

**WISCONSIN DEPARTMENT OF NATURAL RESOURCES  
CREEL SURVEY REPORT**

**BIG LAKE  
(Three Lakes Chain)**

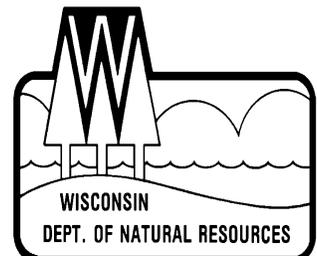
**ONEIDA COUNTY**

**2014-15**



**Treaty Fisheries Publication**

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Jeff Blonski  
Treaty Fisheries Technicians**



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**Fish Graphics:** Virgil Beck, Stevens Point, WI

## 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 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 projections of total catch and harvest of each species, catch and harvest rates, and total fishing effort by month, and for the year in total. Keep in mind that these are only projections based on the best information available, and not a complete accounting of effort, catch, and harvest. Accurate projections 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.

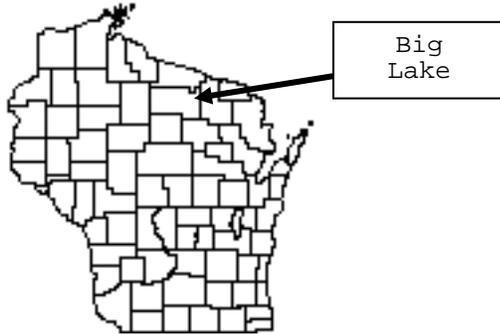
You may have encountered a DNR creel survey clerk on a recent fishing trip. We appreciate your cooperation during an interview. The survey only takes a moment of your time and it gives the Department valuable information needed for management of the fishery.

This report provides projections 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 Big Lake; discussion of results of the survey; and detailed summaries, by species, of fishing effort, catch and harvest.

## GENERAL LAKE INFORMATION



### Location

Big Lake is part of the Three Lakes Chain, located in Oneida County near the Town of Three Lakes.

### Physical Characteristics

Big Lake is the second largest lake in the chain at 845 acres (14% of the chain's acreage) with a maximum depth of 27 feet. Littoral substrates consist primarily of sand, with lesser amounts of muck, and gravel. Big Lake is a soft water lake with slightly acidic, stained water.

### Seasons Surveyed

The period referred to in this report as the 2014-15 fishing season, ran from May 3, 2014 through March 1, 2015. The open water creel survey ran from May 3 through October 31, 2014, and the ice fishing creel survey ran from December 1, 2014 through March 1, 2015.

### Weather

Ice-out on Big Lake was around May 5, 2014. Fishable ice formed on Big Lake in late November.

## Fishing Regulations

The following seasons, daily bag limits, and length limits were in place on Big Lake during the 2014-15 fishing season:

Species	Season	Bag Limit	Min. Size
Largemouth Bass	5/3-3/1	5	14"
Smallmouth Bass	5/3-6/20	Catch & Release	
	6/21-3/1	5	14"
Musky	5/24-11/30	1	40"
Northern Pike	5/3-3/1	5	none
Walleye	5/3-3/1	2*	
	No Minimum, 1 > 14"		
Panfish	year round	25	none
Rock Bass	year round	none	none

\*Due to tribal declarations and harvest, the walleye bag limit was set at 2 on Big Lake.

## 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 1 should be considered as minimum estimates. Each species page has up to five graphs depicting the following:

- PROJECTED FISHING EFFORT**  
Total calculated number of hours during each month that anglers spent fishing for a species.
- PROJECTED 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. **PROJECTED 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 projections contained in the report. This was the second time the department has conducted a creel survey on Big Lake. The last creel survey took place during the 1994-95 fishing season.

### General Angler Information

Anglers spent 12,480 hours or 14.8 hours per acre fishing Big Lake during the 2014-15 season (Table 1). That was less than the Oneida County average of 33.7 hours per acre. May was the most heavily fished month (2.9 hours per acre). Fishing effort was lightest in December (0.2 hours per acre) for those months when the entire month was creeled. Anglers also spent more time (20.8 hours per acre) fishing during the 1994-95 creel survey. The creel clerks were able to conduct 151 interviews throughout the survey.

## RESULTS BY SPECIES

### Walleye (Table 2, Figure 1)

Walleyes received the most fishing effort during the 2014 season. Anglers spent 6,034 hours targeting walleyes. The greatest fishing effort for walleyes was in May (1,647 hours). December had the least amount of walleye fishing effort (68 hours) for those months when the entire month was creeled.

Total catch of walleyes was 2,980 fish with a harvest of 598 fish. Highest catch (876 fish) and harvest (272 fish) occurred in May. Anglers fished 2.2 hours to catch and 10.7 hours to harvest a walleye during the 2014-15 season. The mean length of harvested walleyes was 13.4 inches and the largest walleye measured was a 23.7 inch fish.

### Northern Pike (Table 2, Figure 2)

Fishing effort directed at northern pike was 432 hours during the 2014-15 season. Northern pike fishing effort was greatest in February (219 hours). Total catch of northern pike was 320 fish with a harvest of 16 fish. The mean length of harvested northern pike was 22.9 inches and the largest northern pike measured was a 25.3-inch fish.

### Muskellunge (Table 2, Figure 3)

Anglers spent 2,859 hours targeting muskellunge during the 2014-15 season. Muskellunge fishing effort was greatest in July (807 hours). Total catch of muskellunge was 194. Highest catch (93 fish) occurred in August. Anglers fished 16.4 hours to catch a muskellunge and there was no documented harvest during the 2014-15 season.

### **Smallmouth Bass** (Table 2, Figure 4)

Fishing effort targeted at smallmouth bass was 989 hours during the 2014-15 season. Smallmouth bass fishing effort was greatest in May (435 hours). Total catch of smallmouth bass was 706 fish with no documented harvest. Highest catch (387 fish) occurred in May. Anglers fished 2.1 hours to catch a smallmouth bass during the 2014-15 season.

### **Largemouth Bass** (Table 2, Figure 5)

Fishing effort directed at largemouth bass was 109 hours during the 2014-15 season. Largemouth bass fishing effort was greatest in June (77 hours). Total catch of largemouth bass was 66 fish with no documented harvest. Highest catch (29 fish) occurred in June.

### **Panfish** (Table 2, Figures 6-10)

**Black crappies** were the most sought after panfish species during the survey. Fishing effort directed at black crappies was 5,084 hours. Anglers caught 5,554 black crappies and harvested 1,955 fish. The mean length of black crappies harvested was 10.5 inches.

**Yellow perch** were the second most sought after panfish species during the survey. Fishing effort directed at yellow perch was 576 hours. Total catch of yellow perch was 893 fish with 500 harvested. The mean length of yellow perch harvested was 8.8 inches.

**Bluegills** were the third most sought after panfish species during the survey. Fishing effort directed at bluegills was 259 hours. Total catch of bluegills was 481 fish with 116 harvested. The mean length of bluegills harvested was 7.9 inches.

**Pumpkinseeds and rock bass** were also caught and harvested during the 2014-15 season at low numbers.

## **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, Jonathan Pyatskowitz, and Dennis Scholl. John Logan, Andrew Disch, Shae Flood, Rich Cechal, John Davis, Bob Consolo, Ben Hines, David Gunderson, and Marty Kiepke were the creel clerks on the Three Lakes Chain during the survey period.

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

The Department thanks our cooperators, the (Ruth Ann) Davis Family, John Schmidt, Watercraft Sales, the Levendoski Family, Paul, Peggy, Bill, and Karen of Anchor Marina and Sunset Grill, Mr. and Mrs. Ed Cottingham, Justin and Ginger Millis of Pine Isle Sports Bar and Grill, Russell and Cindy Habeck, and Lee and Gail Sucharda, all of whom generously allowed the Department to keep a boat and/or snowmobile on their property during this survey.

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

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/trtycrs/rvys.html>

**Table 1. Sportfishing effort summary, Three Lakes Chain (Big Lake), 2014-15 season.**

Month	Number of Angler Party Interviews	Total Angler Hours	Total Angler Hours/Acre	1994-95 Total Angler Hours/Acre	Oneida County Average Hours/Acre	Ceded Territory Average Hours/Acre
May	37	2429	2.9	4.7	4.8	5.0
June	22	2078	2.5	3.6	6.4	6.4
July	24	2416	2.9	4.3	7.3	6.8
August	12	2265	2.7	3.8	5.7	5.5
September	12	1324	1.6	2.7	3.4	3.3
October	14	886	1.0	0.9	1.6	1.5
December	9	194	0.2	0.3	1.2	1.1
January	9	554	0.7	0.3	1.5	1.6
February	9	288	0.3	0.2	1.5	1.6
March	3	46	0.1	0.0	0.3	0.2
*Summer Total	121	11398	13.5	20.1	29.2	28.5
*Winter Total	30	1082	1.3	0.7	4.5	4.5
Grand Total	151	12480	14.8	20.8	33.7	33.0

\*\*"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 Big 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 Big Lake to other lakes.

**1994-95 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 Big 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 Big Lake to other lakes in northern Wisconsin.

**Table 2. Comparison of creel survey synopses, Big Lake, 2014-15 and 1994-95 fishing seasons.**

CREEL YEAR: 2014-15

<b>SPECIES</b>	<b>DIRECTED EFFORT (Hours)</b>	<b>PERCENT OF TOTAL</b>	<b>TOTAL CATCH</b>	<b>SPECIFIC CATCH RATE (Hrs/Fish) *</b>	<b>TOTAL HARVEST</b>	<b>SPECIFIC HARVEST RATE (Hrs/Fish) **</b>	<b>MEAN LENGTH OF HARVESTED FISH</b>
Walleye	6034	36.92%	2980	2.2	598	10.7	13.4
Northern Pike	432	2.64%	320	68.5	16	68.5	22.9
Muskellunge	2859	17.49%	194	16.4	0		
Smallmouth Bass	989	6.05%	706	2.1	0		
Largemouth Bass	109	0.67%	66		0		
Yellow Perch	576	3.52%	893	1.4	500	2.3	8.8
Bluegill	259	1.58%	481	1.0	116	6.5	7.9
Pumpkinseed	0	0.00%	41		32		7.7
Rock Bass	0	0.00%	319		250		8.1
Black Crappie	5084	31.11%	5554	1.0	1955	2.8	10.5

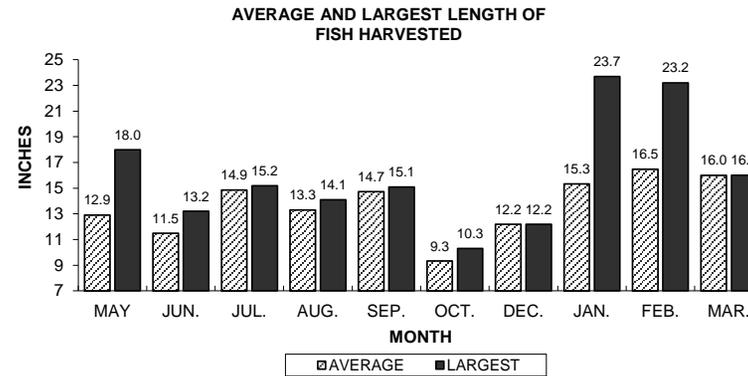
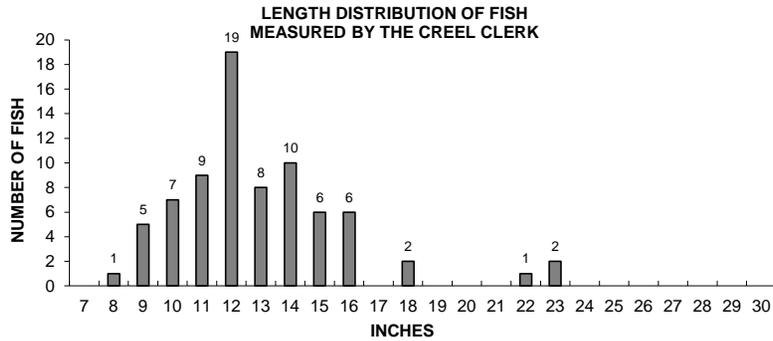
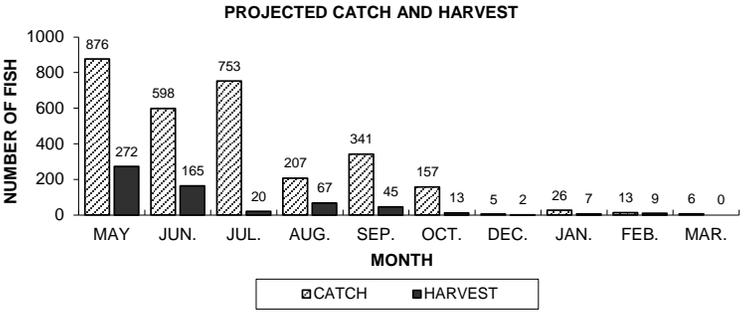
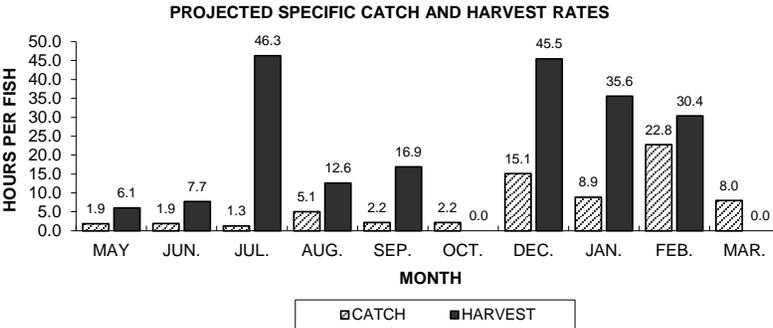
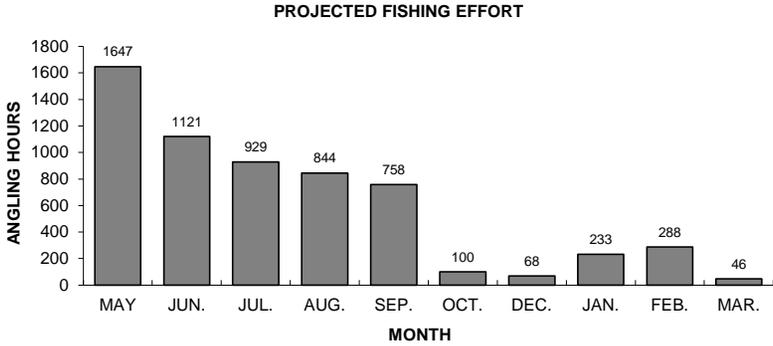
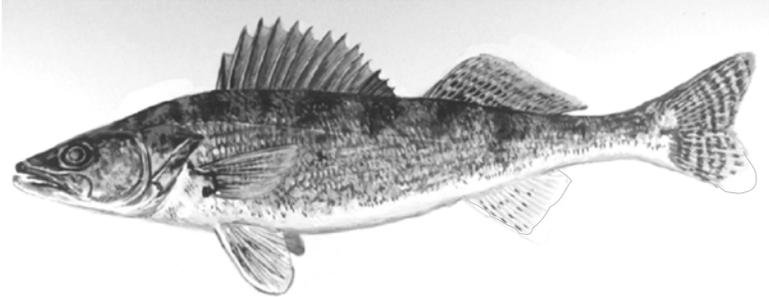
9 \* A blank cell in this column indicates that no fish of a given species were caught by anglers who specifically targeted that species.

\*\* 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: 1994-95

<b>SPECIES</b>	<b>DIRECTED EFFORT (Hours)</b>	<b>PERCENT OF TOTAL</b>	<b>TOTAL CATCH</b>	<b>SPECIFIC CATCH RATE (Hrs/Fish)</b>	<b>TOTAL HARVEST</b>	<b>SPECIFIC HARVEST RATE (Hrs/Fish)</b>	<b>MEAN LENGTH OF HARVESTED FISH</b>
Walleye	9386	39.60%	2710	3.9	857	12.0	11.8
Northern Pike	1022	4.31%	343	7.4	75	42.9	19.3
Muskellunge	3444	14.53%	174	24.9	13	277.8	32.8
Smallmouth Bass	88	0.37%	29	12.7	21	12.7	16.5
Largemouth Bass	340	1.43%	14	0.0	0		
Yellow Perch	3759	15.86%	3903	1.5	1635	3.1	7.7
Bluegill	2097	8.85%	1159	2.2	506	4.8	7.4
Pumpkinseed	325	1.37%	102	6.2	62	12.3	7.1
Rock Bass		0.00%	988		122		8.1
Black Crappie	3244	13.68%	1040	3.5	944	3.8	10.4

# WALLEYE



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Figure 1. Walleye sportfishing effort, catch, harvest, and length distribution, Big Lake, during 2014-15.

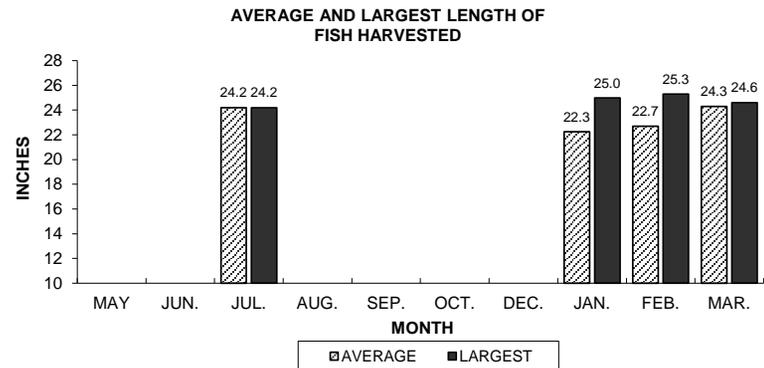
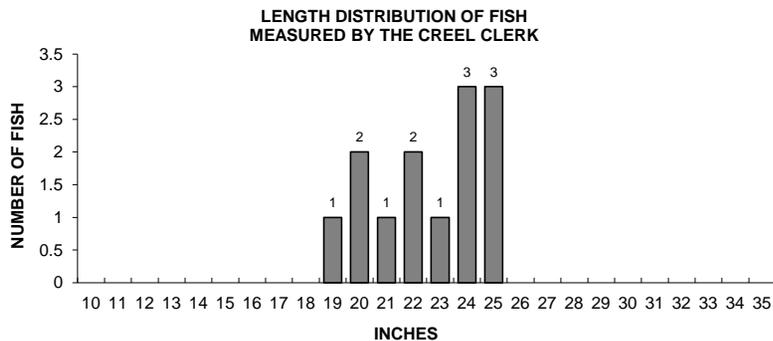
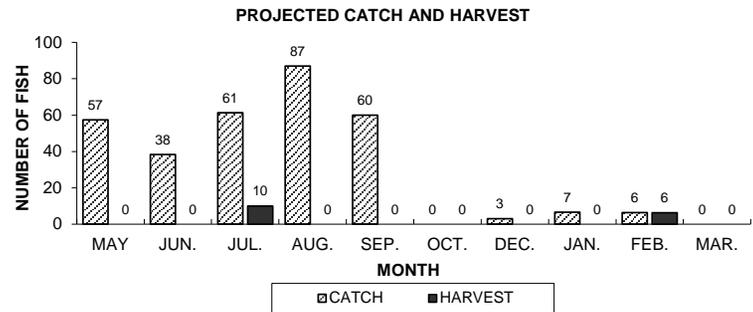
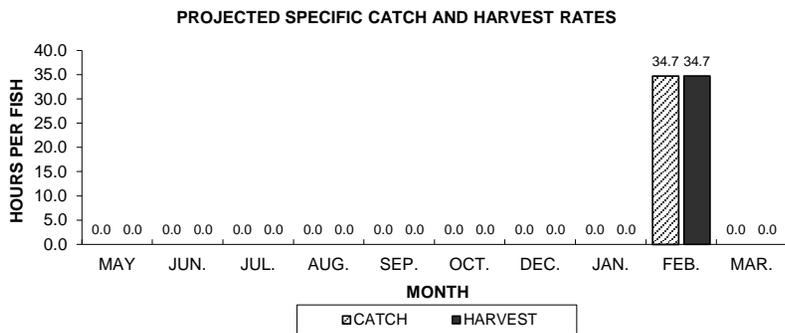
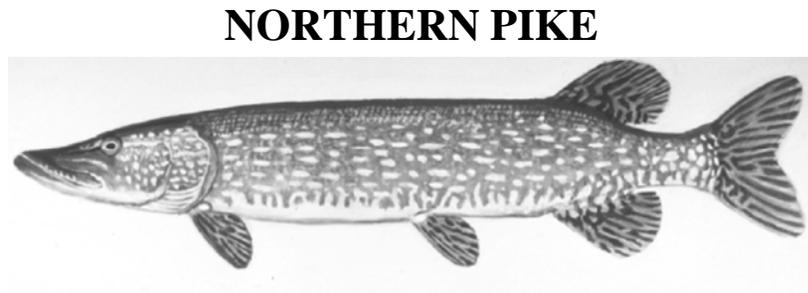
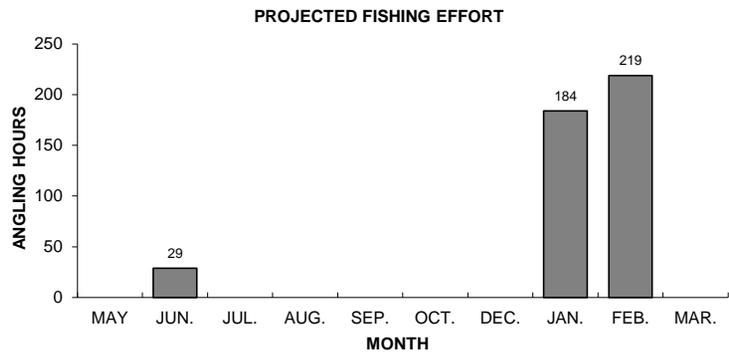
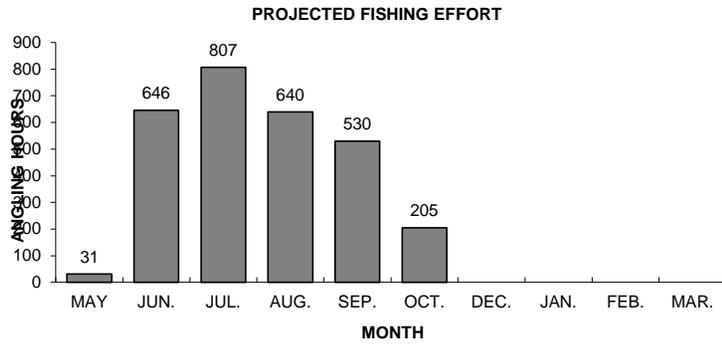
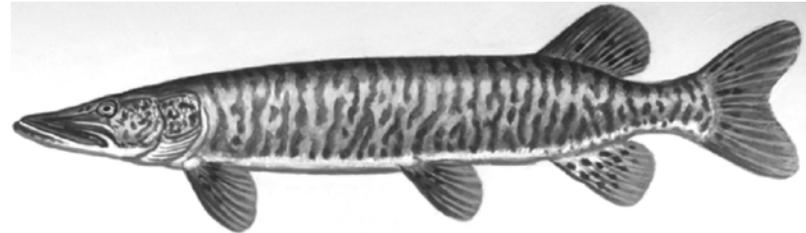


Figure 2. Northern pike sportfishing effort, catch, harvest, and length distribution, Big Lake, during 2014-15.

# MUSKELLUNGE



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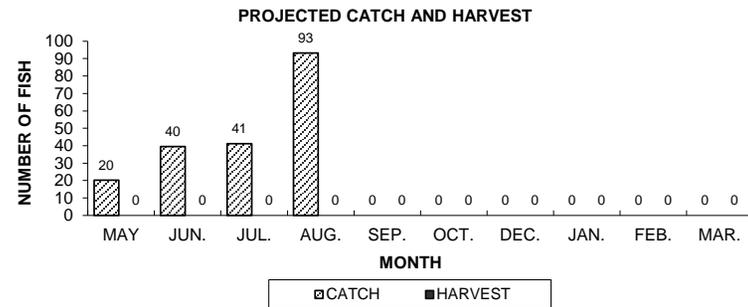
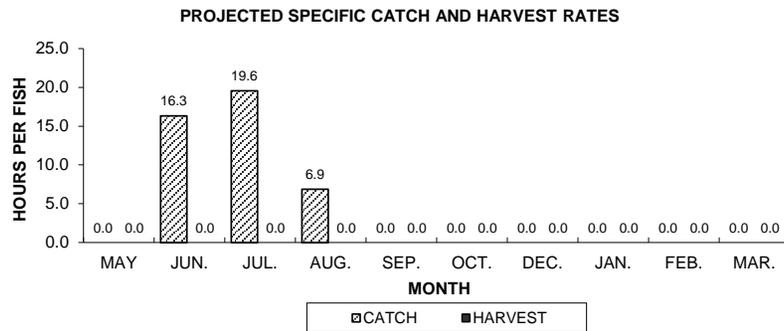


Figure 3. Muskellunge sportfishing effort, catch, harvest, and length distribution, Big Lake, during 2014-15.

# SMALLMOUTH BASS

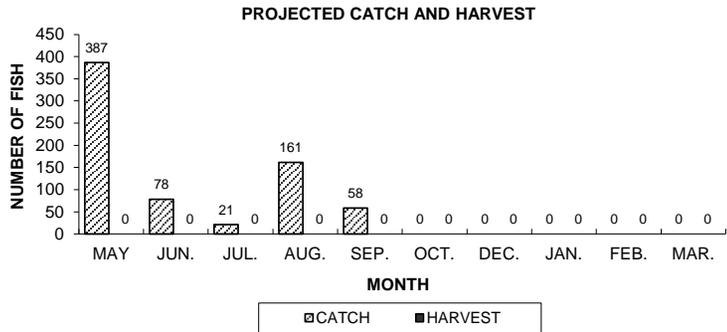
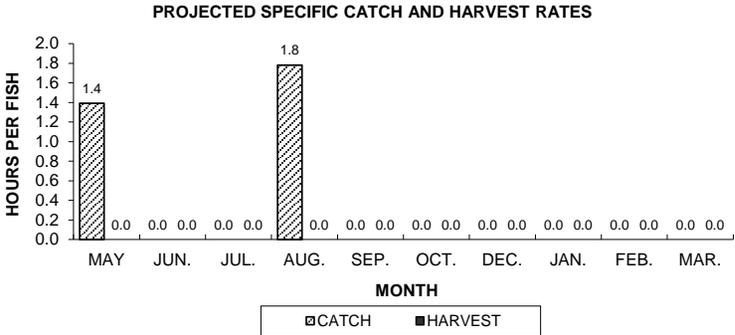
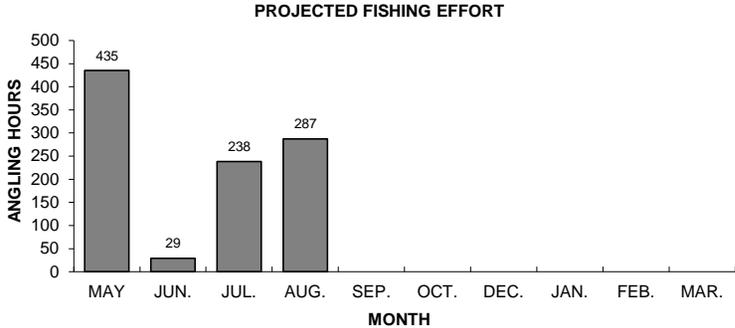
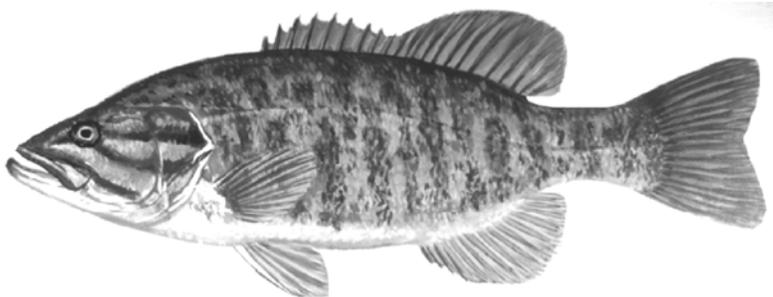
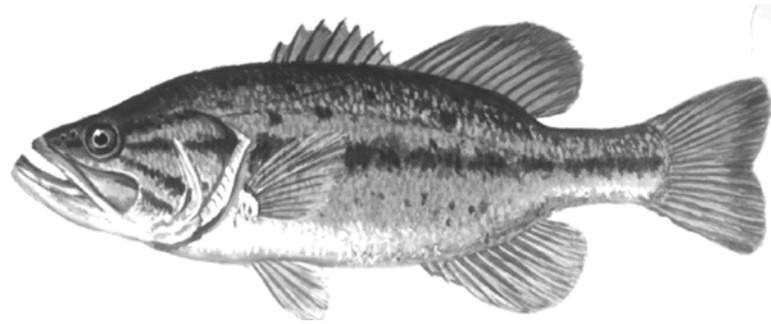


Figure 4. Smallmouth bass sportfishing effort, catch, harvest, and length distribution, Big Lake, during 2014-15.

# LARGEMOUTH BASS



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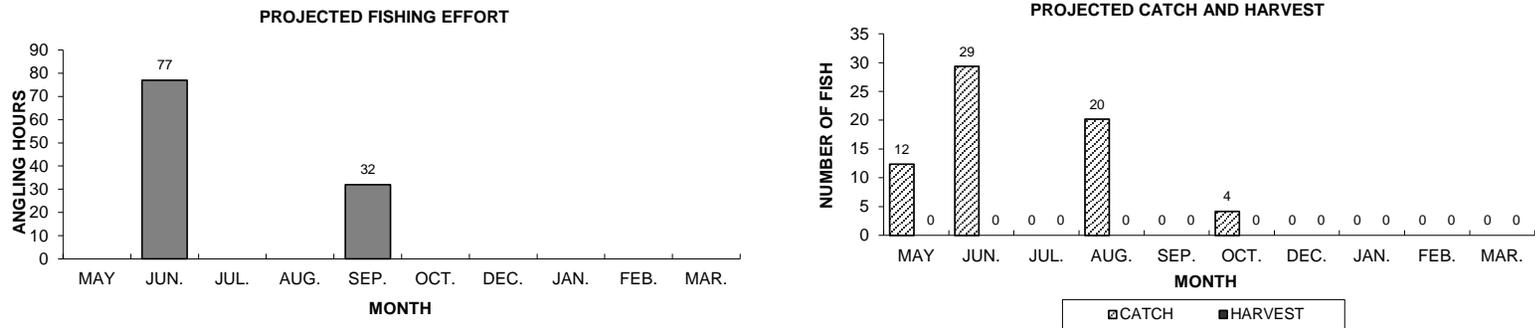


Figure 5. Largemouth bass sportfishing effort, catch, harvest, and length distribution, Big Lake, during 2014-15.

# YELLOW PERCH

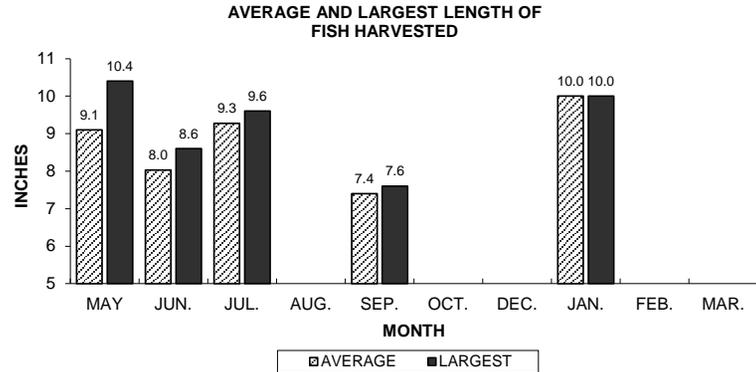
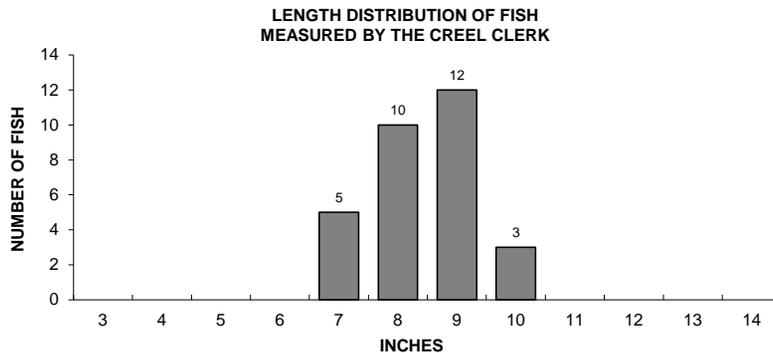
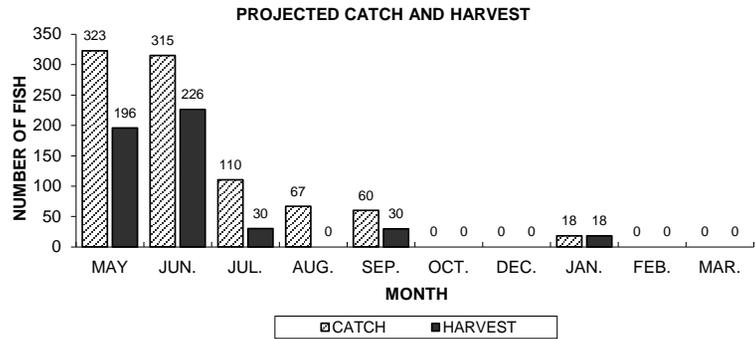
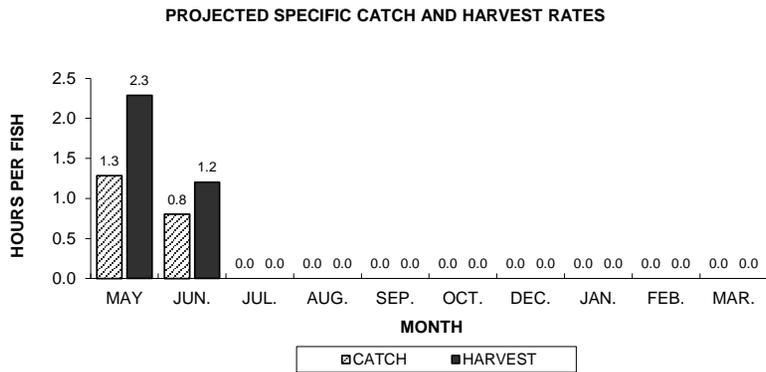
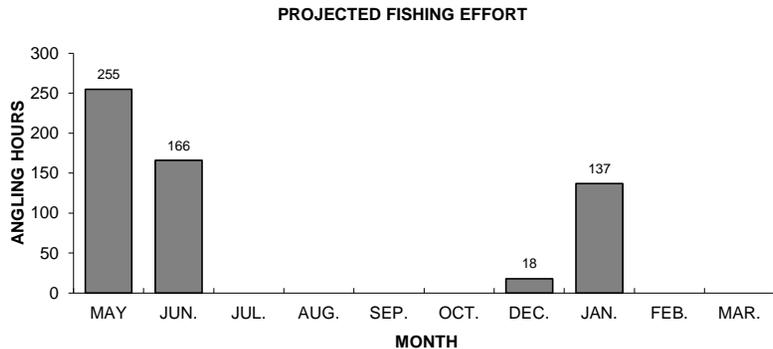


Figure 6. Yellow perch sportfishing effort, catch, harvest, and length distribution, Big Lake, during 2014-15.

# BLUEGILL

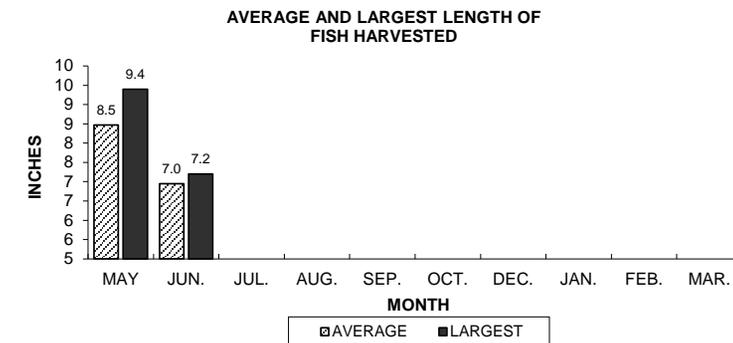
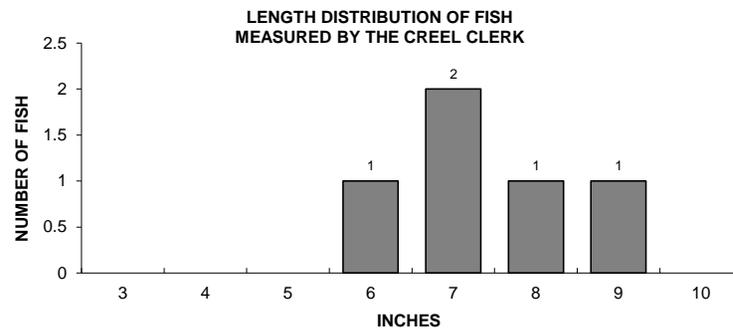
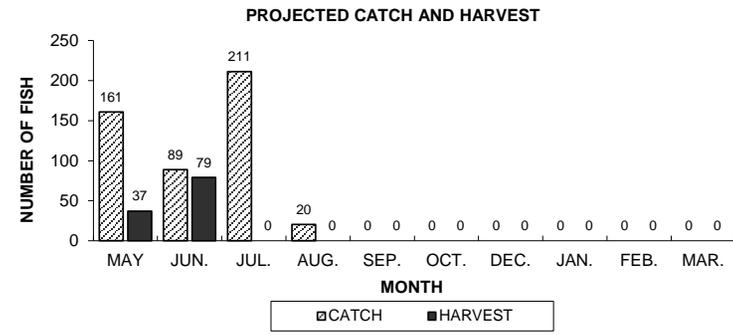
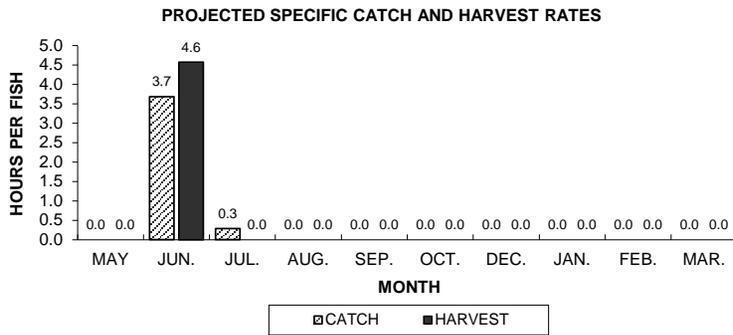
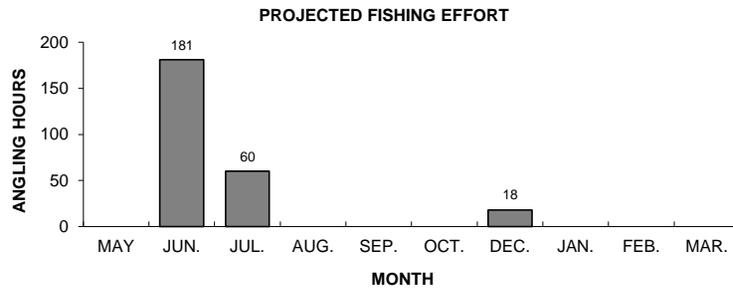
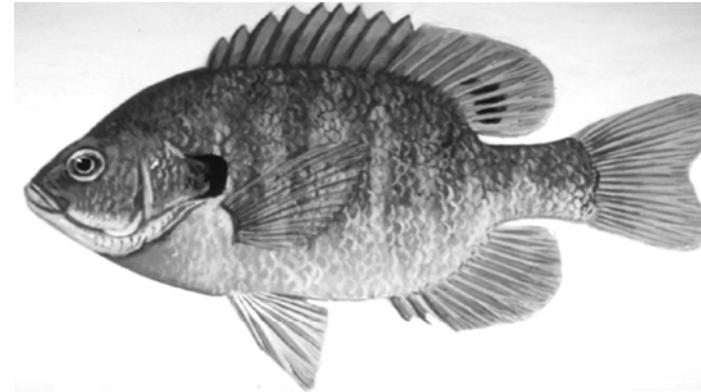


Figure 7. Bluegill sportfishing effort, catch, harvest, and length distribution, Big Lake, during 2014-15.

# PUMPKINSEED

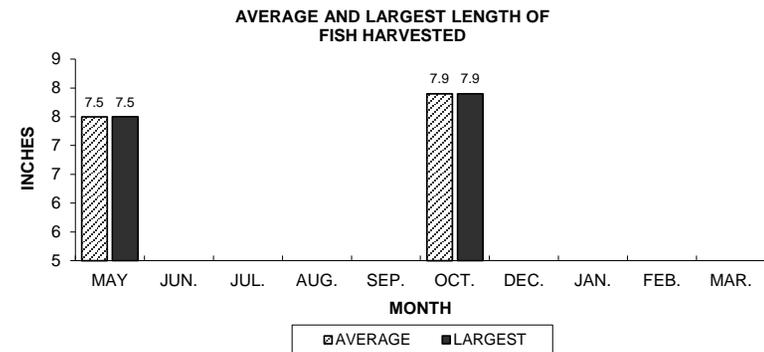
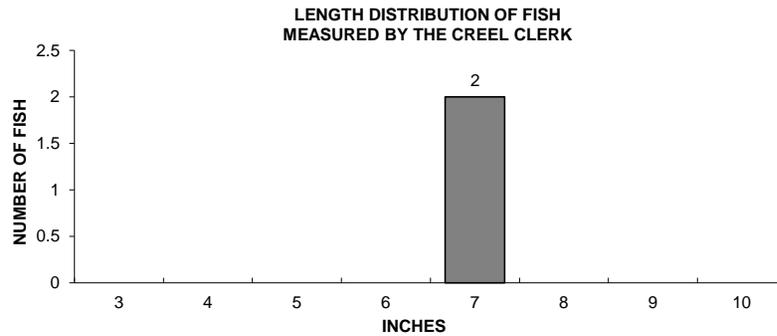
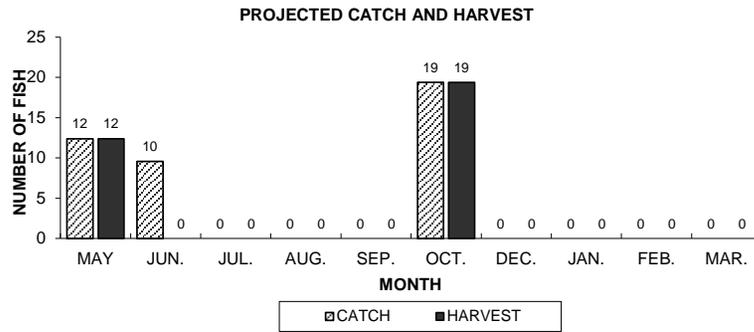
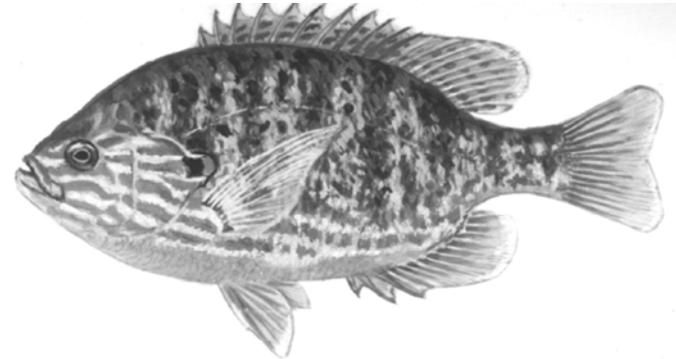


Figure 8. Pumpkinseed sportfishing effort, catch, harvest, and length distribution, Big Lake, during 2014-15.

# ROCK BASS

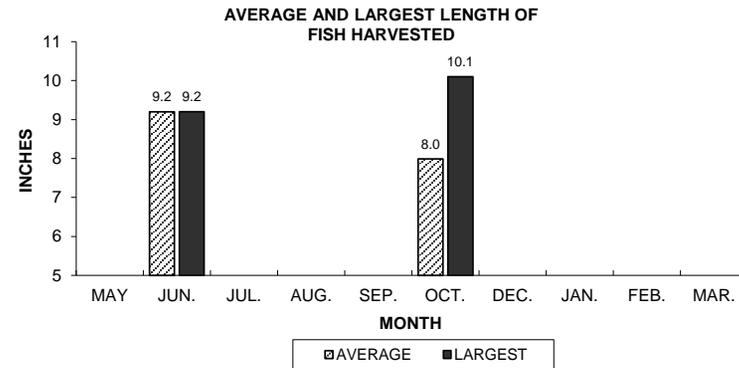
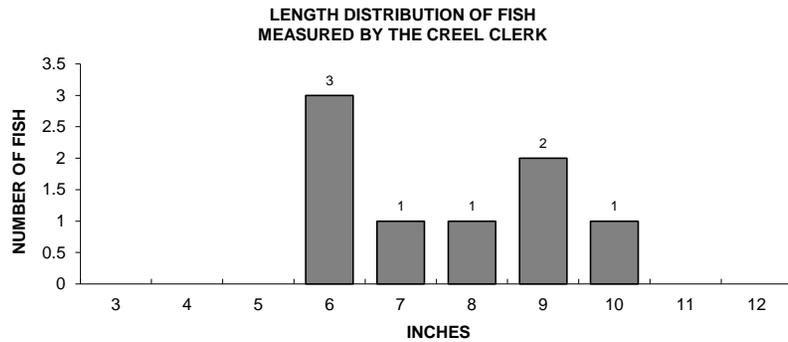
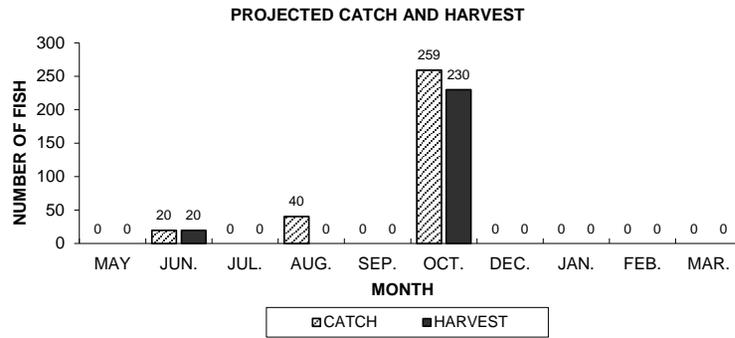
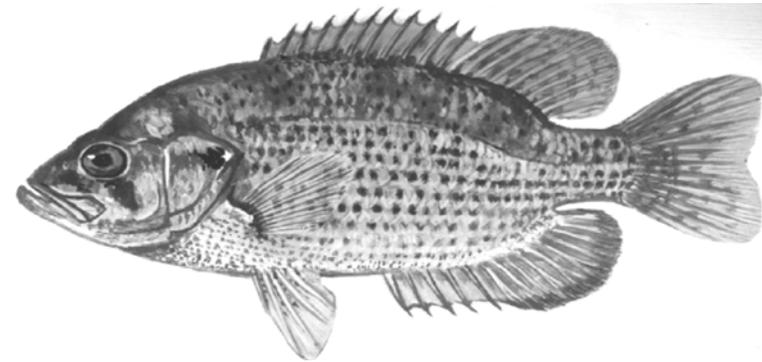


Figure 9. Rock bass sportfishing effort, catch, harvest, and length distribution, Big Lake, during 2014-15.

# BLACK CRAPPIE

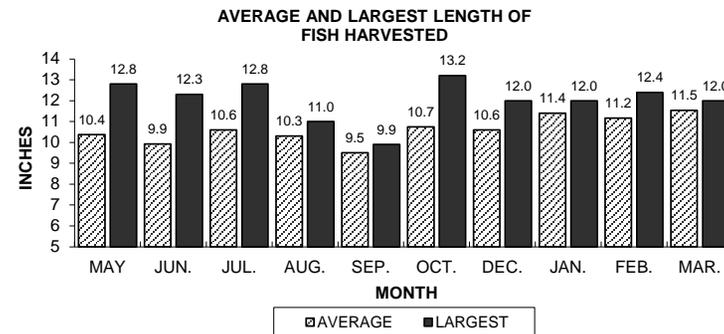
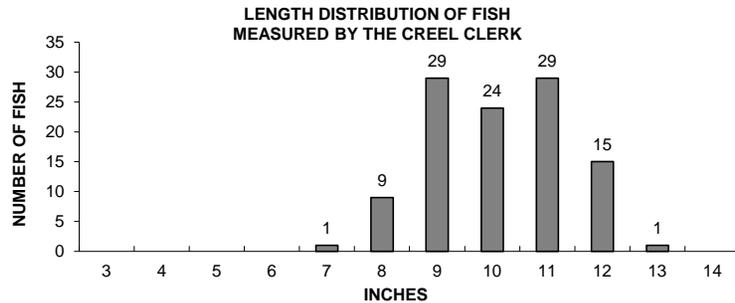
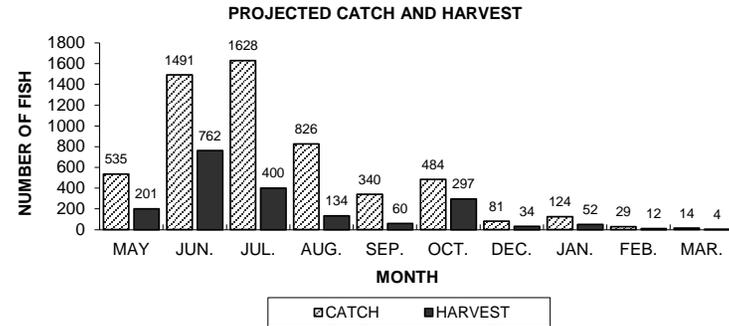
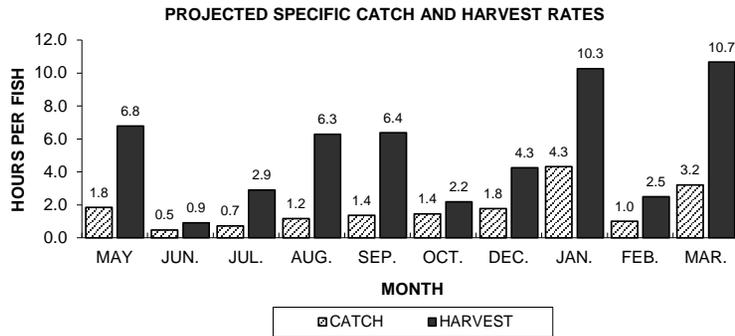
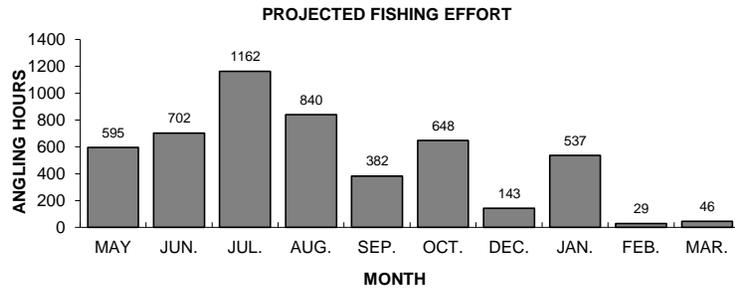
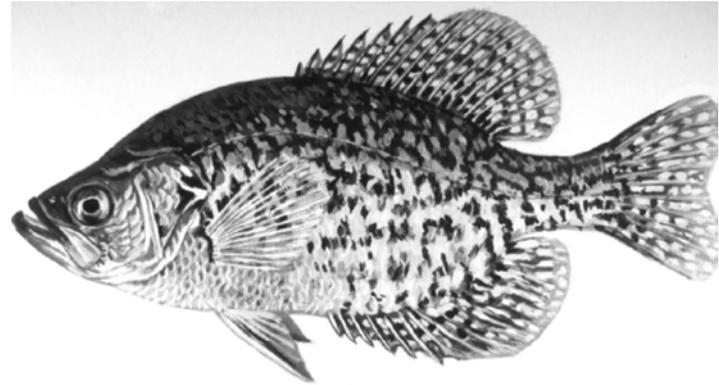


Figure 10. Black crappie sportfishing effort, catch, harvest, and length distribution, Big Lake, during 2014-15.