

WISCONSIN DEPARTMENT OF NATURAL RESOURCES

Squirrel Lake 2023-2024 Creel Survey Report Oneida County



Treaty Fisheries Publication

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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.

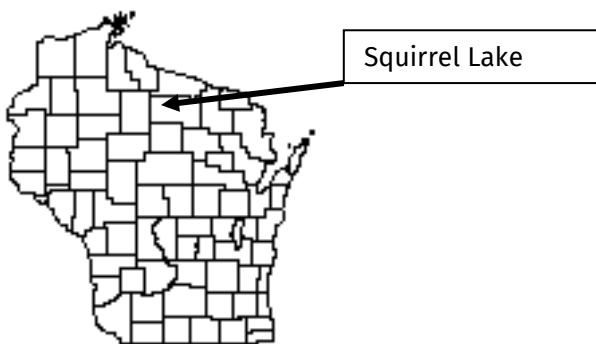
You may have encountered a DNR creel survey clerk on a recent fishing trip. We appreciate your cooperation during an interview. The survey only takes a few minutes of your time and it gives the DNR valuable information needed for management of the fishery.

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

General Lake Information



LOCATION

Squirrel Lake is located in Oneida County in the town of Minocqua.

PHYSICAL CHARACTERISTICS

Squirrel Lake is a 1,317-acre drainage lake with a maximum depth of 46 feet. Littoral substrate consists primarily of sand, with muck, gravel, rubble and some boulders present. Squirrel Lake contains soft, slightly acidic, water of moderate transparency.

SEASONS SURVEYED

The period referred to in this report as the 2023-24 fishing season ran from May 6, 2023 through March 3, 2024. The summer creel survey ran from May 6 through Oct. 31, 2023, and the winter creel survey ran from Dec. 1, 2023 through March 3, 2024.

FISHING REGULATIONS

The following seasons, daily bag limits and length limits were in place on Squirrel Lake during the 2023-24 fishing season:

SPECIES	SEASON	BAG LIMIT	MIN. SIZE
Largemouth Bass	5/06 - 3/03	5*	14"
Smallmouth Bass	5/06 - 3/03	Catch&Release	
	6/17 - 3/03	5*	14"
*Bass species have a combined bag limit of 5.			
Muskellunge	5/27 - 12/31	1	40"
	On open water		
Northern Pike	5/06 - 3/03	5	None
Walleye	5/06 - 3/03	3	no min, 1>14"
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 1-10, along with a comparison of these statistics with the previous creel survey (2018-19) in Table 2. Information about species with fishing seasons extending beyond March 3, 2024 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.
- 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

Due to staffing issues, the winter creel days on Squirrel Lake were split with another creel lake. This may have impacted estimates during the winter months. This was the sixth time the DNR conducted a creel survey on Squirrel Lake. The last creel survey took place during 2018-19.

GENERAL ANGLER INFORMATION

Anglers spent 25,836 hours, or 19.6 hours per acre, fishing Squirrel Lake during the 2023-24 season (Table 1). That was less than the Oneida County average of 32.4 hours per acre, and less than the fishing effort documented during the 2018-19 creel survey (24.2 hours per acre). May was the most heavily fished month (5,279 hours). Creel clerks were able to conduct 526 interviews throughout the survey.

RESULTS BY SPECIES

WALLEYE (Table 2, Figure 1)

Walleye received the most fishing effort of any gamefish species during the season. Anglers spent 7,751 hours targeting walleye. Fishing effort for walleye was highest in May (1,291 hours). Total catch of walleye was 4,024 fish, and total harvest was 1,434 fish. Highest catch (1,436 fish) occurred in September, and highest harvest (494 fish) also occurred in September. Anglers fished an estimated 2.2 hours to catch, and 5.6 hours to harvest a walleye during the survey. Mean length of harvested walleye was 13.4 inches and the largest measured was a 25-inch fish.

NORTHERN PIKE (Table 2, Figure 2)

Fishing effort directed at northern pike was 2,338 hours during the season. Northern pike fishing effort was greatest in May (623 hours). Total catch of northern pike was 1,846 fish, and total harvest was 329 fish. Anglers fished an estimated 3.9 hours to catch a northern pike during the survey. Mean length of harvested northern pike was 22.7 inches and the largest measured was a 32.5-inch fish.

MUSKELLUNGE (Table 2, Figure 3)

Anglers spent 6,211 hours targeting muskellunge during the season. Muskellunge fishing effort was greatest in September (1,508 hours). Total catch of muskellunge was 153 fish, and the highest catch (59 fish) occurred in August. Anglers fished an estimated 46.5 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 6,899 hours during the season. Smallmouth bass fishing effort was greatest in May (2,081 hours). Total catch of smallmouth bass was 7,056 fish, with 26 fish harvested. Highest catch (2,983 fish) occurred in May. Anglers fished an estimated 1.0 hours to catch a smallmouth bass during the survey. Mean length of harvested smallmouth bass was 16.4 inches and the largest measured was a 18.7-inch fish.

LARGEMOUTH BASS (Table 2, Figure 5)

Fishing effort directed at largemouth bass was 4,173 hours during the season. Largemouth bass fishing effort was greatest in June (1,340 hours). Total catch of largemouth bass was 1,834 fish, and total harvest was 48 fish. The highest catch (784 fish) occurred in June. Anglers fished an estimated 2.8 hours to catch a largemouth bass during the survey. Mean length of harvested largemouth bass was 15.7 inches and the largest measured was a 18-inch fish.

YELLOW PERCH (Table 2, Figure 6)

Yellow perch received 4,006 hours of directed fishing effort. Anglers caught 11,184 yellow perch and harvested 3,568 fish. Mean length of yellow perch harvested was 8.0 inches and the largest measured was a 12-inch fish.

BLUEGILL (Table 2, Figure 7)

Bluegill received 3,188 hours of directed fishing effort. Anglers caught 7,449 bluegill and harvested 2,307 fish. Mean length of bluegill harvested was 7.2 inches and the largest measured was a 9.3-inch fish.

Acknowledgments

BLACK CRAPPIE (Table 2, Figure 8)

Black crappie were the most sought after panfish species during the survey. Black crappie received 4,014 hours of directed fishing effort. Anglers caught 4,125 black crappie and harvested 1,690 fish. Mean length of black crappie harvested was 10.5 inches and the largest measured was a 13.9-inch fish.

PUMPKINSEED (Table 2, Figure 9)

Pumpkinseed received 1,148 hours of directed fishing effort. Anglers caught 1,028 pumpkinseed and harvested 165 fish. Mean length of pumpkinseed harvested was 6.8 inches and the largest measured was a 8-inch fish.

ROCK BASS (Table 2, Figure 10)

Rock bass received 97 hours of directed fishing effort. Anglers caught 448 rock bass and harvested 51 fish. Mean length of rock bass harvested was 8.4 inches and the largest measured was a 9.9-inch fish.

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, Marcy Meiners, who generously allowed the DNR to keep a snowmobile on her property during this survey.

Completion of this survey was possible because of the efforts of the following DNR fisheries management staff: John Kubisiak, Lawrence Eslinger, Jason Halverson, Mark Love, Eric Brown and Bob Consolo. Creel clerks on Squirrel Lake during the survey period were Lauren Malanche, Steve Timler and Mike (Spike) Rynski.

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/trtycrlsrvys.html>

Table 1. Sportfishing effort summary, Squirrel Lake, 2023-24 season; compared to 2018-19 creel results, Oneida County averages, and Ceded Territory averages.

Month	Number of Angler Party Interviews	Total Angler Hours	Total Angler Hours/Acre	2018-19 Total Angler Hours/Acre	Oneida County Average Hours/Acre	Ceded Territory Average Hours/Acre
May	104	5,279	4.0	4.2	4.6	4.7
June	74	4,855	3.7	3.6	6.1	6.0
July	76	4,045	3.1	4.6	7.0	6.4
August	72	4,363	3.3	4.4	5.4	5.1
September	98	3,736	2.8	3.7	3.3	3.1
October	77	1,932	1.5	1.9	1.6	1.4
December	4	203	0.2	0.8	1.2	1.1
January	12	723	0.5	0.5	1.6	1.7
February	8	650	0.5	0.4	1.6	1.6
March	1	52	0.0	0.0	0.3	0.2
Summer Total	501	24,209	18.4	22.4	28.0	26.7
Winter Total	25	1,627	1.2	1.8	4.6	4.6
Grand Total	526	25,836	19.6	24.2	32.4	30.7

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 Squirrel 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 Squirrel Lake to other lakes.

2018-19 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 Squirrel 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 Squirrel Lake to other lakes in northern Wisconsin.

Table 2. Comparison of creel survey synopses, Squirrel Lake, 2023-24 and 2018-19 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	7,751	19.5%	4,024	2.2	1,434	5.6	13.4
Northern Pike	2,338	5.9%	1,846	3.9	329	12.0	22.7
Muskellunge	6,211	15.6%	153	46.5	0	*	**
Smallmouth Bass	6,899	17.3%	7,056	1.0	26	338.3	16.4
Largemouth Bass	4,173	10.5%	1,834	2.8	48	*	15.7
Yellow Perch	4,006	10.1%	11,184	0.5	3,568	1.2	8.0
Bluegill	3,188	8.0%	7,449	0.5	2,307	1.4	7.2
Black Crappie	4,014	10.1%	4,125	1.0	1,690	2.4	10.5
Pumpkinseed	1,148	2.9%	1,028	1.4	165	7.3	6.8
Rock Bass	97	0.2%	448	4.7	51	9.5	8.4

CREEL YEAR: 2018-19

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	8,907	20.8%	4,974	1.9	1,870	4.9	13.2
Northern Pike	3,562	8.3%	4,358	1.9	648	6.7	22.5
Muskellunge	7,279	17.0%	241	36.9	0	*	**
Smallmouth Bass	6,671	15.6%	5,077	1.5	28	357.1	16.8
Largemouth Bass	5,116	12.0%	4,185	1.4	124	76.3	15.3
Yellow Perch	4,199	9.8%	9,306	0.5	1,563	2.8	8.6
Bluegill	4,159	9.7%	3,721	1.2	1,314	3.4	7.6
Black Crappie	2,523	5.9%	1,690	1.6	1,054	2.5	10.9
Pumpkinseed	352	0.8%	107	3.7	67	5.2	7.2
Rock Bass	0	0.0%	106	*	51	*	8.4

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

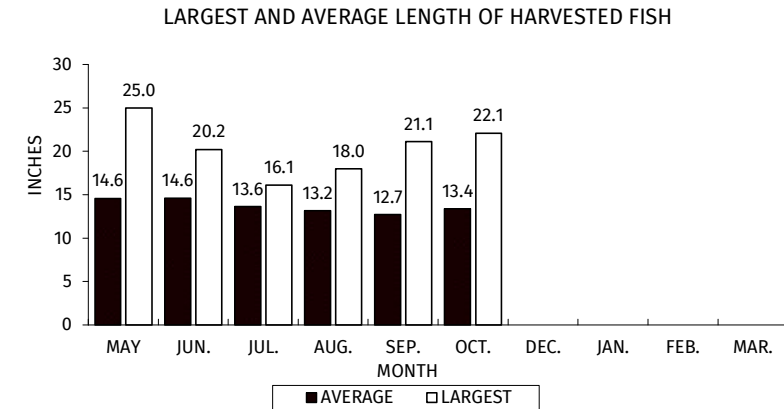
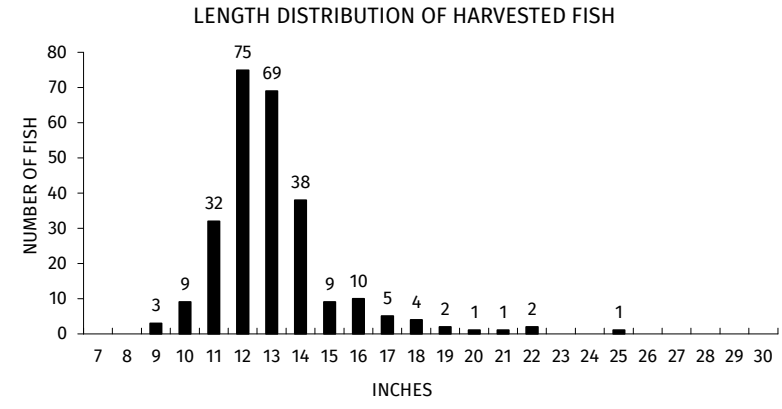
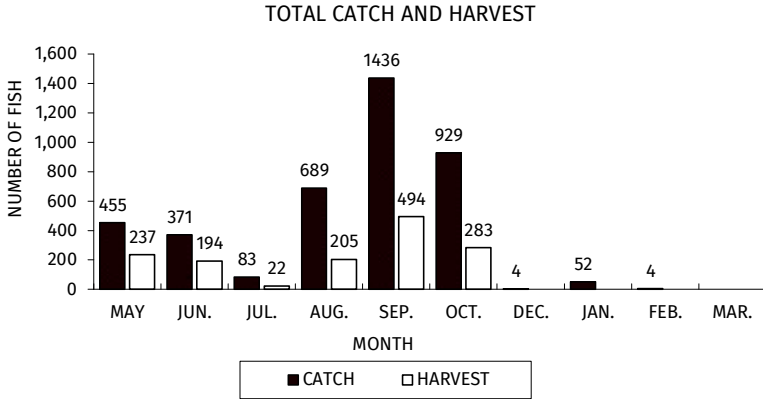
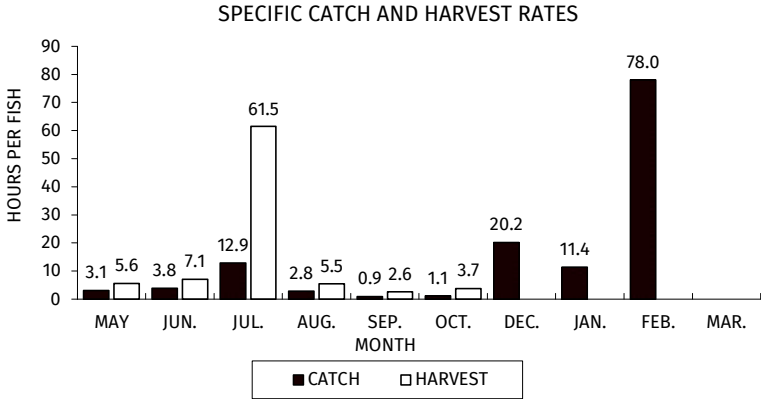
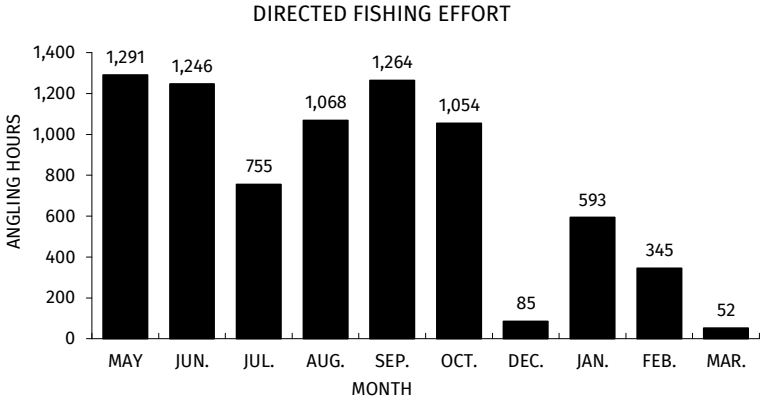
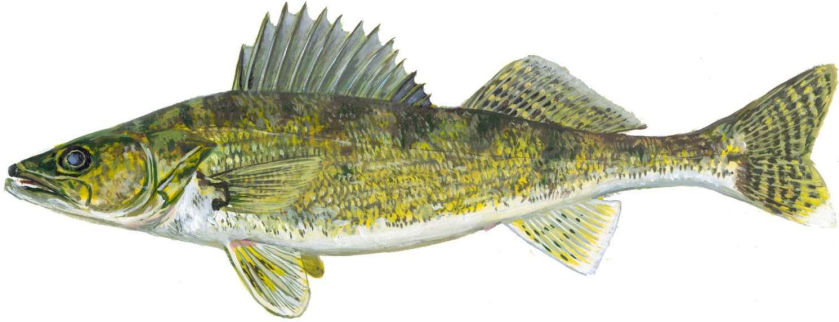
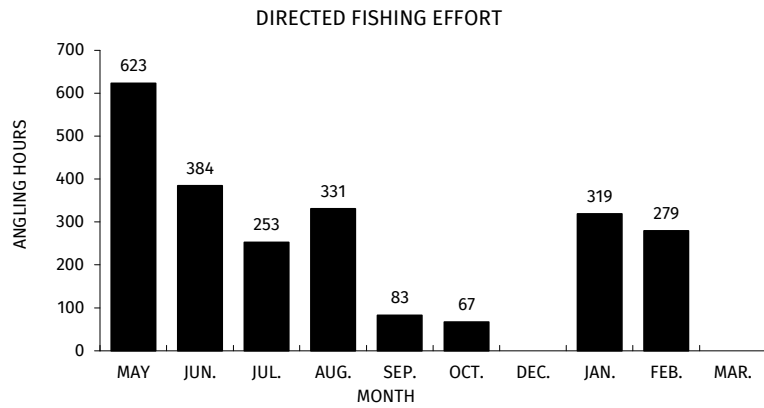


Figure 1. Walleye fishing effort, catch, harvest and length distribution, Squirrel Lake, during 2023-24.



NORTHERN PIKE

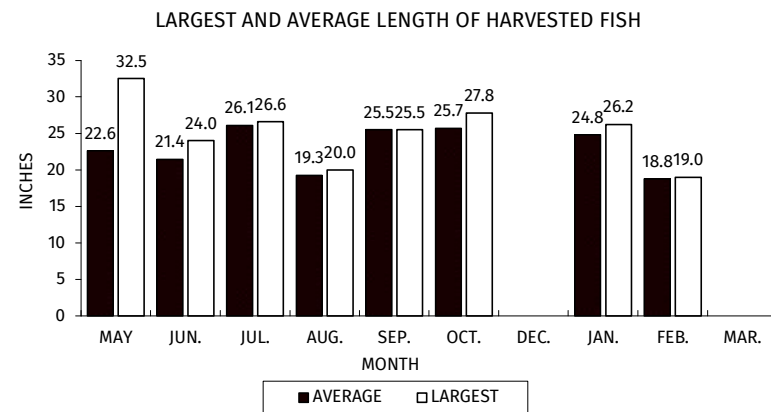
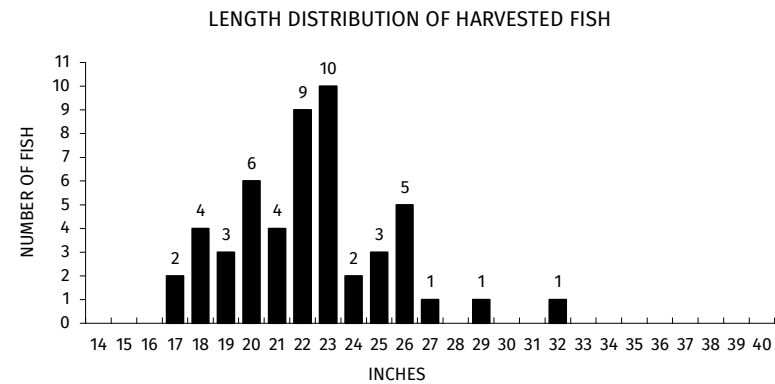
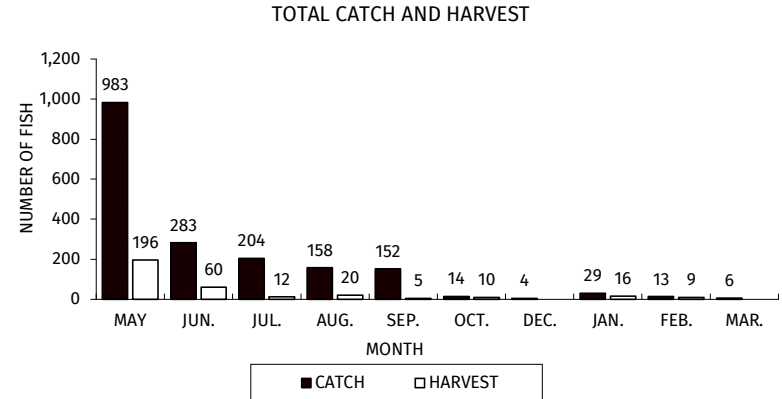
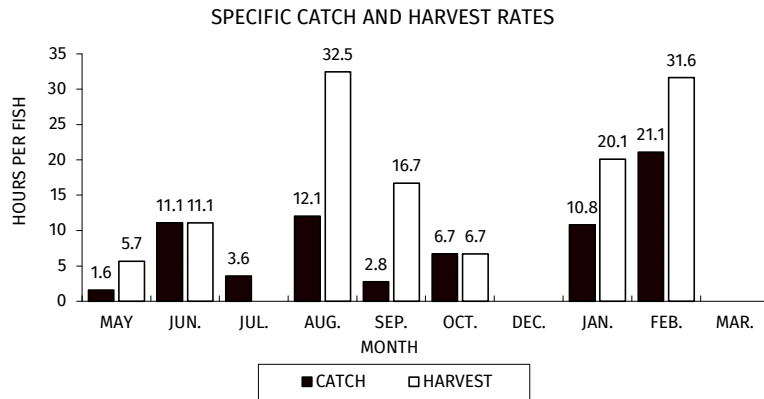


Figure 2. Northern pike fishing effort, catch, harvest and length distribution, Squirrel Lake, during 2023-24. 8

MUSKELLUNGE

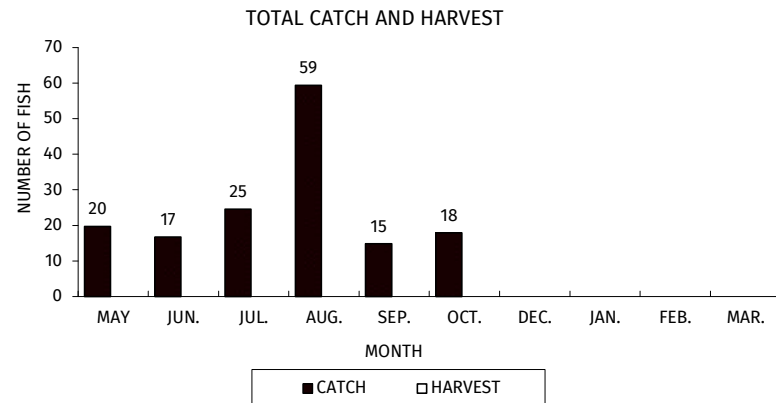
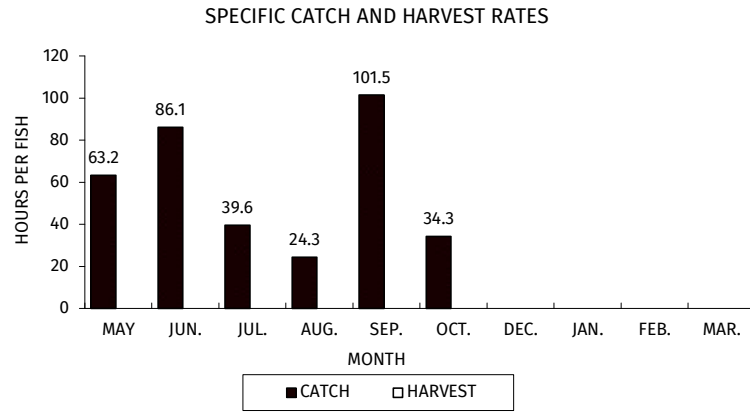
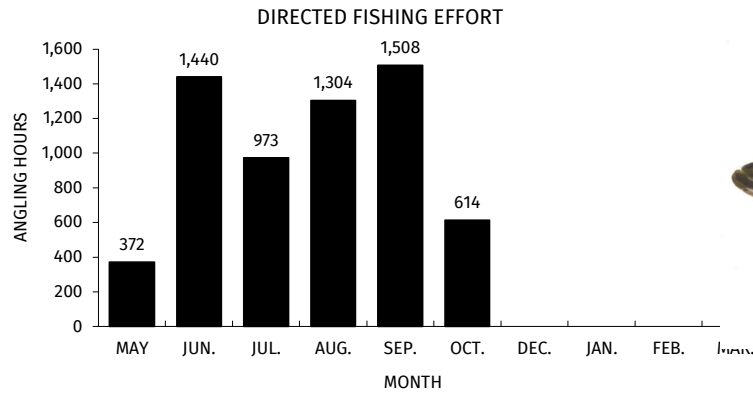


Figure 3. Muskellunge fishing effort and catch, Squirrel Lake, during 2023-24.

SMALLMOUTH BASS

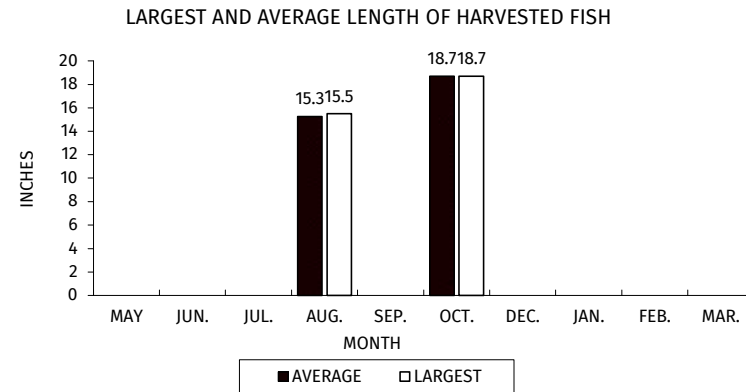
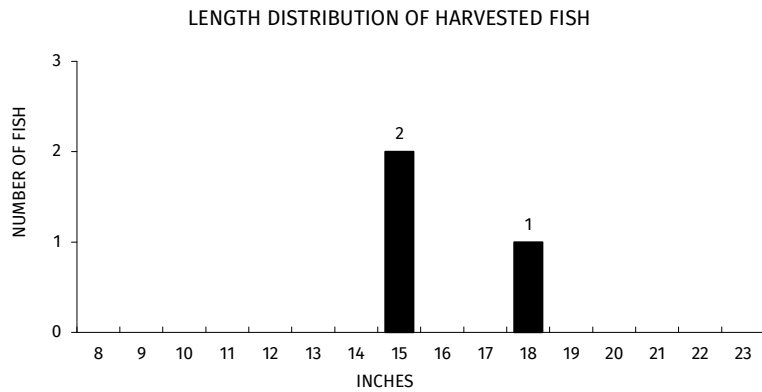
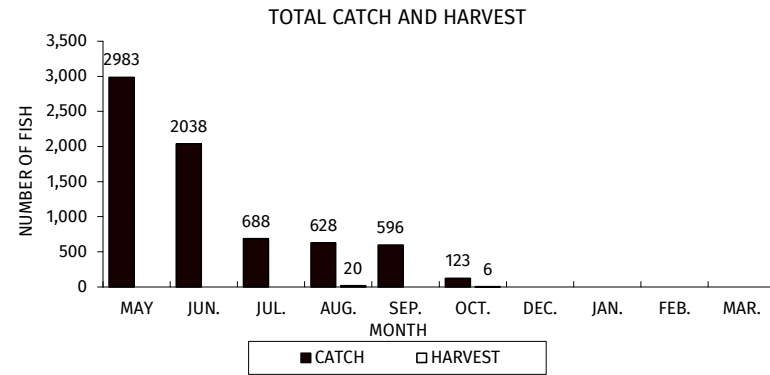
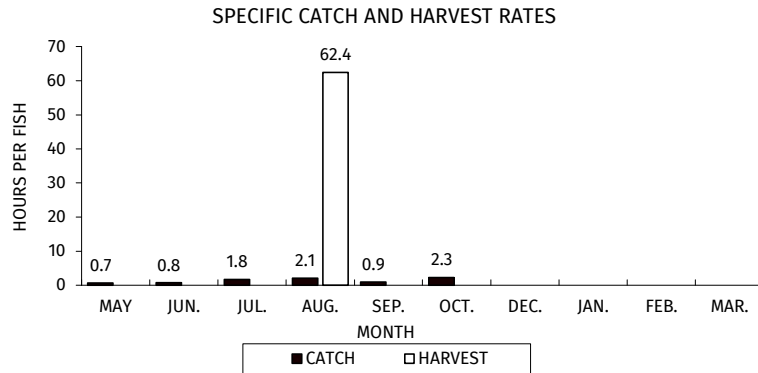
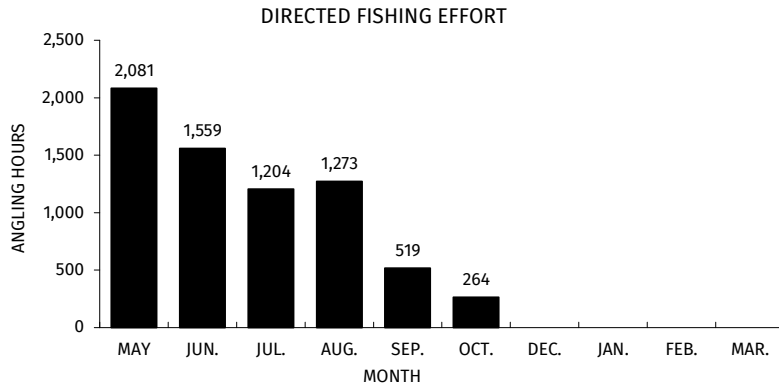


Figure 4. Smallmouth bass fishing effort, catch, harvest and length distribution, Squirrel Lake, during 2023-24.10

LARGEMOUTH BASS

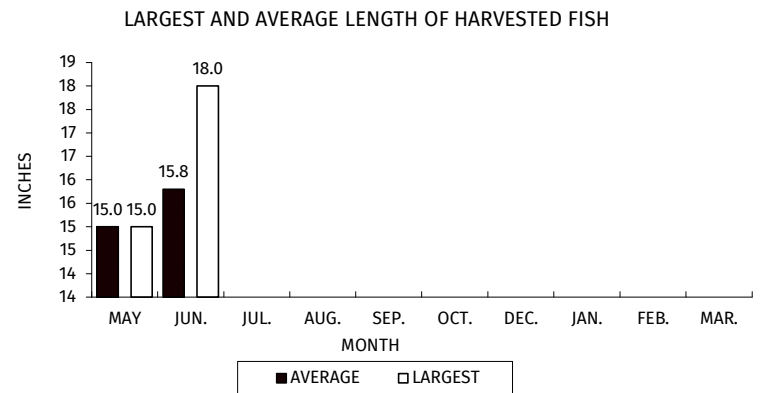
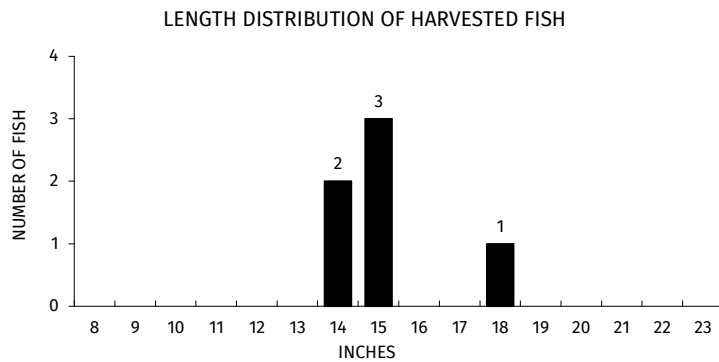
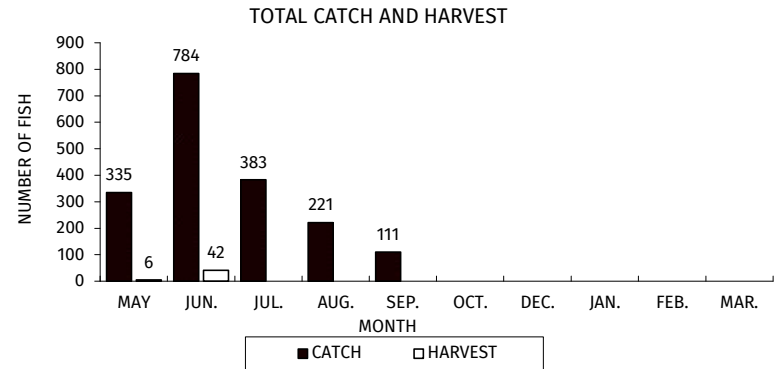
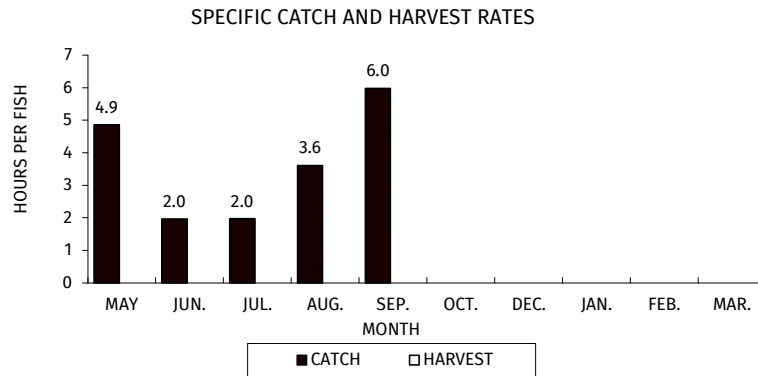
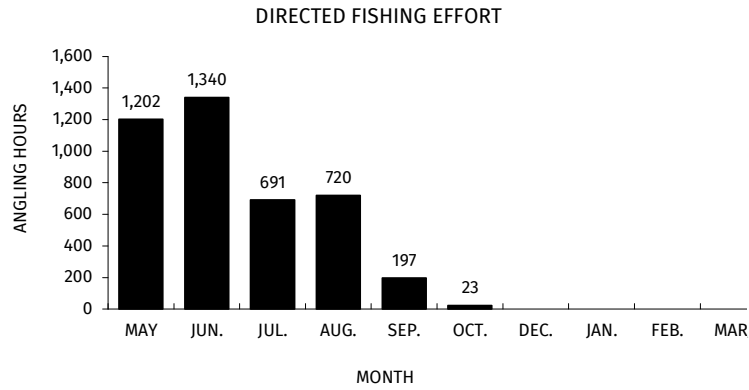
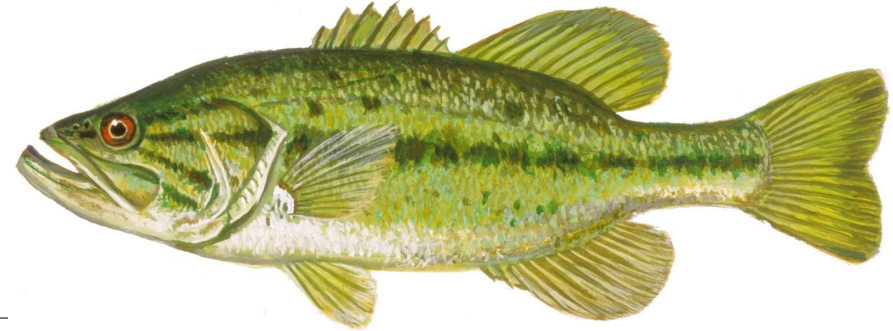


Figure 5. Largemouth Bass fishing effort, catch, and harvest, Squirrel Lake, during 2023-24.

YELLOW PERCH

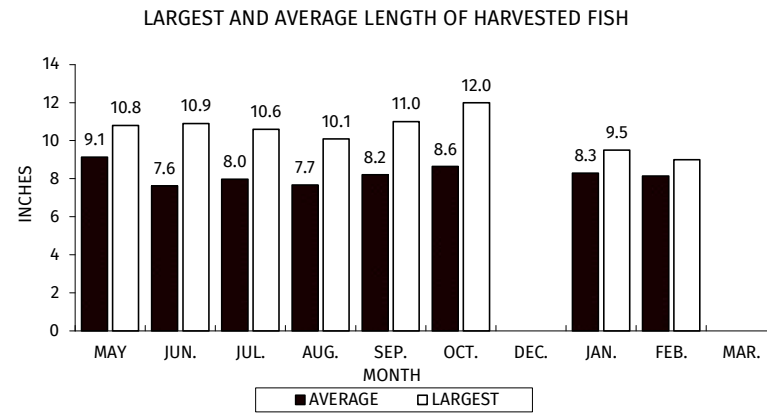
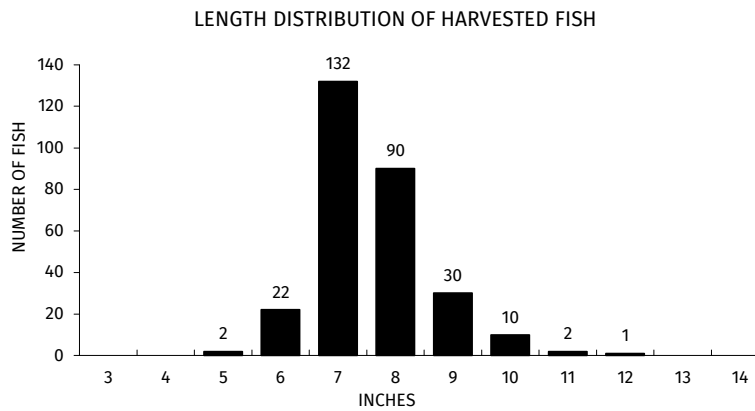
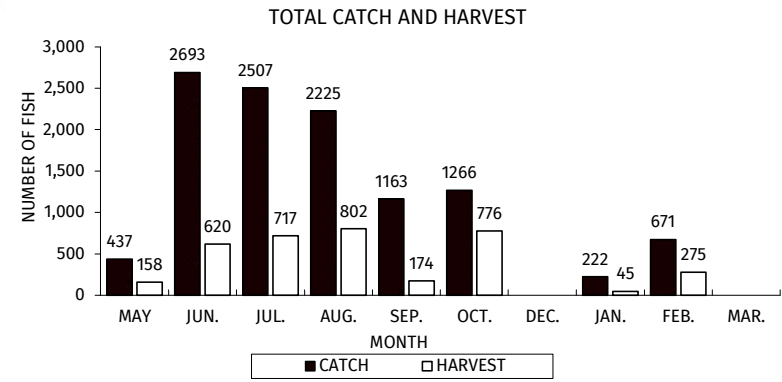
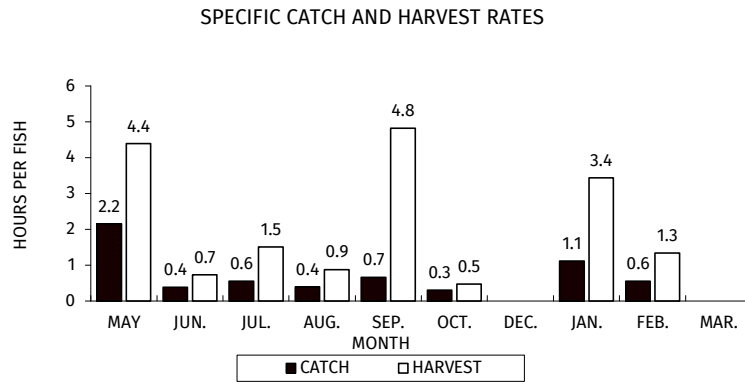
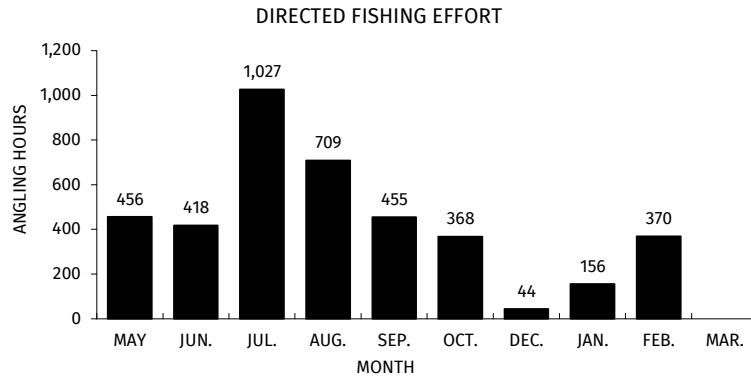
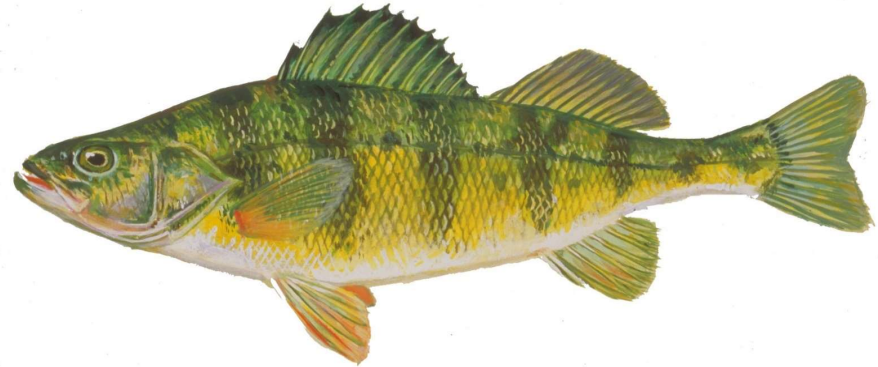


Figure 6. Yellow perch fishing effort, catch, harvest and length distribution, Squirrel Lake, during 2023-24. 12

BLUEGILL

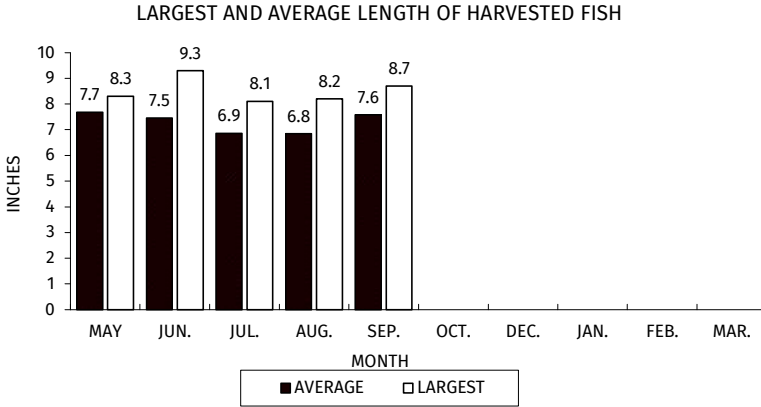
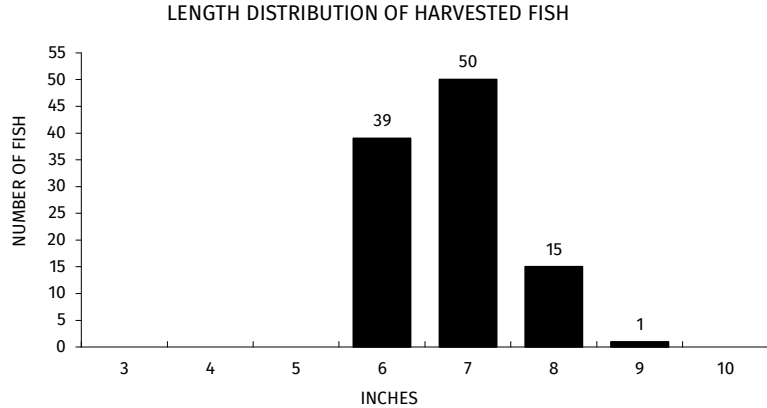
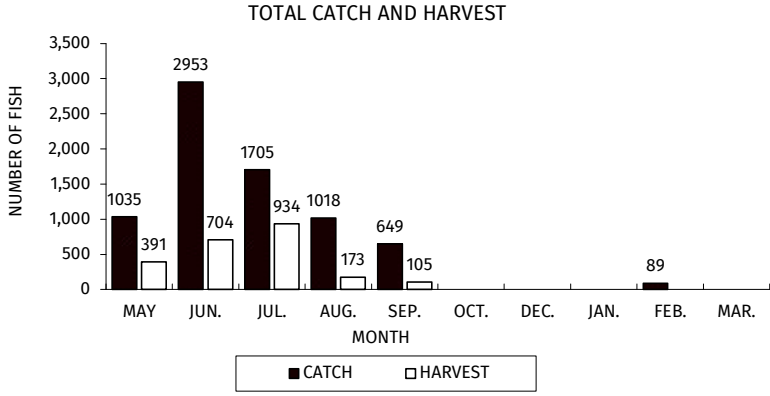
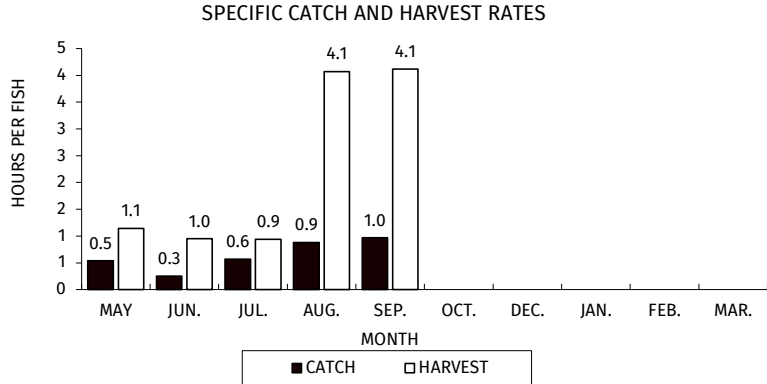
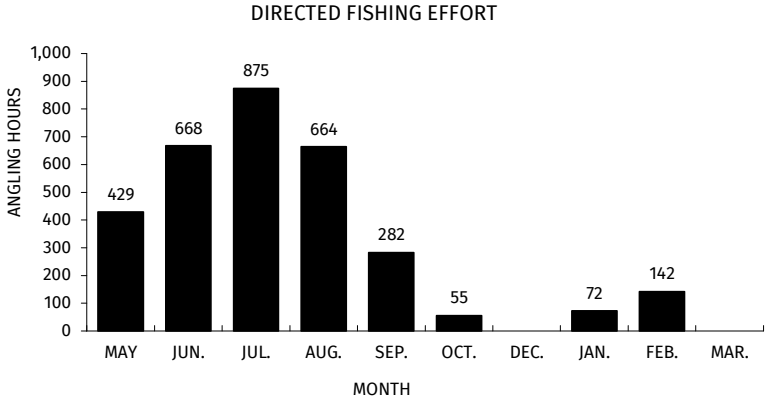
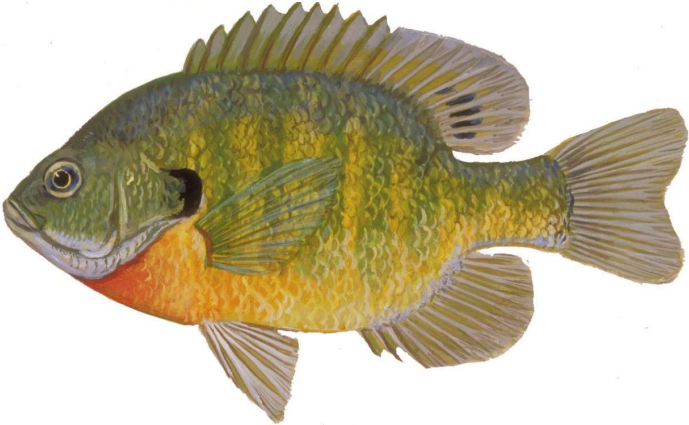


Figure 7. Bluegill fishing effort, catch, harvest and length distribution, Squirrel Lake, during 2023-24.

BLACK CRAPPIE

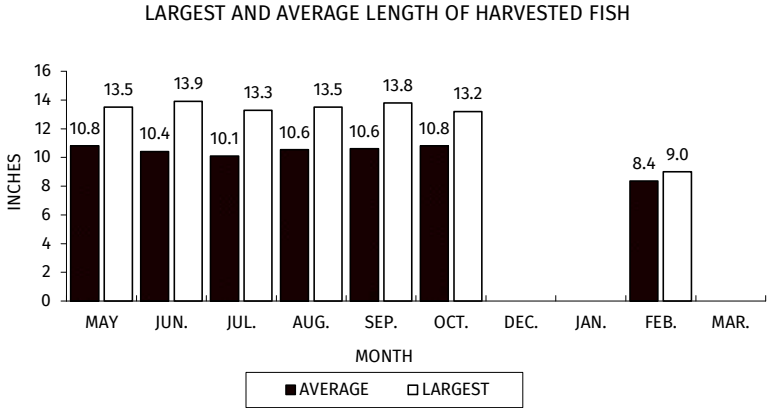
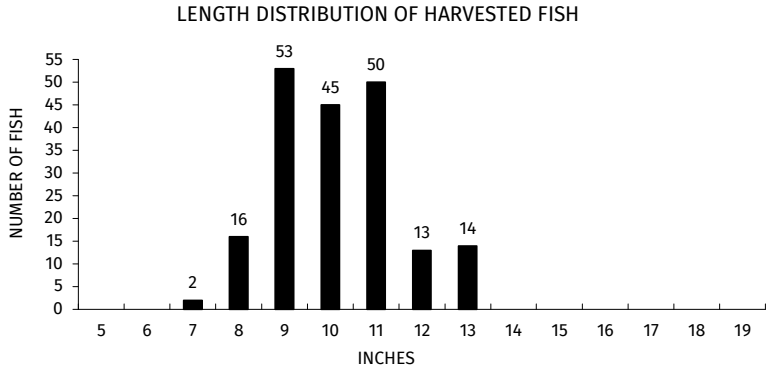
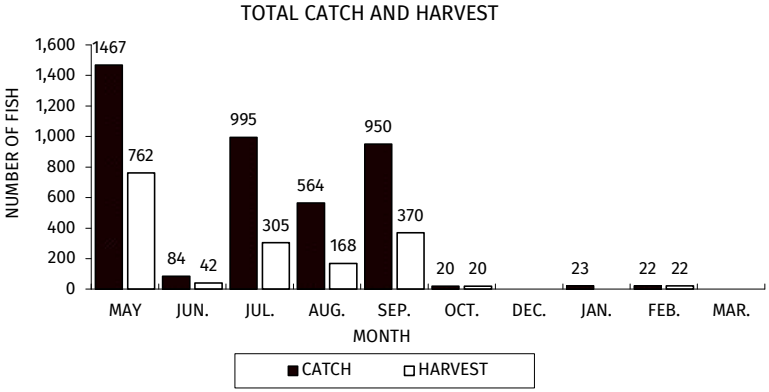
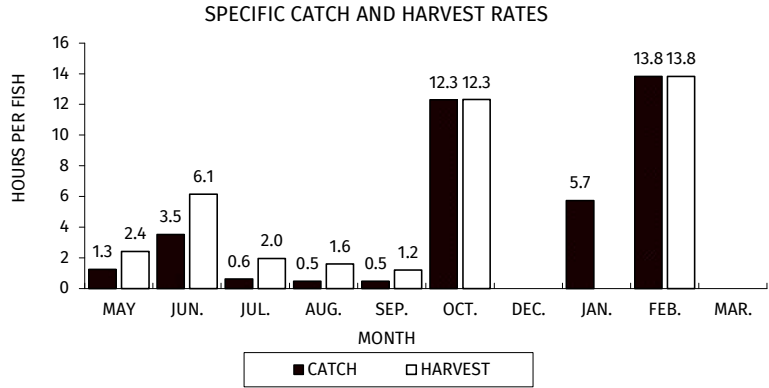
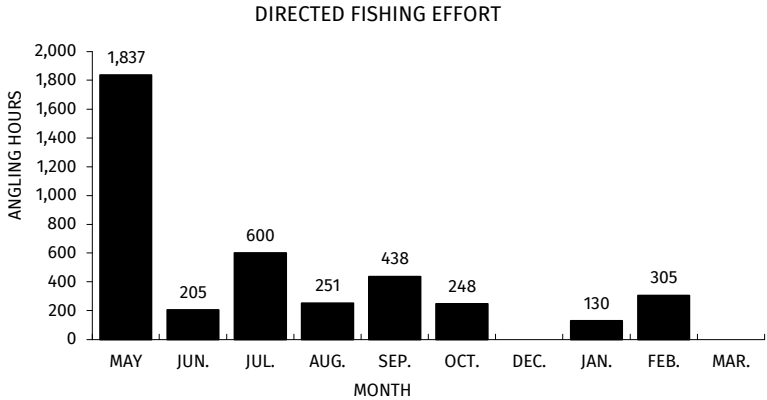
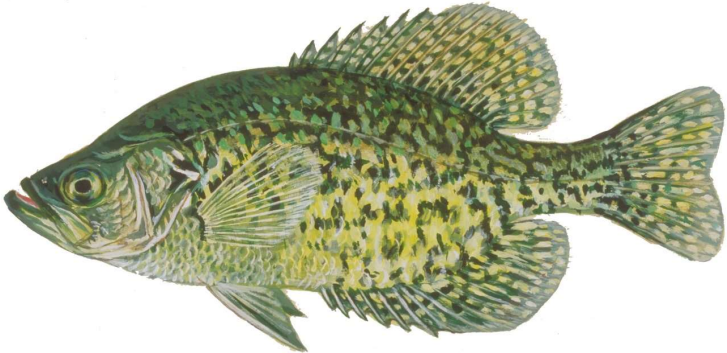


Figure 8. Black crappie fishing effort, catch, harvest and length distribution, Squirrel Lake, during 2023-24. 14

PUMPKINSEED

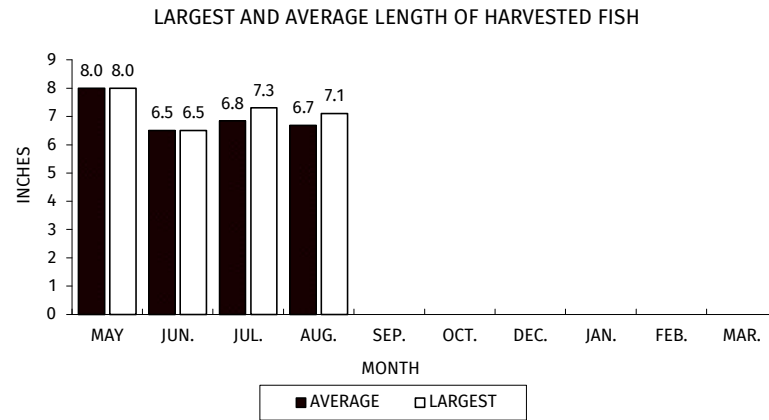
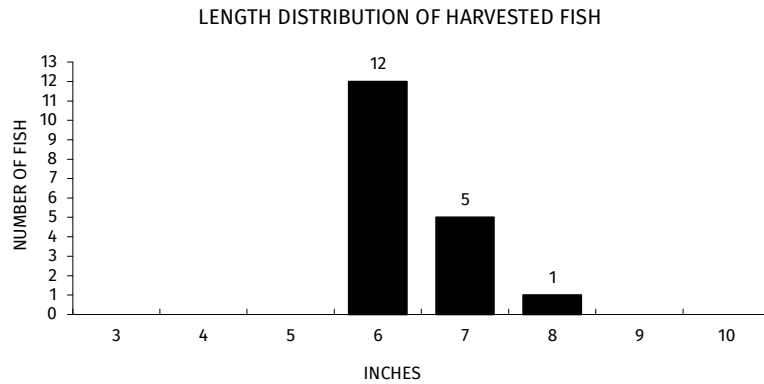
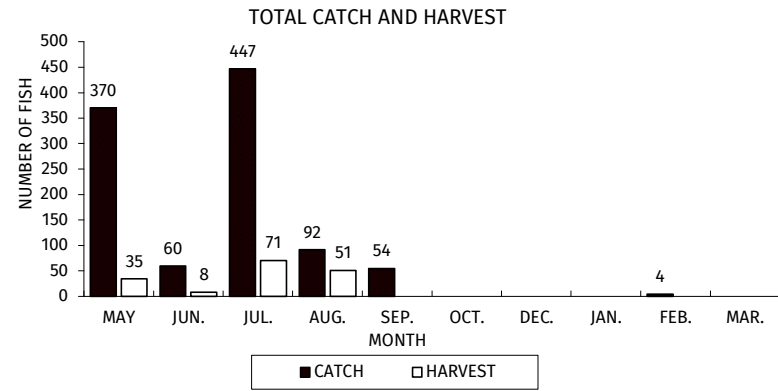
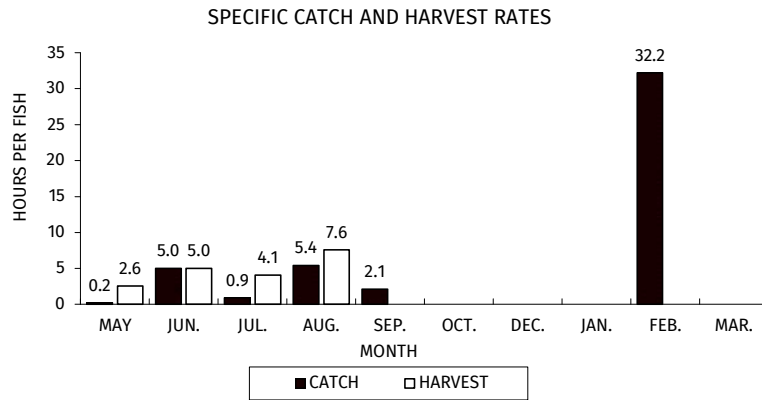
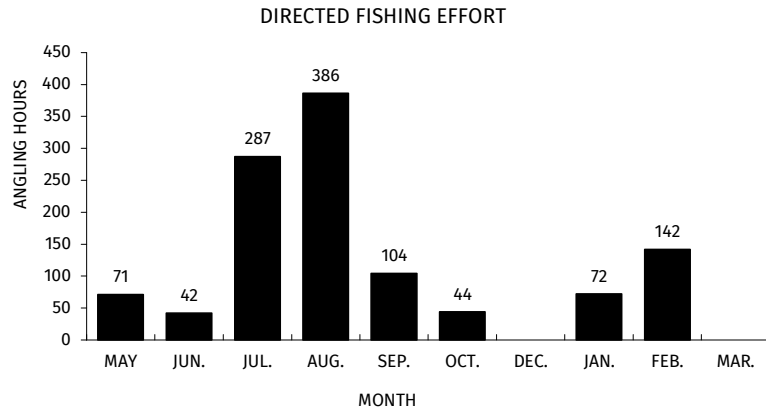
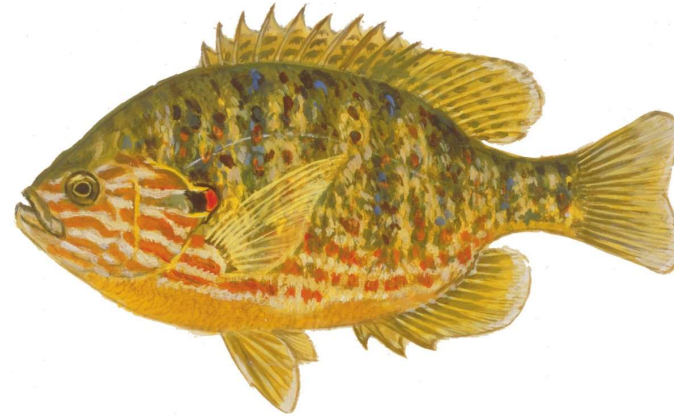


Figure 9. Pumpkinseed fishing effort, catch, harvest and length distribution, Squirrel Lake, during 2023-24. 15

ROCK BASS

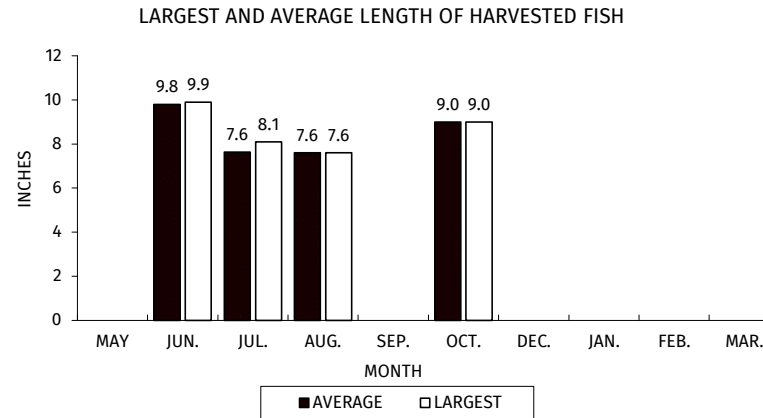
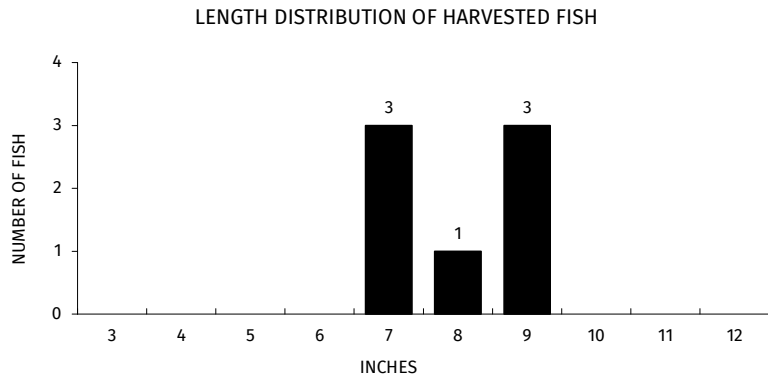
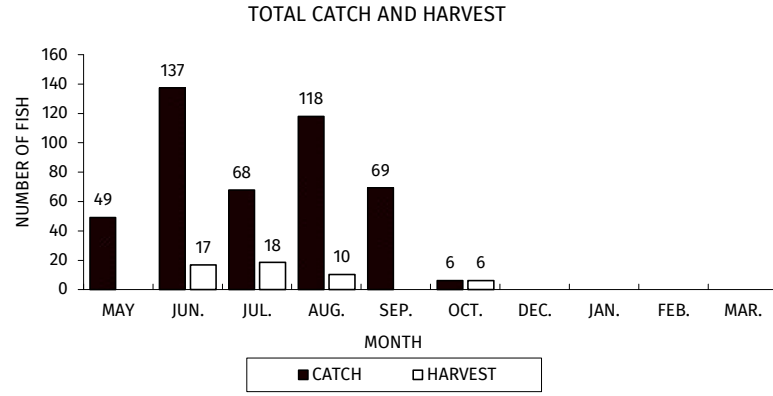
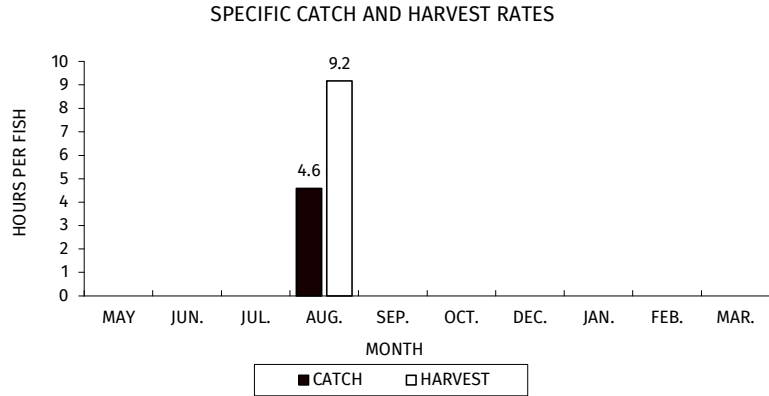
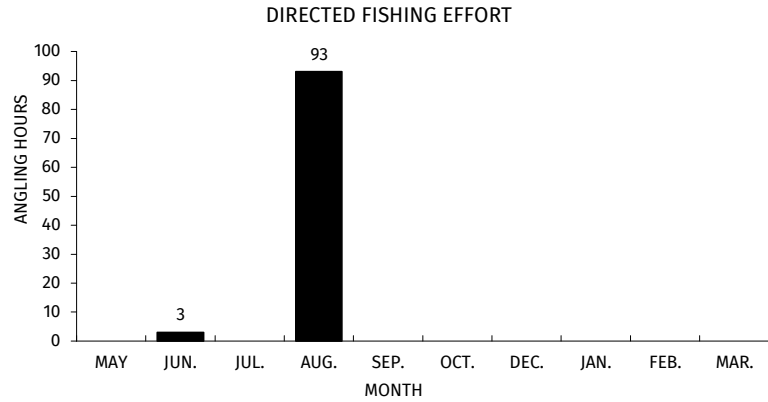
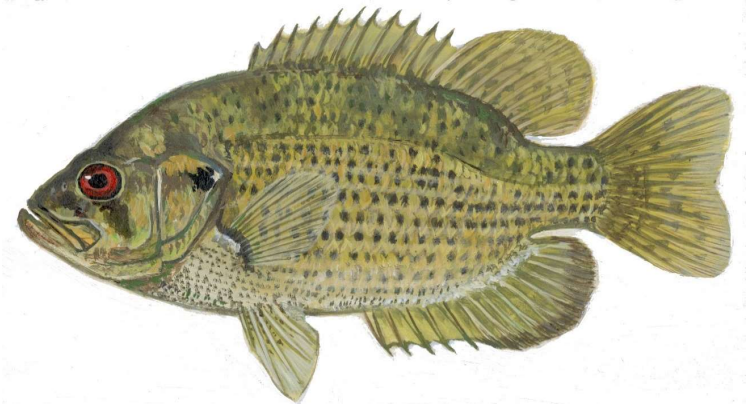


Figure 10. Rock Bass fishing effort, catch, harvest and length distribution, Squirrel Lake, during 2023-24.