

WISCONSIN DEPARTMENT OF NATURAL RESOURCES

GUNLOCK LAKE

2022 – 2023 CREEL SURVEY REPORT

VILAS 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.

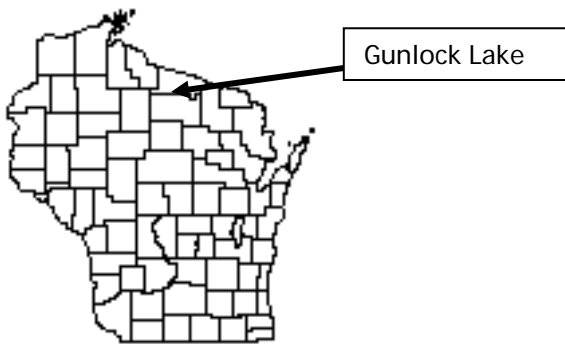
You may have encountered a DNR creel survey clerk on a recent fishing trip. We appreciate your cooperation during an interview. The survey only takes a few minutes of your time and it gives the DNR valuable information needed for management of the fishery.

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

GENERAL LAKE INFORMATION



LOCATION

Gunlock Lake is located in Vilas County near the town of Minocqua.

PHYSICAL CHARACTERISTICS

Gunlock Lake is a 250-acre spring-fed lake with a maximum depth of 26 feet. Littoral substrate consists primarily of sand with lesser amounts of muck. Gunlock Lake contains slightly alkaline, light brown water of moderate 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 Gunlock Lake was early May 2022. Fishable ice formed on Gunlock Lake in early December 2022.

FISHING REGULATIONS

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

SPECIES	SEASON	BAG LIMIT	MIN. SIZE
Largemouth Bass	5/07 - 3/05	5*	None
Smallmouth Bass	5/07 - 6/17	Catch & Release	
	6/18 - 3/05	5*	None
*Bass species have a combined bag limit of 5. No bass 14" - 18", and only 1 bass > 18" may be kept.			
Musky	5/28 - 12/31	1	40"
	On open water		
Northern Pike	5/07 - 3/05	5	None
Walleye	5/07 - 3/05	3	18"
Panfish	Open all year	25	None
No more than 5 Bluegill and Pumpkinseed > 7"			
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.

5. **LARGEST AND AVERAGE LENGTH OF HARVESTED FISH**
Largest and average (mean) length of a species of fish harvested. Only fish measured by the creel survey clerk are reported.

CREEL SURVEY RESULTS AND DISCUSSION

SURVEY LOGISTICS

We encountered no unusual problems conducting the survey or calculating the projections contained in the report. This was the third time the DNR conducted a creel survey on Gunlock Lake. The last creel survey took place during 2002-03.

GENERAL ANGLER INFORMATION

Anglers spent 9,075 hours, or 36.3 hours per acre, fishing Gunlock Lake during the 2022-23 season (Table 1). That was greater than the Vilas County average of 33.4 hours per acre but less than the fishing effort documented during the 2002-03 creel survey (40.3 hours per acre). July was the most heavily fished month (1,999 hours). Creel clerks were able to conduct 109 interviews throughout the survey.

RESULTS BY SPECIES

WALLEYE (Table 2, Figure 1)

Anglers spent 644 hours targeting walleyes. Fishing effort for walleye was highest in June (167 hours). Total catch of walleye was 149 fish, and total harvest was three fish. Highest catch (94 fish) occurred in September, and all three harvested fish were in December. Anglers fished an estimated 15.7 hours to catch a walleye during the survey. One 19.0-inch walleye was measured during the survey.

NORTHERN PIKE (Table 2, Figure 2)

Fishing effort directed at northern pike was 325 hours during the season. Northern pike fishing effort was greatest in February (176 hours). Total catch of northern pike was 22 fish, and no documented harvest. Anglers fished an estimated 81.6 hours to catch a northern pike during the survey.

MUSKELLUNGE (Table 2, Figure 3)

Anglers spent 1,102 hours targeting muskellunge. Muskellunge fishing effort was greatest in June (420 hours). Total catch of muskellunge was 23 fish, and the highest catch (13 fish) occurred in October. Anglers fished an estimated 82.1 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 969 hours during the season. Smallmouth bass fishing effort was greatest in July (551 hours). Total catch of smallmouth bass was 103 fish, with no fish harvested. Highest catch (91 fish) occurred in July. Anglers fished an estimated 9.4 hours to catch a smallmouth bass during the survey.

LARGEMOUTH BASS (Table 2, Figure 5)

Largemouth bass received the most fishing effort of any gamefish species during the season. Fishing effort directed at largemouth bass was 2,230 hours during the season. Largemouth bass fishing effort was greatest in July (655 hours). Total catch of largemouth bass was 3,624 fish, and total harvest was 376 fish. The highest catch (1,127 fish) occurred in May. Anglers fished an estimated 0.8 hours to catch a largemouth bass during the survey.

YELLOW PERCH (Table 2, Figure 6)

Yellow perch received 3,022 hours of directed fishing effort. Total catch of yellow perch was 3,680 fish, and total harvest was 817 fish. Mean length of yellow perch harvested was 8.7 inches.

BLUEGILL (Table 2, Figure 7)

Fishing effort directed at bluegill was 3,209 hours. Total catch of bluegill was 12,529 fish, and total harvest was 1,578 fish. Mean length of bluegills harvested was 7.3 inches.

BLACK CRAPPIE (Table 2, Figure 8)

Black crappies were the most sought after species during the survey. Black crappies received 5,322 hours of directed fishing effort. Anglers caught 17,864 black crappies and harvested 6,086 fish. Mean length of black crappies harvested was 9.8 inches.

PUMPKINSEED (Table 2, Figure 9)

Pumpkinseeds received 247 hours of directed fishing effort. Anglers caught 94 pumpkinseeds with no documented harvested.

ROCK BASS (Table 2, Figure 10)

Rock bass received 126 hours of directed fishing effort. Anglers caught 58 rock bass, and there was 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 cooperator, Jim Erion, who generously allowed the DNR to keep a boat and snowmobile on his property 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 Gunlock Lake during the survey period were Jerry Storke, John Davis and Abbigail Ewert.

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, Gunlock Lake, 2022-23 season; compared to 2002-03 creel results, Vilas County averages and Ceded Territory averages.

Month	Number of Angler Party Interviews	Total Angler Hours	Total Angler Hours/Acre	2002-03 Total Angler Hours/Acre	Vilas County Average Hours/Acre	Ceded Territory Average Hours/Acre
May	4	732	2.9	4.2	5.1	4.7
June	10	1,359	5.4	7.3	6.6	6.1
July	11	1,999	8.0	10.7	7.1	6.5
August	10	1,148	4.6	6.8	6.2	5.1
September	10	1,151	4.6	2.3	4.1	3.2
October	13	472	1.9	0.9	1.9	1.4
December	18	446	1.8	3.2	0.6	1.0
January	19	660	2.6	2.2	0.9	1.7
February	11	840	3.4	2.3	1.0	1.6
March	3	270	1.1	0.4	0.2	0.2
Summer Total	58	6,860	27.4	32.2	30.9	26.9
Winter Total	51	2,215	8.9	8.1	2.7	4.6
Grand Total	109	9,075	36.3	40.3	33.4	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 Gunlock 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 Gunlock Lake to other lakes.

2002-03 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 Gunlock 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 Gunlock Lake to other lakes in northern Wisconsin.

Table 2. Comparison of creel survey synopses, Gunlock Lake, 2022-23 and 2002-2003 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	644	3.7%	149	15.7	3	*	19.0
Northern Pike	325	1.9%	22	81.6	0	*	**
Muskellunge	1,102	6.4%	23	82.1	0	*	**
Smallmouth Bass	969	5.6%	103	9.4	0	*	**
Largemouth Bass	2,230	13.0%	3,624	0.8	376	6.9	11.4
Yellow Perch	3,022	17.6%	3,680	0.9	817	3.8	8.7
Bluegill	3,209	18.7%	12,529	0.3	1,578	2.1	7.3
Black Crappie	5,322	30.9%	17,864	0.3	6,086	0.9	9.8
Pumpkinseed	247	1.4%	94	2.6	0	*	**
Rock Bass	126	0.7%	58	*	0	*	**

CREEL YEAR: 2002-03

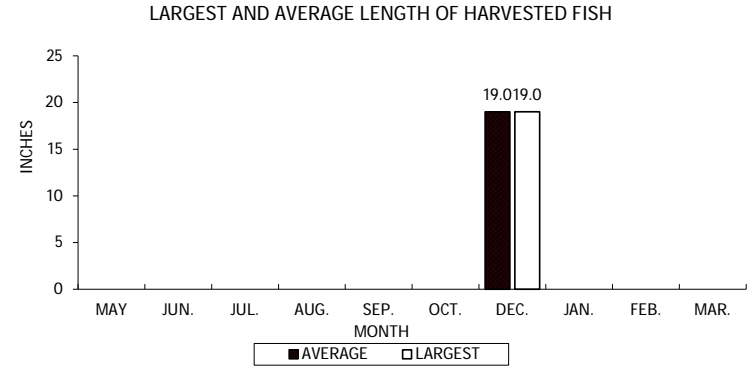
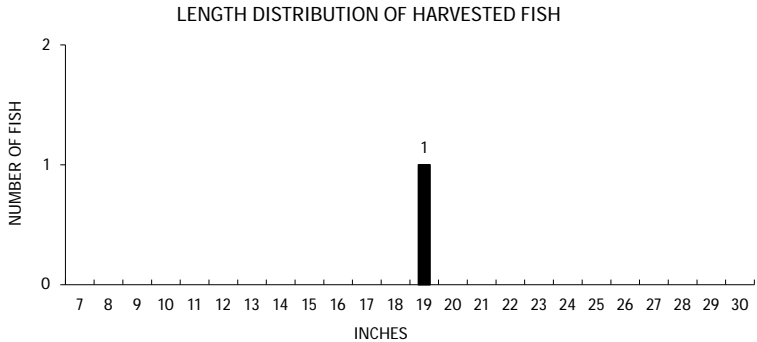
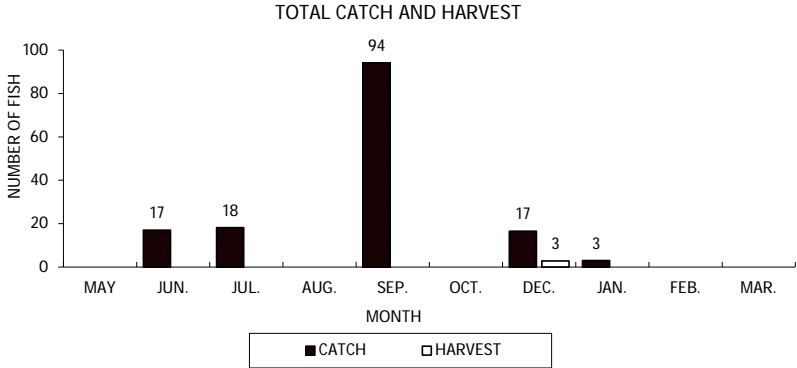
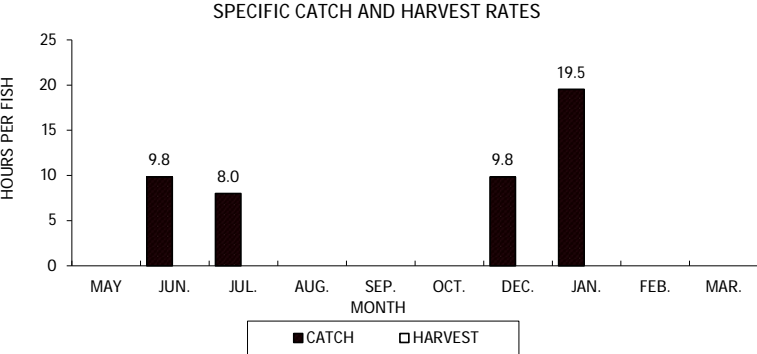
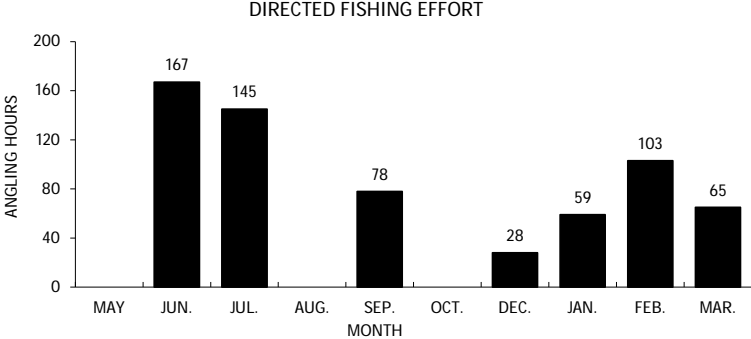
SPECIES	DIRECTED EFFORT (Hours)	PERCENT OF TOTAL	TOTAL CATCH	SPECIFIC CATCH RATE (Hours/Fish)	TOTAL HARVEST	SPECIFIC HARVEST RATE (Hours/Fish)	MEAN LENGTH OF HARVESTED FISH
Walleye	1,456	8.3%	455	4.4	28	137.0	19.0
Northern Pike	1,558	8.9%	167	11.2	81	20.4	25.1
Muskellunge	1,017	5.8%	16	95.2	0	*	**
Smallmouth Bass	1,572	9.0%	456	4.4	0	*	**
Largemouth Bass	2,769	15.9%	4,287	1.0	28	*	13.6
Yellow Perch	2,209	12.7%	6,931	0.5	1,643	1.5	7.8
Bluegill	4,220	24.2%	43,325	0.1	11,612	0.4	6.7
Black Crappie	2,649	15.2%	3,105	0.9	610	4.4	9.9
Pumpkinseed	0	0.0%	89	*	0	*	**
Rock Bass	0	0.0%	220	*	10	*	7.3

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, Gunlock Lake, during 2022-23.

NORTHERN PIKE

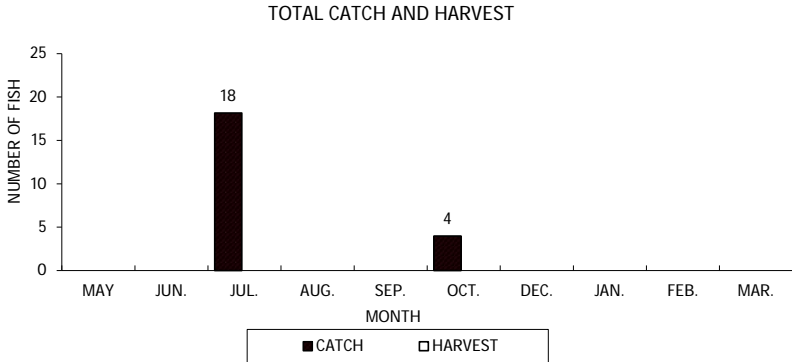
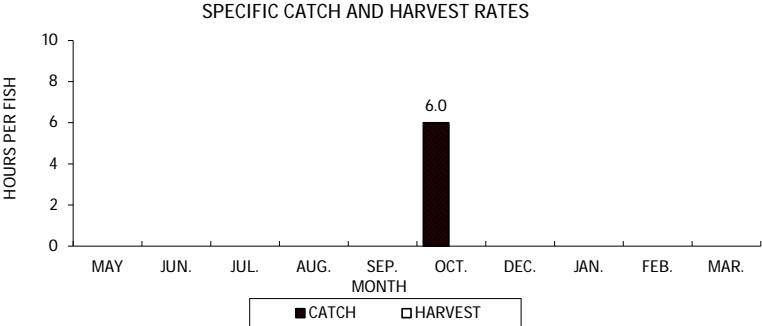
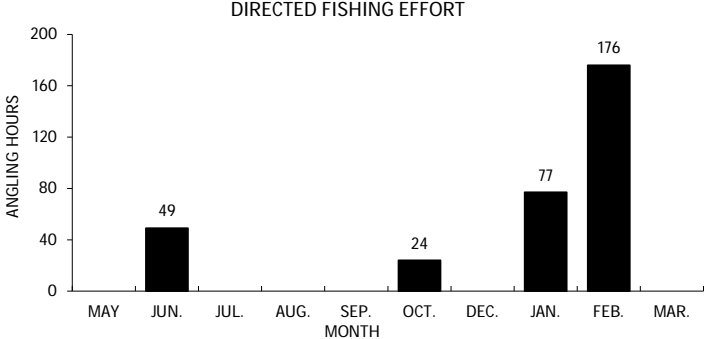


Figure 2. Northern pike fishing effort, catch and harvest, Gunlock Lake, during 2022-23.

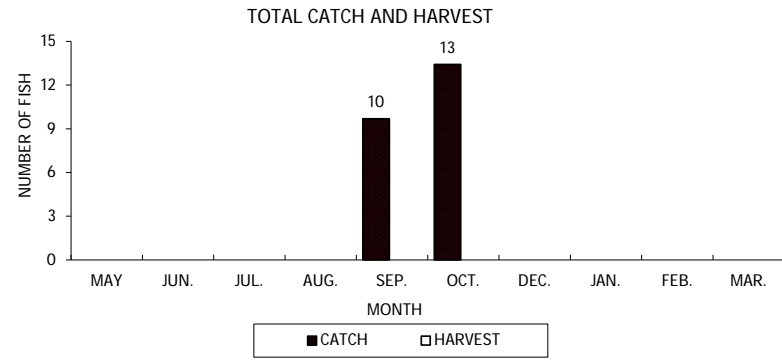
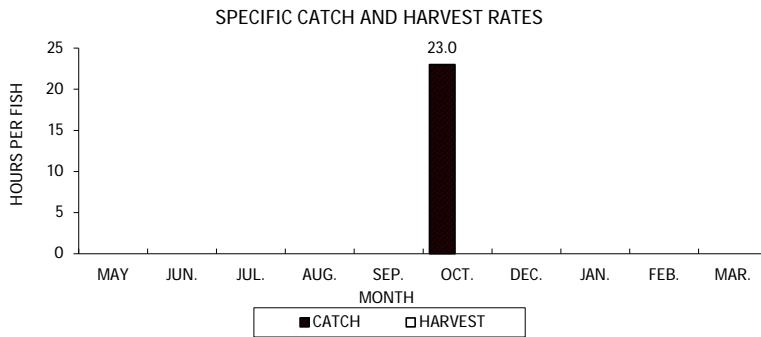
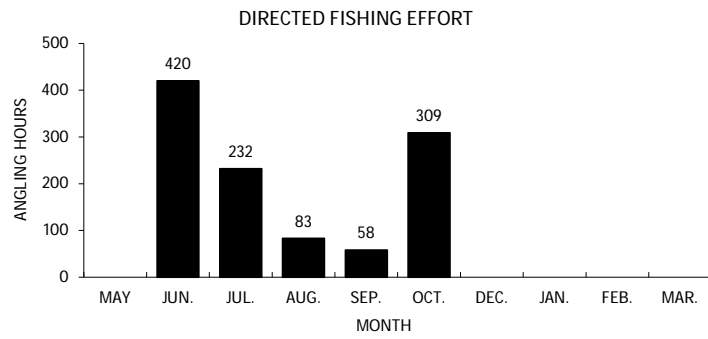


Figure 3. Muskellunge fishing effort, catch and harvest, Gunlock Lake, during 2022-23.

SMALLMOUTH BASS

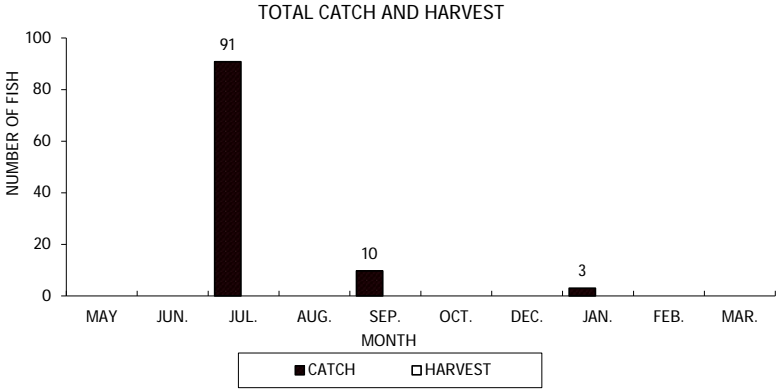
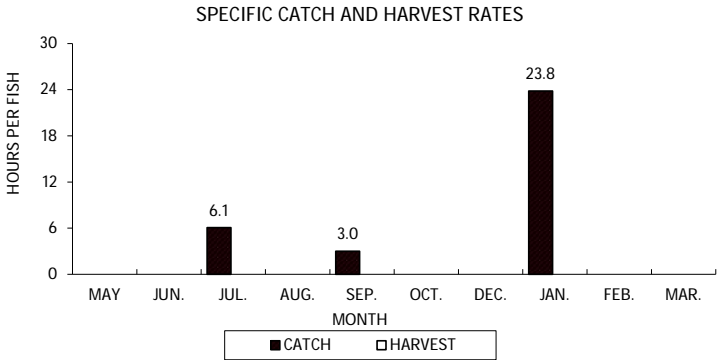
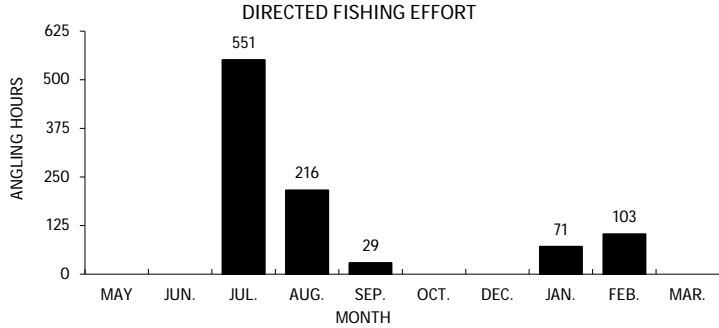


Figure 4. Smallmouth bass fishing effort, catch and harvest, Gunlock Lake, during 2022-23.

LARGEMOUTH BASS

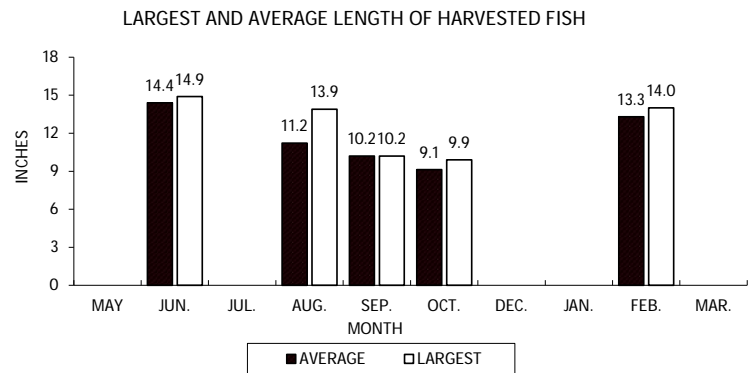
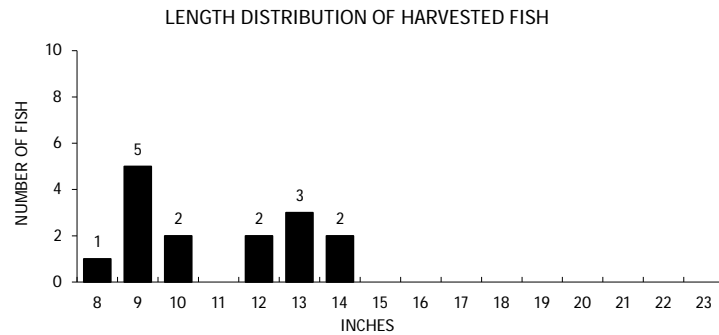
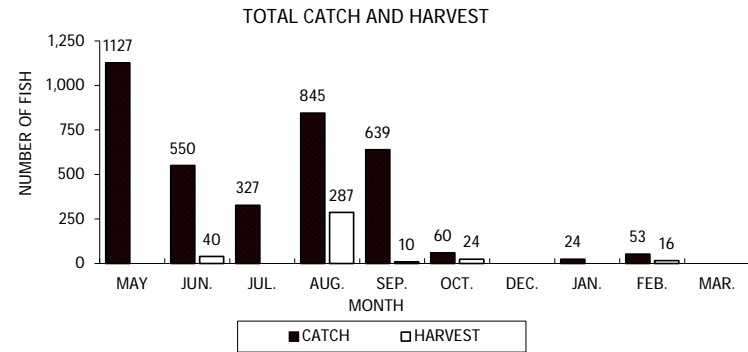
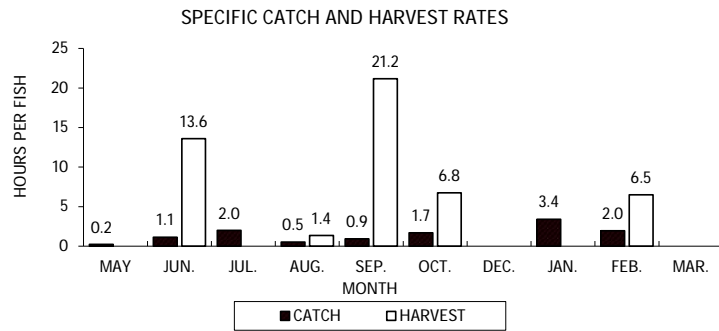
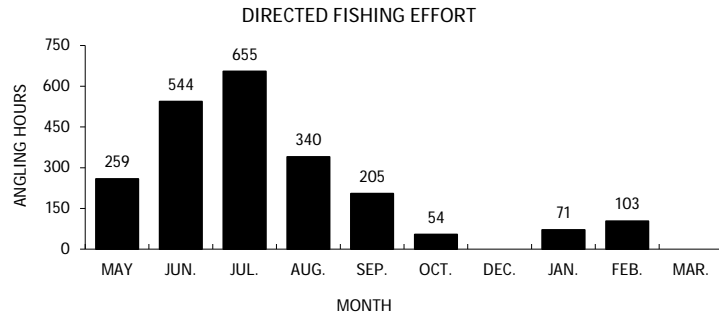


Figure 5. Largemouth bass fishing effort, catch, harvest and length distribution, Gunlock Lake, during 2022-23.

YELLOW PERCH

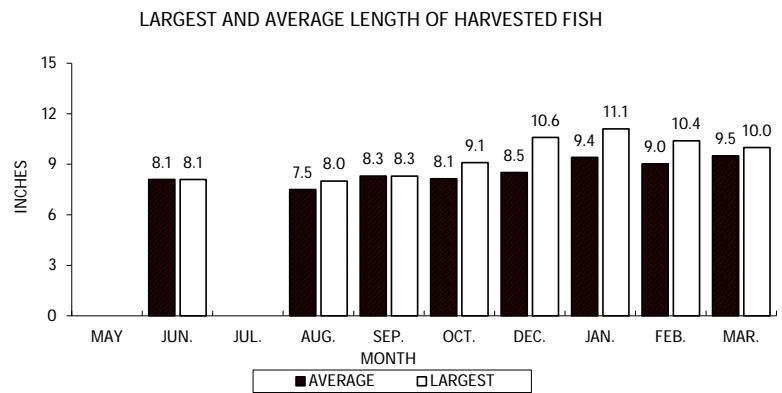
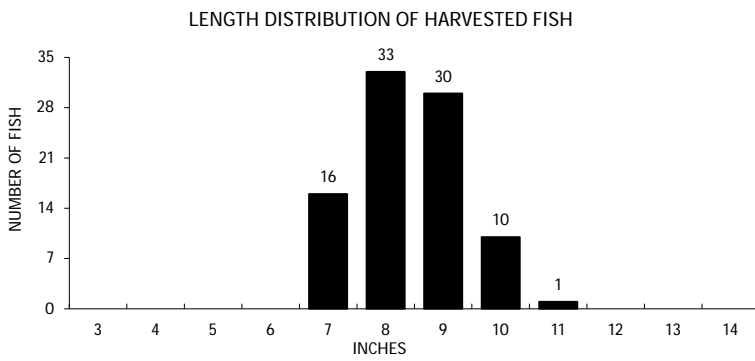
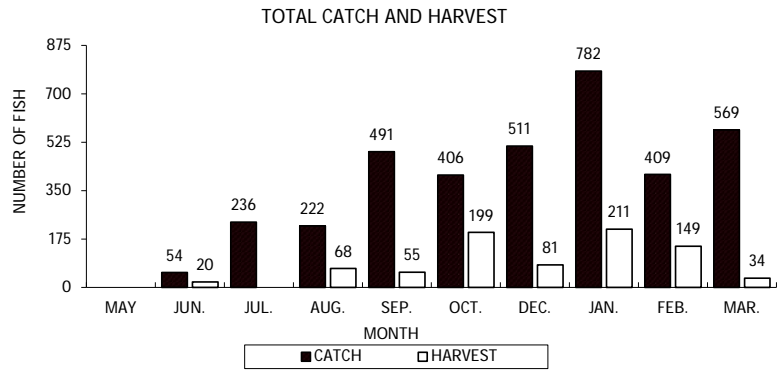
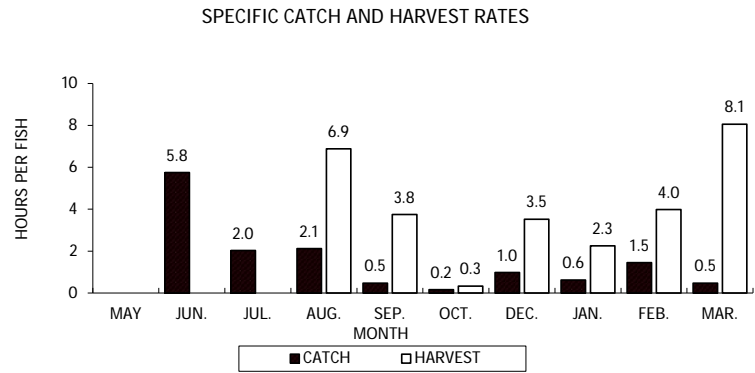
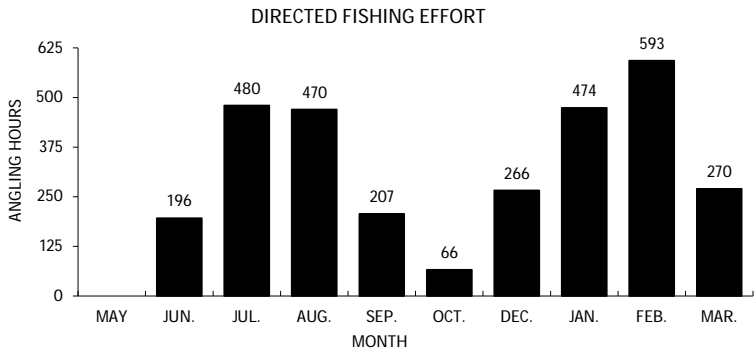


Figure 6. Yellow perch fishing effort, catch, harvest and length distribution, Gunlock Lake, during 2022-23.

BLUEGILL

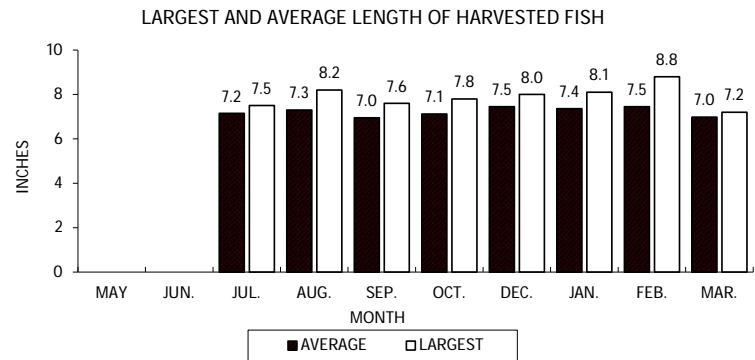
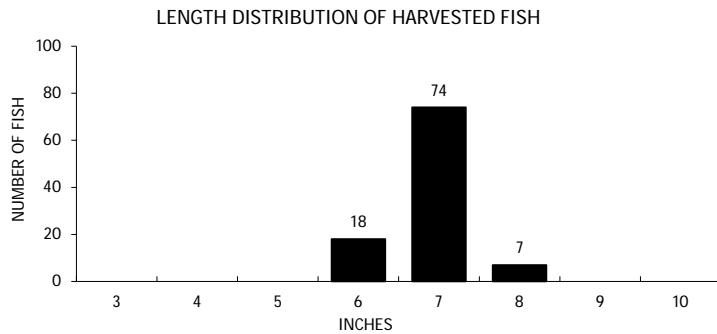
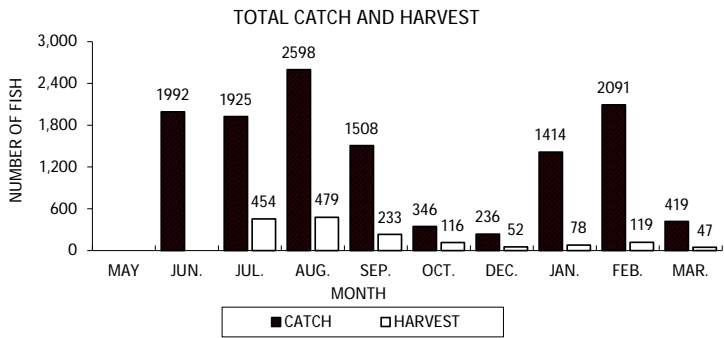
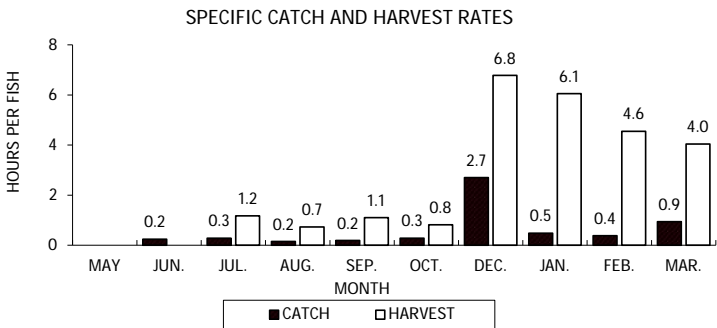
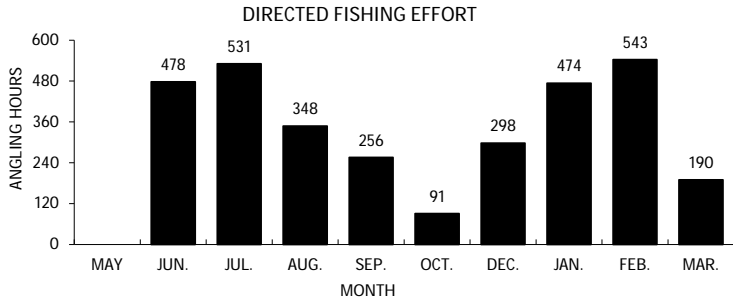


Figure 7. Bluegill fishing effort, catch, harvest and length distribution, Gunlock Lake, during 2022-23.

BLACK CRAPPIE

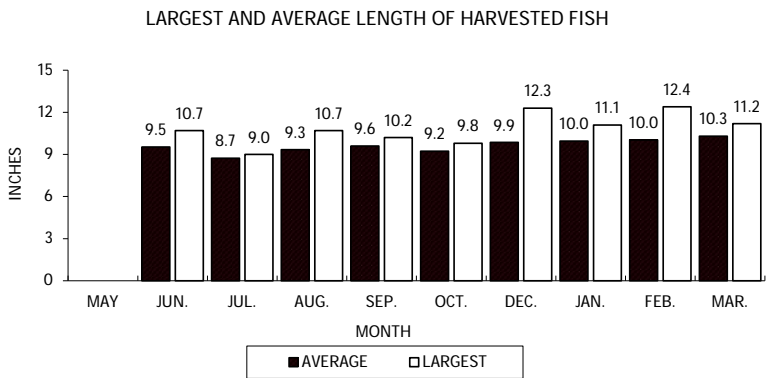
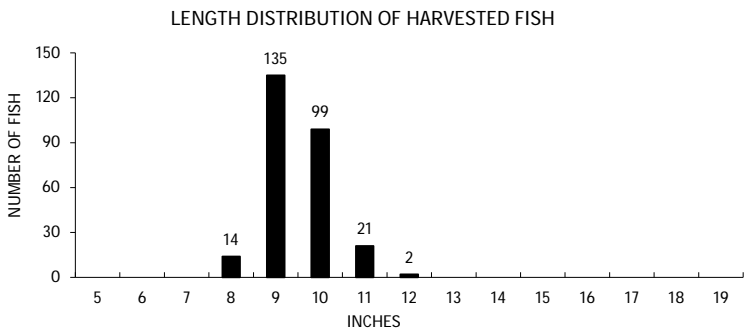
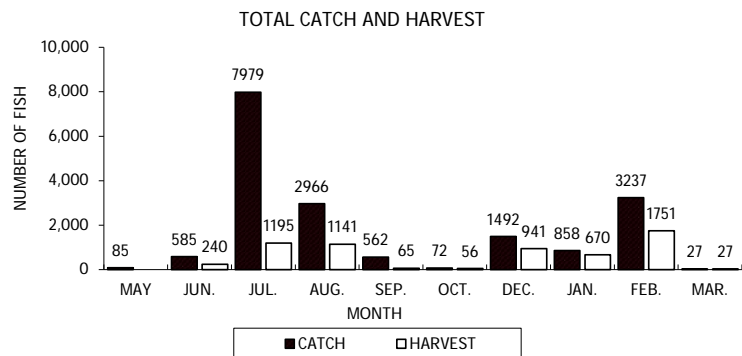
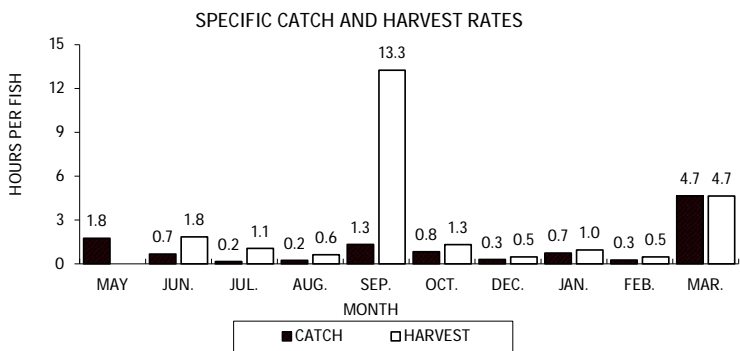
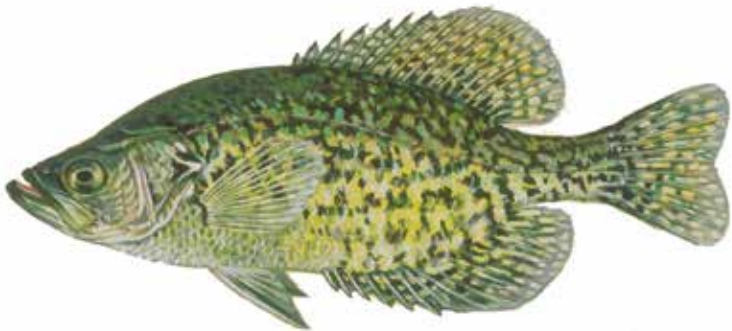


Figure 8. Black crappie fishing effort, catch, harvest and length distribution, Gunlock Lake, during 2022-23.

PUMPKINSEED

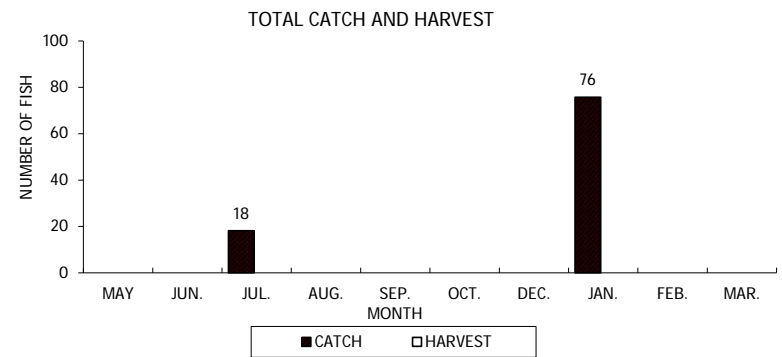
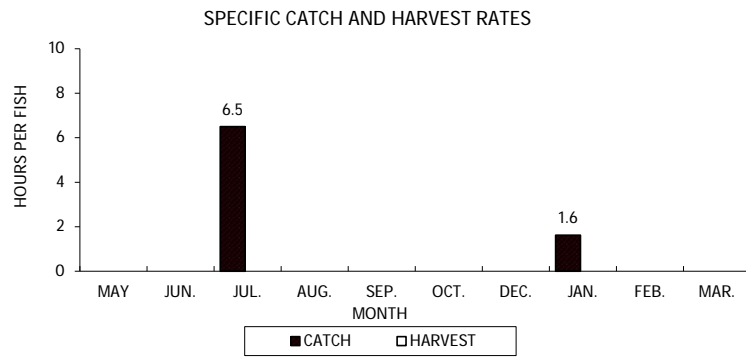
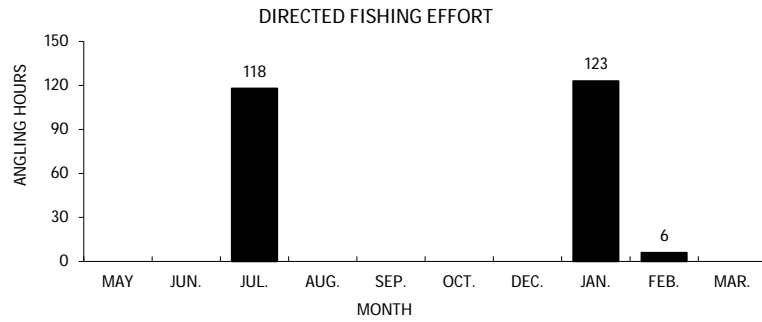


Figure 9. Pumpkinseed fishing effort, catch and harvest, Gunlock Lake, during 2022-23.

ROCK BASS

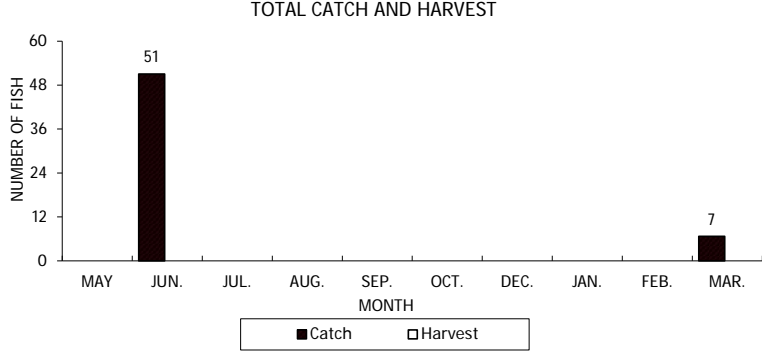


Figure 10. Rock bass fishing effort, catch and harvest, Gunlock Lake, during 2022-23.