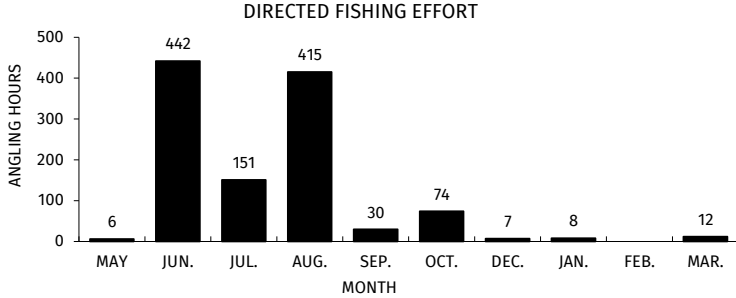


Figure 6. Bluegill sportfishing effort, catch, harvest, and length distribution, Lake Nebagamon, during 2022-23.

# BLACK CRAPPIE

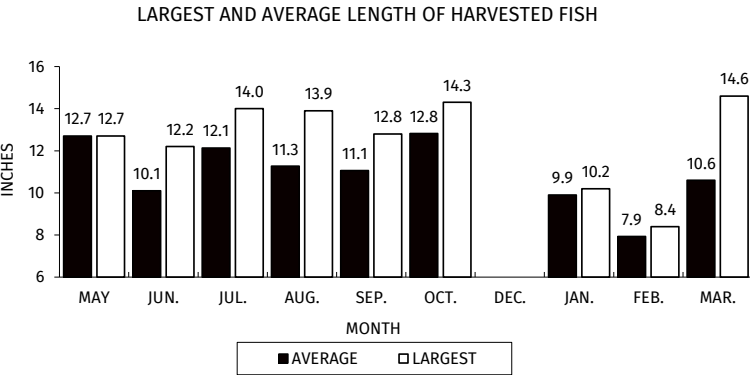
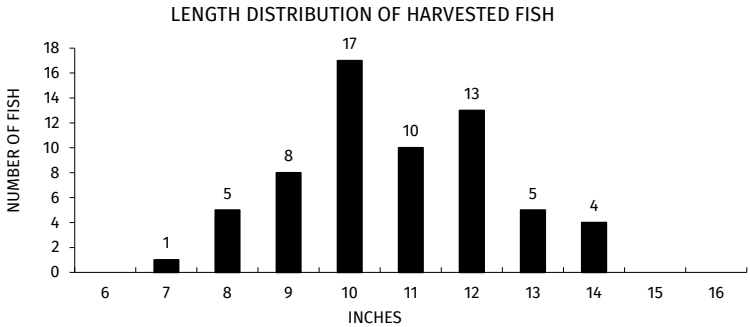
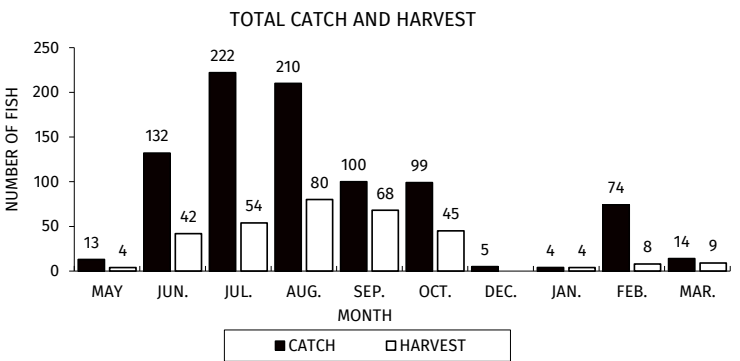
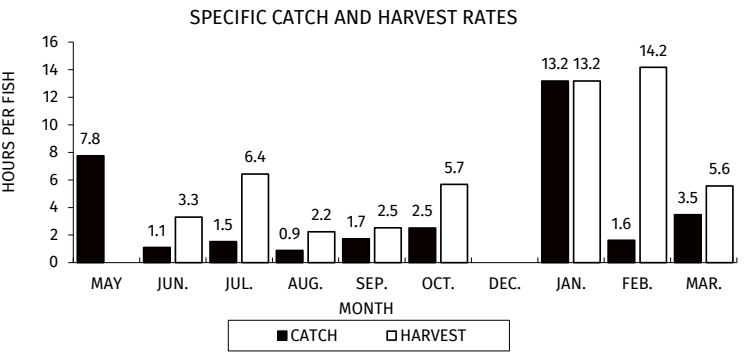
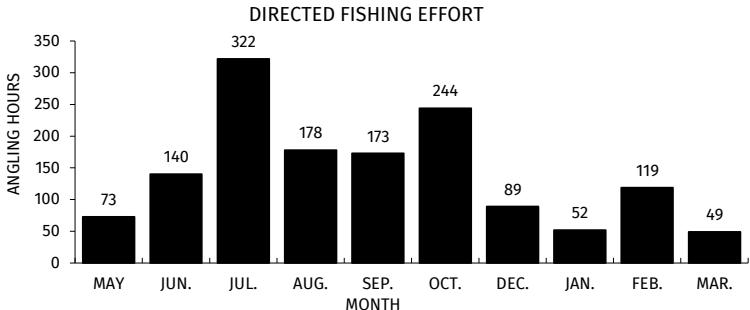


Figure 7. Black Crappie sportfishing effort, catch, harvest, and length distribution, Lake Nebagamon, during 2022-23.

# ROCK BASS

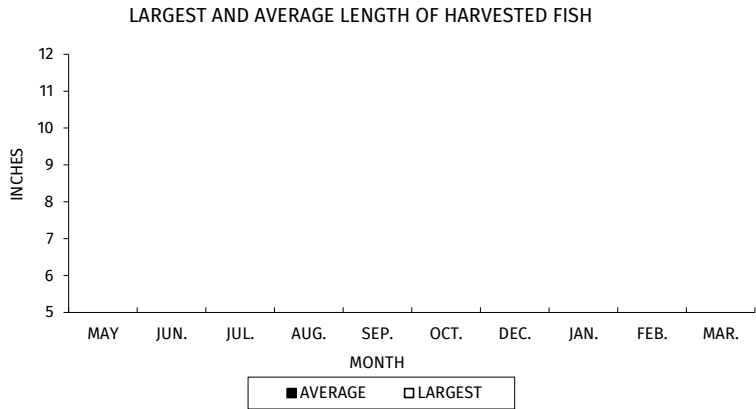
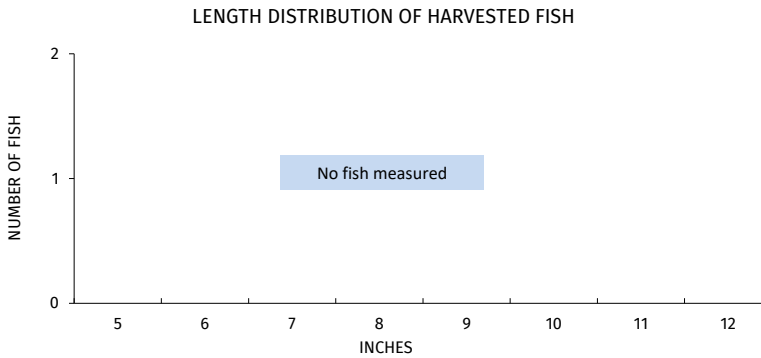
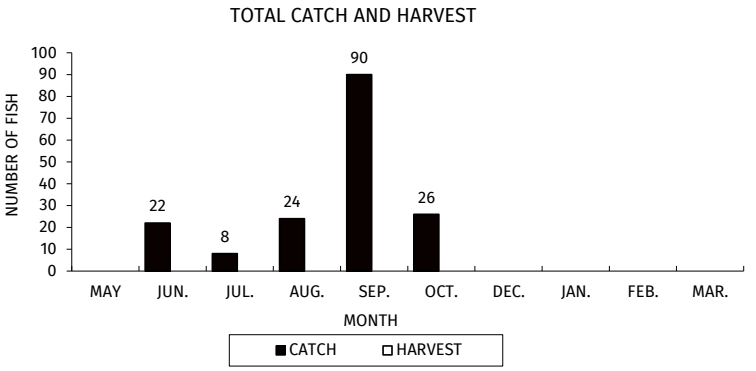
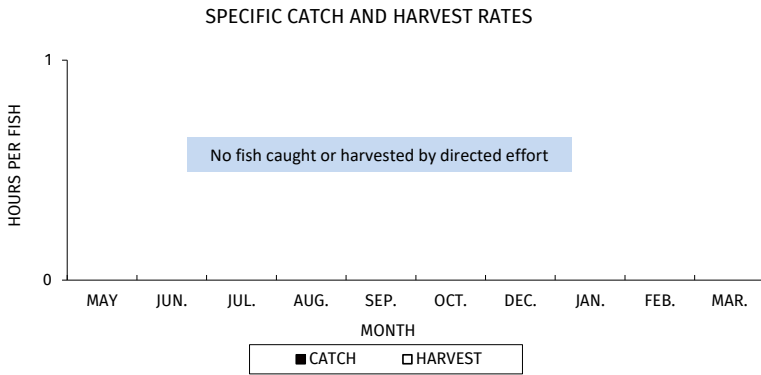
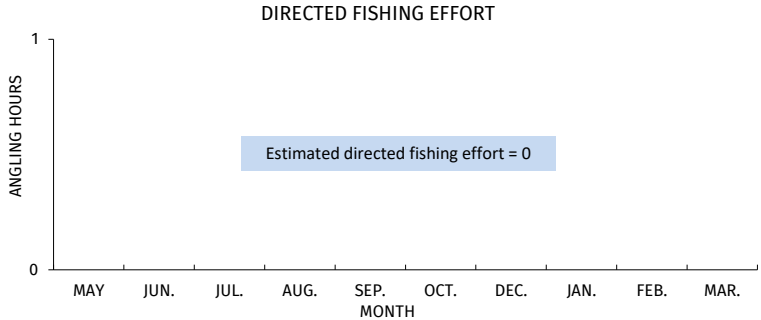


Figure 8. Rock Bass sportfishing effort, catch, harvest, and length distribution, Lake Nebagamon, during 2022-23.