

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

**ROCK LAKE**

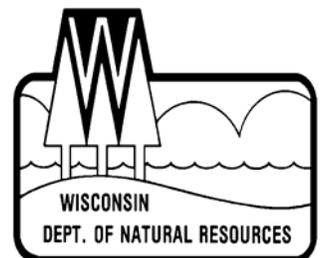
**VILAS COUNTY**

**2010-11**



**Treaty Fisheries Publication**

**Compiled by Tim Tobias  
Treaty Fisheries Technician**



# CONTENTS

INTRODUCTION .....	1
GENERAL LAKE INFORMATION .....	2
Location .....	2
Physical Characteristics .....	2
Seasons Surveyed .....	2
Weather .....	2
Sportfishing Regulations.....	2
SPECIES CATCH AND HARVEST INFORMATION .....	2
CREEL SURVEY RESULTS AND DISCUSSION .....	3
Survey Logistics .....	3
General Angler Information.....	3
SPECIES INFORMATION .....	3
ACKNOWLEDGMENTS .....	4

## SUMMARY TABLES

Table 1. Sportfishing effort summary .....	5
Table 2. Creel survey synopsis .....	6

## SPECIES CATCH AND HARVEST INFORMATION

### Gamefish

Figure 1. Walleye.....	7
Figure 2. Northern Pike .....	8
Figure 3. Muskellunge .....	9
Figure 4. Smallmouth Bass .....	10
Figure 5. Largemouth Bass.....	11

### Panfish

Figure 6. Yellow Perch .....	12
Figure 7. Bluegill .....	13
Figure 8. Pumpkinseed.....	14
Figure 9. Rock Bass .....	15
Figure 10. Black Crappie .....	16

**Cover Art:** Steve Hilt, Minocqua, WI

**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 good 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). But 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 also measure the sport harvest to assess its impact on the fishery. But because it would be highly impractical and very costly to conduct a complete census of every angler who fishes on a lake, 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, except during the month of 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 numbers of anglers on a lake at predetermined times, and to interview anglers who have completed their fishing trip to collect data on what species they fished for, catch, harvest, lengths of fish harvested, marks (finclips 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.

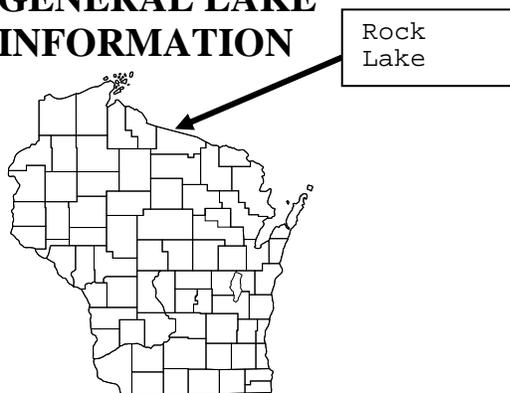
You may have encountered a DNR creel survey clerk on a recent fishing trip. We appreciate your cooperation during an interview. The survey only takes a moment of your time and it gives the Department valuable information needed for management of the fishery.

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

## GENERAL LAKE INFORMATION



Rock Lake is located in Vilas County in the Town of Winchester.

### Physical Characteristics

Rock Lake is a 122-acre drainage lake with a maximum depth of 18 feet. Rock Lake is one of three lakes that make up the Turtle Chain. The other lakes in the chain (North Turtle and South Turtle) were also surveyed in 2010. Littoral substrate consists primarily of sand, with lesser amounts of rock, gravel and muck. Rock Lake is a drainage lake with slightly alkaline, light brown water of moderate transparency.

### Seasons Surveyed

The period referred to in this report as the 2010-11 fishing season ran from May 1, 2010 through March 6, 2011. The open water creel survey ran from May 1 through October 31, 2010 and the ice fishing creel

survey ran from December 1, 2010 through March 6, 2011.

### Weather

Ice-out on Rock Lake was around March 30, 2010. Fishable-ice formed on Rock Lake in mid December.

### Sportfishing Regulations

The following seasons, daily bag limits, and length limits were in place on Rock Lake during the 2010-fishing season:

Species	Season	Bag Limit	Min. Size
Largemouth Bass & Smallmouth Bass	5/01-6/18	Catch & Release	
	6/19-3/06	5	14"
Musky	5/29-11/30	1	34"
Northern Pike	5/01-3/06	5	none
Walleye	5/01-3/06	5	none 1 > 14"
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. **PROJECTED FISHING EFFORT**  
Total calculated number of hours during each month that anglers spent fishing for a species.
2. **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 conducted a creel survey on Rock Lake. The last creel survey of the chain took place in 1991.

### **General Angler Information**

Anglers spent 3,846 hours or 31.5 hours per acre fishing Rock Lake during the 2010 season (Table 1). That was less than the Vilas County average of 34.5 hours per acre. July was the most heavily fished month (5.5 hours per acre). Fishing effort was lightest in December (0.5 hours per acre).

## **RESULTS BY SPECIES**

### **Walleye** (Table 2, Figure 1)

Walleyes received the most fishing pressure of any species during the 2010 season. Anglers spent 1,778 hours targeting walleyes. The greatest fishing effort for walleyes was in May (315 hours). December had the least amount of walleyes fishing effort (66 hours).

Total catch of walleyes was 698 fish with a harvest of 367 fish. Highest catch (390 fish) and harvest (196 fish) occurred in October. Anglers fished 2.6 hours to catch and 4.9 hours to harvest a walleyes during 2010.

The mean length of walleyes harvested was 12.7 inches and the largest fish measured was a 17.2-inch in length.

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

Fishing effort directed at northern pike was 125 hours during the 2010 season. Northern pike fishing effort was greatest in August (62 hours).

Total catch of northern pike was 58 fish with a harvest of 5 fish.

The mean length of harvested northern pike was 24.2 inches and the largest northern pike measured was a 25.1-inch fish.

### **Muskellunge** (Table 2, Figure 3)

Anglers spent 1,409 hours targeting muskellunge during the 2010 season. Muskellunge fishing effort was greatest in September (396 hours).

Total catch of muskellunge was 86 fish. Highest catch (55 fish) occurred in July. Anglers fished 21.8 hours to catch a muskellunge during 2010.

**Smallmouth Bass** (Table 2, Figure 4)  
Fishing effort targeted at smallmouth bass was 237 hours during the 2010 season. Smallmouth bass fishing effort was greatest in June (137 hours).

Total catch of smallmouth bass was 19 fish.

**Largemouth Bass** (Table 2, Figure 5)  
Fishing effort directed at largemouth bass was 216 hours during the 2010 season. Anglers did not report catching a largemouth bass during the survey.

Largemouth bass are currently only a minor part of the Rock Lake fishery.

**Panfish (Table 2, Figures 6-10)**  
**Yellow perch** were the most sought after panfish species during the survey. Fishing effort directed at yellow perch was 589 hours.

Total catch of yellow perch was 638 fish with 74 harvested. The mean length of yellow perch harvested was 8.6 inches and the largest yellow perch measured was a 10.4-inch fish.

**Black crappies** were the second most sought after panfish species during the survey. Fishing effort directed at black crappies was 367 hours.

Anglers caught 292 black crappies and harvested 208 fish. The mean length of black crappies harvested was 10.4 inches and the largest black crappie measured was a 12.8-inch fish.

**Bluegills** were the third most sought after panfish species during the survey. Fishing effort directed at bluegills was 274 hours.

Total catch of bluegills was 768 fish with 138 harvested. The mean length of bluegills

harvested was 7.4 inches with the largest measuring 8.3 inches.

Pumpkinseeds and rock bass were also caught during the 2010 season. Both species are a minor part of the fishery.

## ACKNOWLEDGMENTS

Completion of this survey was possible because of the efforts of the technical staff of the fisheries management and Treaty Fisheries Unit. Treaty staff responsible for ensuring completion of this survey included Jeff Blonski, Steve Kramer, Joelle Underwood, Marty Kiepke, Jason Halverson, and Tim Tobias. Marty Kiepke was the creel clerk on Rock Lake during the survey period.

We also 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 the cooperators, Tom & Julie Rued, who generously allowed the department to keep a boat and snowmobile on their property during this survey.

This creel report was reviewed by Steve Gilbert and Dennis Scholl 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/fish/ceded/reports.html>

**Table 1. Sportfishing effort summary, Rock Lake, 2010-11 season.**

Month	Total Angler Hours	Total Angler Hours/Acre	Vilas County Average Hours/Acre	Statewide Average Hours/Acre
May	540	4.4	5.3	5.8
June	468	3.8	6.8	6.1
July	677	5.5	7.4	6.4
August	636	5.2	6.4	5.4
September	624	5.1	4.1	3.8
October	460	3.8	2.0	1.6
December	66	0.5	0.5	1.7
January	114	0.9	0.8	1.5
February	194	1.6	1.0	1.3
March	69	0.6	0.2	**
*Summer Total	3403	27.9	32.1	29.1
*Winter Total	443	3.6	2.4	4.5
Grand Total	3846	31.5	34.5	33.6

\*"Summer" is May-October; "Winter" is December-March

\*\*Too few lakes have been surveyed in March to give a meaningful statewide average.

**Total Angler Hours** is the estimated total number of hours that anglers spent fishing on Rock 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 if you wish to compare effort on Rock Lake to other lakes.

**County Average Hours/Acre** is the average angler effort in hours per acre for county lakes that have been surveyed since 1990. This value can be useful in comparisons as well.

**Statewide Average Hours/Acre** is the average angler effort in hours per acre for inland lakes in the state surveyed between 1990 and 1995. This value can be used to compare Rock Lake to other lakes statewide.

**Table 2. Comparison of creel survey synopses, Rock Lake, 2010-11 and 1991-92 fishing seasons.**

CREEL YEAR: 2010-11

<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	1778	35.35%	698	2.6	367	4.9	12.7
Northern Pike	125	2.49%	58	24.3	5	43.5	24.2
Muskellunge	1409	28.01%	86	21.8	0		
Smallmouth Bass	237	4.71%	19	41.7	0		
Largemouth Bass	216	4.29%	0		0		
Yellow Perch	589	11.71%	638	1.2	74	14.0	8.6
Bluegill	274	5.45%	768	0.4	138	2.3	7.4
Pumpkinseed	35	0.70%	108	0.5	8		7.5
Rock Bass	0	0.00%	138		0		
Black Crappie	367	7.30%	292	1.4	208	1.9	10.4

\* 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: 1991-92

<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	1550	22.51%	636	2.5	50	31.3	13.8
Northern Pike	282	4.09%	146	2.9	22	18.2	18.5
Muskellunge	1743	25.31%	102	17.5	8	222.2	35.1
Smallmouth Bass	97	1.41%	56		18		13.8
Largemouth Bass	35	0.51%	19		0		
Yellow Perch	1029	14.94%	1907	0.7	338	3.7	8.1
Bluegill	1015	14.74%	1856	0.5	340	3.0	6.6
Pumpkinseed	37	0.54%	30	1.5	15	2.4	7.0
Rock Bass	458	6.65%	43	11.4	0		
Black Crappie	641	9.31%	381	1.8	305	2.3	10.4

# WALLEYE

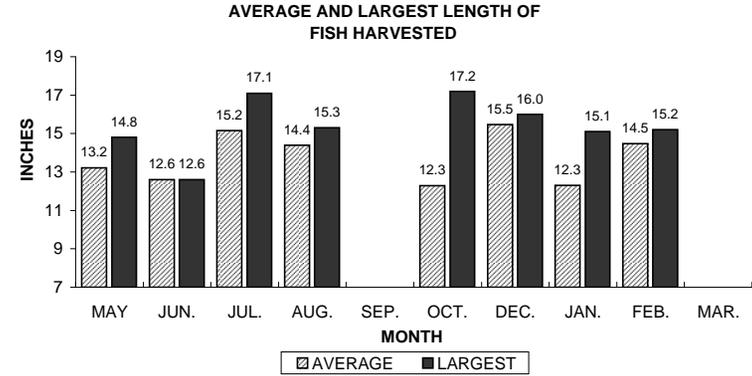
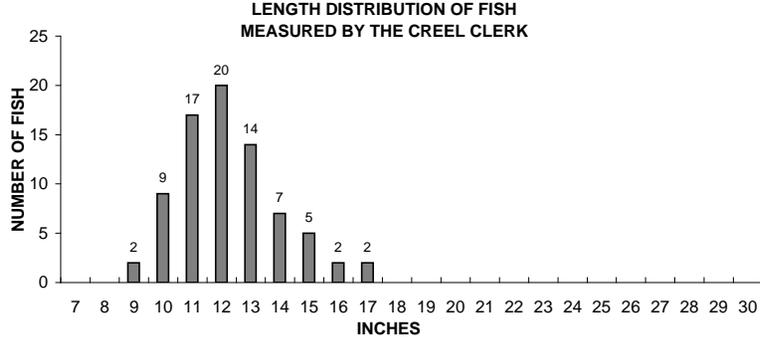
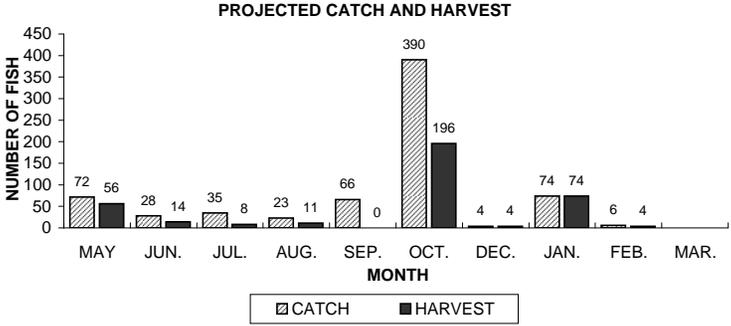
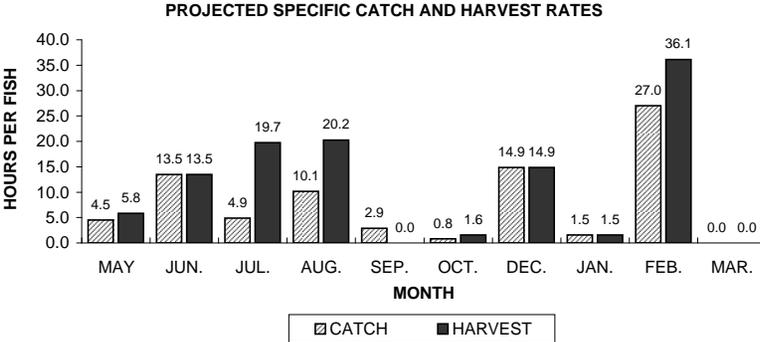
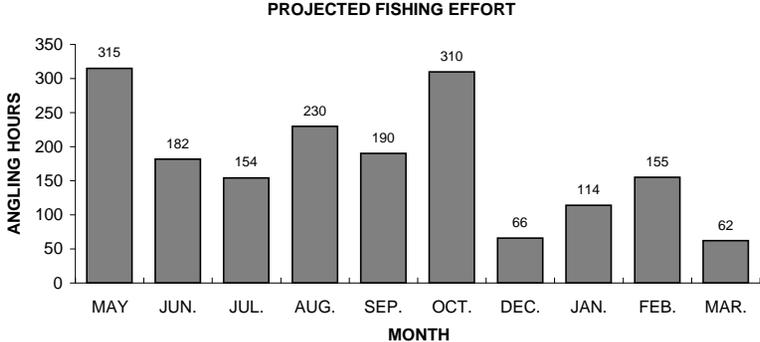
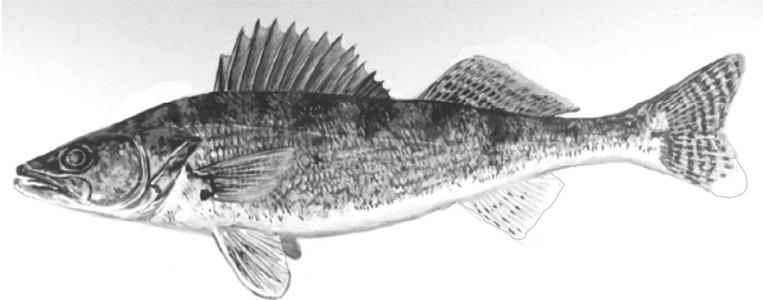


Figure 1. Walleye sportfishing effort, catch, harvest, and length distribution, Rock Lake, during 2010-11.

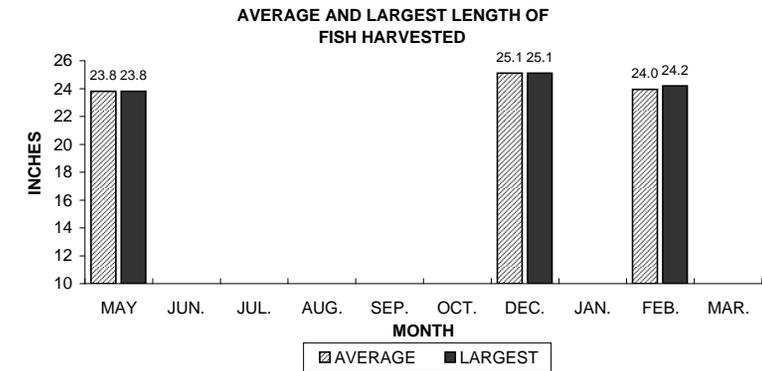
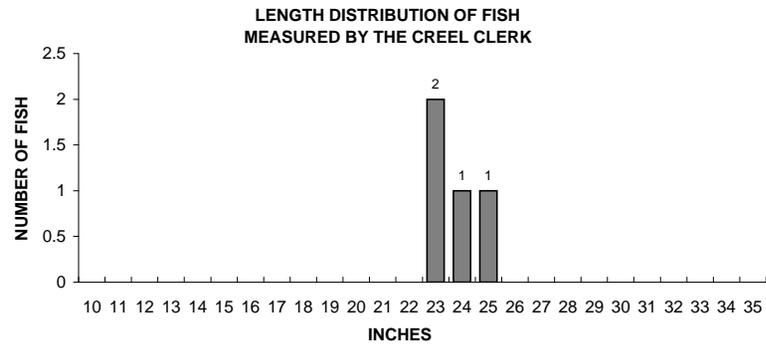
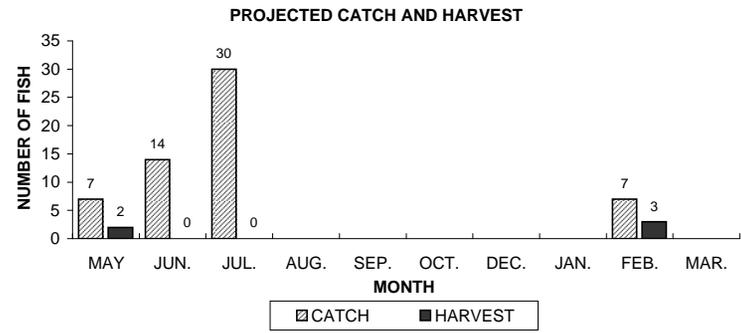
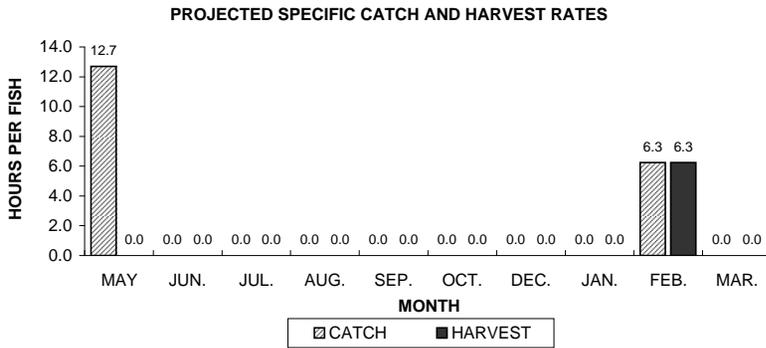
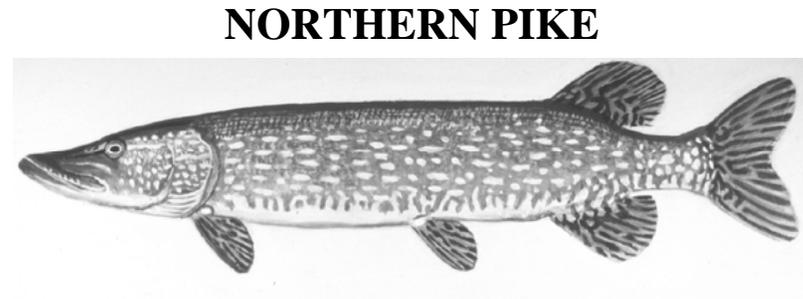
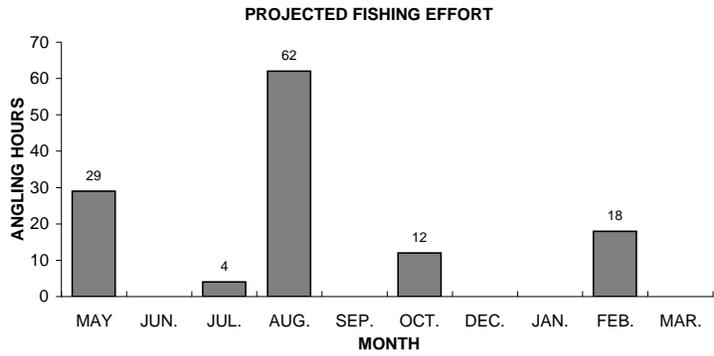
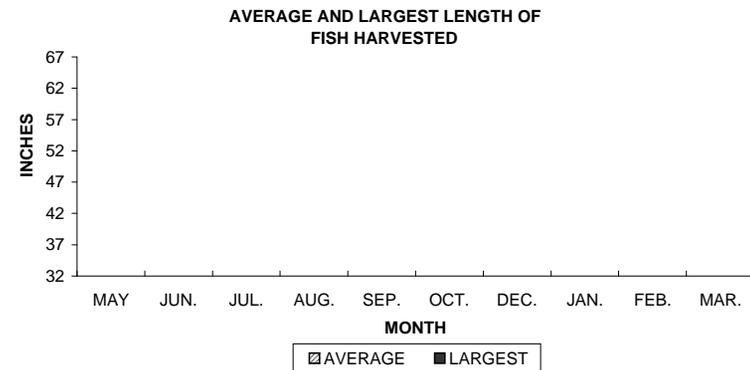
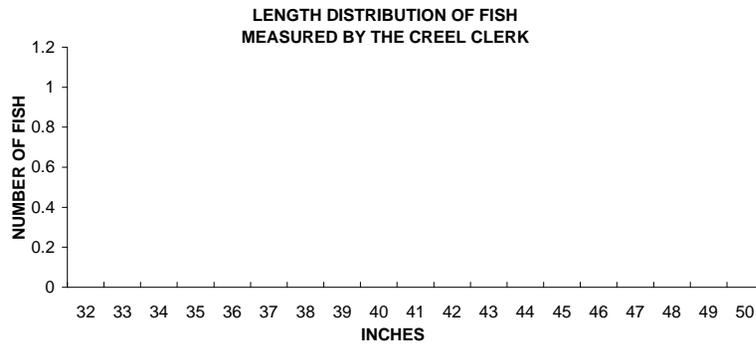
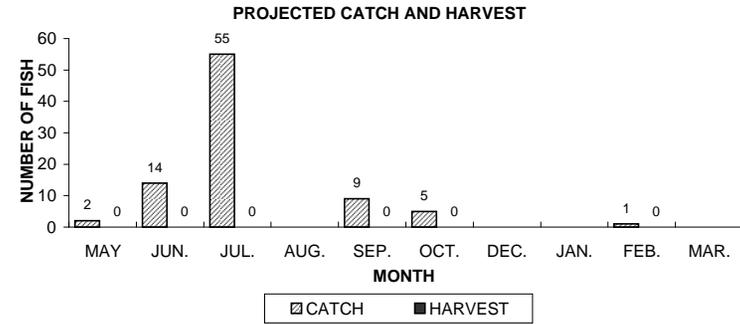
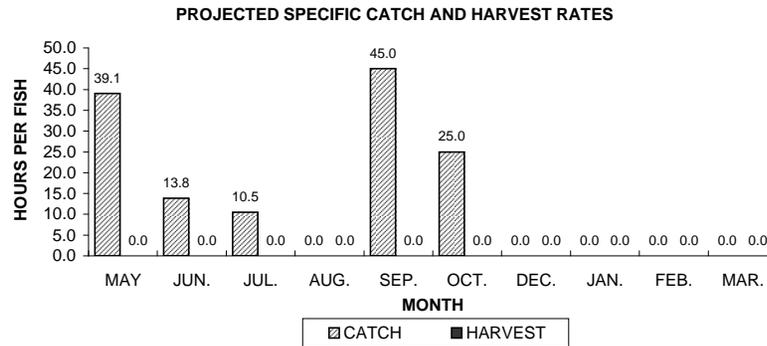
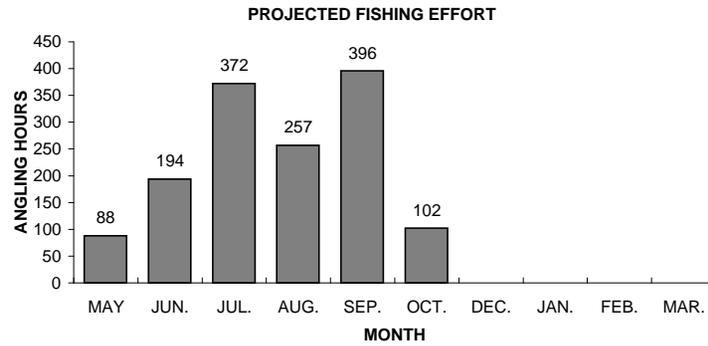
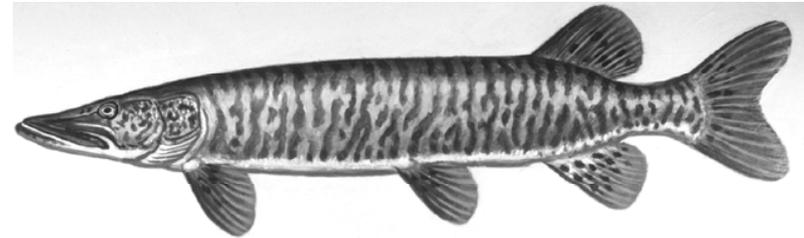


Figure 2. Northern pike sportfishing effort, catch, harvest, and length distribution, Rock Lake, during 2010-11.

# MUSKELLUNGE



6

Figure 3. Muskellunge sportfishing effort, catch, harvest, and length distribution, Rock Lake, during 2010-11.

# SMALLMOUTH BASS

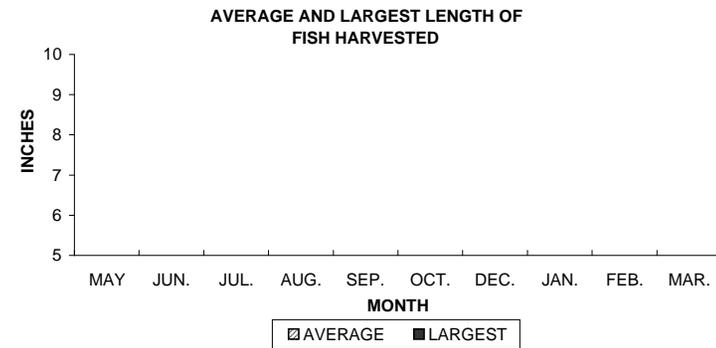
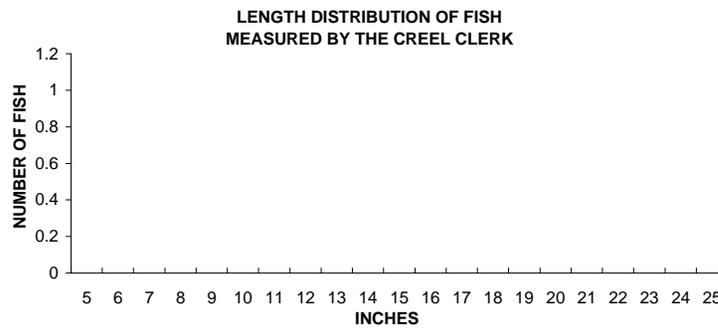
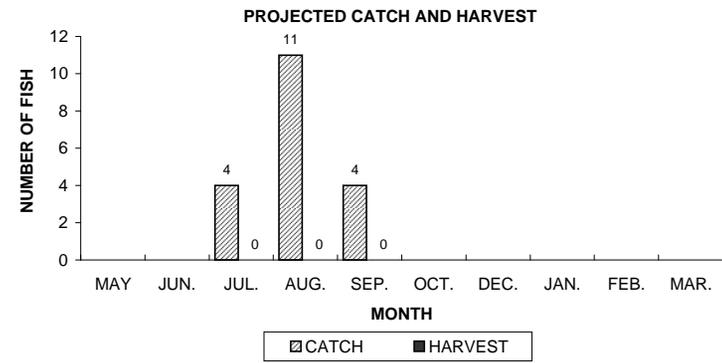
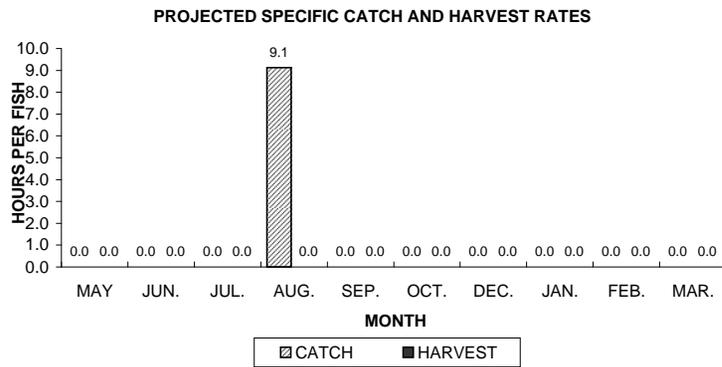
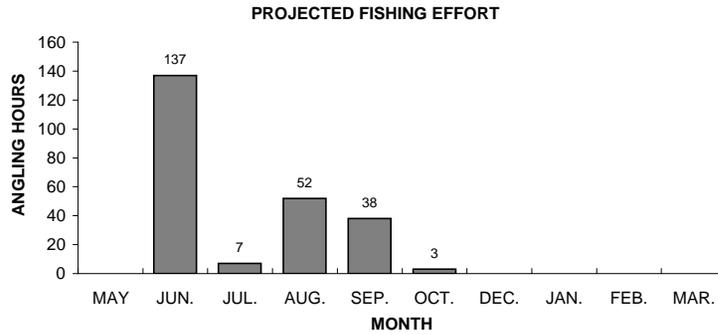
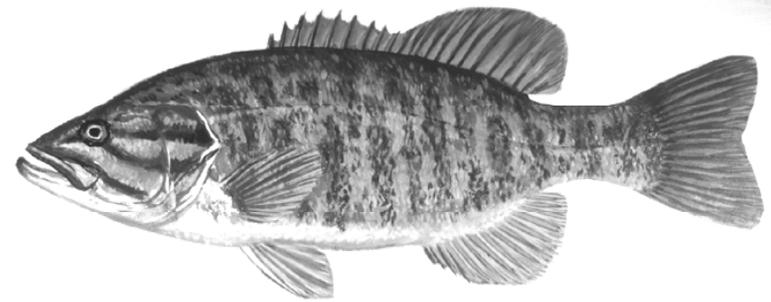


Figure 4. Smallmouth bass sportfishing effort, catch, harvest, and length distribution, Rock Lake, during 2010-11.

# LARGEMOUTH BASS

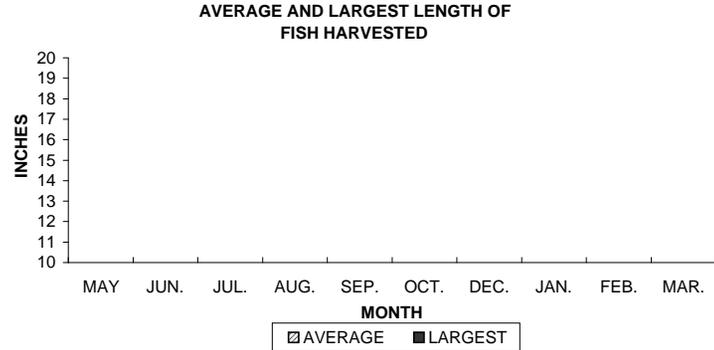
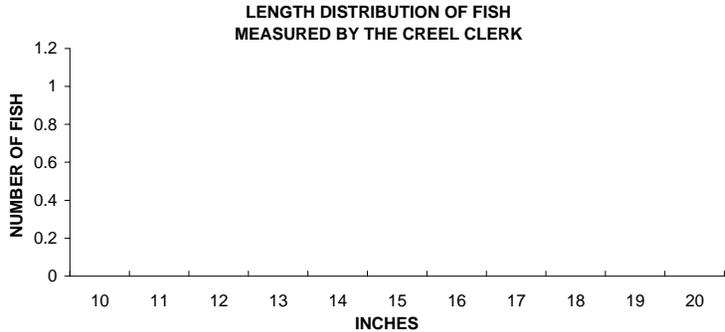
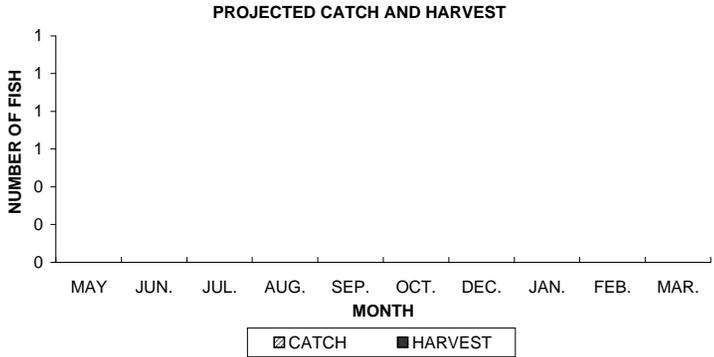
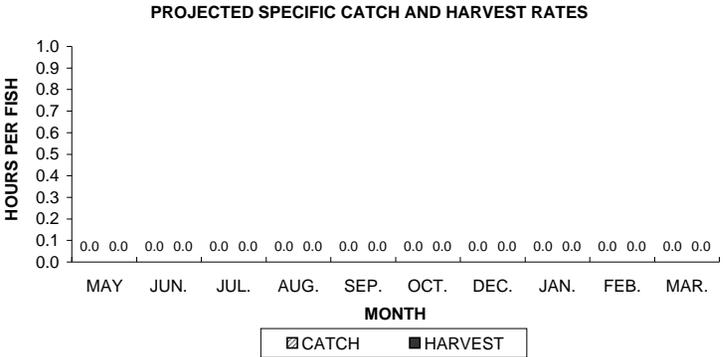
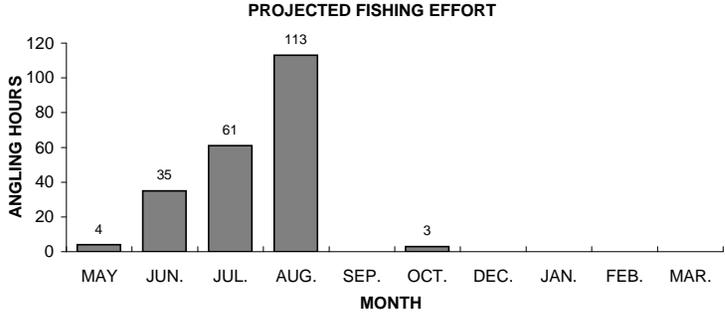
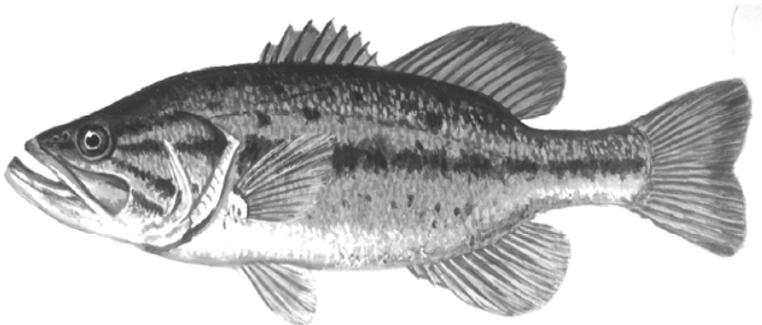


Figure 5. Largemouth bass sportfishing effort, catch, harvest, and length distribution, Rock Lake, during 2010-11.

# YELLOW PERCH

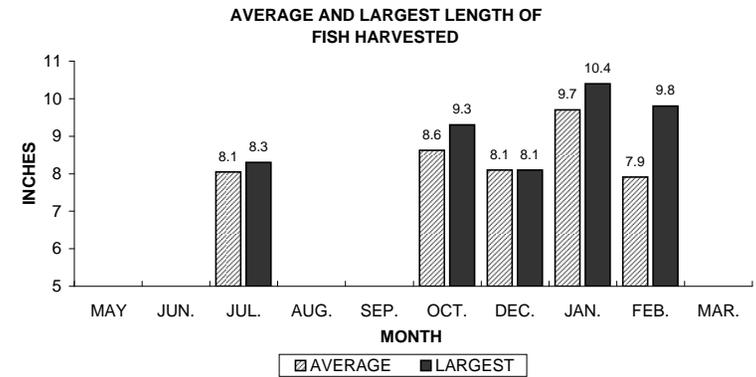
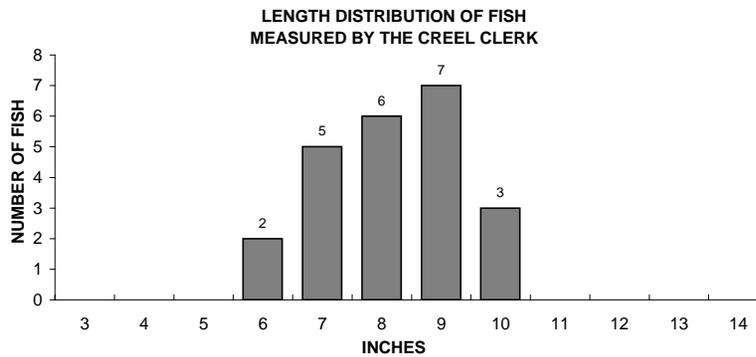
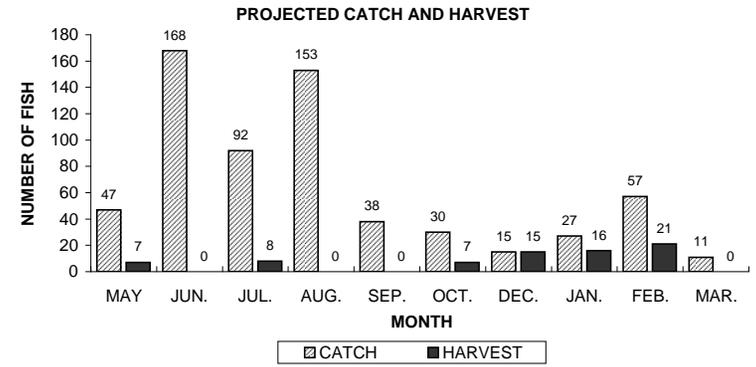
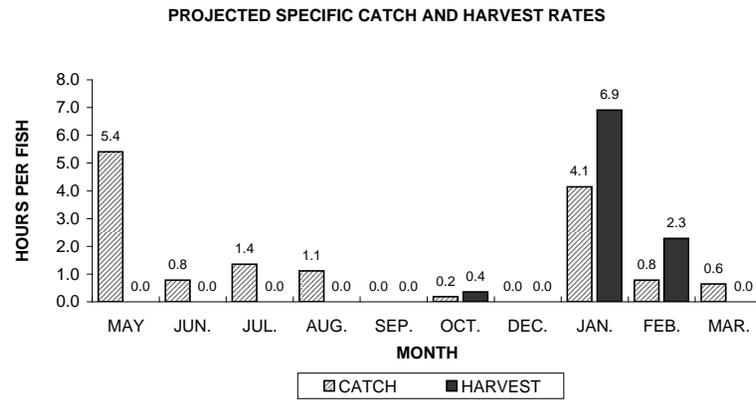
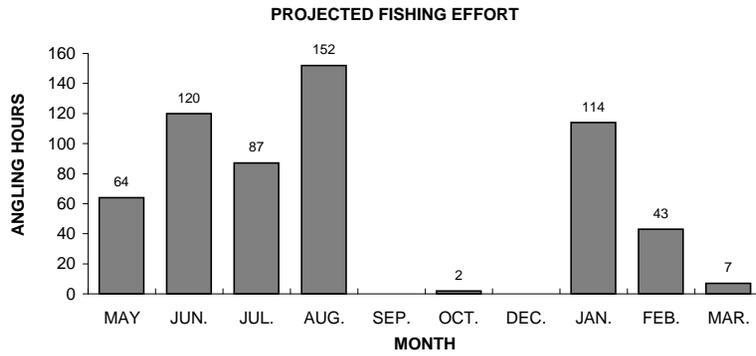
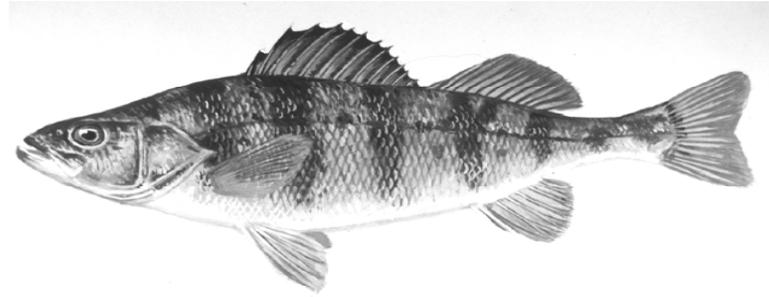


Figure 6. Yellow perch sportfishing effort, catch, harvest, and length distribution, Rock Lake, during 2010-11.

# BLUEGILL

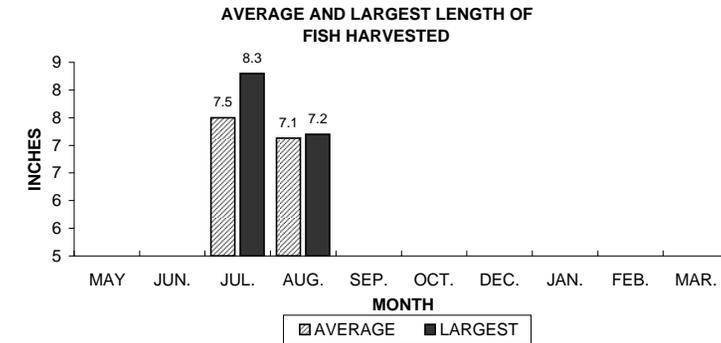
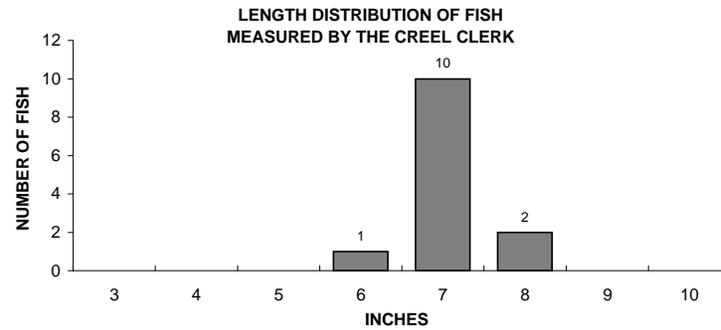
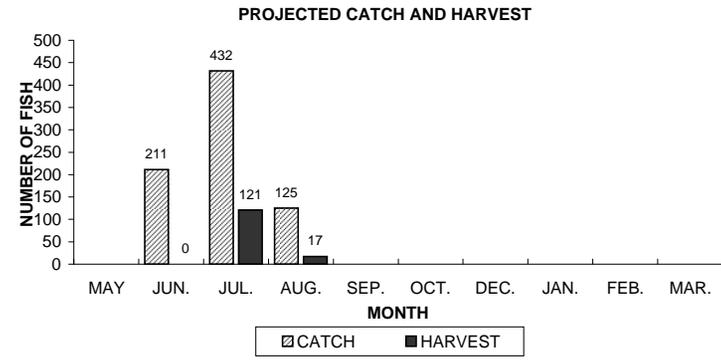
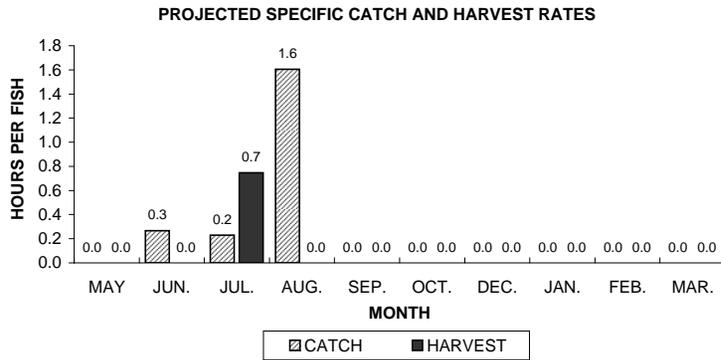
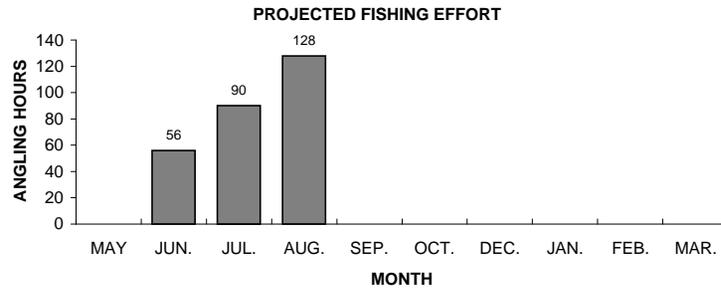
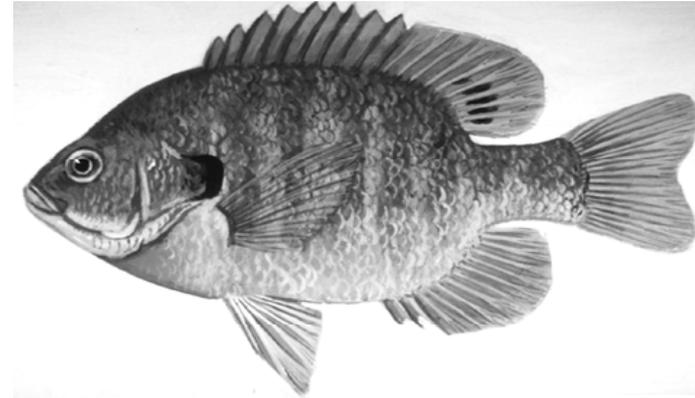


Figure 7. Bluegill sportfishing effort, catch, harvest, and length distribution, Rock Lake, during 2010-11.

# PUMPKINSEED

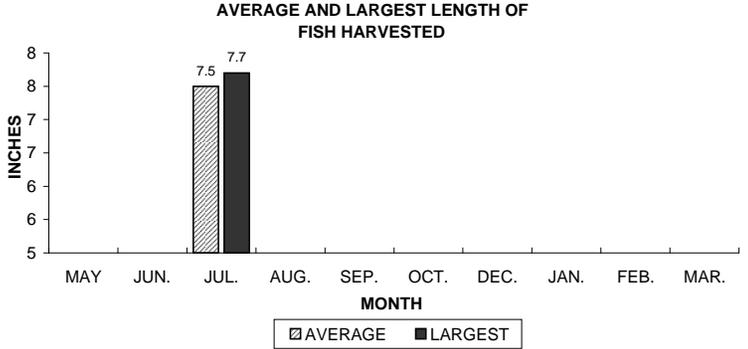
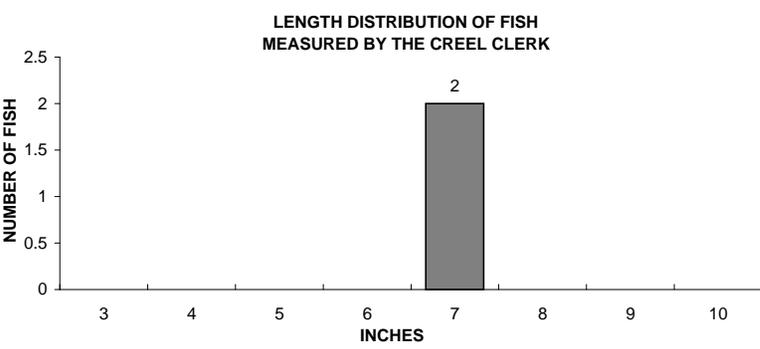
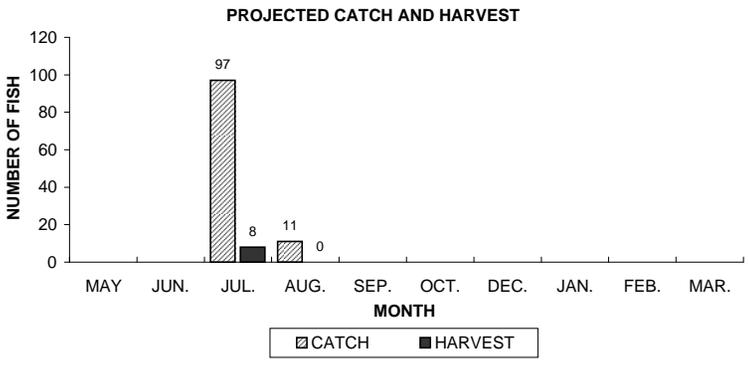
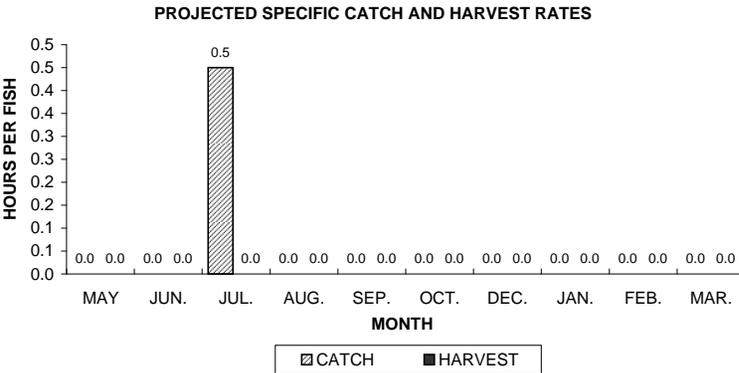
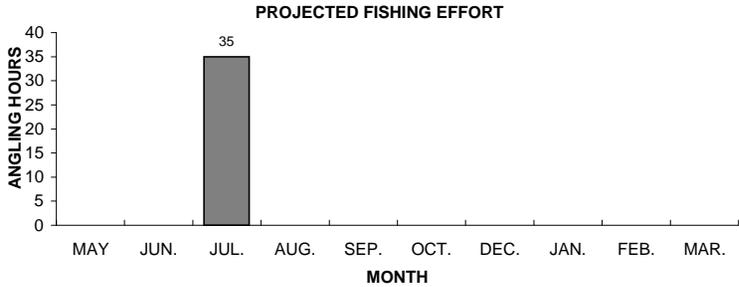
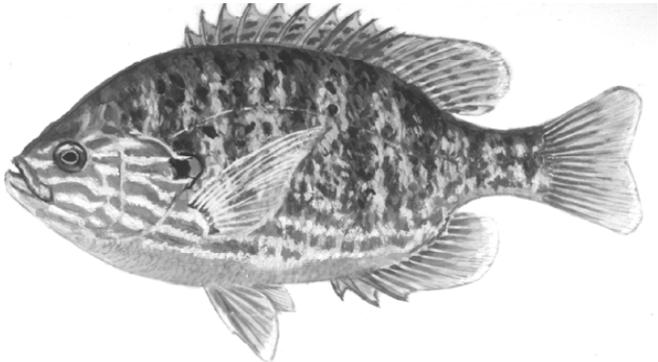


Figure 8. Pumpkinseed sportfishing effort, catch, harvest, and length distribution, Rock Lake, during 2010-11.

# ROCK BASS

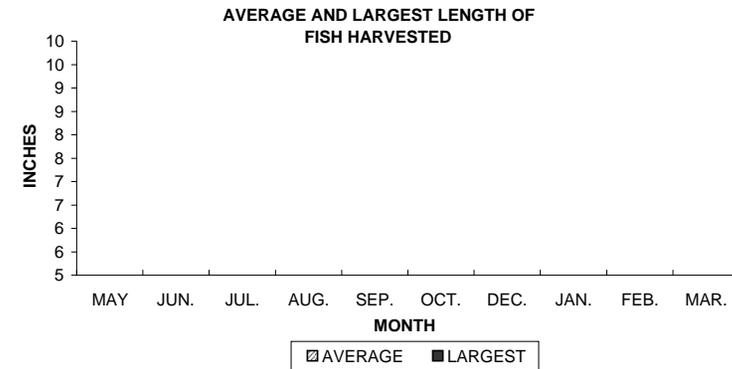
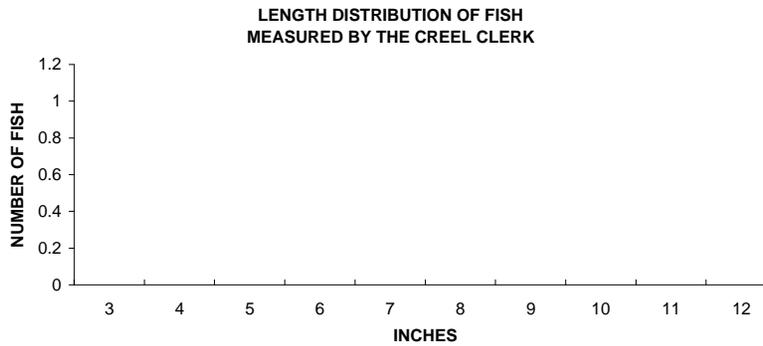
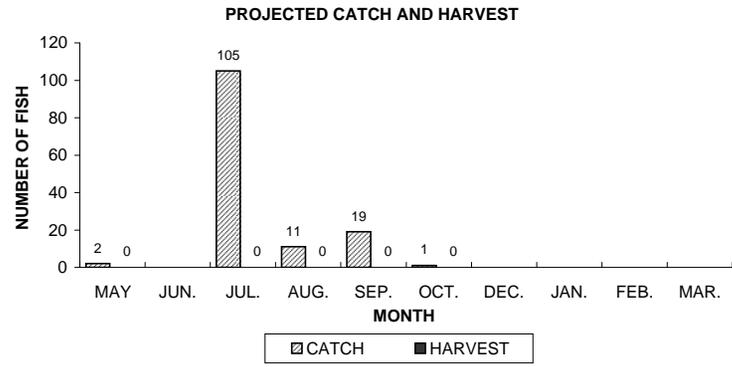
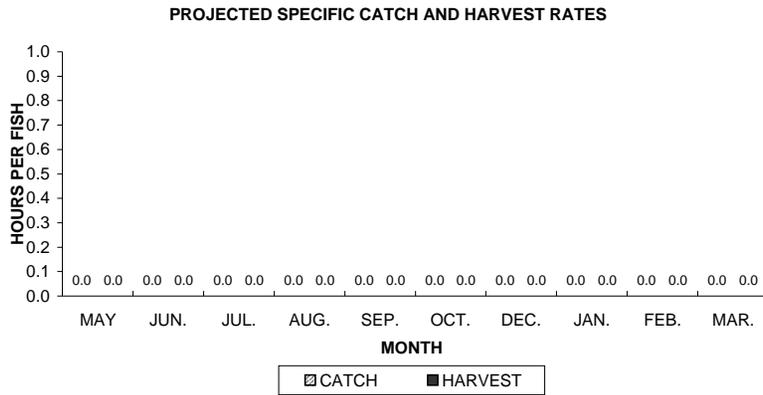
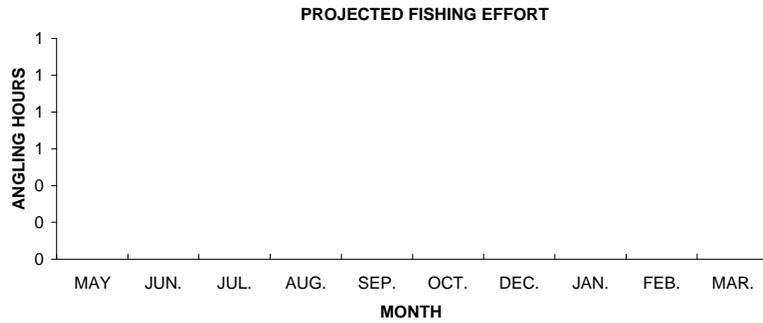
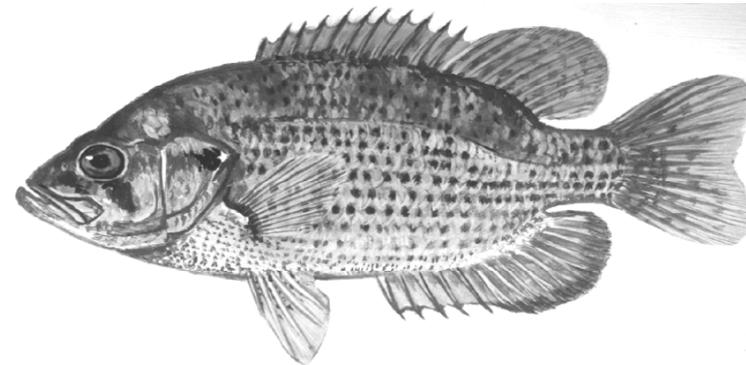


Figure 9. Rock bass sportfishing effort, catch, harvest, and length distribution, Rock Lake, during 2010-11.

# BLACK CRAPPIE

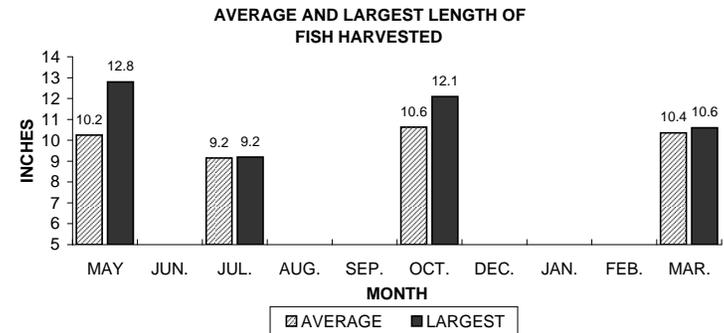
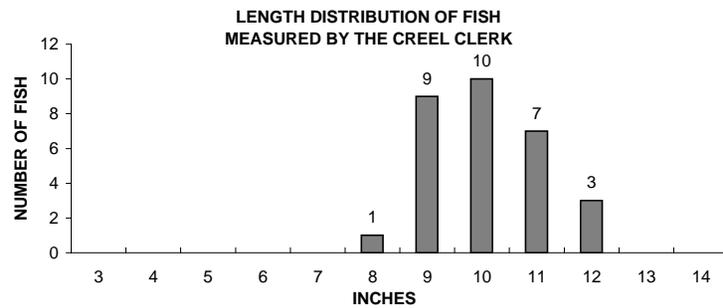
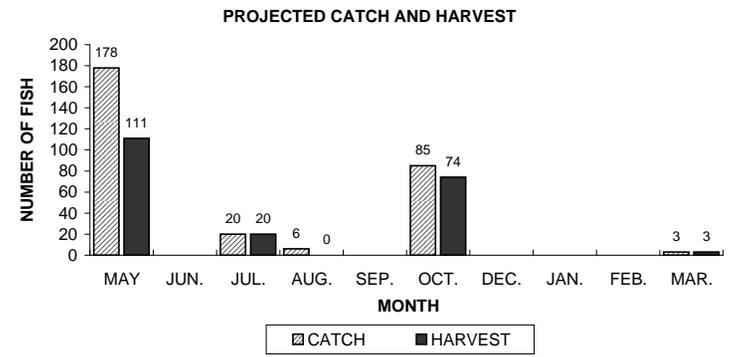
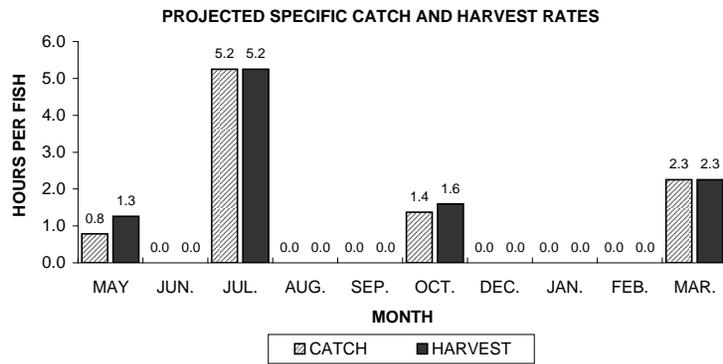
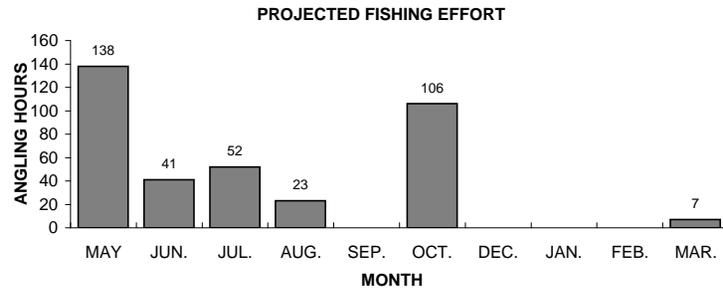
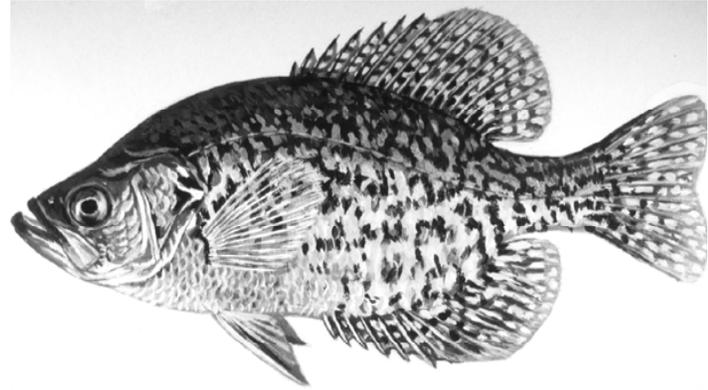


Figure 10. Black crappie sportfishing effort, catch, harvest, and length distribution, Rock Lake, during 2010-11.