

WISCONSIN DEPARTMENT OF NATURAL RESOURCES

BUTTERNUT LAKE

2022 – 2023 CREEL SURVEY REPORT

FOREST COUNTY



Treaty Fisheries Publication



Created by
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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. The 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. Harvest is another key component of fisheries that we need to measure.

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

We also measure the sport angler harvest to assess its impact on the fishery. It would be highly impractical and very costly to conduct a complete census of every angler who fishes on a lake, so we conduct creel surveys instead.

A creel survey is an assessment tool used to sample the fishing activities of anglers on a body of water to make 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 daylight hours throughout the open season for gamefish from the first Saturday in May through the first Sunday in

March. Creel surveys are not conducted in November when fishing effort is low and ice conditions are often unsafe.

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 completed-trip data 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. Keep in mind that these are estimates based on the best information available and not a complete accounting of effort, catch and harvest. 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.

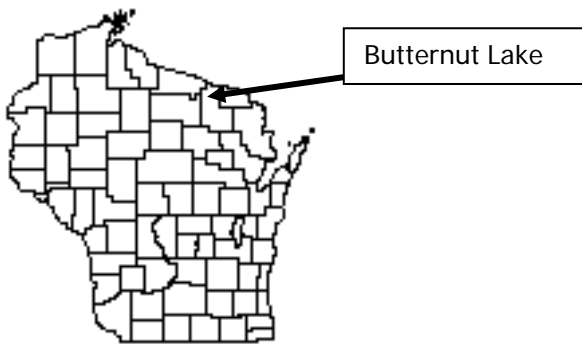
You may have encountered a DNR creel survey clerk on a recent fishing trip. We appreciate your cooperation during an interview. The survey only takes a few minutes of your time and it gives the DNR valuable information needed for management of the fishery.

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 Butternut Lake, discussion of results of the survey and detailed summaries by species of fishing effort, catch and harvest.

GENERAL LAKE INFORMATION



LOCATION

Butternut Lake is located in Forest County near the town of Alvin.

PHYSICAL CHARACTERISTICS

Butternut Lake is a 1,293-acre spring lake with a maximum depth of 42 feet. Littoral substrate consists primarily of sand and gravel with lesser amounts of rubble and muck. Butternut Lake contains medium-hard, slightly alkaline, clear water of high transparency.

SEASONS SURVEYED

The period referred to in this report as the 2022-23 fishing season ran from May 7, 2022 through March 5, 2023. The summer creel survey ran from May 7 through Oct. 31, 2022 and the winter creel survey ran from Dec. 1, 2022 through March 5, 2023.

WEATHER

Ice-out on Butternut Lake was during early May 2022. Fishable ice formed on Butternut Lake in mid-December 2022.

FISHING REGULATIONS

The following seasons, daily bag limits and length limits were in place on Butternut Lake during the 2022-23 fishing season:

SPECIES	SEASON	BAG LIMIT	MIN. SIZE
Largemouth bass	5/07 - 3/05	5*	None
Smallmouth bass	5/07 - 6/17	Catch&Release	
	6/18 - 3/05	5*	None
*Bass species have a combined bag limit of 5. No bass 14" - 18", and only 1 bass > 18" allowed to be kept			
Northern pike	5/07 - 3/05	5	None
Walleye	5/07 - 3/05	3	15"
			20" - 24" Protected Slot, 1>24"
Panfish	Open all year	25	None
Rock bass	Open all year	None	None

SPECIES CATCH AND HARVEST INFORMATION

Summaries of angling effort, catch and harvest information for each species are in Table 2 and Figures 1-9, along with a comparison of these statistics with the previous creel survey in Table 2. Information about species with fishing seasons extending beyond March 5, 2023 should be considered minimum estimates. Each species page has up to five graphs depicting the following:

- DIRECTED FISHING EFFORT**
 Estimated number of hours during each month that anglers spent fishing for a species.
- TOTAL CATCH AND HARVEST**
 Estimated number of fish of the indicated species caught or harvested by all anglers, regardless of targeted species.
- SPECIFIC CATCH AND HARVEST RATES**
 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.

5. **LARGEST AND AVERAGE LENGTH OF HARVESTED FISH**

Largest and average (mean) length of a species of fish harvested. 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. This was the fifth time the DNR conducted a creel survey on Butternut Lake. The last creel survey took place during 2017-18.

GENERAL ANGLER INFORMATION

Anglers spent 14,059 hours, or 10.9 hours per acre, fishing Butternut Lake during the 2022-23 season (Table 1). That was lower than the Forest County average of 25.2 hours per acre but similar to the fishing effort documented during the 2017-18 creel survey (10.3 hours per acre). June was the most heavily fished month (3,150 hours). Creel clerks were able to conduct 437 interviews throughout the survey.

RESULTS BY SPECIES

WALLEYE (Table 2, Figure 1)

Anglers spent 4,249 hours targeting walleyes. Fishing effort for walleye was highest in May (872 hours). Total catch of walleye was 768 fish, and total harvest was 143 fish. Highest catch (185 fish) occurred in May, and highest harvest (44 fish) occurred in December.

Anglers fished an estimated 8.1 hours to catch and 37.7 hours to harvest a walleye during the survey. Mean length of harvested walleye was 16.9 inches, and the largest measured was a 25.5-inch fish.

NORTHERN PIKE (Table 2, Figure 2)

Fishing effort directed at northern pike was 1,100 hours during the season. Northern pike fishing effort was greatest in January (265 hours). Total catch of northern pike was 1,201 fish, and total harvest was 129 fish. Anglers fished an estimated 4.9 hours to catch a northern pike during the survey. Mean length

of harvested northern pike was 23.8 inches, and the largest measured was a 35.1-inch fish.

MUSKELLUNGE

Although there are no documented muskellunge in Butternut Lake, anglers spent 24 hours targeting muskellunge during the season. No muskellunge were caught.

SMALLMOUTH BASS (Table 2, Figure 3)

Smallmouth bass received the highest fishing effort (9,170 hours) of any gamefish species during the season. Smallmouth bass fishing effort was greatest in June (2,561 hours). Total catch of smallmouth bass was 6,836 fish, with 101 fish harvested. Highest catch (2,412 fish) occurred in June. Anglers fished an estimated 1.4 hours to catch a smallmouth bass during the survey.

LARGEMOUTH BASS (Table 2, Figure 4)

Fishing effort directed at largemouth bass was 226 hours during the season. Largemouth bass fishing effort was greatest in August (188 hours). Total catch of largemouth bass was 48 fish, with no fish harvested. The highest catch (26 fish) occurred in August.

YELLOW PERCH (Table 2, Figure 5)

Yellow perch were the most sought after panfish species during the survey. Yellow perch received 1,565 hours of directed fishing effort. Total catch of yellow perch was 1,537 fish, and total harvest was 94 fish. Mean length of yellow perch harvested was 9.0 inches.

BLUEGILL (Table 2, Figure 6)

Fishing effort directed at bluegill was 565 hours. Total catch of bluegill was 748 fish, and total harvest was 130 fish. Mean length of bluegills harvested was 5.7 inches.

BLACK CRAPPIE (Table 2, Figure 7)

Black crappies received 483 hours of directed fishing effort. Anglers caught seven black crappies with no documented harvest.

PUMPKINSEED (Table 2, Figure 8)

Pumpkinseeds received 183 hours of directed fishing effort. Anglers caught nine pumpkinseeds with no documented harvest.

ROCK BASS (Table 2, Figure 9)

Rock bass received no directed fishing effort. Anglers caught 761 rock bass and harvested 49 fish. Mean length of rock bass harvested was 7.0 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. The survey would not have been possible without their cooperation.

We also thank our cooperator, US Forest Service, who generously allowed the DNR to keep a boat and snowmobile on their property during this survey.

Completion of this survey was possible because of the efforts of the following DNR fisheries management and treaty fisheries staff: John Kubisiak, Lawrence Eslinger, Joelle Underwood, Jason Halverson, Mark Love, Eric Brown and Bob Consolo. Creel clerks on Butternut Lake during the survey period were Shannon Morrell, Rich Cechal, Evan Priebe, Marty Kiepke and John Davis.

This creel report was reviewed by John Kubisiak and Lawrence Eslinger of the DNR.

Additional copies of this report, and those covering other local lakes, can be obtained from the DNR Woodruff Service Center or online at:

<http://dnr.wisconsin.gov/topic/Fishing/north/trtycrlsruvys.html>

Table 1. Sportfishing effort summary, Butternut Lake, 2022-23 season; compared to 2017-18 creel results, Forest County averages and Ceded Territory averages.

Month	Number of Angler Party Interviews	Total Angler Hours	Total Angler Hours/Acre	2017-18 Total Angler Hours/Acre	Forest County Average Hours/Acre	Ceded Territory Average Hours/Acre
May	52	1,865	1.4	1.3	3.5	4.7
June	77	3,150	2.4	1.4	4.2	6.1
July	54	2,526	2.0	2.2	4.9	6.5
August	50	2,245	1.7	1.6	4.0	5.1
September	58	1,688	1.3	1.9	2.3	3.2
October	52	803	0.6	0.6	0.8	1.4
December	14	685	0.5	0.2	1.2	1.0
January	14	545	0.4	0.8	2.2	1.7
February	14	489	0.4	0.4	1.9	1.6
March	5	63	0.0	0.1	0.2	0.2
Summer Total	390	12,277	9.5	8.9	19.8	26.9
Winter Total	47	1,782	1.4	1.4	5.5	4.6
Grand Total	437	14,059	10.9	10.3	25.2	31.2

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 Butternut Lake 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 Butternut Lake to other lakes.

2017-18 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 Butternut Lake.

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 Butternut Lake to other lakes in northern Wisconsin.

Table 2. Comparison of creel survey synopses, Butternut Lake, 2022-23 and 2017-18 fishing seasons.

CREEL YEAR: 2022-23

SPECIES	DIRECTED EFFORT (Hours)	PERCENT OF TOTAL	TOTAL CATCH	SPECIFIC CATCH RATE (Hours/Fish)	TOTAL HARVEST	SPECIFIC HARVEST RATE (Hours/Fish)	MEAN LENGTH OF HARVESTED FISH
Walleye	4,249	24.2%	768	8.1	143	37.7	16.9
Northern Pike	1,100	6.3%	1,201	4.9	129	12.2	23.8
Smallmouth Bass	9,170	52.3%	6,836	1.4	101	104.9	15.5
Largemouth Bass	226	1.3%	48	*	0	*	**
Yellow Perch	1,565	8.9%	1,537	1.1	94	17.1	9.0
Bluegill	565	3.2%	748	0.9	130	4.4	5.7
Black Crappie	483	2.8%	7	71.8	0	*	**
Pumpkinseed	183	1.0%	9	21.5	0	*	**
Rock Bass	0	0.0%	761	*	49	*	7.0

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CREEL YEAR: 2017-18

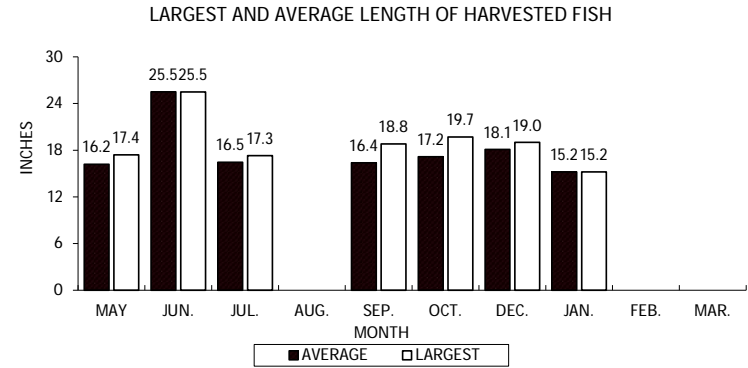
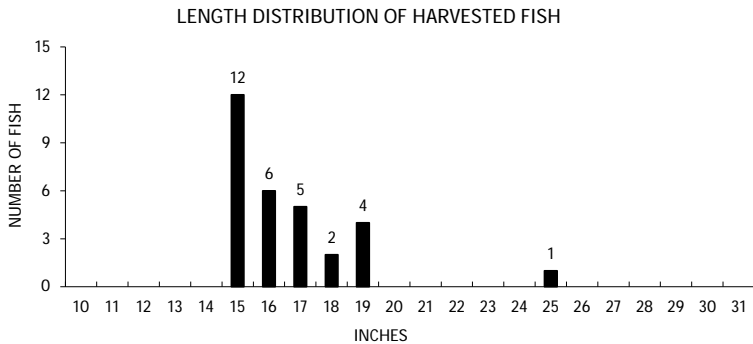
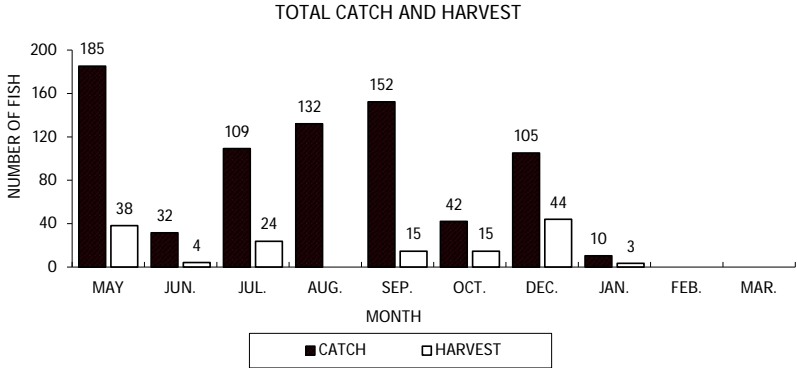
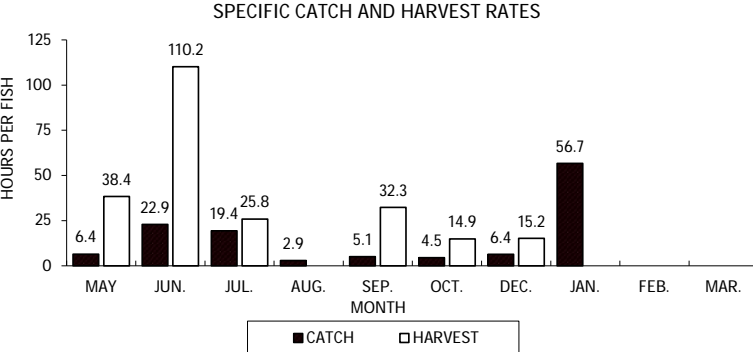
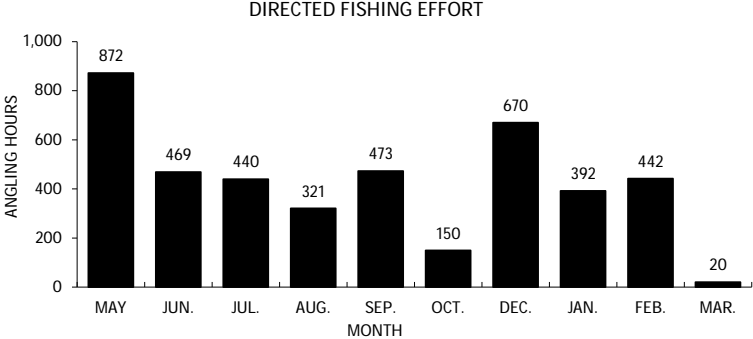
SPECIES	DIRECTED EFFORT (Hours)	PERCENT OF TOTAL	TOTAL CATCH	SPECIFIC CATCH RATE (Hours/Fish)	TOTAL HARVEST	SPECIFIC HARVEST RATE (Hours/Fish)	MEAN LENGTH OF HARVESTED FISH
Walleye	4,379	25.0%	233	20.2	103	43.3	18.4
Northern Pike	1,404	8.0%	340	27.1	67	28.7	25.6
Smallmouth Bass	7,653	43.6%	4,354	1.9	203	38.2	16.4
Largemouth Bass	581	3.3%	130	6.0	9	64.1	15.3
Yellow Perch	2,646	15.1%	3,193	0.9	599	4.6	9.1
Bluegill	741	4.2%	453	1.8	52	14.1	7.6
Rock Bass	135	0.8%	290	1.1	19	6.9	7.5

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.

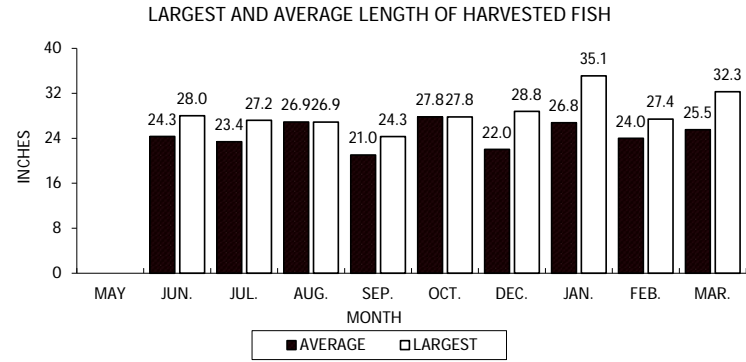
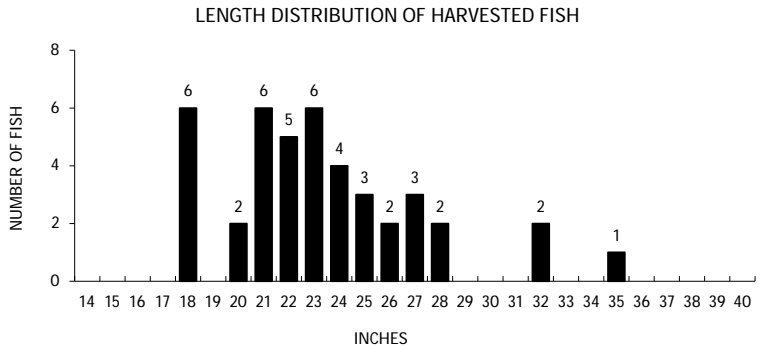
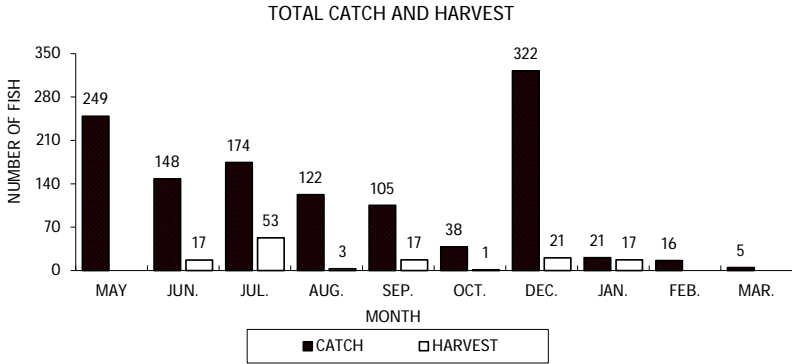
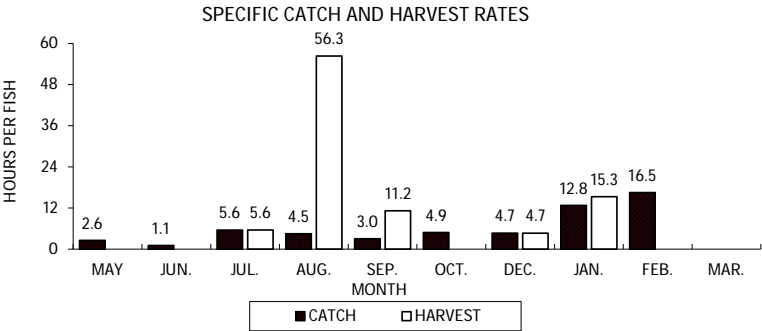
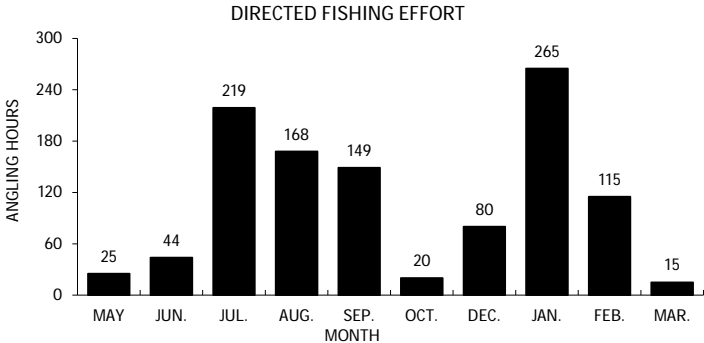
WALLEYE



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

NORTHERN PIKE



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Figure 2. Northern pike fishing effort, catch, harvest and length distribution, Butternut Lake, during 2022-23.

SMALLMOUTH BASS

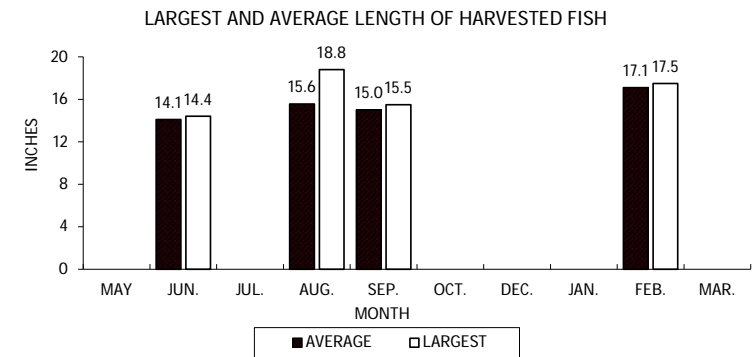
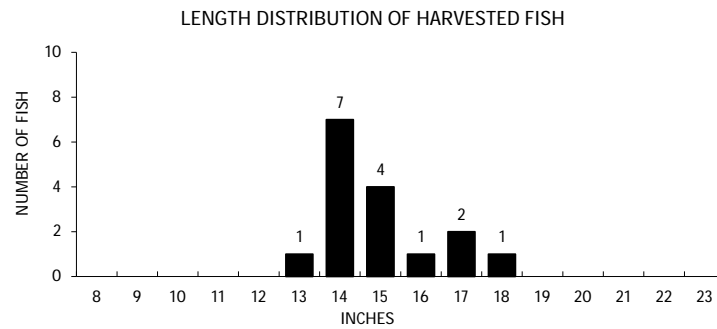
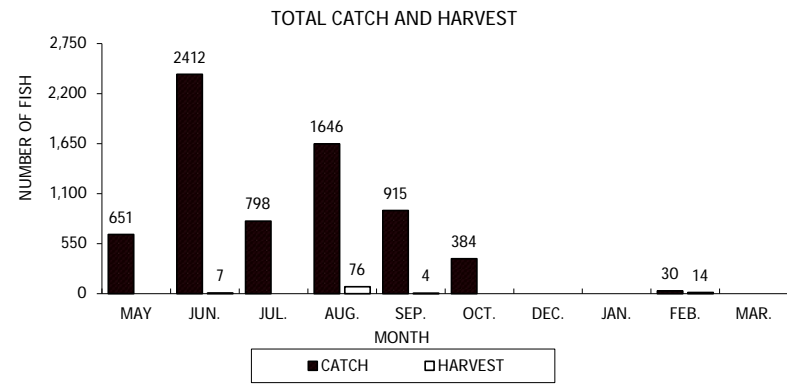
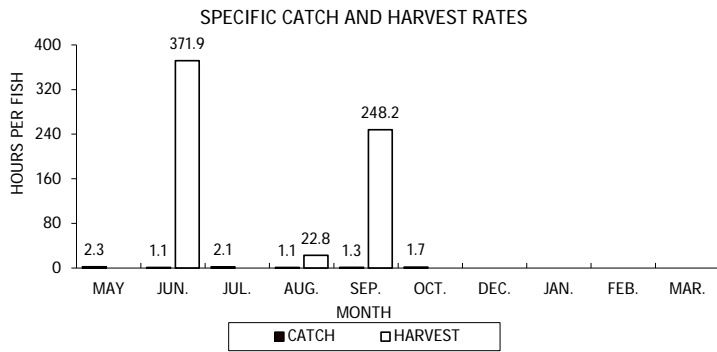
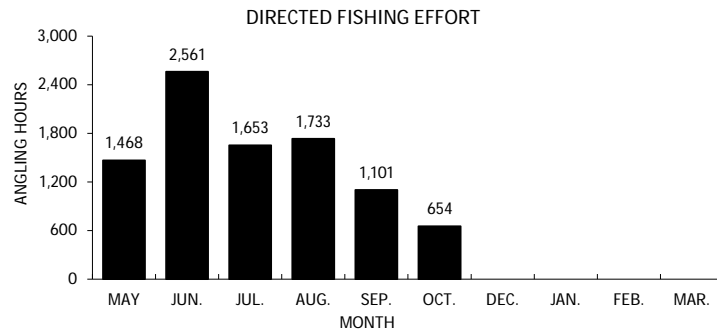


Figure 3. Smallmouth bass fishing effort, catch, harvest and length distribution, Butternut Lake, during 2022-23.

LARGEMOUTH BASS

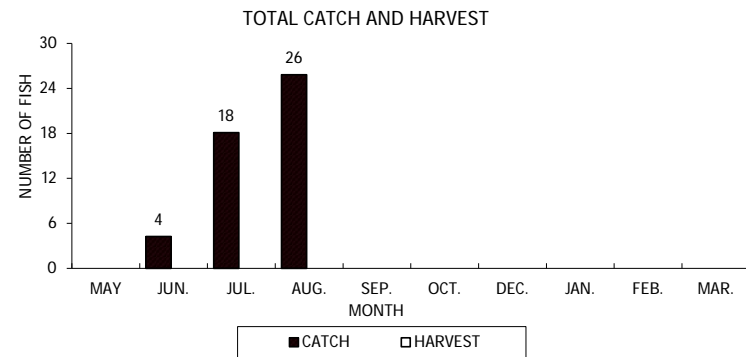
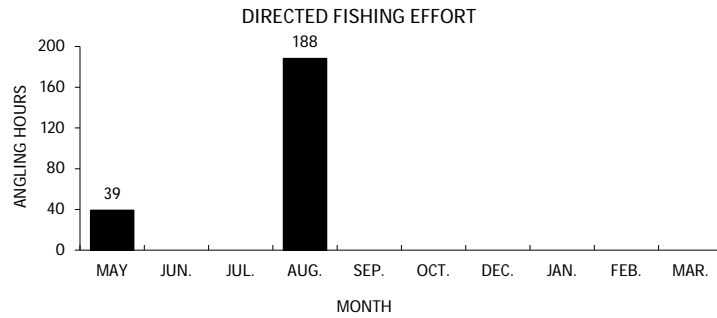
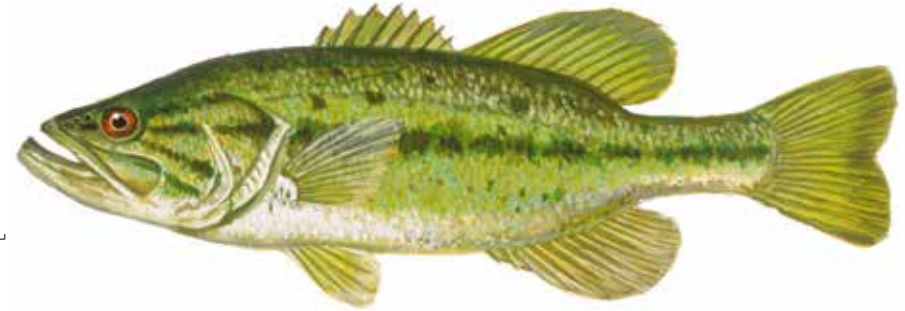


Figure 4. Largemouth bass fishing effort, catch and harvest, Butternut Lake, during 2022-23.

YELLOW PERCH

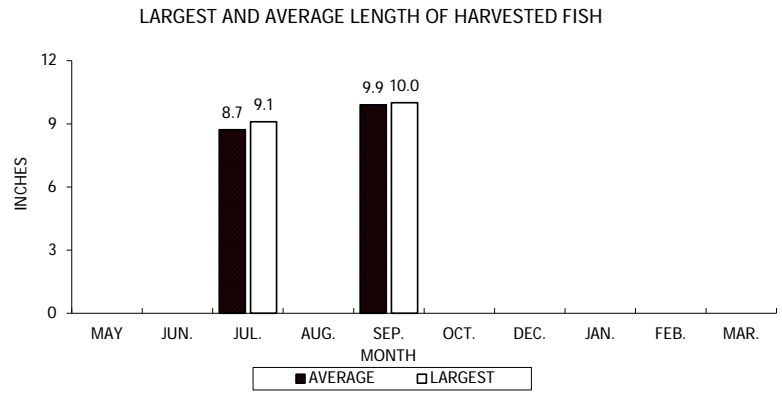
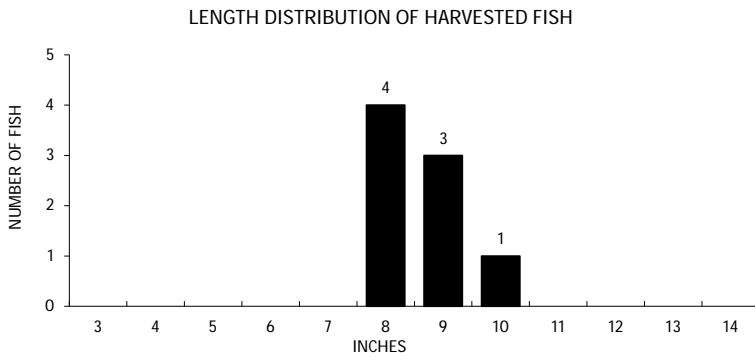
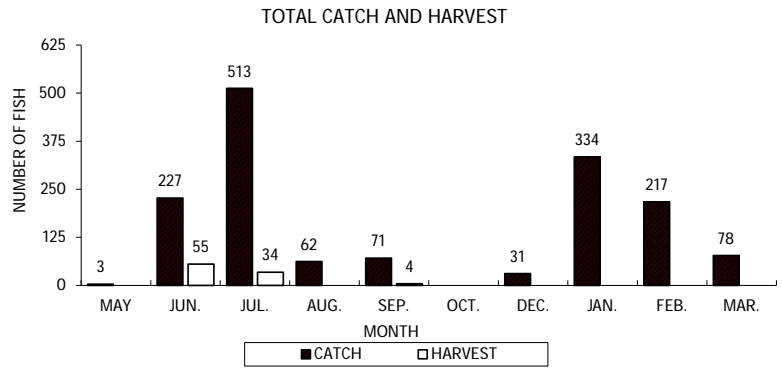
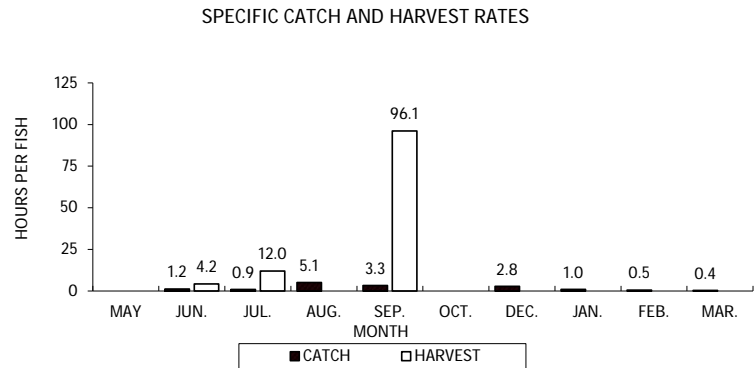
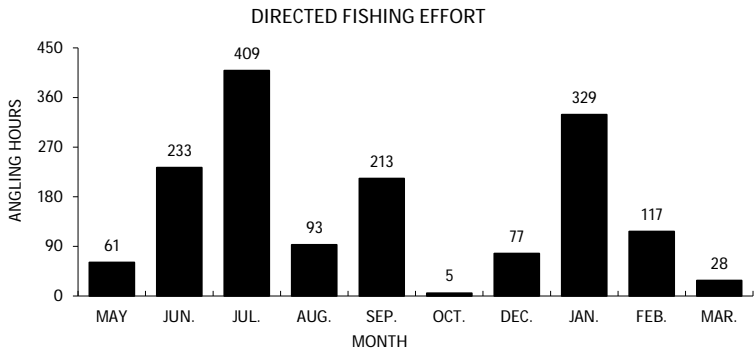


Figure 5. Yellow perch fishing effort, catch, harvest and length distribution, Butternut Lake, during 2022-23.

BLUEGILL

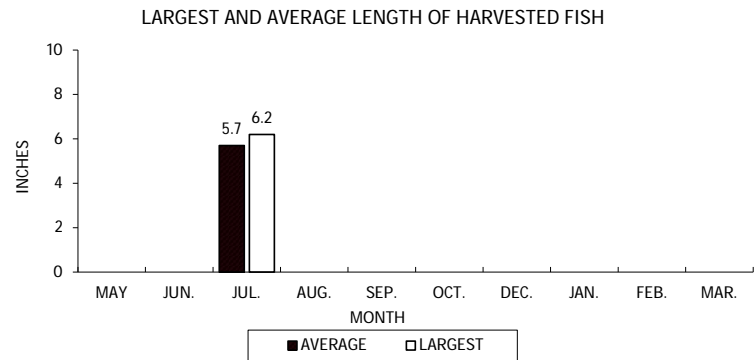
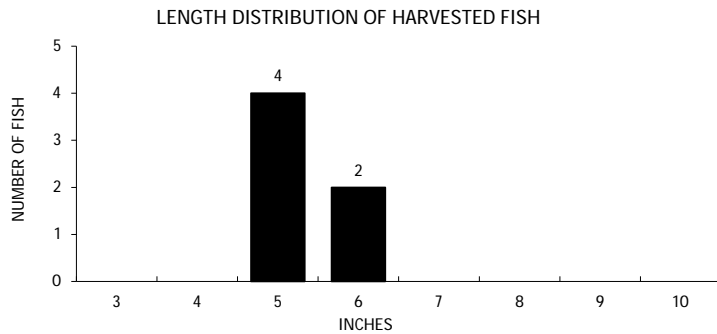
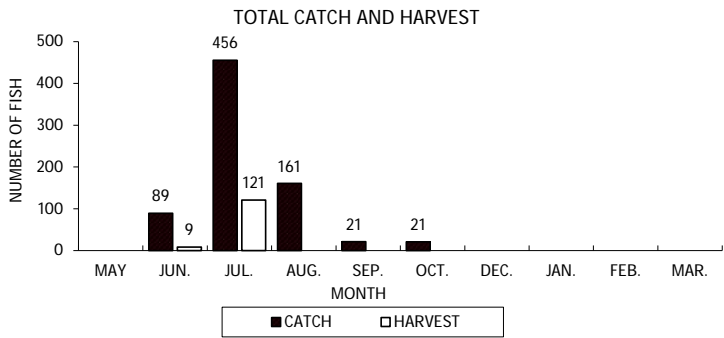
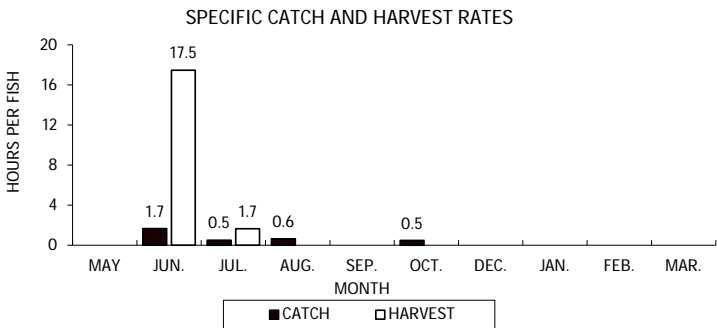
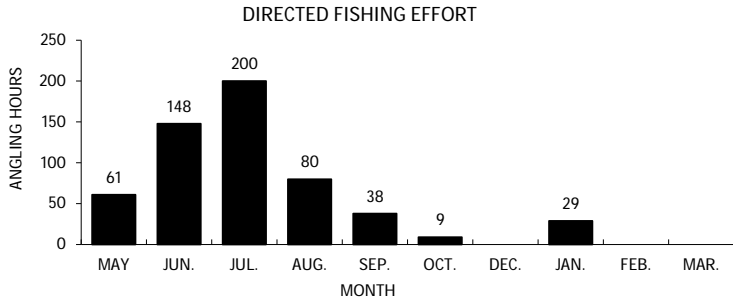


Figure 6. Bluegill fishing effort, catch, harvest and length distribution, Butternut Lake, during 2022-23.

BLACK CRAPPIE

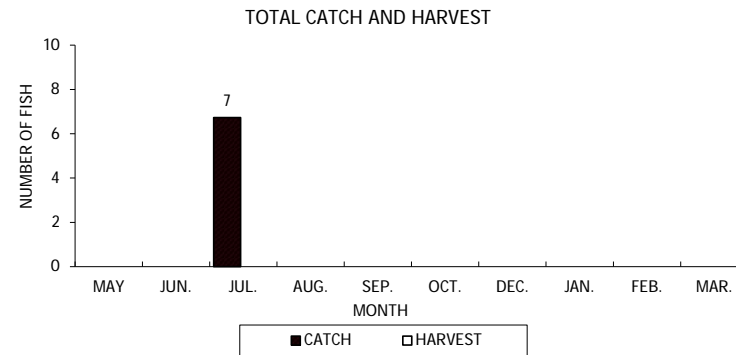
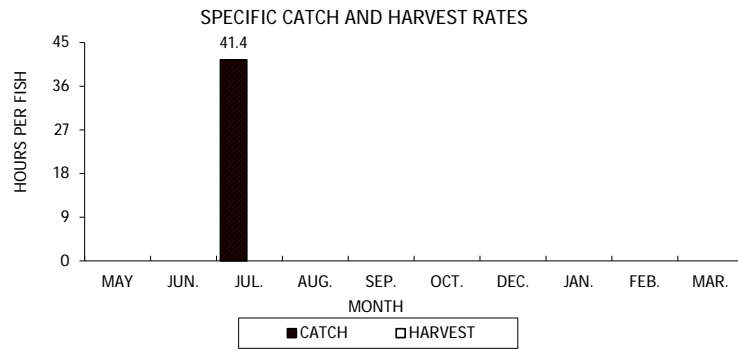
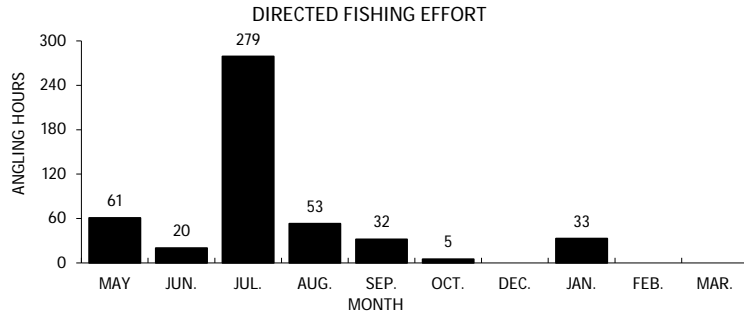
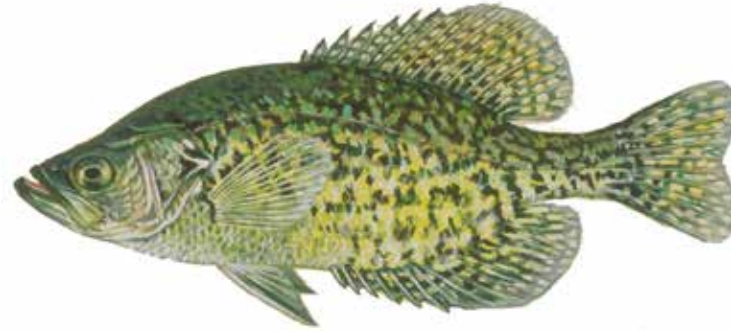


Figure 7. Black crappie fishing effort, catch and harvest, Butternut Lake, during 2022-23.

PUMPKINSEED

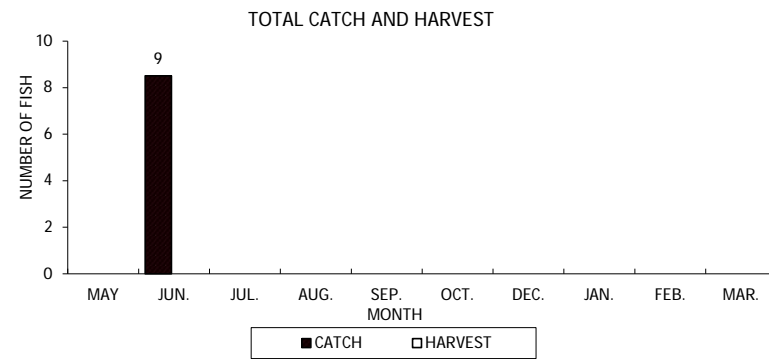
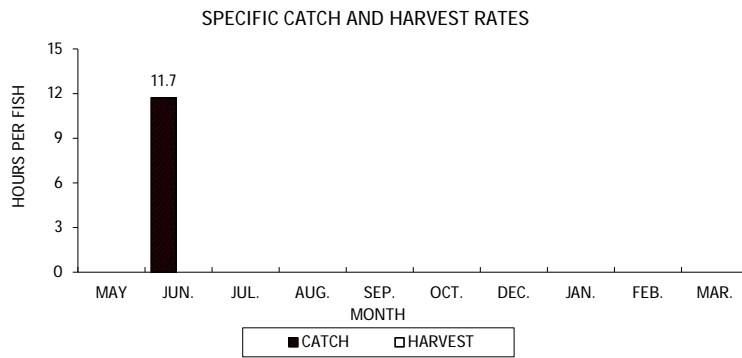
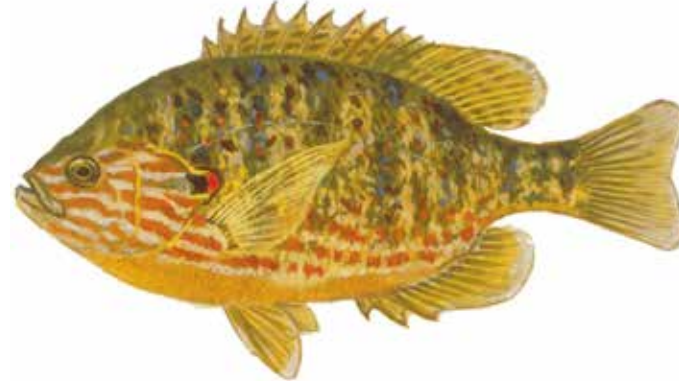
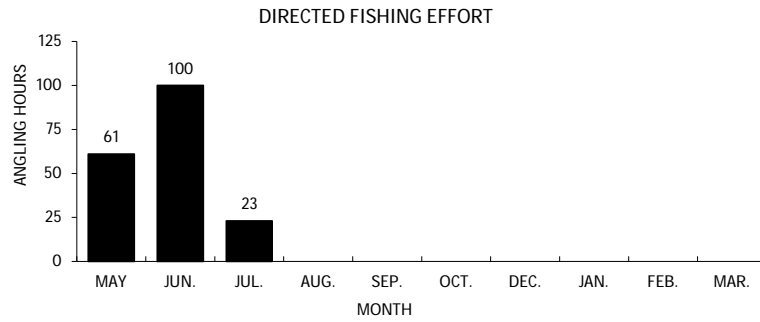
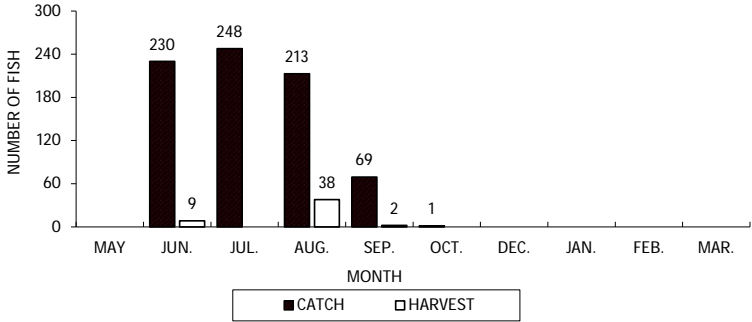


Figure 8. Pumpkinseed fishing effort, catch and harvest, Butternut Lake, during 2022-23.

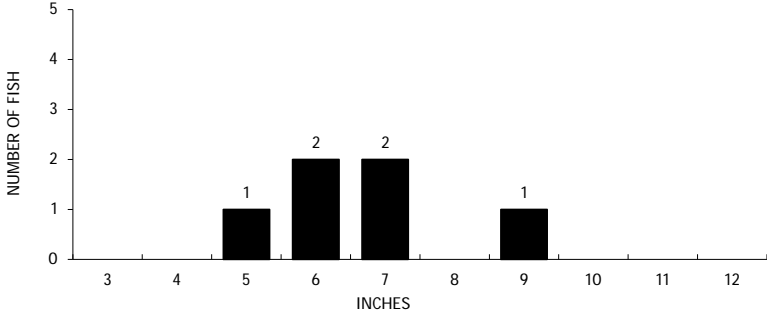
ROCK BASS



TOTAL CATCH AND HARVEST



LENGTH DISTRIBUTION OF HARVESTED FISH



LARGEST AND AVERAGE LENGTH OF HARVESTED FISH

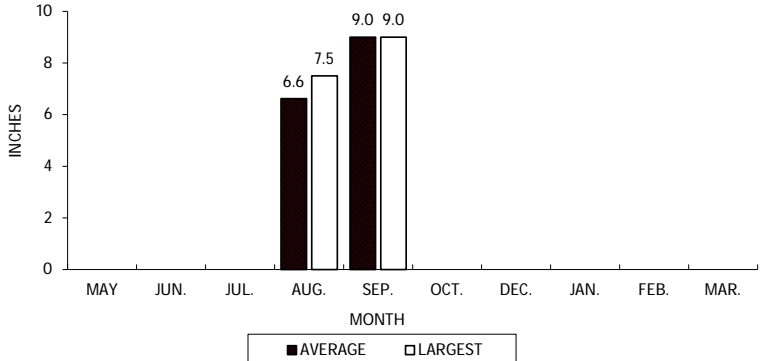


Figure 9. Rock bass catch, harvest and length distribution, Butternut Lake, during 2022-23.