WISCONSIN DEPARTMENT OF NATURAL RESOURCES
CREEL SURVEY REPORT

BOLGER LAKE

ONEIDA COUNTY

2015-16

Treaty Fisheries Publication

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CONTENTS

SUMMARY TABLES

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INTRODUCTION

Fish populations can fluctuate due to natural forces (weather, predation, competition), management actions (stocking, regulations, habitat improvement), inappropriate development (habitat degradation), and harvest impacts. Wisconsin Department of Natural Resources fisheries crews regularly conduct fishery surveys on area 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 (species composition, population size, reproductive success, size/age distribution, and growth rates). The other key component of the fishery that we often need to measure is the harvest.

On many lakes in the Ceded Territory of northern Wisconsin, harvest of fish is divided between sport anglers and the six Chippewa tribes who harvest fish under rights granted by federal treaties. The tribes harvest fish mostly using a highly efficient method, spearing, during a relatively short time period in the spring. Every fish in the spear harvest is counted – a complete "census" of the harvest.

We measure the sport harvest to assess its impact on the fishery. However, it would be highly impractical and very costly to conduct a complete census of every angler who fishes on a lake. Therefore, we conduct creel surveys.

A creel survey is an assessment tool used to sample the fishing activities of anglers on a body of water and make projections, or estimates, of harvest and other fishery parameters. Creel survey clerks work on randomly-selected days and shifts, forty hours per week, during 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. The survey is run during daylight hours, and shift times change from month to month as day length changes.

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 is 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 make estimates of total catch and harvest of each species, catch and harvest rates, and total fishing effort by month, as well as for the year in total. Keep in mind that these are only 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, therefore, depends on good cooperation and truthful responses by anglers when a creel clerk interviews them.

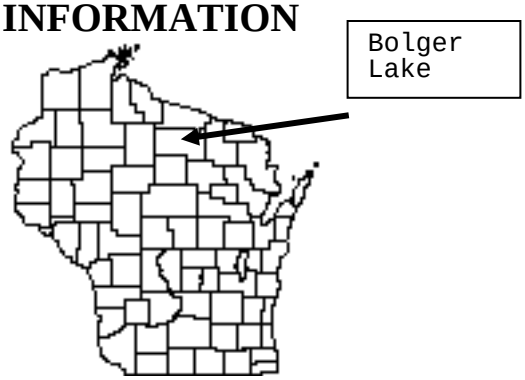
You may have encountered a DNR creel survey clerk on a recent fishing trip. We appreciate your cooperation during an interview. The survey only takes a moment of your time, and it gives the Department valuable information needed for management of the fishery.

This report provides estimates of:

1. Overall fishing effort (pressure)
2. Fishing effort directed at each species
3. Catch and harvest rates
4. Numbers of fish caught and harvested

Also included are a physical description of Bolger Lake; discussion of results of the survey; and detailed summaries, by species, of fishing effort, catch and harvest.

GENERAL LAKE INFORMATION



Location

Bolger Lake is located in Oneida County in the Town of Minocqua.

Physical Characteristics

Bolger Lake is a 119 acre drainage lake with a maximum depth of 39 feet. Littoral substrate consists primarily of sand, with lesser amounts of muck and gravel. Bolger Lake contains soft, slightly acidic, clear water of moderate transparency.

Seasons Surveyed

The period referred to in this report as the 2015-16 fishing season ran from May 2, 2015 through March 6, 2016. The open water creel survey ran from May 2 through October 31, 2015, and the ice fishing creel survey ran from December 1, 2015 through March 6, 2016.

Weather

Ice-out on Bolger Lake was around April 11, 2015. Fishable ice formed on Bolger Lake in late December.

Fishing Regulations

The following seasons, daily bag limits, and length limits were in place on Bolger Lake during the 2015-16 fishing season:

Species	Season	Bag Limit	Min. Size
Largemouth Bass	5/2-3/6	5	14"
Smallmouth Bass	5/2-6/19	Catch&Release	
	6/20-3/6	5	14"
Musky	5/23-11/30	1	40"
Northern Pike	5/2-3/6	5	none
Walleye	5/2-3/6	3	15"
20"-24" Protected Slot, 1>24"			
Panfish	year round	25	none
Rock Bass	year round	none	none

SPECIES CATCH AND HARVEST INFORMATION

Angling effort, catch, and harvest information is summarized for each species in Table 2 and Figures 1-10. Table 2 also includes a comparison of these statistics with the previous creel survey. Information presented about species whose fishing season extends beyond March 6 should be considered minimum estimates. Each species page has up to five graphs depicting the following:

1. **ESTIMATED FISHING EFFORT**
   Total calculated number of hours during each month that anglers spent fishing for a species.

2. **ESTIMATED SPECIFIC CATCH AND HARVEST RATES**
   Calculated 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.

3. ESTIMATED CATCH AND HARVEST

Calculated number of fish of the indicated species caught or harvested by all anglers, regardless of targeted species.

4. 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

Monthly largest and average length of harvested fish of a species. Only those fish measured by the creel survey clerk are reported.

CREEL SURVEY RESULTS AND DISCUSSION

Survey Logistics

The creel survey went well. We encountered no unusual problems conducting the survey or calculating the estimates contained in the report. This was the second time the department conducted a creel survey on Bolger Lake. The last creel survey took place in 2003-04.

General Angler Information

Anglers spent 3,731 hours, or 31.4 hours per acre, fishing Bolger Lake during the 2015-16 season (Table 1). That was less than the Oneida County average of 33.7 hours per acre. May was the most heavily fished month (833 hours). Fishing effort was lightest in December (0 hours) due to poor ice conditions. Anglers spent more time (37.4 hours per acre) fishing during the 2003-04 creel survey. The creel clerks were able to conduct 214 interviews throughout the survey.

RESULTS BY SPECIES

Walleye (Table 2, Figure 1)

Anglers spent 1,130 hours targeting walleye during the 2015-16 season. The greatest fishing effort for walleyes was in May (255 hours). October had the least amount of walleye fishing effort (49 hours).

Total catch of walleyes was 98 fish with a harvest of 28 fish. Highest catch (41 fish) occurred in May, and highest harvest (16 fish) occurred in June. Anglers fished 12.4 hours to catch, and 40.2 hours to harvest, a walleye during the survey. The mean length of harvested walleyes was 16.8 inches, and the largest walleye measured was a 19.2-inch fish.

Northern Pike (Table 2, Figure 2)

Fishing effort directed at northern pike was 525 hours during the 2015-16 season. Northern pike fishing effort was greatest in February (189 hours). Total catch of northern pike was 177 fish with a harvest of 23 fish. The mean length of harvested northern pike was 21.5 inches, and the largest northern pike measured was a 26.2-inch fish.

Muskellunge (Table 2, Figure 3)

Anglers spent 761 hours targeting muskellunge during the 2015-16 season. Muskellunge fishing effort was greatest in August (210 hours). Total catch of muskellunge was 28 fish, and the highest catch (10 fish) occurred in May. Anglers fished 52.1 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 2015-16 season. Fishing effort targeted

at smallmouth bass was 1,850 hours. Smallmouth bass fishing effort was greatest in May (543 hours). Total catch of smallmouth bass was 1,344 fish, with 30 being harvested. Highest catch (418 fish) occurred in May. Anglers fished 1.9 hours to catch a smallmouth bass during the survey.

Largemouth Bass (Table 2, Figure 5)

Fishing effort directed at largemouth bass was 1,597 hours during the 2015-16 season. Largemouth bass fishing effort was greatest in May (560 hours). Total catch of largemouth bass was 767 fish, with a harvest of 9 fish. Highest catch (296 fish) occurred in May. Anglers fished 2.3 hours to catch a largemouth bass during the survey.

Panfish (Table 2, Figures 6-10)

Yellow perch received 471 hours of directed fishing effort. Total catch of yellow perch was 378 fish, with 73 being harvested. The mean length of yellow perch harvested was 8.7 inches.

Bluegills were the most sought after panfish species during the survey. Fishing effort directed at bluegills was 697 hours. Total catch of bluegills was 2,395 fish, with 213 being harvested. The mean length of bluegills harvested was 7.3 inches.

Black crappies received 428 hours of directed fishing effort. Anglers caught 158 black crappies and harvested 3 fish. The mean length of black crappies harvested was 11.2 inches.

Pumpkinseeds were also caught during the 2015-16 season; however, no harvest was documented.

Rock bass received only 8 hours of directed fishing effort. However, anglers caught 1,855 rock bass and harvested 505 fish. The mean length of rock bass harvested was 8.2 inches.

ACKNOWLEDGMENTS

Completion of this survey was possible because of the efforts of the following fisheries management and treaty fisheries staff: Lawrence Eslinger, Jeff Blonski, Joelle Underwood, Jason Halverson, John Kubisiak, and Steve Timler. John Davis and April Mikul were the creel clerks on Bolger Lake during the survey period.

We thank all the anglers who took the time to offer information about their fishing trip to the survey clerk. Without their cooperation the survey would not have been possible.

The department thanks our cooperators, Dan and Carolyn Langowski, who generously allowed the department to keep a boat on their property during this survey.

This creel report was reviewed by John Kubisiak and Lawrence Eslinger of the Wisconsin Department of Natural Resources, Woodruff, Wisconsin.

Additional copies of this report, and those covering other local lakes, can be obtained from the Woodruff DNR or online at:
http://dnr.wi.gov/topic/Fishing/north/trtycrlsrvys.html

Table 1. Sportfishing effort summary, Bolger Lake, 2015-16 Season.

Month	Number of Angler Party Interviews	Total Angler Hours	Total Angler Hours/Acre	2003-04 Bolger Total Angler Hours/Acre	Oneida County Average Hours/Acre	Ceded Territory Average Hours/Acre
May	24	833	7.0	4.2	4.8	5.0
June	37	742	6.2	8.7	6.4	6.4
July	37	556	4.7	7.8	7.3	6.8
August	32	577	4.8	5.5	5.7	5.5
September	22	264	2.2	2.4	3.3	3.3
October	23	242	2.0	3.0	1.7	1.5
December	0	0	0.0	1.5	1.2	1.1
January	13	148	1.2	2.8	1.5	1.7
February	15	272	2.3	1.5	1.5	1.6
March	11	98	0.8	0.0	0.3	0.2
*Summer Total	175	3214	27.0	31.6	29.2	28.5
*Winter Total	39	518	4.4	5.9	4.5	4.6
Grand Total	214	3731	31.4	37.4	33.7	33.1

*"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 Bolger 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 Bolger Lake to other lakes.

2003-04 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 Bolger 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 Bolger Lake to other lakes in northern Wisconsin.

Table 2. Comparison of creel survey synopses, Bolger Lake, 2015-16 and 2003-04 fishing seasons.

CREEL YEAR: 2015-16

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	1130	15.1%	98	12.4	28	40.2	16.8
Northern Pike	525	7.0%	177	5.2	23	22.7	21.5
Muskellunge	761	10.1%	28	52.1	0		
Smallmouth Bass	1850	24.7%	1344	1.9	30	79.4	15.5
Largemouth Bass	1597	21.3%	767	2.3	9	178.6	14.1
Yellow Perch	471	6.3%	378	1.7	73	8.2	8.7
Bluegill	697	9.3%	2395	0.3	213	4.3	7.3
Black Crappie	428	5.7%	158	2.8	3	137.0	11.2
Pumpkinseed	32	0.4%	5	5.8	0		
Rock Bass	8	0.1%	1855	2.5	505		8.2

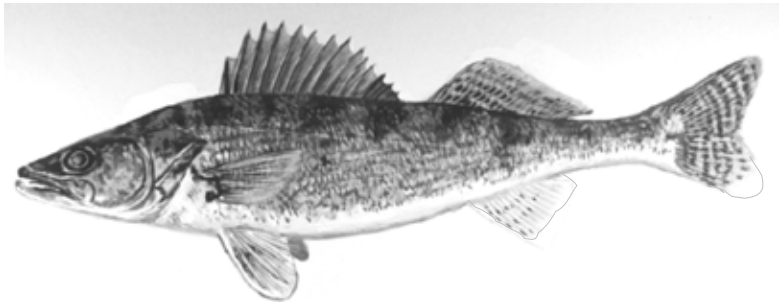
* A blank cell in this column indicates that no fish of a given species were caught by anglers who specifically targeted that species.

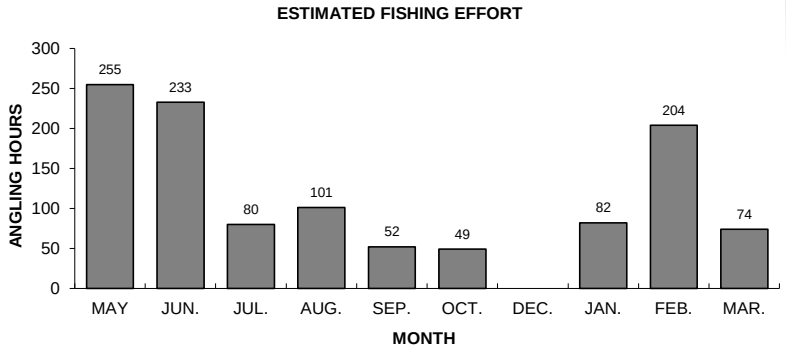
** A blank cell in this column indicates that no fish of a given species were harvested by anglers who specifically targeted that species.

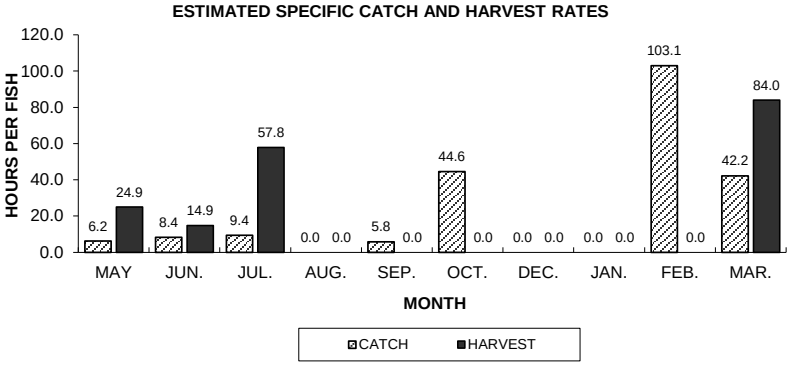
CREEL YEAR: 2003-04

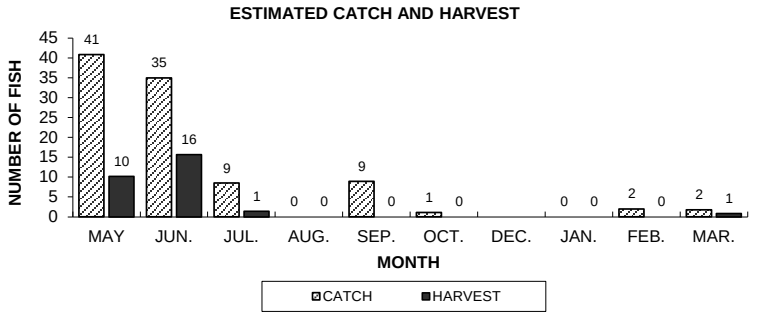
SPECIES	DIRECTED EFFORT (Hours)	PERCENT OF TOTAL	TOTAL CATCH	SPECIFIC CATCH RATE (Hrs/Fish)	TOTAL HARVEST	SPECIFIC HARVEST RATE (Hrs/Fish)	MEAN LENGTH OF HARVESTED FISH
Walleye	1911	31.2%	142	14.7	43	62.9	17.2
Northern Pike	53	0.9%	51	7.4	32	7.4	21.8
Muskellunge	704	11.5%	26	28.0	0		
Smallmouth Bass	1160	19.0%	1470	1.3	37	86.2	15.1
Largemouth Bass	355	5.8%	121	9.5	2	188.7	19.3
Yellow Perch	378	6.2%	437	1.2	297	1.5	8.6
Bluegill	1268	20.7%	4884	0.3	1148	1.2	7.3
Black Crappie	91	1.5%	72	1.5	68	1.6	10.6
Pumpkinseed	0	0.0%	81		4		7.1
Rock Bass	201	3.3%	1701	0.3	297	1.0	7.8

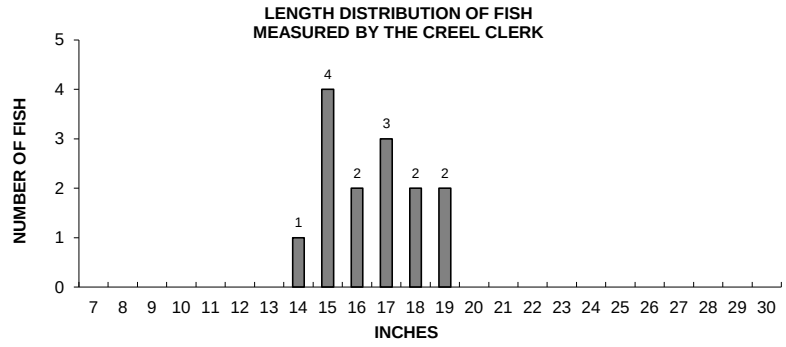
WALLEYE











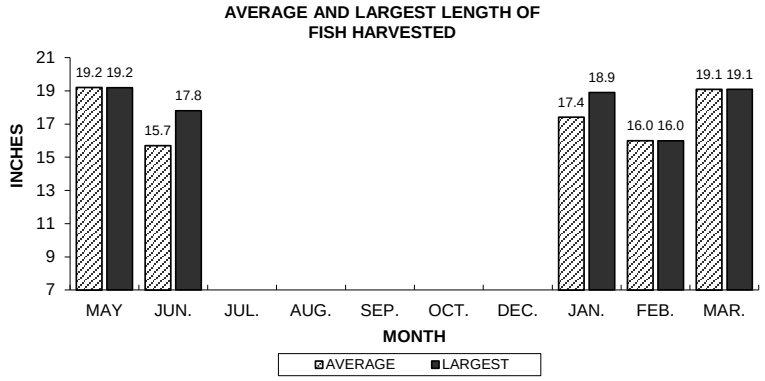
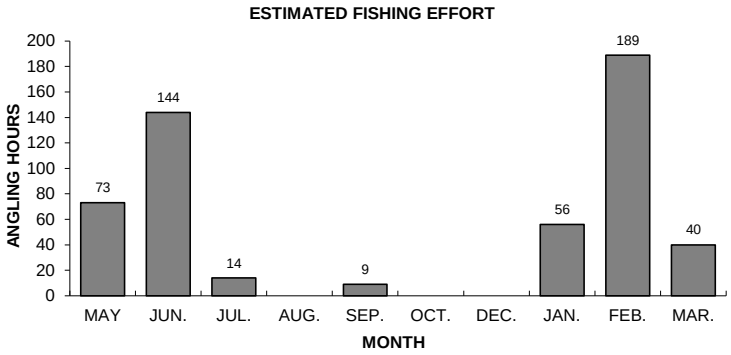
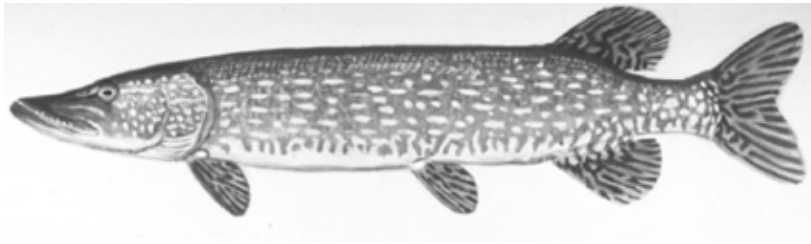
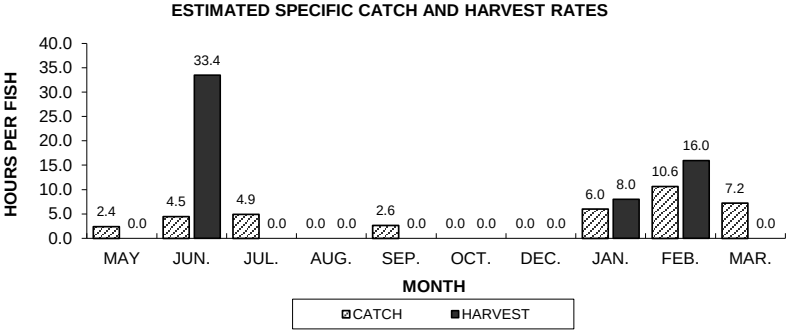


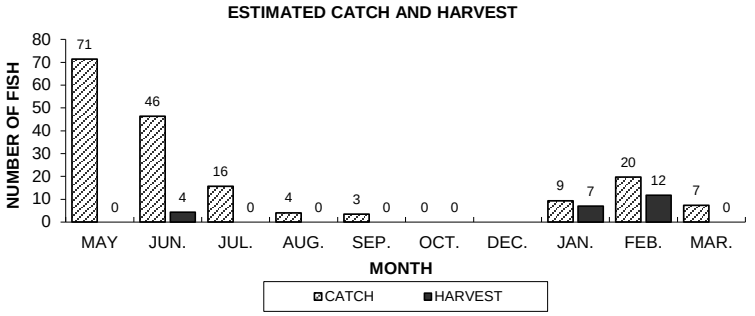
Figure 1. Walleye sportfishing effort, catch, harvest, and length distribution, Bolger Lake, during 2015-16.

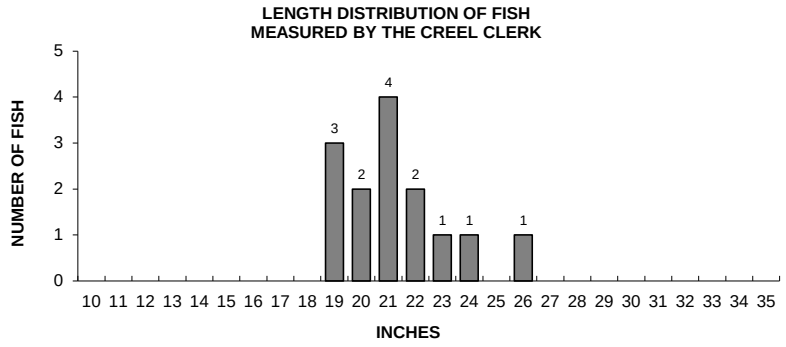


NORTHERN PIKE









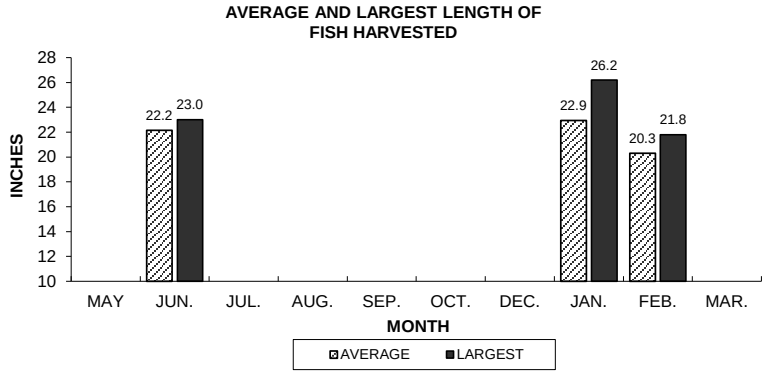
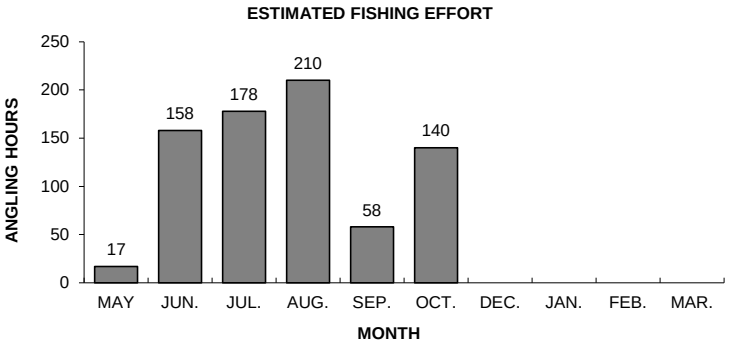
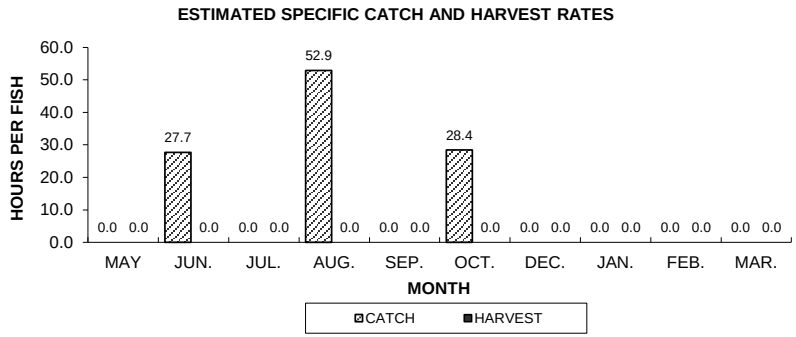


Figure 2. Northern pike sportfishing effort, catch, harvest, and length distribution, Bolger Lake, during 2015-16.

MUSKELLUNGE





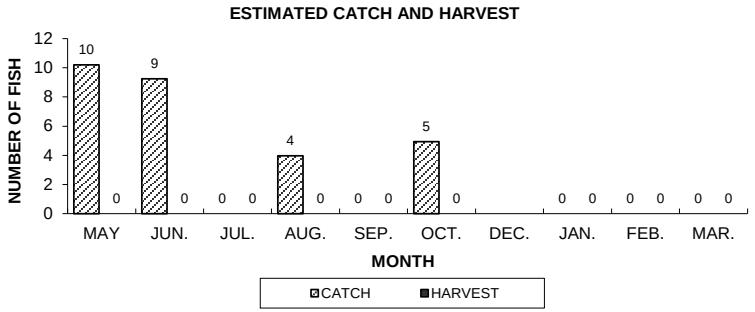
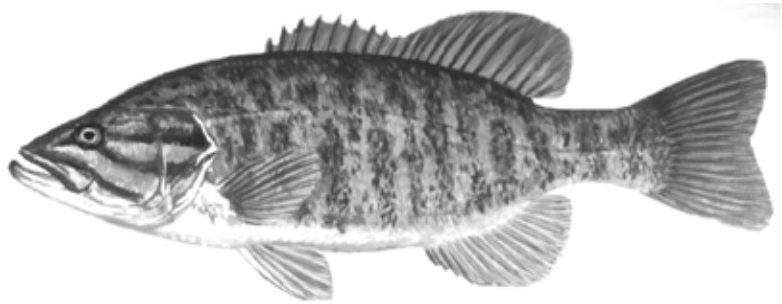
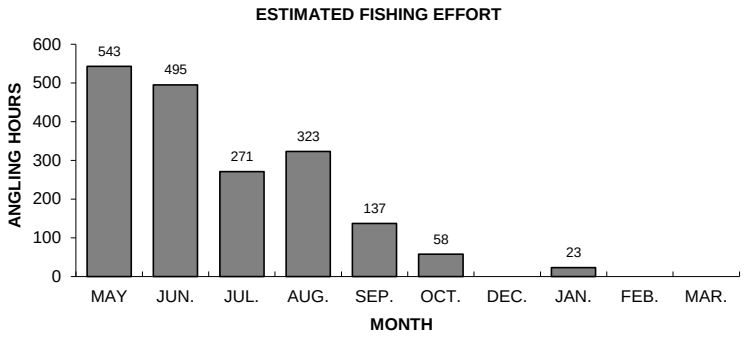
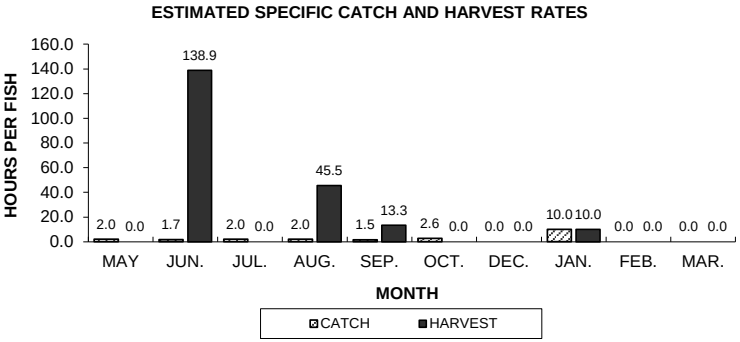


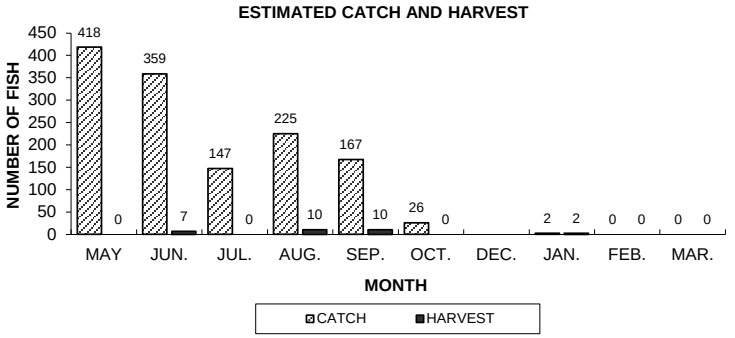
Figure 3. Muskellunge sportfishing effort, catch, harvest, and length distribution, Bolger Lake, during 2015-16.

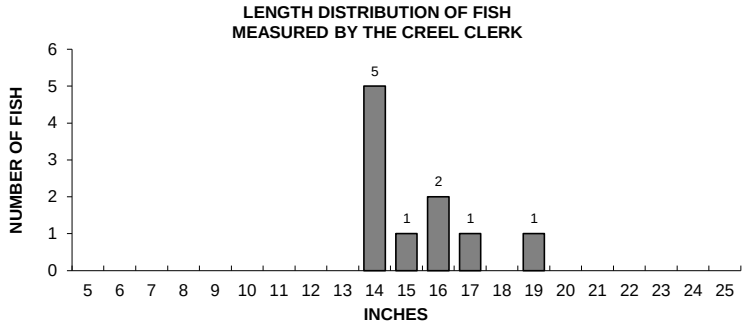
SMALLMOUTH BASS











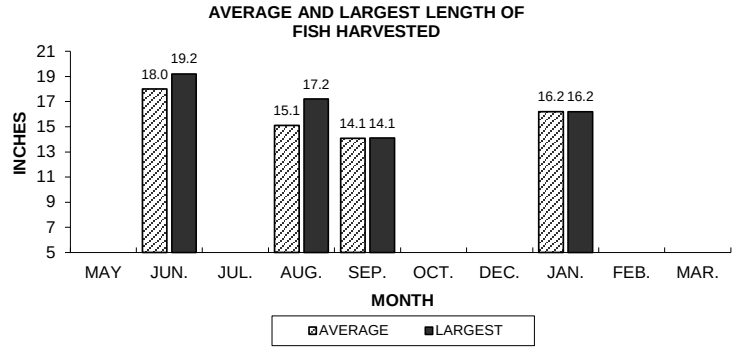
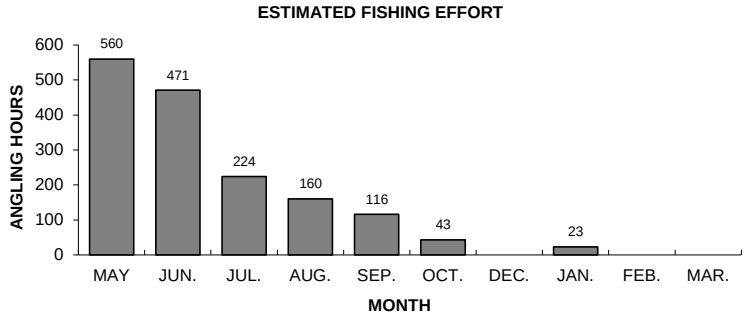
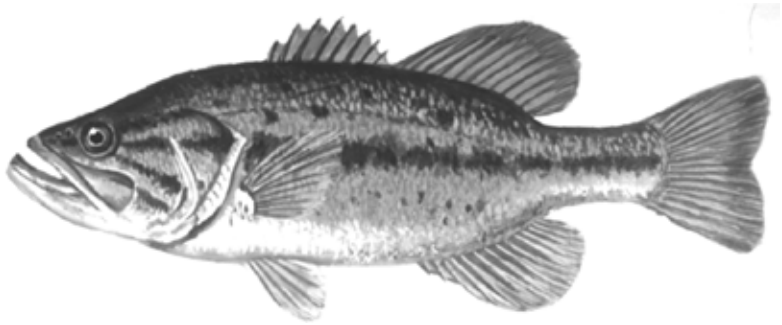
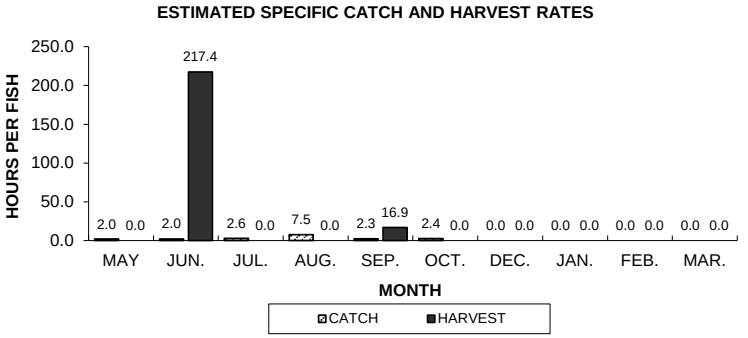


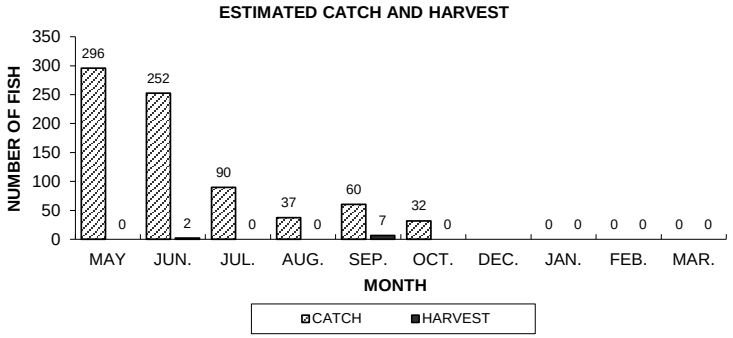
Figure 4. Smallmouth bass sportfishing effort, catch, harvest, and length distribution, Bolger Lake, during 2015-16.

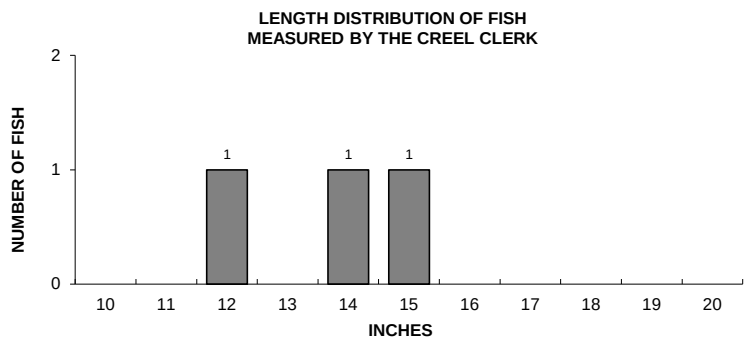
LARGEMOUTH BASS











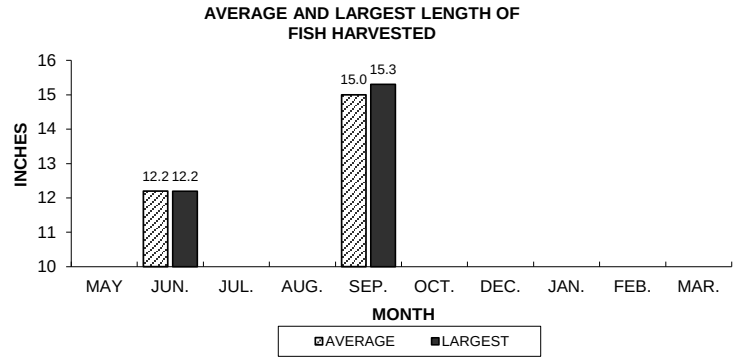
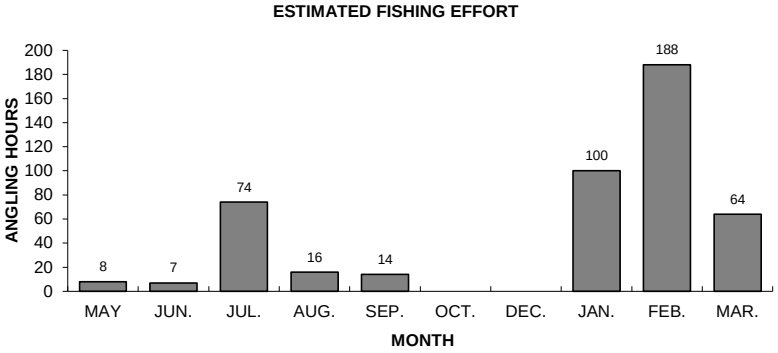
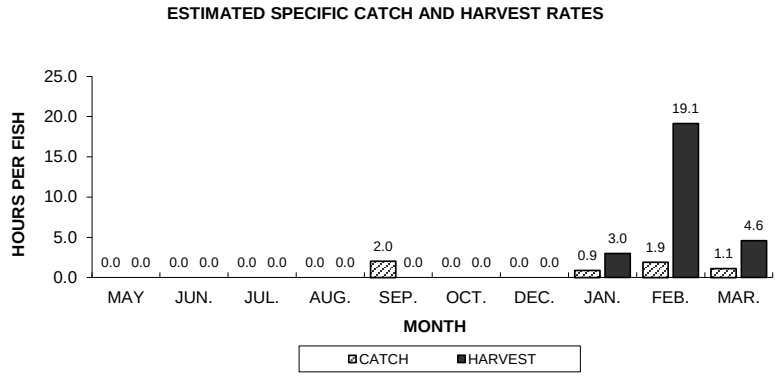
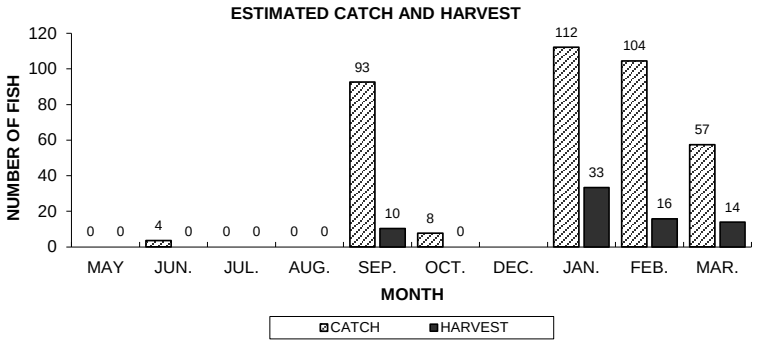


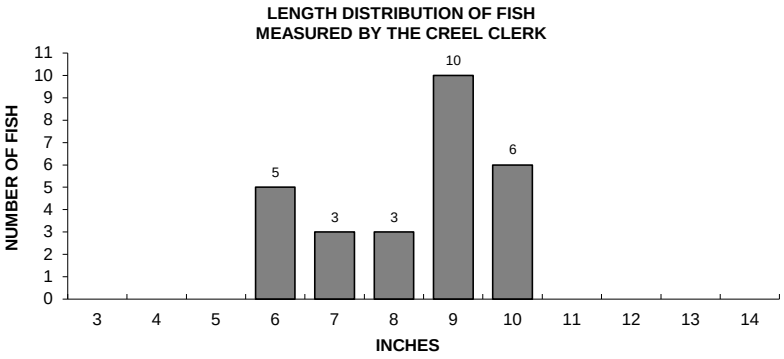
Figure 5. Largemouth bass sportfishing effort, catch, harvest, and length distribution, Bolger Lake, during 2015-16.

YELLOW PERCH









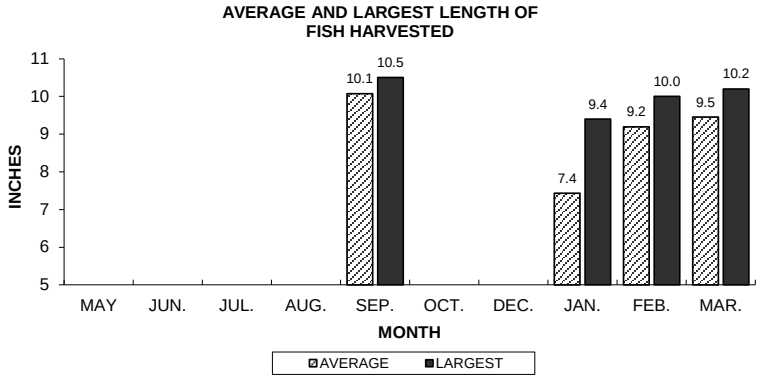
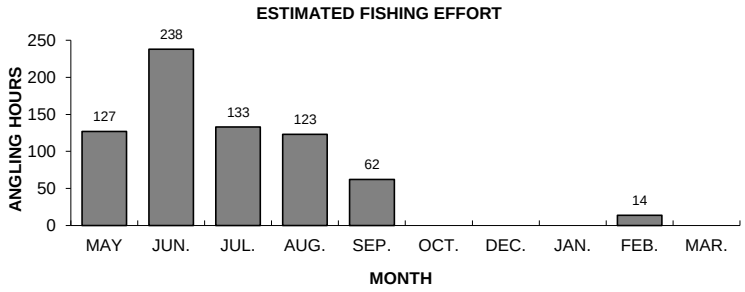
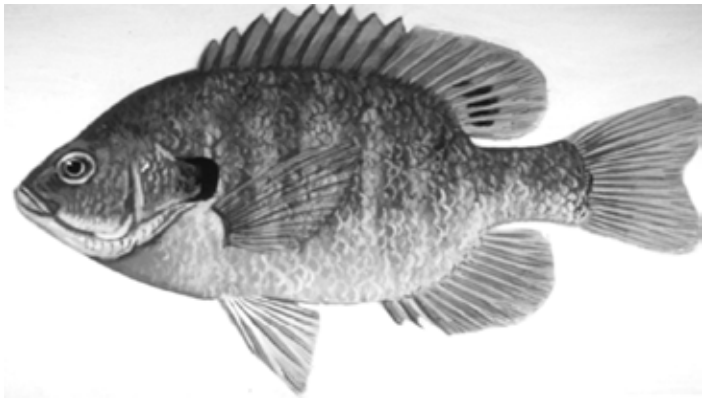
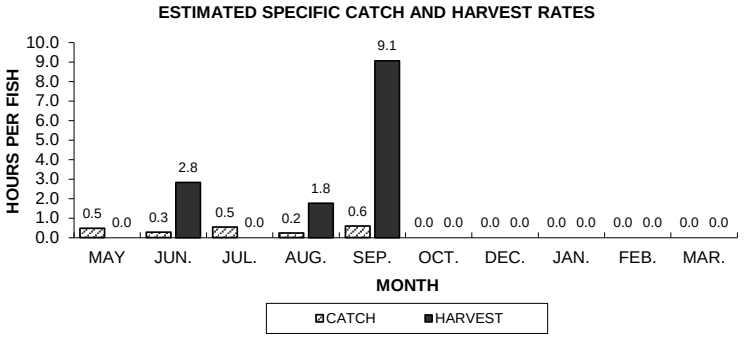


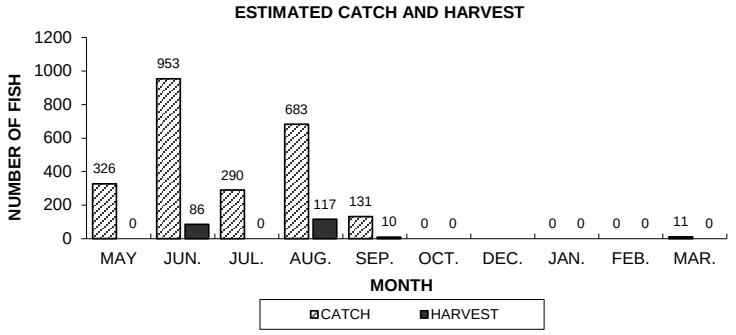
Figure 6. Yellow perch sportfishing effort, catch, harvest, and length distribution, Bolger Lake, during 2015-16.

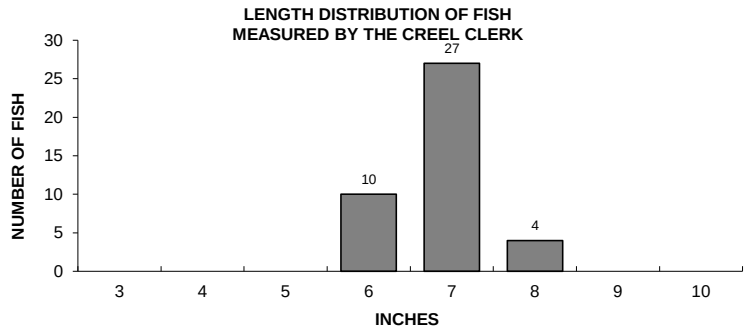
BLUEGILL











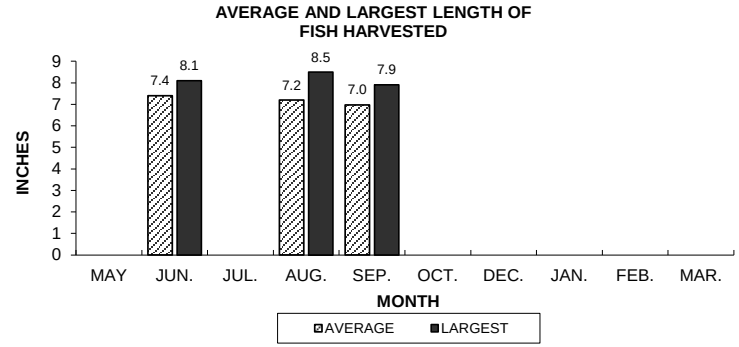
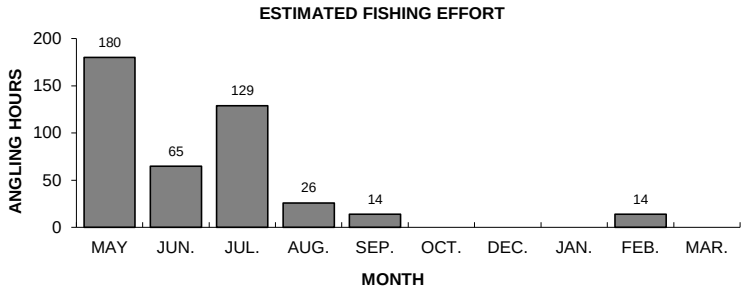
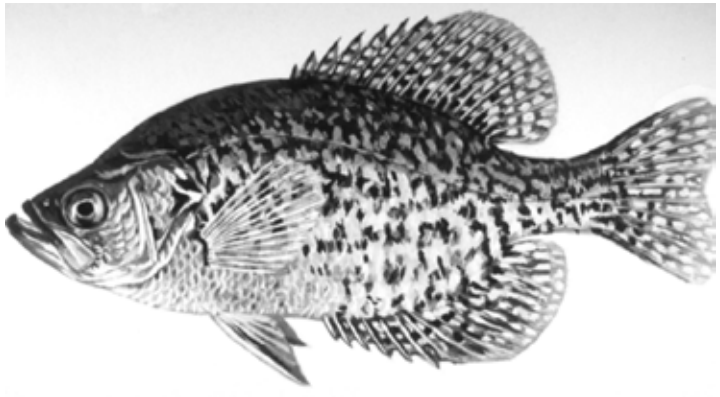
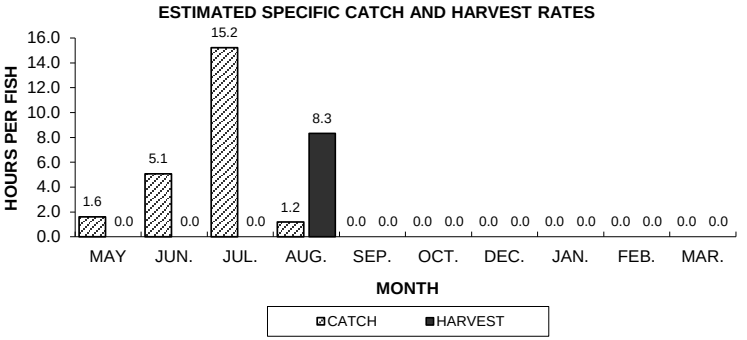


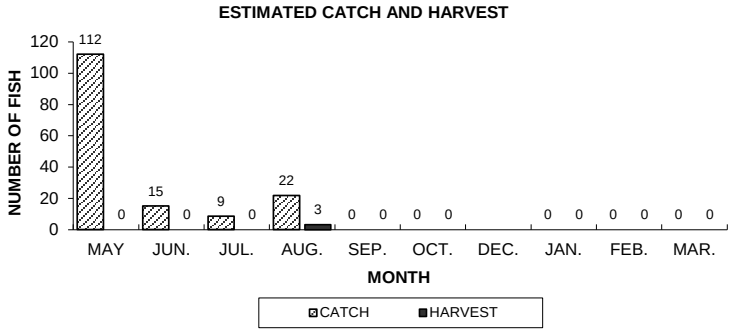
Figure 7. Bluegill sportfishing effort, catch, harvest, and length distribution, Bolger Lake, during 2015-16.

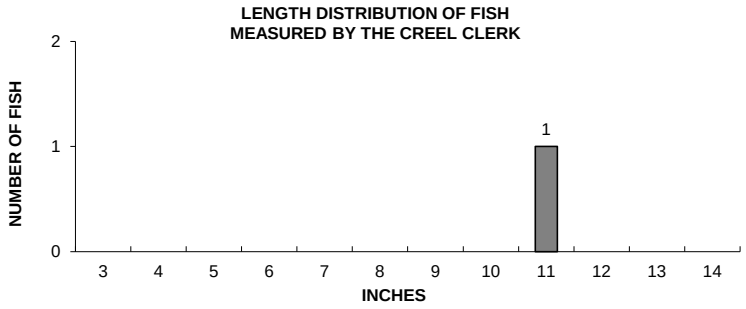
BLACK CRAPPIE











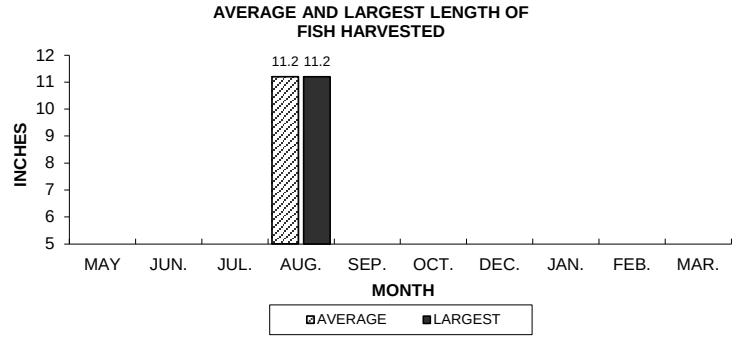
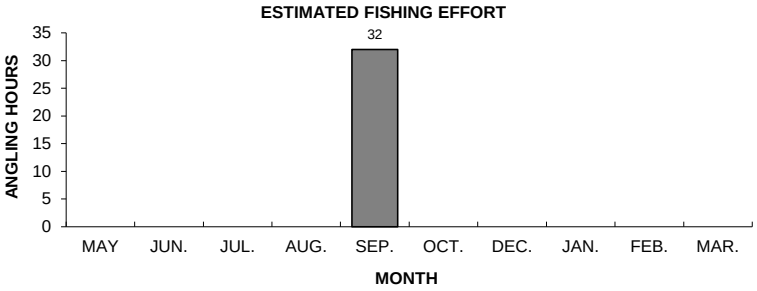
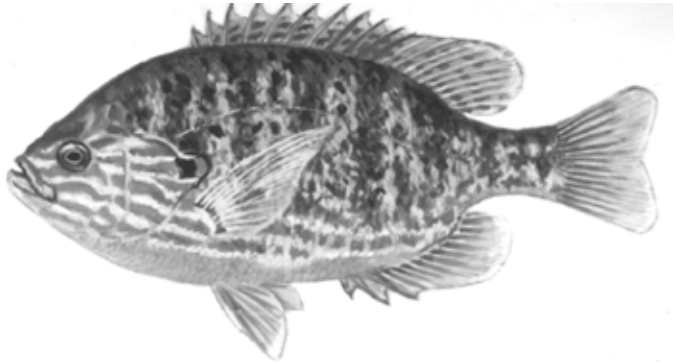
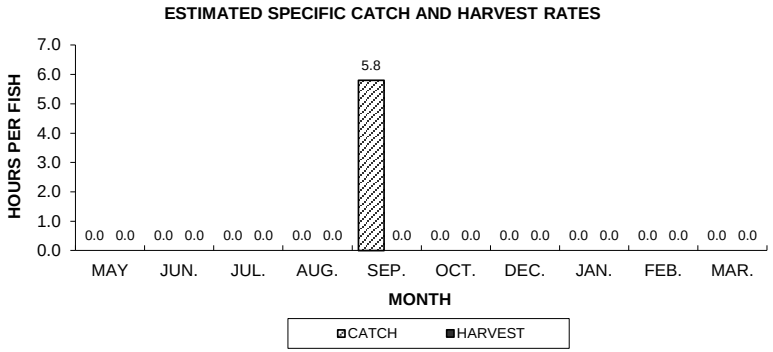


Figure 8. Black crappie sportfishing effort, catch, harvest, and length distribution, Bolger Lake, during 2015-16.

PUMPKINSEED







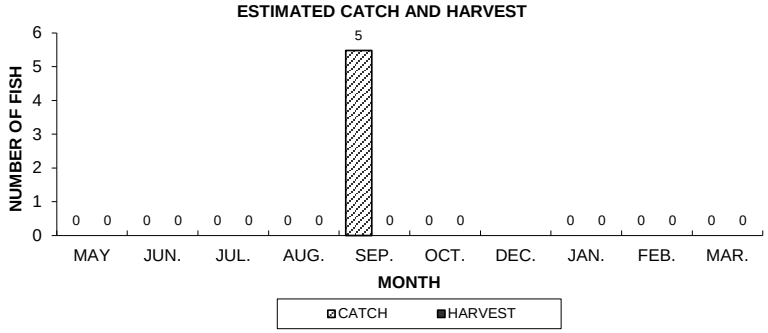
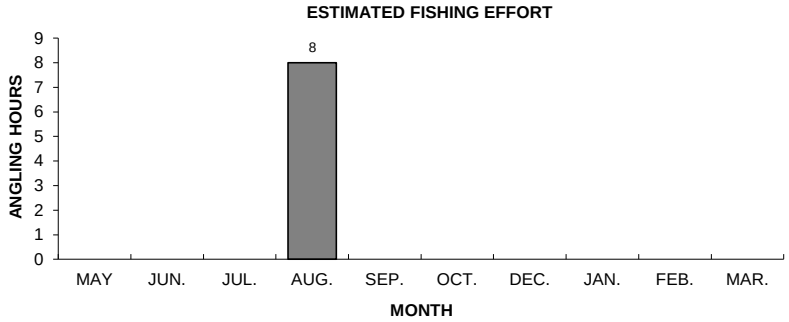
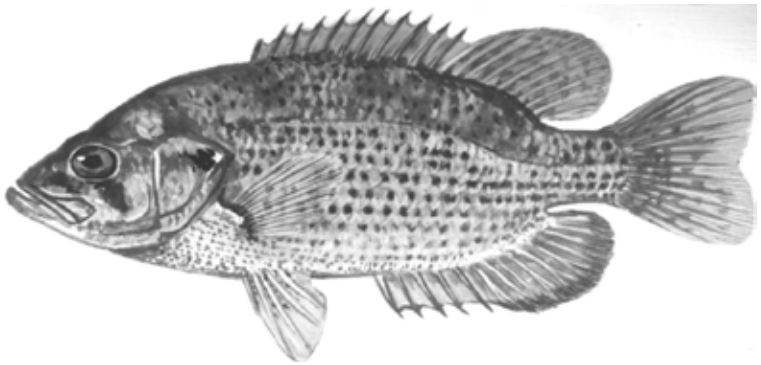
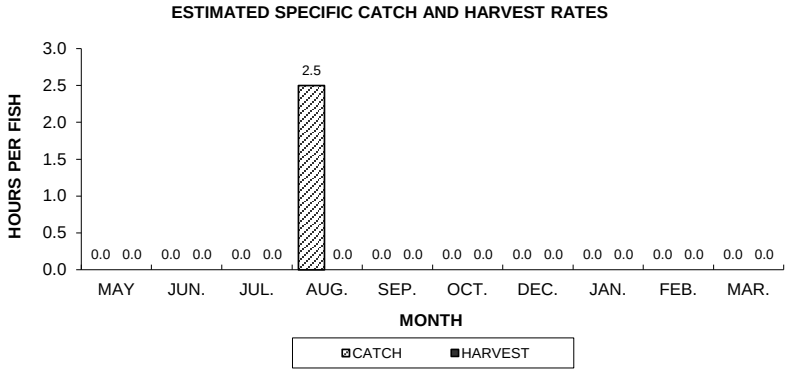


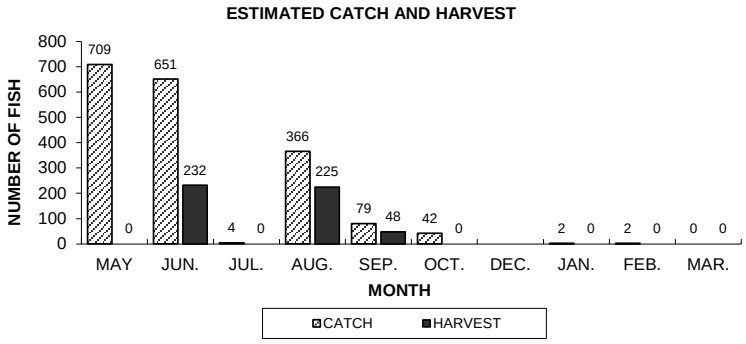
Figure 9. Pumpkinseed sportfishing effort, catch, harvest, and length distribution, Bolger Lake, during 2015-16.

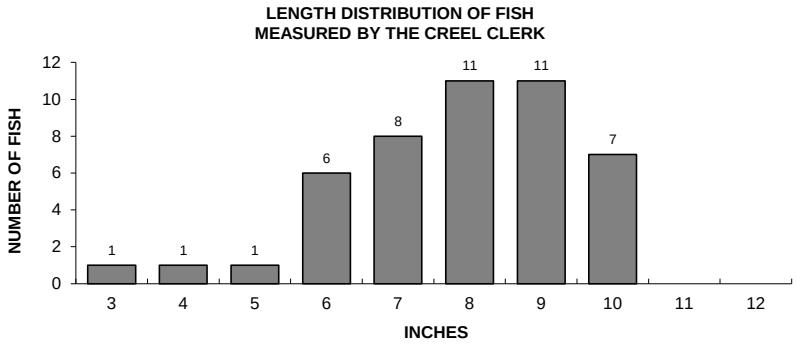
ROCK BASS











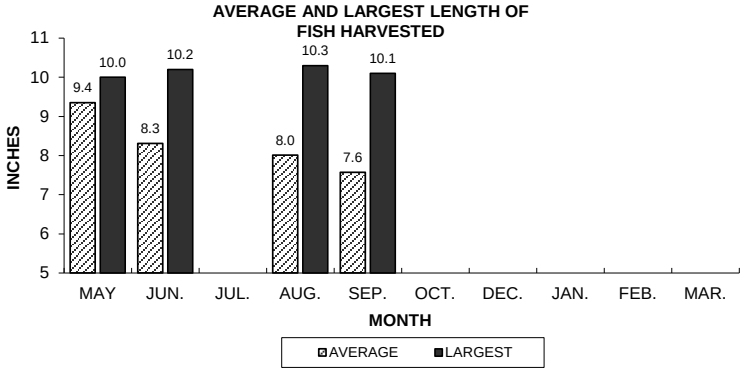


Figure 10. Rock bass sportfishing effort, catch, harvest, and length distribution, Bolger Lake, during 2015-16.