

WISCONSIN DEPARTMENT OF NATURAL RESOURCES

# LAKE MOHAWKSIN

2022 – 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.

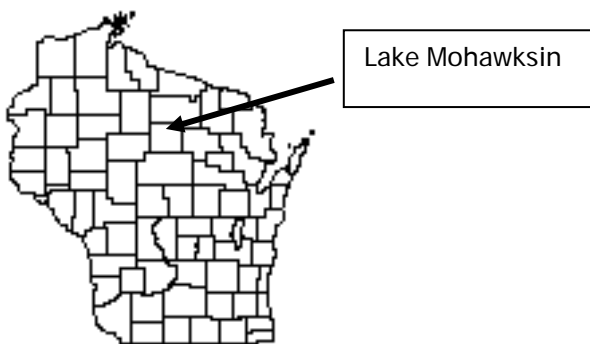
You may have encountered a DNR creel survey clerk on a recent fishing trip. We appreciate your cooperation during an interview. The survey only takes a few minutes of your time and it gives the DNR valuable information needed for management of the fishery.

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

## GENERAL LAKE INFORMATION



### LOCATION

Lake Mohawksin is located in Lincoln County near the city of Tomahawk.

### PHYSICAL CHARACTERISTICS

Lake Mohawksin is a 1,910-acre impoundment on the Wisconsin River with a maximum depth of 25 feet. Littoral substrate consists primarily of sand with lesser amounts of muck, gravel and boulder. Lake Mohawksin contains soft, slightly alkaline, medium-brown water of moderate transparency.

### SEASONS SURVEYED

Lake Mohawksin provides a year-round fishing season, which allowed for an extended creel survey. The period referred to in this report as the 2022-23 fishing season ran from May 7, 2022 through April 30, 2023. The summer creel survey ran from May 7 through Oct. 31, 2022 and the winter creel survey ran from Dec. 1, 2022 through April 30, 2023.

### WEATHER

Ice-out on Lake Mohawksin was around late April. Fishable ice formed on Lake Mohawksin in mid-December and remained in areas through March 2023. Open water fishing commenced again at the start of April 2023.

### FISHING REGULATIONS

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

SPECIES	SEASON	BAG LIMIT	MIN. SIZE
Largemouth Bass	Open all year	5*	14"
Smallmouth Bass	Open all year	5*	14"
*Bass species have a combined bag limit of 5.			
Musky	5/ 28 - 12/ 31 On open water	1	40"
Northern Pike	Open all year	5	None
Walleye	Open all year 20" - 24" Protected Slot, 1>24"	3	15"
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. 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 in the report. This was the second time the DNR conducted a creel survey on Lake Mohawksin. The last creel survey took place during 2009-10. The 2009-10 creel survey was a 13-month bus route style survey, running from March 2009 to April 2010, excluding November. In 2021-22, the bus route creel survey ran for 11 months from May 2022 to April 2023, excluding November. The differences in survey months and duration do not allow for a direct comparison between surveys. Therefore, in Table 1 (pg. 5) and Table 2 (pg. 6-7), we provide the individual data summaries produced from each survey.

## GENERAL ANGLER INFORMATION

Anglers spent 61,202 hours, or 32.0 hours per acre, fishing Lake Mohawksin during the 2022-23 season (Table 1). That was more than the Lincoln County average of 29.6 hours per acre but less than the fishing effort documented during the 2009-10 creel survey (62.3 hours per acre). July was the most heavily fished month (17,784 hours). Creel clerks were able to conduct 427 interviews throughout the survey.

## RESULTS BY SPECIES

### WALLEYE (Table 2, Figure 1)

Walleyes received the greatest fishing effort of any species during the season. Anglers spent 14,573 hours targeting walleyes. Fishing effort for walleye was highest in May (3,144 hours). Total catch of walleye was 9,437 fish, and total harvest was 466 fish. Highest catch (2,472 fish) occurred in May, and highest harvest (97 fish) occurred in April. Anglers fished an estimated 1.6 hours to catch and 31.2 hours to harvest a walleye during the survey. Mean length of harvested walleye was 15.9 inches, and the largest measured was a 19.8-inch fish.

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

Fishing effort directed at northern pike was 4,997 hours during the season. Northern pike fishing effort was greatest in June (1,724 hours). Total catch of northern pike was 4,728 fish, and total harvest was 214 fish. Anglers fished an estimated 1.8 hours to catch a northern pike during the survey. Mean length of harvested northern pike was 21.7 inches and the largest measured was a 27.5-inch fish.

### MUSKELLUNGE (Table 2, Figure 3)

Anglers spent 11,546 hours targeting muskellunge during the season. Muskellunge fishing effort was greatest in June (3,119 hours). Total catch of muskellunge was 239 fish, and the highest catch (96 fish) occurred in July. Anglers fished an estimated 77.4 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 11,541 hours during the season. Smallmouth bass fishing effort was greatest in July (4,825 hours). Total catch of smallmouth bass was 6,208 fish, with 145 fish harvested. Highest catch (2,465 fish) occurred in June. Anglers fished an estimated 2.3 hours to catch a smallmouth bass during the survey. Mean length of smallmouth bass harvested was 15.9 inches, and the largest was 19.7 inches.

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

Fishing effort directed at largemouth bass was 6,934 hours during the season. Largemouth bass fishing effort was greatest in June (2,953 hours). Total catch of largemouth bass was 269 fish, with no documented harvest. The highest catch (224 fish) occurred in July. Anglers fished an estimated 30.9 hours to catch a largemouth bass during the survey.

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

Yellow perch received 12,023 hours of directed fishing effort. Total catch of yellow perch was 11,403 fish, and total harvest was 2,774 fish. Mean length of yellow perch harvested was 9.3 inches.



### **BLUEGILL** (Table 2, Figure 7)

Bluegills were the most sought after panfish species during the survey. Fishing effort directed at bluegill was 13,724 hours. Total catch of bluegill was 13,755 fish, and total harvest was 2,285 fish. Mean length of bluegills harvested was 7.6 inches.

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

Black crappies received 11,172 hours of directed fishing effort. Anglers caught 4,870 black crappies and harvested 2,900 fish. Mean length of black crappies harvested was 9.9 inches.

### **PUMPKINSEED** (Table 2, Figure 9)

Pumpkinseeds received 5,438 hours of directed fishing effort. Anglers caught 3,291 pumpkinseeds and harvested 827 fish. Mean length of pumpkinseeds harvested was 7.1 inches.

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

There was no directed angler effort for rock bass. However, anglers caught 2,084 rock bass and harvested 120 fish. Mean length of rock bass harvested was 8.3 inches.

### **OTHER SPECIES**

Channel catfish and bullhead species received small amounts of directed fishing effort (240 and 21 hours, respectively), but no documented catch or harvest was observed. Bowfin, redhorse species and white sucker had no directed fishing effort but were caught in low numbers (274, 33, and 74, respectively).

## **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.

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

Lindberg, Ava Cohrs, Abbigail Ewert and John Davis.

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, Lake Mohawksin, 2022-23 season; compared to 2009-2010 creel results, Lincoln County averages and Ceded Territory averages.**

Month	Number of Angler Party Interviews	Total Angler Hours	Total Angler Hours/Acre	2009-10 Total Angler Hours/Acre	Lincoln County Average Hours/Acre	Ceded Territory Average Hours/Acre
March 2009*	-	-	-	3.7	1.2	0.2
April 2009*	-	-	-	4.3	2.9	2.9
May	34	7,491	3.9	7.9	5.5	4.7
June	60	10,434	5.5	6.6	5.6	6.1
July	94	17,784	9.3	12.3	6.4	6.5
August	50	8,015	4.2	8.0	4.2	5.1
September	51	5,922	3.1	6.4	1.8	3.2
October	67	3,418	1.8	1.6	0.6	1.4
December	7	870	0.5	1.2	1.4	1.0
January	15	2,058	1.1	5.0	3.0	1.7
February	27	2,400	1.3	5.0	1.9	1.6
March	2	259	0.1	5.2	1.2	0.2
April	20	2,550	1.3	3.1	2.9	2.9
Summer Total**	356	53,064	27.8	42.7	24.0	26.9
Winter Total**	71	8,137	4.3	19.6	7.4	4.6
Grand Total**	427	61,202	32.0	62.3	29.6	31.2

Note: \*The 2009-10 survey ran from March of 2009 through April of 2010 for a total of 13 months.

\*\*Summer, Winter and Grand totals for the 2009-10 survey include two more months of data than typical lake surveys.

\*\*2021-22 summer is May-October; 2021-22 winter is December-April.

\*\*2009-10 summer is April-October; 2009-10 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 Lake Mohawksin 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 Lake Mohawksin to other lakes.

**2009-10 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 Lake Mohawksin.

**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 Lake Mohawksin to other lakes in northern Wisconsin.

Table 2. Comparison of creel survey synopses, Lake Mohawksin, 2009-10 and 2022-23 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	14,573	15.8%	9,437	1.6	466	31.2	15.9
Northern Pike	4,997	5.4%	4,728	1.8	214	28.0	21.7
Muskellunge	11,546	12.5%	239	77.4	0	*	**
Smallmouth Bass	11,541	12.5%	6,208	2.3	145	142.9	15.9
Largemouth Bass	6,934	7.5%	269	30.9	0	*	**
Yellow Perch	12,023	13.0%	11,403	1.3	2,774	4.7	9.3
Bluegill	13,724	14.9%	13,755	1.0	2,285	6.2	7.6
Black Crappie	11,172	12.1%	4,870	2.6	2,900	4.0	9.9
Pumpkinseed	5,438	5.9%	3,291	2.8	827	11.0	7.1
Rock Bass	0	0.0%	2,084	*	120	*	8.3
Bowfin	0	0.0%	274	*	168	*	**
Bullhead species	21	0.0%	0	*	0	*	**
Channel Catfish	240	0.3%	0	*	0	*	**
Redhorse species	0	0.0%	33	*	0	*	**
White Sucker	0	0.0%	74	*	0	*	**

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**CREEL YEAR: March 2009- February 2010 (See pg. 3)**

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	39,624	20.7%	20,551	2.0	625	65.8	16.4
Northern Pike	17,537	9.1%	6,247	7.1	644	35.1	23.4
Muskellunge	14,152	7.4%	608	28.1	17	833.3	42.0
Smallmouth Bass	12,858	6.7%	6,421	3.2	176	238.1	15.0
Largemouth Bass	7,092	3.7%	539	36.2	0	*	**
Yellow Perch	31,935	16.6%	18,534	2.3	8,605	4.0	9.1
Bluegill	32,448	16.9%	46,280	0.8	21,216	1.6	7.2
Black Crappie	31,999	16.7%	17,397	1.9	11,995	2.7	9.5
Pumpkinseed	4,115	2.1%	7,080	1.3	906	5.3	6.3
Rock Bass	58	0.0%	472	0.8	104	0.8	**

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.



Table 2. Continued comparison of creel survey synopses, Lake Mohawksin, 2009-10 and 2022-23 fishing seasons.

CREEL YEAR: March 2010- April 2010 (See pg. 3)

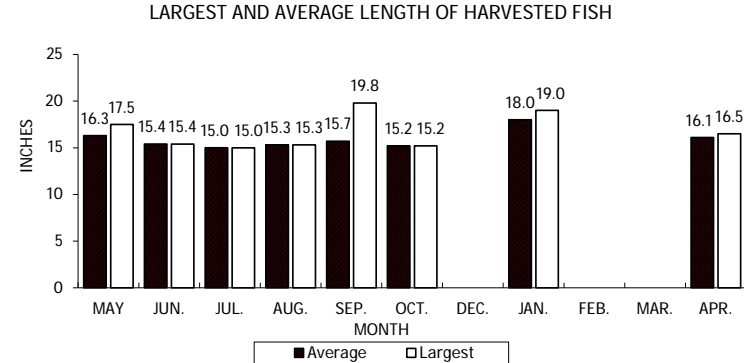
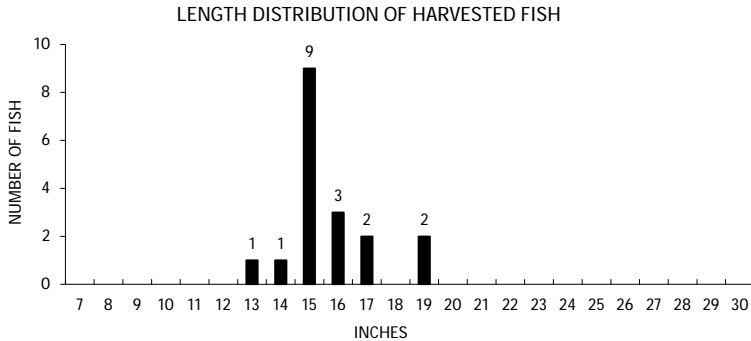
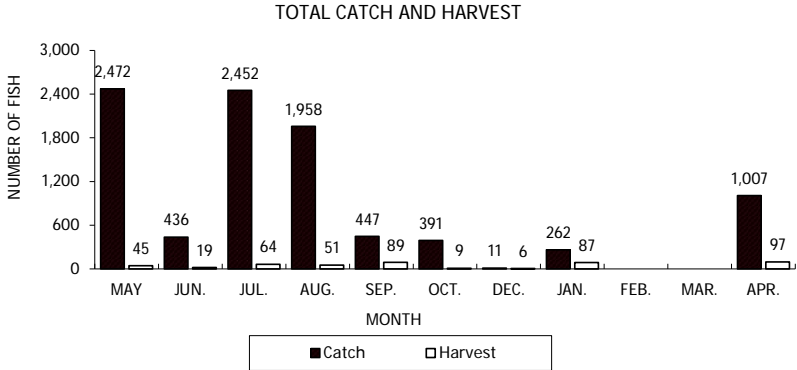
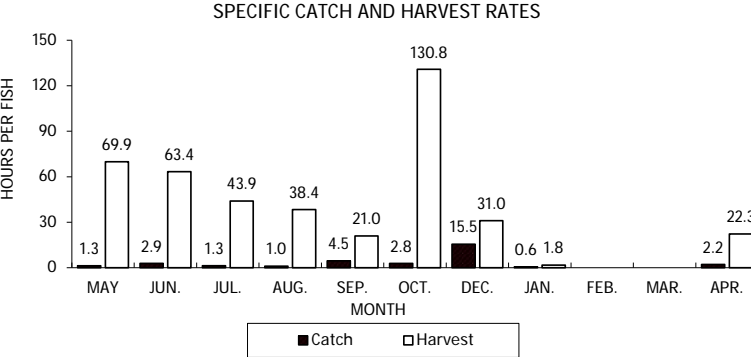
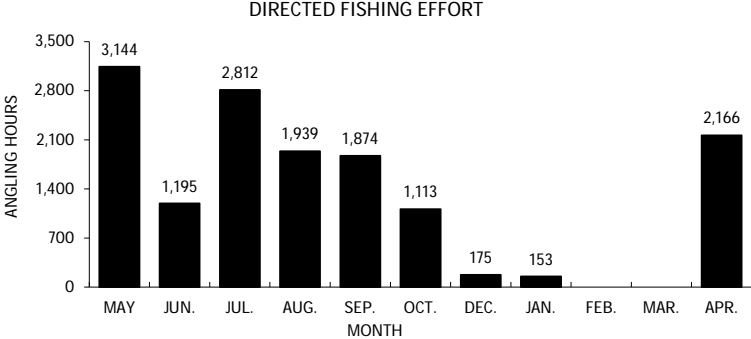
SPECIES	DIRECTED EFFORT (Hours)	PERCENT OF TOTAL	TOTAL CATCH	SPECIFIC CATCH RATE (Hours/Fish)	TOTAL HARVEST	SPECIFIC HARVEST RATE (Hours/Fish)	MEAN LENGTH OF HARVESTED FISH
Walleye	9,714	39.4%	5,923	1.6	241	40.3	15.8
Northern Pike	1,782	7.2%	853	3.5	368	6.3	22.2
Smallmouth Bass	277	1.1%	380	1.7	27	10.3	15.5
Yellow Perch	5,758	23.4%	4,423	2.0	1,604	4.1	9.2
Bluegill	2,490	10.1%	4,723	0.6	2,372	1.1	7.2
Black Crappie	4,545	18.4%	4,670	1.1	3,431	1.5	9.9
Pumpkinseed	85	0.3%	398	4.0	91	*	7.1
Rock Bass	0	0.0%	30	*	30	*	7.8

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.

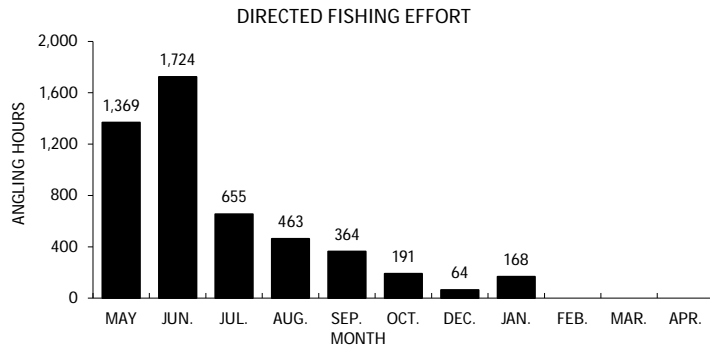
\*\* Indicates that no fish were measured by the creel clerks for this species.

# WALLEYE



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



## NORTHERN PIKE

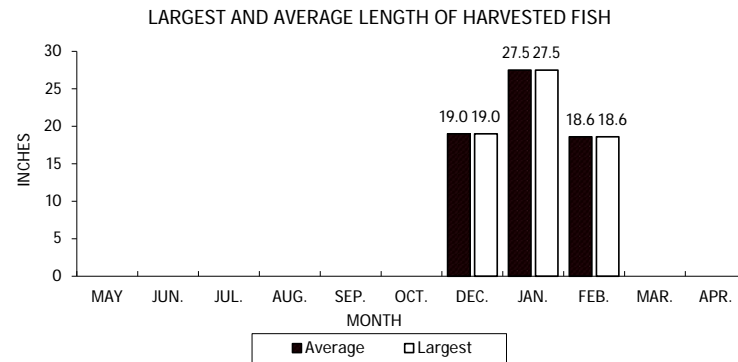
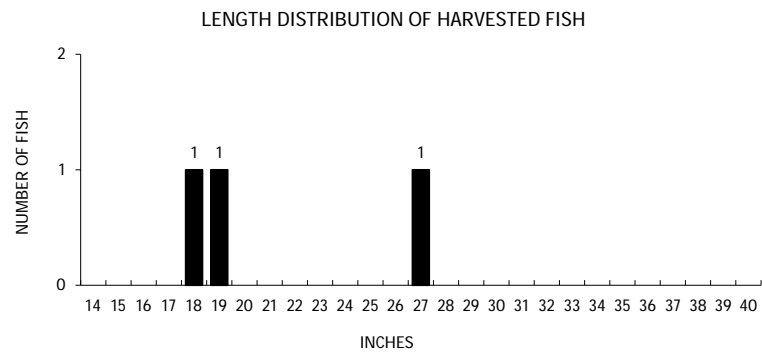
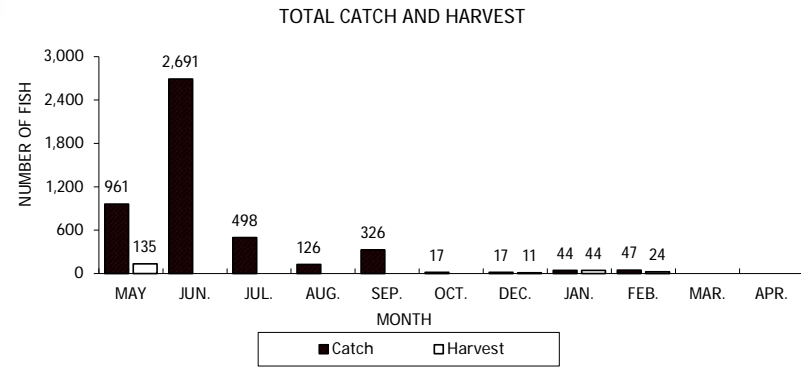
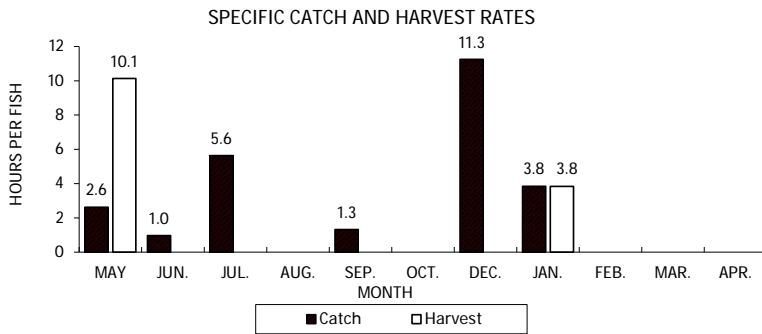
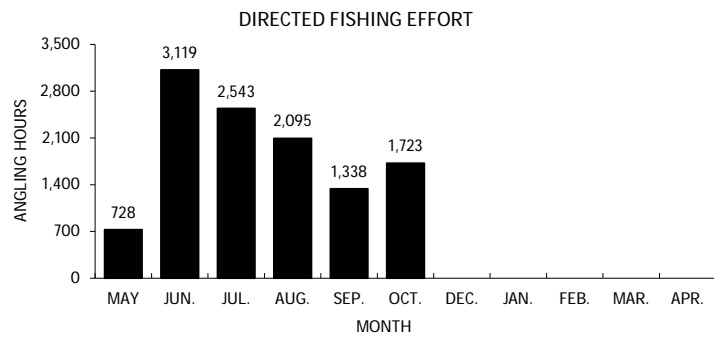


Figure 2. Northern pike fishing effort, catch, harvest and length distribution, Lake Mohawksin, during 2022-23.



## MUSKELLUNGE

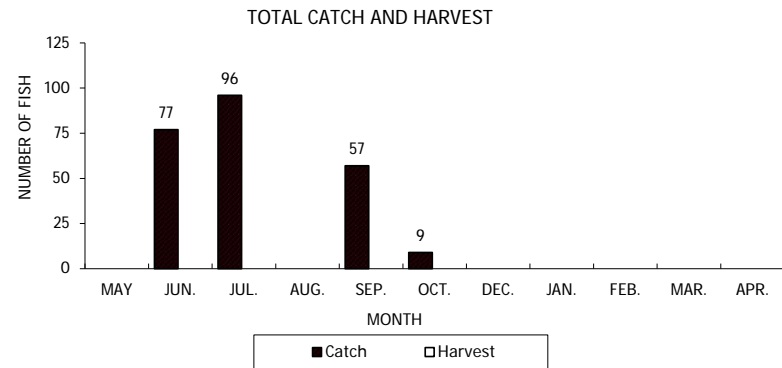
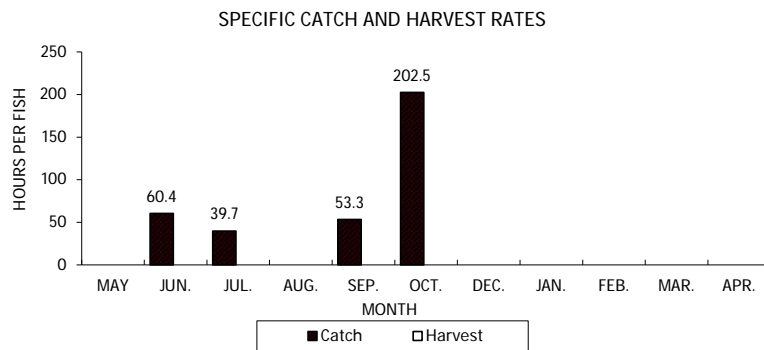


Figure 3. Muskellunge fishing effort, catch and harvest, Lake Mohawksin, during 2022-23.

# SMALLMOUTH BASS

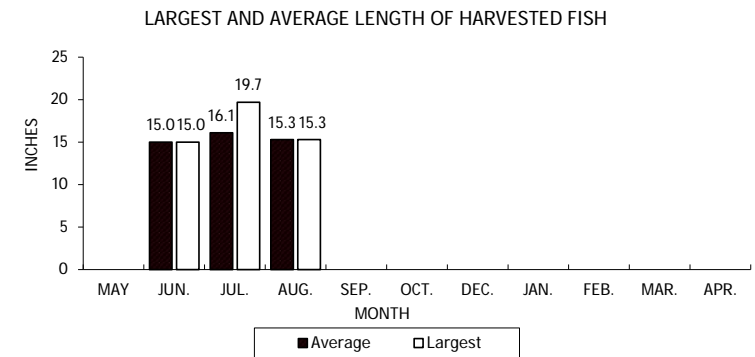
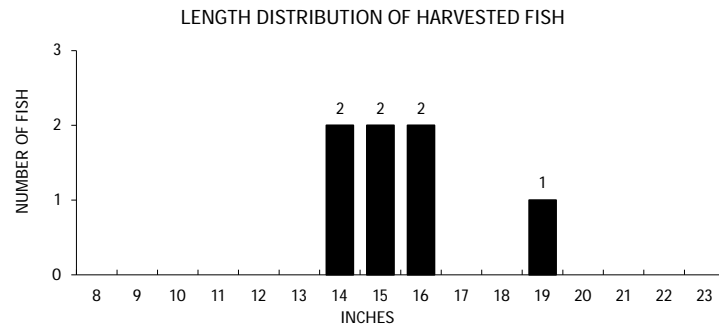
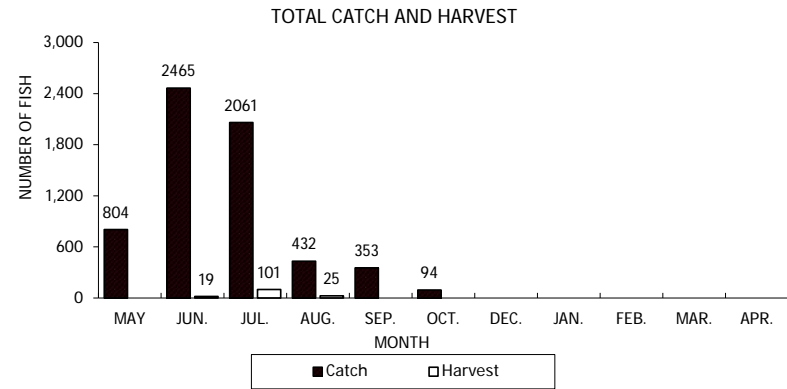
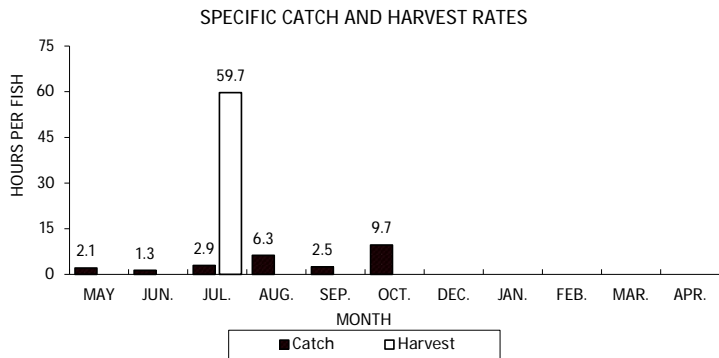
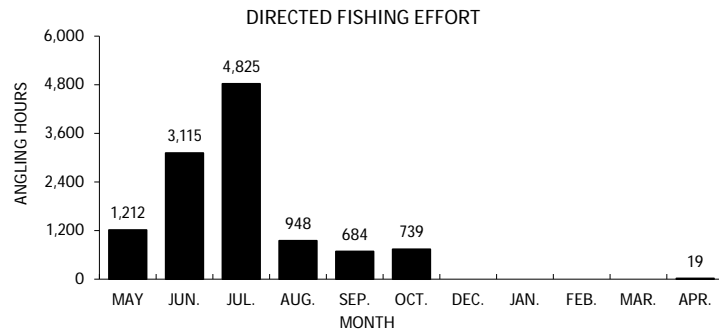


Figure 4. Smallmouth bass fishing effort, catch, harvest and length distribution, Lake Mohawksin, during 2022-23.



# LARGEMOUTH BASS

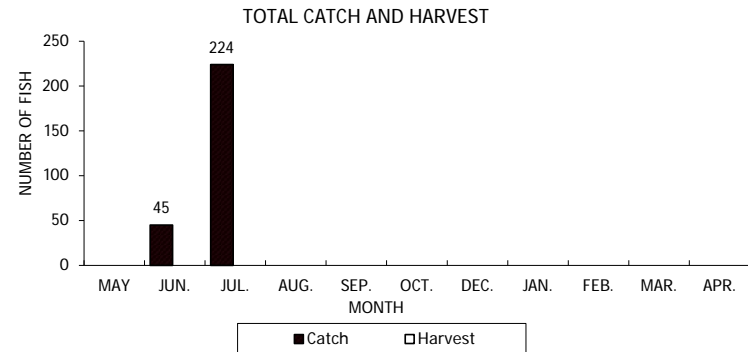
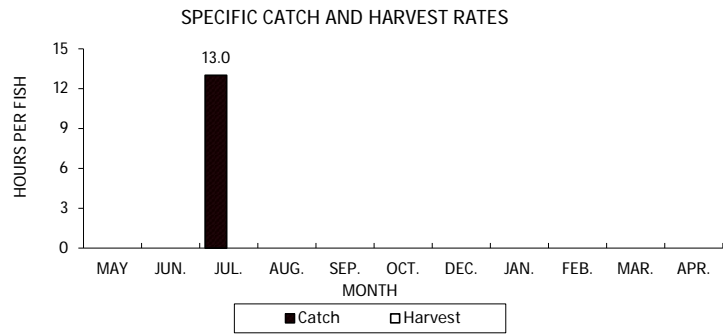
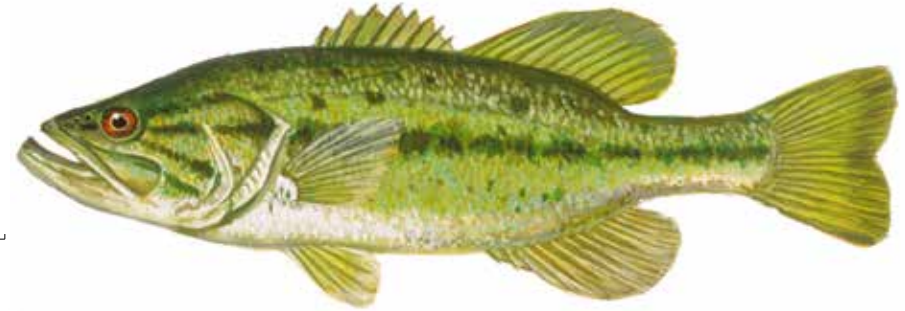


Figure 5. Largemouth bass fishing effort, catch and harvest, Lake Mohawksin, during 2022-23.

# YELLOW PERCH

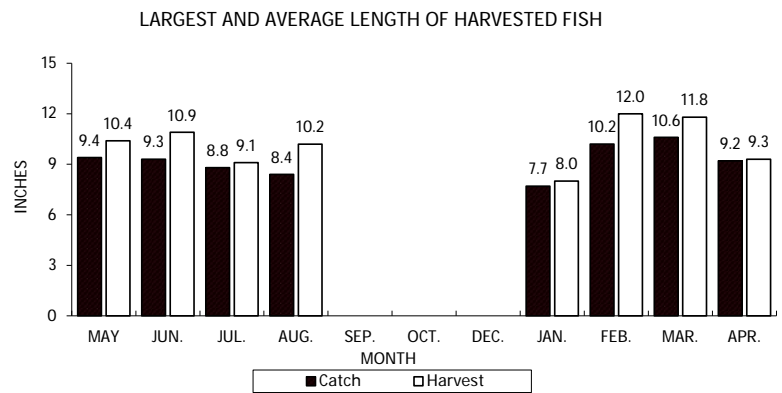
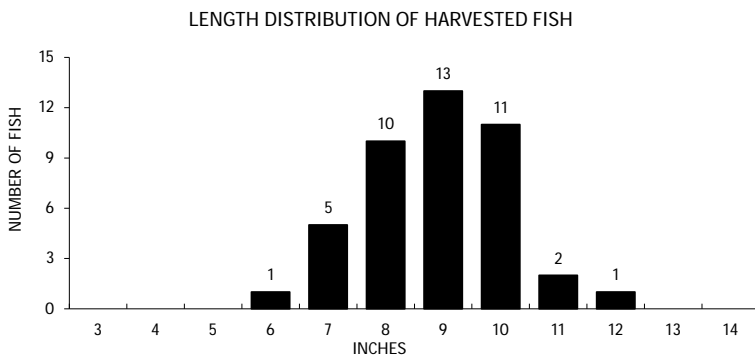
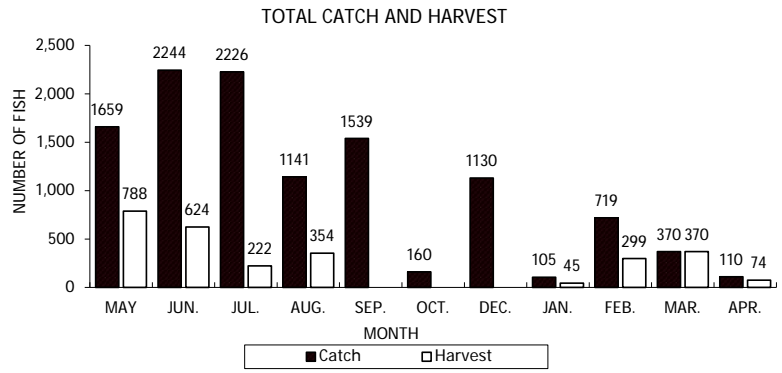
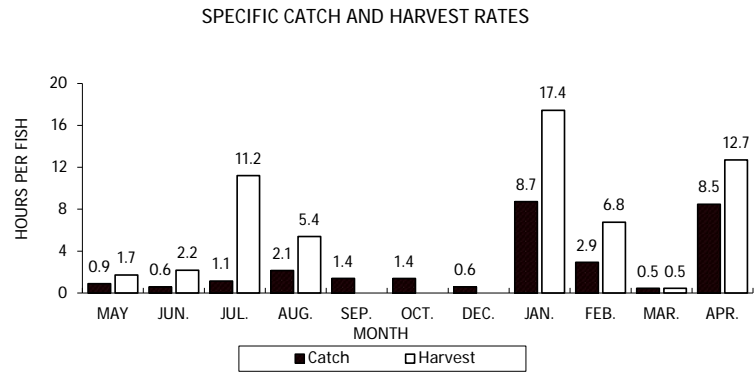
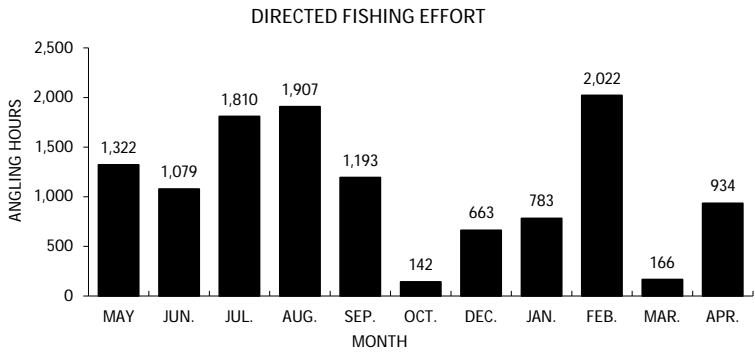


Figure 6. Yellow perch fishing effort, catch, harvest and length distribution, Lake Mohawksin, during 2022-23.

# BLUEGILL

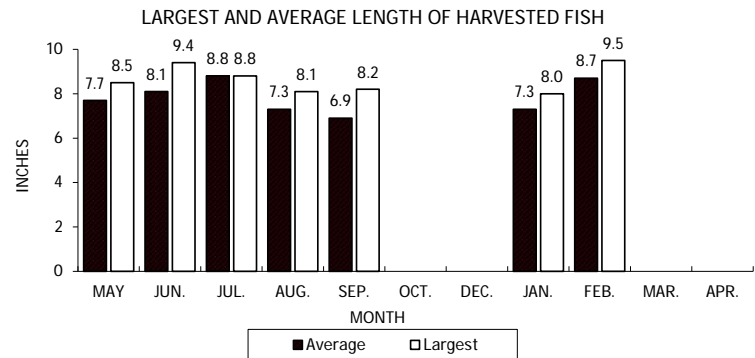
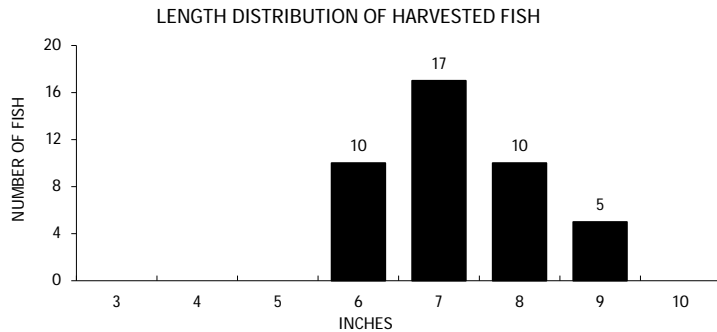
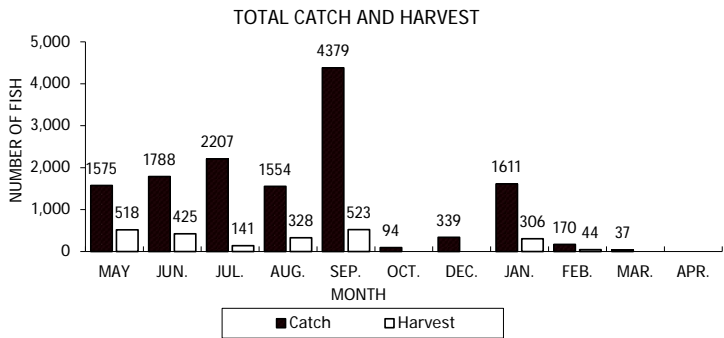
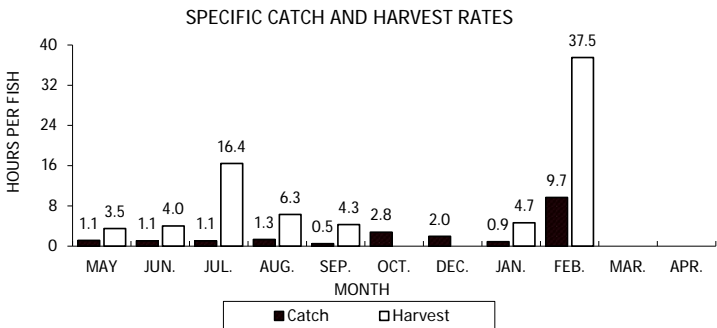
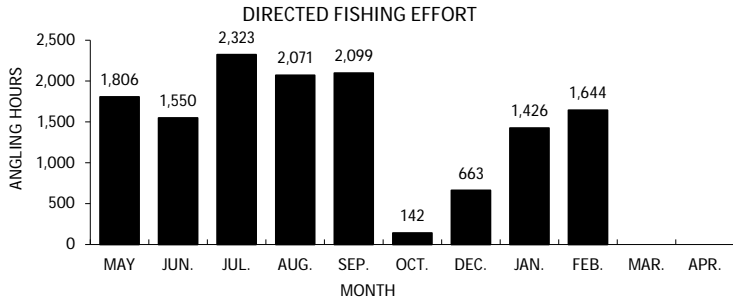


Figure 7. Bluegill fishing effort, catch, harvest and length distribution, Lake Mohawksin, during 2022-23.

# BLACK CRAPPIE

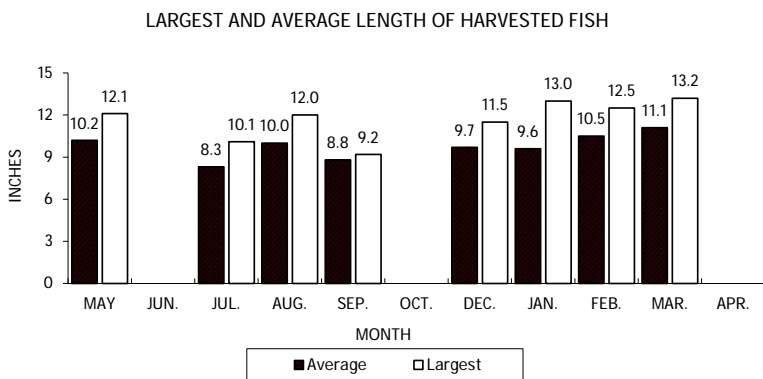
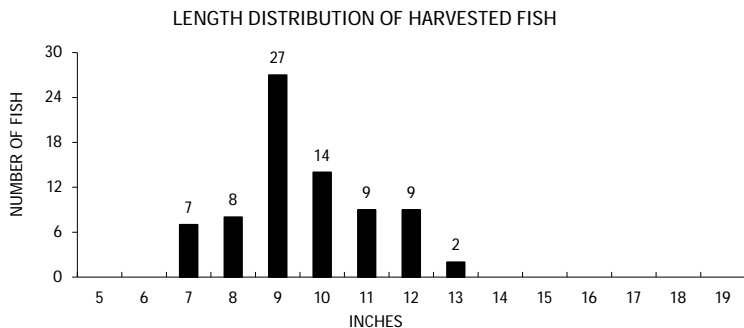
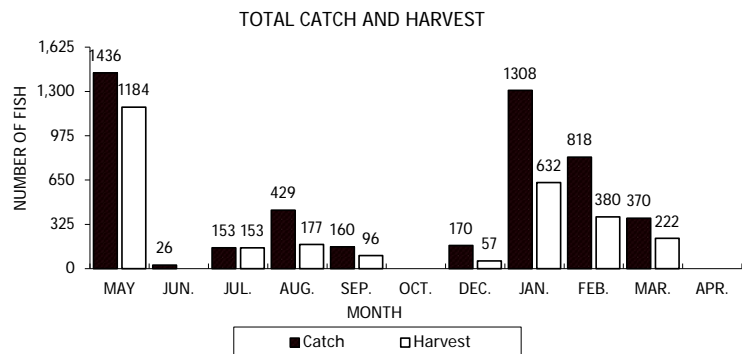
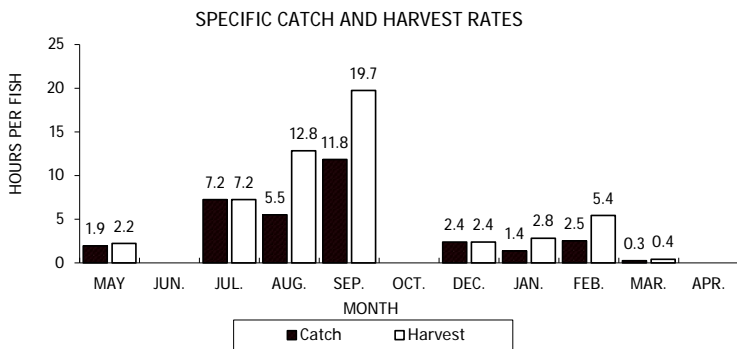
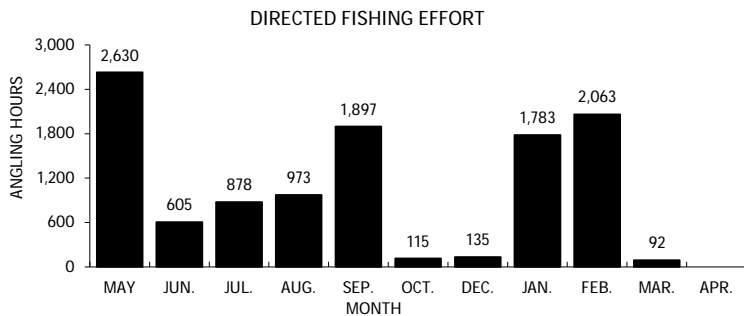
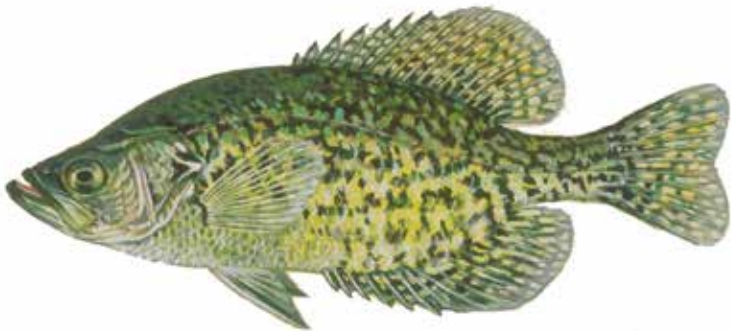


Figure 8. Black crappie fishing effort, catch, harvest and length distribution, Lake Mohawksin, during 2022-23.

# PUMPKINSEED

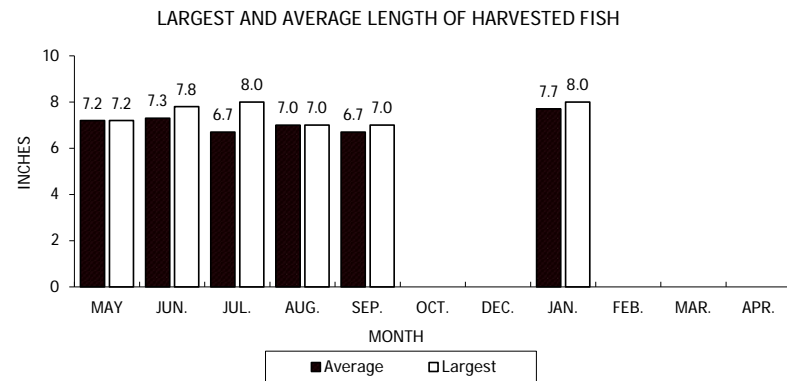
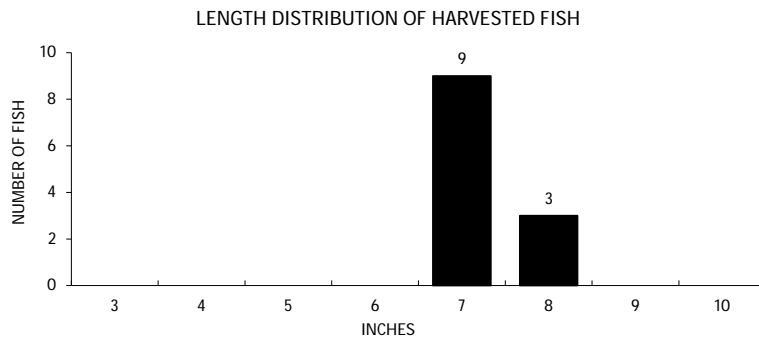
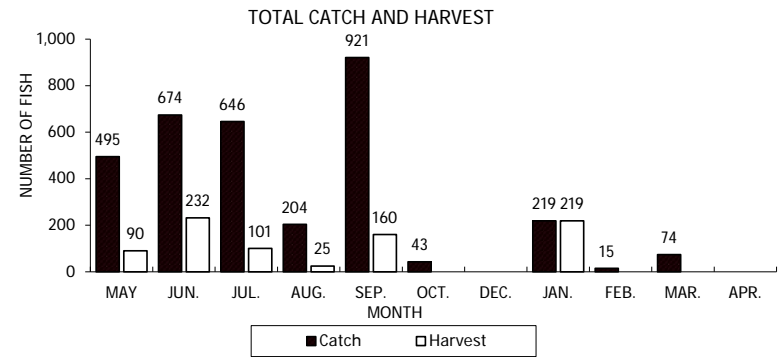
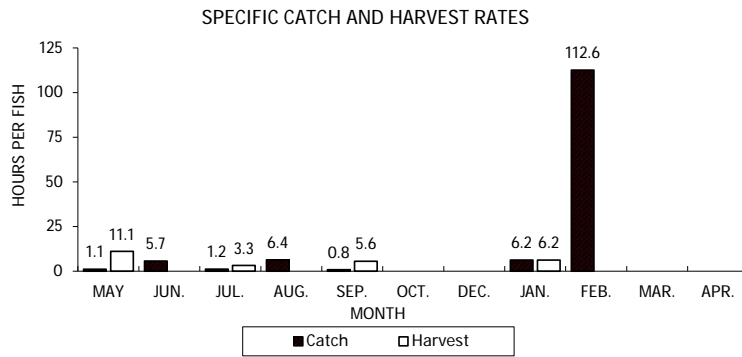
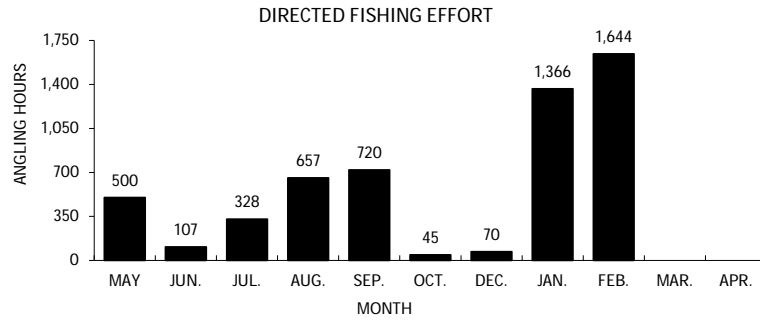
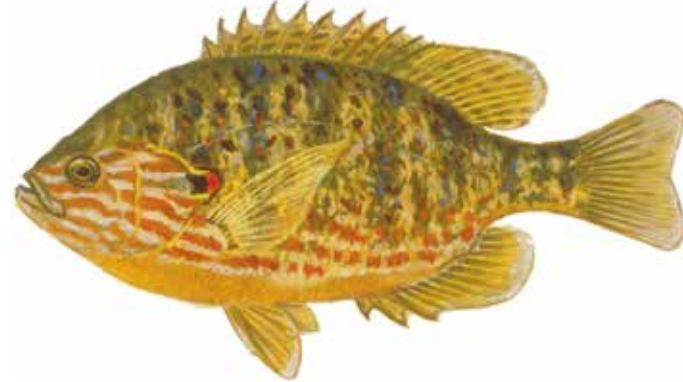


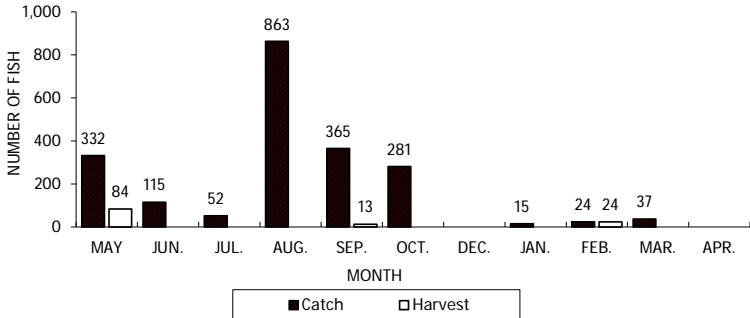
Figure 9. Pumpkinseed fishing effort, catch, harvest and length distribution, Lake Mohawksin, during 2022-23.



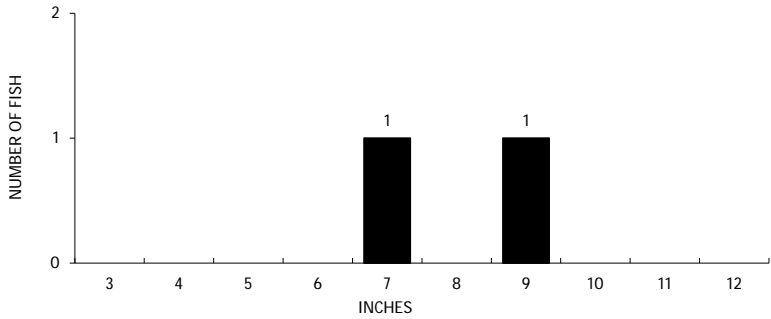
# ROCK BASS



TOTAL CATCH AND HARVEST



LENGTH DISTRIBUTION OF HARVESTED FISH



LARGEST AND AVERAGE LENGTH OF HARVESTED FISH

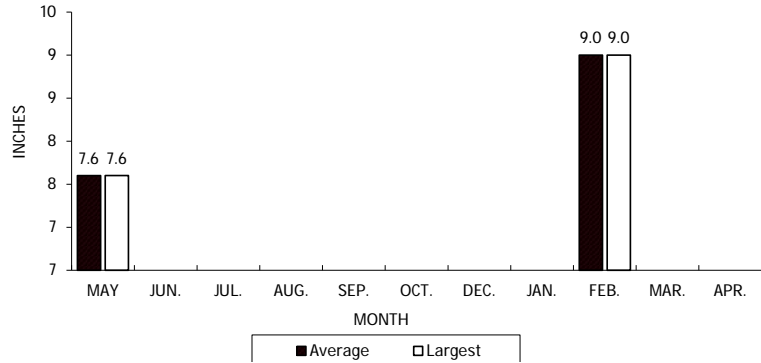


Figure 10. Rock bass catch, harvest and length distribution, Lake Mohawksin, during 2022-23.