WISCONSIN DEPARTMENT OF NATURAL RESOURCES

Creel Survey Report
Plum Lake, 2024-2025

Vilas 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.

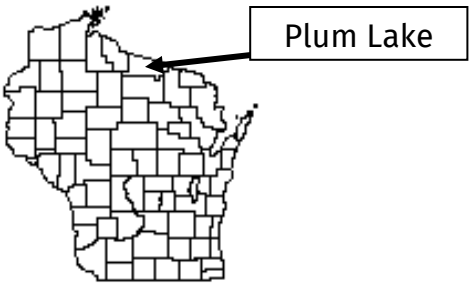
You may have encountered a DNR creel survey clerk on a recent fishing trip. We appreciate your cooperation during an interview. The survey only takes a few minutes of your time and it gives the DNR valuable information needed for management of the fishery.

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

General Lake Information



LOCATION

Plum Lake is located in Vilas County near the town of Sayner.

PHYSICAL CHARACTERISTICS

Plum Lake is a 1,033-acre drainage lake with a maximum depth of 57 feet. Littoral substrate consists primarily of sand, gravel and muck. Plum Lake contains medium-hard, slightly acidic, stained water of high transparency.

SEASONS SURVEYED

The period referred to in this report as the 2024-25 fishing season ran from May 4, 2024, through March 2, 2025. The summer creel survey ran from May 4 through Oct. 31, 2024, and the winter creel survey ran from Dec. 1, 2024, through March 2, 2025.

WEATHER

Ice-out on Plum Lake was in early April 2024. Fishable ice formed on Plum Lake in early December 2024.

FISHING REGULATIONS

The following seasons, daily bag limits and length limits were in place on Plum Lake during the 2024-25 fishing season:

SPECIES	SEASON	BAG LIMIT	MIN. SIZE
Largemouth bass	5/ 04 - 3/ 02	1*	18"
Smallmouth bass	6/ 15 - 3/ 02	1*	18"
*Bass species have a combined bag limit of 5. Catch & release is open all year.			
Muskellunge	5/ 25 - 12/ 31	1	50"
On open water			
Northern pike	5/ 04 - 3/ 02	5	None
Walleye	5/ 04 - 3/ 02	3	None
14"-18" protected slot, 1>18"			
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 2, 2025, 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

We encountered no unusual problems conducting the survey or calculating the projections contained in the report. This was the tenth time the DNR conducted a creel

survey on Plum Lake. The last creel survey took place during 2021-22.

GENERAL ANGLER INFORMATION

Anglers spent 17,052 hours, or 16.5 hours per acre, fishing Plum Lake during the 2024-25 season (Table 1). That was less fishing effort than both the Vilas County average of 33.2 hours per acre, and the effort documented during the 2021-22 creel survey (25.6 hours per acre). June was the most heavily fished month (2,960 hours). Creel clerks were able to conduct 361 interviews throughout the survey.

RESULTS BY SPECIES

WALLEYE (Table 2, Figure 1)
Anglers spent 4,972 hours targeting walleye. Fishing effort for walleye was highest in February (1,336 hours). Total catch of walleye was 384 fish, and total harvest was 57 fish. Highest catch (159 fish) and harvest (36 fish) occurred in October. Anglers fished an estimated 15.0 hours to catch, and 87.6 hours to harvest a walleye during the survey. Mean length of harvested walleye was 16.7 inches, and the largest measured was a 20.1-inch fish.

NORTHERN PIKE (Table 2, Figure 2)
Fishing effort directed at northern pike was 3,253 hours during the season. Northern pike fishing effort was greatest in February (1,256 hours). Total catch of northern pike was 964 fish, and total harvest was 122 fish. Anglers fished an estimated 7.0 hours to catch a northern pike during the survey. Mean length of harvested northern pike was 21.5 inches, and the largest measured was a 28.4-inch fish.

MUSKELLUNGE (Table 2, Figure 3)
Anglers spent 2,529 hours targeting muskellunge during the season. Muskellunge fishing effort was greatest in August (598 hours). Total catch of muskellunge was 16 fish, and the highest catch (10 fish) occurred in August. Anglers fished an estimated 156.1 hours to catch a muskellunge, and there was no documented harvest during the survey.

SMALLMOUTH BASS (Table 2, Figure 4)
Smallmouth bass received the most fishing effort of any gamefish species during the season. Fishing effort targeted at smallmouth bass was 7,139 hours during the season. Smallmouth bass fishing effort was greatest in May (2,043 hours). Total catch of smallmouth bass was 3,383 fish, with 8 fish harvested. Highest catch (1,499 fish) occurred in May. Anglers fished an estimated 2.2 hours to catch a smallmouth bass during the survey. One harvested smallmouth bass was measured at 16.5 inches.

LARGEMOUTH BASS (Table 2, Figure 5)
Fishing effort directed at largemouth bass was 2,768 hours during the season. Largemouth bass fishing effort was greatest in September (795 hours). Total catch of largemouth bass was 987 fish, and total harvest was 8 fish. The highest catch (327 fish) occurred in July. Anglers fished an estimated 3.8 hours to catch a largemouth bass during the survey. One harvested largemouth bass was measured at 15.3 inches.

YELLOW PERCH (Table 2, Figure 6)
Yellow perch received 1,450 hours of directed fishing effort. Total catch of yellow perch was 892 fish, and total harvest was 65 fish. Mean length of yellow perch harvested was 8.7 inches, and the largest measured was a 9.6-inch fish.

BLUEGILL (Table 2, Figure 7)
Fishing effort directed at bluegill was 2,108 hours. Total catch of bluegill was 4,823 fish, and total harvest was 1,171 fish. Mean length of bluegill harvested was 7.3 inches, and the largest measured was an 8.7-inch fish.

BLACK CRAPPIE (Table 2, Figure 8)
Black crappie were the most sought after panfish species during the survey. Black crappie received 3,532 hours of directed fishing effort. Anglers caught 4,092 black crappie and harvested 2,081 fish. Mean length of black crappie harvested was 10.5 inches, and the largest measured was a 14.1-inch fish.

PUMPKINSEED (Table 2, Figure 9)
Pumpkinseed received 512 hours of directed fishing effort. Anglers caught 445 pumpkinseed and harvested 207 fish. Mean length of pumpkinseed harvested was 7.1

inches, and the largest measured was a 7.8-inch fish.

ROCK BASS (Table 2, Figure 10)
Rock bass received 140 hours of directed fishing effort. Anglers caught 346 rock bass and harvested 65 fish. Mean length of rock bass harvested was 8.6 inches, and the largest measured was a 10.8-inch fish.

Acknowledgements

The DNR thanks 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, Meadow Lofty of Plum Gate Resort and Shawn Savel of Plum Lake Golf Club, who generously allowed the DNR to keep a boat and/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 Plum Lake during the survey period were Lauren Malanche 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, Plum Lake, 2024-25 season; compared to 2021-22 creel results, Vilas County averages, and Ceded Territory averages.

MONTH	NUMBER OF ANGLER PARTY INTERVIEWS	TOTAL ANGLER HOURS	TOTAL ANGLER HOURS/ACRE	2021-22 TOTAL ANGLER HOURS/ACRE	VILAS COUNTY AVERAGE HOURS/ACRE	CEDED TERRITORY AVERAGE HOURS/ACRE
May	55	2,658	2.6	3.4	5.1	4.7
June	61	2,960	2.9	5.9	6.6	6.0
July	49	2,359	2.3	3.9	7.0	6.4
August	42	2,259	2.2	4.2	6.1	5.0
September	53	2,882	2.8	3.7	4.0	3.1
October	51	1,531	1.5	2.2	1.9	1.4
December	4	207	0.2	0.3	0.6	1.0
January	18	718	0.7	0.4	0.9	1.7
February	25	1,357	1.3	1.2	1.0	1.6
March	3	121	0.1	0.5	0.1	0.2
Summer Total	311	14,650	14.2	23.2	30.6	26.5
Winter Total	50	2,402	2.3	2.4	2.6	4.6
Grand Total	361	17,052	16.5	25.6	33.2	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 Plum 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 Plum Lake to other lakes.

2021-22 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 Plum 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 Plum Lake to other lakes in northern Wisconsin.

Table 2. Comparison of creel survey synopses, Plum Lake, 2024-25 and 2021-22 fishing seasons.

CREEL YEAR: 2024-25

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	4,972	17.5%	384	15.0	57	87.6	16.7
Northern pike	3,253	11.5%	964	7.0	122	28.7	21.5
Muskellunge	2,529	8.9%	16	156.1	0	*	**
Smallmouth bass	7,139	25.1%	3,383	2.2	8	863.4	16.5
Largemouth bass	2,768	9.7%	987	3.8	8	0.0	15.3
Yellow perch	1,450	5.1%	892	4.4	65	71.8	8.7
Bluegill	2,108	7.4%	4,823	0.6	1,171	1.9	7.3
Black crappie	3,532	12.4%	4,092	0.9	2,081	1.7	10.5
Pumpkinseed	512	1.8%	445	1.3	207	2.5	7.1
Rock bass	140	0.5%	346	1.3	65	0.0	8.6

CREEL YEAR: 2021-22

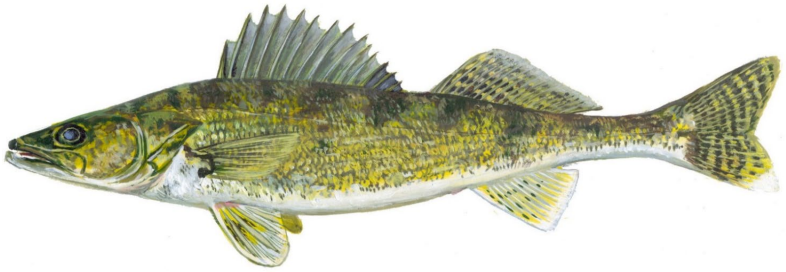
SPECIES	DIRECTED EFFORT (HOURS)	PERCENT OF TOTAL	TOTAL CATCH	SPECIFIC CATCH RATE (HRS/FISH)	TOTAL HARVEST	SPECIFIC HARVEST RATE (HRS/FISH)	MEAN LENGTH OF HARVESTED FISH
Walleye	8,095	16.3%	824	10.2	89	91.3	15.2
Northern pike	7,103	14.3%	2,031	6.5	152	54.0	22.4
Muskellunge	3,109	6.3%	30	103.6	0	*	**
Smallmouth bass	10,400	20.9%	4,139	2.7	13	*	19.1
Largemouth bass	4,408	8.9%	1,170	6.1	5	*	17.0
Yellow perch	4,712	9.5%	1,112	4.9	79	64.2	8.2
Bluegill	5,687	11.5%	5,936	1.0	1,973	2.9	7.8
Black crappie	4,318	8.7%	1,255	3.4	779	5.5	10.6
Pumpkinseed	1,827	3.7%	114	17.5	36	51.0	7.7
Rock bass	0	0.0%	249	*	15	*	9.5

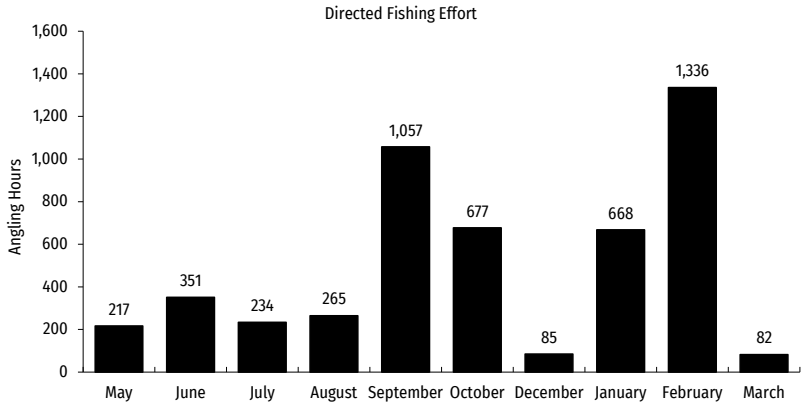
Note: If a species is not shown in a table, no data was collected by the creel clerks for that species.

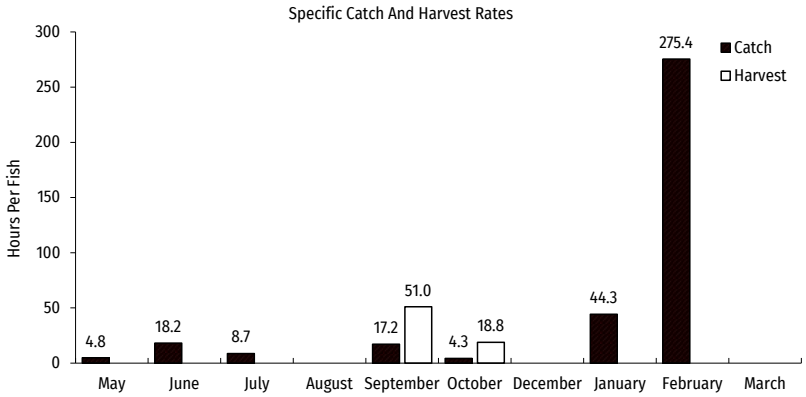
* Indicates that no fish of this species were caught or harvested (depending on the column) by anglers who specifically targeted this species.

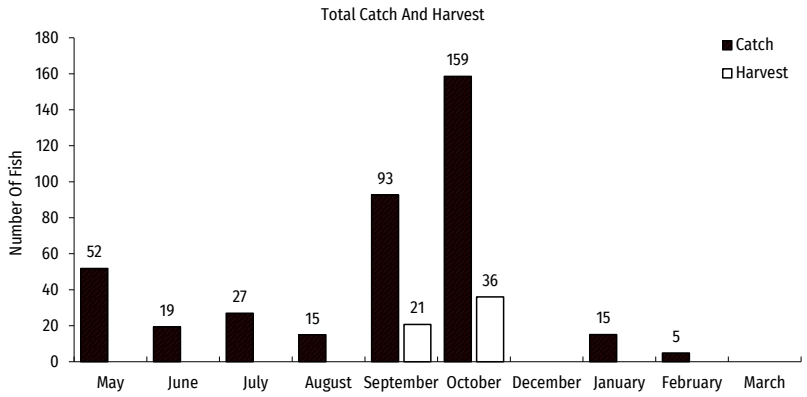
** Indicates that no fish were measured by the creel clerks for this species.

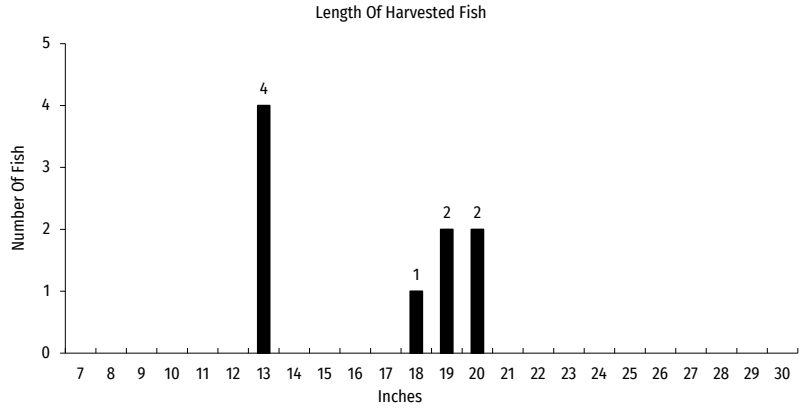
Walleye











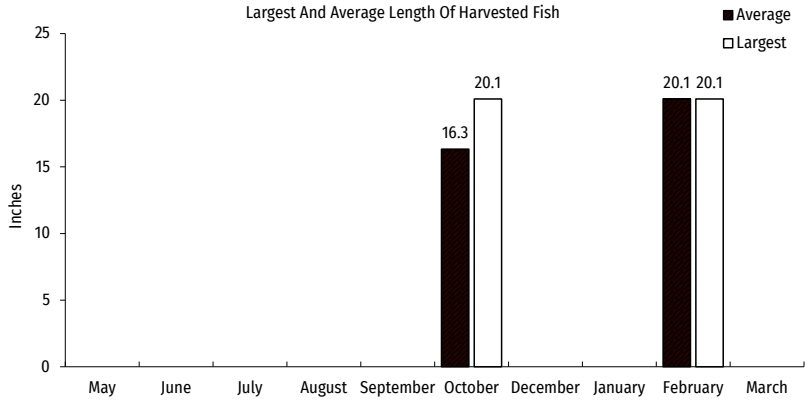
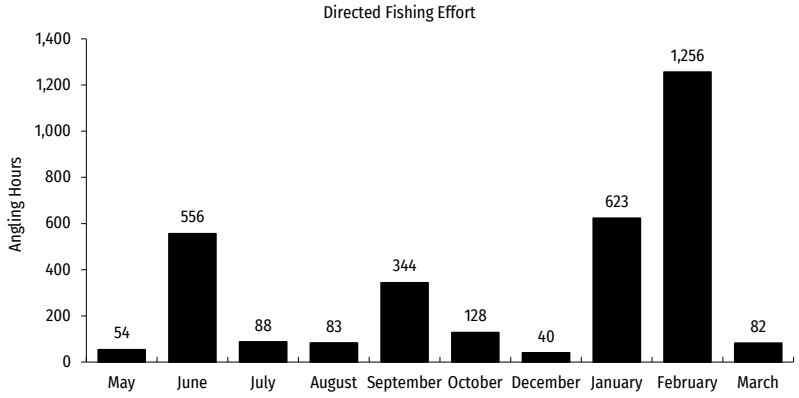
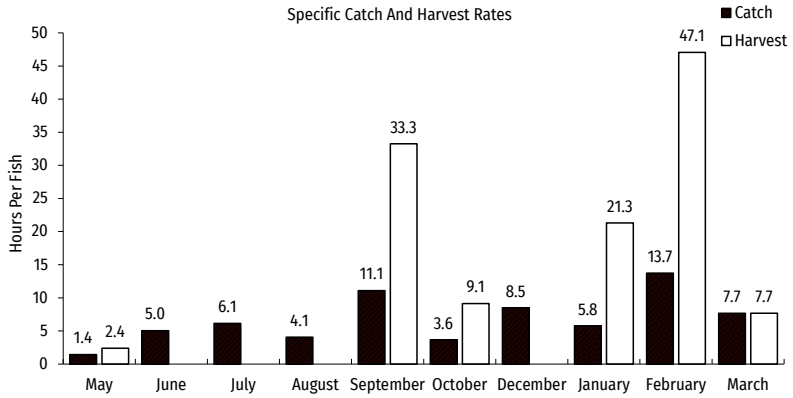
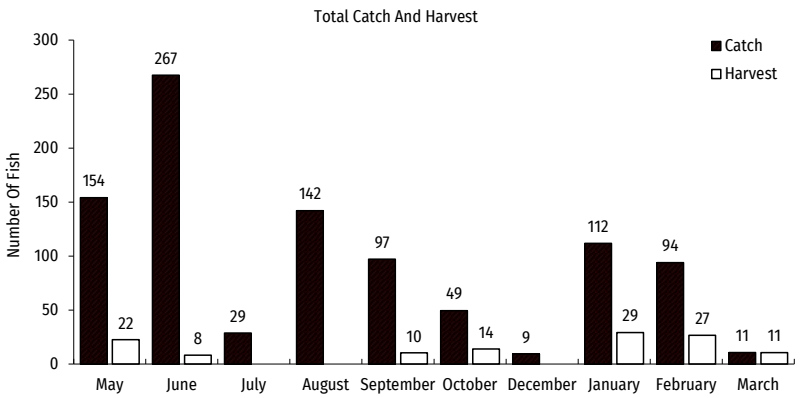
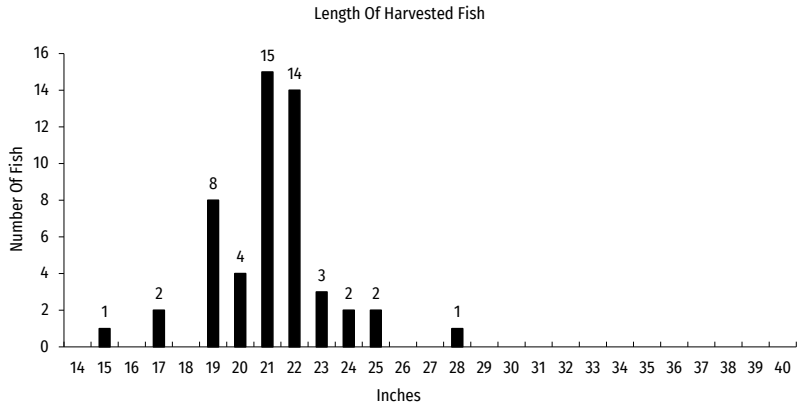


Figure 1. Walleye fishing effort, catch, harvest and length distribution, Plum Lake, during 2024-25.









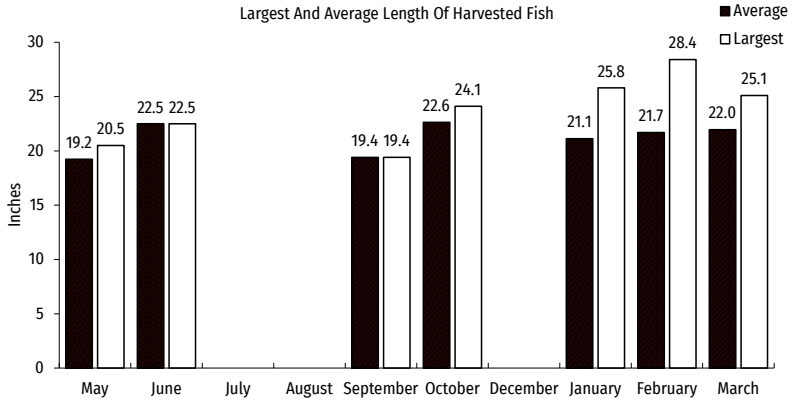
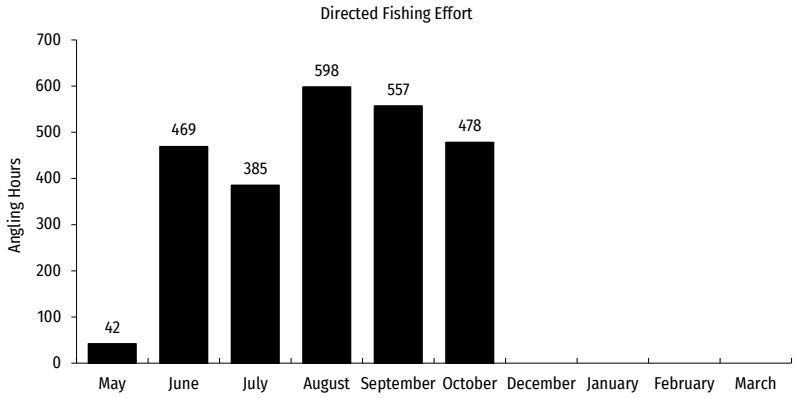
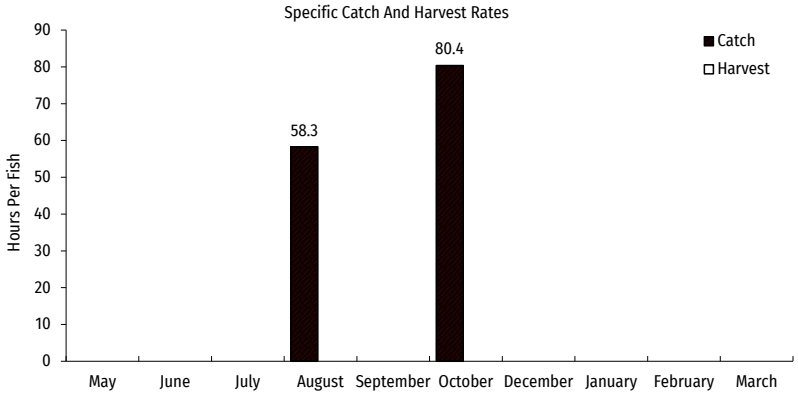


Figure 2. Northern pike fishing effort, catch, harvest and length distribution, Plum Lake, during 2024-25.



Muskellunge



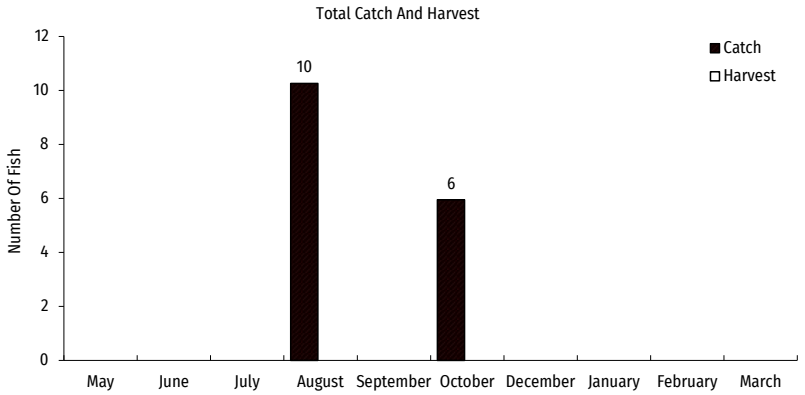
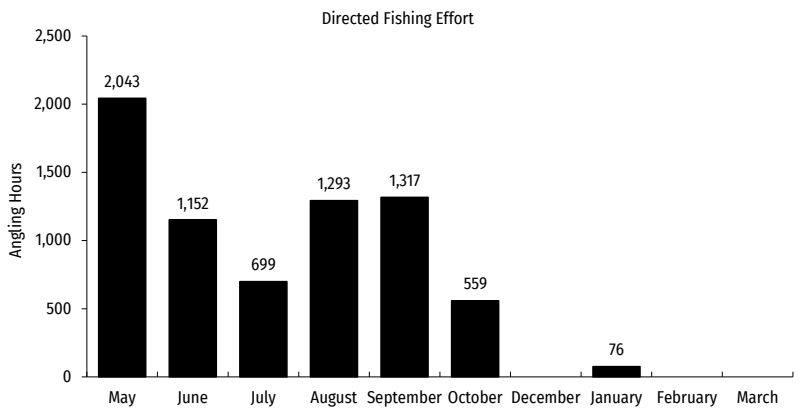
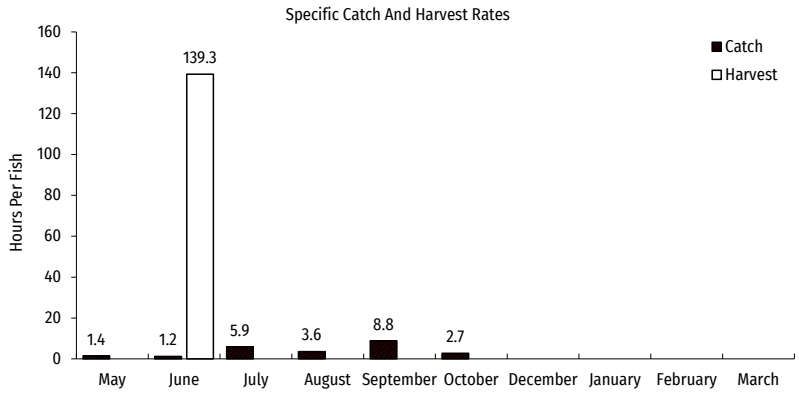
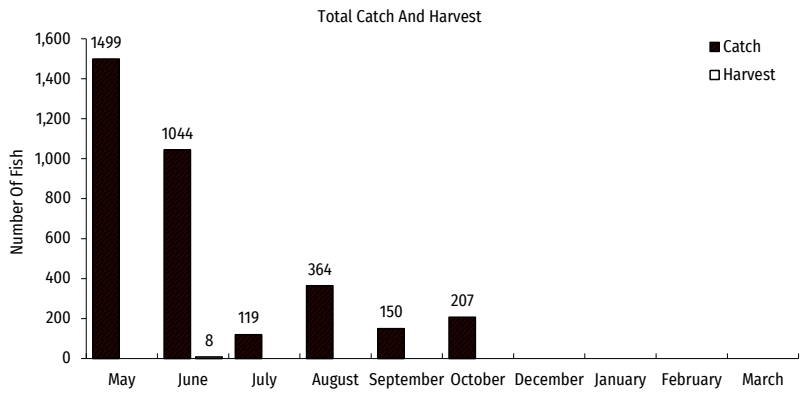


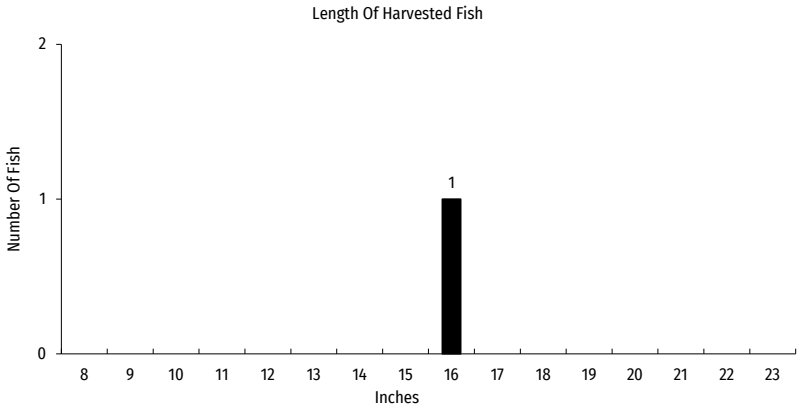
Figure 3. Muskellunge fishing effort, catch and harvest, Plum Lake, during 2024-25.



Smallmouth Bass







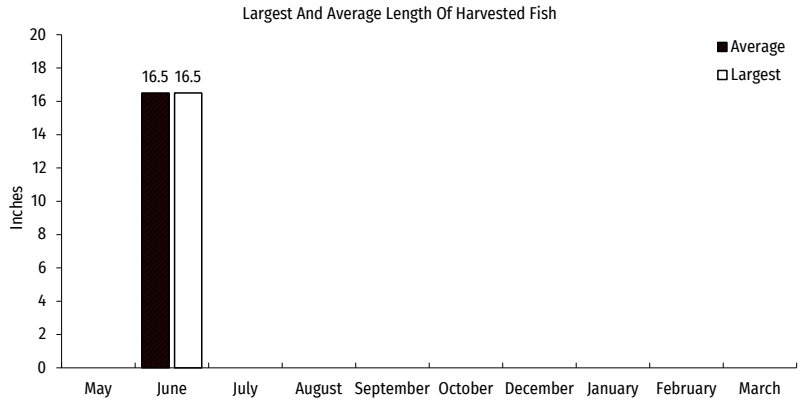


Figure 4. Smallmouth bass fishing effort, catch, harvest and length distribution, Plum Lake, during 2024-25.

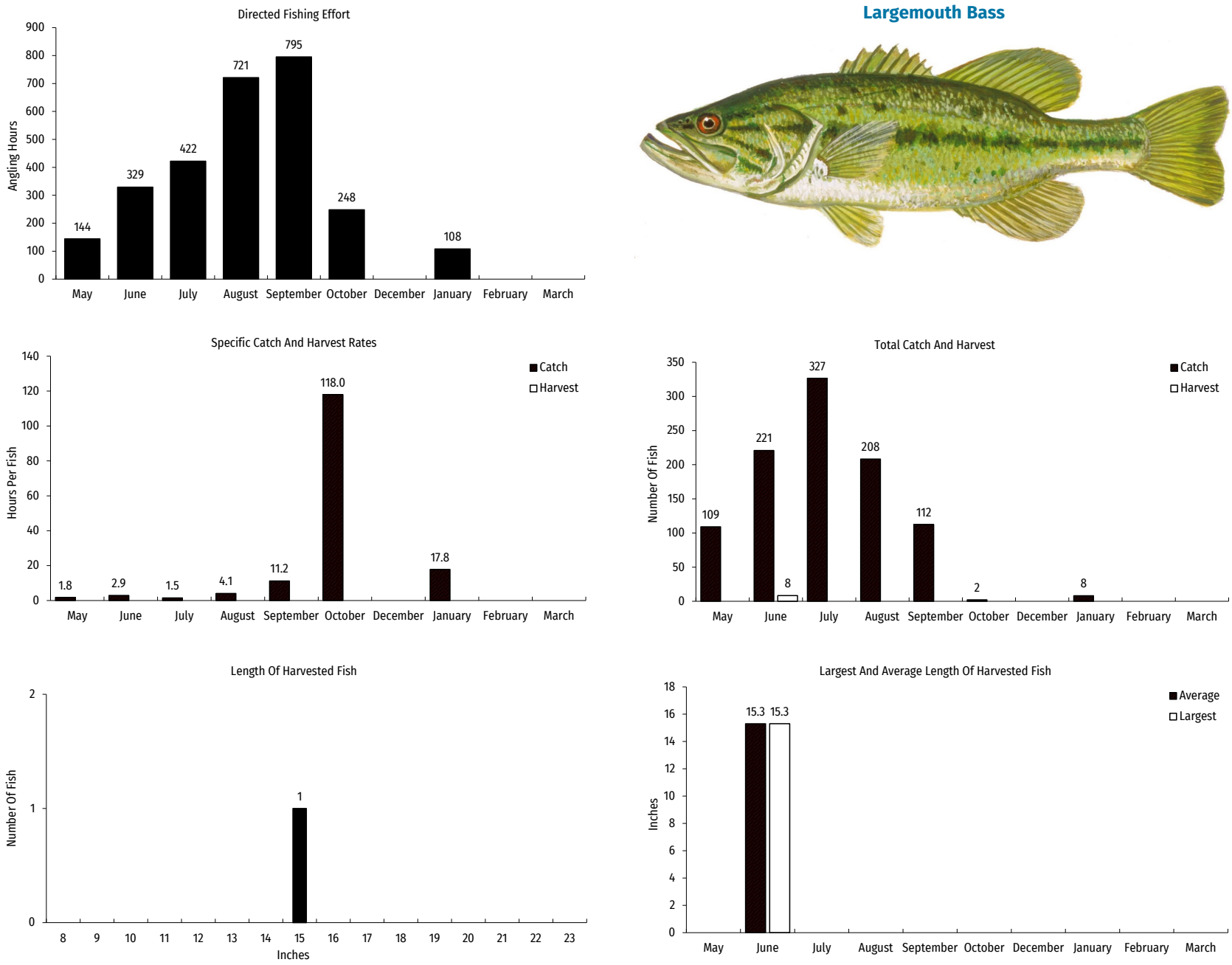
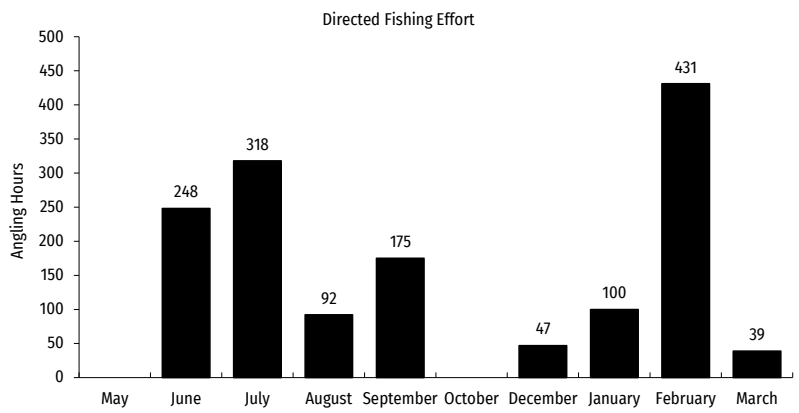
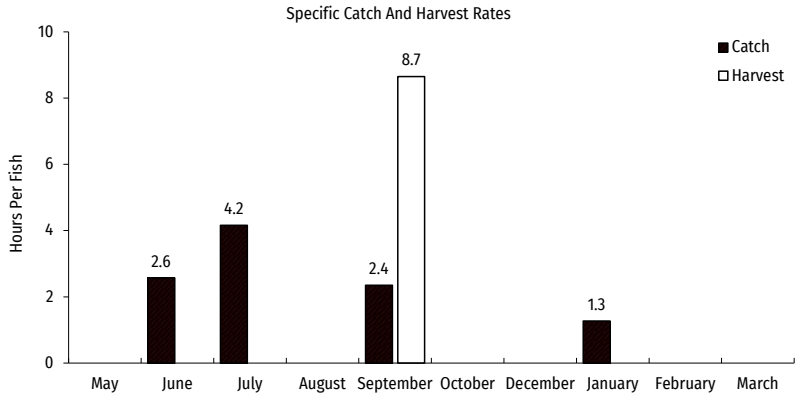
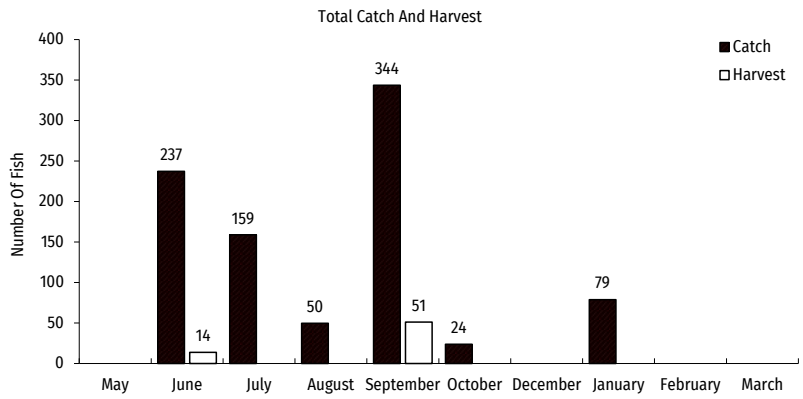
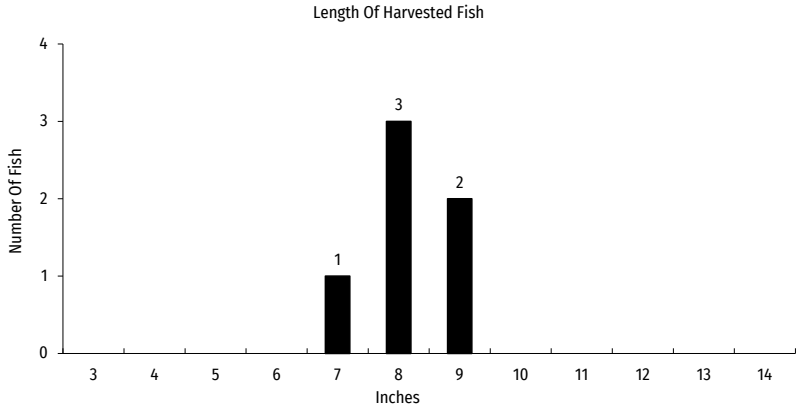


Figure 5. Largemouth bass fishing effort, catch, harvest and length distribution, Plum Lake, during 2024-25.









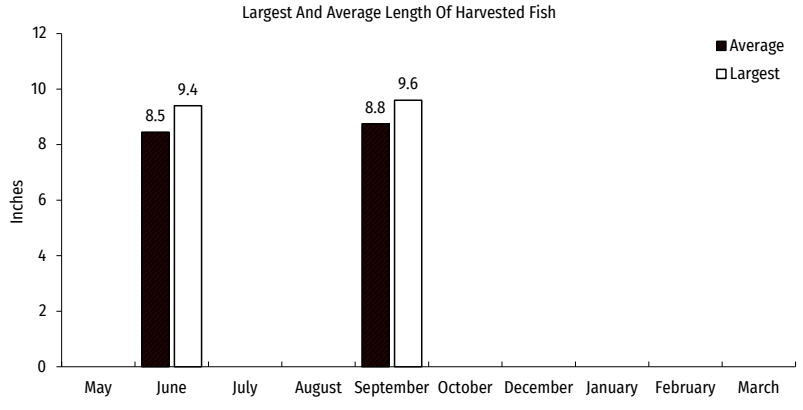
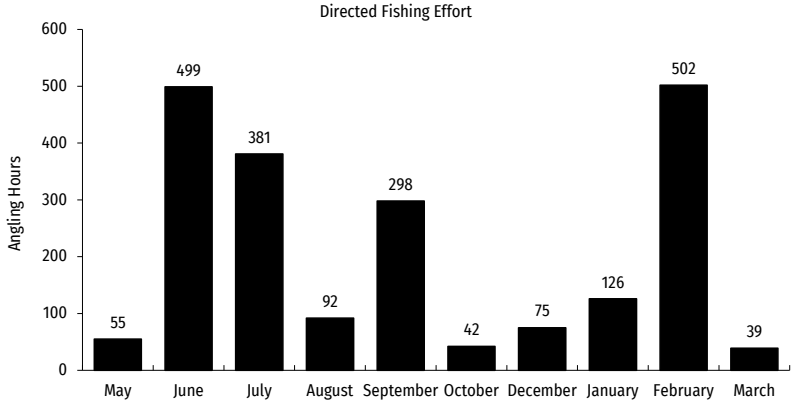
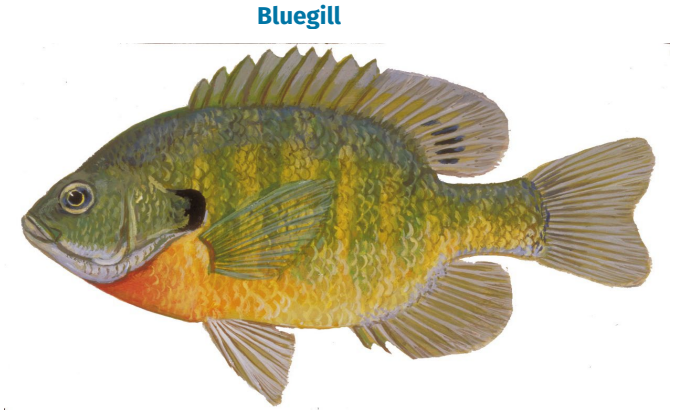
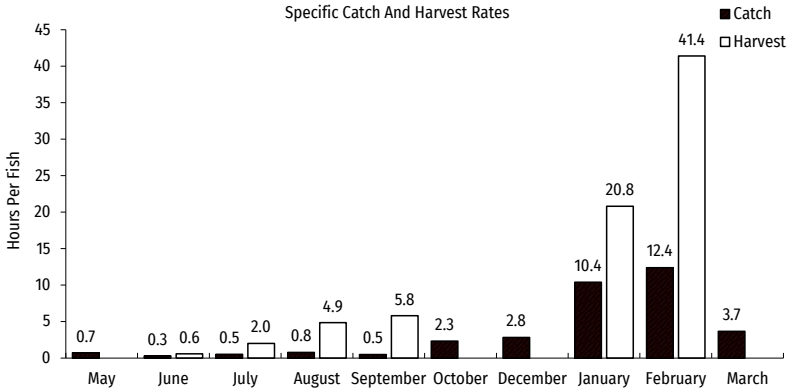
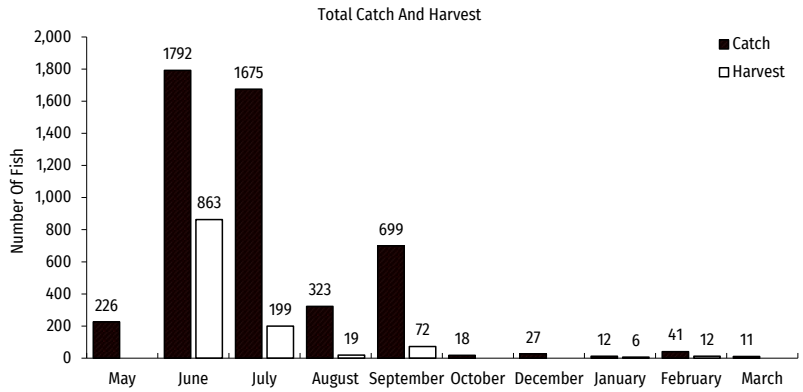


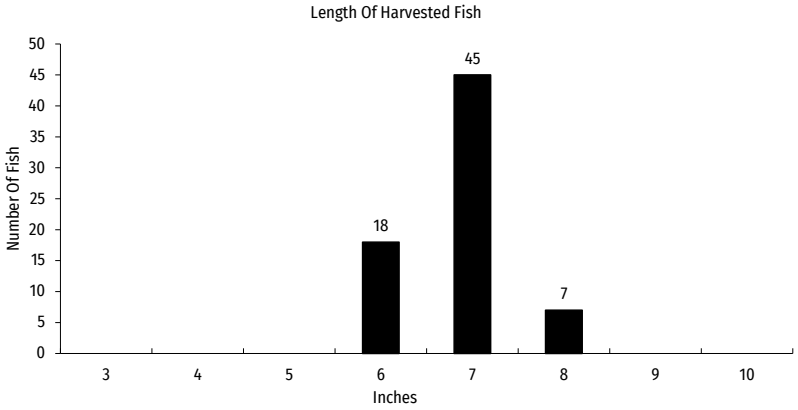
Figure 6. Yellow perch fishing effort, catch, harvest and length distribution, Plum Lake, during 2024-25.











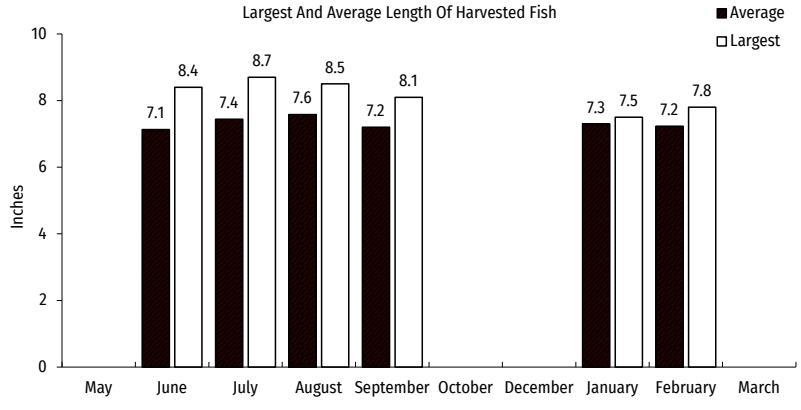
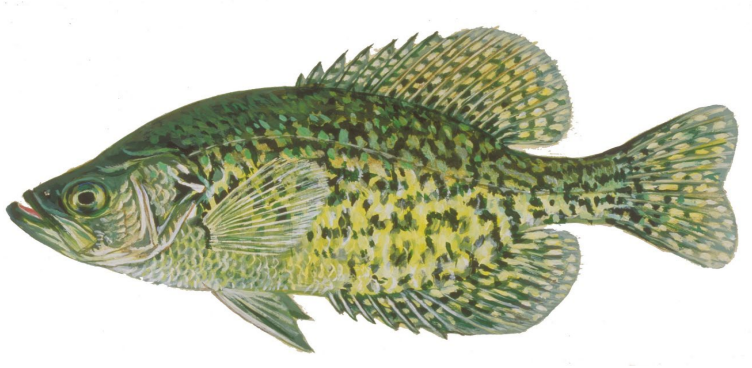
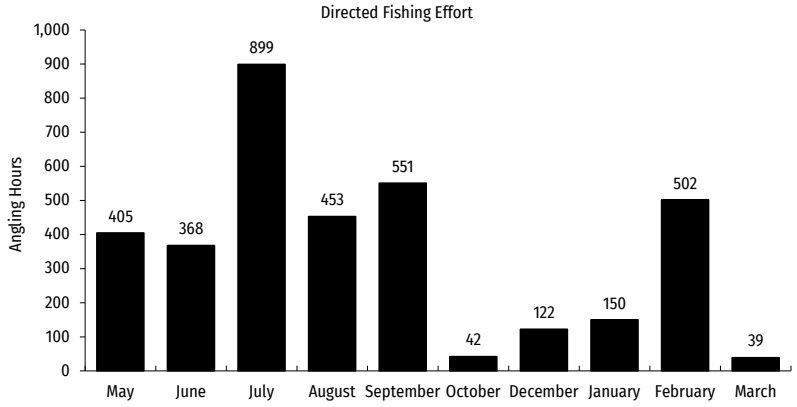
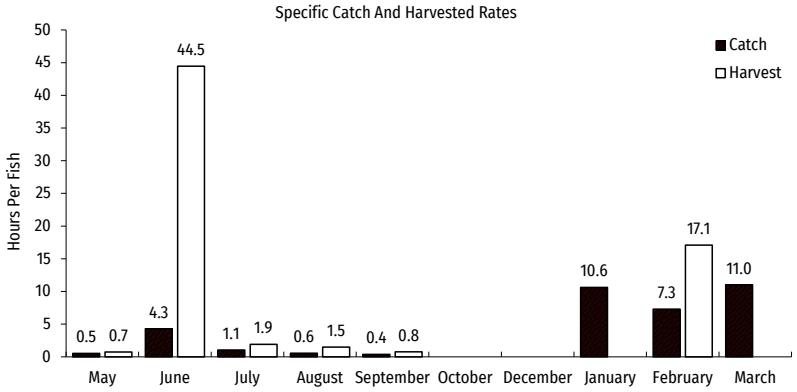


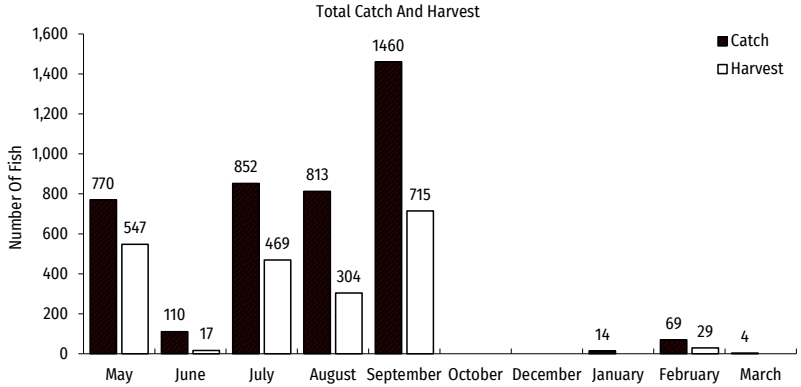
Figure 7. Bluegill fishing effort, catch, harvest and length distribution, Plum Lake, during 2024-25.

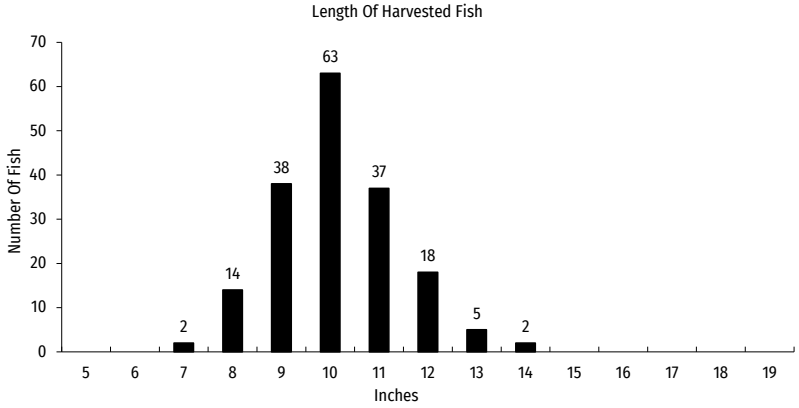
Black Crappie











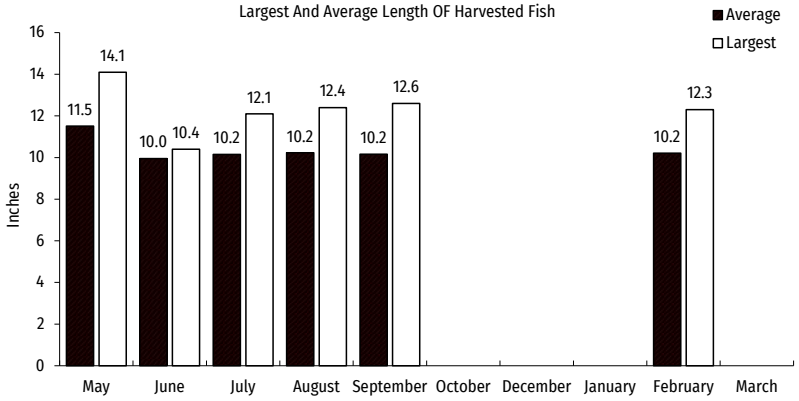
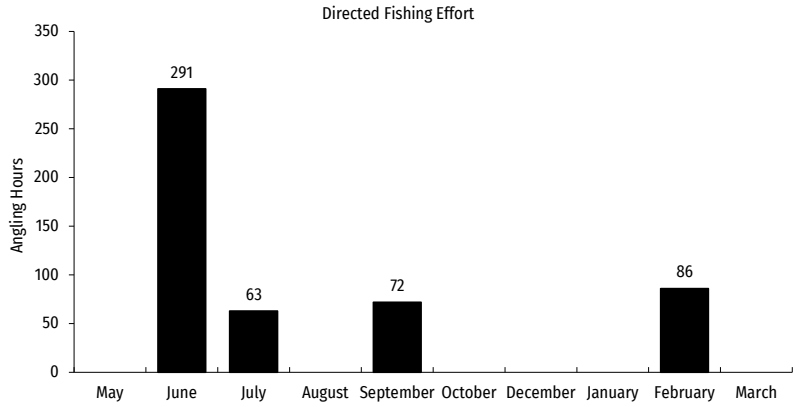
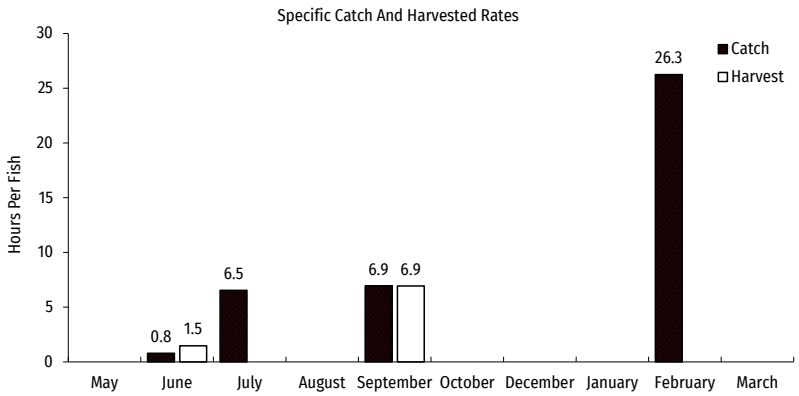
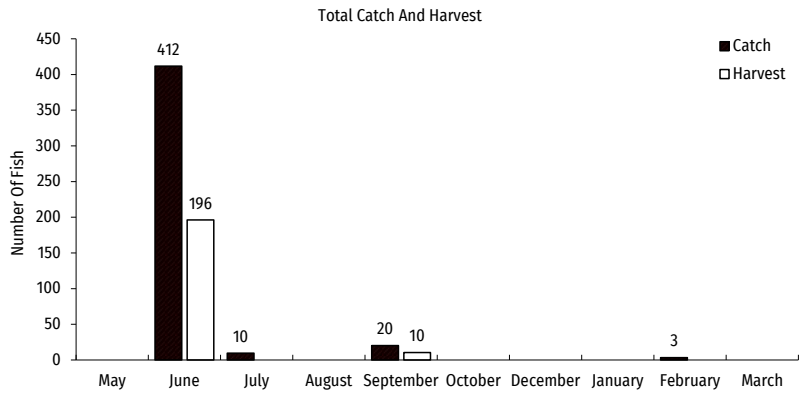


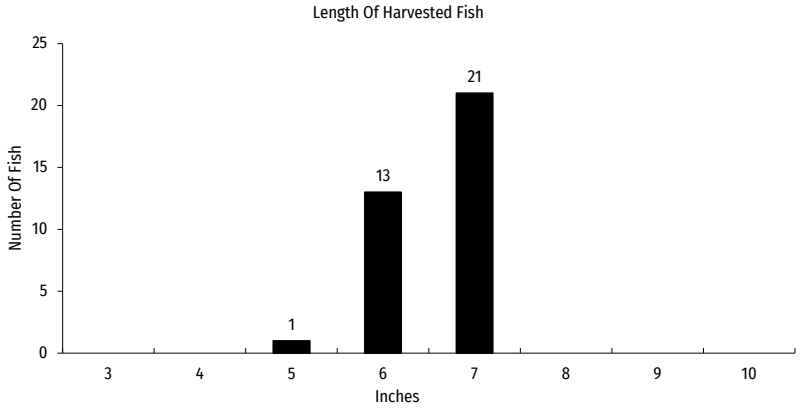
Figure 8. Black crappie fishing effort, catch, harvest and length distribution, Plum Lake, during 2024-25.



Pumpkinseed







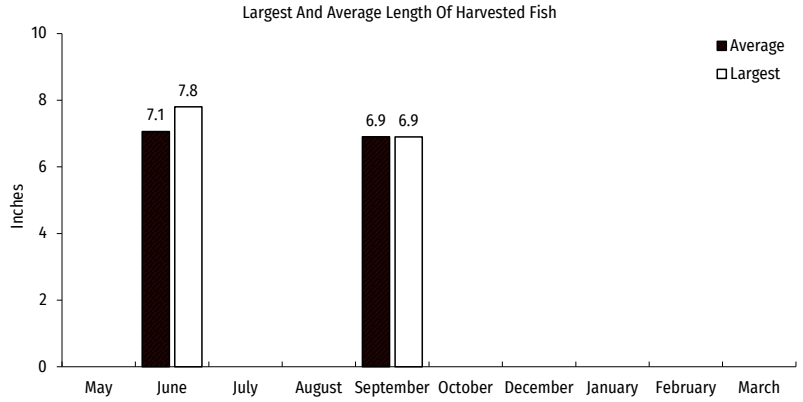
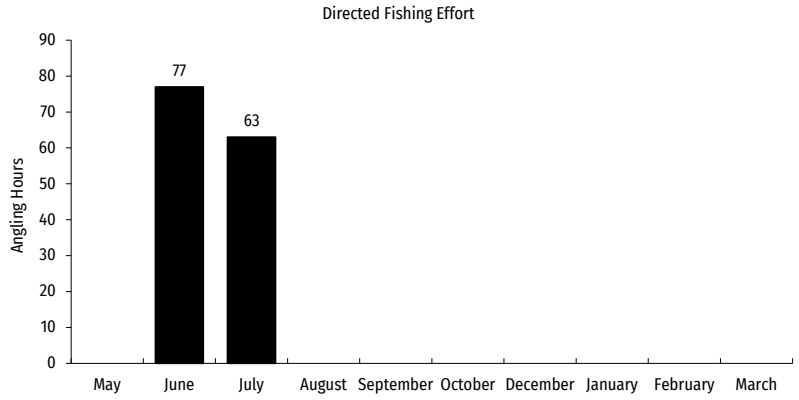
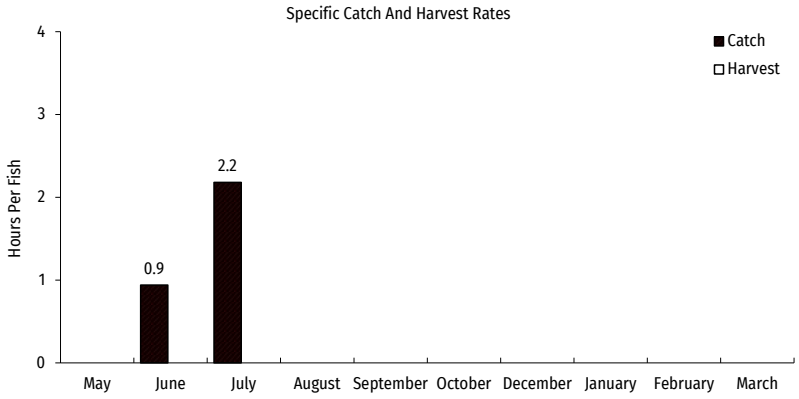
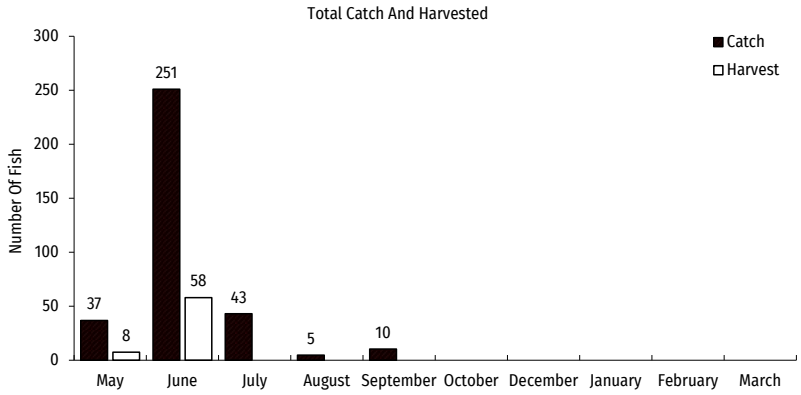


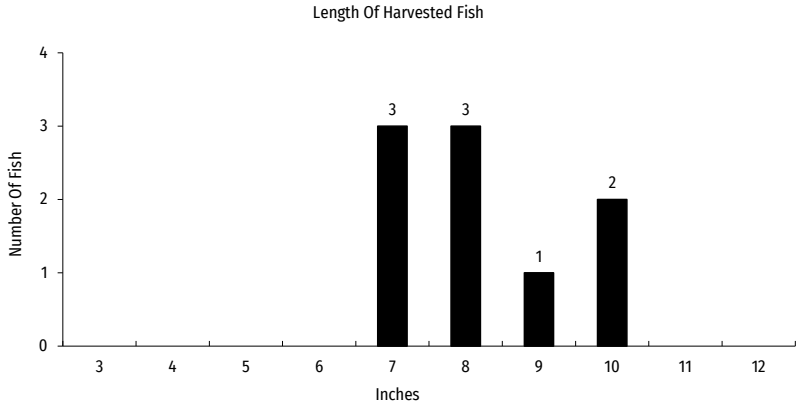
Figure 9. Pumpkinseed fishing effort, catch, harvest and length distribution, Plum Lake, during 2024-25.

Rock Bass









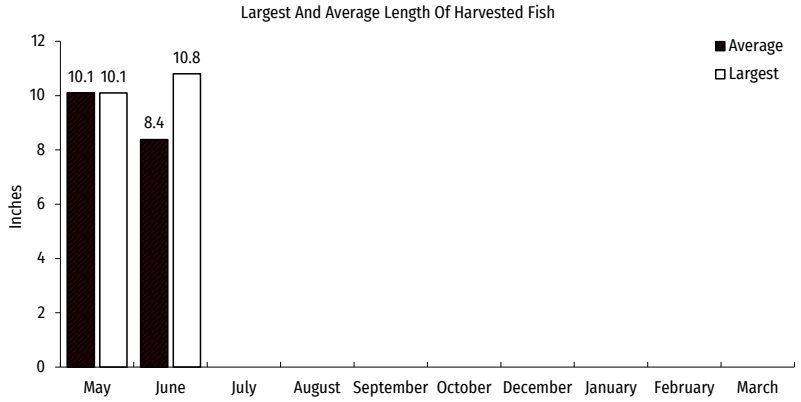


Figure 10. Rock bass fishing effort, catch, harvest and length distribution, Plum Lake, during 2024-25.