WISCONSIN DEPARTMENT OF NATURAL RESOURCES

Katherine Lake
2023-2024 Creel Survey Report

Oneida 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. 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.

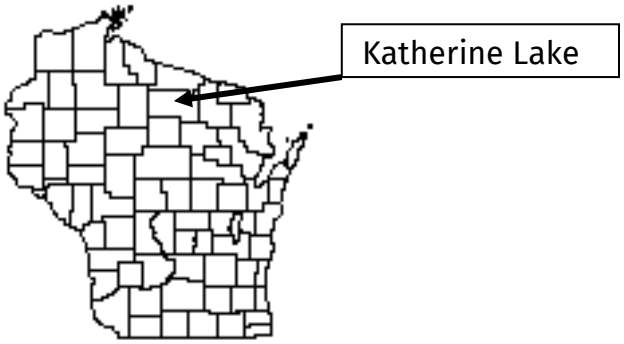
You may have encountered a DNR creel survey clerk on a recent fishing trip. We appreciate your cooperation during an interview. The survey only takes a few minutes of your time and it gives the DNR valuable information needed for management of the fishery.

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

General Lake Information



LOCATION

Katherine Lake is located in Oneida County near the town of Hazelhurst.

PHYSICAL CHARACTERISTICS

Katherine Lake is a 590-acre seepage lake with a maximum depth of 32 feet. Littoral substrate consists primarily of sand, rubble and gravel with some boulders and muck. Katherine Lake is a very soft water lake having slightly alkaline, clear water of high 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.

WEATHER

Ice-out on Katherine Lake was around first week in May, 2023. Fishable ice formed on Katherine Lake in early-December 2023.

FISHING REGULATIONS

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

SPECIES	SEASON	BAG LIMIT	MIN. SIZE
Largemouth bass	5/06 - 3/03	5*	None
Smallmouth bass	5/06 - 6/16	Catch&Release	
	6/17 - 3/03	5*	None
*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	1	18"
Walleye from 22" - 28" may not be kept			
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 03, 2024 should be considered minimum estimates. Each species page has up to five graphs depicting the following:

1. **DIRECTED FISHING EFFORT**
   Estimated number of hours during each month that anglers spent fishing for a species.

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

3. **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.

4. **LENGTH 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

Due to staffing issues, the winter creel days on Katherine Lake were split with another creel lake. This may have impacted estimates during the winter months. This was the third time the DNR conducted a creel survey on Katherine Lake. The last creel survey took place during 2001.

GENERAL ANGLER INFORMATION

Anglers spent 11,651 hours, or 19.7 hours per acre, fishing Katherine Lake during the 2023-24 season (Table 1). That was less than the Oneida County average of 32.4 hours per acre, and slightly more than the fishing effort documented during the 2001-02 creel survey (19.1 hours per acre). July was the most heavily fished month (3,043 hours). Creel clerks were able to conduct 312 interviews throughout the survey.

RESULTS BY SPECIES

WALLEYE (Table 2, Figure 1)
Anglers spent 2,310 hours targeting walleye. Fishing effort for walleye was highest in January (520 hours). Total catch of walleye was 1,196 fish, and total harvest was 22 fish. Highest catch (353 fish) occurred in July, and highest harvest (10 fish) occurred in both June and July. Anglers fished an estimated 2.9 hours to catch, and 105.7 hours to harvest a walleye during the survey. Mean length of harvested walleye was 18.8 inches and the largest measured was a 19.4-inch fish.

NORTHERN PIKE
There was no documented fishing effort directed at northern pike during the season. However, six northern pike were caught by anglers.

MUSKELLUNGE (Table 2, Figure 2)
Anglers spent 438 hours targeting muskellunge during the season. Muskellunge fishing effort was greatest in August (128 hours). Total catch of muskellunge was 9 fish, and the highest catch (5 fish) occurred in May. Anglers fished an estimated 130.1 hours to catch a muskellunge, and there was no documented harvest during the survey.

SMALLMOUTH BASS (Table 2, Figure 3)
Fishing effort targeted at smallmouth bass was 6,851 hours during the season. Smallmouth bass fishing effort was greatest in July (2,077 hours). Total catch of smallmouth bass was 7,982 fish, with 315 fish harvested. Highest catch (2,586 fish) occurred in June. Anglers fished an estimated 0.9 hours to catch a smallmouth bass, and 23.1 hours to harvest a smallmouth bass during the survey. Mean length of harvested smallmouth bass was 13.2 inches and the largest measured was a 16.9-inch fish.

LARGEMOUTH BASS (Table 2, Figure 4)
Fishing effort directed at largemouth bass was 6,443 hours during the season. Largemouth bass fishing effort was greatest in July (1,753 hours). Total catch of largemouth bass was 6,382 fish, and total harvest was 603 fish. The highest catch (3,212 fish) occurred in June. Anglers fished an estimated 1.1 hours to catch, and 11.4 hours to harvest a largemouth bass during the survey. Mean length of harvested largemouth bass was 13.4 inches and the largest measured was a 17.8-inch fish.

YELLOW PERCH (Table 2, Figure 5)
Yellow perch received 1,406 hours of directed fishing effort. Total catch of yellow perch was 2,574 fish, and total harvest was 356 fish. Mean length of yellow perch harvested was 8.6 inches and the largest measured was a 12.1-inch fish.

BLUEGILL (Table 2, Figure 6)
Bluegill were the most sought after panfish species during the survey. Fishing effort directed at bluegill was 2,532 hours. Total catch of bluegill was 5,706 fish, and total

harvest was 1,256 fish. Mean length of bluegill harvested was 7.7 inches and the largest measured was a 9.7-inch fish.

BLACK CRAPPIE (Table 2, Figure 7)
Black crappie received 1,497 hours of directed fishing effort. Anglers caught 2,276 black crappie and harvested 934 fish. Mean length of black crappie harvested was 10.2 inches and the largest measured was a 14.2-inch fish.

PUMPKINSEED (Table 2, Figure 8)
Pumpkinseed received 633 hours of directed fishing effort. Anglers caught 55 pumpkinseed with no documented harvest.

ROCK BASS (Table 2, Figure 9)
Rock bass received 291 hours of directed fishing effort. Anglers caught 2,896 rock bass and harvested 337 fish. Mean length of rock bass harvested was 7.8 inches and the largest measured was a 12.0-inch fish.

BURBOT
Burbot received 6 hours of directed fishing effort. There was no documented catch or harvest.

Acknowledgements

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

We also thank our cooperators, Rob Hagge and Town of Hazelhurst, who generously allowed the DNR to keep a boat or snowmobile on their 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 Katherine Lake during the survey period were Jerry Storke, John Davis and Mike 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, Katherine Lake, 2023-24 season; compared to 2001-02 creel results, Oneida County averages, and Ceded Territory averages.

MONTH	NUMBER OF ANGLER PARTY INTERVIEWS	TOTAL ANGLER HOURS	TOTAL ANGLER HOURS/ACRE	2001-02 TOTAL ANGLER HOURS/ACRE	ONEIDA COUNTY AVERAGE HOURS/ACRE	CEDED TERRITORY AVERAGE HOURS/ACRE
May	27	925	1.6	2.9	4.6	4.7
June	79	2,612	4.4	2.7	6.1	6.0
July	71	3,043	5.2	3.0	7.0	6.4
August	47	2,125	3.6	2.5	5.4	5.1
September	33	1,048	1.8	2.1	3.3	3.1
October	22	585	1.0	1.4	1.6	1.4
December	5	105	0.2	0.7	1.2	1.1
January	14	574	1.0	2.4	1.6	1.7
February	13	571	1.0	1.5	1.6	1.6
March	1	63	0.1	0.0	0.3	0.2
Summer Total	279	10,337	17.5	14.6	28.0	26.7
Winter Total	33	1,313	2.2	4.6	4.6	4.6
Grand Total	312	11,651	19.7	19.2	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 Katherine 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 Katherine Lake to other lakes.

2001-02 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 Katherine 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 Katherine Lake to other lakes in northern Wisconsin.

Table 2. Comparison of creel survey synopses, Katherine Lake, 2023-24 and 2001-02 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	2,310	10.3%	1,196	2.9	22	105.7	18.8
Northern pike	0	0.0%	6	*	0	*	**
Muskellunge	438	2.0%	9	130.1	0	*	**
Smallmouth bass	6,851	30.6%	7,982	0.9	315	23.1	13.2
Largemouth bass	6,443	28.8%	6,382	1.1	603	11.4	13.4
Yellow perch	1,406	6.3%	2,574	0.6	356	4.3	8.6
Bluegill	2,532	11.3%	5,706	0.5	1,256	2.0	7.7
Black crappie	1,497	6.7%	2,276	0.7	934	1.7	10.2
Pumpkinseed	633	2.8%	55	161.4	0	*	**
Rock bass	291	1.3%	2,896	1.4	337	3.6	7.8
Burbot	6	0.0%	0	*	0	*	**

CREEL YEAR: 2001-02

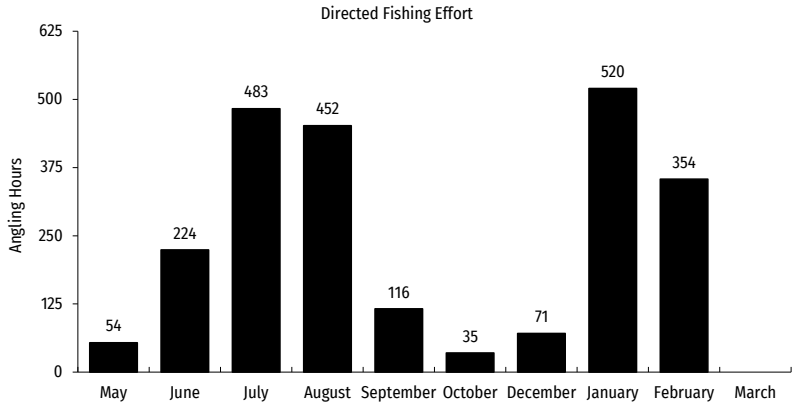
SPECIES	DIRECTED EFFORT (HOURS)	PERCENT OF TOTAL	TOTAL CATCH	SPECIFIC CATCH RATE (HRS/FISH)	TOTAL HARVEST	SPECIFIC HARVEST RATE (HRS/FISH)	MEAN LENGTH OF HARVESTED FISH
Walleye	6,699	40.9%	1,330	5.1	748	9.0	13.0
Northern pike	352	2.2%	0	*	0	*	**
Muskellunge	2,593	15.9%	109	42.0	0	*	**
Smallmouth bass	2,941	18.0%	3,586	1.1	184	19.5	16.2
Largemouth bass	423	2.6%	23	40.3	6	*	15.0
Yellow perch	2,189	13.4%	642	3.9	395	5.7	8.4
Bluegill	710	4.3%	865	1.1	133	5.3	6.5
Black crappie	305	1.9%	130	94.3	0	*	**
Rock bass	147	0.9%	810	0.4	99	1.8	8.2

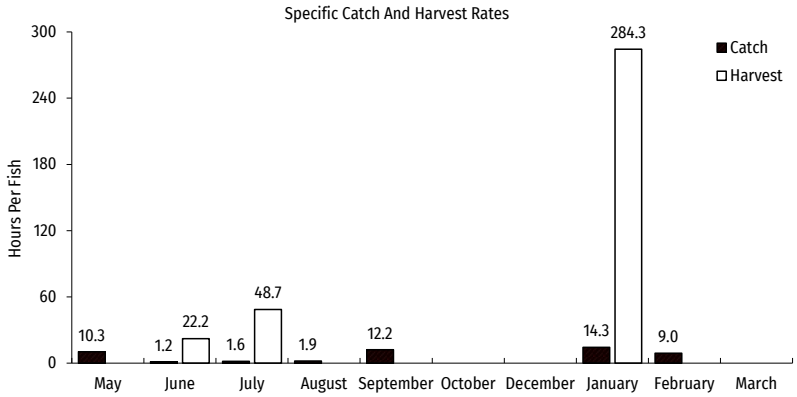
Note: If a species is not shown in a table, no data was collected by the creel clerks for that species.

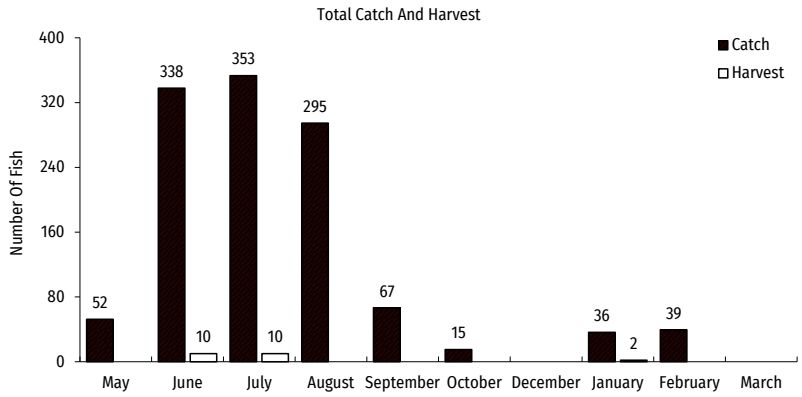
* Indicates that no fish of this species were caught or harvested (depending on the column) by anglers who specifically targeted this species.

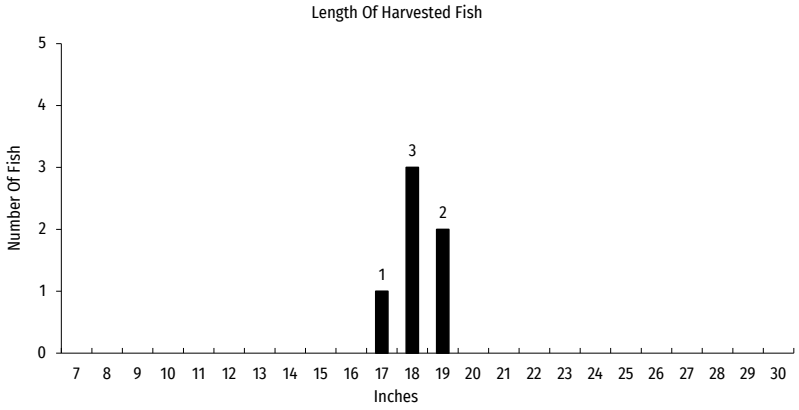
** Indicates that no fish were measured by the creel clerks for this species.

Walleye









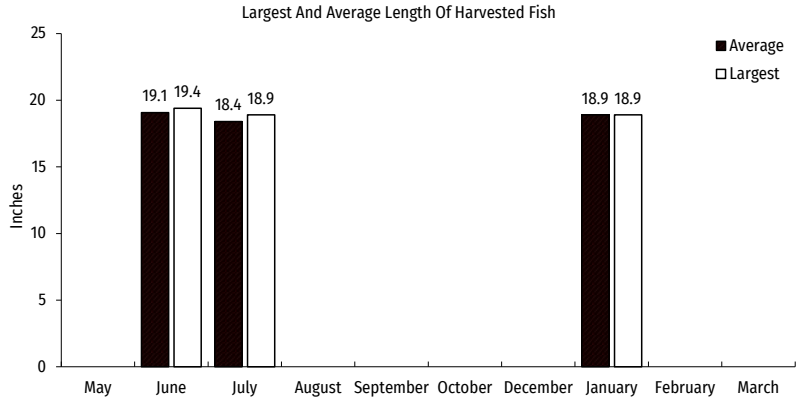
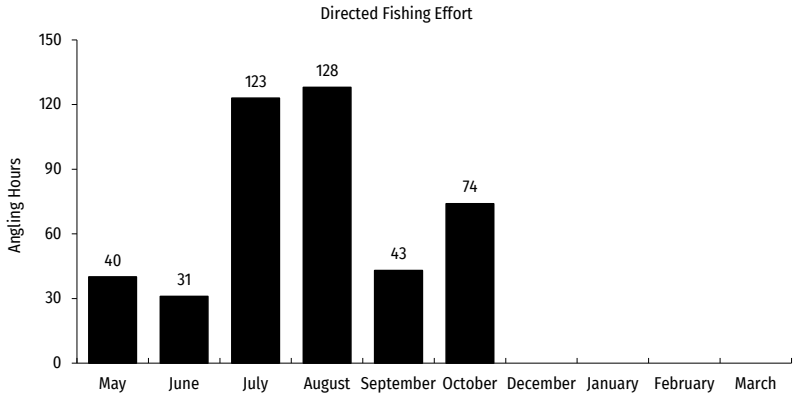
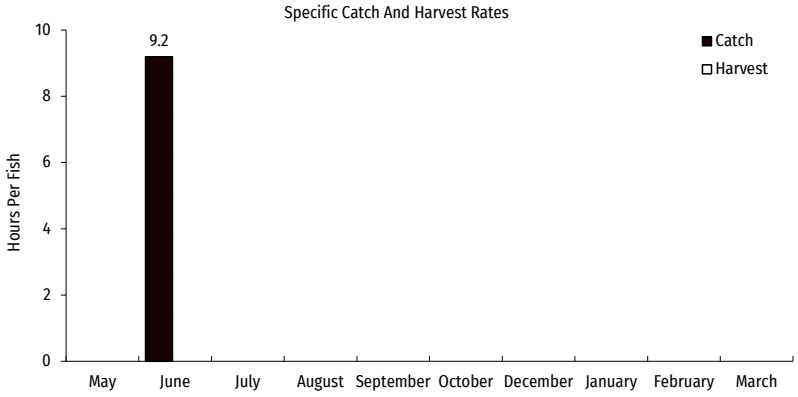


Figure 1. Walleye fishing effort, catch, harvest and length distribution, Katherine Lake, during 2023-24.

Muskellunge





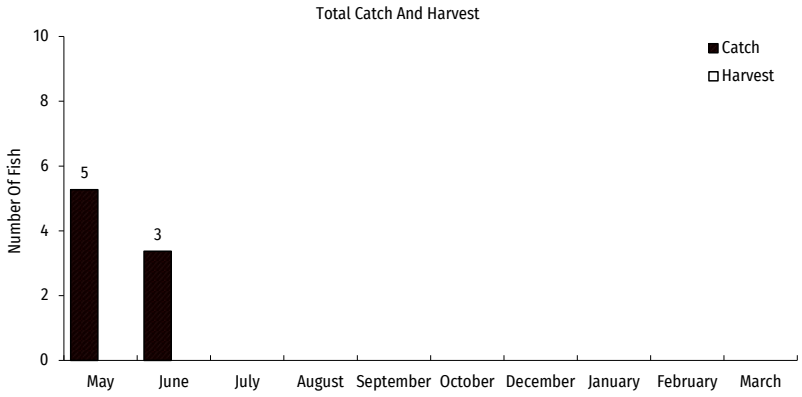
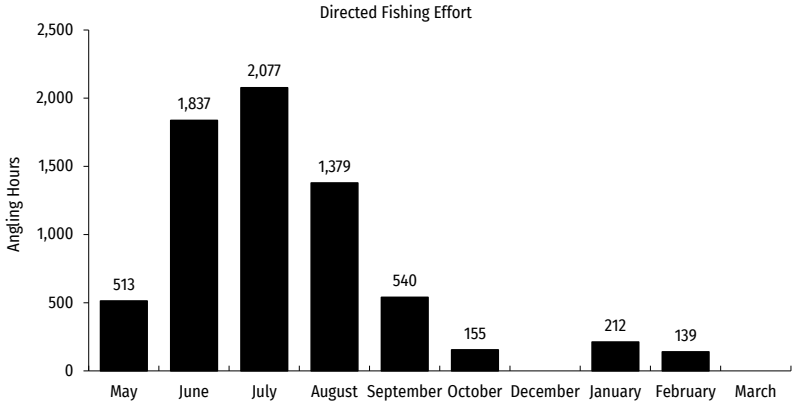
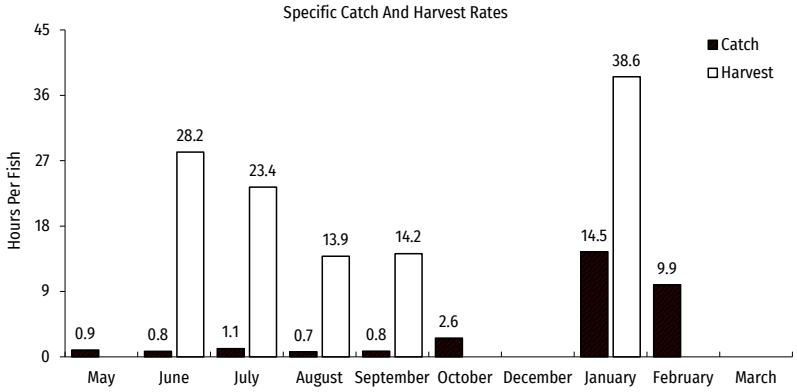
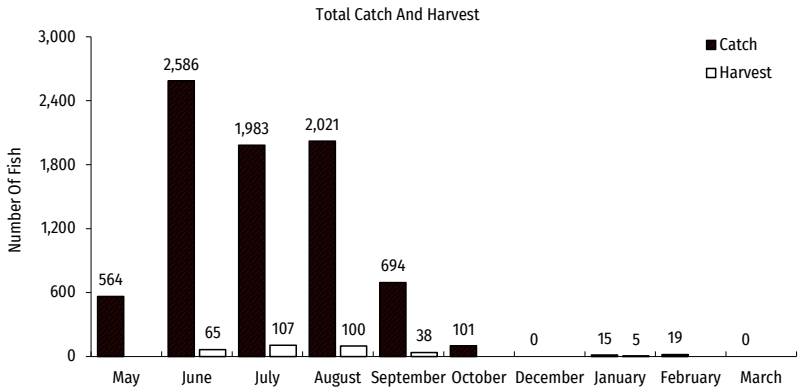


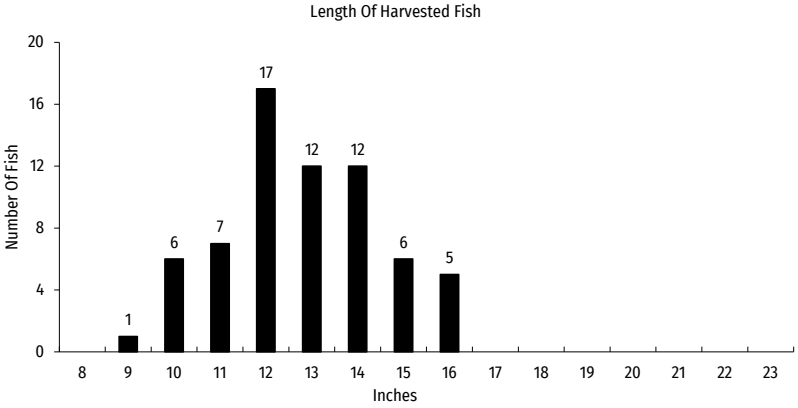
Figure 2. Muskellunge fishing effort, catch and harvest, Katherine Lake, during 2023-24.

Smallmouth Bass









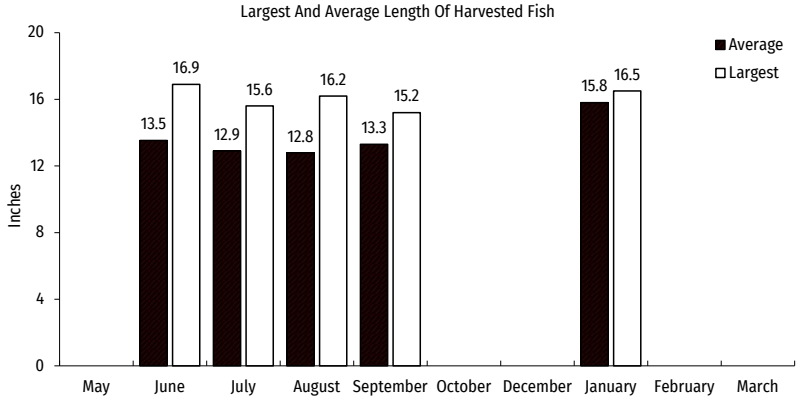
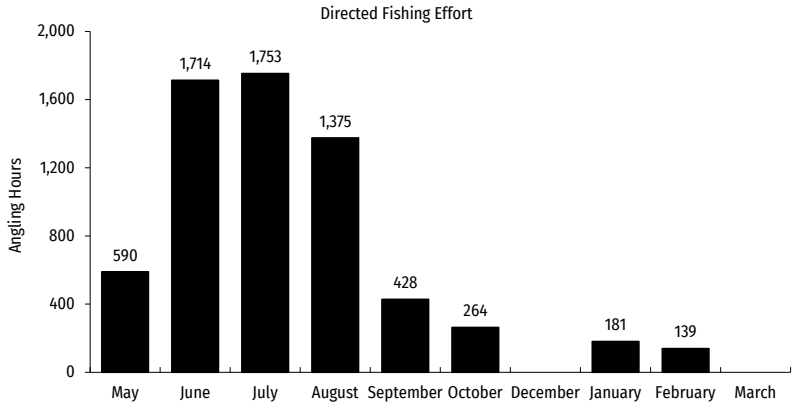
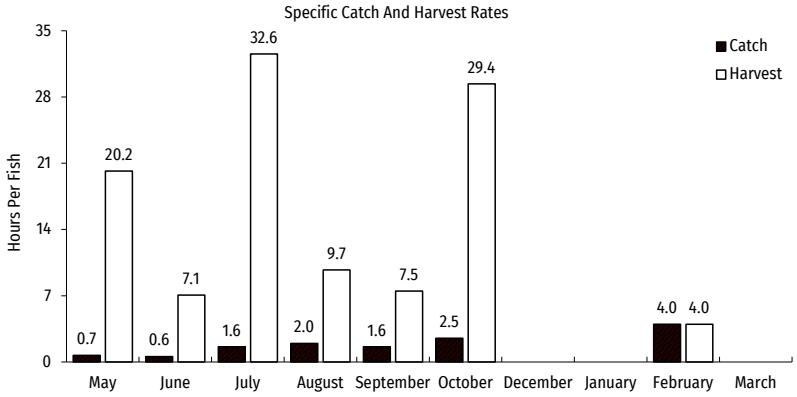
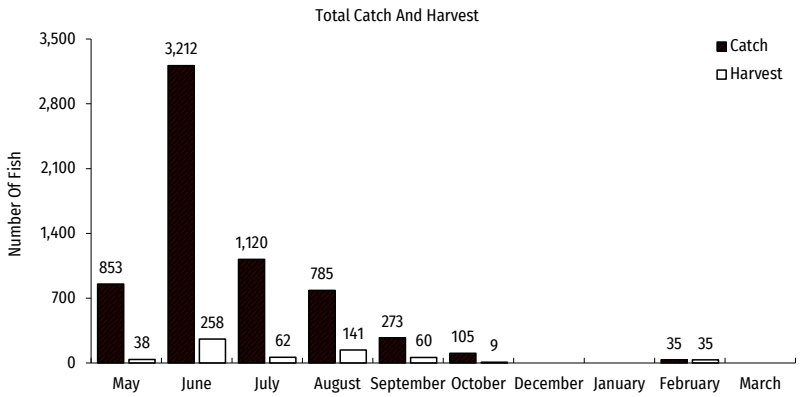


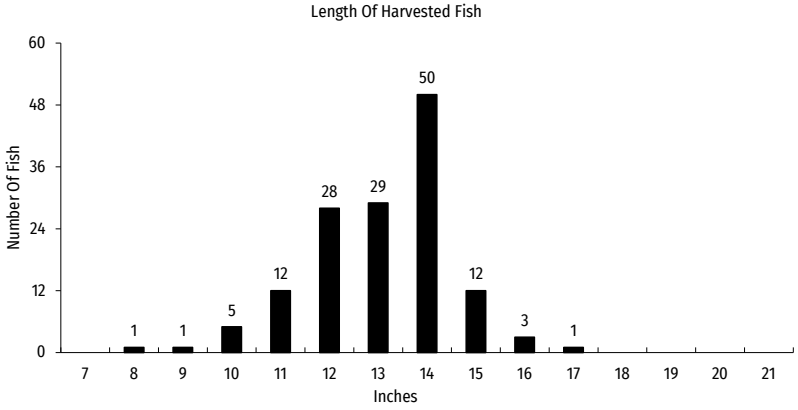
Figure 3. Smallmouth bass fishing effort, catch, harvest and length distribution, Katherine Lake, during 2023-24.



Largemouth Bass







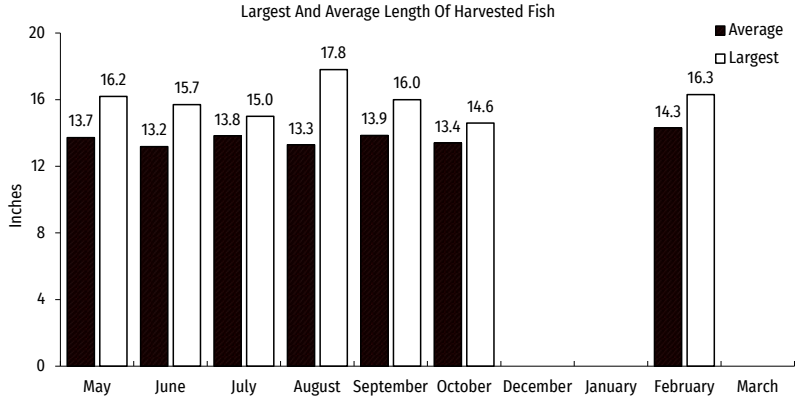
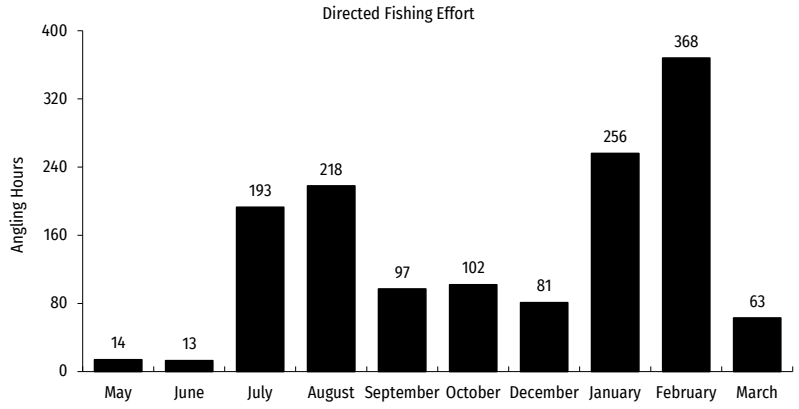
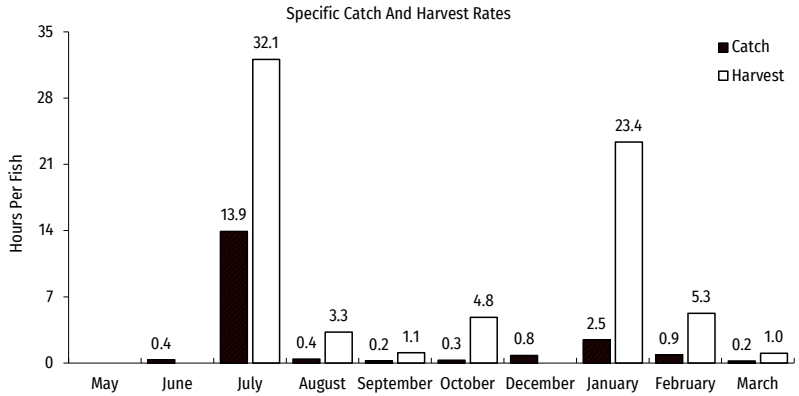
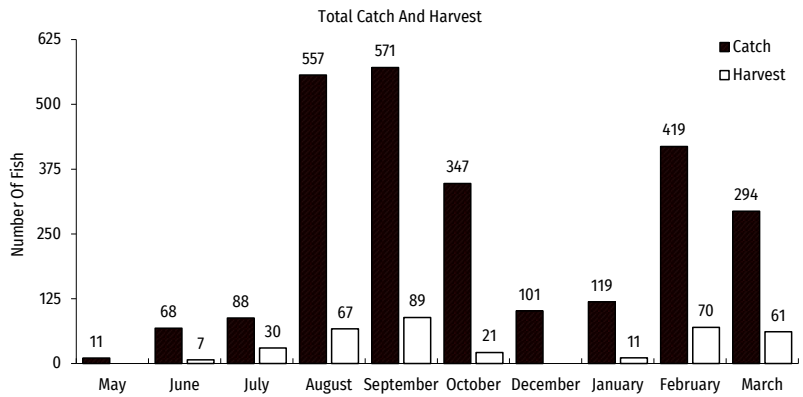


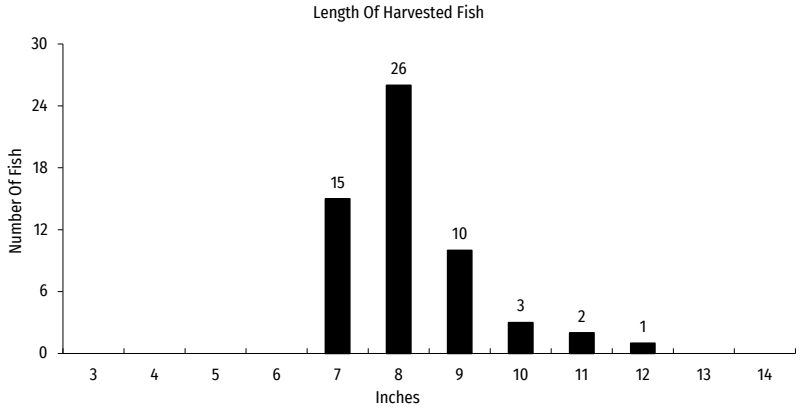
Figure 4. Largemouth bass fishing effort, catch, harvest and length distribution, Katherine Lake, during 2023-24.



Yellow Perch







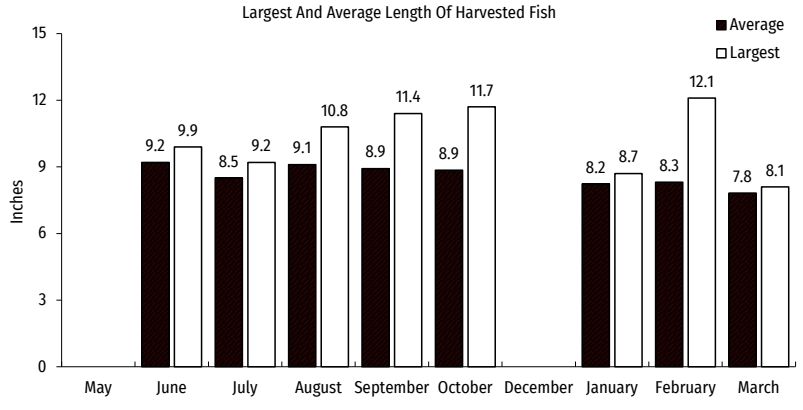
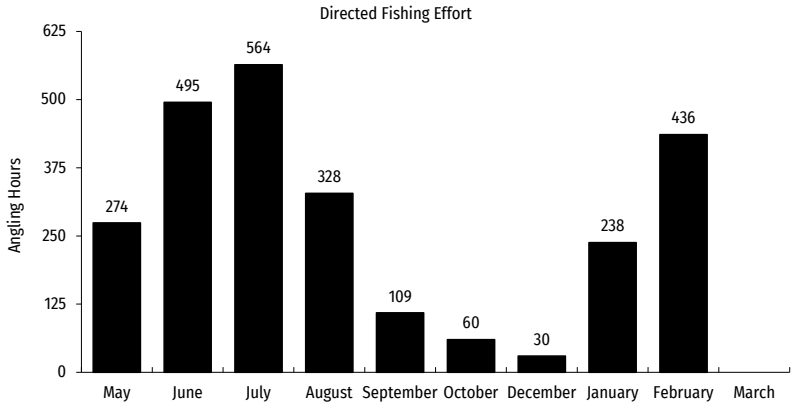
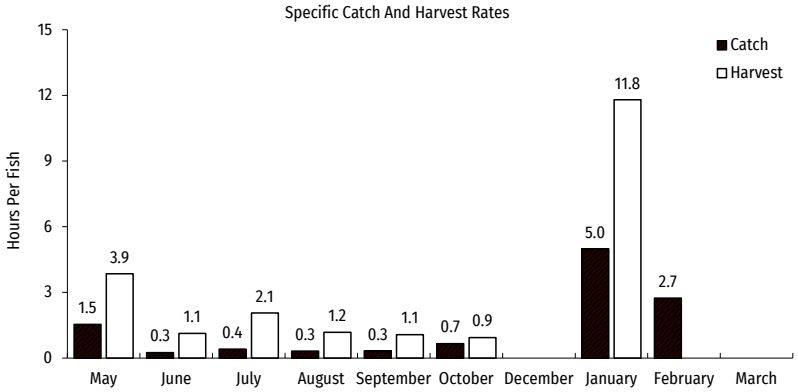
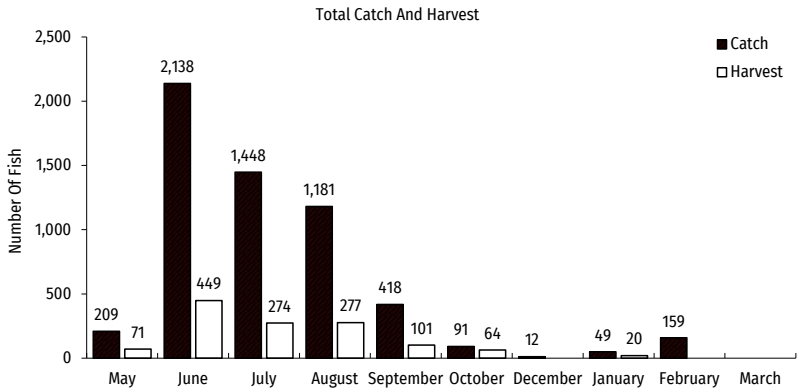


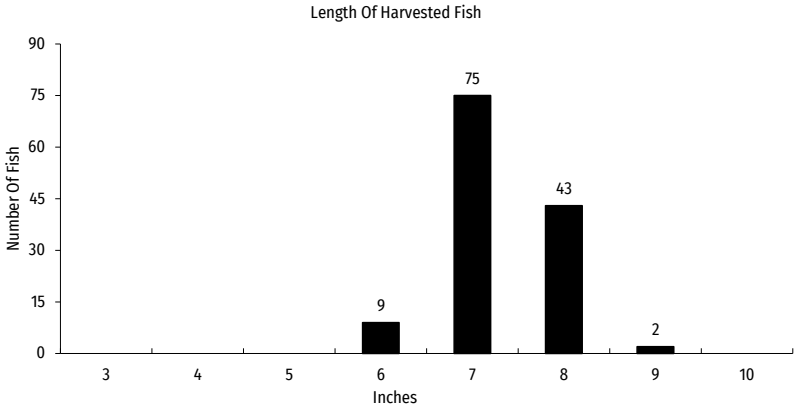
Figure 5. Yellow perch fishing effort, catch, harvest and length distribution, Katherine Lake, during 2023-24.

Bluegill









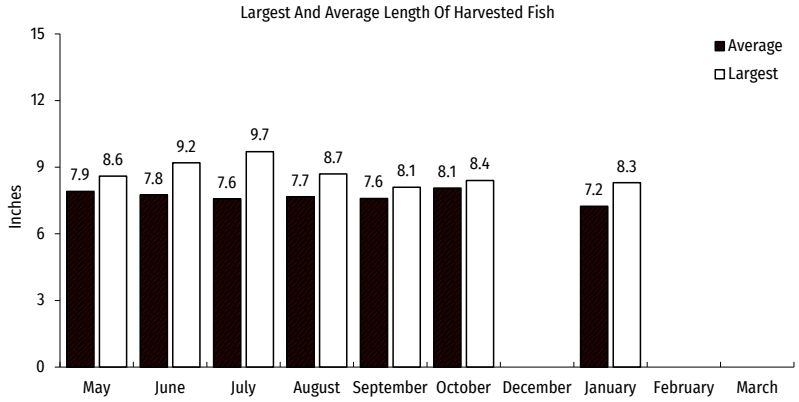
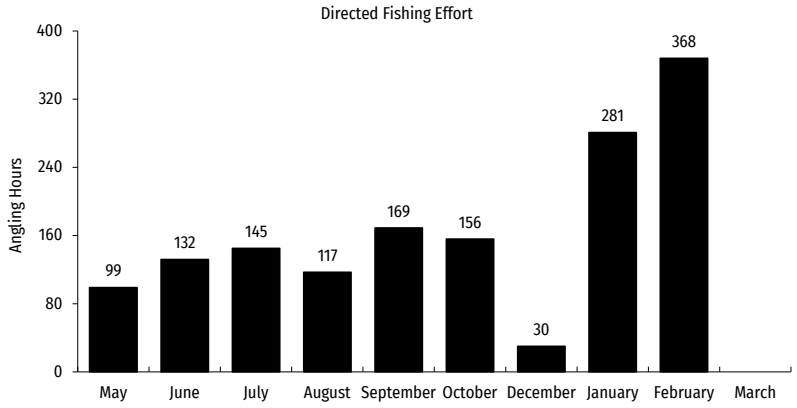
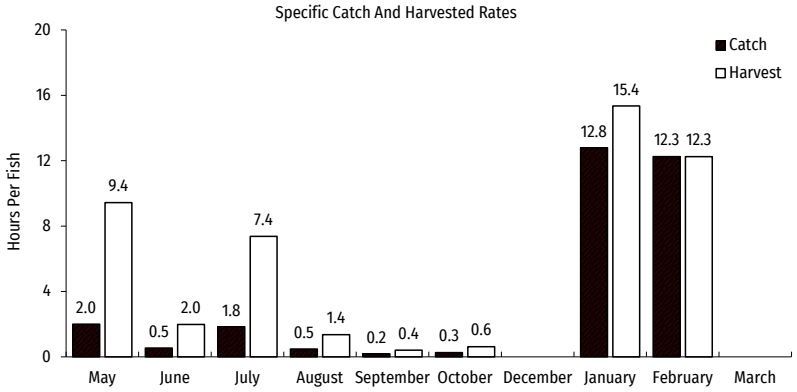
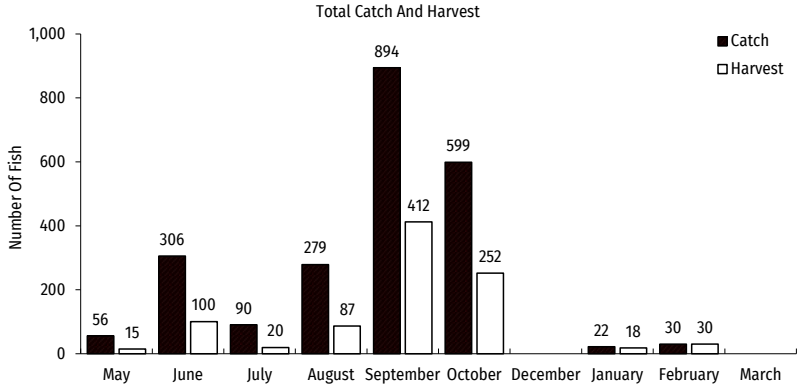


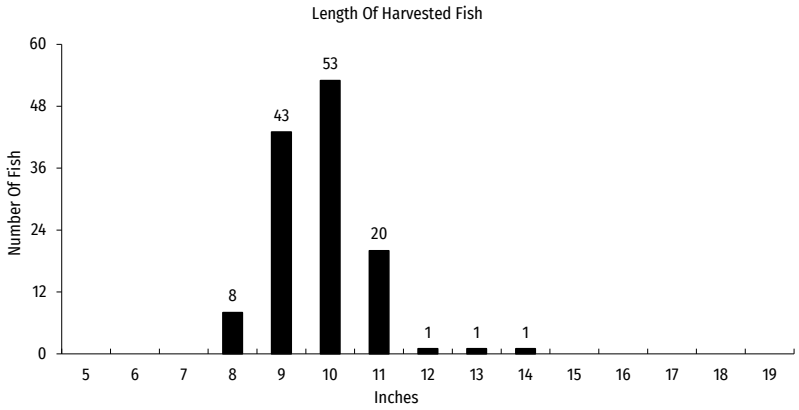
Figure 6. Bluegill fishing effort, catch, harvest and length distribution, Katherine Lake, during 2023-24.

Black Crappie









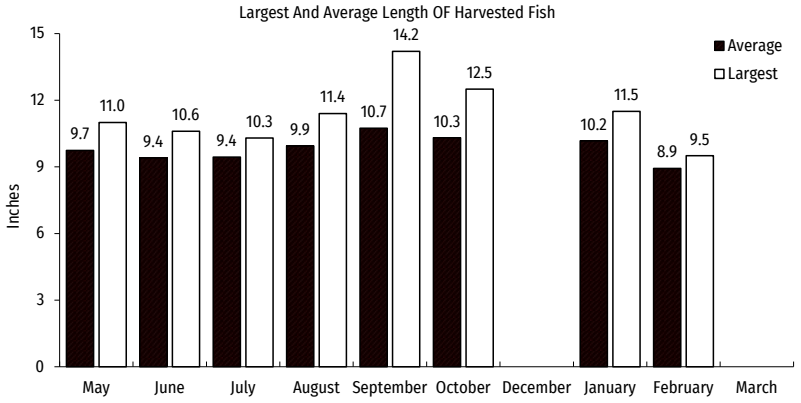
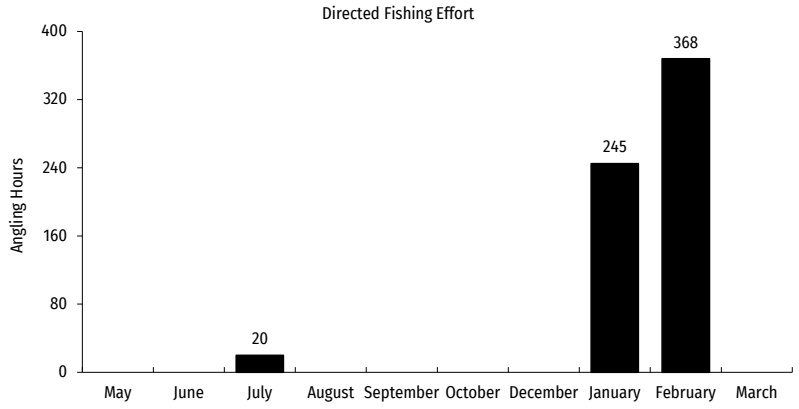
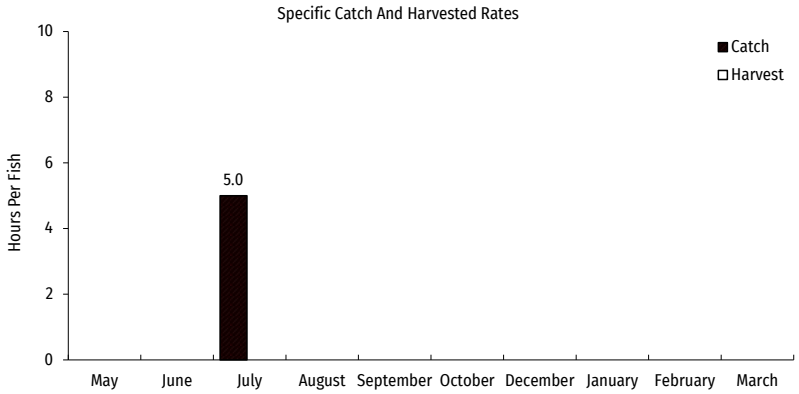


Figure 7. Black crappie fishing effort, catch, harvest and length distribution, Katherine Lake, during 2023-24.



Pumpkinseed



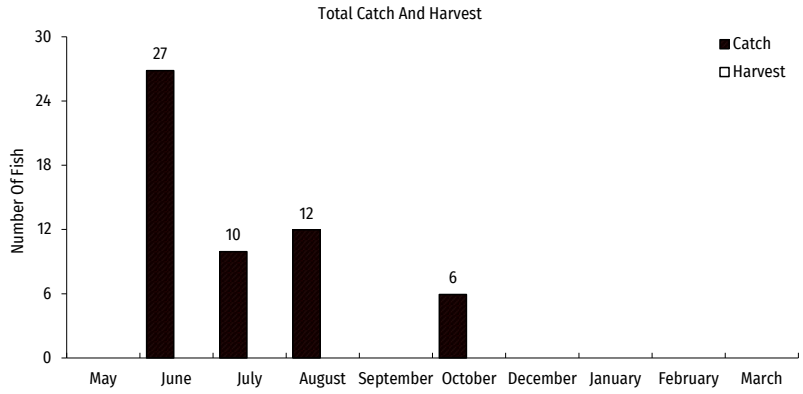
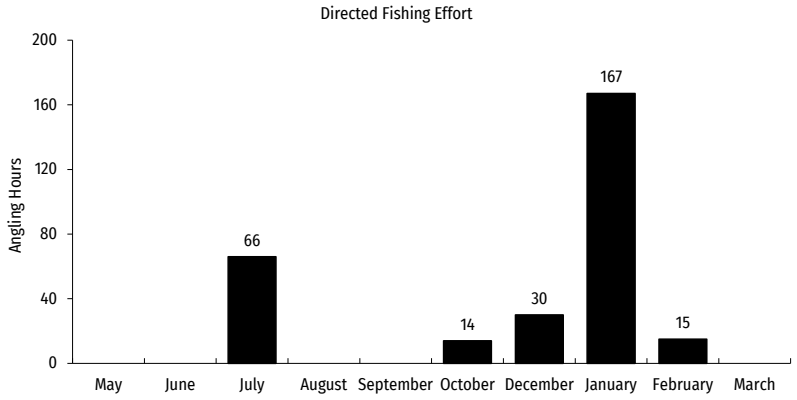
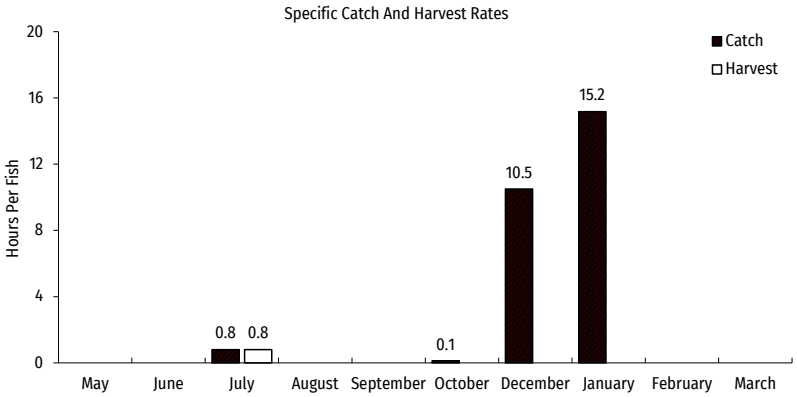
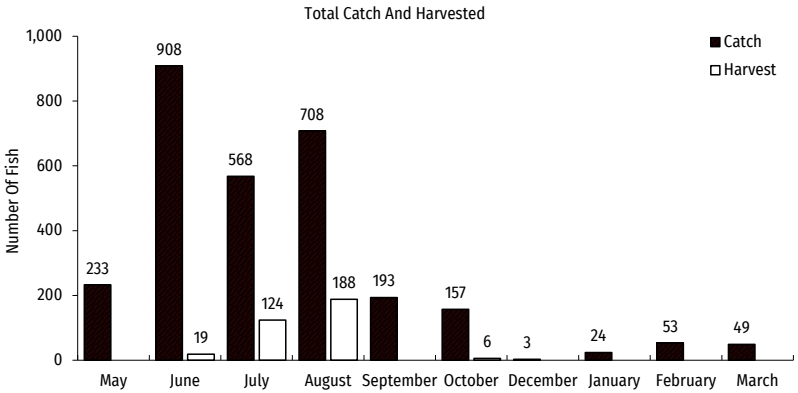


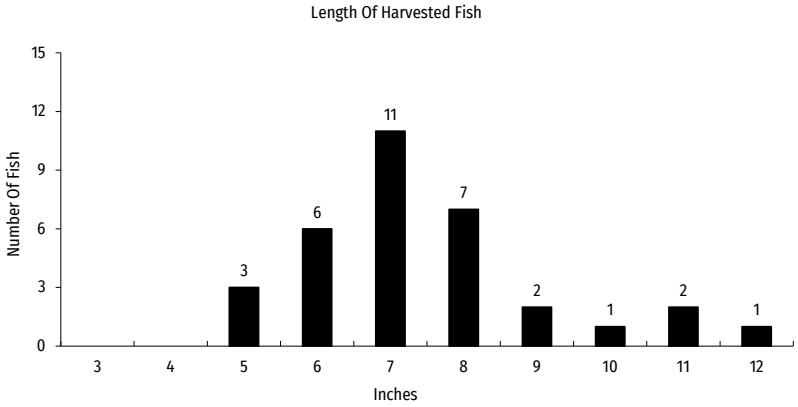
Figure 8. Pumpkinseed fishing effort, catch and harvest, Katherine Lake, during 2023-24.

Rock Bass









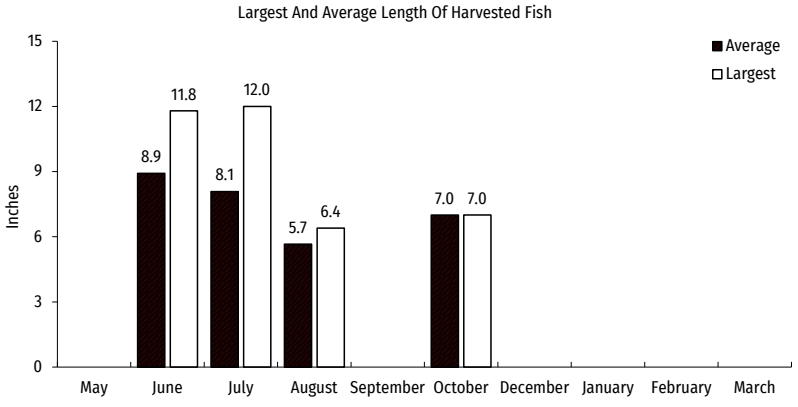


Figure 9. Rock bass fishing effort, catch, harvest and length distribution, Katherine Lake, during 2023-24.