

# WISCONSIN DEPARTMENT OF NATURAL RESOURCES

## Deer Lake 2023 Creel Survey Report Lincoln 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.

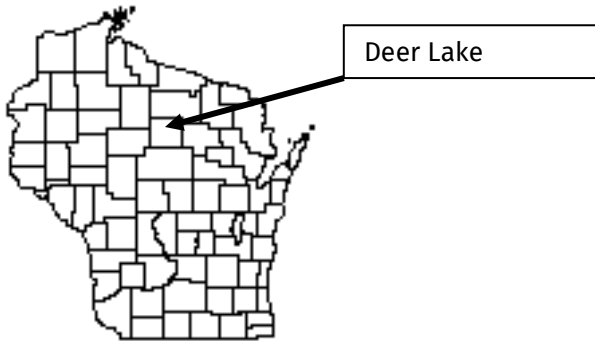
You may have encountered a DNR creel survey clerk on a recent fishing trip. We appreciate your cooperation during an interview. The survey only takes a few minutes of your time and it gives the DNR valuable information needed for management of the fishery.

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

## General Lake Information



### LOCATION

Deer Lake is in Lincoln County near the city of Tomahawk.

### PHYSICAL CHARACTERISTICS

Deer Lake is a 156-acre spring lake within the Rice Reservoir system. It has a maximum depth of 53 feet, and littoral substrate consists primarily of sand, with lesser amounts of muck and gravel. Deer Lake contains soft, slightly alkaline, clear water of high transparency.

### SEASONS SURVEYED

The period referred to in this report as the 2023 fishing season ran from May 6, 2023 through October 31, 2023. There was no winter ice creel survey on Deer Lake.

### FISHING REGULATIONS

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

SPECIES	SEASON	BAG LIMIT	MIN. SIZE
Largemouth bass	5/ 06 - 3/ 03	5*	14"
Smallmouth bass	5/ 06 - 6/ 16	Catch & Release	
	6/ 17 - 3/ 03	5*	14"
*Bass species have a combined bag limit of 5.			
Muskellunge	5/ 06 - 12/ 31	1	40"
	On open water		
Northern pike	5/ 06 - 3/ 03	5	None
Walleye	5/ 06 - 3/ 03	3	15"
	20"- 24" Protected Slot, 1>24"		
Panfish	Open all year	25	None
	No more than 10 of any one species		
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. 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

We encountered no unusual problems conducting the survey or calculating the projections contained in the report. This was the fourth time the DNR conducted a creel survey on Deer Lake. The last creel survey took place during 2012.

## GENERAL ANGLER INFORMATION

Anglers spent 1,339 hours, or 8.6 hours per acre, fishing Deer Lake during the 2023 open-water season (Table 1). That was less than the Lincoln County open-water average of 21.6 hours per acre, and less than the fishing effort documented during the 2012 open-water creel survey (20.6 hours per acre). July was the most heavily fished month (2.8 hours). Creel clerks were able to conduct 25 interviews throughout the survey.

## RESULTS BY SPECIES

### WALLEYE (Table 2, Figure 1)

Walleye received the least fishing effort of any gamefish species during the season. Anglers spent 64 hours targeting walleye. Fishing effort for walleye was highest in July (40 hours). No walleye were estimated to have been caught or harvested during this survey.

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

Fishing effort directed at northern pike was 283 hours during the season. Northern pike fishing effort was greatest in May (144 hours). Total catch of northern pike was 121 fish, and total harvest was 5 fish. Anglers fished an estimated 2.4 hours to catch a northern pike during the survey. Creel clerks observed one harvested pike at 28.2 inches.

### MUSKELLUNGE (Table 2, Figure 3)

Fishing effort directed at muskellunge was 112 hours during the season. Muskellunge fishing effort was greatest in June (72 hours). No catch or harvest was observed during this survey.

### SMALLMOUTH BASS (Table 2, Figure 4)

Fishing effort directed at smallmouth bass was 462 hours during the season. Smallmouth bass fishing effort was greatest in July (194 hours). Total catch of smallmouth bass was 87 fish, with no fish harvested. Highest catch (44 fish) occurred in June. Anglers fished an estimated 6.4 hours to catch a smallmouth bass during the survey.

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

Fishing effort directed at largemouth bass was 462 hours during the season. Largemouth

bass fishing effort was greatest in July (194 hours). Total catch of largemouth bass was 195 fish, and total harvest was 6 fish. The highest catch (120 fish) occurred in July. Anglers fished an estimated 4.3 hours to catch a largemouth bass during the survey. Creel clerks observed one harvested largemouth bass at 17.5 inches.

### YELLOW PERCH (Table 2, Figure 6)

Yellow perch received 322 hours of directed fishing effort. Anglers caught 403 yellow perch and harvested 60 fish. Mean length of yellow perch harvested was 10.0 inches.

### BLUEGILL (Table 2, Figure 7)

Bluegill were the most sought-after species during the survey. Bluegill received 484 hours of directed fishing effort. Anglers caught 1,059 fish and harvested 98 fish. Mean length of bluegill harvested was 8.3 inches.

### BLACK CRAPPIE (Table 2, Figure 8)

Black crappie received 470 hours of directed fishing effort. Anglers caught 80 black crappie and harvested 11 fish. Mean length of black crappie harvested was 8.6 inches.

### PUMPKINSEED (Table 2, Figure 9)

Pumpkinseed received 471 hours of directed fishing effort. Anglers caught 300 pumpkinseed and harvested 25 fish. Mean length of pumpkinseed harvested was 7.4 inches.

### ROCK BASS (Table 2, Figure 10)

Rock bass received no directed fishing effort. Anglers caught 27 rock bass and harvested no fish.

## 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, Ken Mack and Wisconsin Valley Improvement Company (WVIC), who generously allowed the DNR to keep a boat on their property during this survey.

Completion of this survey was possible because of the efforts of the following DNR fisheries management staff: John Kubisiak, Lawrence Eslinger, Jason Halverson, Mark Love, Eric Brown and Bob Consolo. Creel clerks on Deer Lake during the survey period were Calden Wojt, Eric Lindberg and Morgan Jansen.

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, Deer Lake, 2023 open-water creel season; compared to 2012 open-water creel season results, Lincoln County averages and Ceded Territory averages.

Month	Number of Angler Party Interviews	Total Angler Hours	Total Angler Hours/Acre	2012-2013 Total Angler Hours/Acre	Lincoln County Average Hours/Acre	Ceded Territory Average Hours/Acre
May	4	306	2.0	3.1	5.0	4.7
June	2	160	1.0	7.4	5.0	6.0
July	6	432	2.8	4.7	5.7	6.4
August	7	289	1.9	3.5	3.7	5.1
September	5	134	0.9	0.8	1.6	3.1
October	1	17	0.1	1.1	0.5	1.4
Summer Total	25	1,339	8.6	20.6	21.6	26.7

Note: Creel survey was conducted for open-water season only.

**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 Deer 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 Deer Lake to other lakes.

**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 Deer 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 Deer Lake to other lakes in northern Wisconsin.

Table 2. Comparison of creel survey synopses, Deer Lake, 2023 and 2012 open-water fishing seasons.

CREEL YEAR: 2023

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	64	2.0%	0	*	0	*	**
Northern Pike	283	9.0%	121	2.4	5	56.2	28.2
Muskellunge	112	3.6%	0	*	0	*	**
Smallmouth Bass	462	14.8%	87	6.4	0	*	**
Largemouth Bass	462	14.8%	195	4.3	6	80.3	17.5
Yellow Perch	322	10.3%	403	1.3	60	7.7	10.0
Bluegill	484	15.5%	1,059	0.6	98	4.9	8.3
Black Crappie	470	15.0%	80	6.3	11	77.9	8.6
Pumpkinseed	471	15.0%	300	1.6	25	18.8	7.4
Rock Bass	0	0.0%	27	*	0	*	**

CREEL YEAR: 2012

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	10	0.2%	0	*	0	*	**
Northern Pike	607	11.0%	438	3.1	20	29.9	**
Muskellunge	705	12.7%	67	15.1	0	*	**
Smallmouth Bass	1,088	19.6%	665	1.8	0	*	**
Largemouth Bass	942	17.0%	627	1.7	0	*	**
Yellow Perch	197	3.6%	213	1.2	0	*	**
Bluegill	1,336	24.1%	2,884	0.5	582	2.3	7.3
Black Crappie	311	5.6%	205	1.5	0	*	**
Pumpkinseed	340	6.1%	554	1.0	21	16.2	**
Bowfin	*	*	10	*	0	*	**

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

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

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



# WALLEYE

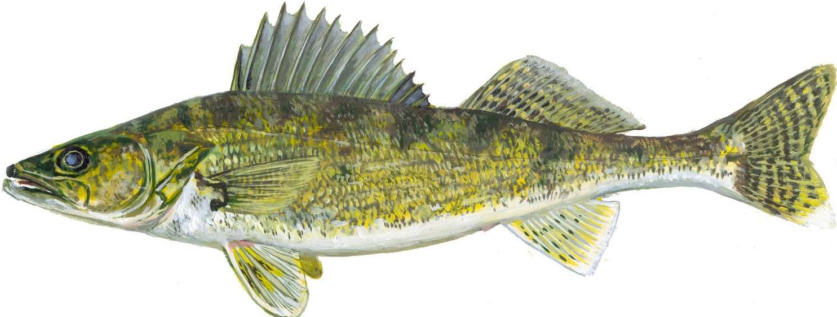
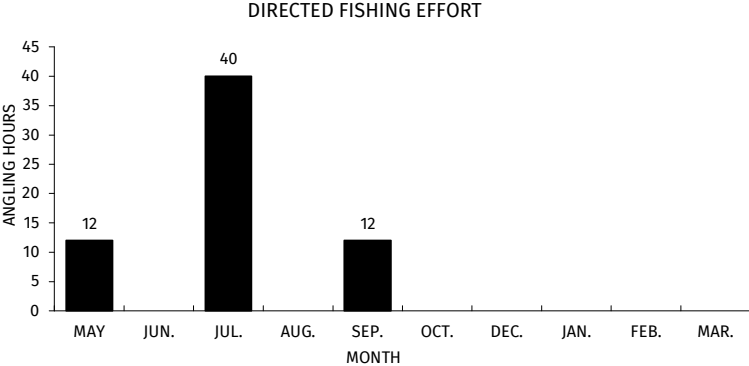
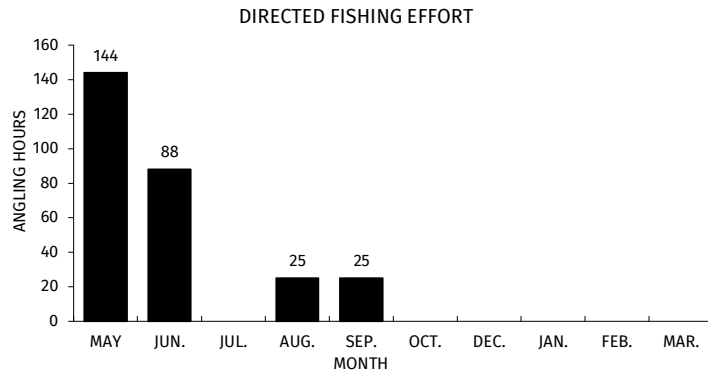


Figure 1. Walleye fishing effort, Deer Lake, during 2023.



## NORTHERN PIKE

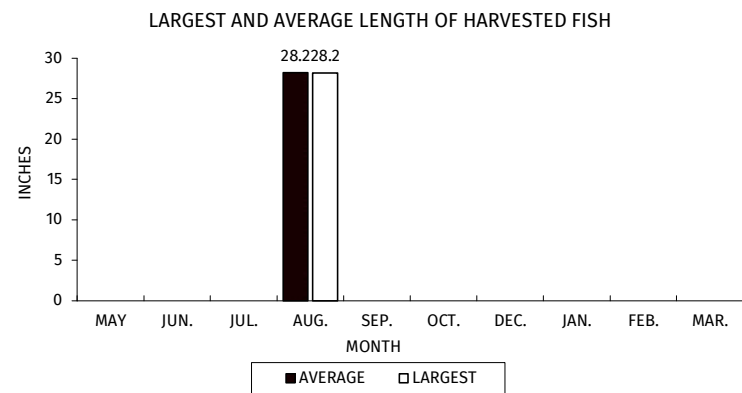
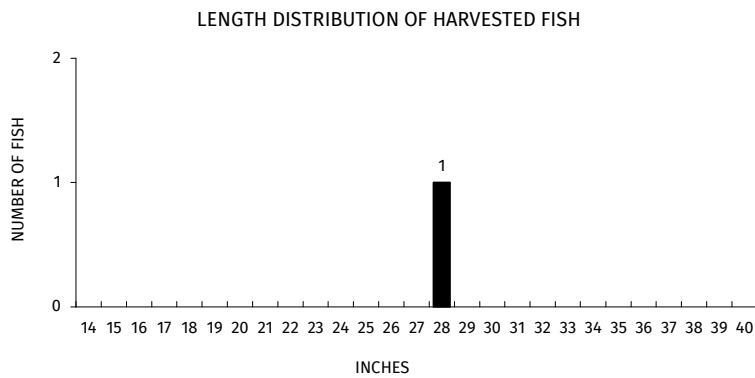
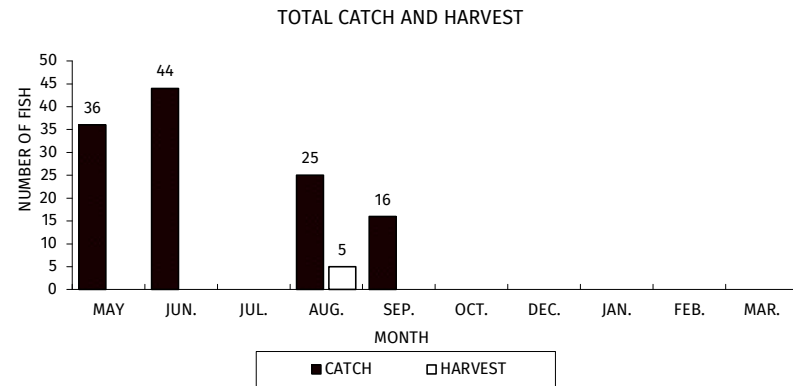
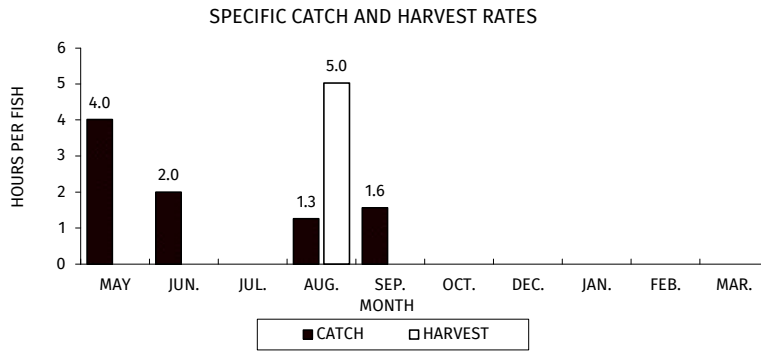
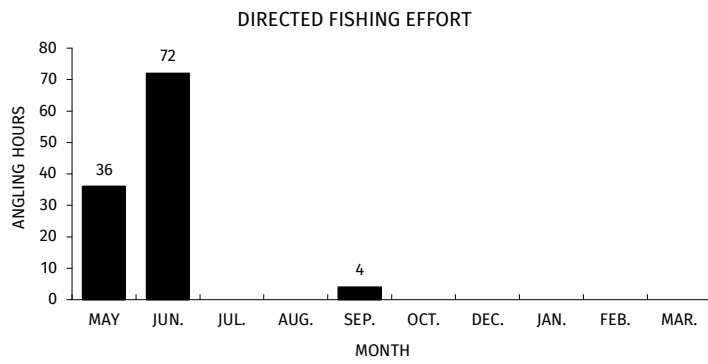


Figure 2. Northern pike fishing effort, catch, harvest and length distribution, Deer Lake, during 2023.



## MUSKELLUNGE



Figure 3. Muskellunge fishing effort, Deer Lake, during 2023.

## SMALLMOUTH BASS

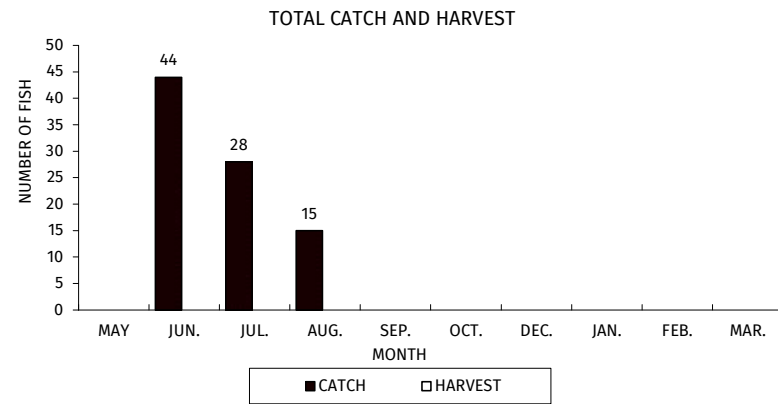
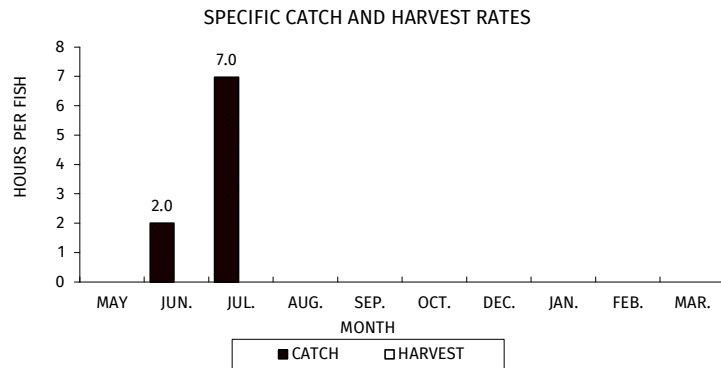
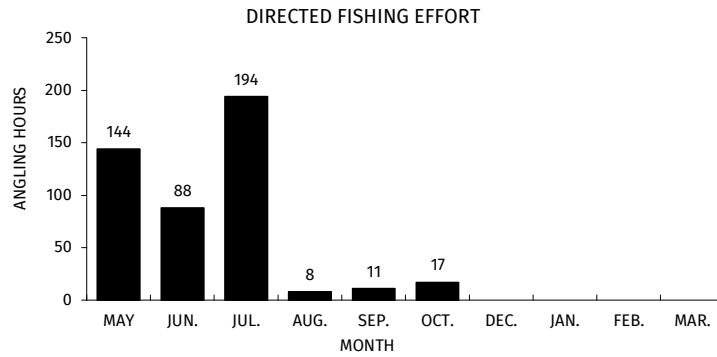


Figure 4. Smallmouth bass fishing effort, catch and harvest, Deer Lake, during 2023.

# LARGEMOUTH BASS

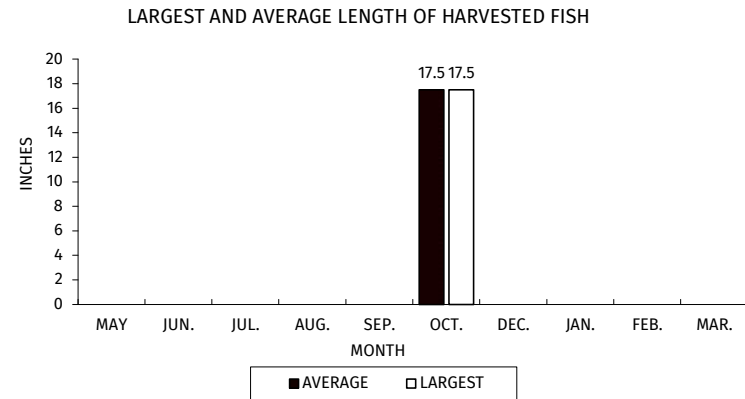
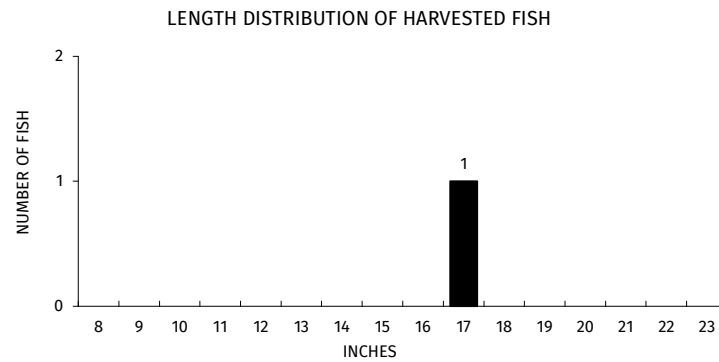
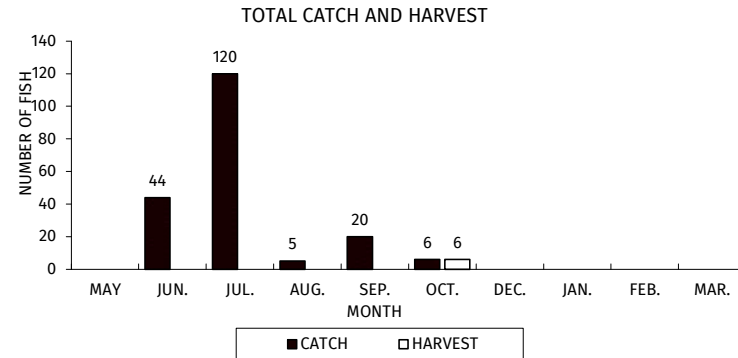
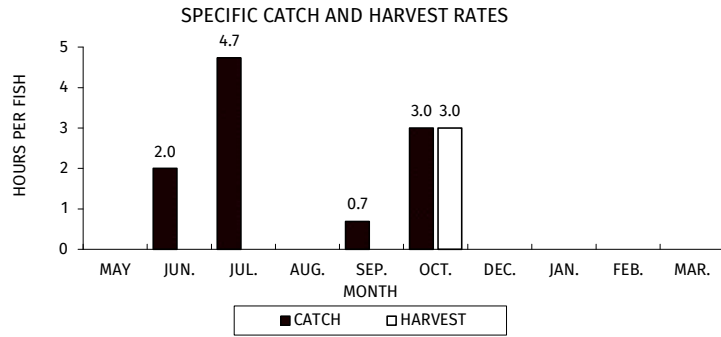
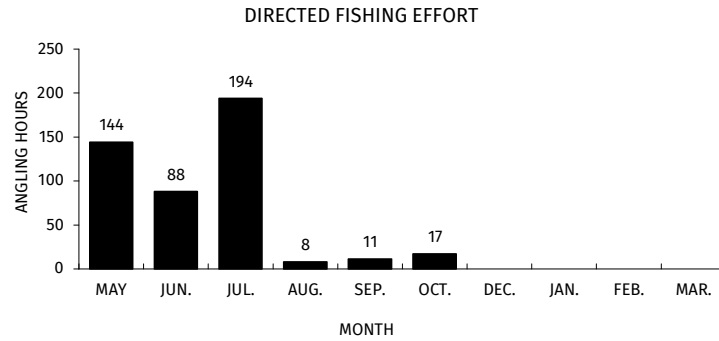
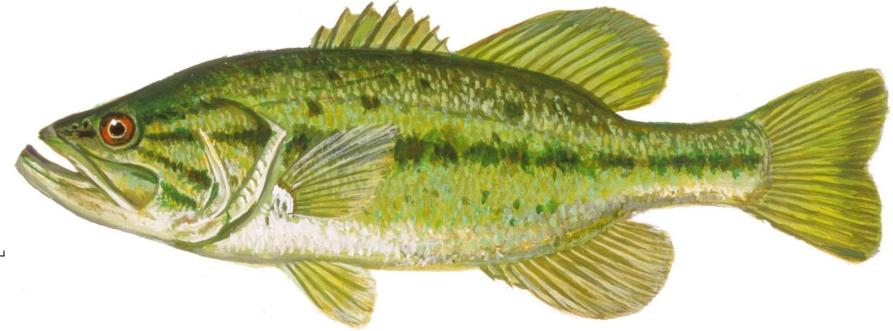


Figure 5. Largemouth bass fishing effort, catch, harvest and length distribution, Deer Lake, during 2023.

# YELLOW PERCH

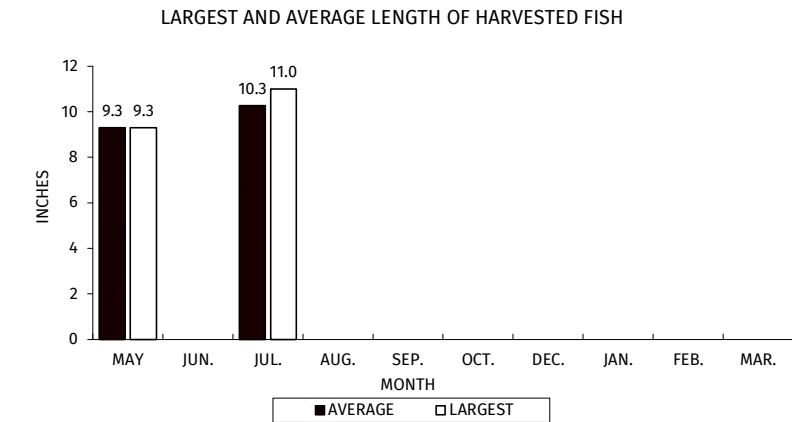
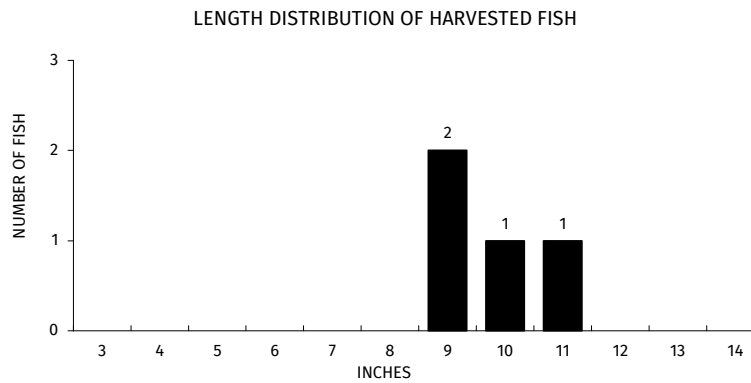
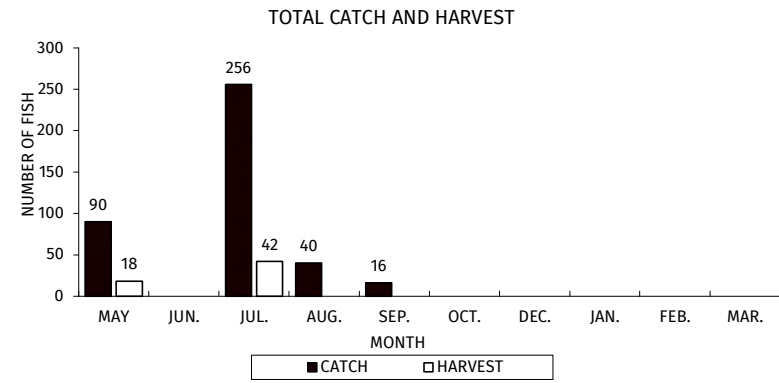
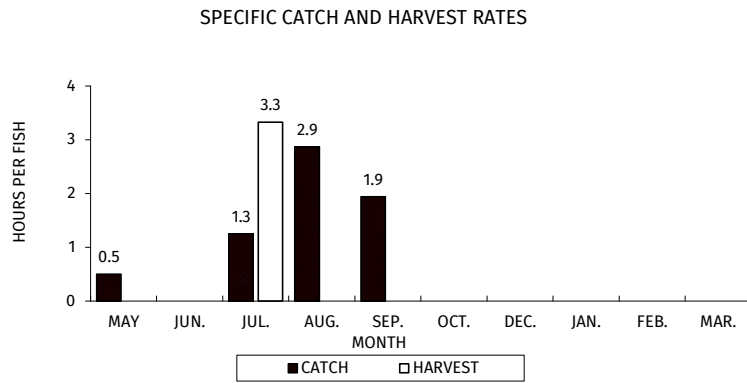
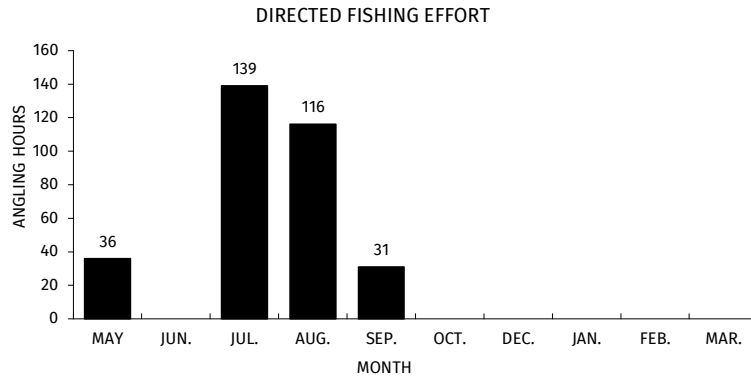
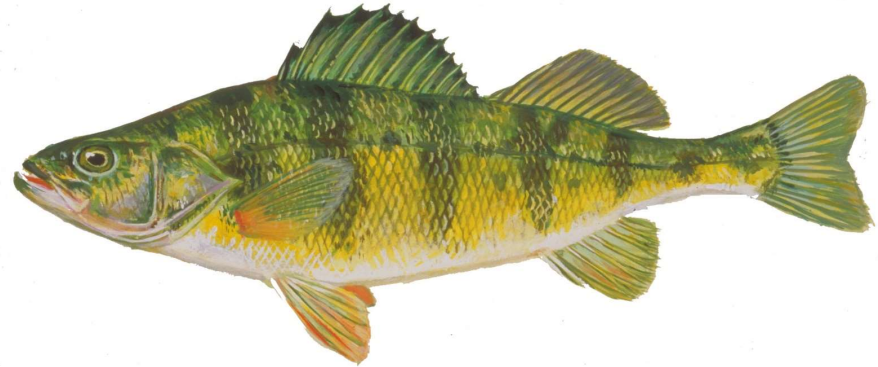


Figure 6. Yellow perch fishing effort, catch, harvest and length distribution, Deer Lake, during 2023.

# BLUEGILL

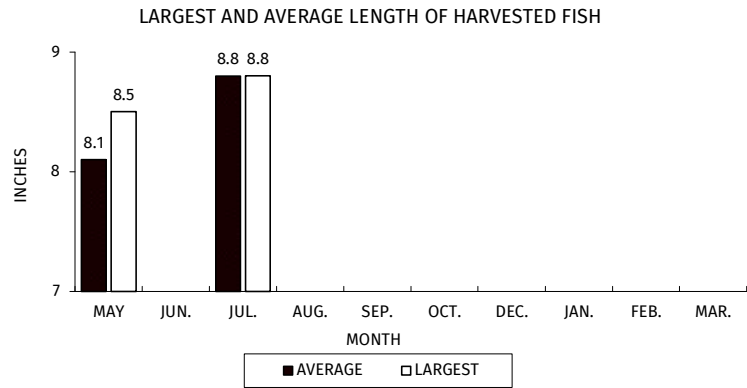
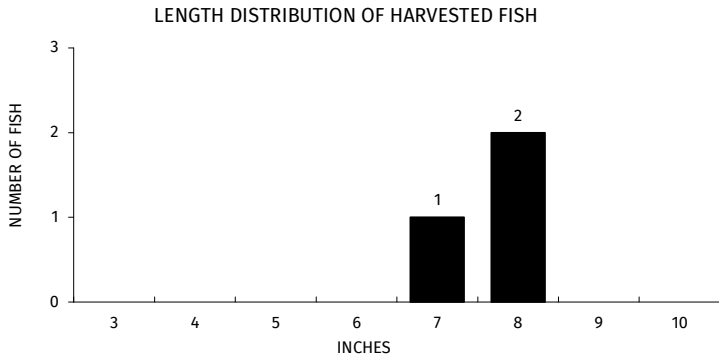
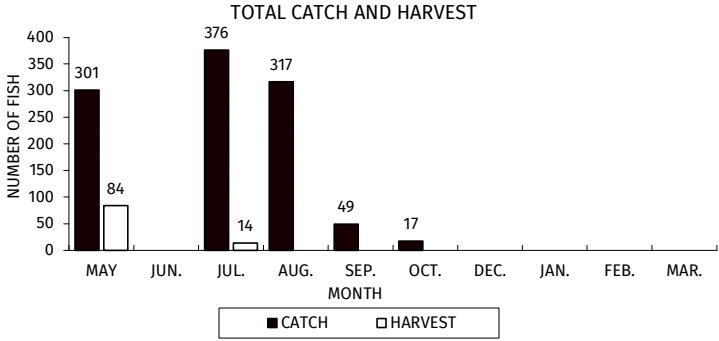
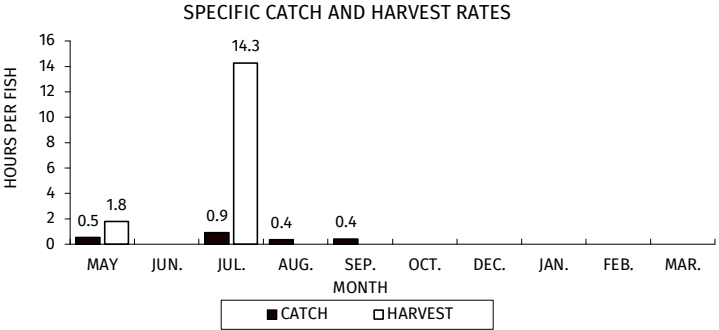
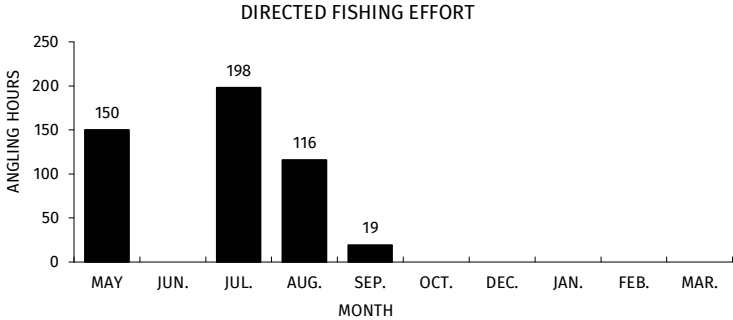
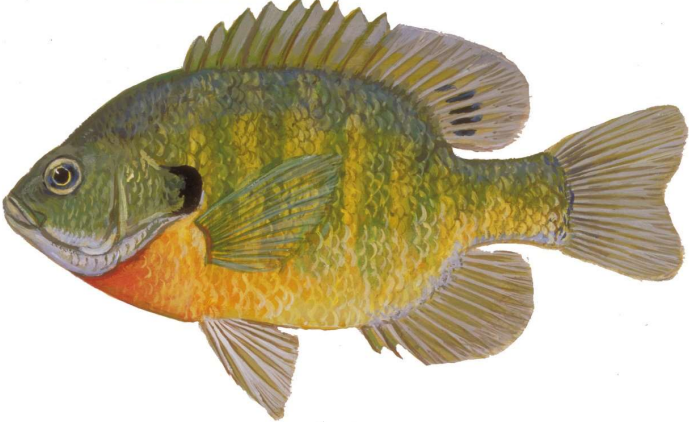


Figure 7. Bluegill fishing effort, catch, harvest and length distribution, Deer Lake, during 2023.

# BLACK CRAPPIE

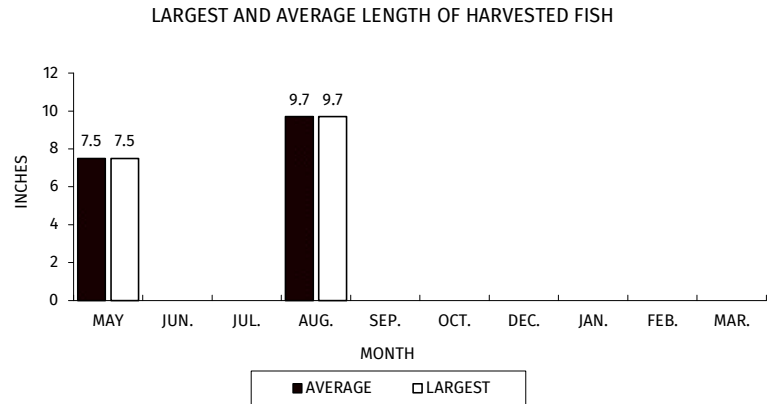
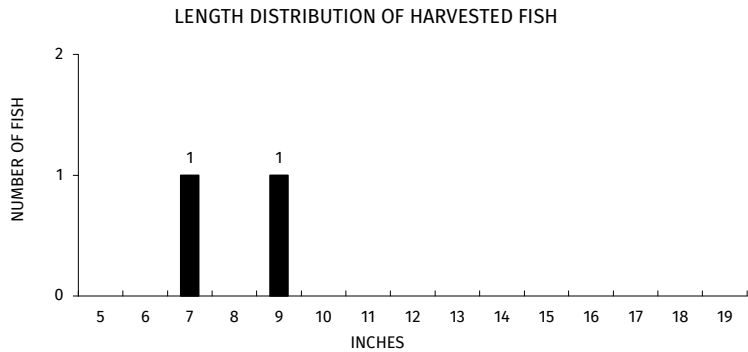
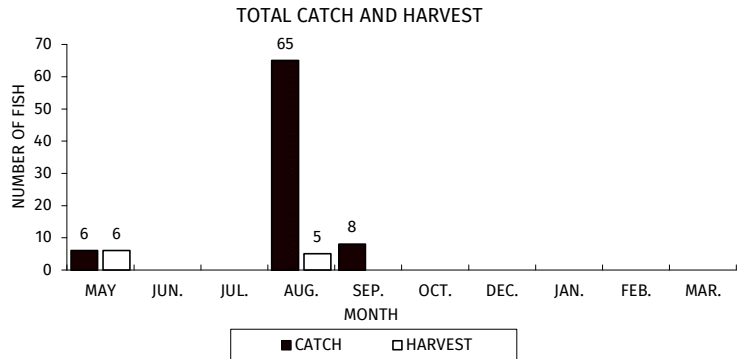
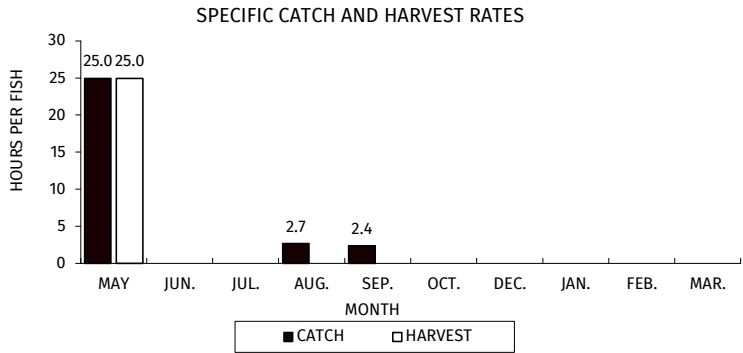
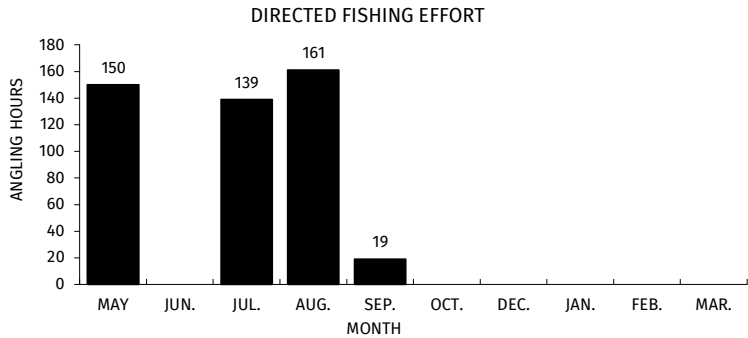
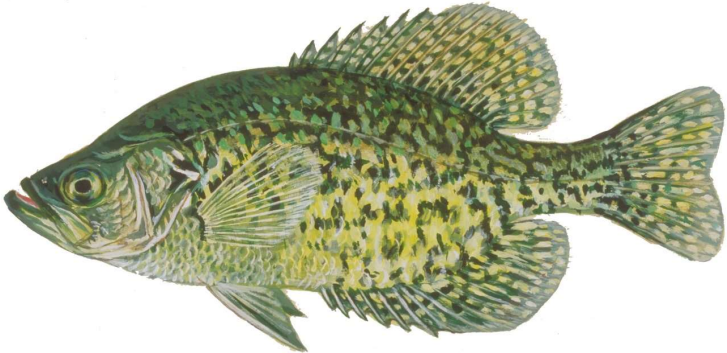


Figure 8. Black crappie fishing effort, catch, harvest and length distribution, Deer Lake, during 2023.



# PUMPKINSEED

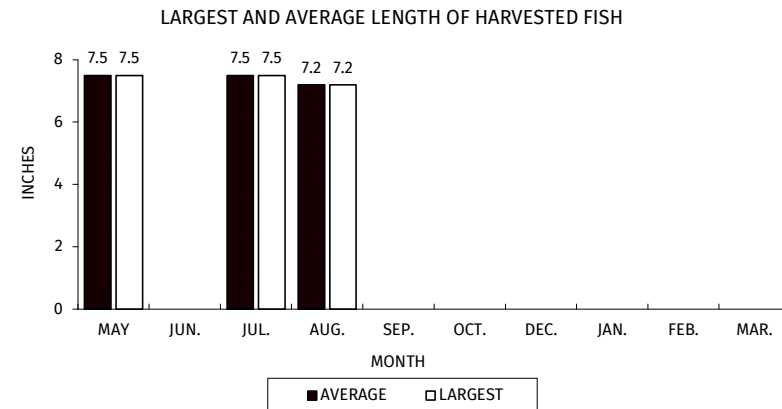
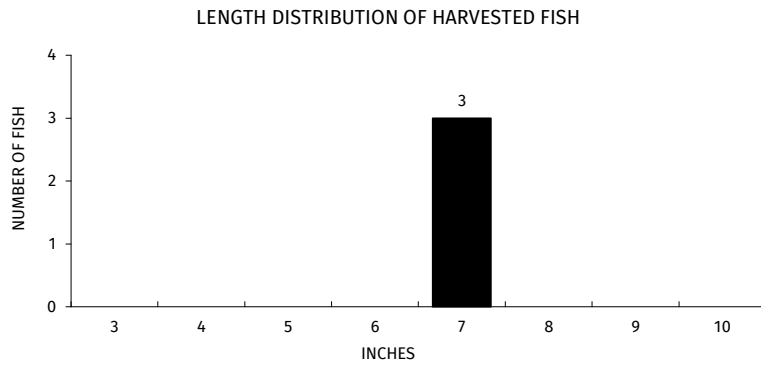
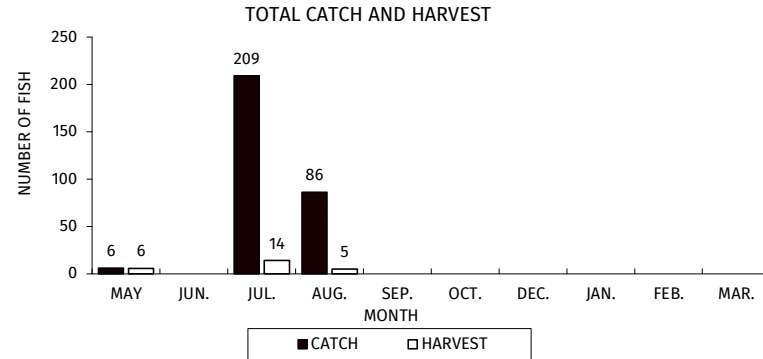
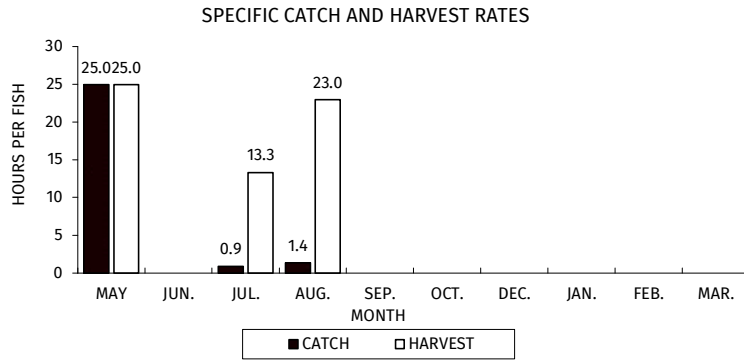
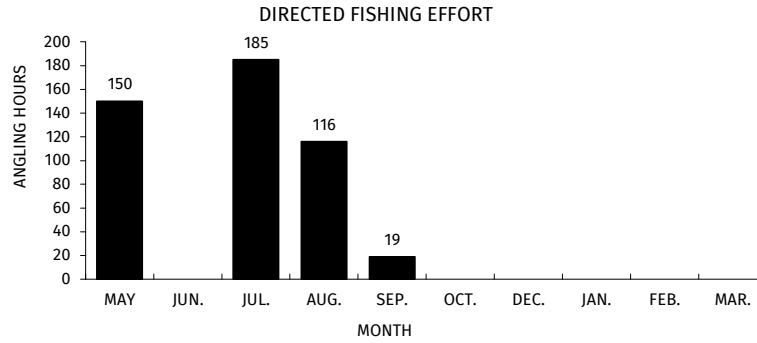
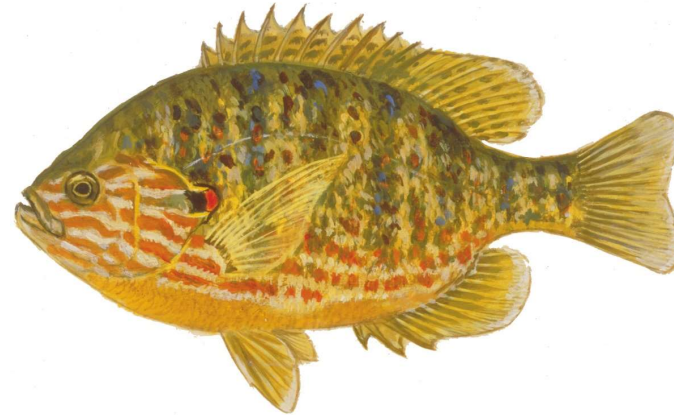


Figure 9. Pumpkinseed fishing effort, catch, harvest and length distribution, Deer Lake, during 2023.

# ROCK BASS

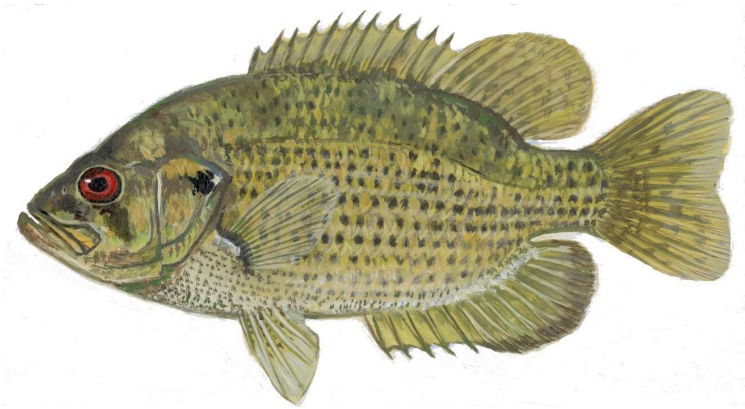
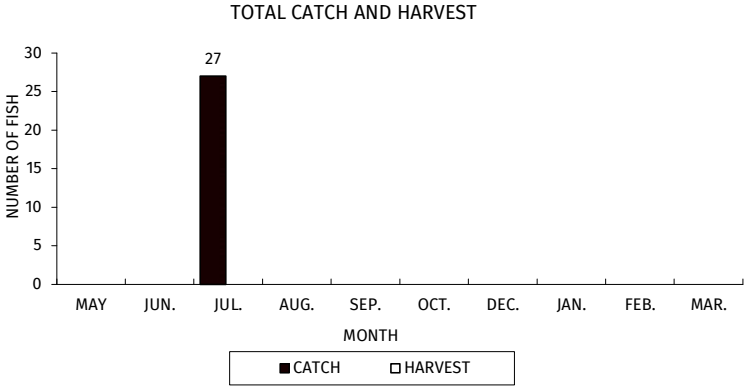


Figure 10. Rock bass catch and harvest, Deer Lake, during 2023.