

WISCONSIN DEPARTMENT OF NATURAL RESOURCES

SAND LAKE

2022 – 2023 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.

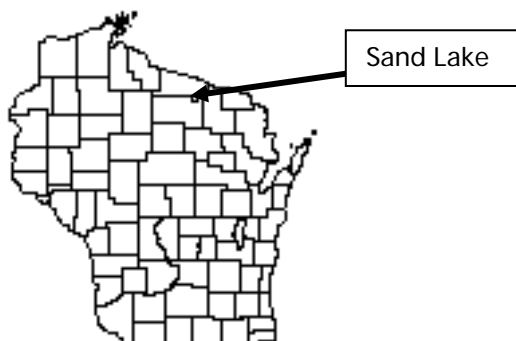
You may have encountered a DNR creel survey clerk on a recent fishing trip. We appreciate your cooperation during an interview. The survey only takes a few minutes of your time, and it gives the DNR valuable information needed for management of the fishery.

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

GENERAL LAKE INFORMATION



LOCATION

Sand Lake is located in Oneida County near the town of Sugar Camp.

PHYSICAL CHARACTERISTICS

Sand Lake is a 540-acre drainage lake with a maximum depth of 20 feet. Littoral substrate consists primarily of sand and gravel, with lesser amounts of muck. Sand Lake contains soft, slightly acidic, light brown water of low 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 Sand Lake was in late April. Fishable ice formed on Sand Lake in mid-December.

FISHING REGULATIONS

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

SPECIES	SEASON	BAG LIMIT	MIN. SIZE
Largemouth Bass	5/07 - 3/05	5*	14"
Smallmouth Bass	5/07 - 6/17	Catch&Release	
	6/18 - 3/05	5*	14"
*Bass species have a combined bag limit of 5.			
Musky	5/07 - 12/31	1	40"
	On open water		
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 1-10, 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.
- 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.

and the largest measured was a 29.0-inch fish.

MUSKELLUNGE (Table 2, Figure 3)
Muskellunge received the most fishing effort of any gamefish species during the season. Anglers spent 4,013 hours targeting muskellunge during the season. Muskellunge fishing effort was greatest in August (1,270 hours). Total catch of muskellunge was 57 fish, and the highest catch (23 fish) occurred in July. Anglers fished an estimated 70.8 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 421 hours during the season. Smallmouth bass fishing effort was greatest in July (113 hours). Total catch of smallmouth bass was 95 fish, with no fish harvested. Highest catch (60 fish) occurred in July. Anglers fished an estimated 29.9 hours to catch a smallmouth bass during the survey.

LARGEMOUTH BASS (Table 2, Figure 5)
Fishing effort directed at largemouth bass was 579 hours during the season. Largemouth bass fishing effort was greatest in July (211 hours). Total catch of largemouth bass was 254 fish, with no documented harvest. The highest catch (228 fish) occurred in July. Anglers fished an estimated 2.4 hours to catch a largemouth bass during the survey.

YELLOW PERCH (Table 2, Figure 6)
Yellow perch received 4,360 hours of directed fishing effort. Total catch of yellow perch was 1,668 fish, and total harvest was 227 fish. Mean length of yellow perch harvested was 8.4 inches.

BLUEGILL (Table 2, Figure 7)
Fishing effort directed at bluegill was 4,362 hours. Total catch of bluegill was 2,681 fish, and total harvest was 888 fish. Mean length of bluegills harvested was 7.7 inches.

BLACK CRAPPIE (Table 2, Figure 8)
Black crappies were the most sought after species during the survey. Black crappies received 6,189 hours of directed fishing effort.

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 third time the DNR conducted a creel survey on Sand Lake. The last creel survey took place during 1997-98.

GENERAL ANGLER INFORMATION

Anglers spent 12,264 hours, or 22.7 hours per acre, fishing Sand Lake during the 2022-23 season (Table 1). That was lower than the Oneida County average of 32.8 hours per acre and similar to the fishing effort documented during the 1997-98 creel survey (21.7 hours per acre). February was the most heavily fished month (2,839 hours), with a couple local fishing tournaments being influential in this result. Creel clerks were able to conduct 285 interviews throughout the survey.

RESULTS BY SPECIES

WALLEYE (Table 2, Figure 1)
Anglers spent 3,255 hours targeting walleyes. Fishing effort for walleyes was highest in February (1,517 hours). Total catch of walleye was 153 fish, and total harvest was 58 fish. Highest catch (65 fish) and highest harvest (29 fish) both occurred in July. Anglers fished an estimated 28.4 hours to catch and 82.6 hours to harvest a walleye during the survey. Mean length of harvested walleye was 16.4 inches, and the largest measured was a 19.5-inch fish.

NORTHERN PIKE (Table 2, Figure 2)
Fishing effort directed at northern pike was 2,187 hours during the season. Northern pike fishing effort was greatest in February (1,517 hours). Total catch of northern pike was 417 fish, and total harvest was 53 fish. Anglers fished an estimated 11.5 hours to catch a northern pike during the survey. Mean length of harvested northern pike was 21.4 inches,

Anglers caught 8,883 black crappies and harvested 3,597 fish. Mean length of black crappies harvested was 9.2 inches.

PUMPKINSEED (Table 2, Figure 9)

Pumpkinseeds received 3,069 hours of directed fishing effort. Anglers caught 78 pumpkinseeds, and harvested 78 fish. Mean length of pumpkinseeds harvested was 7.3 inches.

ROCK BASS (Table 2, Figure 10)

Rock bass received 35 hours of directed fishing effort. Anglers caught 143 rock bass and harvested three fish. Mean length of rock bass harvested was 7.1 inches.

BULLHEAD species

There was no documented angler effort for bullhead species. However, anglers caught 23 bullheads with no documented harvest.

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 cooperators, the town of Sugar Camp and Gary Pitlik, who generously allowed the DNR to keep a boat and snowmobile (respectively) on their properties during this survey.

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

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/trtycrlsruvs.html>

Table 1. Sportfishing effort summary, Sand Lake, 2022-23 season; compared to 1997-98 creel results, Oneida County averages and Ceded Territory averages.

Month	Number of Angler Party Interviews	Total Angler Hours	Total Angler Hours/Acre	1997-98 Total Angler Hours/Acre	Oneida County Average Hours/Acre	Ceded Territory Average Hours/Acre
May	26	1,044	1.9	3.0	4.7	4.7
June	53	1,936	3.6	3.9	6.2	6.1
July	25	2,272	4.2	4.6	7.1	6.5
August	39	1,998	3.7	4.2	5.5	5.1
September	31	862	1.6	1.9	3.3	3.2
October	34	633	1.2	0.8	1.6	1.4
December	9	239	0.4	0.4	1.2	1.0
January	13	298	0.6	0.9	1.6	1.7
February	51	2,839	5.3	2.1	1.7	1.6
March	4	144	0.3	0.0	0.3	0.2
Summer Total	208	8,744	16.2	18.4	28.3	26.9
Winter Total	77	3,519	6.5	3.4	4.7	4.6
Grand Total	285	12,264	22.7	21.7	32.8	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 Sand 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 Sand Lake to other lakes.

1997-98 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 Sand 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 Sand Lake to other lakes in northern Wisconsin.

Table 2. Comparison of creel survey synopses, Sand Lake, 2022-23 and 1997-98 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	3,255	11.4%	153	28.4	58	82.6	16.4
Northern Pike	2,187	7.7%	417	11.5	53	66.5	21.4
Muskellunge	4,013	14.1%	57	70.8	0	*	**
Smallmouth Bass	421	1.5%	95	29.9	0	*	**
Largemouth Bass	579	2.0%	254	2.4	0	*	**
Yellow Perch	4,360	15.3%	1,668	4.1	227	21.9	8.4
Bluegill	4,362	15.3%	2,681	1.8	888	5.2	7.7
Black Crappie	6,189	21.7%	8,883	0.7	3,597	1.7	9.2
Pumpkinseed	3,069	10.8%	78	62.5	78	62.5	7.3
Rock Bass	35	0.1%	143	14.0	3	14.0	7.1
Bullhead sp.	0	0.0%	23	*	0	*	**

CREEL YEAR: 1997-98

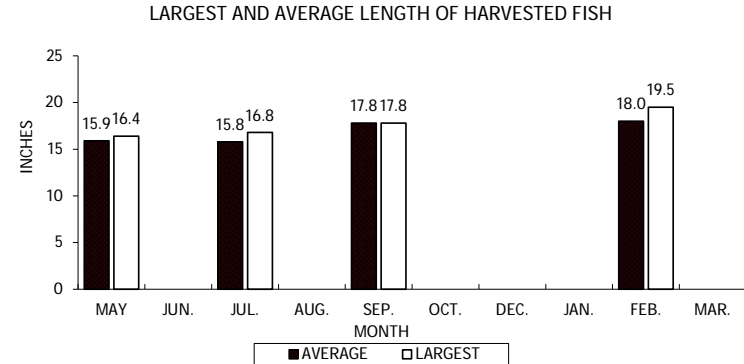
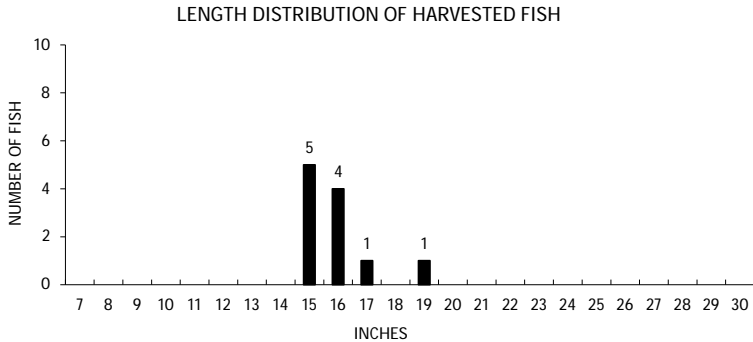
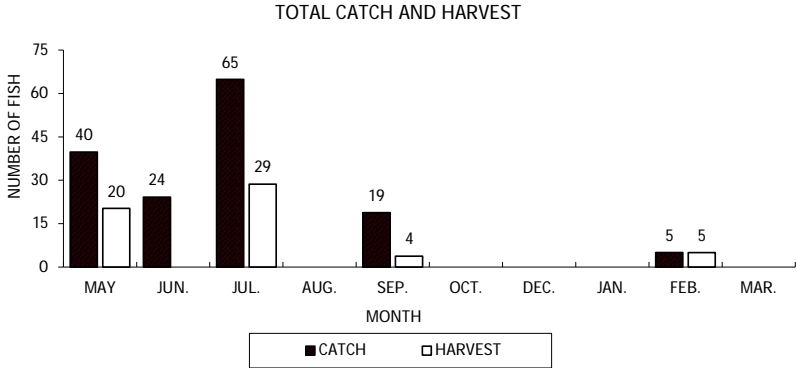
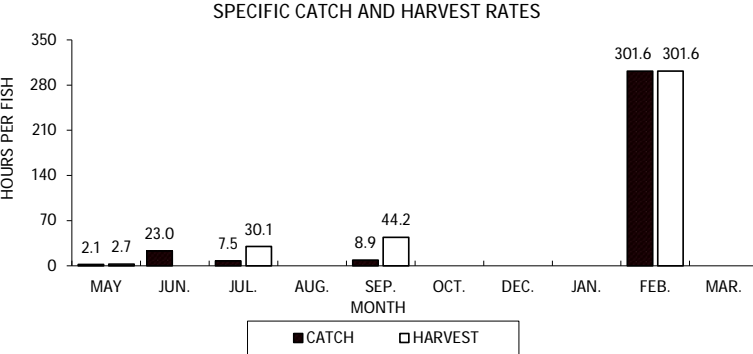
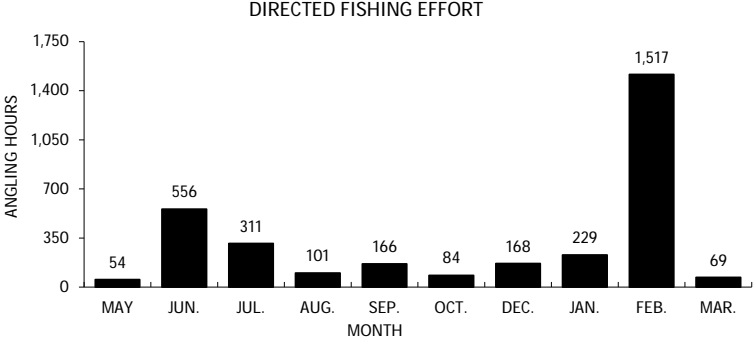
SPECIES	DIRECTED EFFORT (Hours)	PERCENT OF TOTAL	TOTAL CATCH	SPECIFIC CATCH RATE (Hours/Fish)	TOTAL HARVEST	SPECIFIC HARVEST RATE (Hours/Fish)	MEAN LENGTH OF HARVESTED FISH
Walleye	6,326	29.9%	1,813	3.5	395	16.0	12.1
Northern Pike	2,207	10.4%	649	5.1	64	36.5	19.4
Muskellunge	1,705	8.1%	56	59.9	5	312.5	38.0
Smallmouth Bass	340	1.6%	24	19.3	0	*	**
Largemouth Bass	267	1.3%	13	40.7	0	*	**
Yellow Perch	3,575	16.9%	1,290	3.2	622	6.5	7.9
Bluegill	2,919	13.8%	863	3.5	642	4.7	7.8
Black Crappie	3,557	16.8%	3,185	1.1	2,547	1.4	9.7
Pumpkinseed	204	1.0%	69	2.9	23	9.0	6.8
Rock Bass	24	0.1%	95	1.1	38	*	7.6

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.

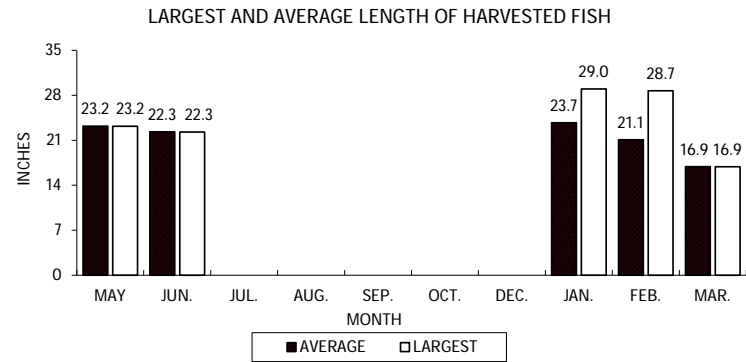
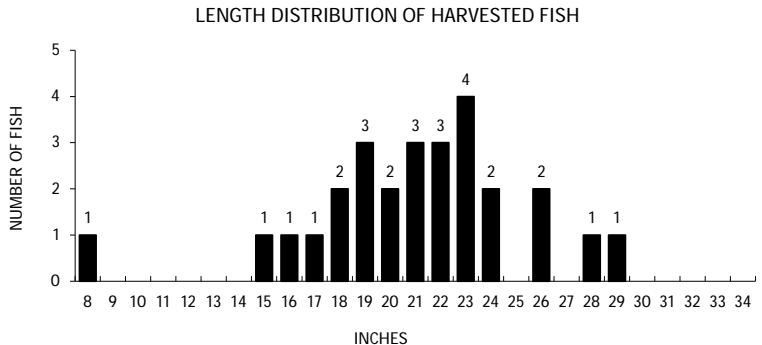
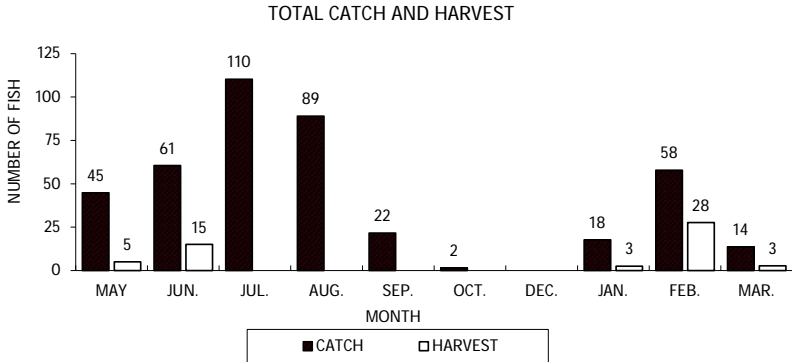
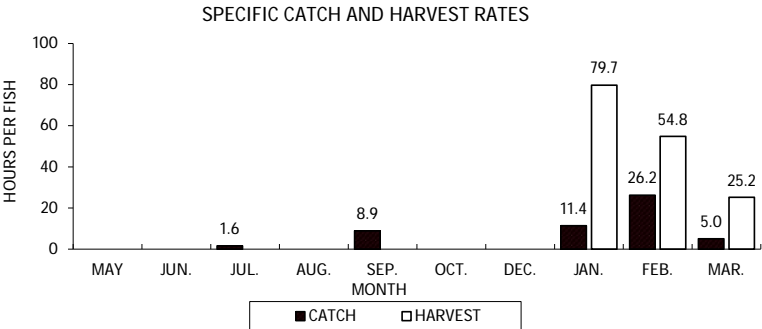
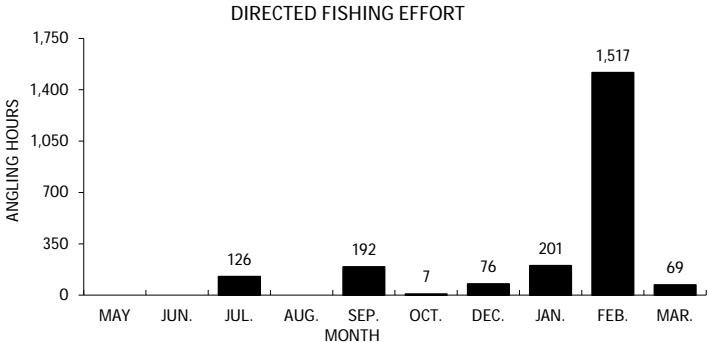
WALLEYE



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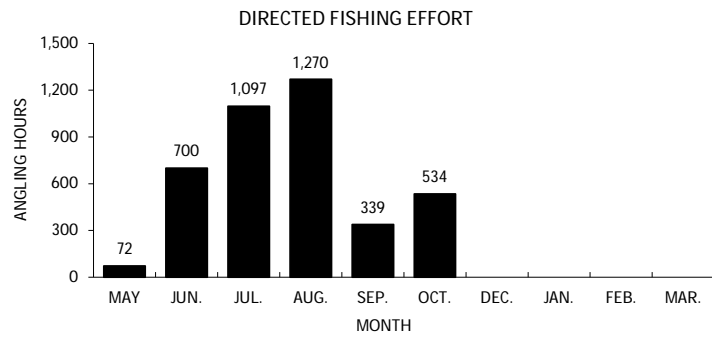
Figure 1. Walleye fishing effort, catch, harvest and length distribution, Sand Lake, during 2022-23.

NORTHERN PIKE



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



MUSKELLUNGE

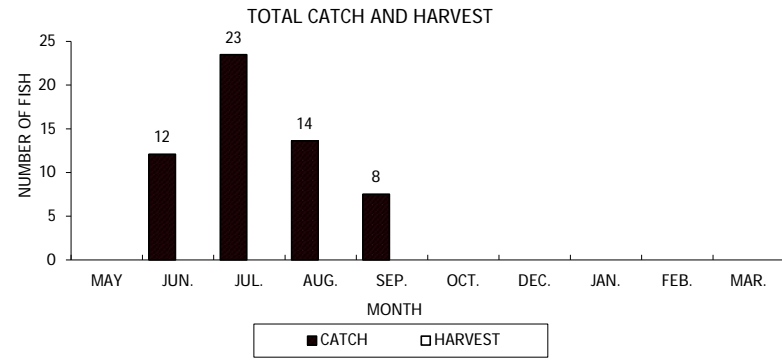
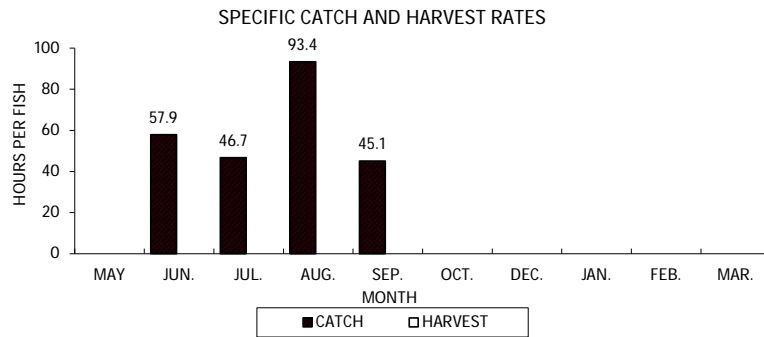


Figure 3. Muskellunge fishing effort, catch and harvest, Sand Lake, during 2022-23.

SMALLMOUTH BASS

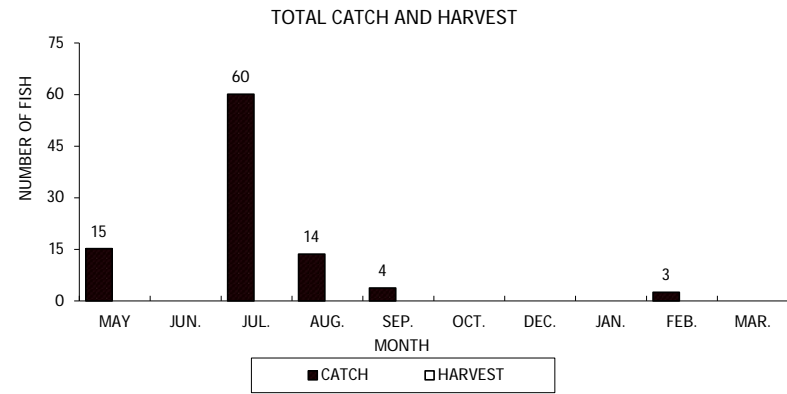
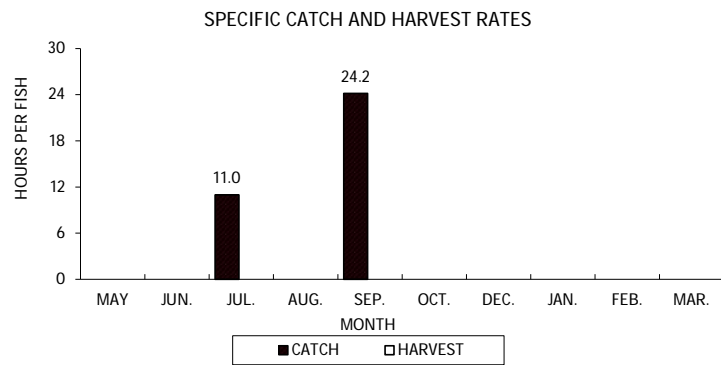
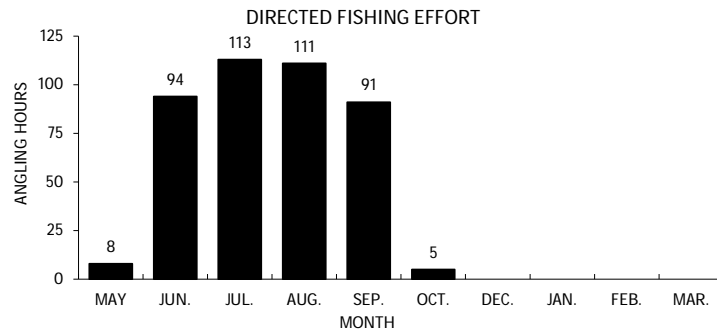


Figure 4. Smallmouth bass fishing effort, catch and harvest, Sand Lake, during 2022-23.

LARGEMOUTH BASS

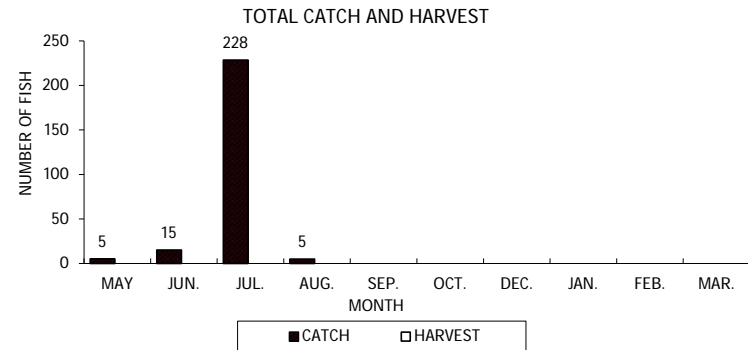
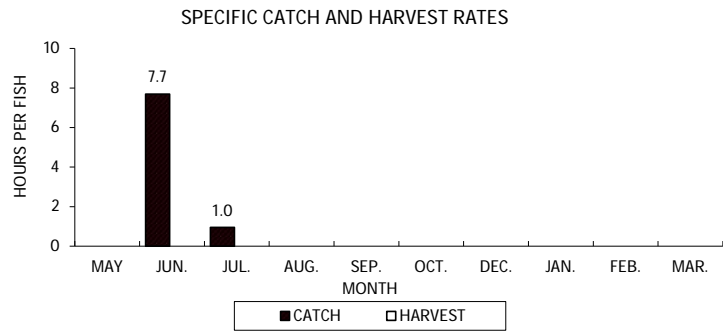
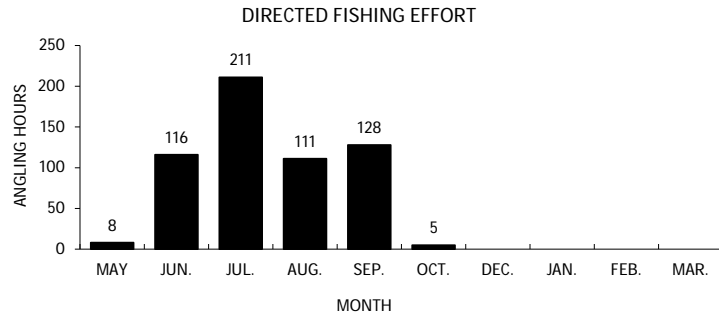
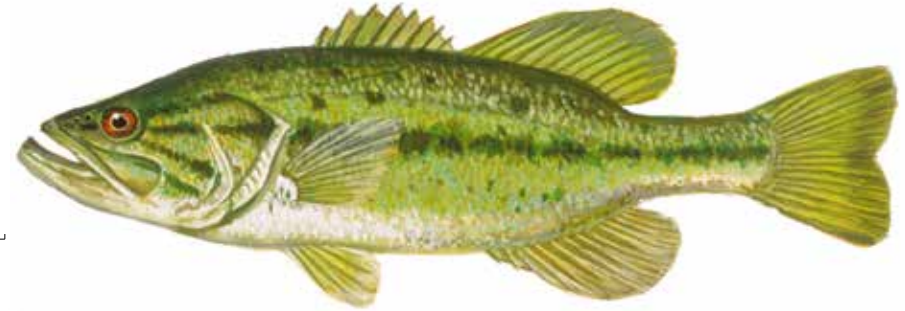


Figure 5. Largemouth bass fishing effort, catch and harvest, Sand Lake, during 2022-23.

YELLOW PERCH

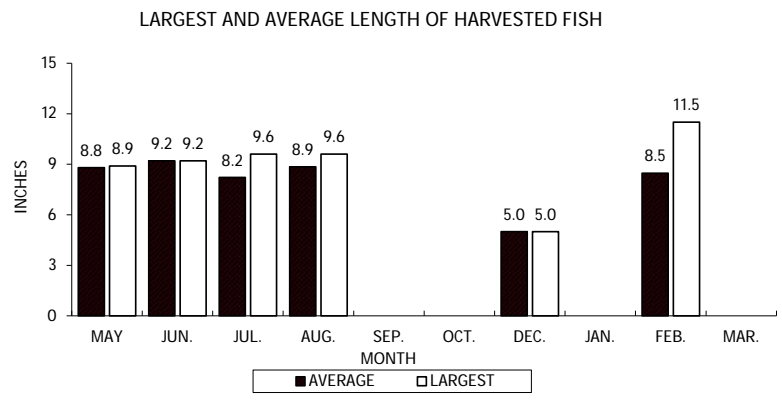
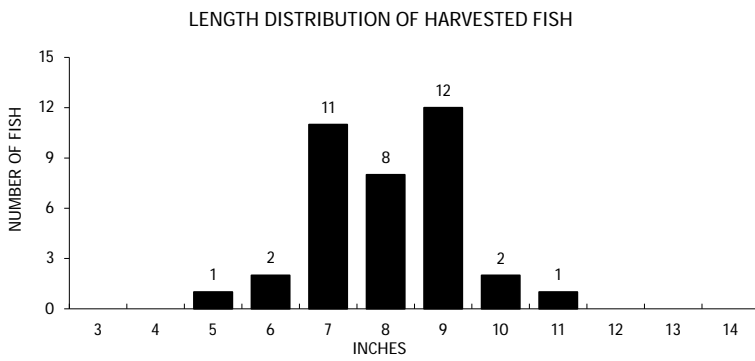
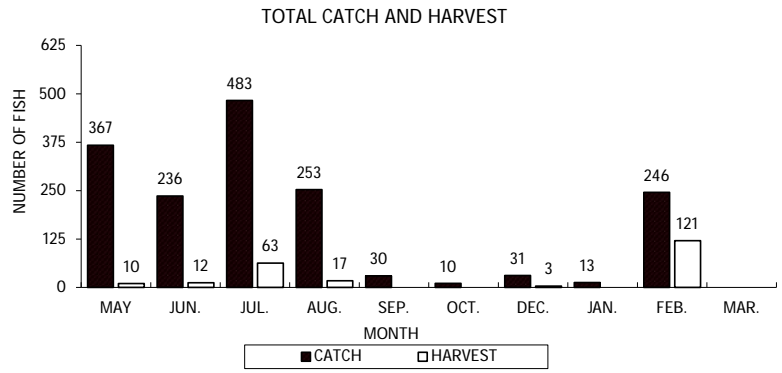
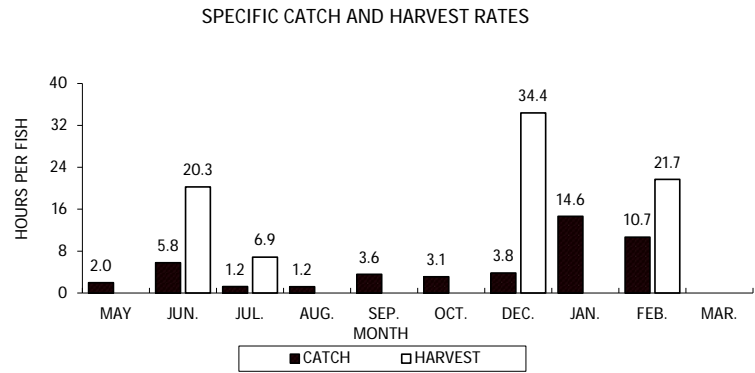
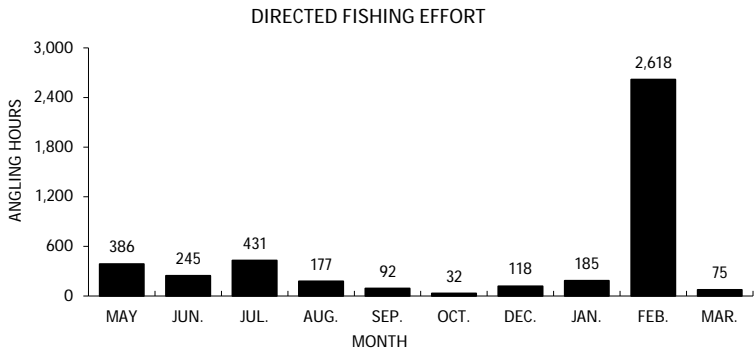


Figure 6. Yellow perch fishing effort, catch, harvest and length distribution, Sand Lake, during 2022-23.

BLUEGILL

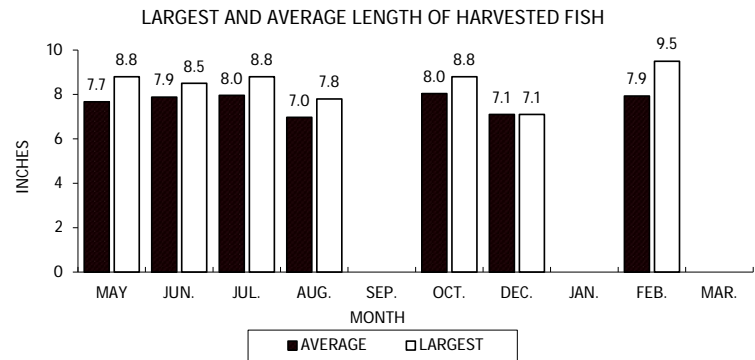
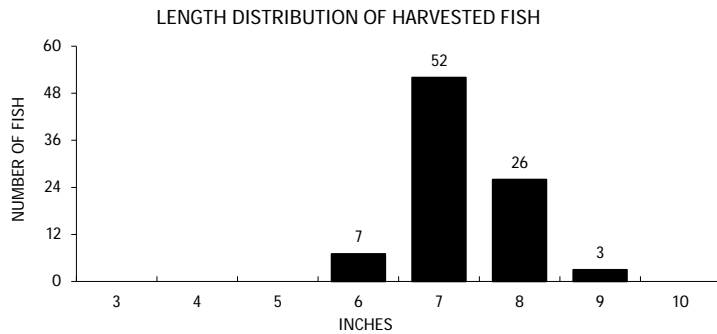
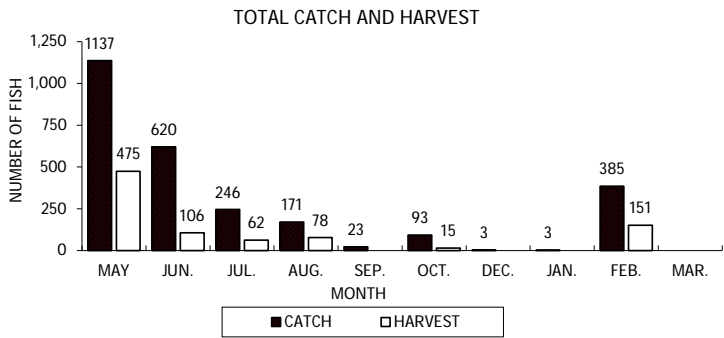
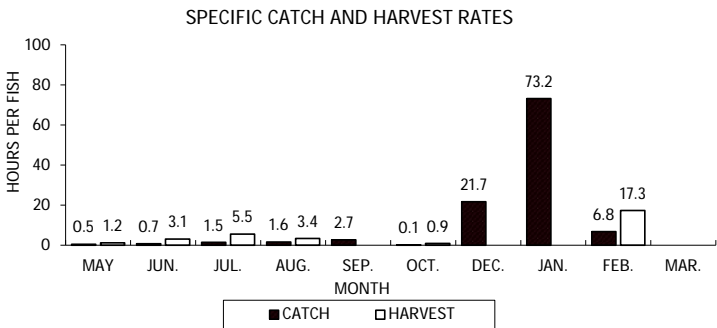
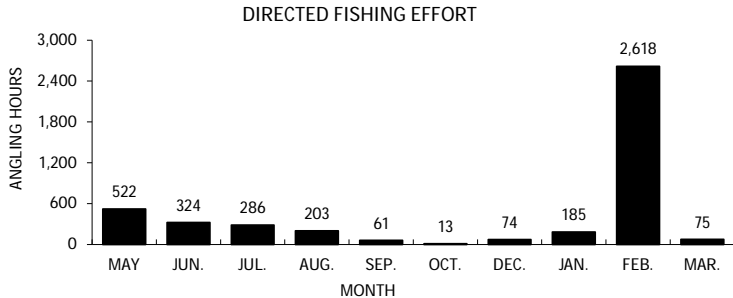


Figure 7. Bluegill fishing effort, catch, harvest and length distribution, Sand Lake, during 2022-23.

BLACK CRAPPIE

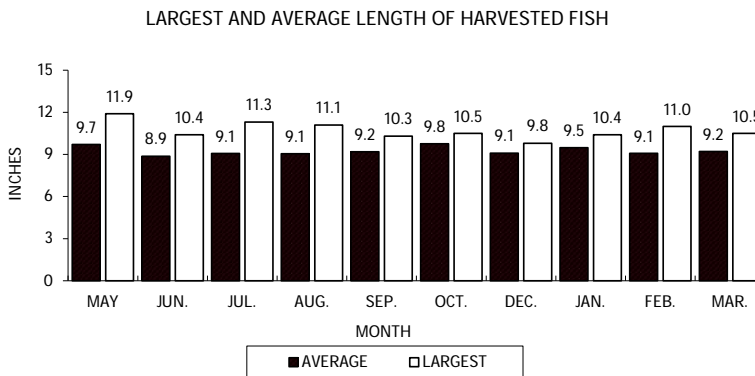
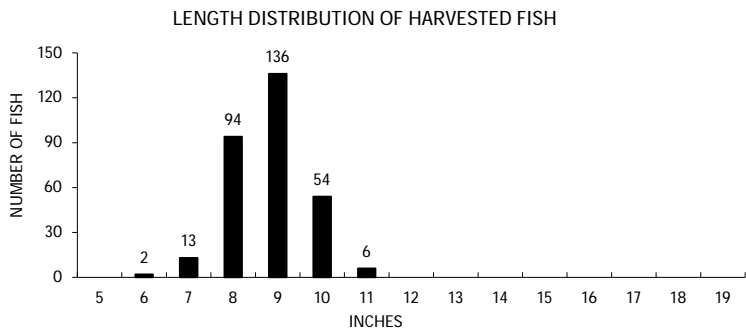
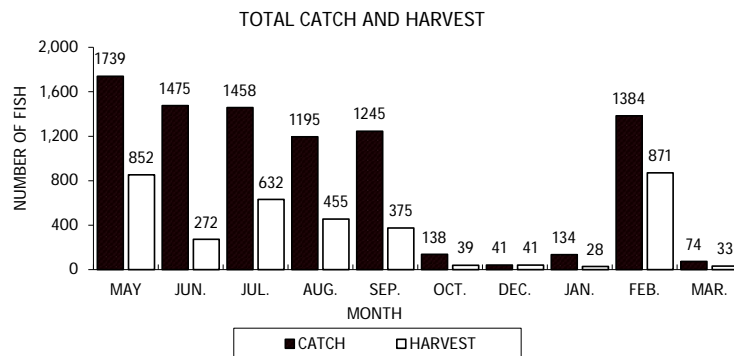
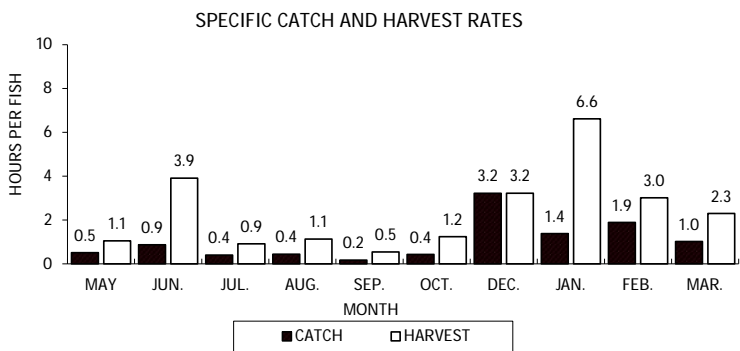
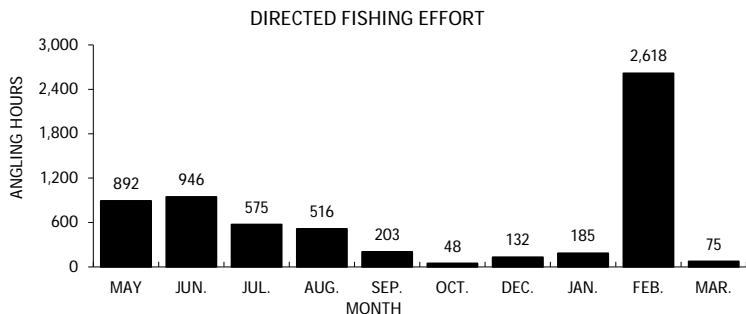
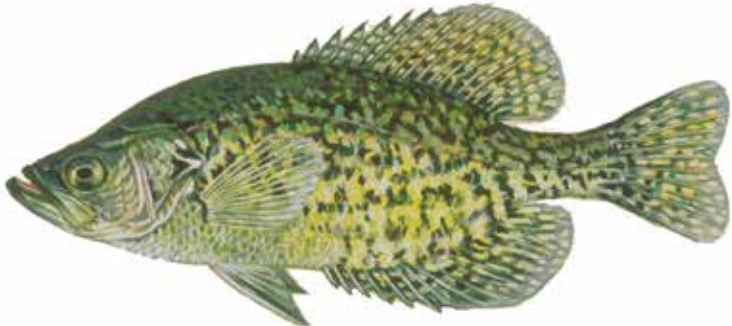


Figure 8. Black crappie fishing effort, catch, harvest and length distribution, Sand Lake, during 2022-23.

PUMPKINSEED

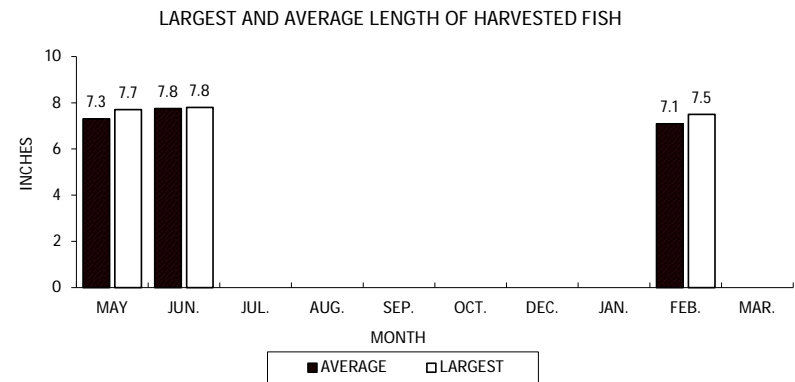
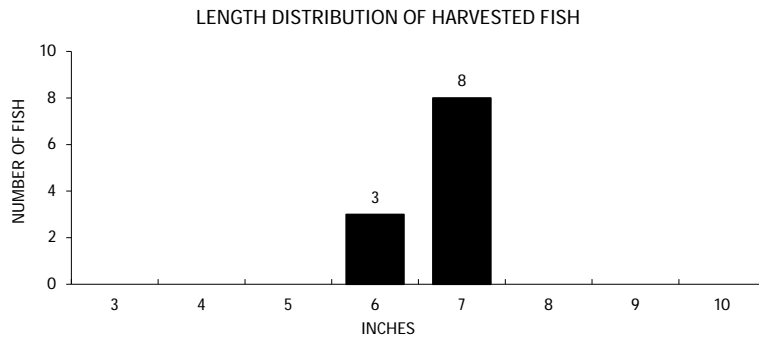
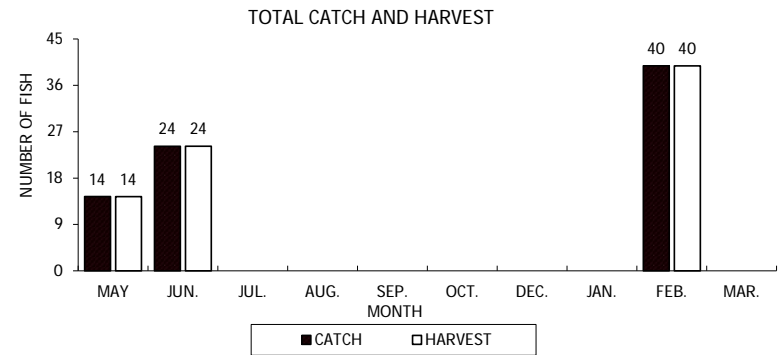
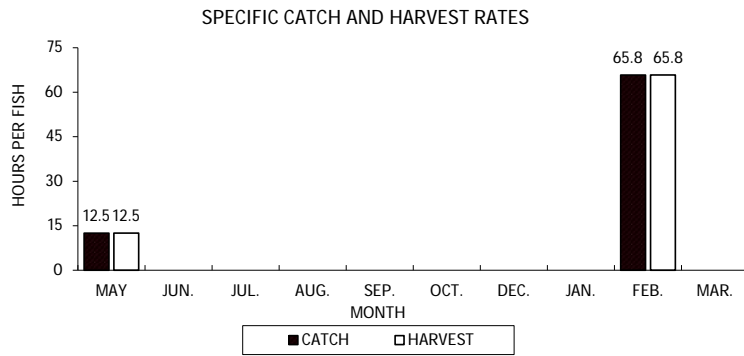
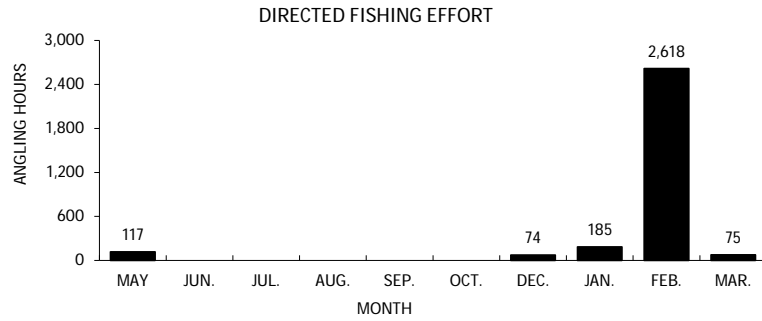


Figure 9. Pumpkinseed fishing effort, catch, harvest and length distribution, Sand Lake, during 2022-23.

ROCK BASS

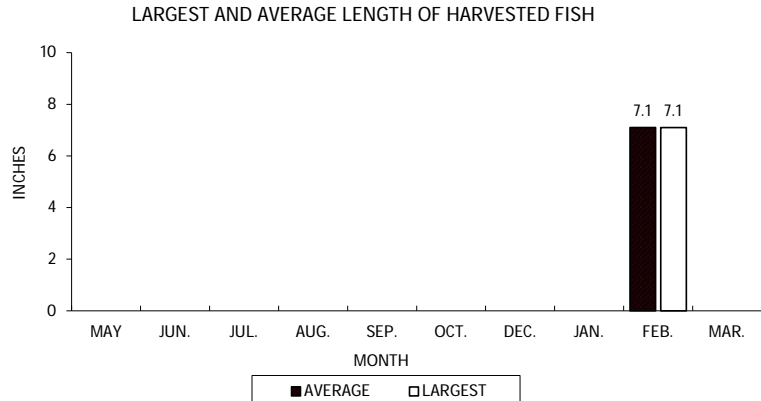
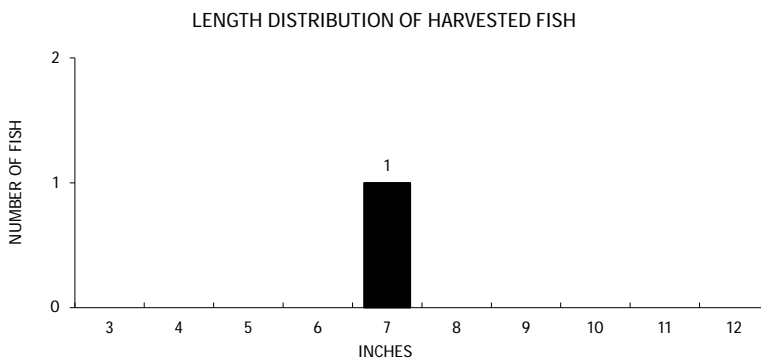
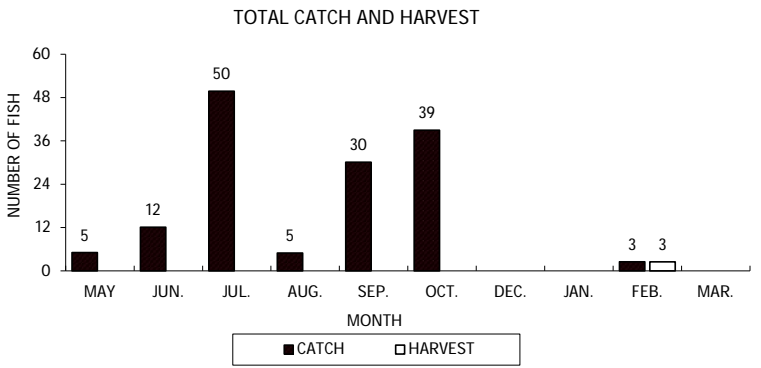
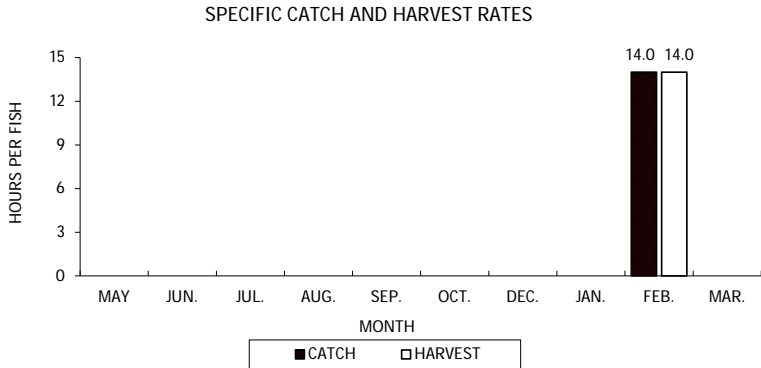
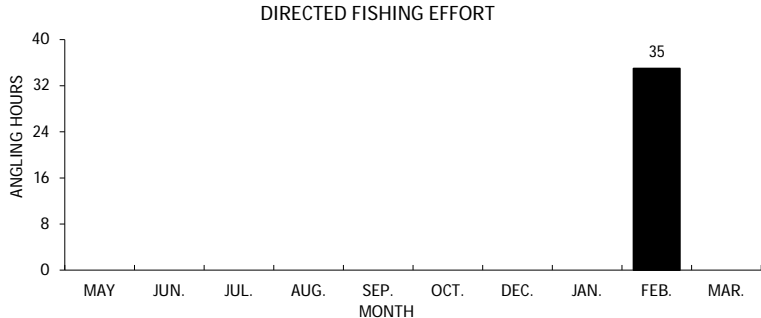


Figure 10. Rock bass fishing effort, catch, harvest and length distribution, Sand Lake, during 2022-23.