WISCONSIN DEPARTMENT OF NATURAL RESOURCES

PIKE LAKE CHAIN

2023 – 2024 CREEL SURVEY REPORT

BAYFIELD COUNTY

Treaty Fisheries Publication

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CONTENTS

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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

Pike Lake Chain
Buskey Bay
Lake Millicent
Hart Lake
Twin Bear Lake

LOCATION

The Pike Lake Chain is located in Bayfield County near the town of Iron River.

PHYSICAL CHARACTERISTICS

The Pike Chain consists of 7 drainage lakes, of which 4 were surveyed: Buskey Bay, Millicent, Hart and Twin Bear Lake. They cover 713-acres, with a maximum depth of 59 feet. Littoral substrate consists primarily of rock, with lesser amounts of sand and gravel. The Pike Chain contains hard, slightly alkaline, clear water of high transparency.

SEASONS SURVEYED

The open-water creel survey ran from May 6 through Oct. 31, 2023, and the ice fishing creel survey ran from Dec. 1, 2023 through March 3, 2024.

WEATHER

Ice-out on the Pike Chain was around May 2, 2023. Fishable ice formed in late November.

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/ 6-3/ 3	5	14"
Smallmouth Bass	6/ 17-3/ 3	5	14"
Largemouth and Smallmouth Bass Catch and release only all other times of year			
Musky	5/ 27-12/ 31	1	40"
Northern Pike	5/ 6-3/ 3	5	none
Walleye	5/ 6-3/ 3	3	none
	Only fish <14", 1 >18"		
Panfish	year round	25	none

SPECIES CATCH AND HARVEST INFORMATION

Summaries of angling effort, catch and harvest information for each species are in Table 2 and Figures 1-10, 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:

1. **ESTIMATED FISHING EFFORT**
   The estimated number of hours during each month that anglers spent fishing for a species.

2. **ESTIMATED CATCH AND HARVEST**
   The estimated number of fish of the indicated species caught or harvested by all anglers, regardless of targeted species.

3. **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.

4. **LENGTH DISTRIBUTION OF HARVESTED FISH**
   All fish of a species that were measured by the clerk during the entire creel survey season.

5. **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 15,744 hours, or 22.1 hours per acre, fishing the Pike Chain during the 2023-24 season (Table 1). That was similar to the Bayfield County average of 22.2 hours per acre, and less than the fishing effort documented during the 2010-11 creel survey (36.3 hours per acre). July was the most heavily fished month (3,846 hours), and fishing effort was lightest in December (189 hours). The creel clerks were able to conduct 226 interviews throughout the survey.

RESULTS BY SPECIES

WALLEYE (Table 2, Figure 1)
Walleye received 4.3 percent of the fishing effort during the season. Anglers spent 1,127 hours targeting Walleye. The greatest fishing effort for Walleye was in May (252 hours). July had the least amount of Walleye fishing effort.

Total catch of Walleye was 163 fish, with a harvest of 65. Highest catch (88 fish) occurred in June, and highest harvest (62 fish) also occurred in June. Anglers fished an average of 14.3 hours to catch and 28.7 hours to harvest a Walleye during the survey. The mean length of harvested Walleye was 21.6 inches, and the largest measured was a 25.4-inch fish.

NORTHERN PIKE (Table 2, Figure 2)
Fishing effort directed at Northern Pike was 2,409 hours during the season. Northern Pike fishing effort was greatest in July (567 hours). Total catch of Northern Pike was 1,740 fish, with a harvest of 56. Anglers fished an average of 3 hours to catch a Northern Pike during the survey. The mean length of harvested Northern Pike was 21.3 inches, and the largest measured was a 31.4-inch fish.

MUSKELLUNGE (Table 2, Figure 3)
Anglers spent 3,317 hours targeting Muskellunge during the season. Muskellunge fishing effort was greatest in July (1,231 hours). Total catch of Muskellunge was 127 fish, and the highest catch (63 fish) occurred in July. Anglers fished 28.8 hours to catch a Muskellunge, and there was no documented harvest during the survey.

SMALLMOUTH BASS (Table 2, Figure 4)
Fishing effort targeted at Smallmouth Bass was 3,916 hours during the season. Smallmouth Bass fishing effort was greatest in August (1,460 hours). Total catch of Smallmouth Bass was 2,163 fish, with 99 harvested. Highest catch (698 fish) occurred in August. Anglers fished an average of 2.2 hours to catch a Smallmouth Bass during the survey.

LARGEMOUTH BASS (Table 2, Figure 5)
Fishing effort directed at Largemouth Bass was 6,226 hours during the season. Largemouth Bass fishing effort was greatest in August (1,802 hours). Total catch of Largemouth Bass was 9,320 fish, with a harvest of 63. Highest catch (3,169 fish) occurred in August. Anglers fished an average of 0.8 hours to catch a Largemouth Bass during the survey.

PANFISH (Table 2, Figures 6-10)
YELLOW PERCH received 1,835 hours of directed fishing effort. Total catch of Yellow Perch was 3,155 fish, with 1,114 harvested. The mean length of harvested fish was 9.9 inches.

BLUEGILL received 4,509 hours of directed fishing effort. Total catch of Bluegill was 24,335 fish, with 4,862 harvested. The mean length of harvested fish was 7.6 inches.

BLACK CRAPPIE received 1,916 hours of directed fishing effort. Anglers caught 1,308 Black Crappie and harvested 664. The mean length of harvested fish was 10.2 inches.

PUMPKINSEED received 42 hours of directed fishing effort. Anglers caught 62 Pumpkinseed and harvested 51. The mean length of harvested fish was 7.3 inches.

ROCK BASS received 675 hours of directed fishing effort. Anglers caught 1,939 Rock Bass and harvested 235. The mean length of harvested fish was 8.3 inches.

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, Mark Thul, 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 fisheries management and treaty fisheries staff: Angelena Sikora, Gene Hatzenbeler, Nate Thomas, Samir Shaikh, Todd Brecka, Misty Rood, Bill Sobaski and Matthew Kufahl. Creel clerk during the survey period was Marty Kangas.

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, Pike Lake Chain, 2023-24 season; compared to 2010-11 creel results, Bayfield County averages, and Ceded Territory averages.

Month	Number of Angler Party Interviews	Total Angler Hours	Total Angler Hours/Acre	2010-11 Total Angler Hours/Acre	Bayfield County Average Hours/Acre	Ceded Territory Average Hours/Acre
May	17	1,673	2.3	5.4	3.2	4.8
June	24	2,187	3.1	6.6	4.8	6.2
July	25	3,846	5.4	8.1	5.0	6.6
August	39	3,321	4.7	6.1	3.8	5.2
September	25	1,533	2.1	3.4	2.0	3.2
October	31	951	1.3	2.0	1.0	1.4
December	14	189	0.3	1.1	0.6	1.1
January	28	982	1.4	1.9	0.8	1.7
February	20	849	1.2	1.3	0.8	1.6
March	3	213	0.3	0.4	0.1	0.2
Summer Total	161	13,511	18.9	31.6	19.9	27.4
Winter Total	65	2,233	3.1	4.7	2.4	4.6
Grand Total	226	15,744	22.1	36.3	22.2	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 Pike Lake Chain 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 Pike Lake Chain to other lakes.

2010-11 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 Pike Lake Chain.

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 Pike Lake Chain to other lakes in northern Wisconsin.

Table 2. Comparison of creel survey synopses, Pike Lake Chain, 2023-24 and 2010-11 fishing seasons.

CREEL YEAR: 2023-24

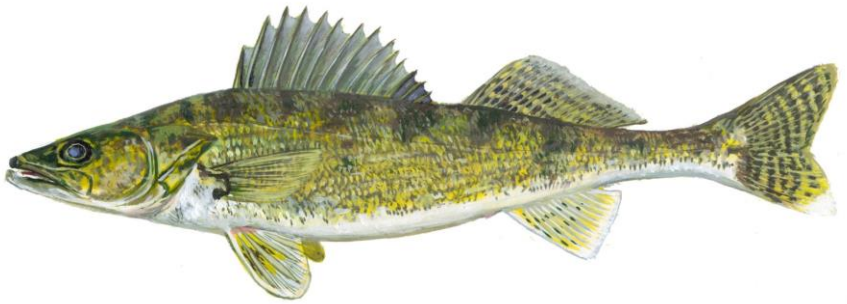
SPECIES	DIRECTED EFFORT (Hours)	PERCENT OF TOTAL	TOTAL CATCH	SPECIFIC CATCH RATE (Hrs/Fish)	TOTAL HARVEST	SPECIFIC HARVEST RATE (Hrs/Fish)	MEAN LENGTH OF HARVESTED FISH
Walleye	1,127	4.3%	163	14.3	65	28.7	21.6
Northern Pike	2,409	9.3%	1,740	3.0	56	45.7	21.3
Muskellunge	3,317	12.8%	127	28.8	0	*	**
Smallmouth Bass	3,916	15.1%	2,163	2.2	99	400.0	16.6
Largemouth Bass	6,226	24.0%	9,320	0.8	63	384.6	14.5
Yellow Perch	1,835	7.1%	3,155	0.7	1,114	1.7	9.9
Bluegill	4,509	17.4%	24,335	0.2	4,862	0.9	7.6
Black Crappie	1,916	7.4%	1,308	1.5	664	3.0	10.2
Pumpkinseed	42	0.2%	62	1.9	51	3.7	7.3
Rock Bass	675	2.6%	1,939	0.8	235	6.9	8.3
Warmouth	0	0.0%	12	*	0	*	**

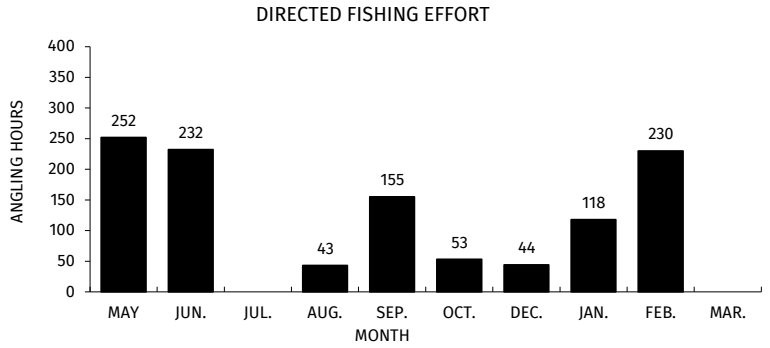
CREEL YEAR: 2010-11

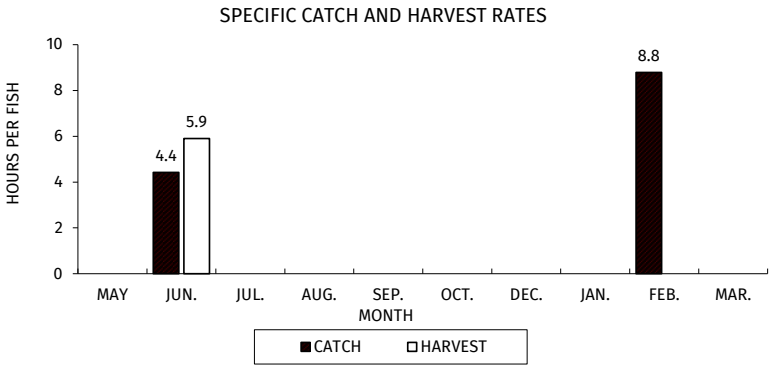
SPECIES	DIRECTED EFFORT (Hours)	PERCENT OF TOTAL	TOTAL CATCH	SPECIFIC CATCH RATE (Hrs/Fish)	TOTAL HARVEST	SPECIFIC HARVEST RATE (Hrs/Fish)	MEAN LENGTH OF HARVESTED FISH
Walleye	4,995	10.7%	214	36.5	144	48.5	15.7
Northern Pike	5,393	11.6%	1,581	5.8	136	53.9	23.8
Muskellunge	4,504	9.7%	149	34.8	0	*	**
Smallmouth Bass	7,528	16.2%	6,214	1.5	49	456.7	14.9
Largemouth Bass	9,558	20.6%	13,688	0.9	146	68.3	14.7
Yellow Perch	1,802	3.9%	3,472	0.7	1,002	2.1	8.7
Bluegill	8,150	17.5%	36,374	0.2	7,142	1.2	7.1
Black Crappie	3,871	8.3%	1,094	4.2	440	11.0	10.5
Pumpkinseed	581	1.2%	218	4.6	139	7.6	6.9
Rock Bass	125	0.3%	2,768	0.5	240	1.2	7.9
White Sucker	0	0.0%	6	*	0	*	**

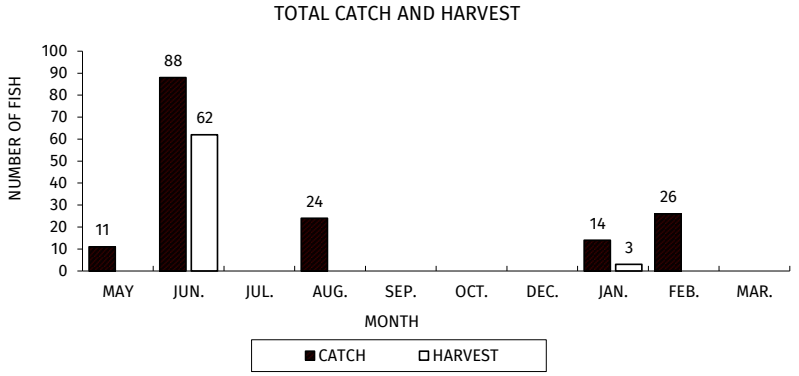
Note: If a species is not shown in a table, no data was collected by the creel clerks for that species.
* Indicates that no fish of this species were caught or harvested (depending on the column) by anglers who specifically targeted this species.
** Indicates that no fish were measured by the creel clerks for this species.

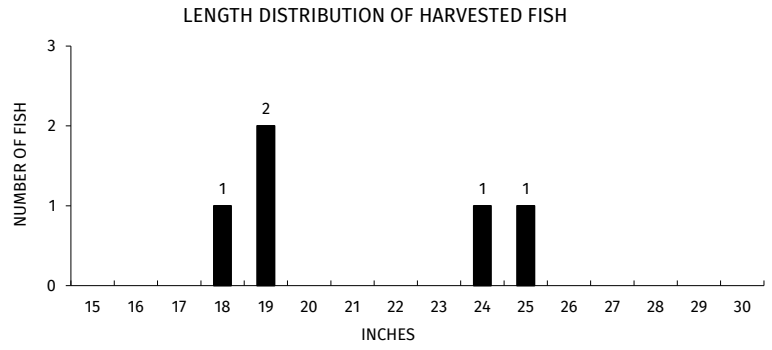
WALLEYE











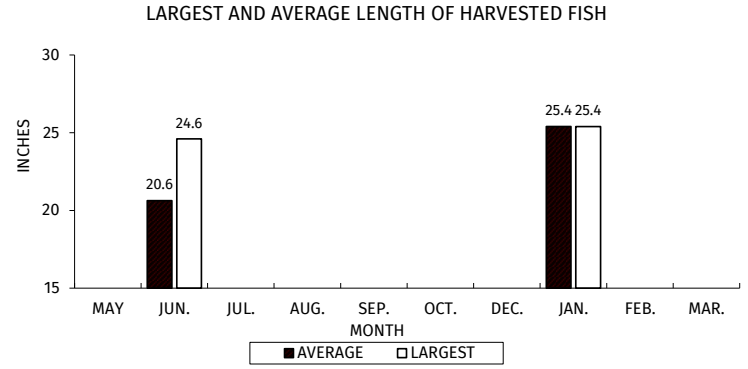
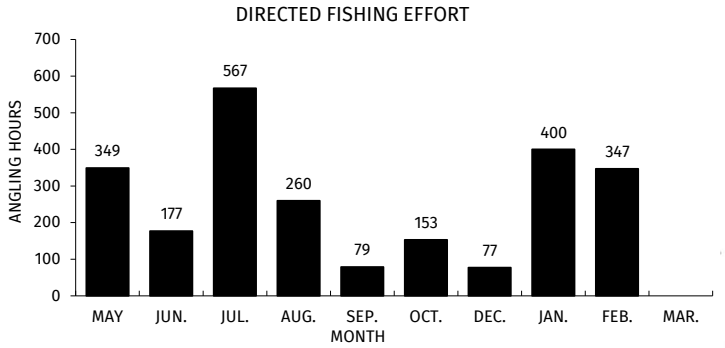
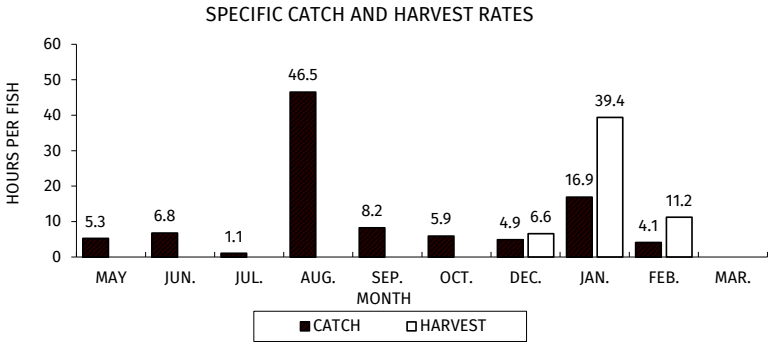
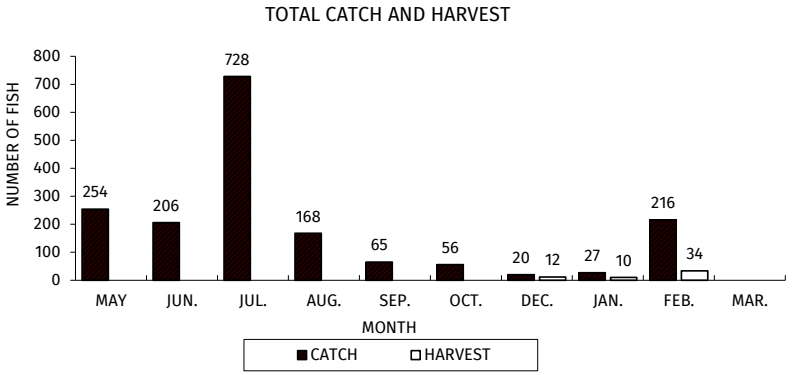


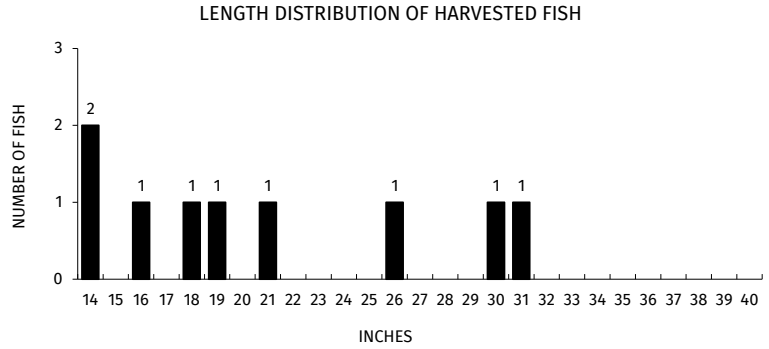
Figure 1. Walleye sportfishing effort, catch, harvest, and length distribution, Pike Lake Chain, during 2023-24.



NORTHERN PIKE







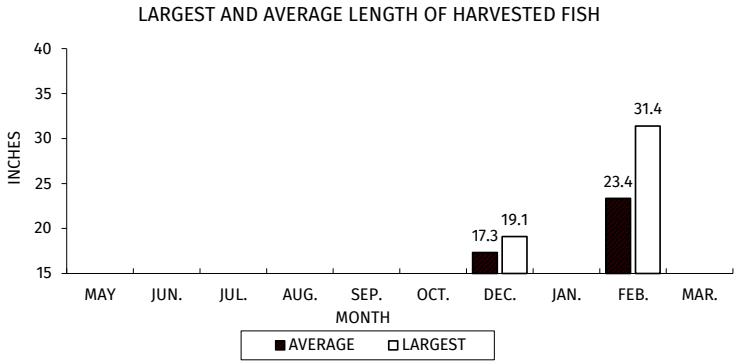


Figure 2. Northern Pike sportfishing effort, catch, harvest, and length distribution, Pike Lake Chain, during 2023-24.

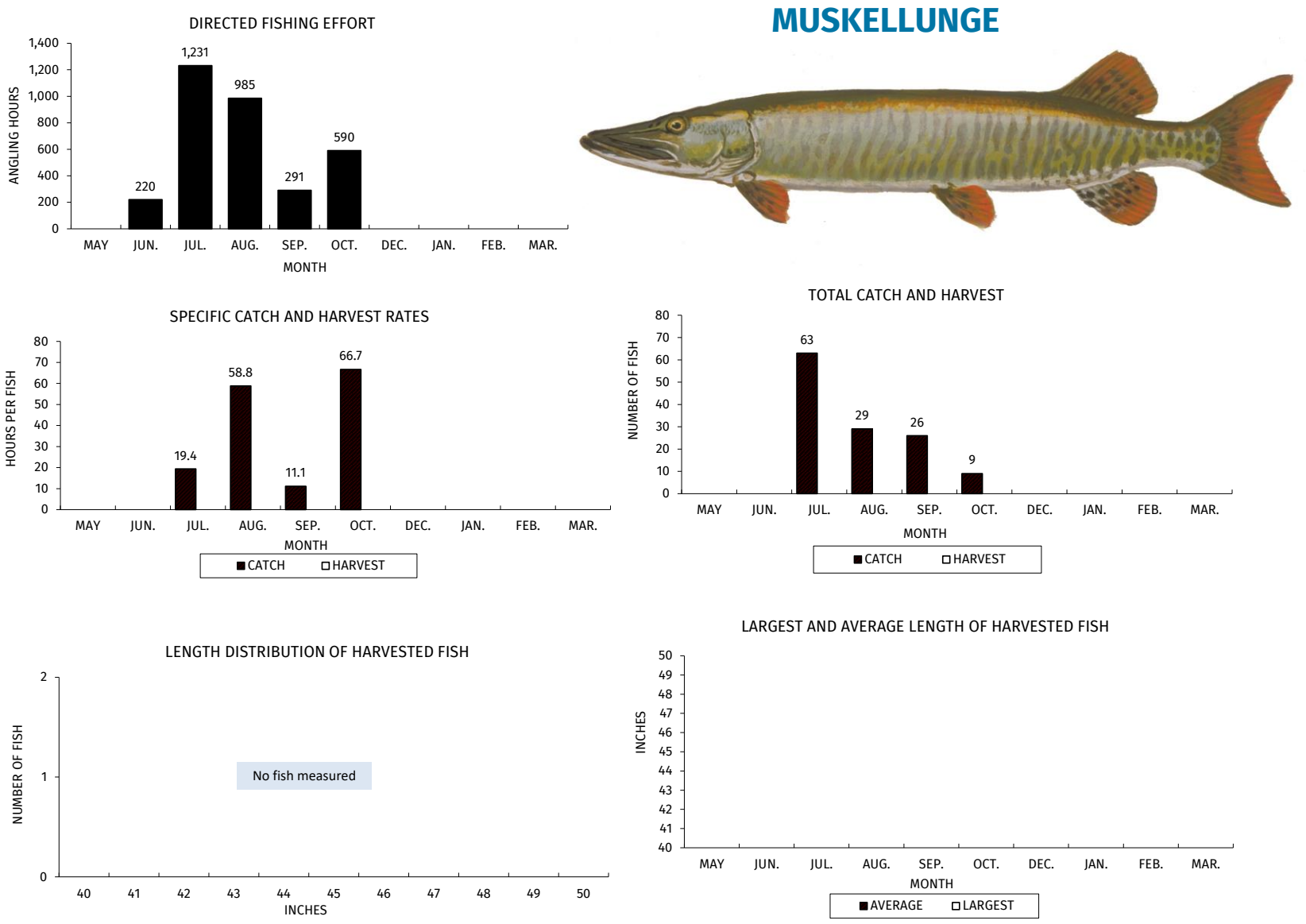
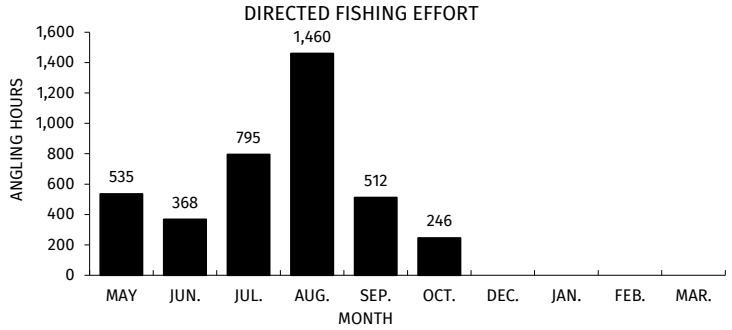
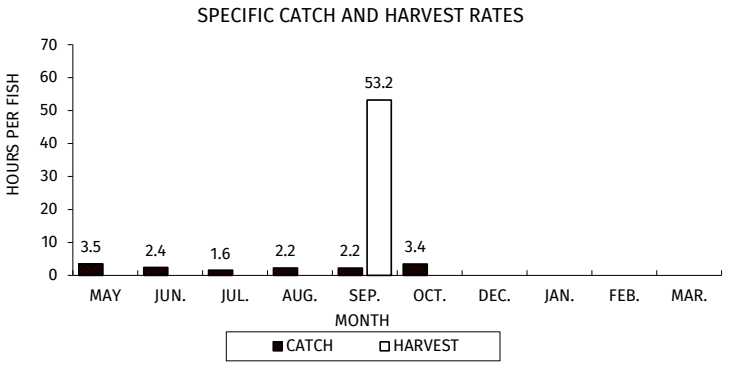
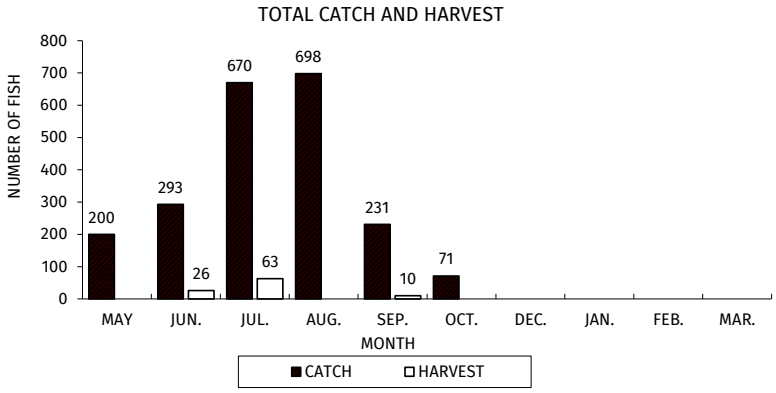


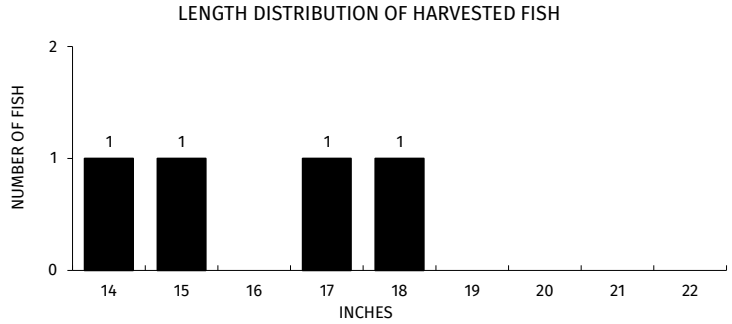
Figure 3. Muskellunge sportfishing effort, catch, harvest, and length distribution, Pike Lake Chain, during 2023-24.

SMALLMOUTH BASS









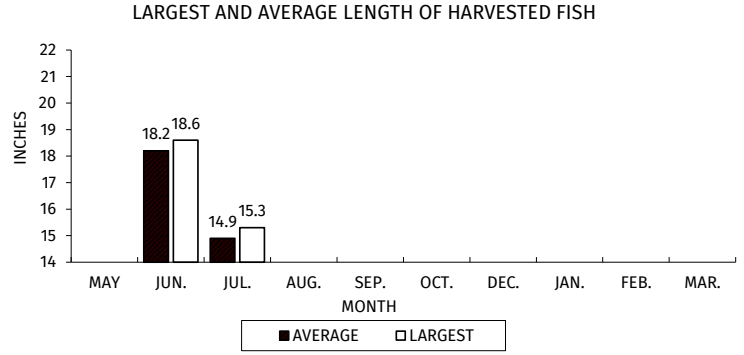
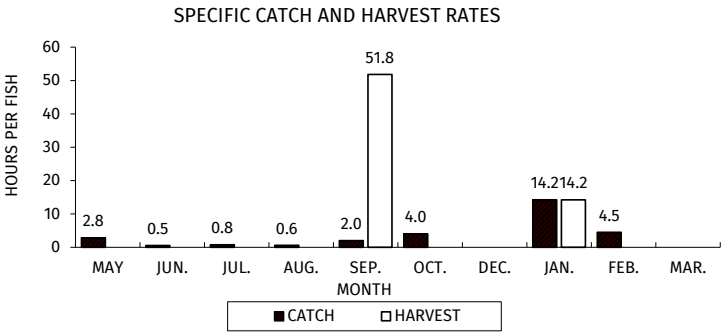
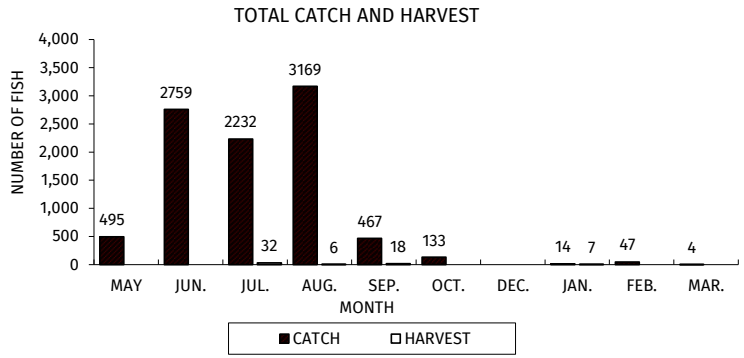
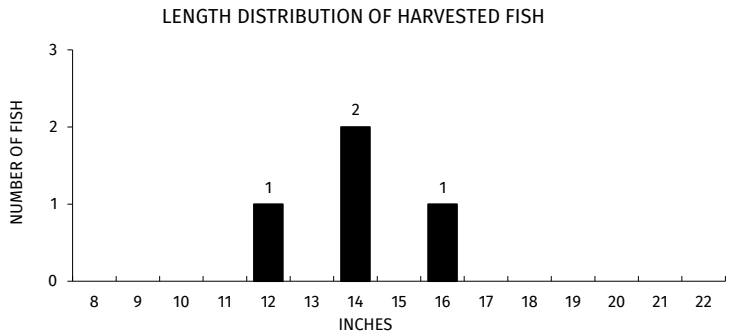


Figure 4. Smallmouth Bass sportfishing effort, catch, harvest, and length distribution, Pike Lake Chain, during 2023-24.

LARGEMOUTH BASS







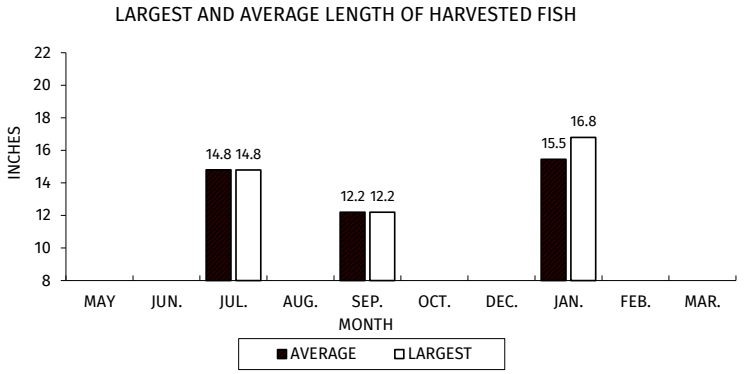


Figure 5. Largemouth Bass sportfishing effort, catch, harvest, and length distribution, Pike Lake Chain, during 2023-24.

YELLOW PERCH

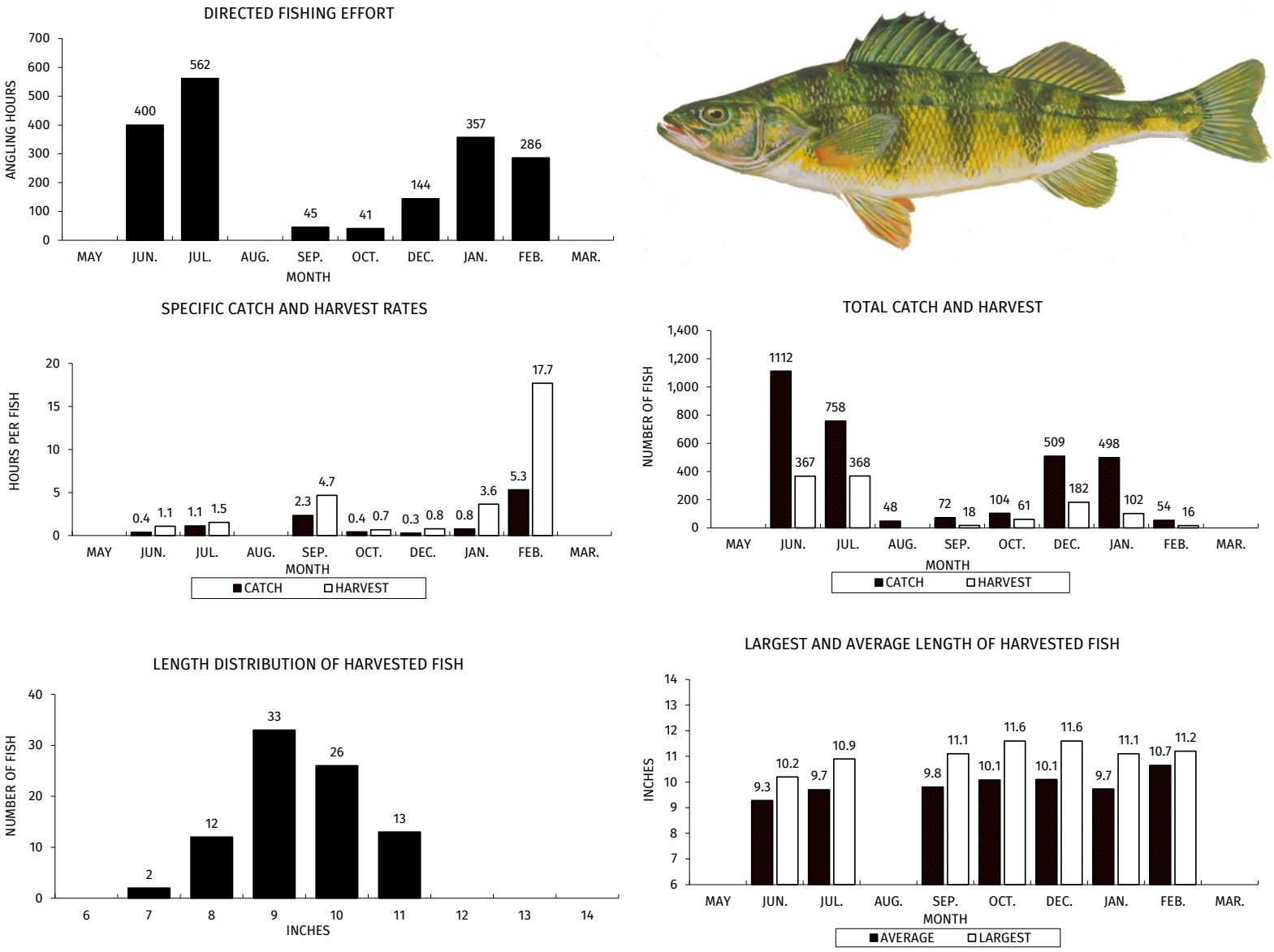
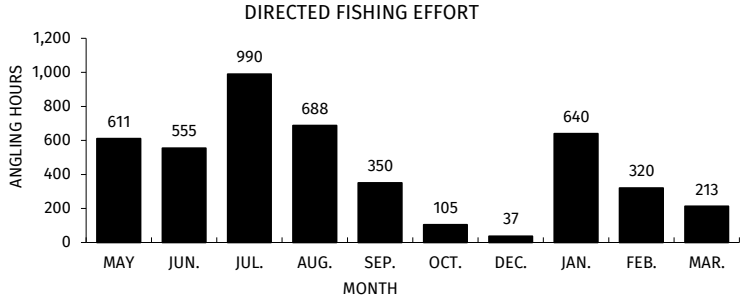
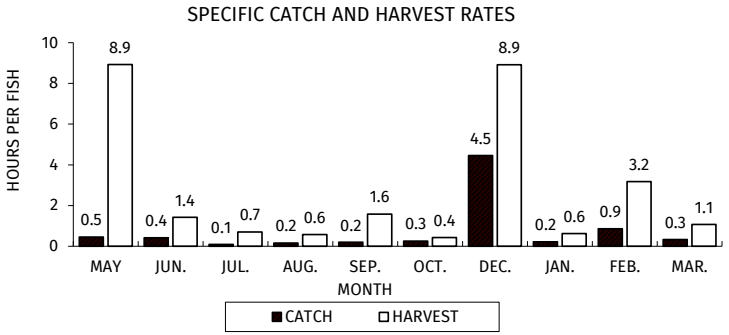
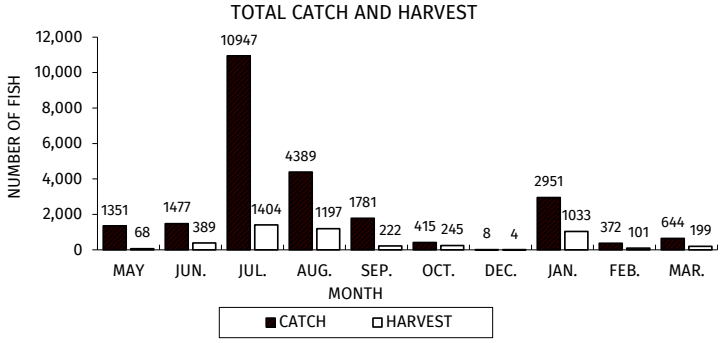


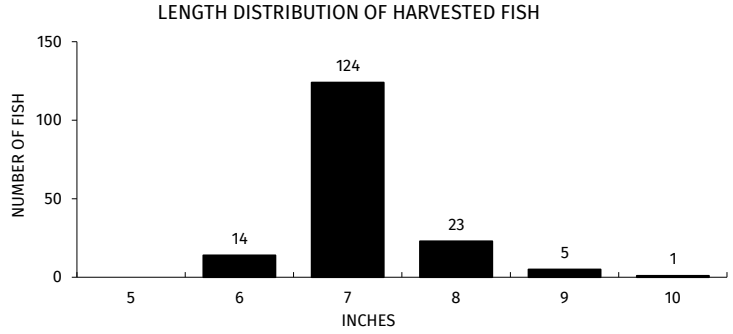
Figure 6. Yellow Perch sportfishing effort, catch, harvest, and length distribution, Pike Lake Chain, during 2023-24.

BLUEGILL









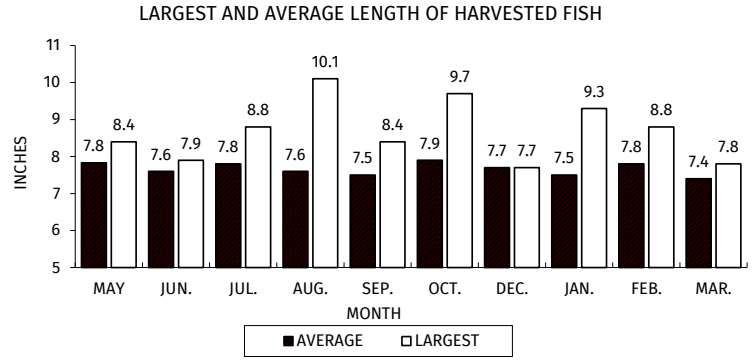
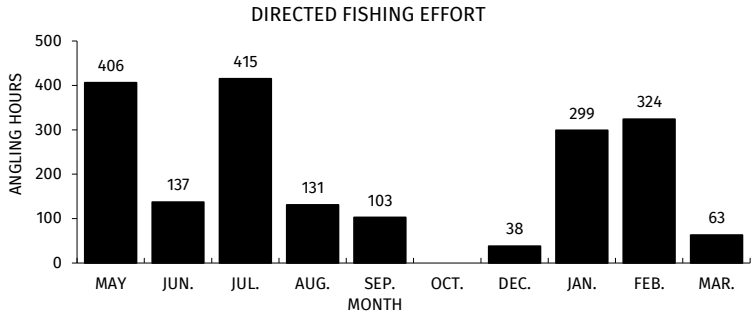
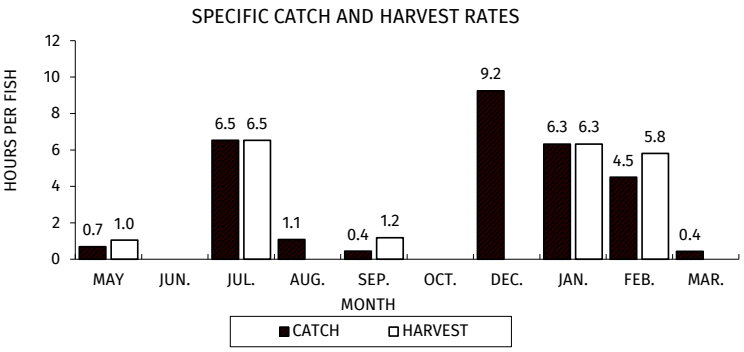
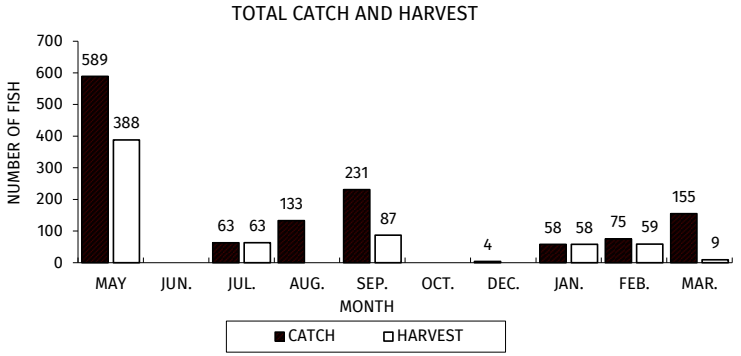


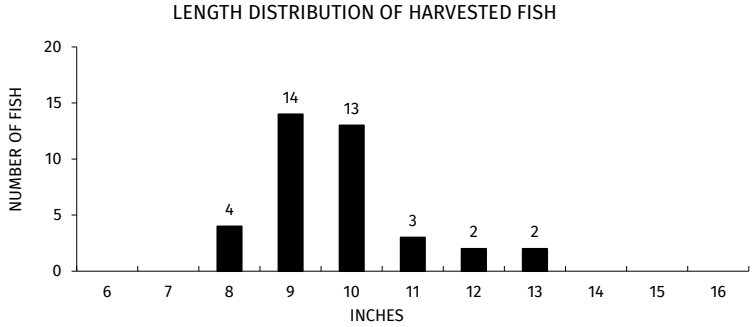
Figure 7. Bluegill sportfishing effort, catch, harvest, and length distribution, Pike Lake Chain, during 2023-24.

BLACK CRAPPIE









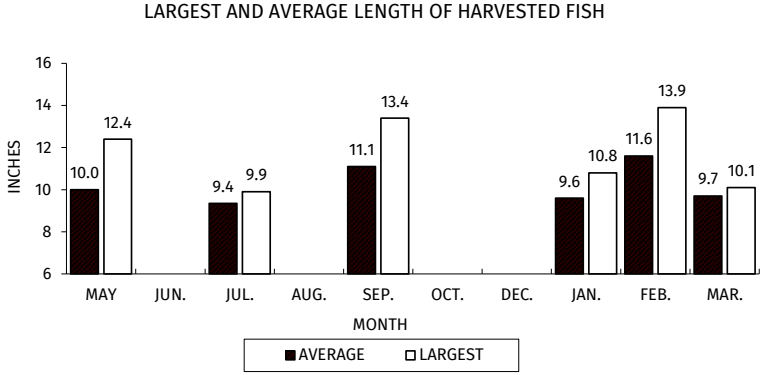
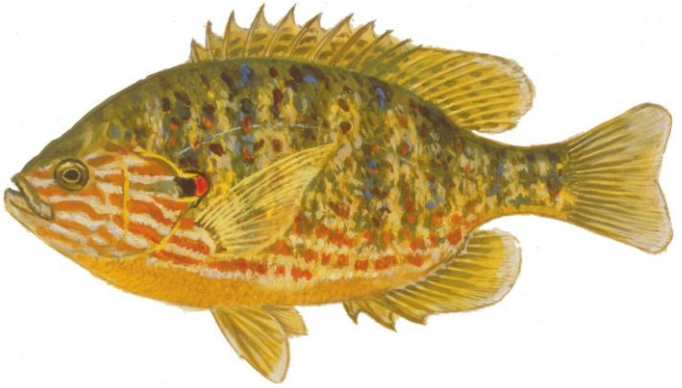
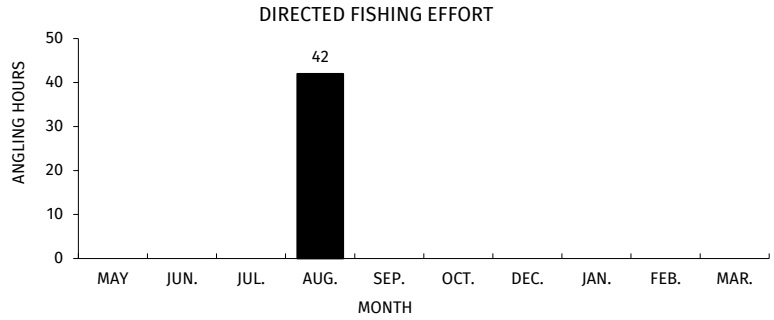
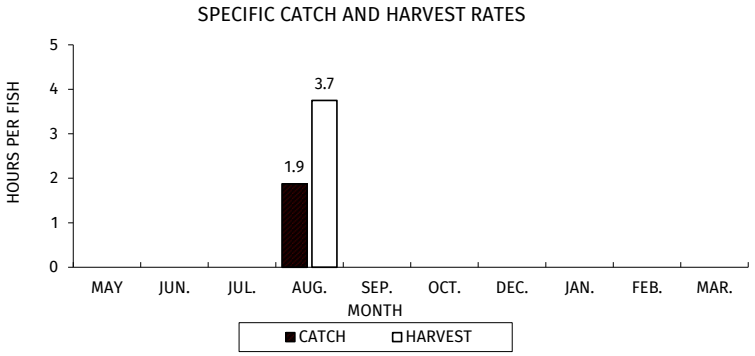


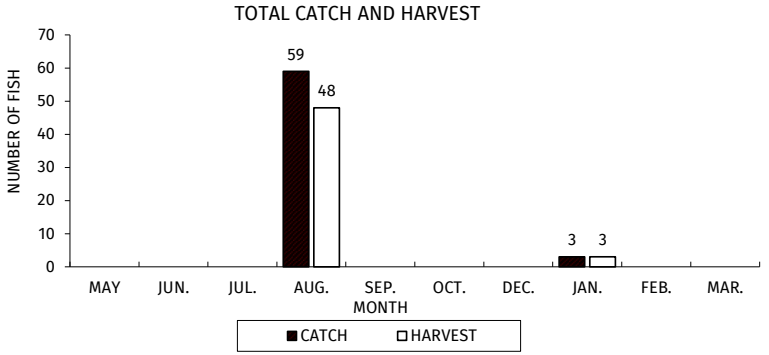
Figure 8. Black Crappie sportfishing effort, catch, harvest, and length distribution, Pike Lake Chain, during 2023-24.

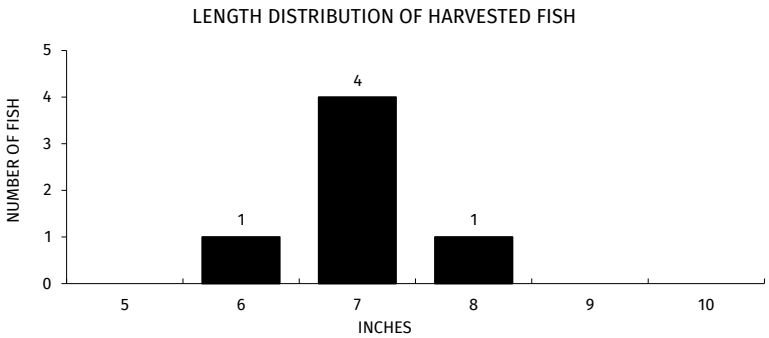
PUMPKINSEED











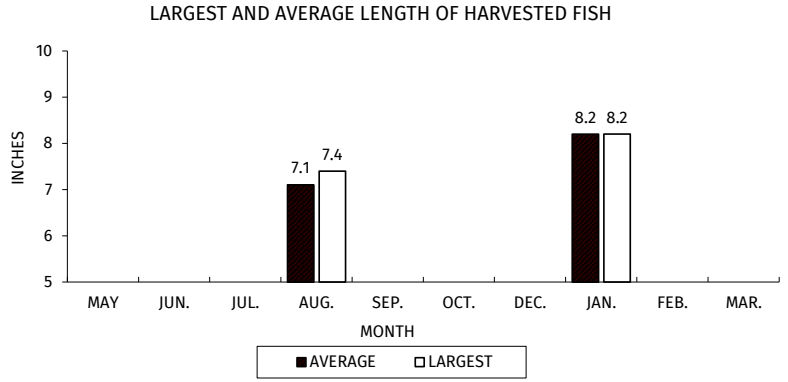
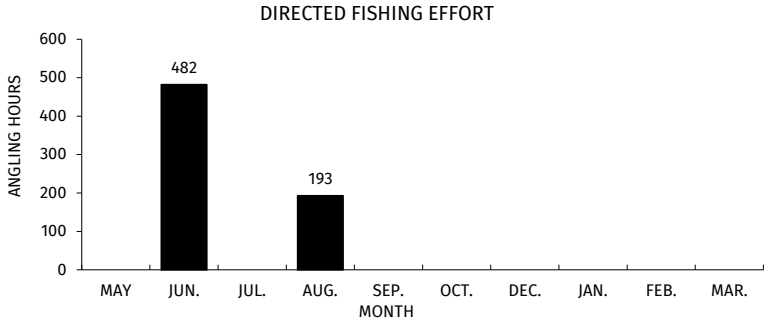
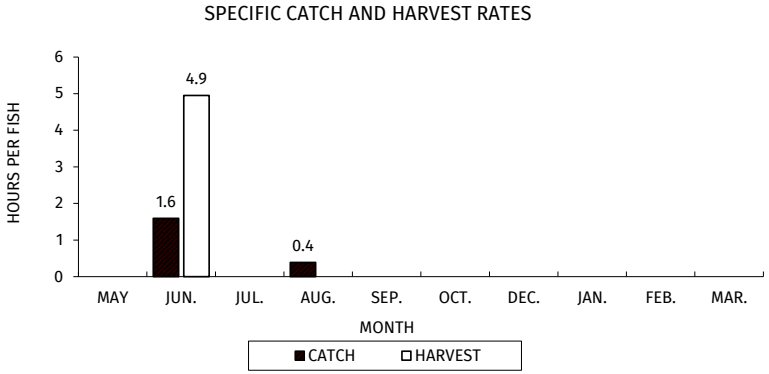
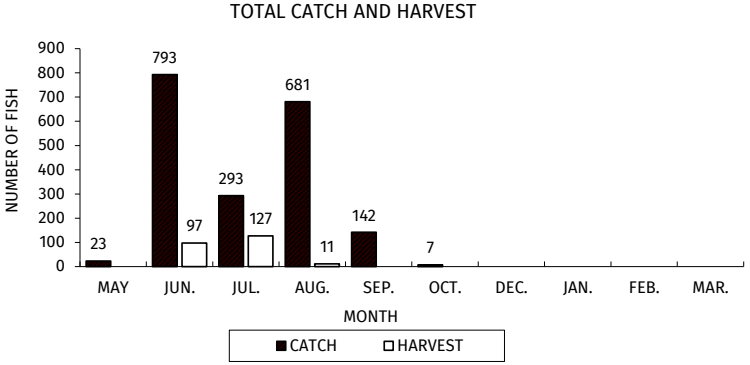


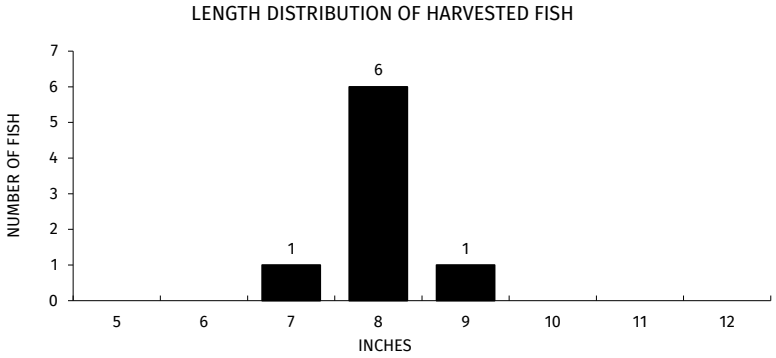
Figure 9. Pumpkinseed sportfishing effort, catch, harvest, and length distribution, Pike Lake Chain, during 2023-24.

ROCK BASS









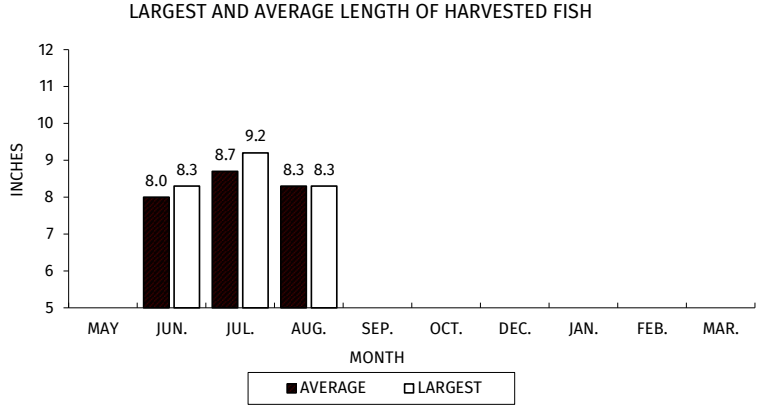


Figure 10. Rock Bass sportfishing effort, catch, harvest, and length distribution, Pike Lake Chain, during 2023-24.