

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

**Big Lake
(Cisco Chain)**

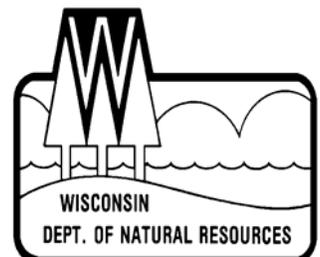
Vilas County

2008-09



Treaty Fisheries Publication

**Compiled by Tim Tobias
Treaty Fisheries Technician**



May 2009

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.

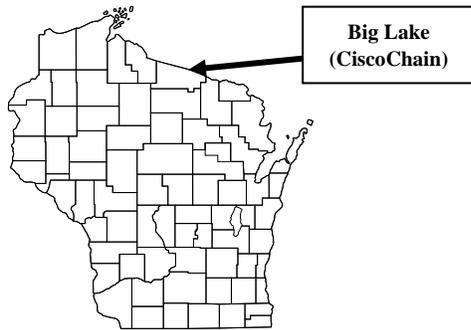
Creel survey clerks travel their lakes using a boat or snowmobile to count numbers of anglers on a lake at predetermined times, and to interview anglers who have completed their fishing trip to collect data on what species they fished for, catch, harvest, lengths of fish harvested, marks (finclips or 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.

Also included are general information about the lake, discussion of results of the survey, and detailed summaries, by species, of fishing effort, catch and harvest.

GENERAL LAKE INFORMATION



Location

Big Lake (Cisco Chain) is located 12.5 miles west of the town of Land O’ Lakes in Vilas County.

Physical Characteristics

Big Lake covers 771 acres, has a maximum depth of 30 feet, and 12.1 miles of total shoreline. It is a shallow drainage lake of high fertility. The bottom material consists of mostly sand and gravel with some muck and rock also present. There is one public launch.

Seasons Surveyed

The creel survey started on opening day (May 3th) of the 2008 gamefishing season and ran through March 01, 2009. The only portion of the gamefishing season not covered by the survey was November 1 to December 1, due to unsafe ice conditions.

Weather

Spring weather conditions were normal. Ice cleared the lake on approximately April 30th.

Harvest Regulations

The following seasons, daily bag limits, and

length limits were in place on Big Lake during the 2008 gamefish season.

<u>Species</u>	<u>Season</u>	<u>Bag Limit</u>	<u>Minimum Size</u>
Largemouth Bass & Smallmouth Bass	5/3-6/20	catch and release	
	6/21-11/30	5 of each	14 inches
Muskellunge	5/15-11/30	1	40 inches
Northern Pike	5/3-3/01	5	none
Walleye	5/3-3/01	3*	15"
Rock Bass	year round	none	none
Panfish	none	25	none

* The statewide bag limit was 5 fish, but due to tribal declarations it was reduced on this lake.

SPECIES CATCH AND HARVEST INFORMATION

Angling information is summarized for each species caught or fished for (Figures 2-10). Each species page has up to five graphs depicting the following:

- ESTIMATED FISHING EFFORT**
Total calculated number of hours during each month that anglers spent fishing for a species.
- ESTIMATED 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.
- ESTIMATED CATCH AND HARVEST**
Calculated number of fish of the indicated species caught or harvested by all anglers regardless of their intended target.

4. LENGTH DISTRIBUTION OF HARVESTED FISH

All fish of a species that were measured by the creel clerk during the entire survey season.

5. LARGEST AND AVERAGE LENGTH OF FISH HARVESTED

Largest and average length of harvested fish of the indicated species measured by the creel clerk each month.

Survey Logistics

There were no unusual problems associated with the survey. The department also conducted creel surveys in 1996 and 1991.

General Angler Information

Anglers spent 28,269 hours fishing Big Lake within the standard daylight survey period during the 2008-09 gamefishing season (Table 1). Fishing activity during the 2008 fishing season peaked in May (5,735 hours) and was lowest in December (438 hours).

SPECIES INFORMATION

Walleye (Table 2, Figure 1)

Walleye were the most sought after target of anglers who fished Big Lake during the 2008-09 gamefishing season. Anglers directed 15,528 hours of effort at walleye within the standard daylight survey period during the 2008 season.

Anglers caught 11,121 and harvested 815 walleye from Big Lake during the 2008 season. The 2008 catch of 11,121 fish was almost identical to the 1991 catch of 11,551 fish. Projected harvest increased by 378 walleye from 437 in 1991 to 815 walleye harvested in 2008.

Walleye anglers spent 1.4 hours to catch a walleye during the 2008 season. Walleye anglers also expended less effort to harvest a walleye from Big Lake in 2008 (19.2 hours) than in 1991 (35.8 hours).

Walleye fishing effort on Big Lake during the 2008 season was highest in May (5,182 hours). Total projected catch (4,546) and harvest (424) were also highest in May.

The largest harvested walleye measured by the creel clerk was a 26.7-inch fish caught in December. The average length of walleye measured by the clerk was 16.6 inches in 2008.

Northern Pike (Table 2, Figure 2)

Anglers devoted 1,354 hours of effort to pursuing northern pike during the 2008 season.

Anglers caught 834 and harvested 64 northern pike from Big Lake during the 2008 season.

Muskellunge (Table 2, Figure 3)

Muskellunge were the third most sought after target of anglers who fished Big Lake during the 2008 gamefishing season. Anglers directed 6,407 hours of effort at muskellunge within the standard daylight survey period during the 2008 season.

Anglers caught 229 and harvested 0 muskellunge from Big Lake during the 2008 season.

Smallmouth Bass (Table 2, Figure 4)

Smallmouth bass accounted for 7.4 percent of the directed effort in Big Lake.

Total catch of Smallmouth bass increased from 2,110 smallmouth caught in the 1991 survey to 4,643 fish in 2008-09. Projected

harvest of smallmouth bass was 70 fish.

Largemouth Bass (Table 2, Figure 5)

About 1.5 percent of directed effort was focused on largemouth bass. Catch rate increased from 26 fish in 1991-92 to 274 fish in the 2008-09 survey.

Panfish (Table 2, Figures 6-10)

Yellow perch were the 2nd most sought after fish species with almost 20 percent of the directed effort. An estimated 9,322 yellow perch were caught and 4,733 harvested from Big Lake during the 2008-09 creel season. The greatest monthly catch of yellow perch during the 2008 season occurred in June (2,638 fish). The average length of yellow perch measured by the clerk was 8.8 inches in 2008.

Nine percent of directed effort was focused on bluegill. Anglers caught 5,685 and harvested 2,090 during the 2008 season. The average length of bluegill measured was 7.1 inches.

Other species of panfish taken, but considered of only minimal importance during the 2008-09 survey include rock bass, pumpkinseed and black crappie.

ACKNOWLEDGEMENTS

Lynn Robinson was the survey clerk on the lake from May through October, and Doug Day from December through March.

The Department thanks the cooperators, Wes Kiley (summer) and Brian Achuff (winter), who generously allowed the department to keep a boat and snowmobile on their property during this survey.

We also thank all the anglers who took the time to offer information about their fishing trip to the survey clerk. Without your

cooperation this survey would not have been possible.

This creel survey report was reviewed by Mike Coshun, Steven 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. Requests should be directed to:

Mike Coshun
Treaty Fisheries Biologist
Wisconsin Department of Natural Resources
8770 Hwy J
Woodruff, WI 54568
(715-358-9209)
michael.coshun@dnr.state.wi.us

Table 1. Sportfishing effort summary, Big Lake, 2008-09 season.

Month	Total Angler Hours	Total Angler Hours/Acre	Vilas County Average Hours/Acre	Statewide Average Hours/Acre
May	5735	7.4	5.4	5.8
June	4405	5.7	7.0	6.1
July	4779	6.2	7.6	6.4
August	5327	6.9	6.6	5.4
September	3443	4.5	4.2	3.8
October	1930	2.5	2.0	1.6
December	438	0.6	0.5	1.7
January	1292	1.7	0.8	1.5
February	909	1.2	0.9	1.3
March	12	0.0	0.1	**
*Summer Total	25619	33.2	32.8	29.1
*Winter Total	2650	3.4	2.4	4.5
Grand Total	28269	36.7	35.2	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 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 if you wish to compare effort on Big 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 Big Lake to other lakes statewide.

Table 2. Comparison of creel survey synopses, Big Lake, 2008-09 and 1991-92 fishing seasons.

CREEL YEAR: 2008-09

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	15528	38.76%	11121	1.4	815	19.2	16.6
Northern Pike	1354	3.38%	834	7.9	64	100.0	24.8
Muskellunge	6407	15.99%	229	3.4	0		
Smallmouth Bass	2980	7.44%	4643	1.8	70	49.5	15.2
Largemouth Bass	607	1.51%	274	3.3	0		
Yellow Perch	7695	19.21%	9322	0.9	4733	1.7	8.8
Bluegill	3721	9.29%	5685	0.8	2090	1.8	7.1
Pumpkinseed	183	0.46%	38	5.5	33	5.5	6.7
Rock Bass	0	0.00%	1502		55		7.4
Black Crappie	1590	3.97%	821	2.0	359	4.7	8.0

* 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

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	15456	45.24%	11551	1.4	437	35.8	17.0
Northern Pike	1041	3.05%	873	12.3	247	0.0	22.4
Muskellunge	4070	11.91%	166	66.2	0	0.0	0.0
Smallmouth Bass	1506	4.41%	2110	4.2	299	19.5	13.0
Largemouth Bass	69	0.20%	26	0.0	0	0.0	12.3
Yellow Perch	8837	25.86%	28996	0.3	17155	0.5	9.2
Bluegill	3052	8.93%	4326	0.8	2029	1.7	7.4
Pumpkinseed	0	0.00%	5	0.0	5	0.0	6.5
Rock Bass	0	0.00%	2730	0.0	213	0.0	8.2
Black Crappie	135	0.40%	22	15.6	0	0.0	0.0

WALLEYE

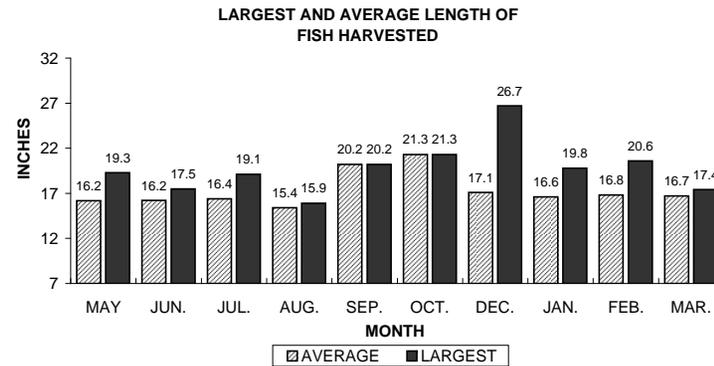
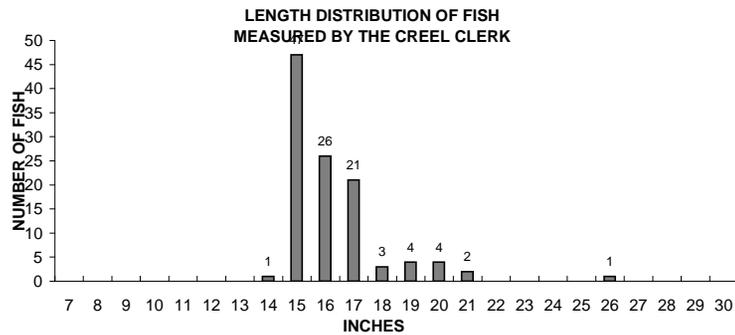
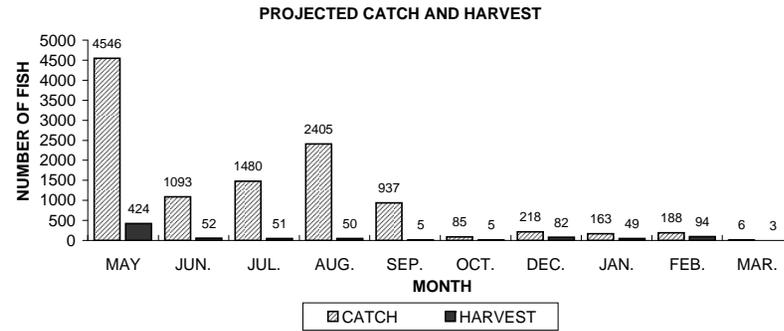
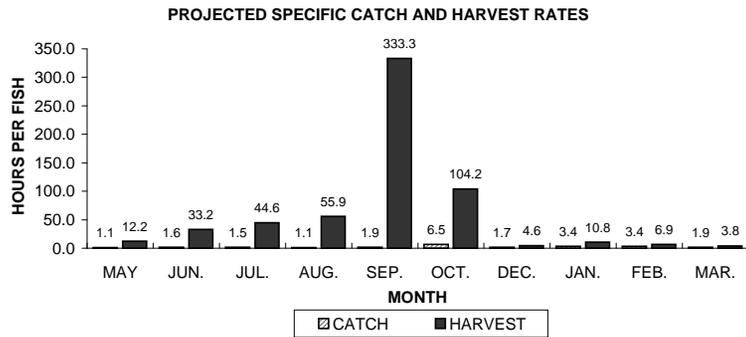
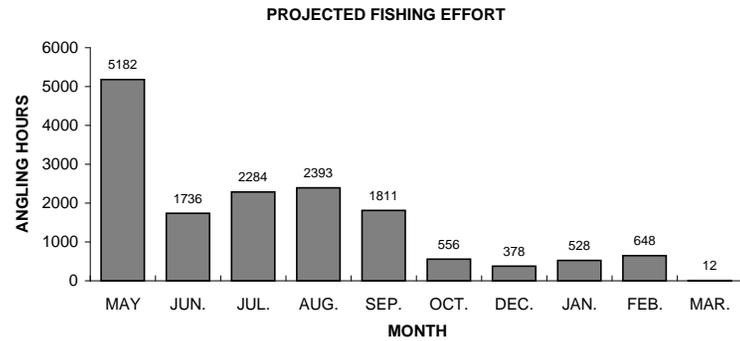
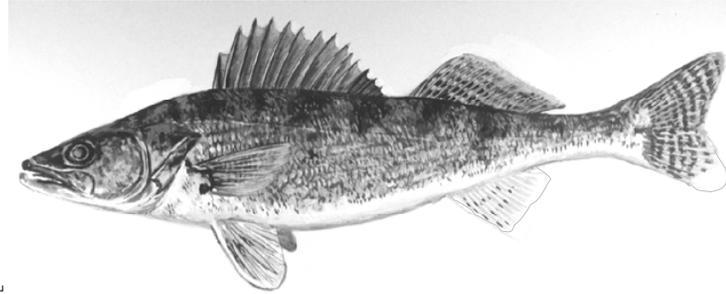


Figure 1. Walleye sportfishing effort, catch, harvest, and length distribution, Big Lake, during 2008-09.

NORTHERN PIKE

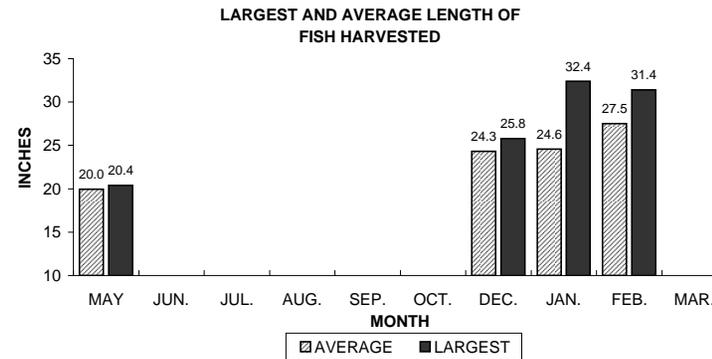
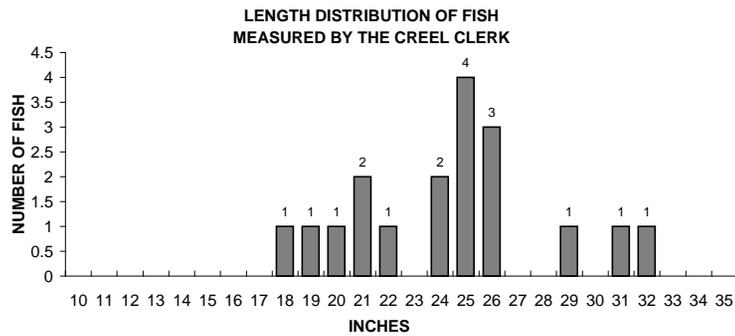
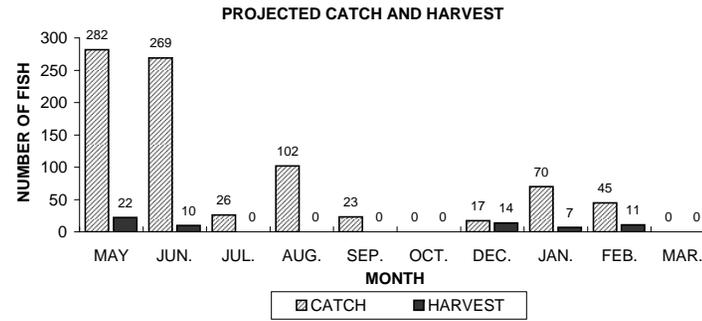
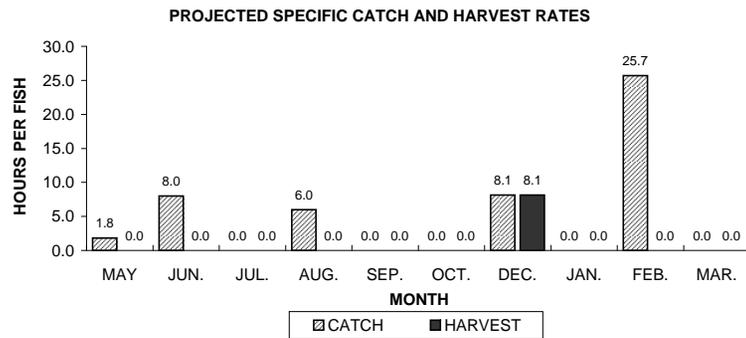
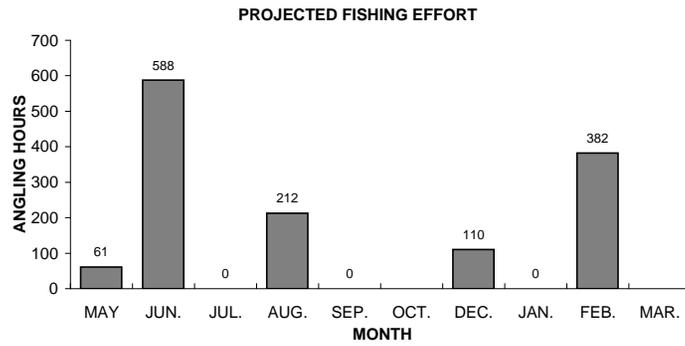
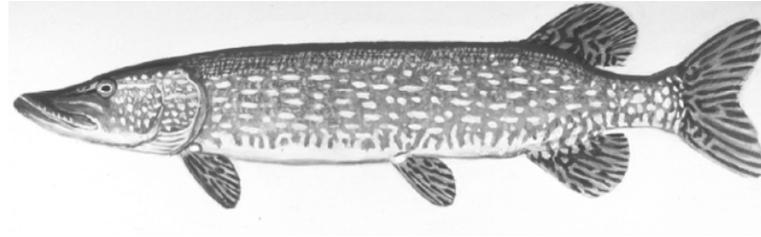
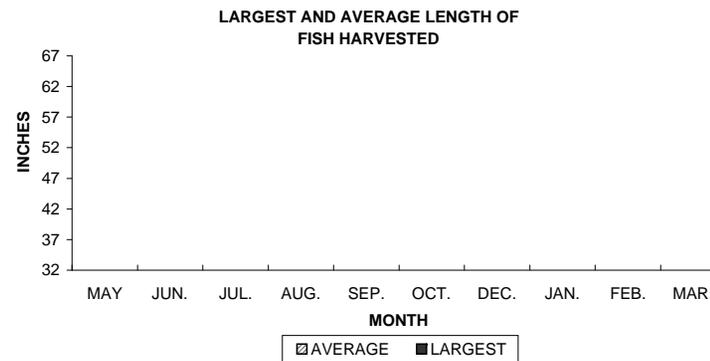
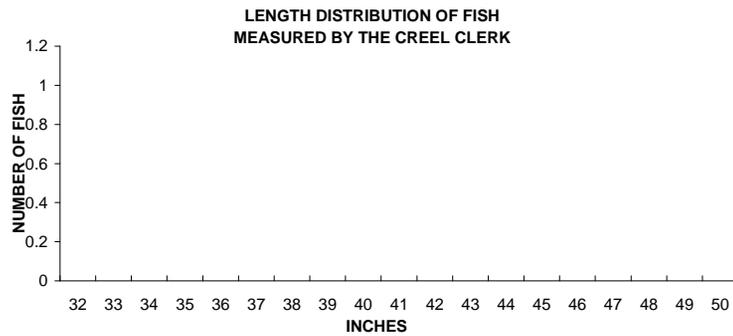
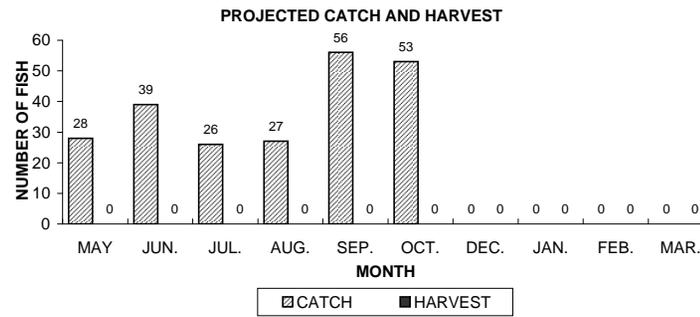
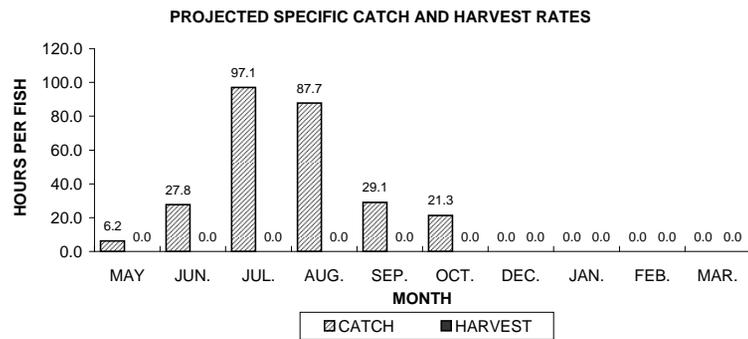
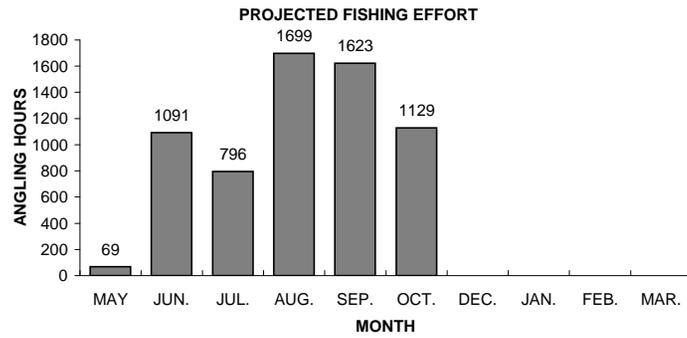
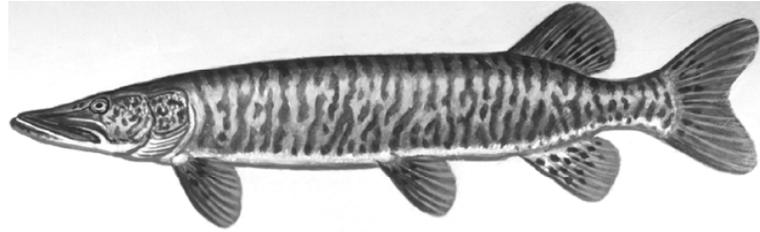


Figure 2. Northern pike sportfishing effort, catch, harvest, and length distribution, Big Lake, during 2008-09.

MUSKELLUNGE



6

Figure 3. Muskellunge sportfishing effort, catch, harvest, and length distribution, Big Lake, during 2008-09.

SMALLMOUTH BASS

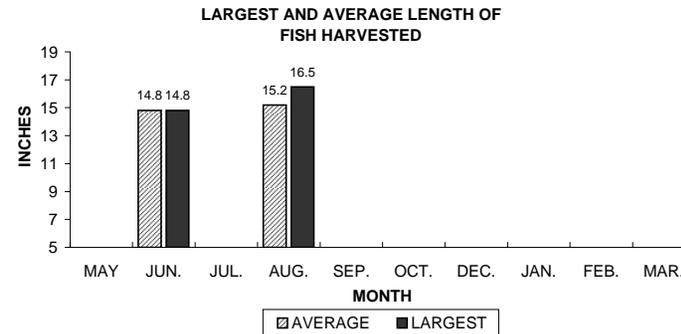
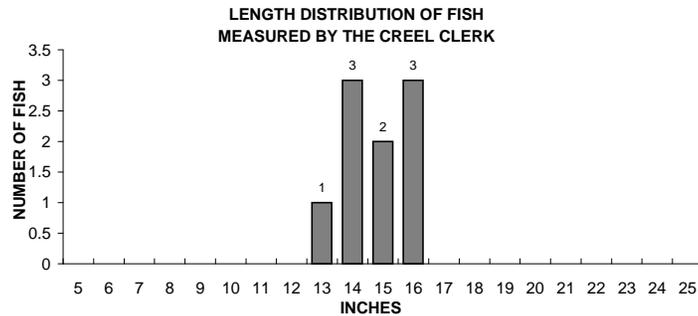
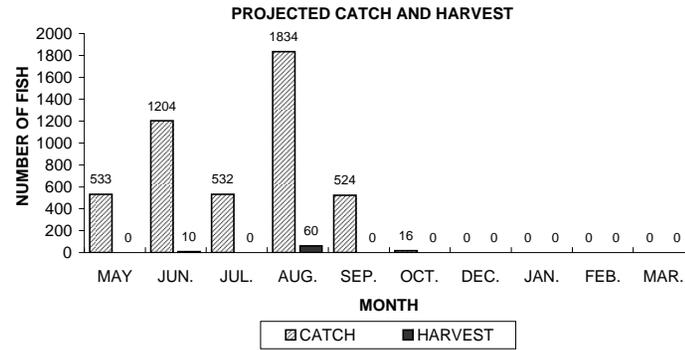
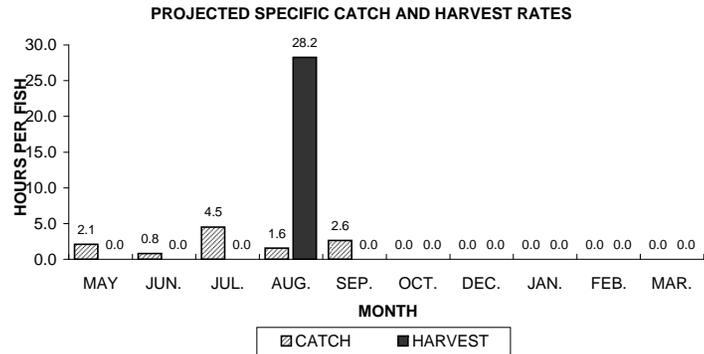
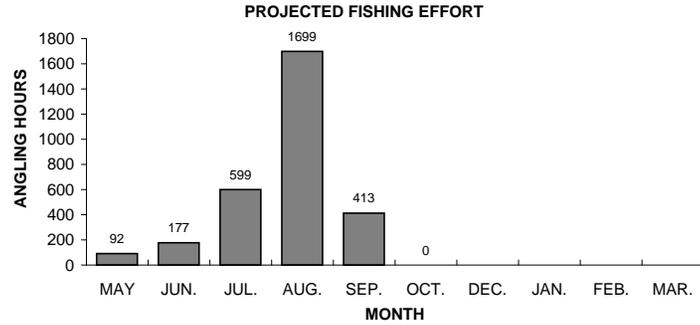
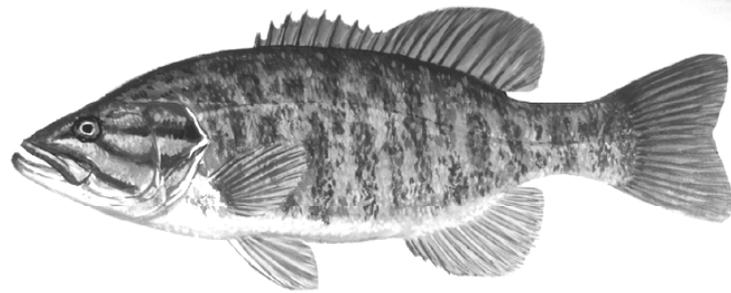


Figure 4. Smallmouth bass sportfishing effort, catch, harvest, and length distribution, Big Lake, during 2008-09.

LARGEMOUTH BASS

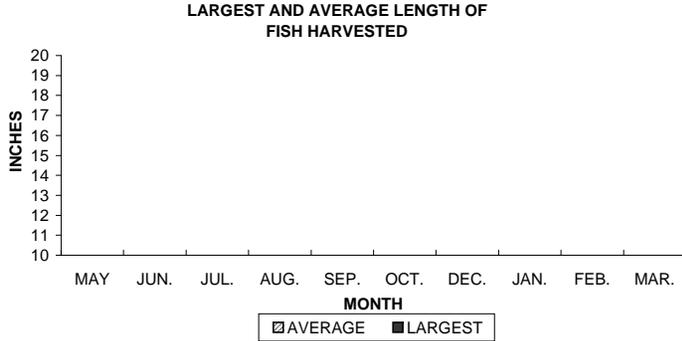
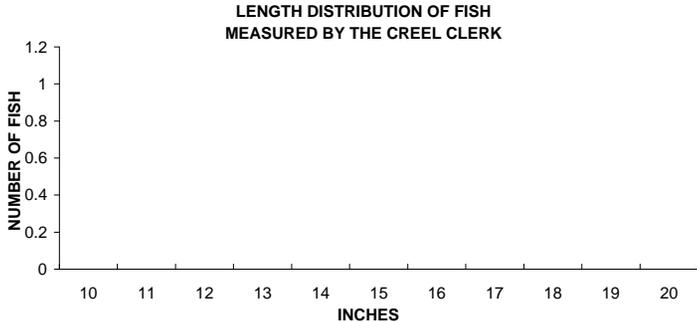
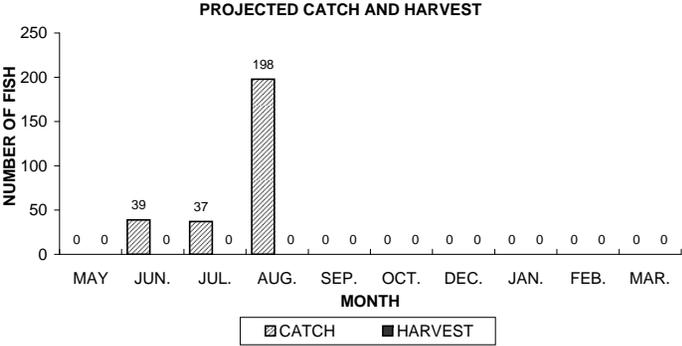
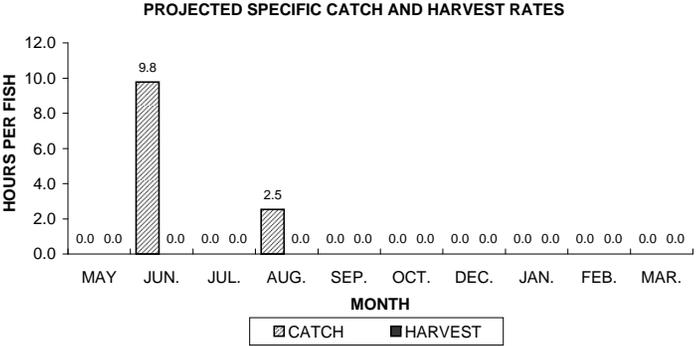
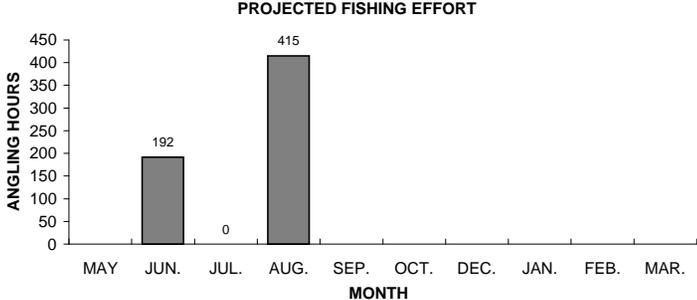
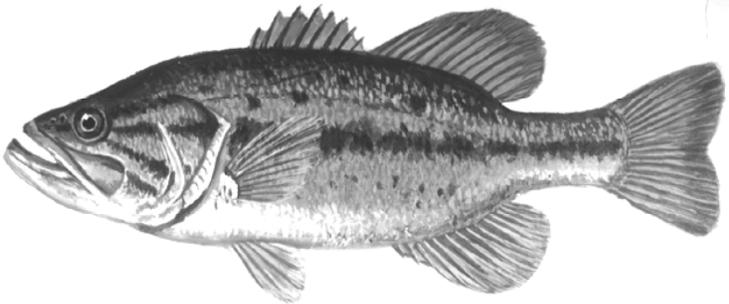


Figure 5. Largemouth bass sportfishing effort, catch, harvest, and length distribution, Big Lake, during 2008-09.

YELLOW PERCH

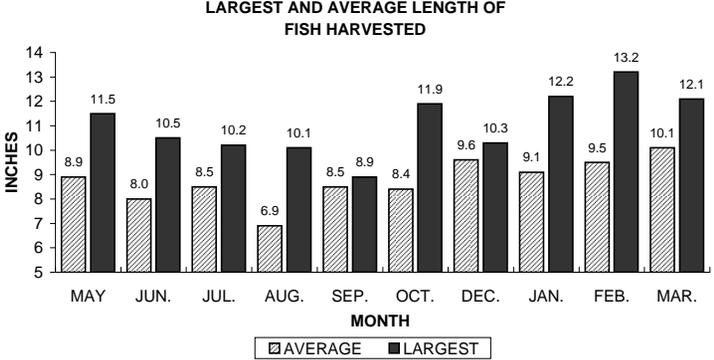
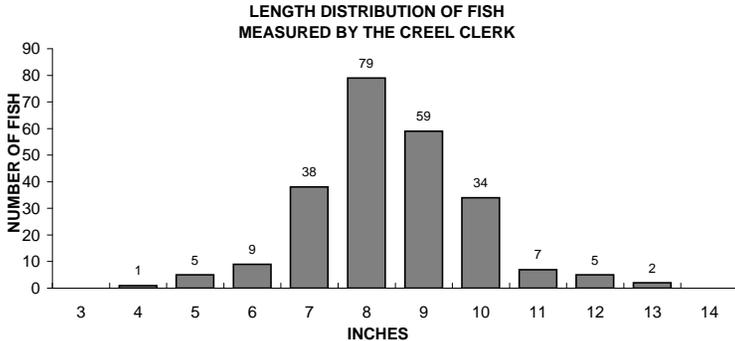
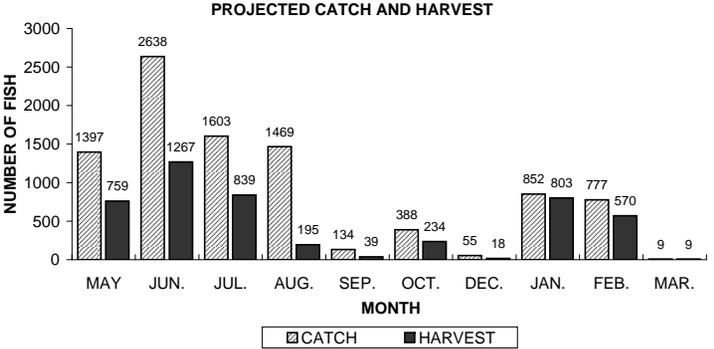
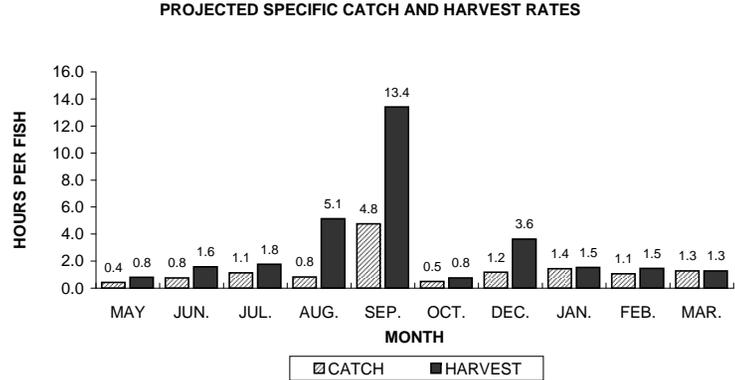
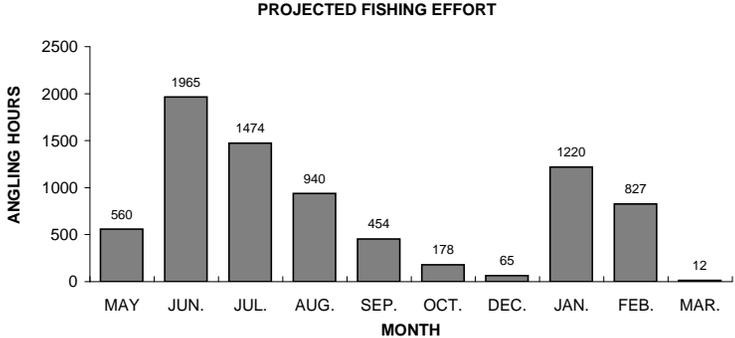


Figure 6. Yellow perch sportfishing effort, catch, harvest, and length distribution, Big Lake, during 2008-09.

BLUEGILL

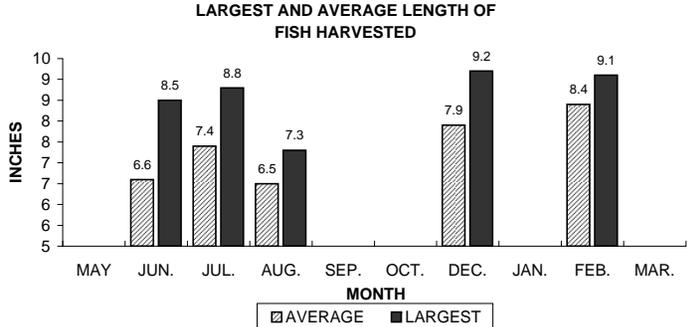
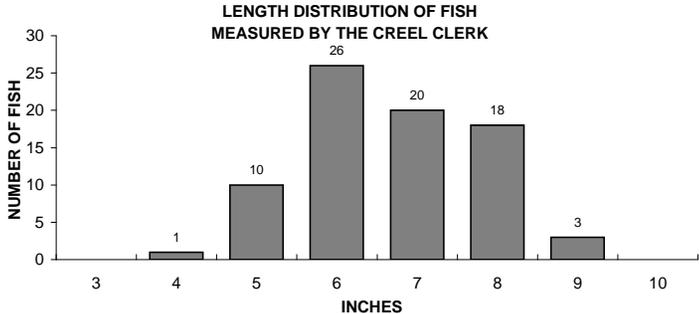
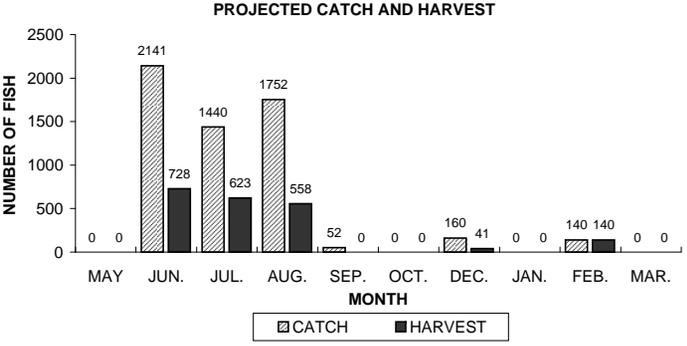
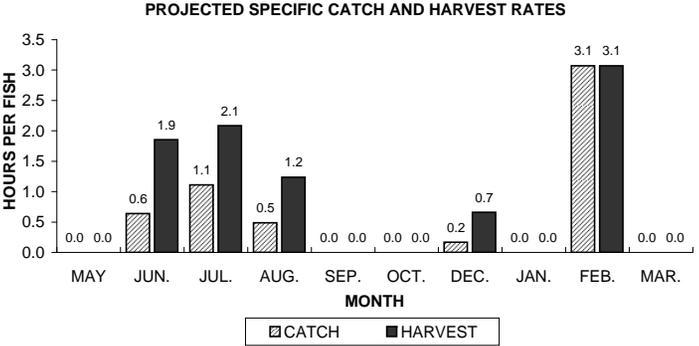
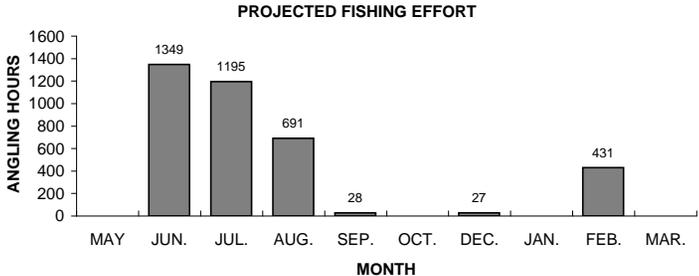
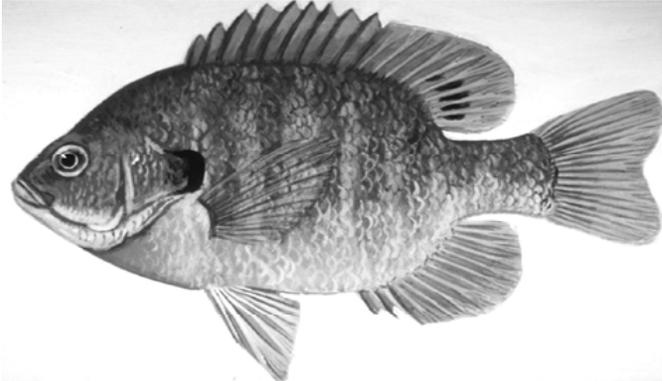


Figure 7. Bluegill sportfishing effort, catch, harvest, and length distribution, Big Lake, during 2008-09.

PUMPKINSEED

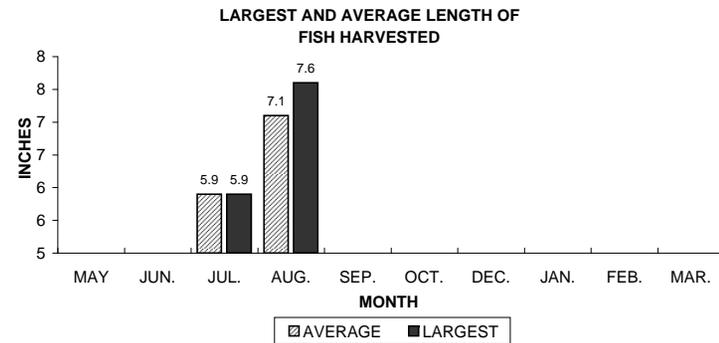
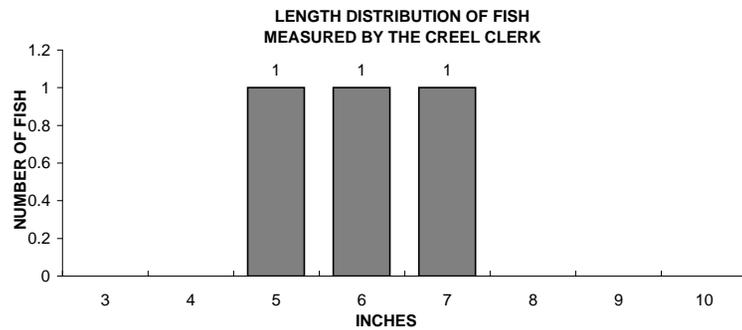
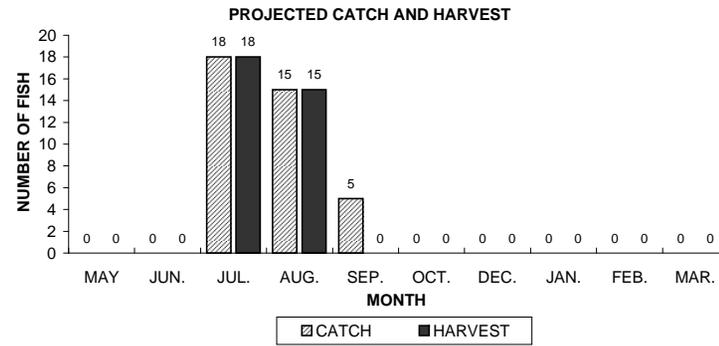
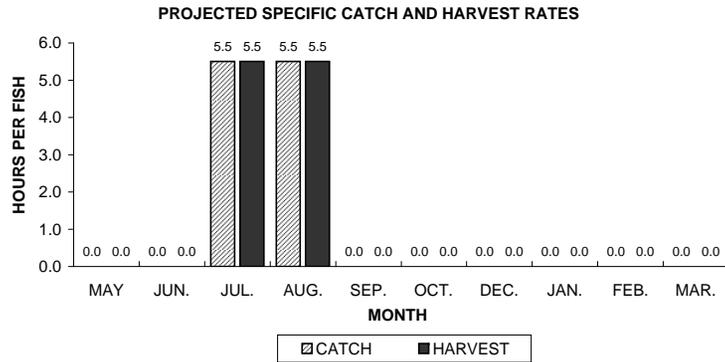
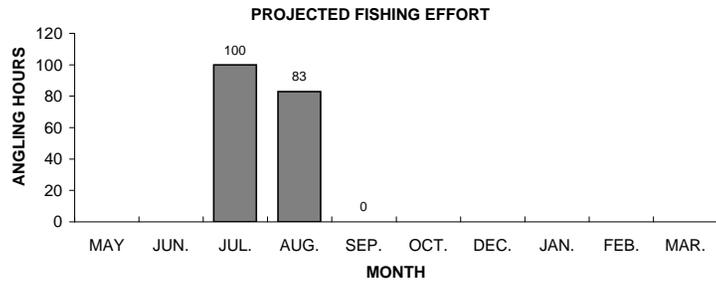
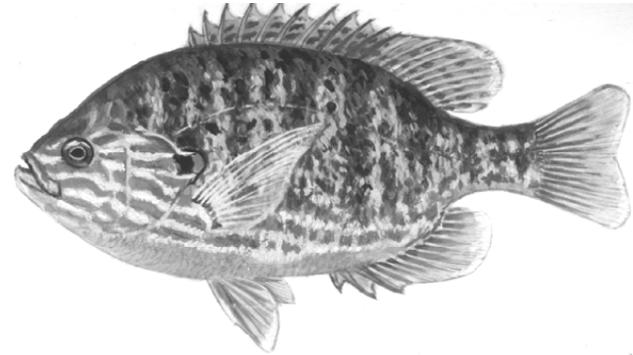


Figure 8. Pumpkinseed sportfishing effort, catch, harvest, and length distribution, Big Lake, during 2008-09.

ROCK BASS

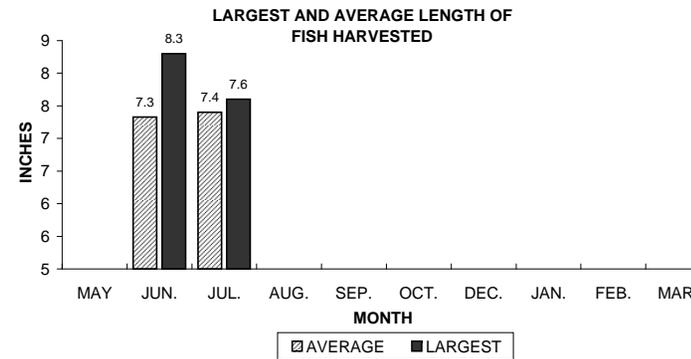
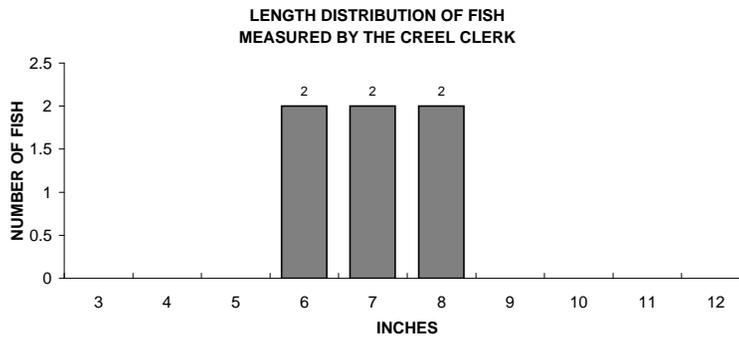
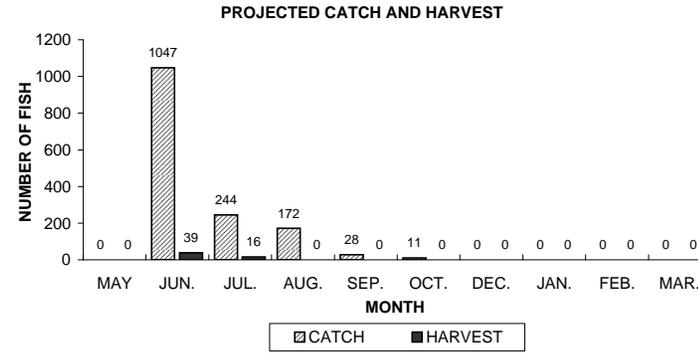
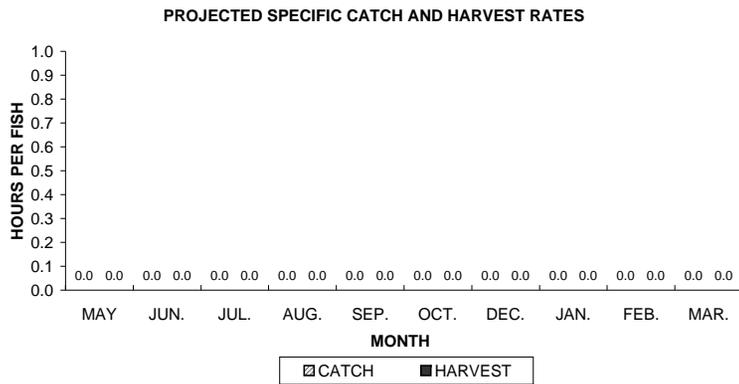
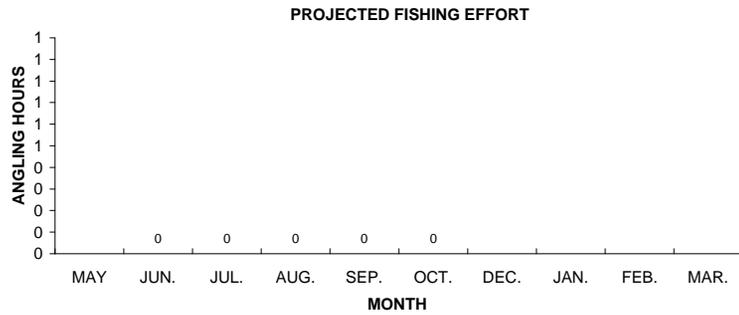
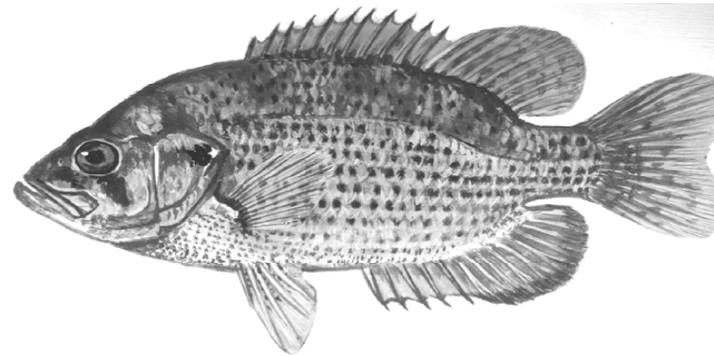


Figure 9. Rock bass sportfishing effort, catch, harvest, and length distribution, Big Lake, during 2008-09.

BLACK CRAPPIE

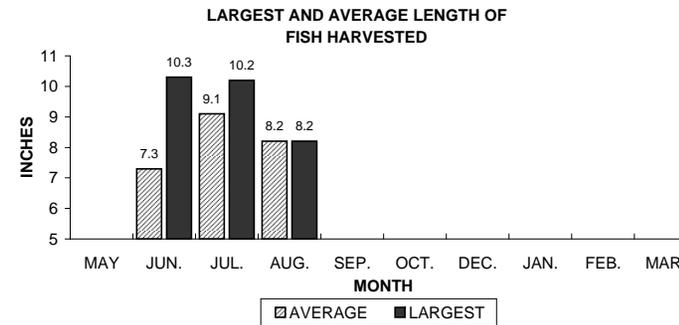
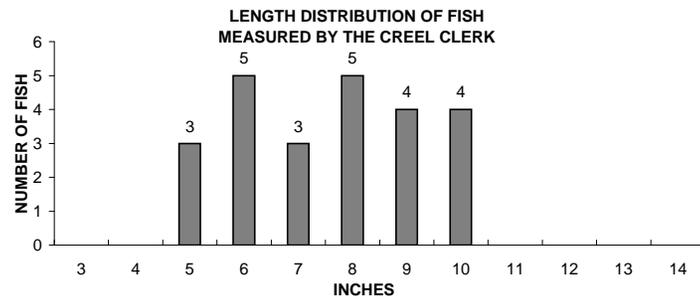
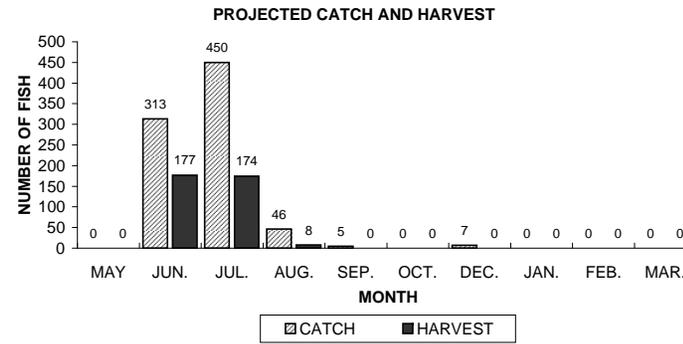
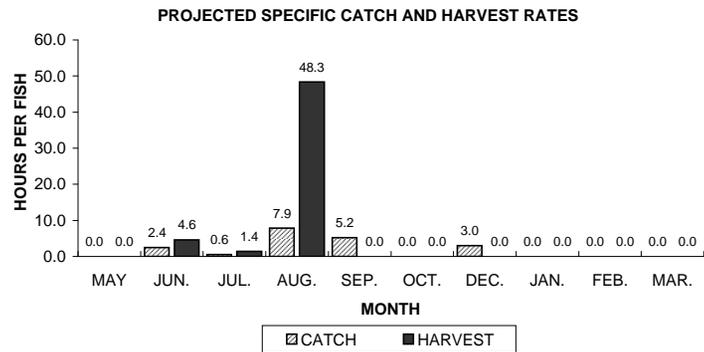
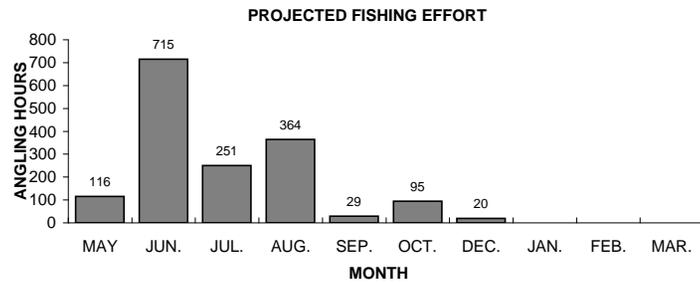
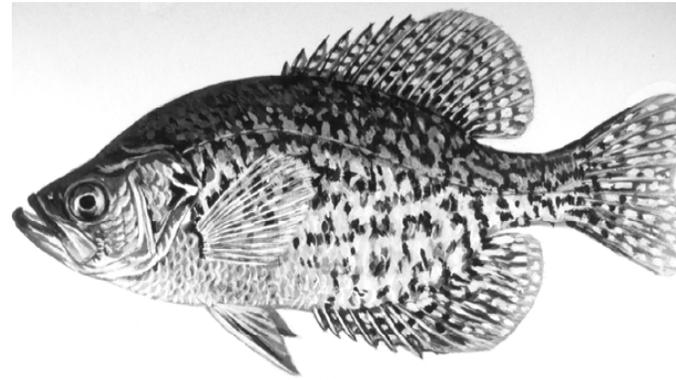


Figure 10. Black crappie sportfishing effort, catch, harvest, and length distribution, Big Lake, during 2008-09.