

WISCONSIN DEPARTMENT OF NATURAL RESOURCES

ECHO LAKE

2023 – 2024 CREEL SURVEY REPORT

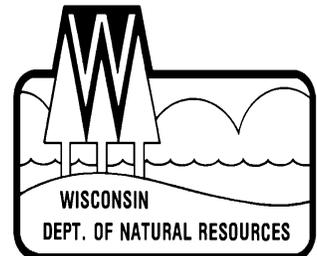
IRON COUNTY



Treaty Fisheries Publication



Compiled by  
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Fisheries Technician



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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.

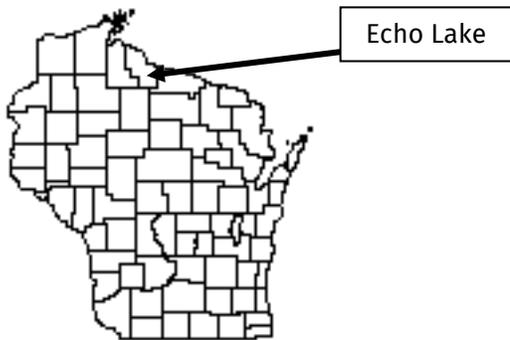
You may have encountered a DNR creel survey clerk on a recent fishing trip. We appreciate your cooperation during an interview. The survey only takes a few minutes of your time, and it gives the DNR valuable information needed for management of the fishery.

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



### LOCATION

Echo Lake is located in Iron County near the town of Mercer.

### PHYSICAL CHARACTERISTICS

Echo Lake is a 220-acre drainage lake with a maximum depth of 25 feet. Littoral substrate consists primarily of sand, with lesser amounts of gravel, rock and gravel. Echo Lake contains medium hard, slightly alkaline, clear water of moderate 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 Echo Lake was around May 5, 2023. Fishable ice formed early 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/ 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	15"
			20-24" Protected Slot, 1>24"
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:

- 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 3,668 hours, or 16.7 hours per acre, fishing Echo Lake during the 2023-24 season (Table 1). That was more than the Iron County average of 14.1 hours per acre. July was the most heavily fished month (643 hours), and fishing effort was lightest in December (205 hours). The creel clerks were able to conduct 120 interviews throughout the survey.

## RESULTS BY SPECIES

### WALLEYE (Table 2, Figure 1)

Walleye received 24.9 percent of the fishing effort during the season. Anglers spent 1,448 hours targeting Walleye. The greatest fishing effort for Walleye was in May (413 hours). August had the least amount of Walleye fishing effort (0 hours).

Total catch of Walleye was 439 fish, with a harvest of 37. Highest catch (331 fish) occurred in May, and highest harvest (13 fish) occurred in January. Anglers fished an average of 3.4 hours to catch and 44.1 hours to harvest a Walleye during the survey. The mean length of harvested Walleye was 18.2 inches, and the largest measured was a 26.7-inch fish.

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

Fishing effort directed at Northern Pike was 530 hours during the season. Northern Pike fishing effort was greatest in January (220 hours). Total catch of Northern Pike was 104 fish, with a harvest of 21. Anglers fished an average of 8.4 hours to catch a Northern Pike during the survey. The mean length of harvested Northern Pike was 23.5 inches, and the largest measured was a 26.6-inch fish.

### MUSKELLUNGE (Table 2, Figure 3)

Anglers spent 1,262 hours targeting Muskellunge during the season. Muskellunge fishing effort was greatest in October (355 hours). Total catch of Muskellunge was 75 fish, and the highest catch (23 fish) occurred in October. Anglers fished 16.8 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 268 hours during the season. Smallmouth Bass fishing effort was greatest in June (88 hours). Total catch of Smallmouth Bass was 123 fish, with no fish harvested. Highest catch (85 fish) occurred in June. Anglers fished an average of 4.3 hours to catch a Smallmouth Bass during the survey.

### LARGEMOUTH BASS (Table 2, Figure 5)

Fishing effort directed at Largemouth Bass was 135 hours during the season. Largemouth Bass fishing effort was greatest in August and September (45 hours). Total catch of Largemouth Bass was 12 fish, with no harvest. Highest catch (7 fish) occurred in June.

### PANFISH (Table 2, Figures 6-10)

**YELLOW PERCH** received 700 hours of directed fishing effort. Total catch of Yellow Perch was 1,675 fish, with 99 harvested. The mean length of harvested fish was 7.7 inches.

**BLUEGILL** received 389 hours of directed fishing effort. Total catch of Bluegill was 507 fish, with no fish harvested.

**BLACK CRAPPIE** received 987 hours of directed fishing effort. Anglers caught 522 Black Crappie and harvested 355. The mean length of harvested fish was 9.8 inches.

**PUMPKINSEED** received 85 hours of directed fishing effort. Anglers caught 99 Pumpkinseed, with no fish harvested.

**ROCK BASS** received no directed fishing effort. Anglers caught 60 Rock Bass, with no fish harvested.

## 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, Dale Anderson, 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, Zach Lawson, Todd Brecka, Misty Rood, Jason Folstad, Jake Dunbar, Matthew Kufahl and Bill Sobaski. Creel clerks during the survey period were Matt Lorenzoni and Ben Schick.

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/trtycr/srvys.html>

**Table 1. Sportfishing effort summary, Echo Lake, 2023-24 season; compared to Iron County averages, and Ceded Territory averages.**

Month	Number of Angler Party Interviews	Total Angler Hours	Total Angler Hours/Acre	Iron County Average Hours/Acre	Ceded Territory Average Hours/Acre
May	11	629	2.9	3.2	4.8
June	19	450	2.0	2.3	6.2
July	28	643	2.9	2.3	6.6
August	9	220	1.0	2.0	5.2
September	11	240	1.1	1.7	3.2
October	22	477	2.2	1.2	1.4
December	6	205	0.9	0.2	1.1
January	8	360	1.6	0.5	1.7
February	6	416	1.9	0.5	1.6
March	0	29	0.1	0.1	0.2
Summer Total	100	2,658	12.1	12.8	27.4
Winter Total	20	1,010	4.6	1.3	4.6
Grand Total	120	3,668	16.7	14.1	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 Echo 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 Echo Lake to other lakes.

**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 Echo Lake to other lakes in northern Wisconsin.

**Table 2. Creel survey synopsis, Echo Lake, 2023-24 fishing season.**

**CREEL YEAR: 2023-24**

<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	1,448	24.9%	439	3.4	37	44.1	18.2
Northern Pike	530	9.1%	104	8.4	21	31.5	23.5
Muskellunge	1,262	21.7%	75	16.8	0	*	**
Smallmouth Bass	268	4.6%	123	4.3	0	*	**
Largemouth Bass	135	2.3%	12	*	0	*	**
Yellow Perch	700	12.1%	1,675	0.5	99	7.4	7.7
Bluegill	389	6.7%	507	1.0	0	*	**
Black Crappie	987	17.0%	522	2.4	355	3.2	9.8
Pumpkinseed	85	1.5%	99	3.6	0	*	**
Rock Bass	0	0.0%	60	*	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

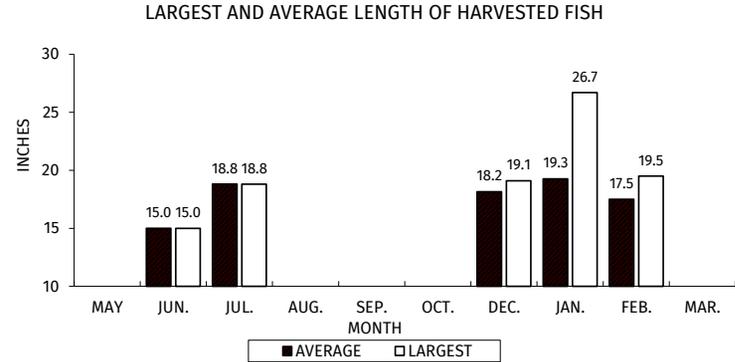
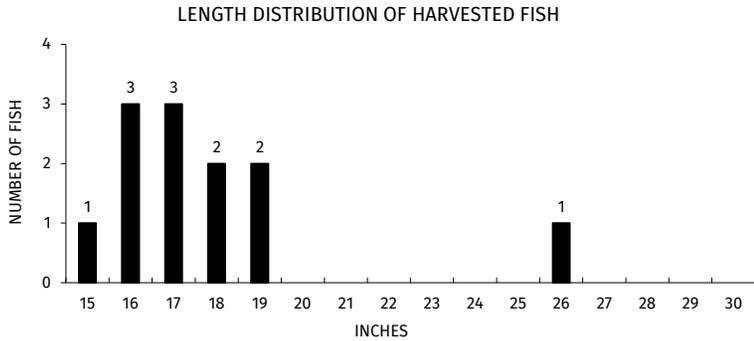
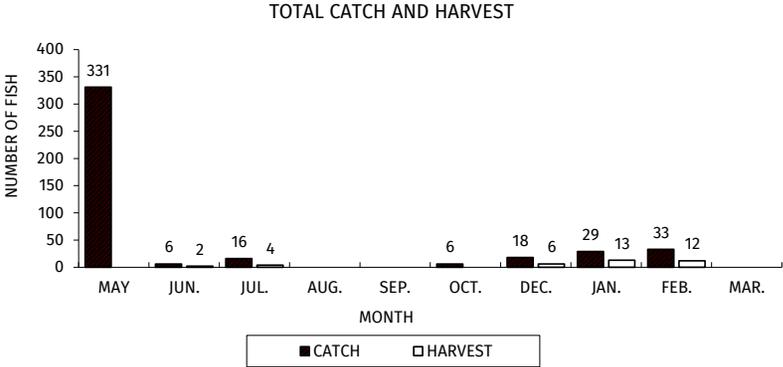
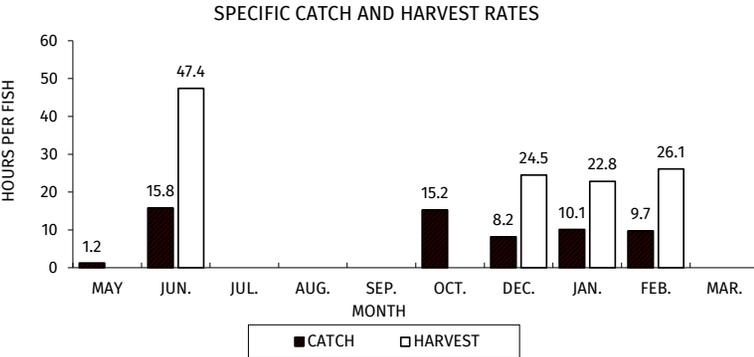
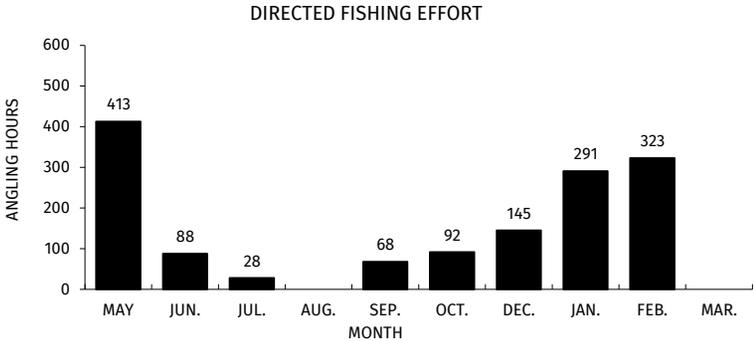
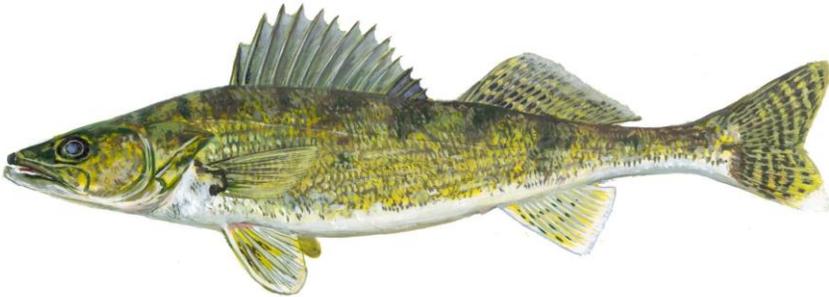


Figure 1. Walleye sportfishing effort, catch, harvest, and length distribution, Echo Lake, during 2023-24.

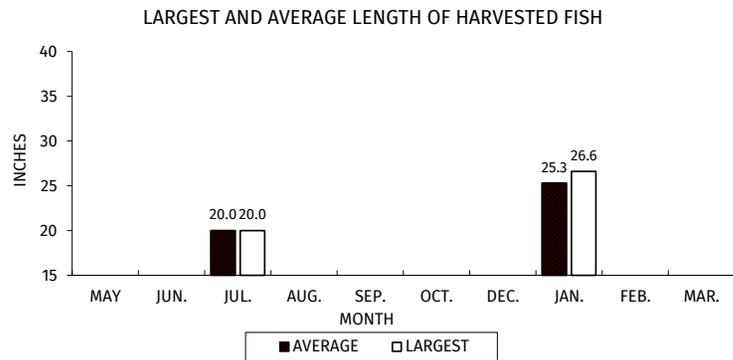
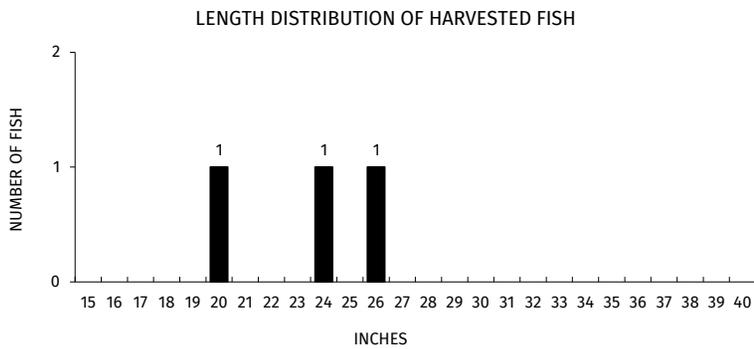
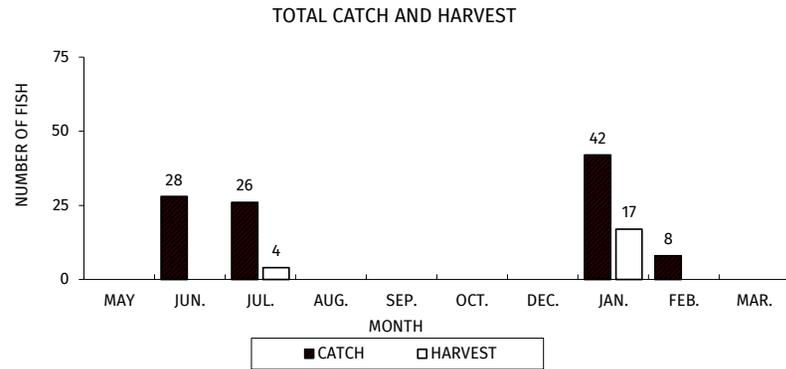
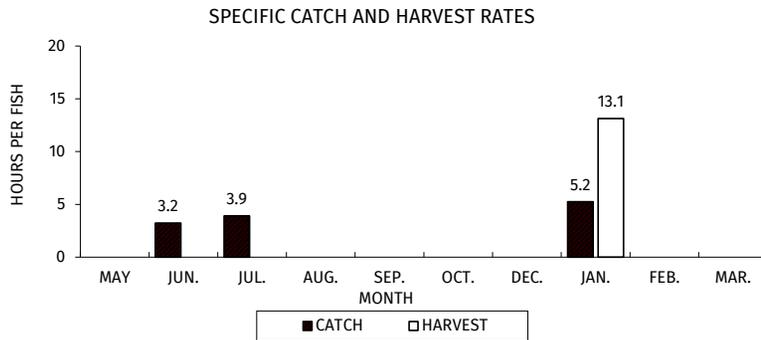
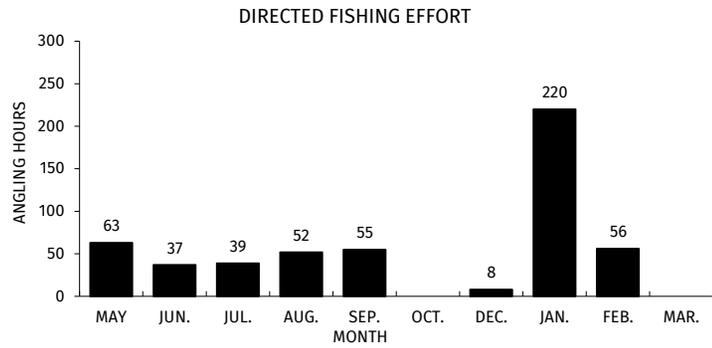


Figure 2. Northern Pike sportfishing effort, catch, harvest, and length distribution, Echo Lake, during 2023-24.

# MUSKELLUNGE

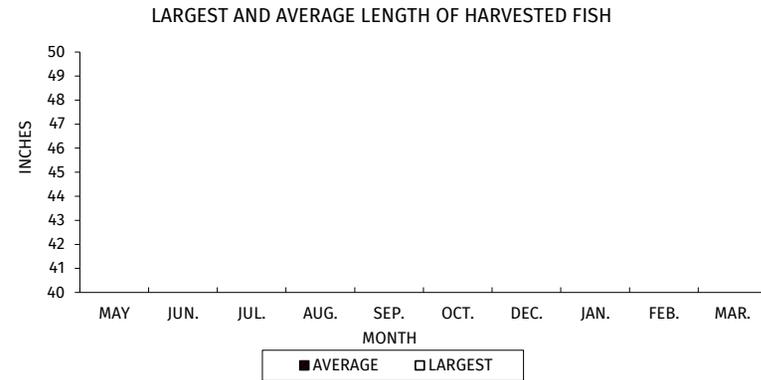
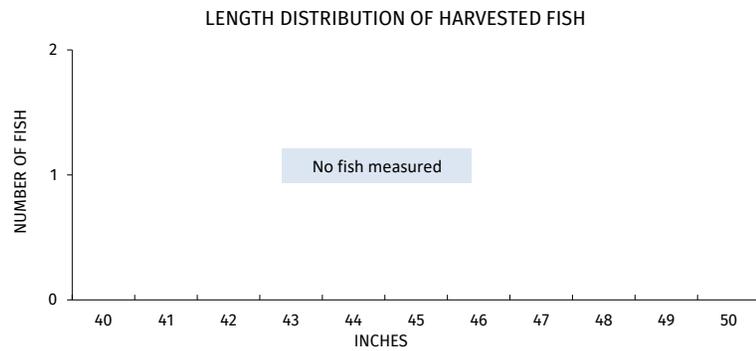
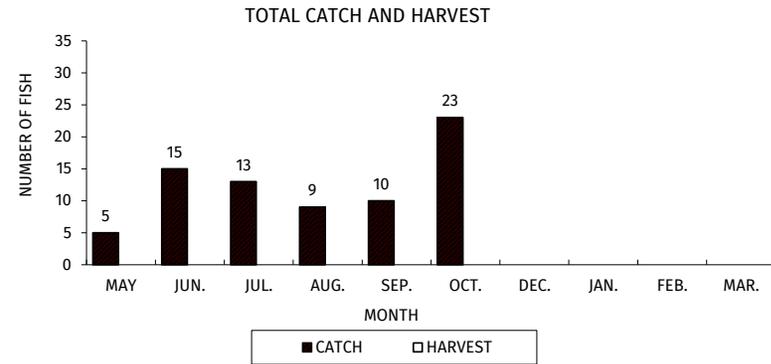
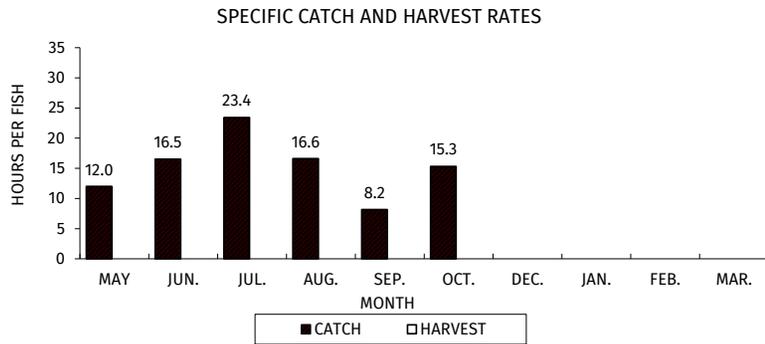
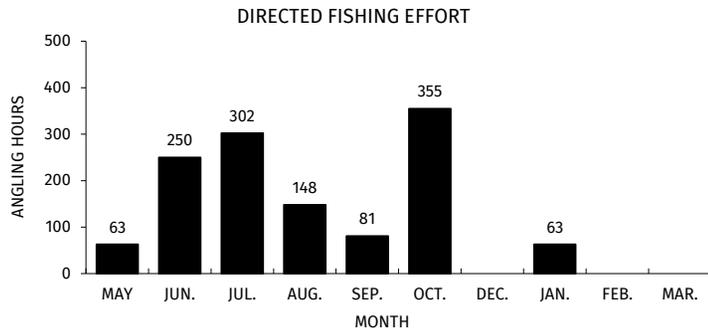


Figure 3. Muskellunge sportfishing effort, catch, harvest, and length distribution, Echo Lake, during 2023-24.

# SMALLMOUTH BASS

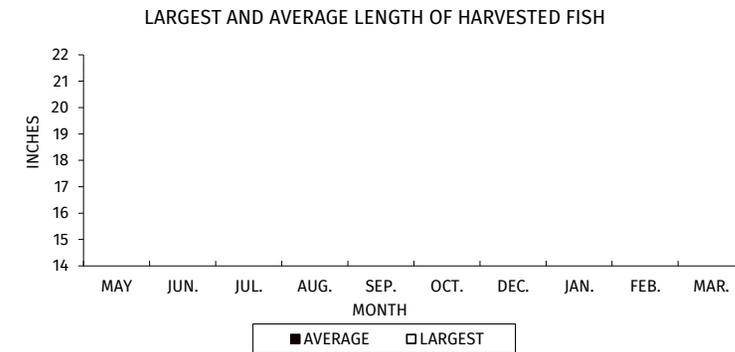
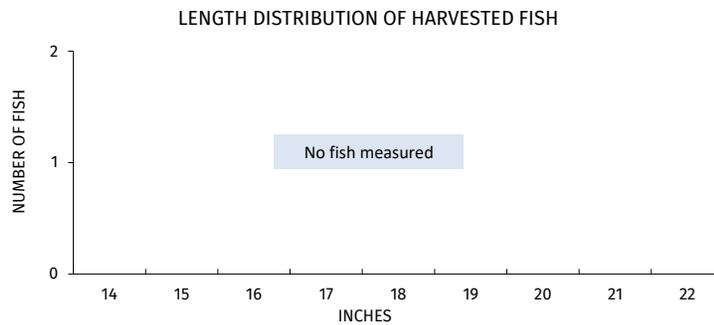
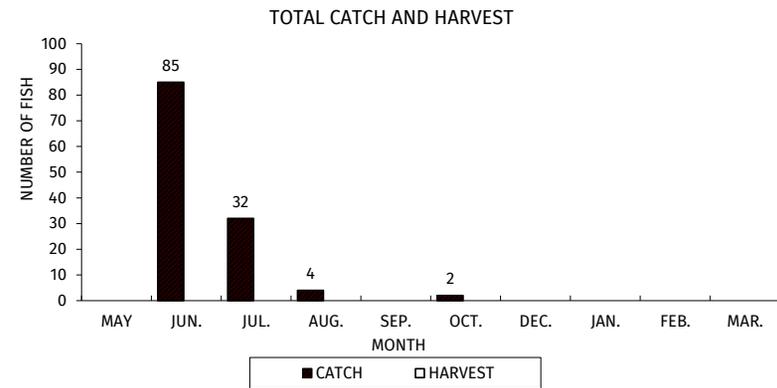
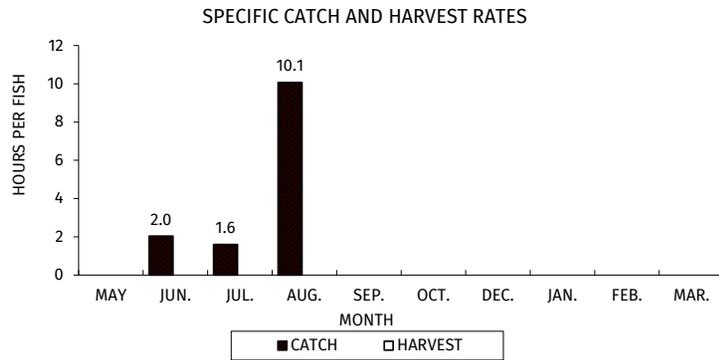
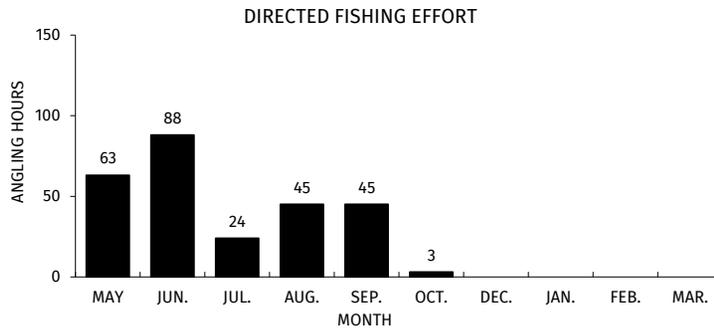


Figure 4. Smallmouth Bass sportfishing effort, catch, harvest, and length distribution, Echo Lake, during 2023-24.

# LARGEMOUTH BASS

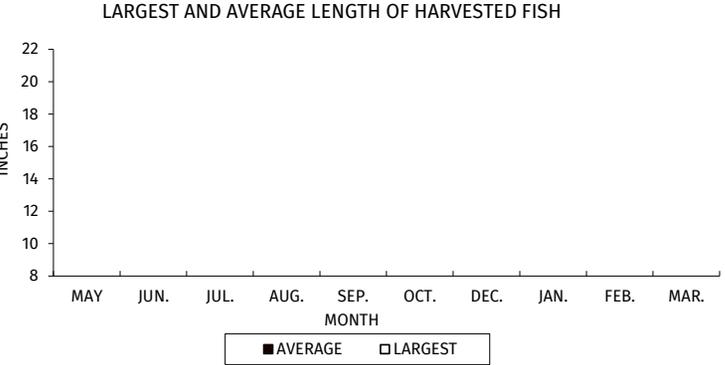
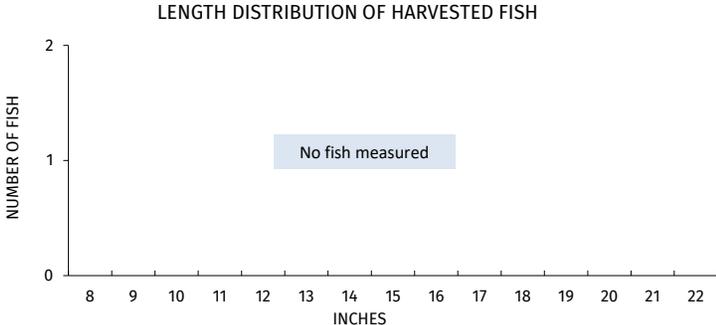
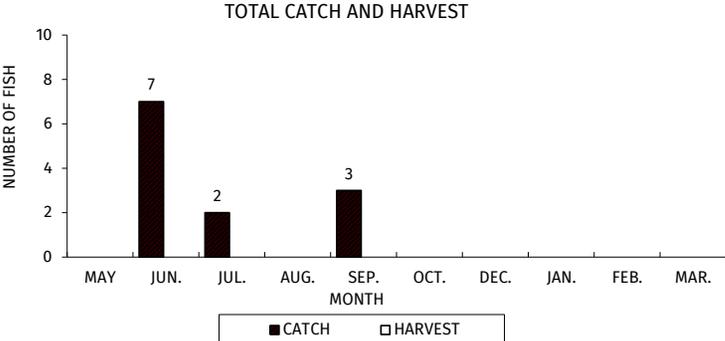
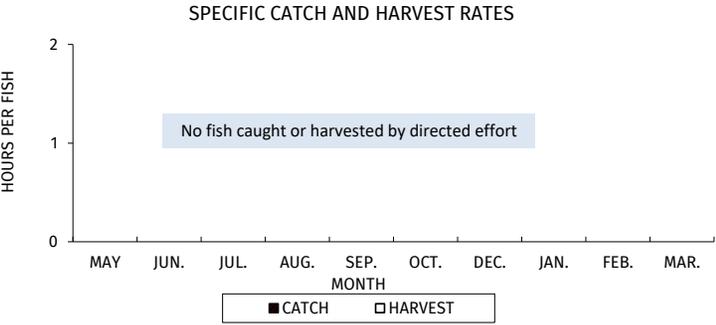
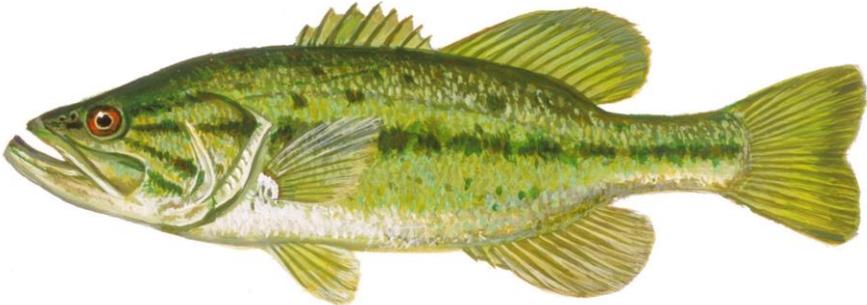


Figure 5. Largemouth Bass sportfishing effort, catch, harvest, and length distribution, Echo Lake, during 2023-24.

# YELLOW PERCH

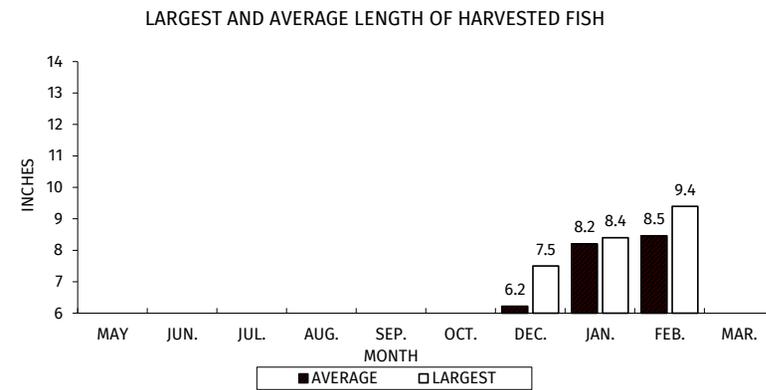
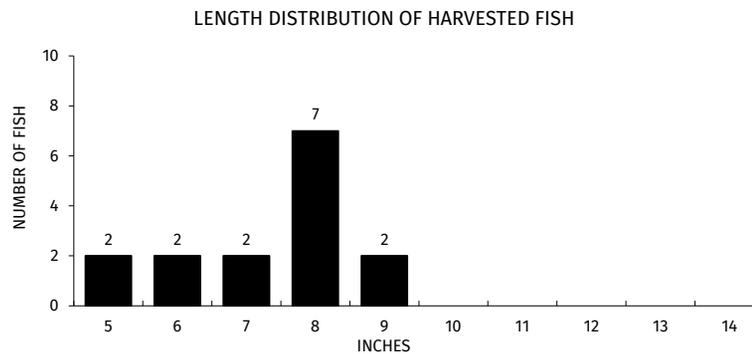
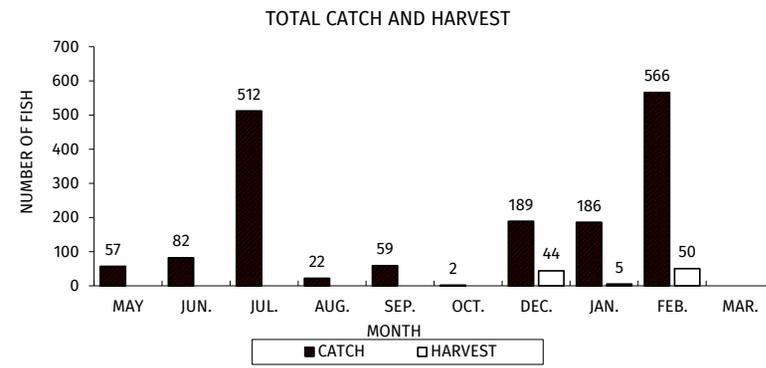
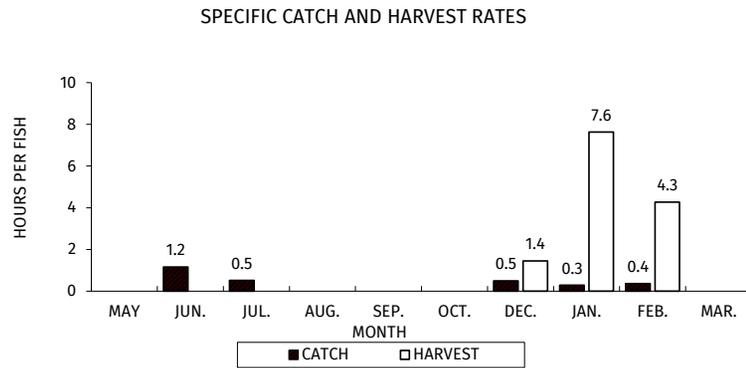
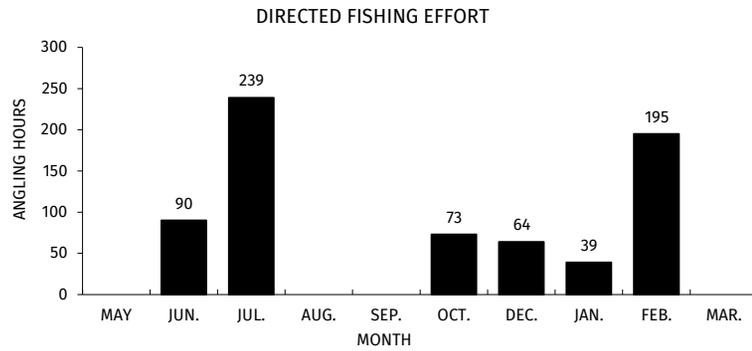


Figure 6. Yellow Perch sportfishing effort, catch, harvest, and length distribution, Echo Lake, during 2023-24.

# BLUEGILL

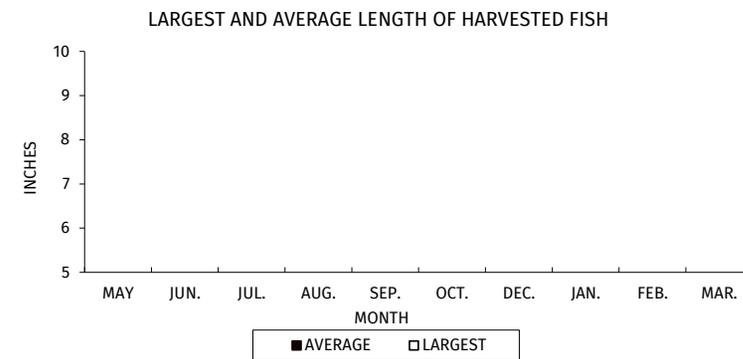
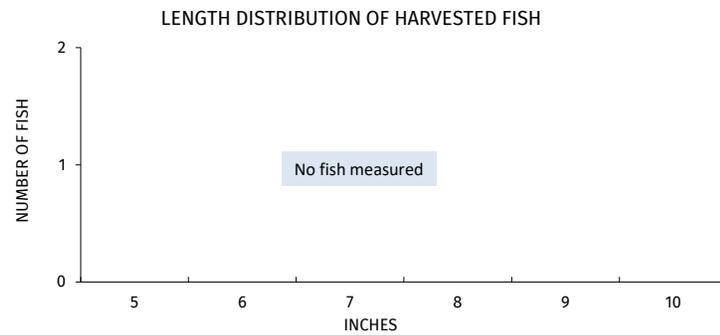
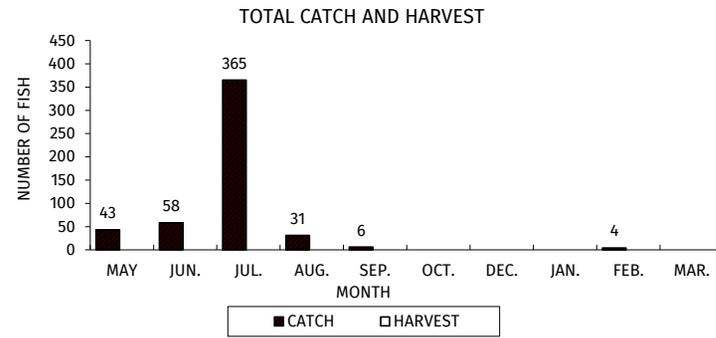
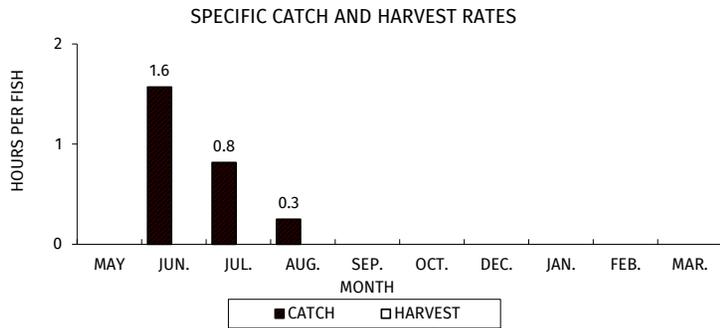
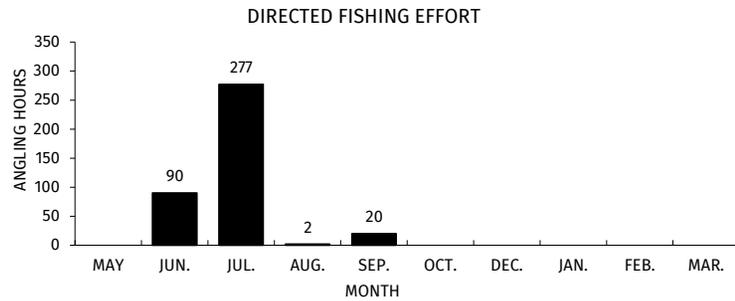


Figure 7. Bluegill sportfishing effort, catch, harvest, and length distribution, Echo Lake, during 2023-24.

# BLACK CRAPPIE

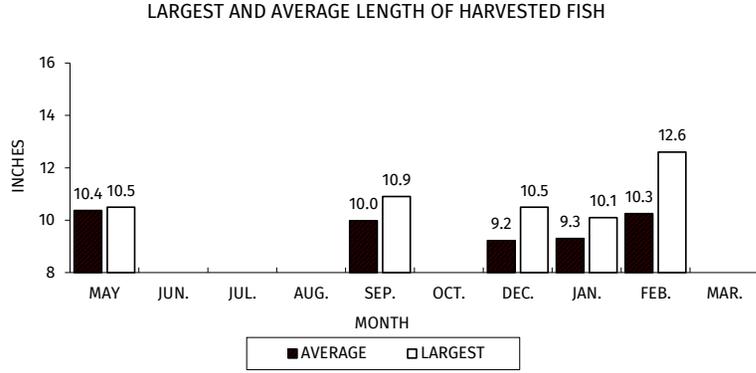
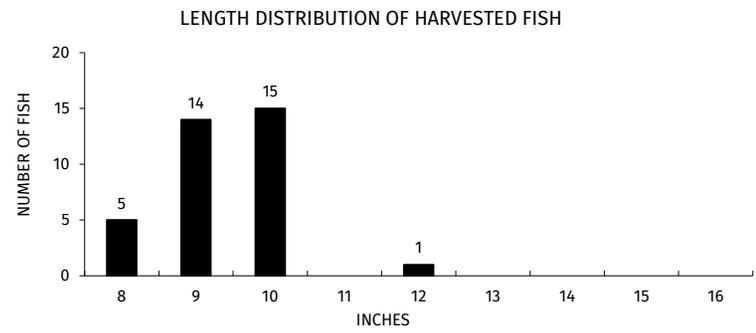
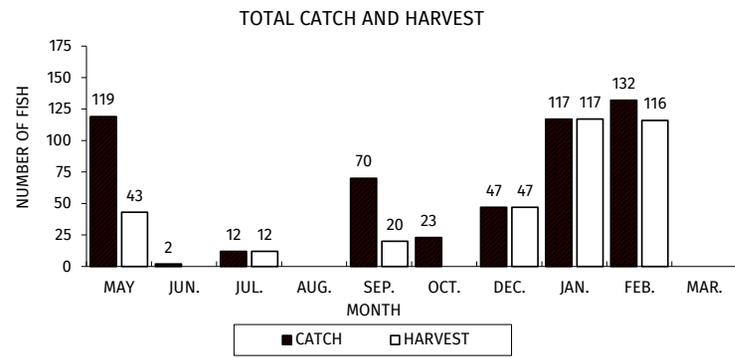
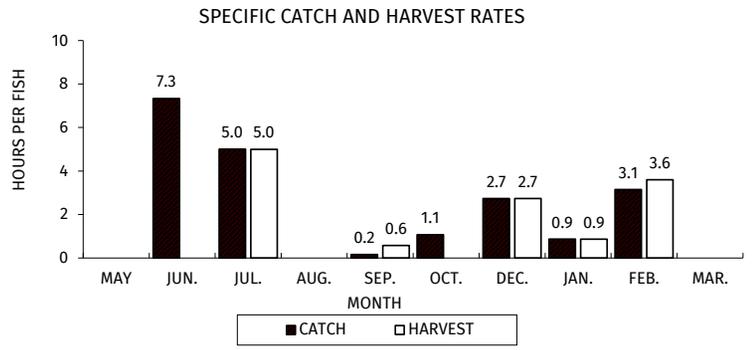
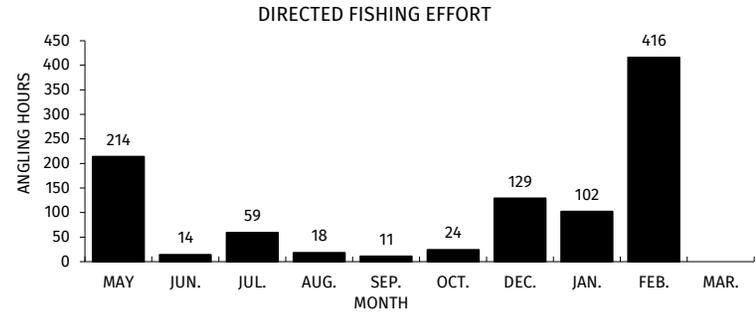
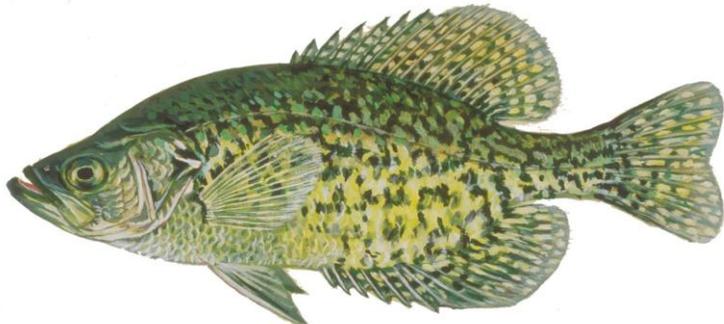


Figure 8. Black Crappie sportfishing effort, catch, harvest, and length distribution, Echo Lake, during 2023-24.

# PUMPKINSEED

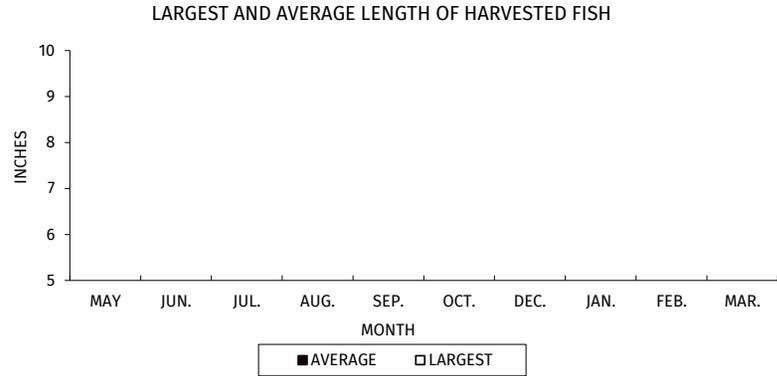
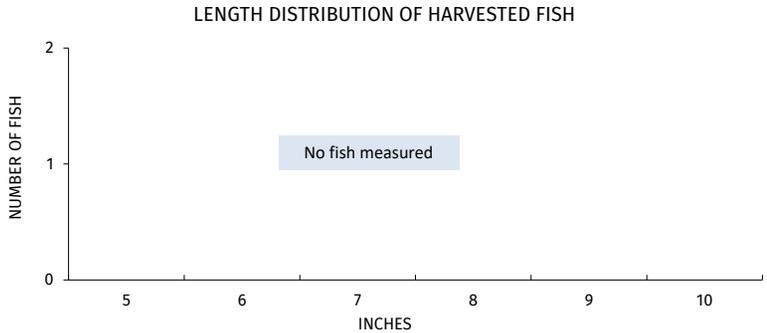
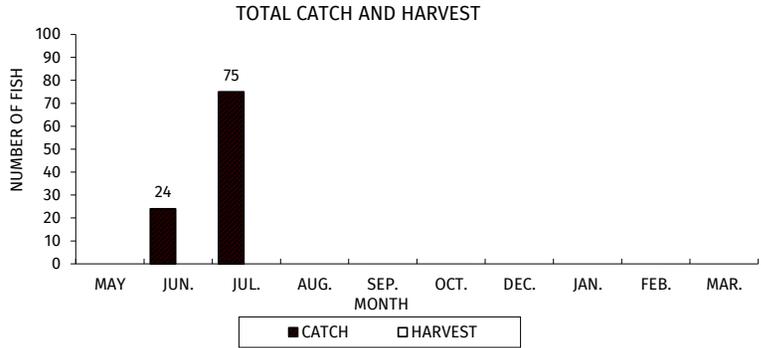
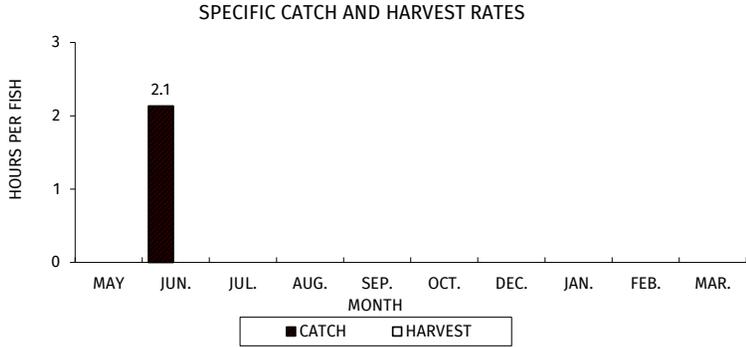
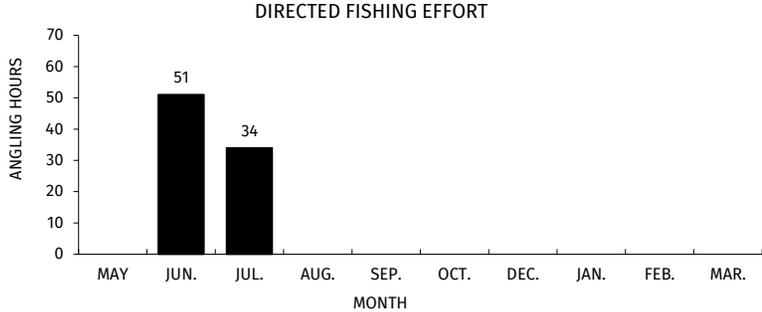


Figure 9. Pumpkinseed sportfishing effort, catch, harvest, and length distribution, Echo Lake, during 2023-24.

# ROCK BASS

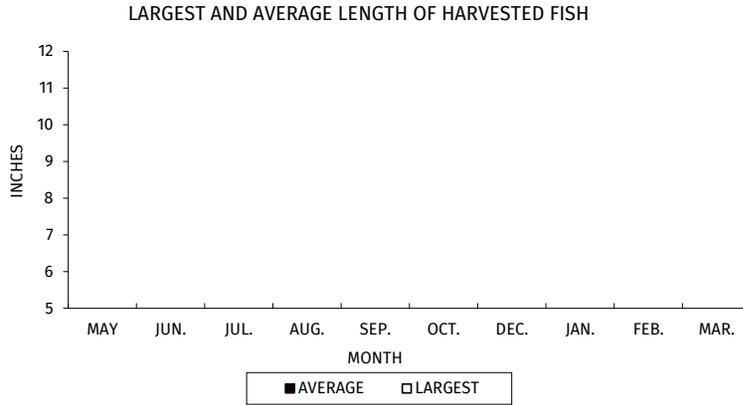
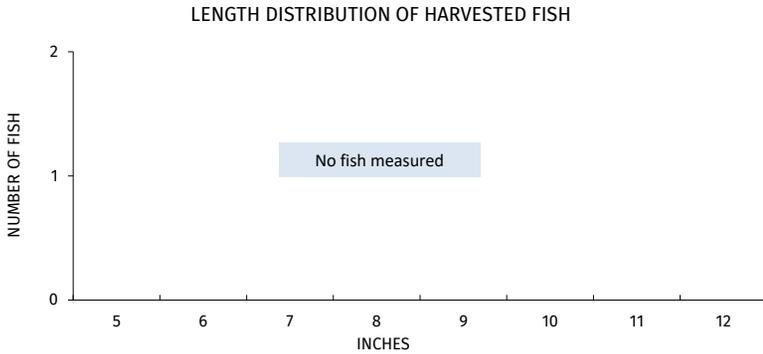
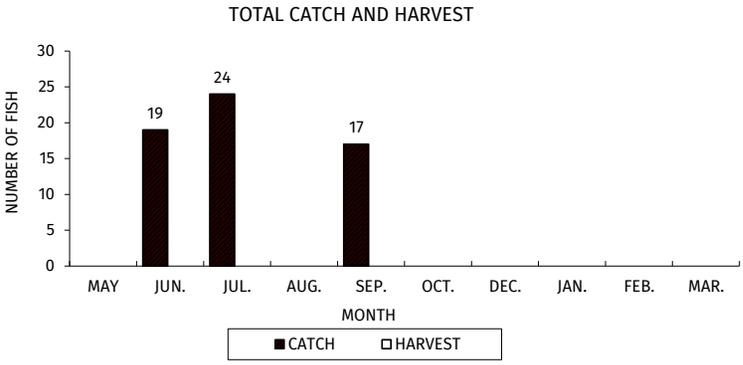
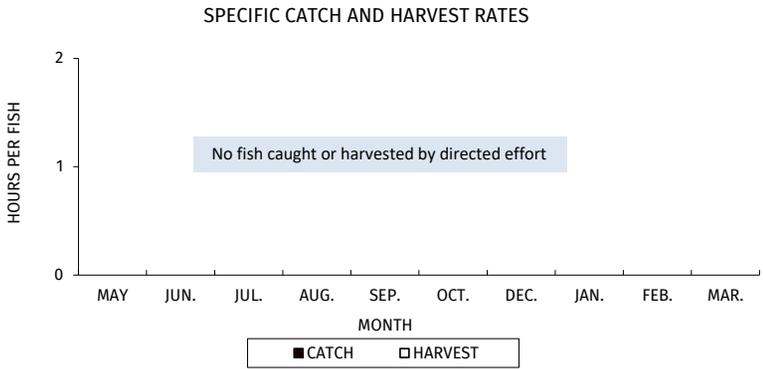
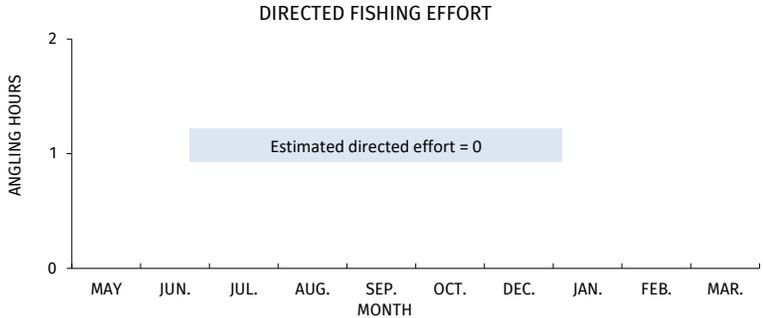


Figure 10. Rock Bass sportfishing effort, catch, harvest, and length distribution, Echo Lake, during 2023-24.