

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

**LUCERNE LAKE**

**FOREST COUNTY**

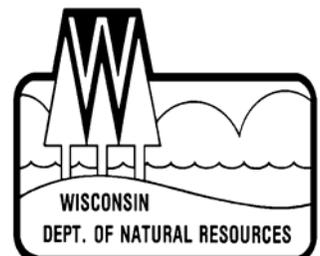
**2006-07**



**Treaty Fisheries Publication**

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**Edited by Dennis Scholl  
Treaty Fisheries Supervisor**



**May 2007**

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**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.

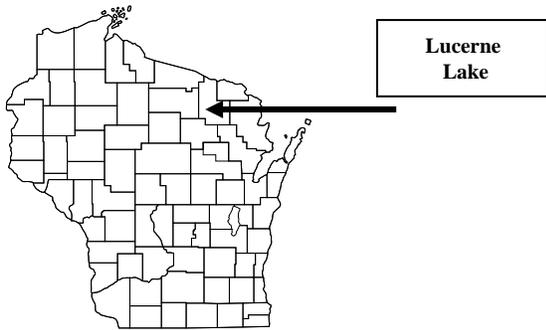
You may have encountered a DNR creel survey clerk on a recent fishing trip. We appreciate your cooperation during an interview. The survey only takes a moment of your time and it gives the Department valuable information needed for management of the fishery.

This report provides projections of:

1. Overall fishing 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 about the lake; discussion of results of the survey; and detailed summaries, by species, of fishing effort, catch and harvest.

## GENERAL LAKE INFORMATION



### Location

Lucerne Lake is located in Forest County east of Crandon.

### Physical Characteristics

Lucerne Lake is a 1026-acre drained lake with one outlet. The outlet flows to Swamp Creek. Lucerne Lake has a maximum depth of 73 feet, a mean depth of 31 feet, and has 8.9 miles of shoreline. Littoral substrate is comprised primarily of sand, with lesser amounts of gravel, muck, and rock. Lucerne Lake is a medium hard water lake having slightly alkaline, clear water of very high transparency.

### Seasons Surveyed

The period referred to in this report as the 2006 fishing season ran from May 6, 2006 through March 4, 2007. The open water creel survey ran from May 6 through October 31, 2006 and the ice fishing creel

survey ran from December 1, 2007 through March 4, 2007.

### Weather

Ice-out on Lucerne Lake was around April 18, 2006 which is considered normal for northern Wisconsin. Spring, summer and fall weather was normal. Fishable-ice formed on Lucerne Lake in early December.

### Sportfishing Regulations

The following seasons, daily bag limits, and length limits were in place on Lucerne Lake during the 2006-fishing season:

Species	Season	Bag Limit	Min. Size
Largemouth Bass & Smallmouth Bass	5/06-6/16	Catch & Release	
Northern Pike	6/17-3/04	5	14"
Walleye	5/06-3/04	5	none
Panfish	5/06-3/04	3*	15"
Rock Bass	all year	25	none
	all year	none	none

\* The statewide bag limit was 5 fish, but due to tribal declarations it was reduced on Lucerne Lake.

## SPECIES CATCH AND HARVEST INFORMATION

Angling information is summarized for each species (Figures 1-9) with effort and/or catch information. Information presented about species whose fishing season extends beyond March 4 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.

### **General Angler Information**

Anglers spent 14,136 hours or 13.8 hours per acre fishing Lucerne Lake during the 2006 season (Table 1). That was lower than the statewide average of 33.6 hours per acre and the Forest County average of 28.5 hours per acre. July was the most heavily fished month (4.0 hours per acre). Fishing effort was lightest in October and December (0.2 hours per acre).

## **SPECIES INFORMATION**

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

Fishing effort targeted at walleye was 6,596 hours during the 2006 season. Walleye fishing effort was greatest in August (1,530 hours). October had the least amount of walleye fishing effort (181 hours).

Catch was 772 fish and harvest 103 fish. Highest catch (443 fish) and harvest (41 fish) occurred in July. Anglers fished 9.0 hours to catch and 69.0 hours to harvest a walleye during 2006.

The mean length of harvested walleye was 19.8 inches and the largest walleye measured was a 25.1-inch fish harvested in May.

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

Fishing effort directed at northern pike was 1,236 hours during the 2006 season. Northern pike fishing effort was greatest in February (332 hours). October had the least amount of northern pike effort (4 hours).

Catch was 282 fish and harvest 42 fish. Highest catch (71 fish) occurred in May and highest harvest (25 fish) occurred in January. Anglers fished 8.1 hours to catch and 39.7 hours to harvest a northern pike during 2006.

The mean length of harvested northern pike was 24.9 inches and the largest northern pike measured was a 32.5-inch fish harvest in February.

### **Smallmouth Bass** (Table 2, Figure 3)

Smallmouth received the most fishing pressure in Lucerne Lake during the 2006 season. Anglers spent 8,120 hours targeting smallmouth. Smallmouth bass fishing effort was greatest in August (2,547 hours).

Catch was 8,616 fish and harvest 364 fish. Highest catch (2,823 fish) occurred in July and harvest (158 fish) occurred in June. Anglers fished 1.1 hours to catch and 23.1 hours to harvest a smallmouth bass during 2006.

The mean length of harvested smallmouth bass was 15.0 inches and the largest smallmouth bass measured were 21.0-inch fish harvested in October.

**Largemouth Bass** (Table 2, Figure 4)  
Fishing effort directed at largemouth bass was 4,407 hours during the 2006 season. Largemouth bass fishing effort was greatest in June (1,524 hours).

Catch was 850 fish and harvest 79 fish. Highest catch (290 fish) occurred in June. Anglers fished 6.7 hours to catch a largemouth bass during 2006.

**Panfish** (Table 2, Figures 5-9)  
Panfish effort was 4,194 hours during the 2006 season. Panfish fishing effort was greatest in August (1,591 hours). Catch was 9,117 fish and harvest 2,601 fish. Highest catch (4,014 fish) and harvest (953 fish) occurred in August.

Bluegills were the most sought after panfish during the survey. Fishing effort directed at bluegill was 2,833 hours during the 2006 season. Catch was 6,714 fish and harvest 2,149 fish. The mean length of harvested bluegill was 7.4 inches.

Other panfish caught during the 2006 survey included yellow perch, pumpkinseed, rock bass, and black crappie.

Completion of this survey was possible because of the efforts of the technical staff of the Treaty Fisheries Unit. Treaty staff responsible for ensuring completion of this survey includes Steve Kramer, Tim Tobias, Joelle Underwood, Marty Kiepke, Jeff Blonski and Jason Halverson. Scott Yonker and Keith Worrall was the creel clerks on Lucerne 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.

Additional copies of this report and those covering other local lakes can be obtained from the Woodruff DNR. Requests should be directed to:

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## **ACKNOWLEDGMENTS**

**Table 1. Sportfishing effort summary, Lucerne Lake, 2006-07 season.**

<b>Month</b>	<b>Total Angler Hours</b>	<b>Total Angler Hours/Acre</b>	<b>Forest County Average Hours/Acre</b>	<b>Statewide Average Hours/Acre</b>
May	1533	1.5	4.2	5.8
June	2772	2.7	5.3	6.1
July	4144	4.0	6.0	6.4
August	3601	3.5	4.9	5.4
September	934	0.9	2.5	3.8
October	253	0.2	0.8	1.6
December	213	0.2	1.1	1.7
January	336	0.3	1.8	1.5
February	349	0.3	1.7	1.3
March			0.1	**
*Summer Total	13237	12.9	23.7	29.1
*Winter Total	899	0.9	4.8	4.5
Grand Total	14136	13.8	28.5	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 Lucerne 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 Lucerne 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 Lucerne Lake to other lakes statewide.

**Table 2. Creel survey synopses, Lucerne Lake, 2006-07 fishing season.**

CREEL YEAR: 2006-07

<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	6596	#REF!	772	9.0	103	69.0	19.8
Northern Pike	1236	#REF!	282	8.1	42	39.7	24.9
Muskellunge	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!
Smallmouth Bass	8120	#REF!	8616	1.1	364	23.1	15.0
Largemouth Bass	4407	#REF!	850	6.7	79	62.1	15.1
Yellow Perch	463	#REF!	243	7.8	17	32.7	8.0
Bluegill	2833	#REF!	6714	0.4	2149	1.3	7.4
Pumpkinseed	20	#REF!	102	1.0	50	3.0	7.5
Rock Bass	587	#REF!	2035	0.7	385	1.7	7.8
Black Crappie	291	#REF!	23	19.2	0		
extra	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!

\* 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.

# WALLEYE

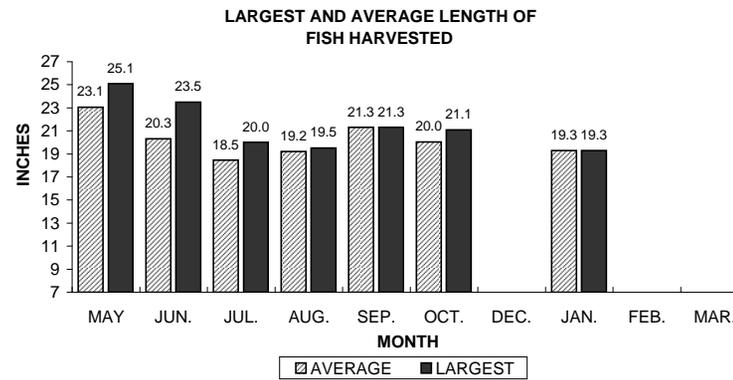
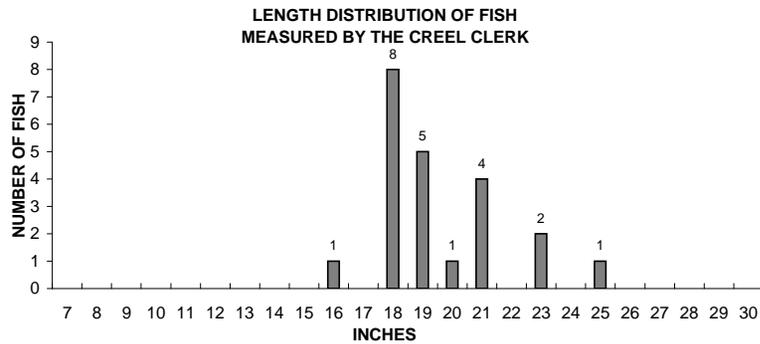
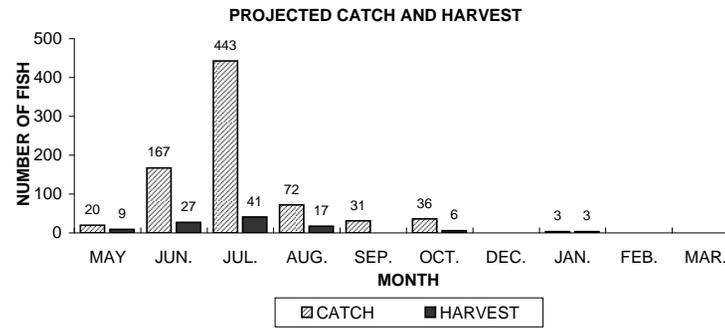
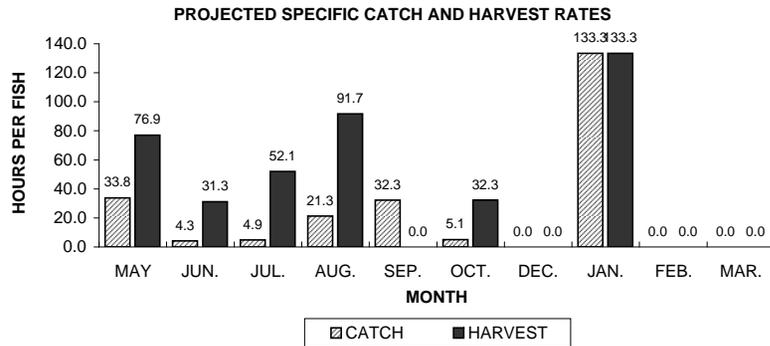
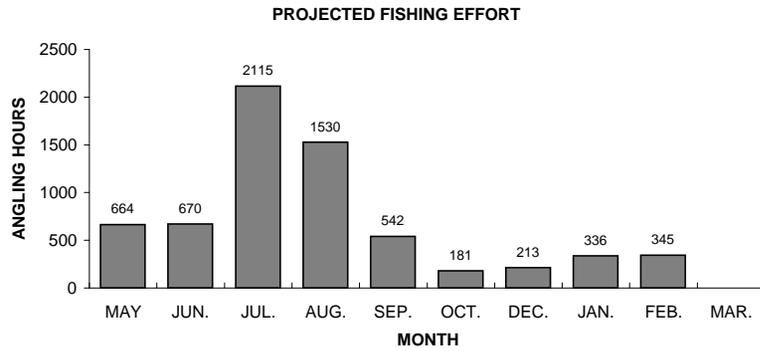
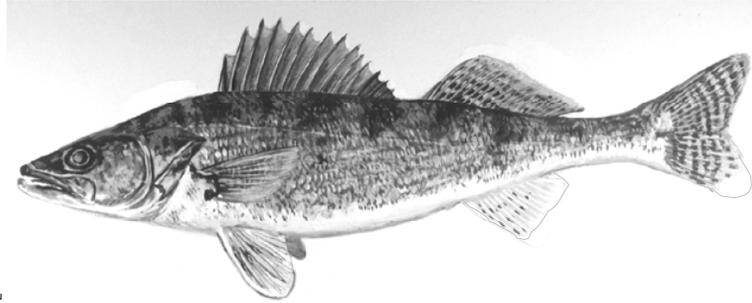


Figure 1. Walleye sportfishing effort, catch, harvest, and length distribution, Lucerne Lake, during 2006-07.

# NORTHERN PIKE

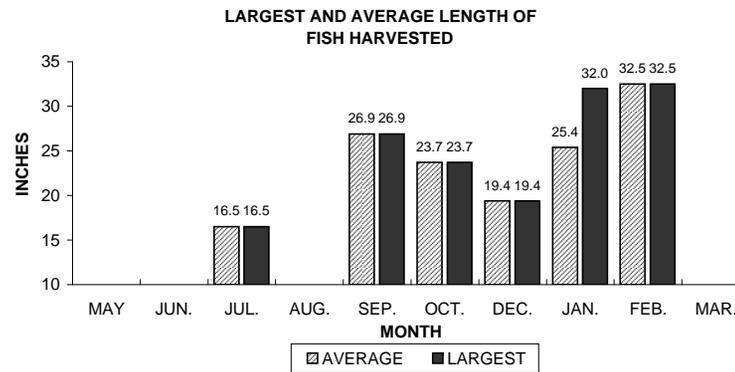
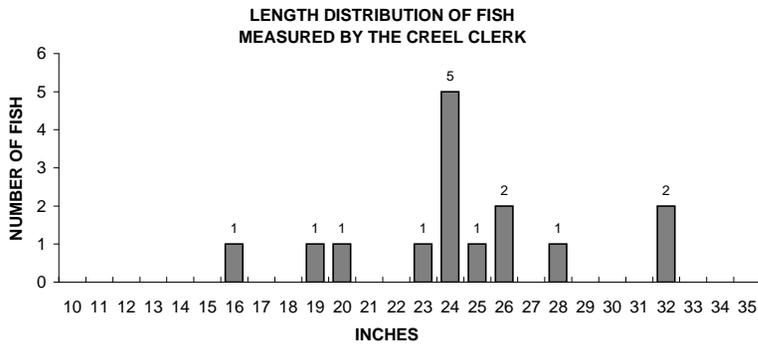
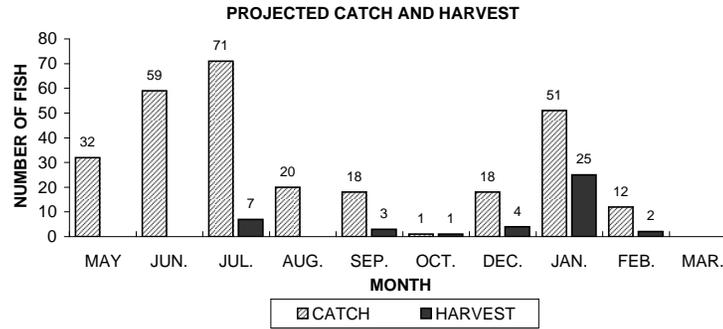
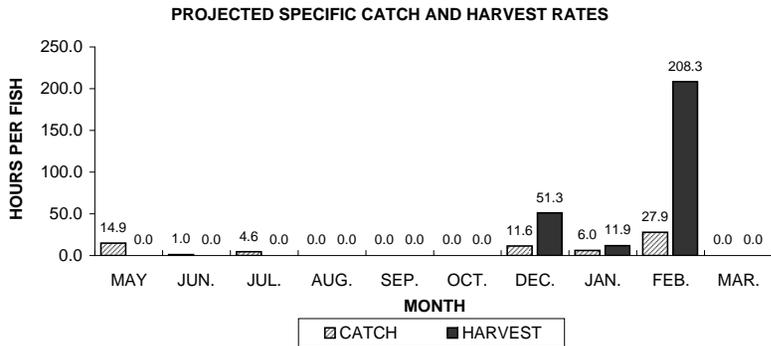
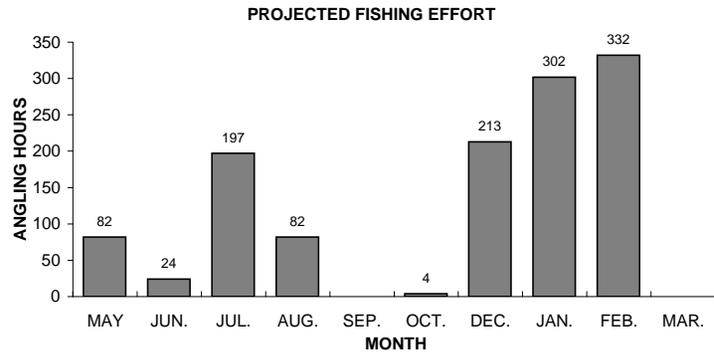
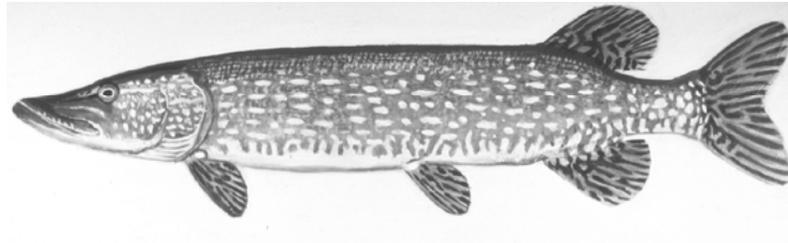


Figure 2. Northern pike sportfishing effort, catch, harvest, and length distribution, Lucerne Lake, during 2006-07.

# SMALLMOUTH BASS

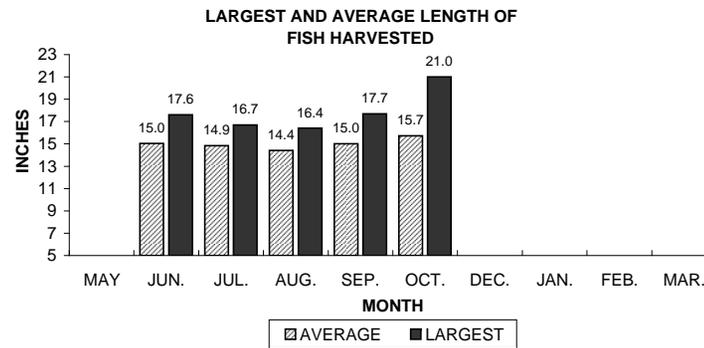
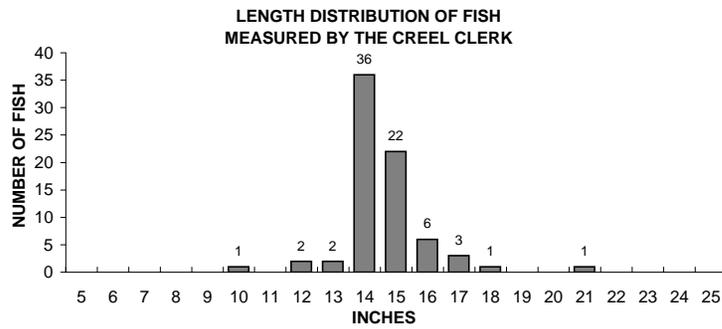
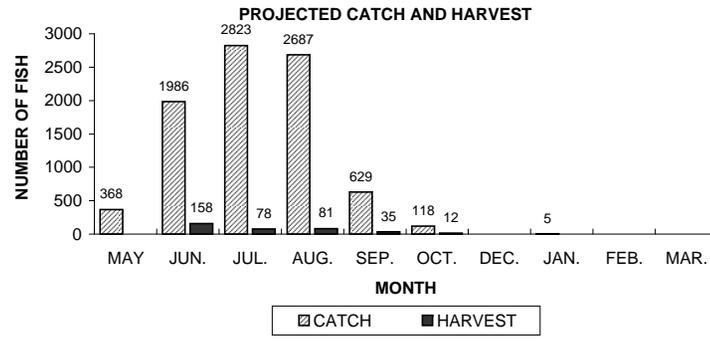
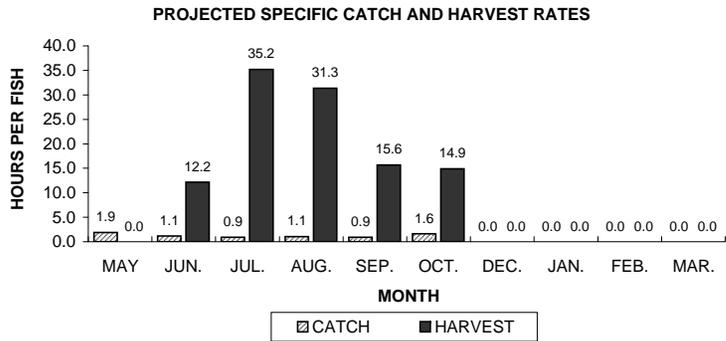
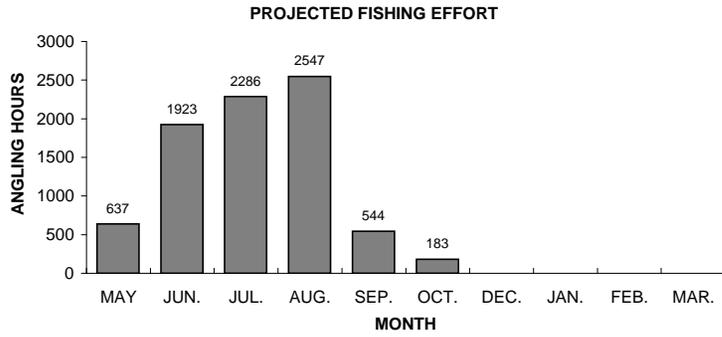
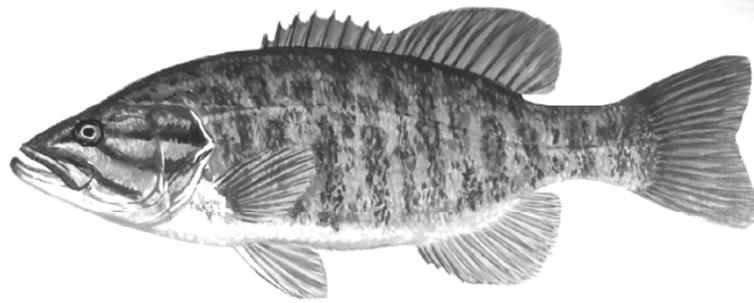


Figure 4. Smallmouth bass sportfishing effort, catch, harvest, and length distribution, Lucerne Lake, during 2006-07.

# LARGEMOUTH BASS

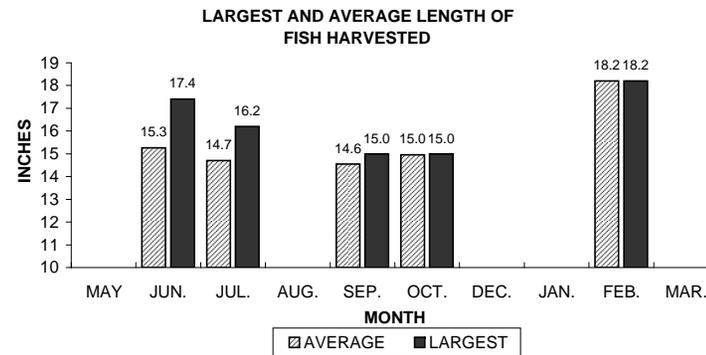
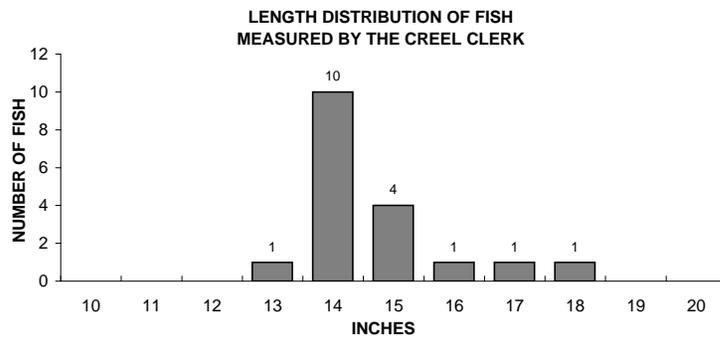
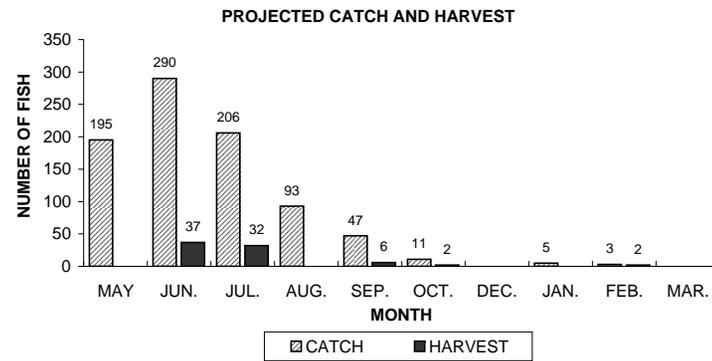
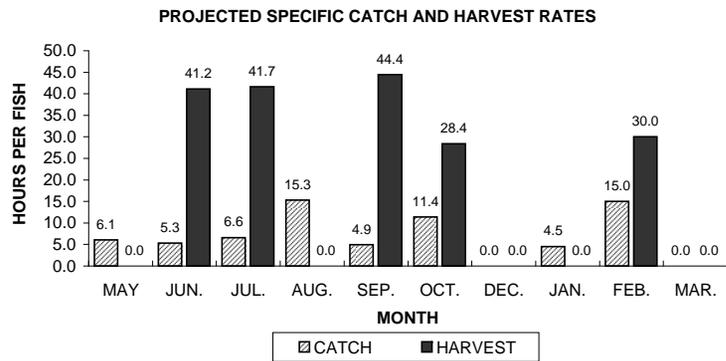
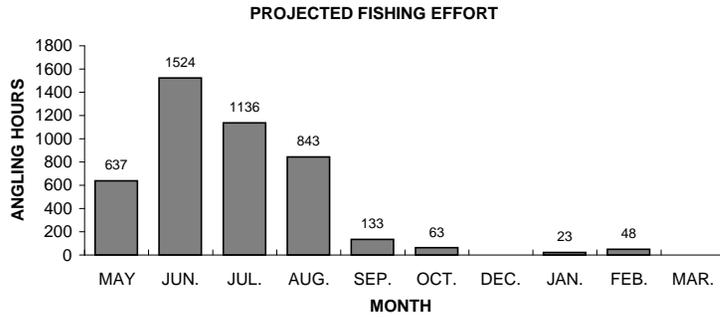
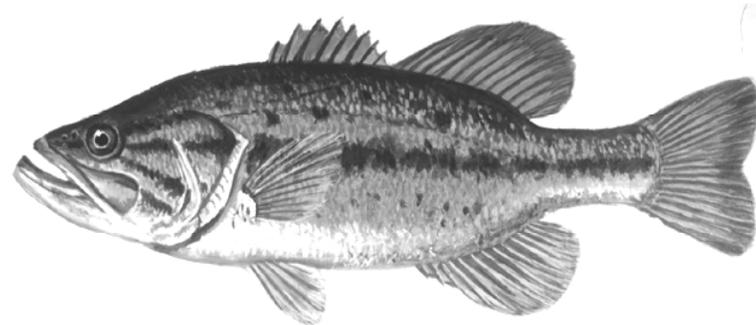


Figure 5. Largemouth bass sportfishing effort, catch, harvest, and length distribution, Lucerne Lake, during 2006-07.

# YELLOW PERCH

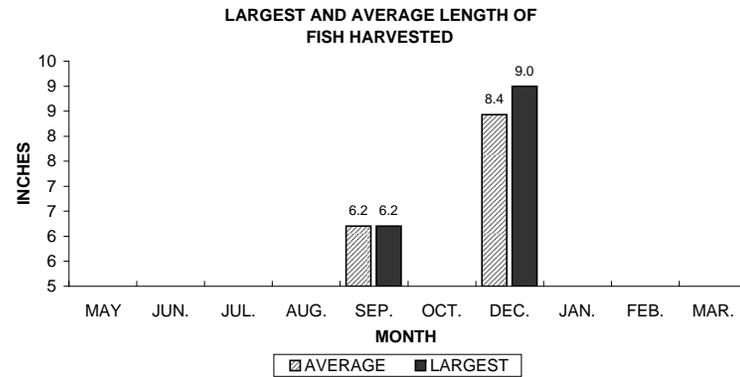
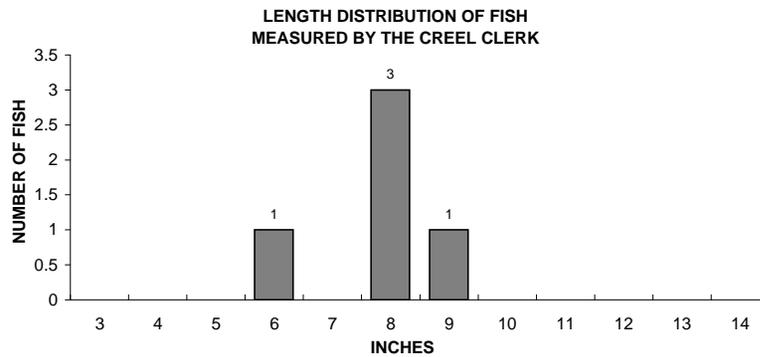
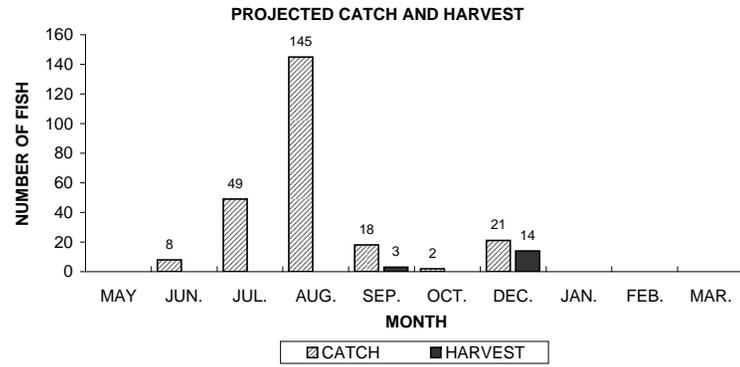
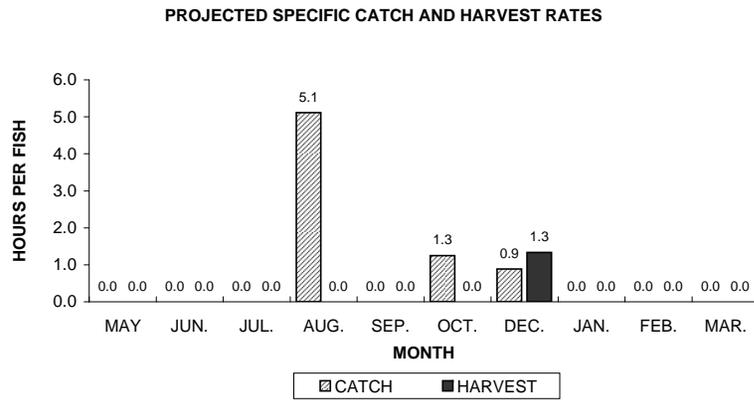
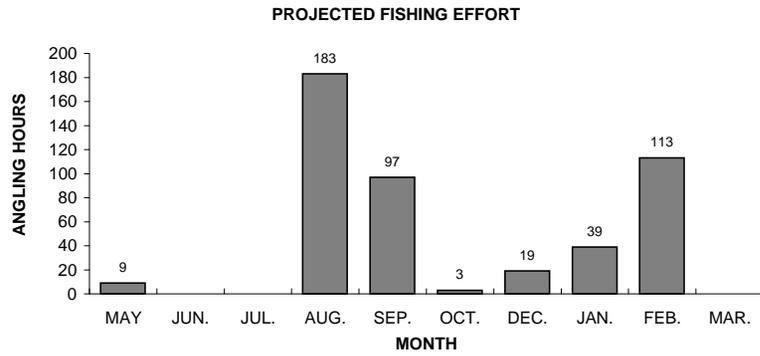
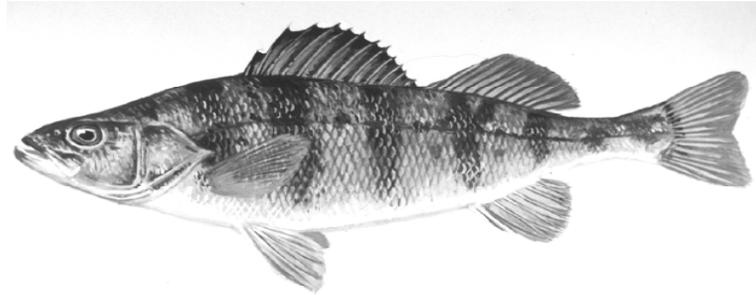


Figure 6. Yellow perch sportfishing effort, catch, harvest, and length distribution, Lucerne Lake, during 2006-07.

# BLUEGILL

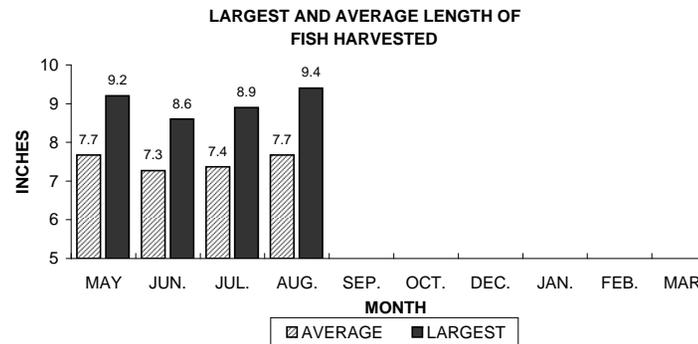
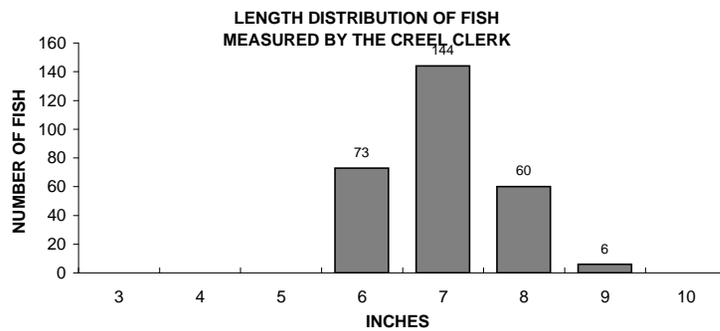
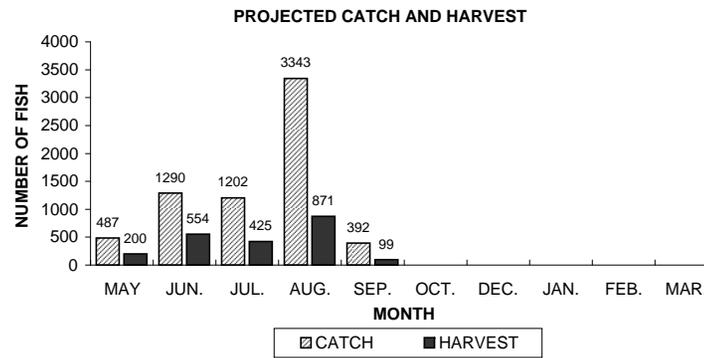
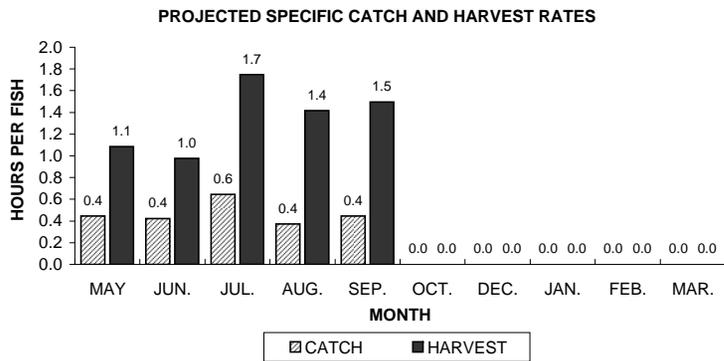
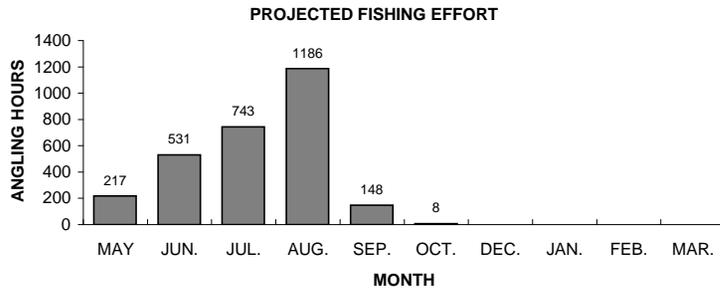
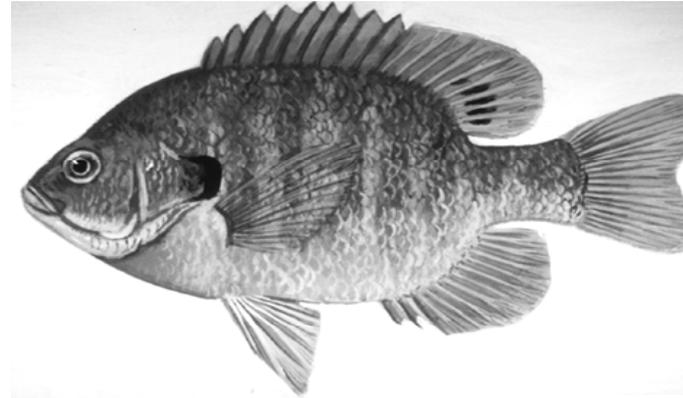


Figure 7. Bluegill sportfishing effort, catch, harvest, and length distribution, Lucerne Lake, during 2006-07.

# PUMPKINSEED

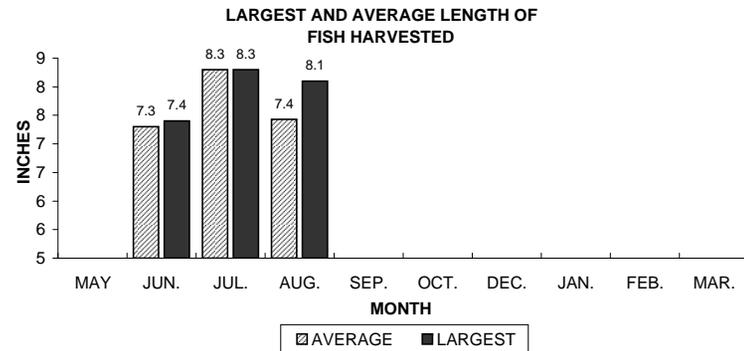
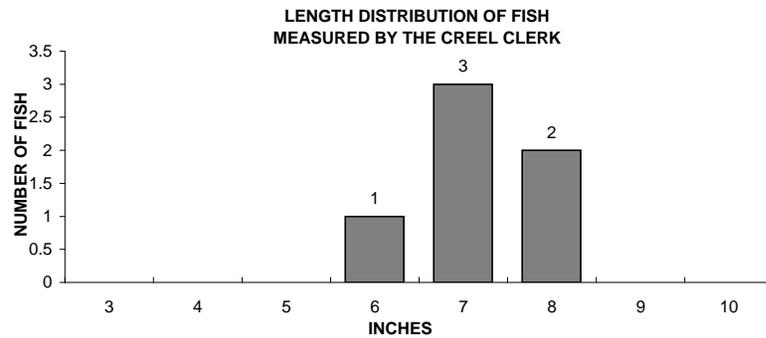
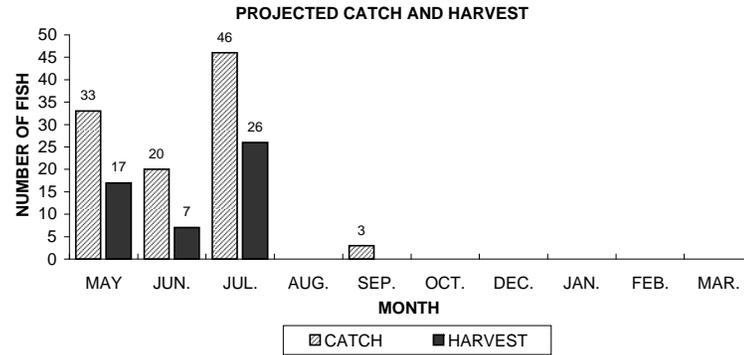
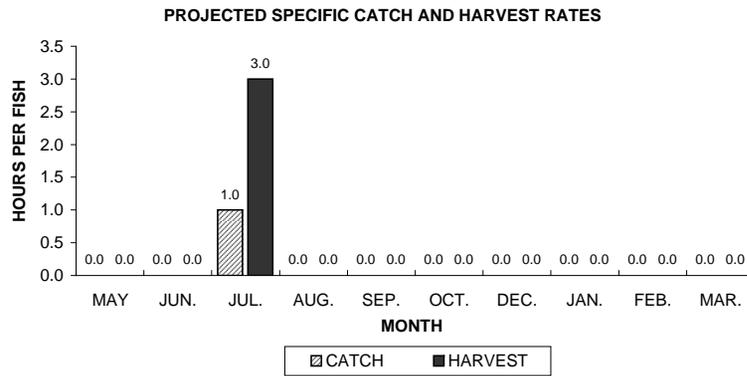
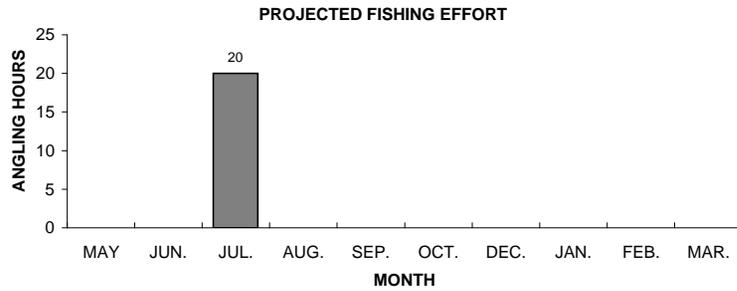
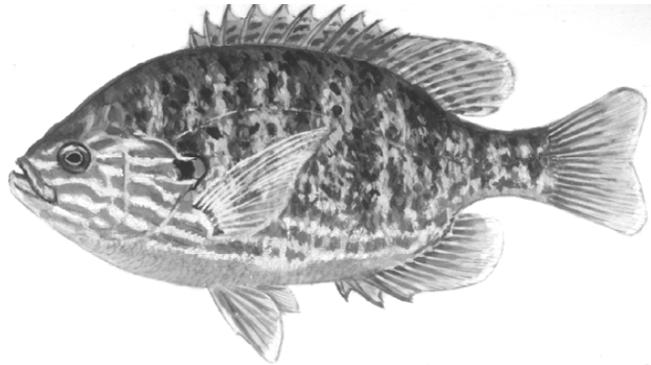


Figure 8. Pumpkinseed sportfishing effort, catch, harvest, and length distribution, Lucerne Lake, during 2006-07.

# ROCK BASS

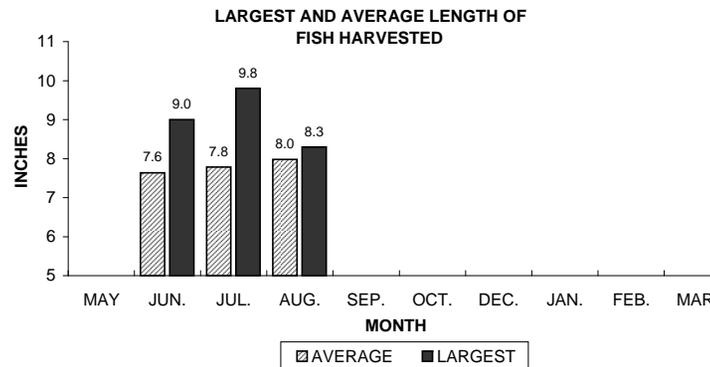
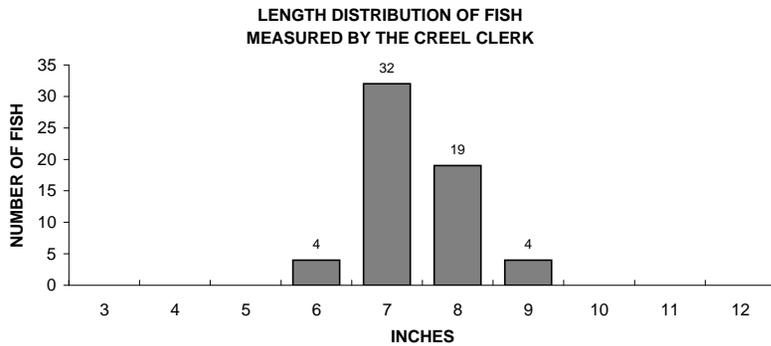
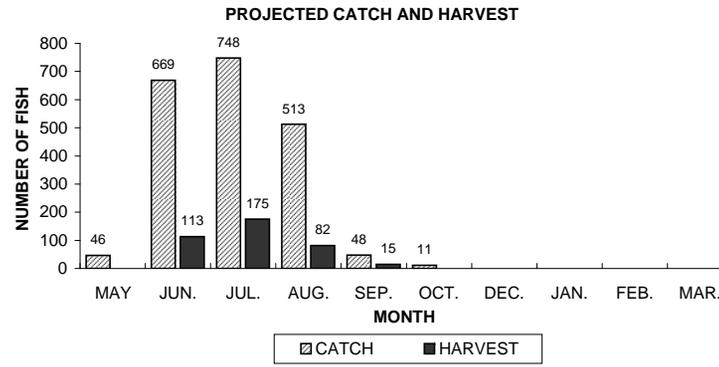
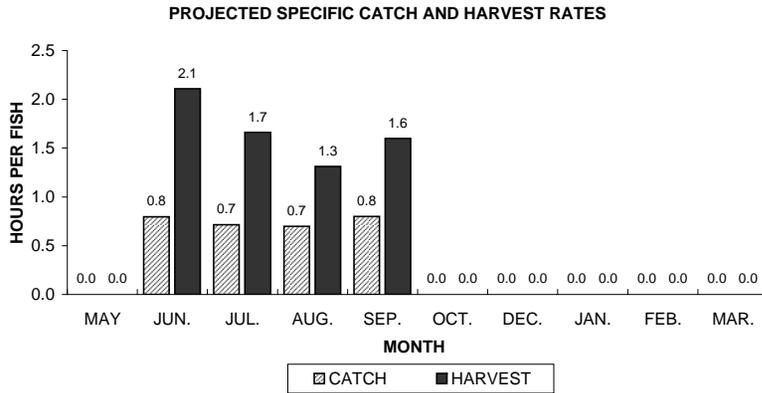
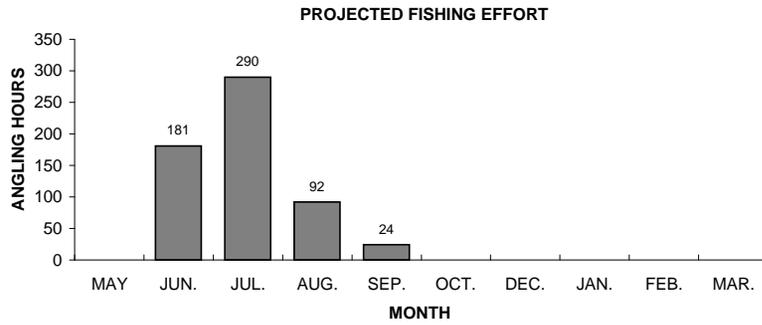
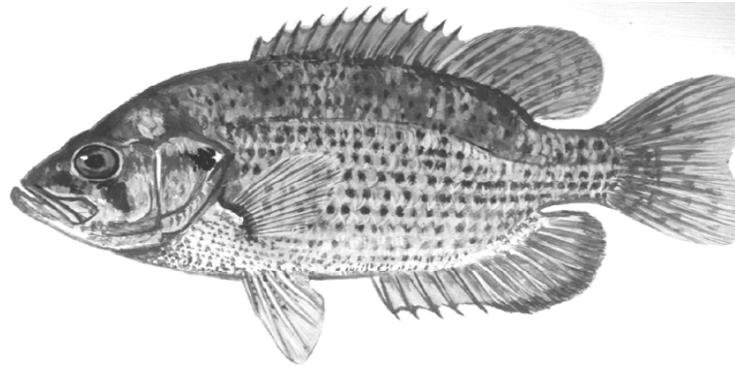


Figure 9. Rock bass sportfishing effort, catch, harvest, and length distribution, Lucerne Lake, during 2006-07.

# BLACK CRAPPIE

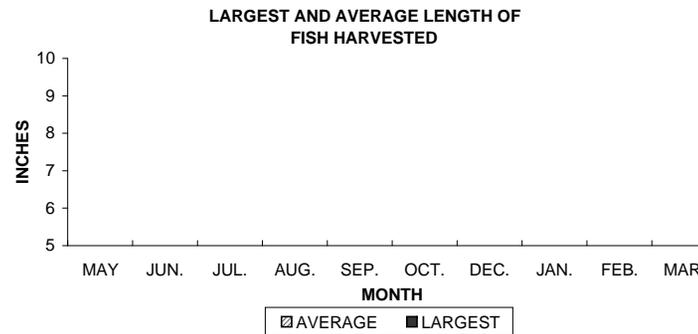
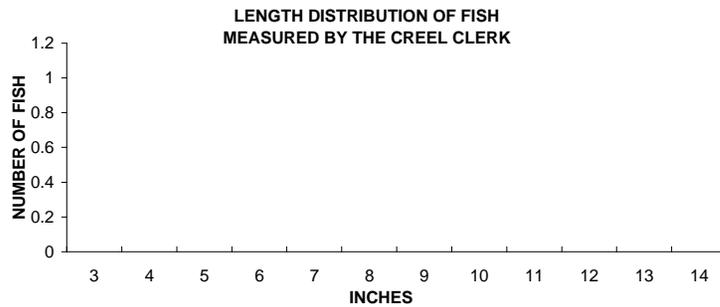
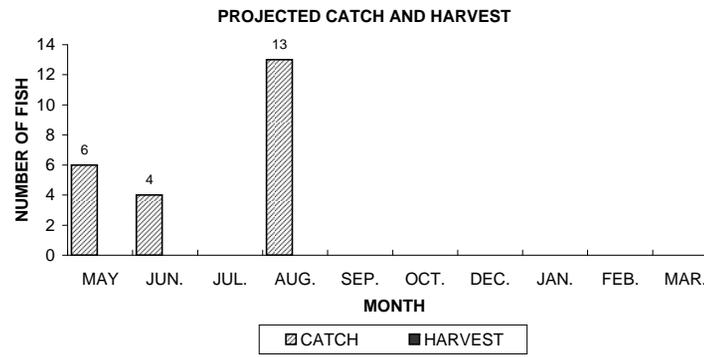
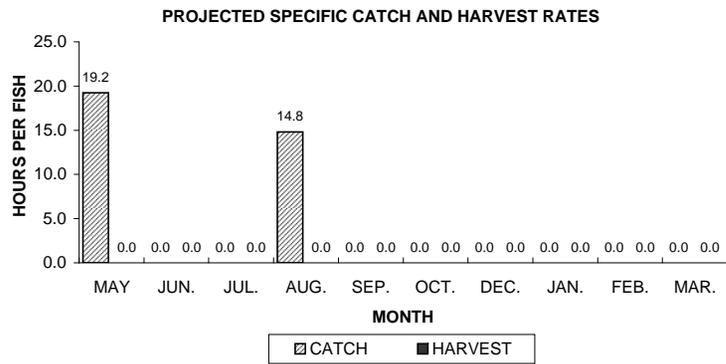
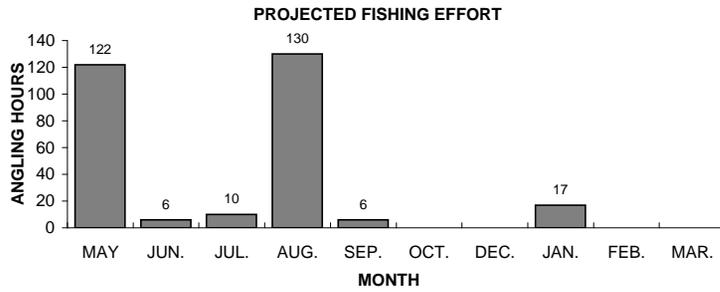
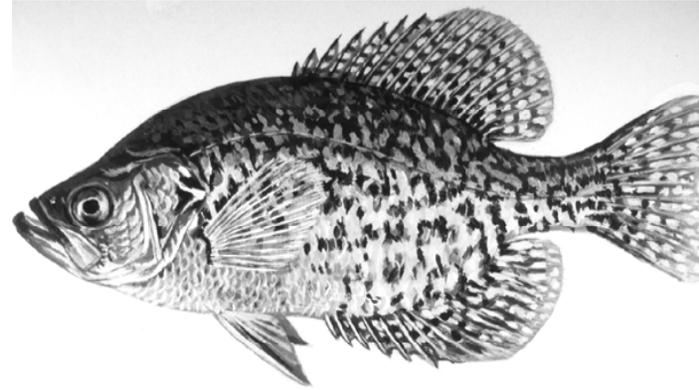


Figure 10. Black crappie sportfishing effort, catch, harvest, and length distribution, Lucerne Lake, during 2006-07.