

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

Two Sisters Lake

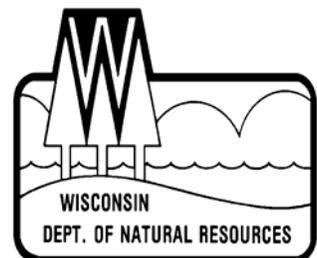
Oneida County

2008-09



**Treaty Fisheries Publication
2009**

**Compiled by Tim Tobias
Treaty Fisheries Technician**



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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 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.

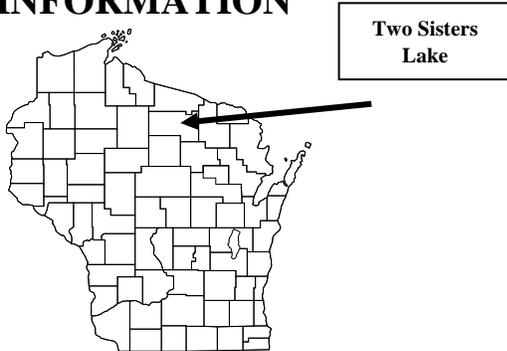
survey ran from December 1, 2008 through March 1, 2009.

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

GENERAL LAKE INFORMATION



Location

Two Sisters Lake is located in Oneida County southeast of the town of Lake Tomahawk.

Physical Characteristics

Two Sisters Lake is a 719-acre spring lake with a maximum depth of 63 feet. Littoral substrate consists primarily of sand, with lesser amounts of gravel, and some muck. Two Sisters Lake is a soft water lake having alkaline clear water of very high transparency.

Seasons Surveyed

The period referred to in this report as the 2008-09 fishing season ran from May 3, 2008 through March 1, 2009. The open water creel survey ran from May 3 through October 31, 2008 and the ice fishing creel

Weather

Ice-out on Two Sisters Lake was around May 4, 2008 which is considered late for northern Wisconsin. Fishable-ice formed on Two Sisters Lake in Late December.

Sportfishing Regulations

The following seasons, daily bag limits, and length limits were in place on Two Sisters Lake during the 2008-fishing season:

		Catch&Release	
Largemouth Bass& Smallmouth Bass	5/03-6/20	5	14"
Musky	5/24-11/30	1	40"
Northern Pike	5/03-3/01	5	none
Walleye	5/03-3/01	3*	15"
Panfish	all year	25	none
Rock Bass	all year	none	none

* The statewide bag limit was 5 walleye, but due to tribal declarations it was reduced on Two Sisters Lake.

SPECIES CATCH AND HARVEST INFORMATION

Angling information is summarized for each species (Figures 1-10) with effort and/or catch information. Information presented about species whose fishing season extends beyond March 1 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 fifth time the department conducted a creel survey on Two Sisters Lake. The previous surveys took place in 1992, 1998, 2002 and 2005.

General Angler Information

Anglers spent 8,843 hours or 12.3 hours per acre fishing Two Sisters Lake during the 2008 season (Table 1). That was less than the statewide average of 33.6 hours per acre and the Oneida County average of 37.2 hours per acre. August was the most heavily

fished month (2.6 hours per acre). Fishing effort was lightest in October (0.6 hours per acre).

SPECIES INFORMATION

Walleye (Table 2, Figure 1)

Walleye received the most fishing pressure during the 2008 season. Anglers spent 5,321 hours targeting walleye. Walleye fishing effort was greatest in February (978 hours). October had the least amount of walleye fishing effort (42 hours).

Catch was 313 fish and harvest 190 fish. Highest catch (89 fish) occurred in January and harvest (53 fish) occurred in May. Anglers fished 17.5 hours to catch and 28.0 hours to harvest a walleye during 2008.

The mean length of harvested walleye was 20.4 inches and the largest walleye measured was a 27.6-inch fish.

Northern Pike (Table 2, Figure 2)

Fishing effort directed at northern pike was 341 hours during the 2008 season. Northern pike fishing effort was greatest in August (129 hours).

Catch was 235 fish and harvest 29 fish. The mean length of harvested northern pike was 29.2 inches and the largest northern pike measured was a 36.7-inch fish.

Muskellunge (Table 2, Figure 3)

Anglers spent 1,704 hours targeting muskellunge during the 2008 season. Muskellunge fishing effort was greatest in August (478 hours).

Catch was 48 fish and harvest 8 fish. Highest catch (17 fish) occurred in August. Anglers fished 40.0 hours to catch a muskellunge during 2008.

Smallmouth Bass (Table 2, Figure 4)

Fishing effort targeted at smallmouth bass was 1,680 hours during the 2008 season. Smallmouth bass fishing effort was greatest in August (771 hours).

Catch was 2,062 fish and harvest of 87 fish. Highest catch (849 fish) occurred in August. Anglers fished 1.6 hours to catch a smallmouth bass during 2008.

The mean length of harvested smallmouth bass was 15.7 inches and the largest smallmouth bass measured was a 18.0-inch fish harvested in February.

Largemouth Bass (Table 2, Figure 5)

Fishing effort directed at largemouth bass was 1,242 hours during the 2008 season. Largemouth bass fishing effort was greatest in August (561 hours).

Catch was 1,217 fish and harvest 11 fish. Highest catch (446 fish) occurred in July. Anglers fished 1.9 hours to catch a largemouth bass during 2008.

Panfish (Table 2, Figures 6-10)

Bluegills were the most sought after panfish species during the survey. Fishing effort directed at bluegill was 1,210 hours. Anglers caught 2,631 and harvested 345 fish. The mean length of bluegill harvested was 7.7 inches.

Total catch of yellow perch was 320 fish and 120 harvested. The mean length of yellow perch harvested was 8.5 inches.

Total catch of black crappie was 366 fish and 336 harvested. The mean length of black crappie harvested was 11.0 inches.

Anglers caught 2,134 rock bass and harvested 260. The mean length of rock bass taken was 7.4 inches.

Pumpkinseeds were also caught during the 2008 season.

ACKNOWLEDGMENTS

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, Joelle Underwood, Marty Kiepke, Jason Halverson, and Tim Tobias. Bill Brener and Dave Stahmer were the creel clerks on Two Sisters 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 cooperator, Don Nierode family, who generously allowed the department to keep a boat and snowmobile on their property during this survey.

This creel report was reviewed by John Kubisiak, Mike Coshun 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:

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

Month	Total Angler Hours	Total Angler Hours/Acre	Oneida County Average Hours/Acre	Statewide Average Hours/Acre
May	872	1.2	5.4	5.8
June	1084	1.5	7.3	6.1
July	1455	2.0	8.3	6.4
August	1893	2.6	6.3	5.4
September	523	0.7	3.7	3.8
October	408	0.6	1.7	1.6
December	730	1.0	1.2	1.7
January	842	1.2	1.5	1.5
February	978	1.4	1.5	1.3
March	58	0.1	0.2	**
*Summer Total	6235	8.7	32.8	29.1
*Winter Total	2608	3.6	4.4	4.5
Grand Total	8843	12.3	37.2	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 Two Sisters 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 Two Sisters 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 Two Sisters Lake to other lakes statewide.

Table 2. Comparison of creel survey synopses, Two Sisters Lake, 2008-09 and 2005-06 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	5321	40.88%	313	17.5	190	28.0	20.4
Northern Pike	341	2.62%	235	5.9	29	27.8	29.2
Muskellunge	1704	13.09%	48	40.0	8	227.3	45.3
Smallmouth Bass	1680	12.91%	2062	1.6	87	32.9	15.7
Largemouth Bass	1242	9.54%	1217	1.9	11	112.4	14.8
Yellow Perch	570	4.38%	320	2.7	120	4.9	8.5
Bluegill	1210	9.30%	2631	0.6	345	3.9	7.7
Pumpkinseed	141	1.08%	78	1.8	48	3.0	7.0
Rock Bass	240	1.84%	2134	0.6	260	0.9	7.4
Black Crappie	569	4.37%	366	1.6	336	1.7	11.0

* 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: 2005-06

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	6063	35.21%	431	14.7	291	21.6	20.0
Northern Pike	565	3.28%	749	5.2	26	43.7	26.1
Muskellunge	3678	21.36%	132	43.3	0		
Smallmouth Bass	1472	8.55%	2049	1.5	24	61.3	18.1
Largemouth Bass	1093	6.35%	1321	1.6	12	88.5	16.5
Yellow Perch	1915	11.12%	2107	1.2	677	2.9	7.3
Bluegill	1862	10.81%	6561	0.3	1800	1.0	6.7
Pumpkinseed	0	0.00%	0		0		
Rock Bass	226	1.31%	2897	0.7	314	1.3	7.6
Black Crappie	347	2.01%	86	4.6	31	12.4	9.9
extra	0	0.00%	0		0		

WALLEYE

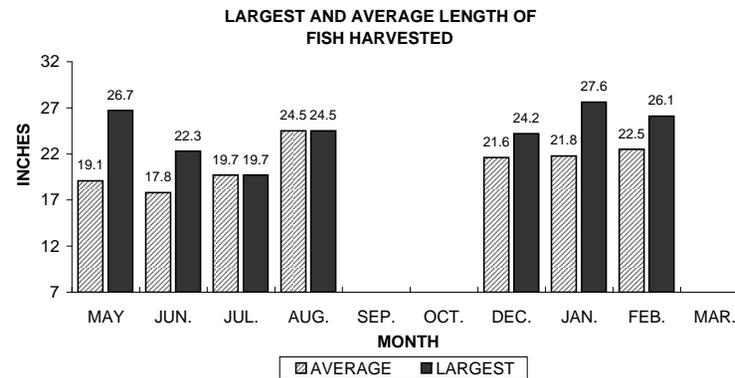
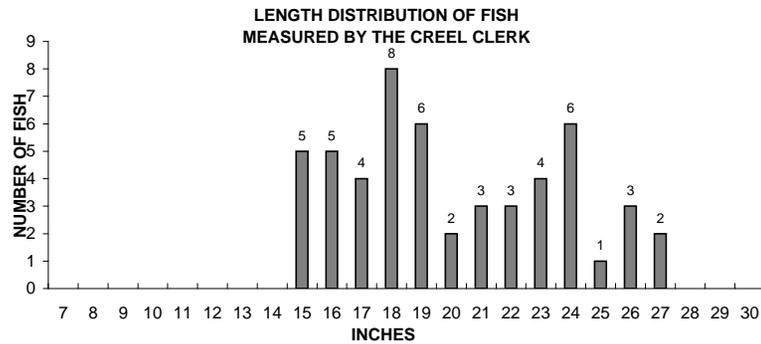
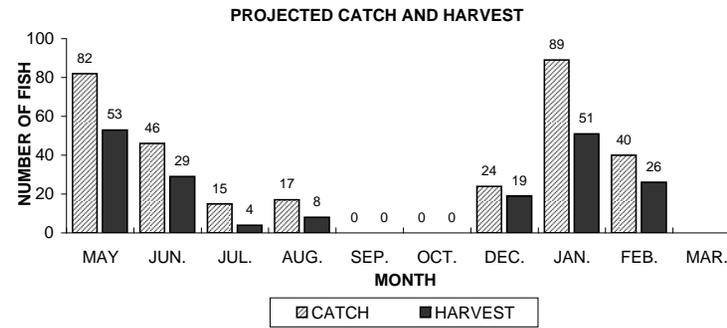
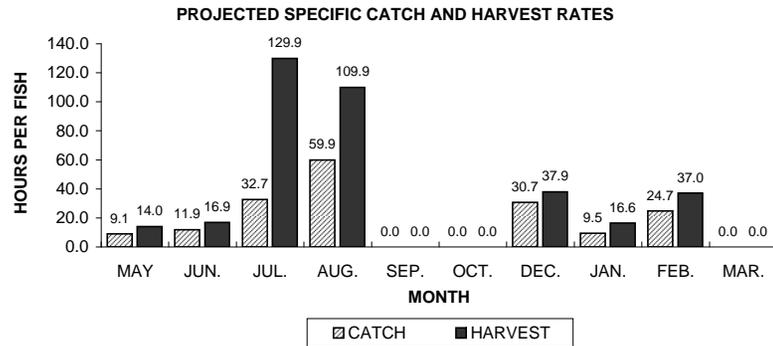
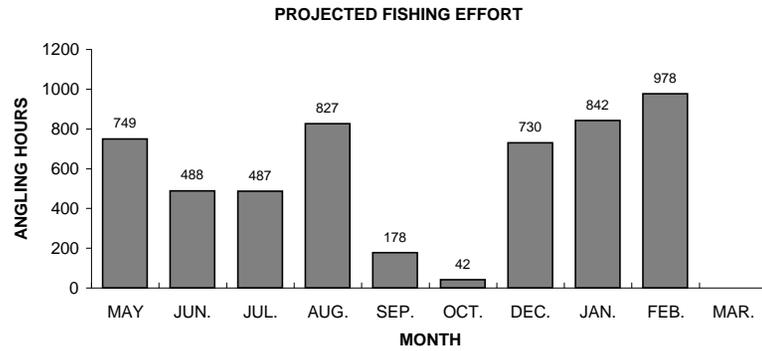
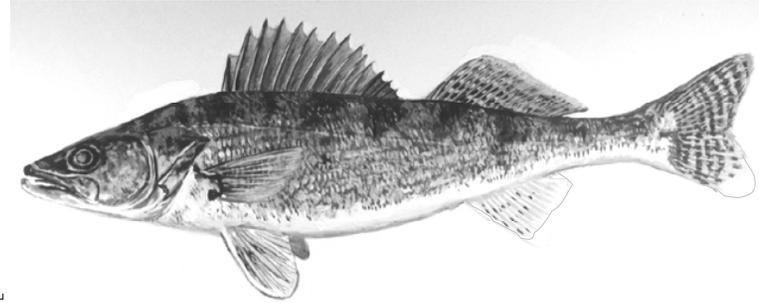


Figure 1. Walleye sportfishing effort, catch, harvest, and length distribution, Two Sisters Lake, during 2008-09.

NORTHERN PIKE

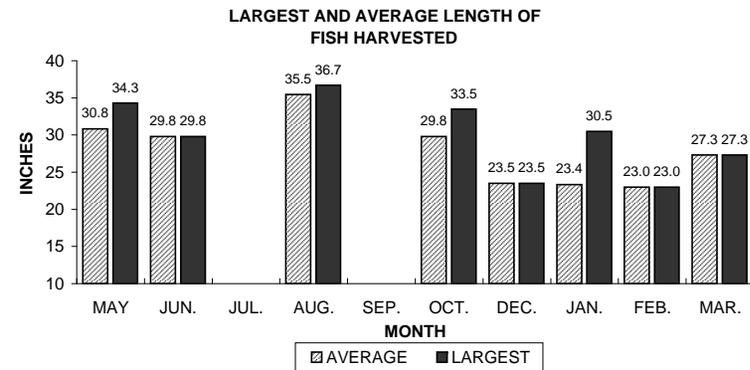
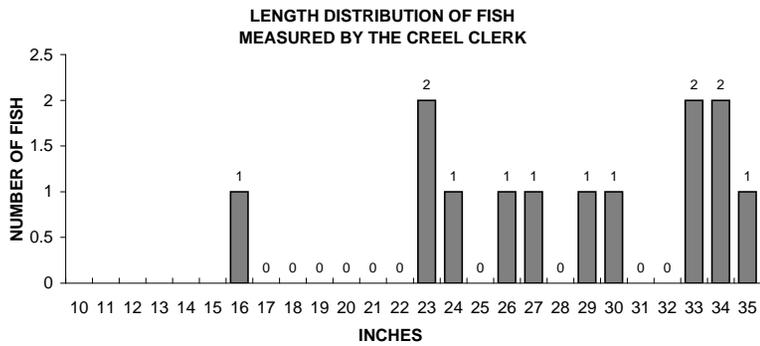
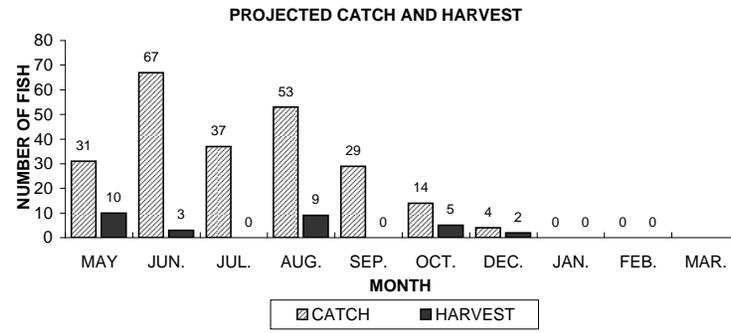
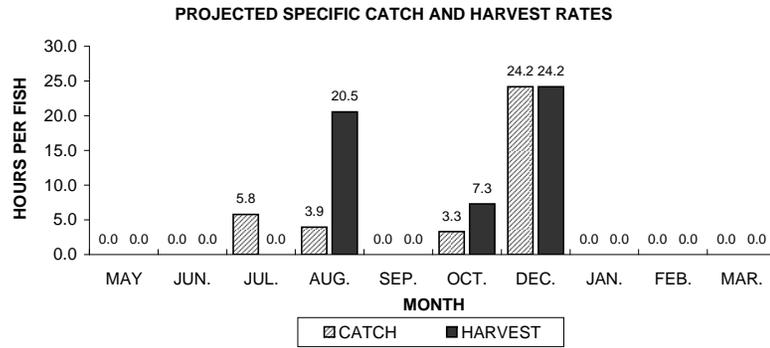
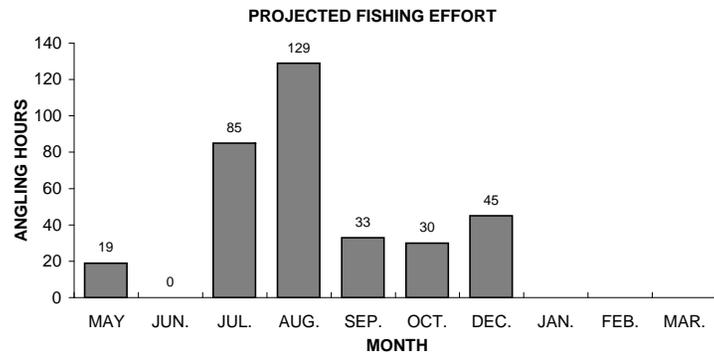
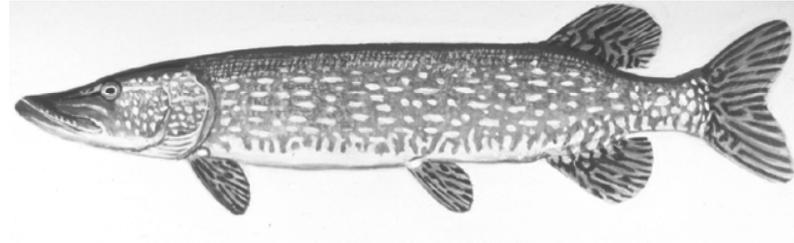
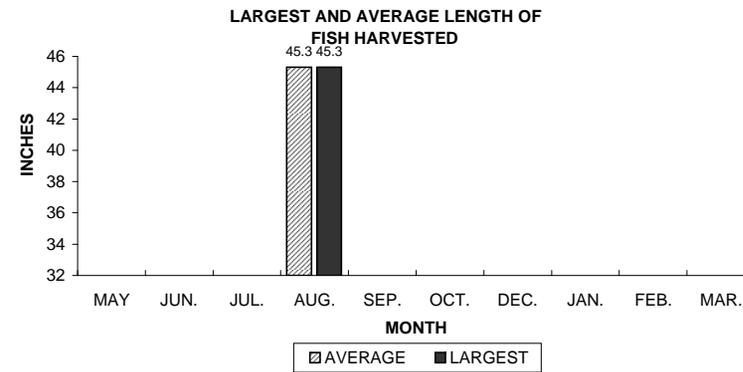
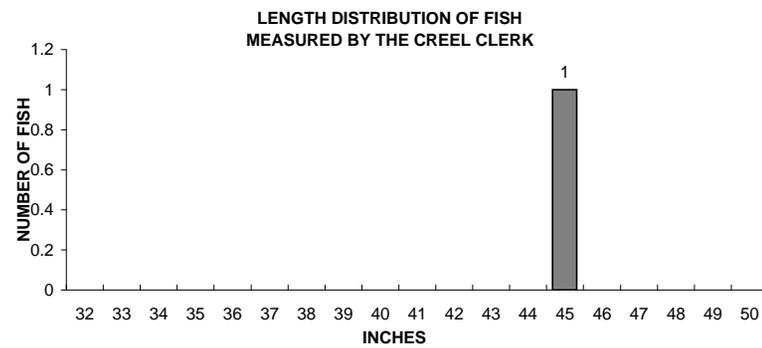
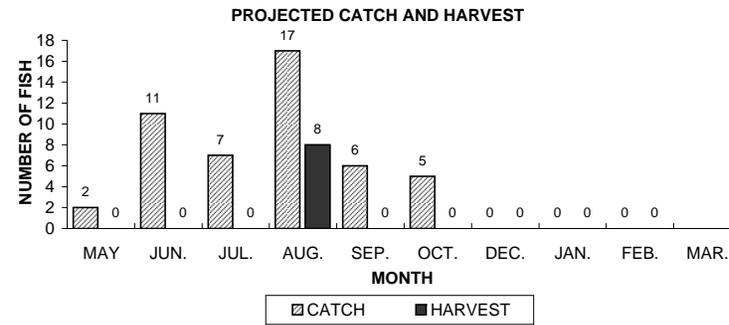
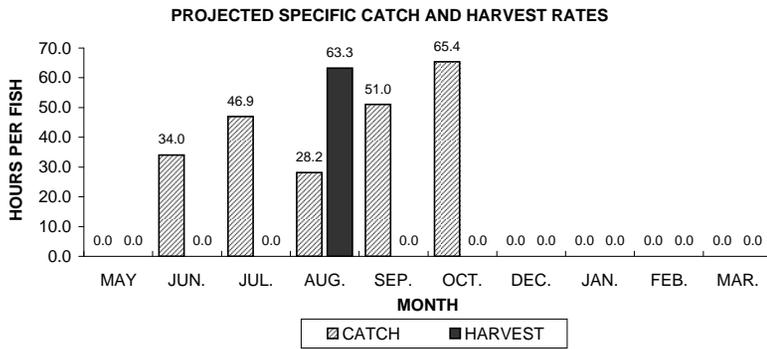
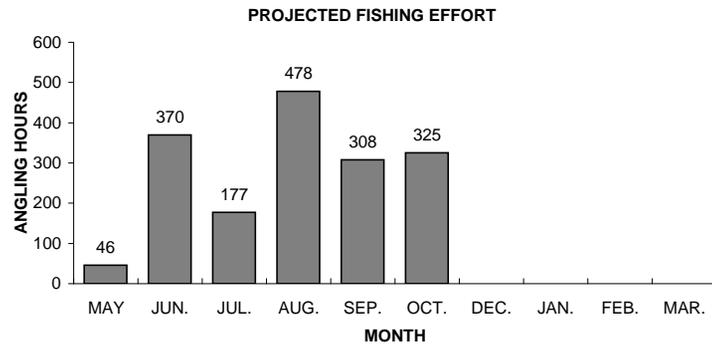
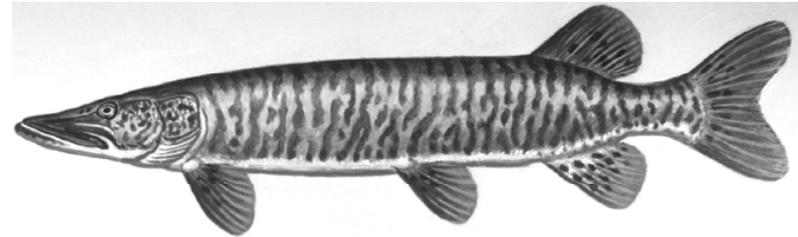


Figure 2. Northern pike sportfishing effort, catch, harvest, and length distribution, Two Sisters Lake, during 2008-09.

MUSKELLUNGE



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

SMALLMOUTH BASS

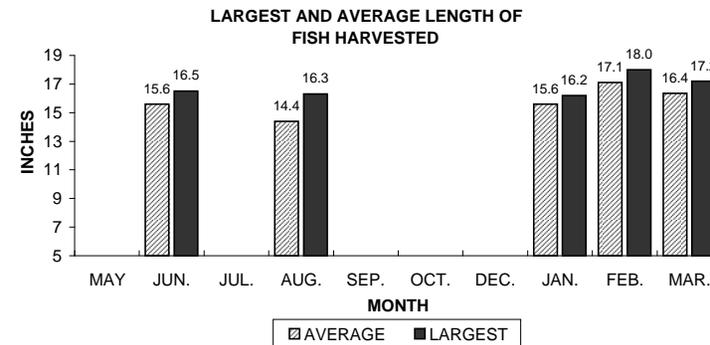
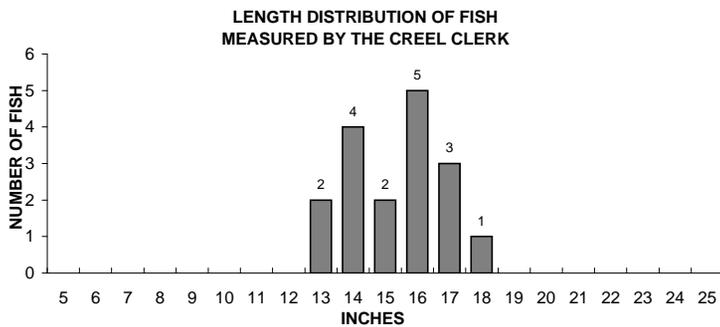
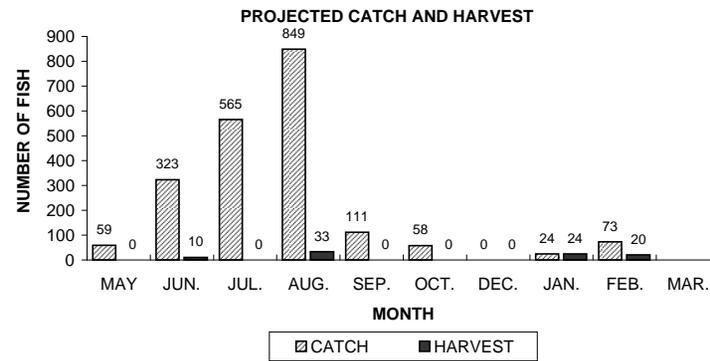
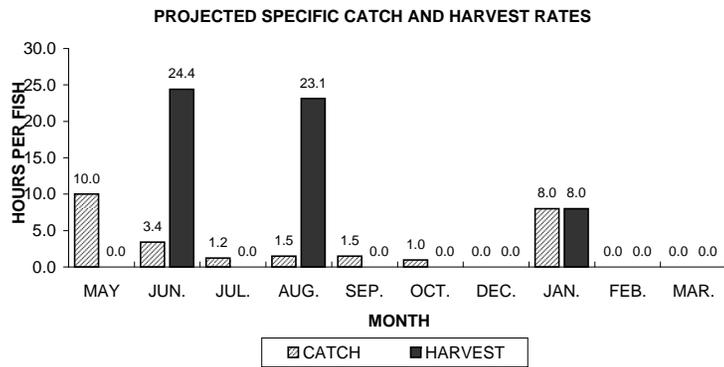
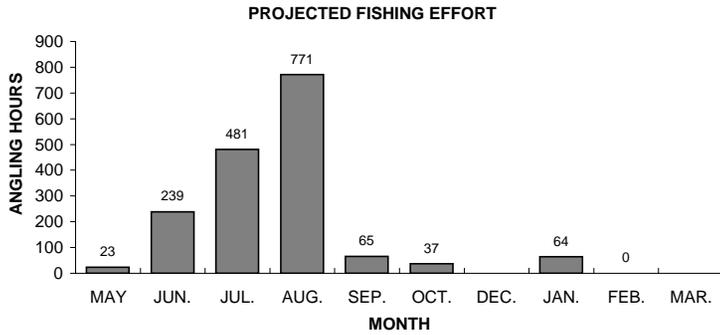
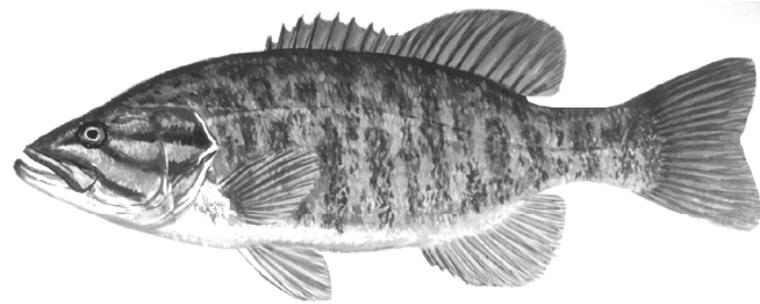


Figure 4. Smallmouth bass sportfishing effort, catch, harvest, and length distribution, Two Sisters Lake, during 2008-09.

LARGEMOUTH BASS

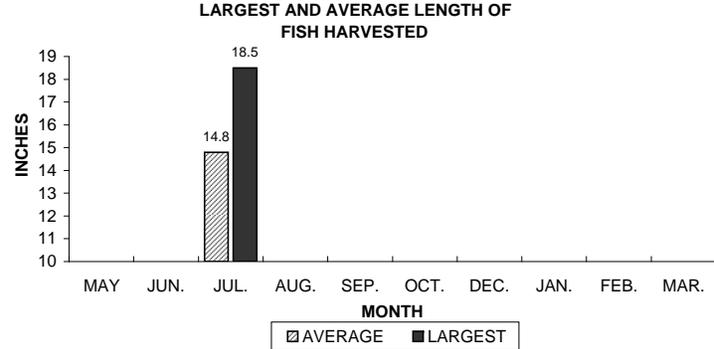
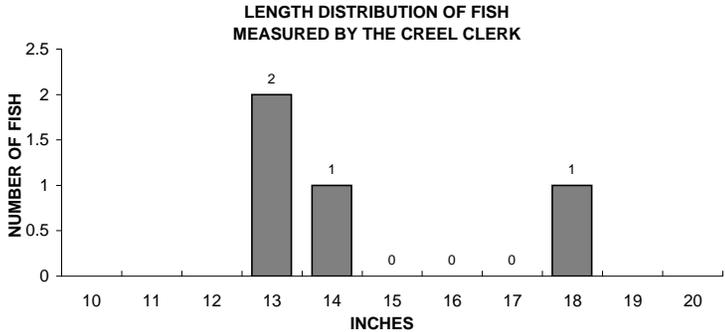
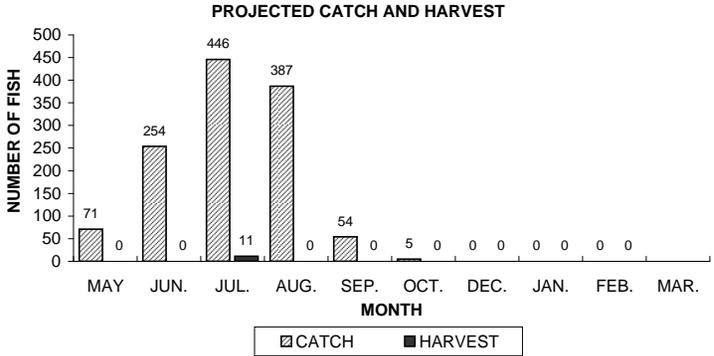
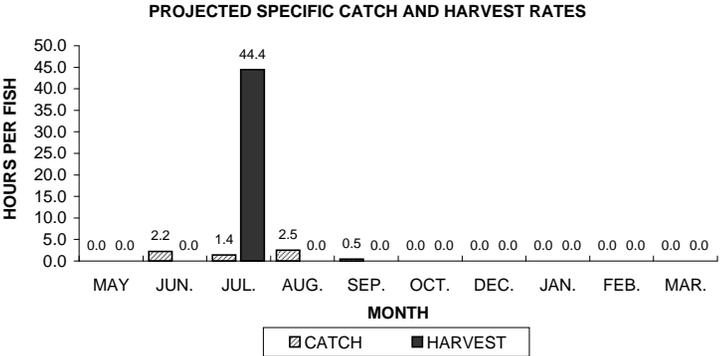
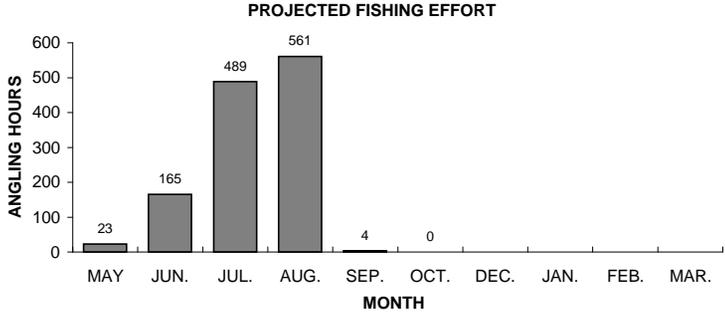
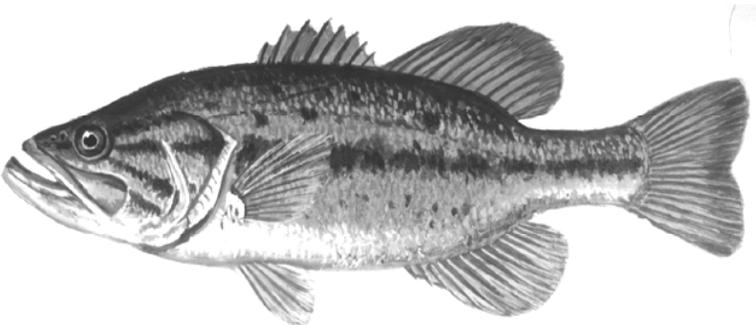


Figure 5. Largemouth bass sportfishing effort, catch, harvest, and length distribution, Two Sisters Lake, during 2008-09.

YELLOW PERCH

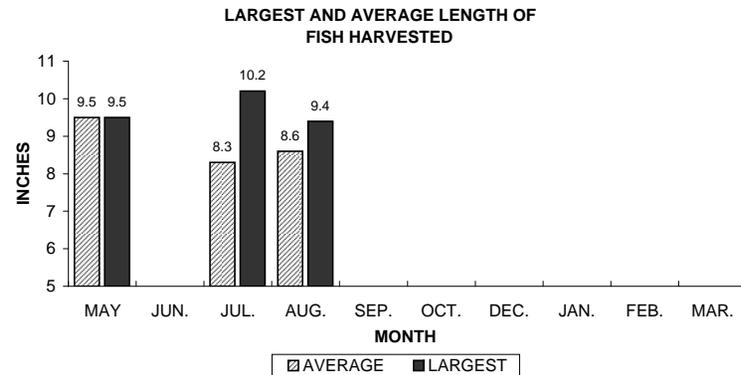
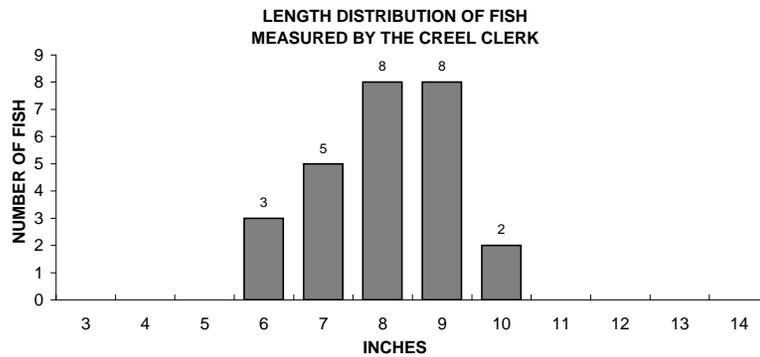
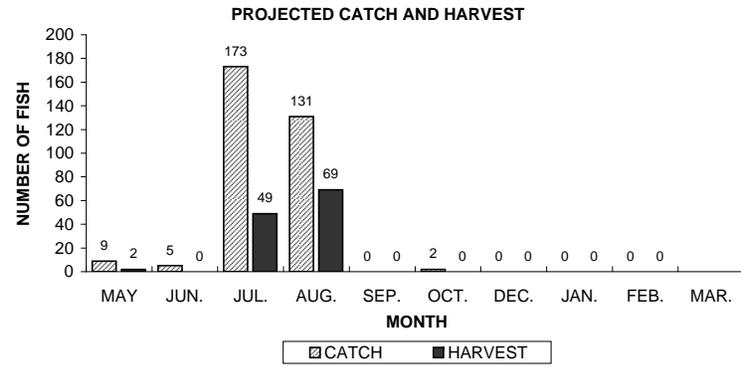
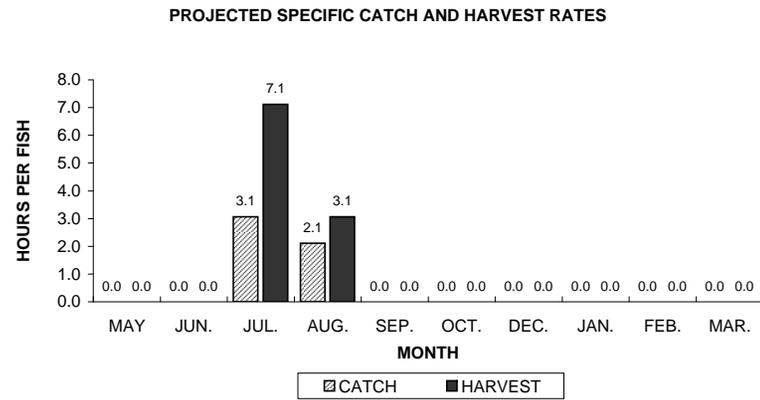
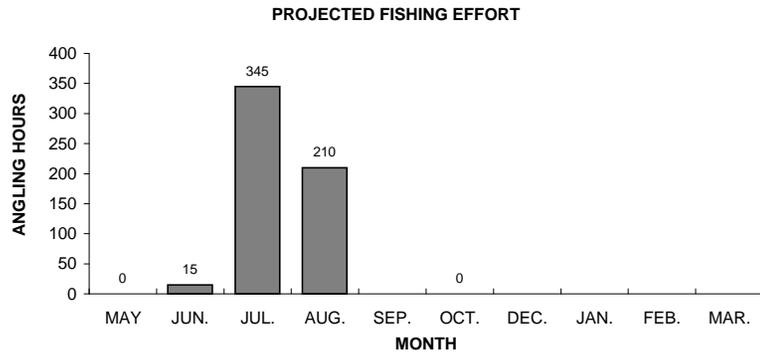
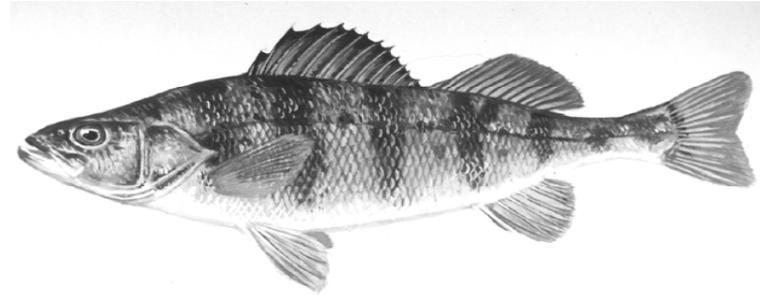


Figure 6. Yellow perch sportfishing effort, catch, harvest, and length distribution, Two Sisters Lake, during 2008-09.

BLUEGILL

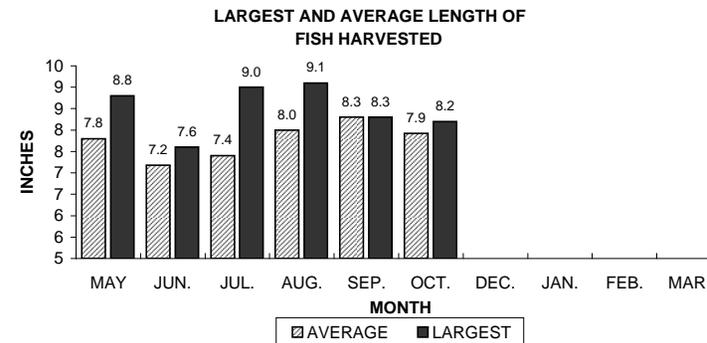
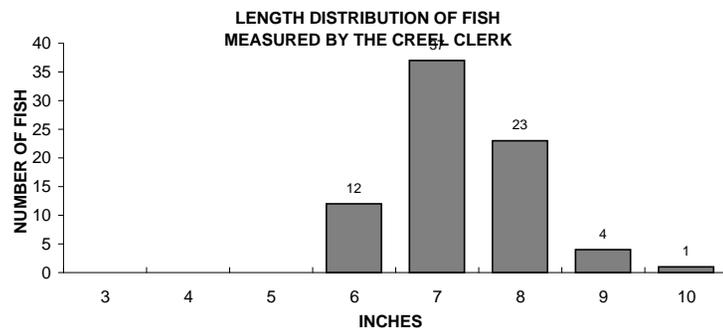
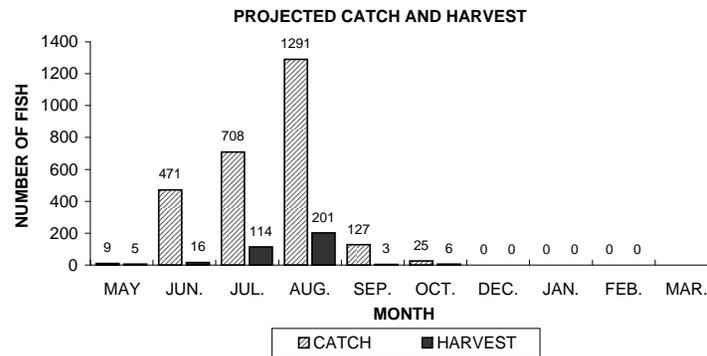
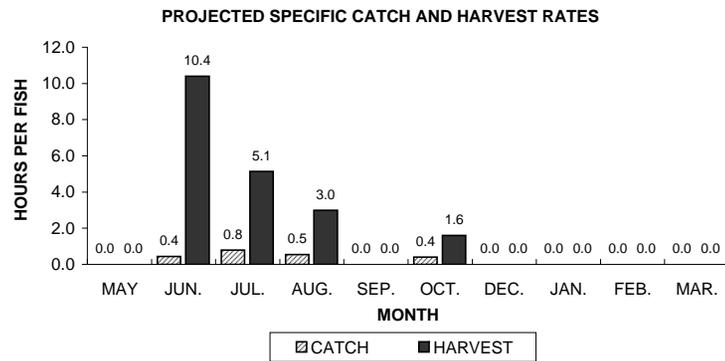
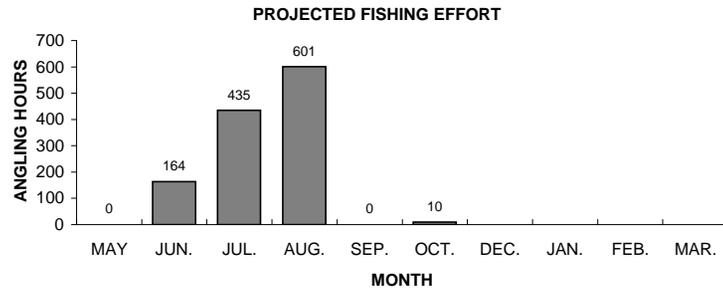
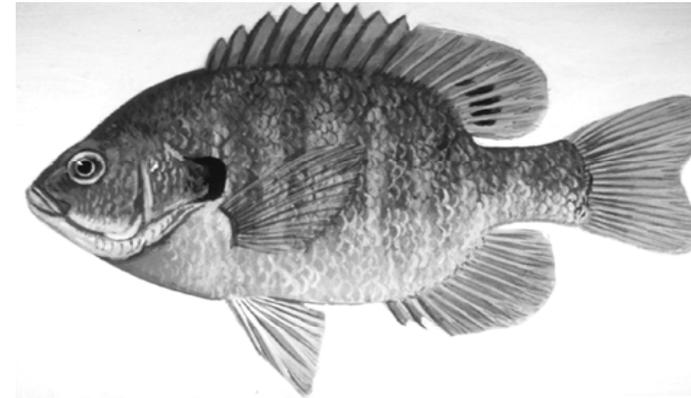


Figure 7. Bluegill sportfishing effort, catch, harvest, and length distribution, Two Sisters Lake, during 2008-09.

PUMPKINSEED

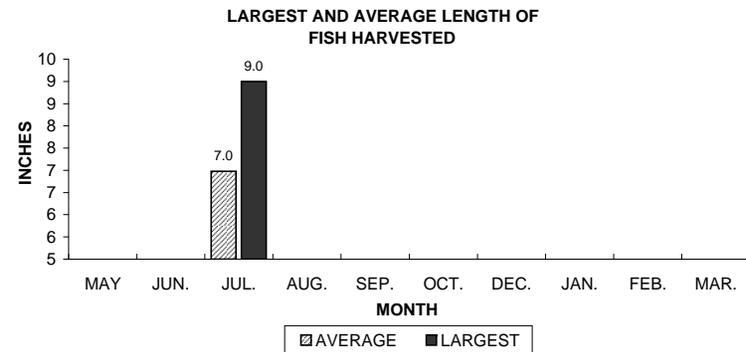
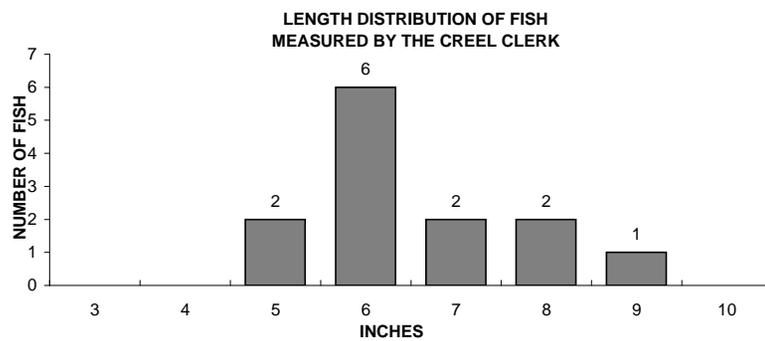
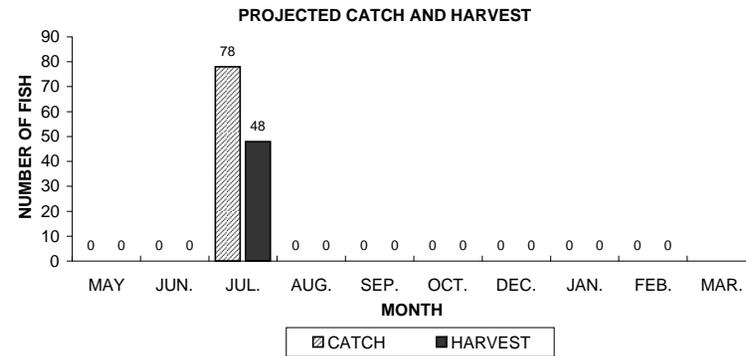
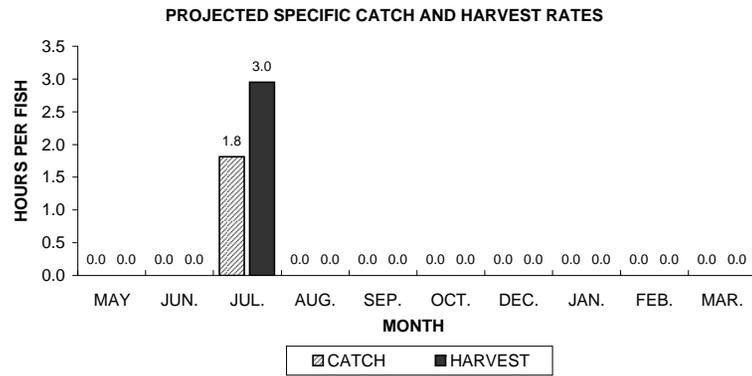
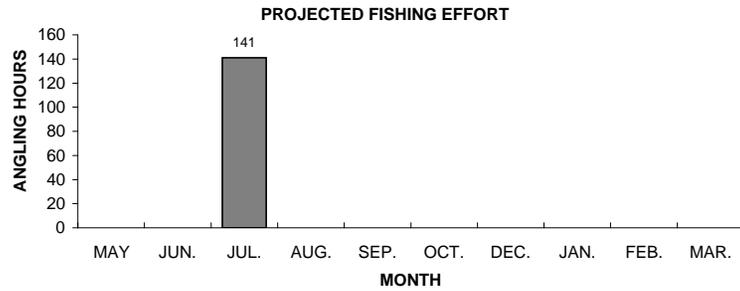
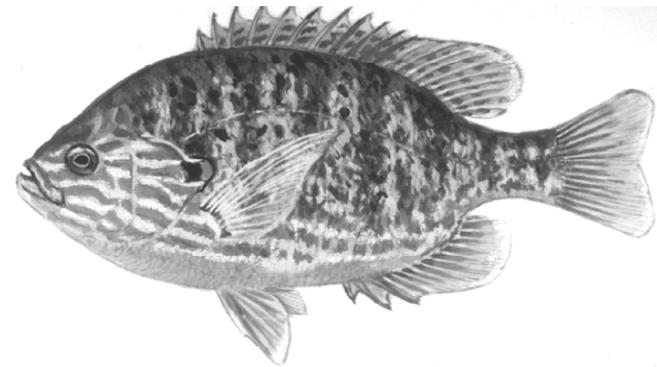
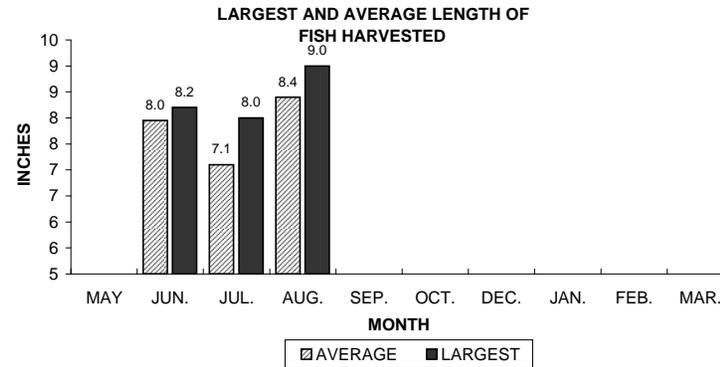
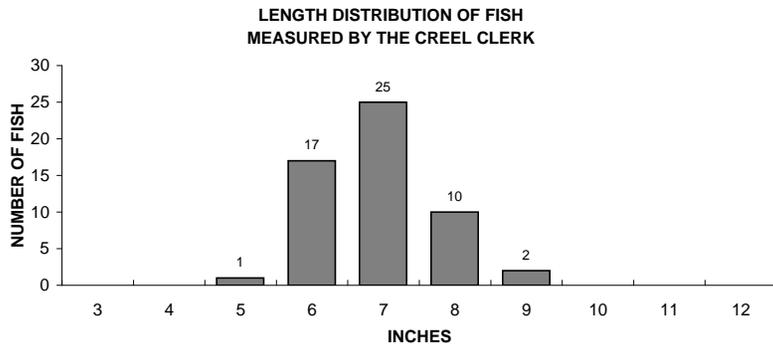
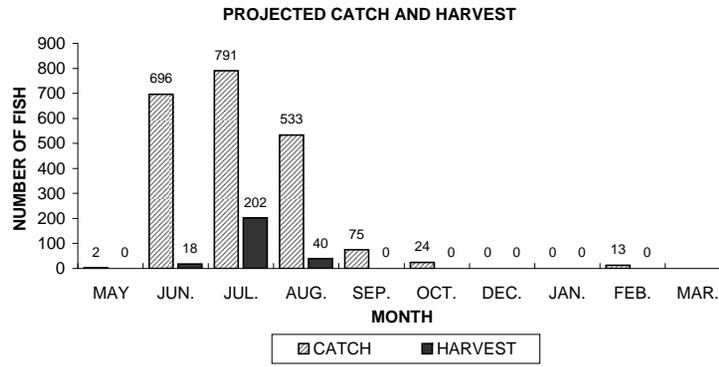
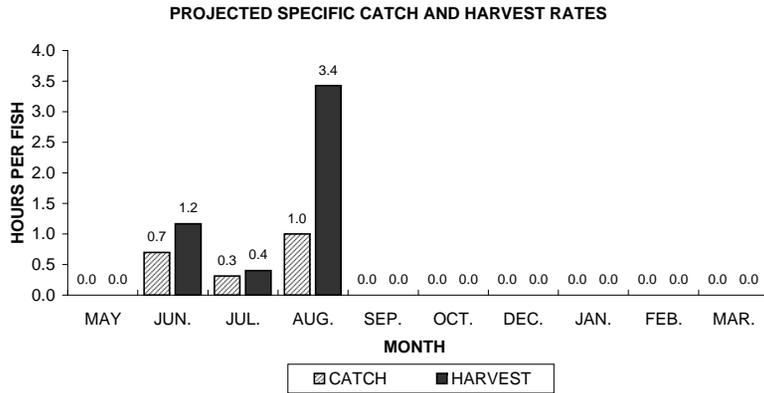
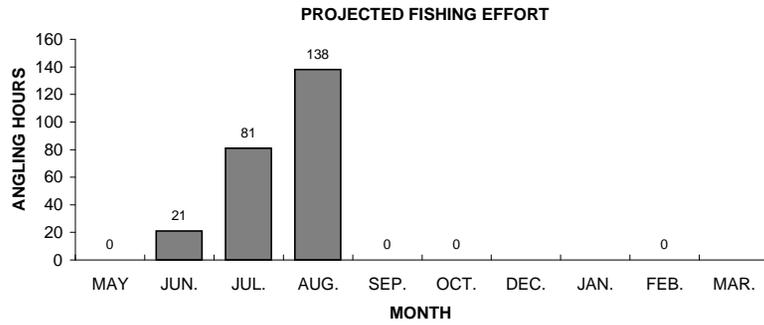
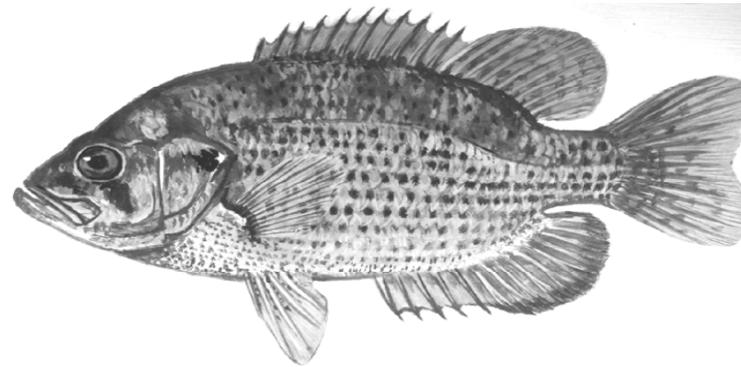


Figure 8. Pumpkinseed sportfishing effort, catch, harvest, and length distribution, Two Sisters Lake, during 2008-09.

ROCK BASS



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

BLACK CRAPPIE

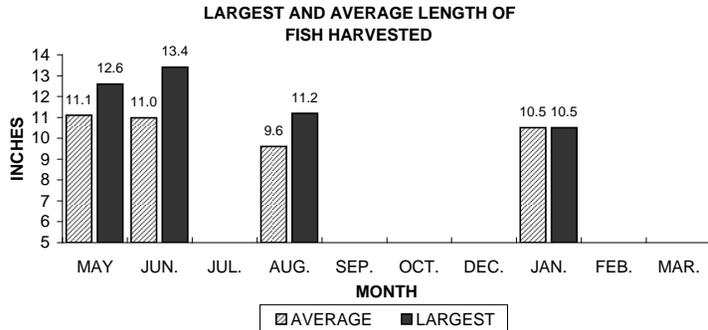
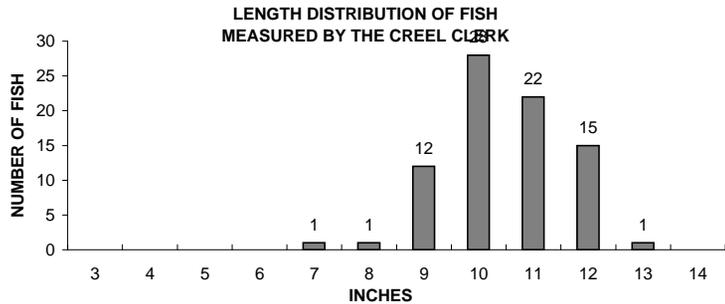
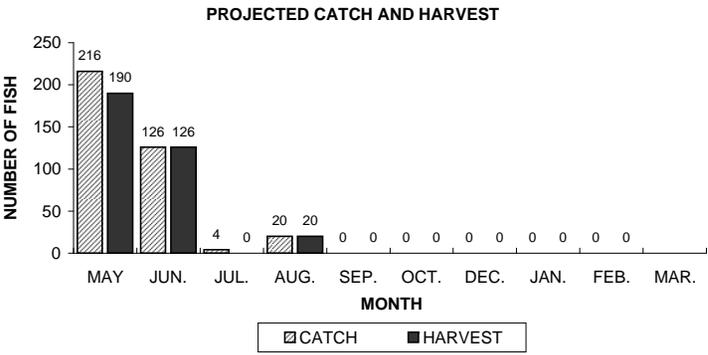
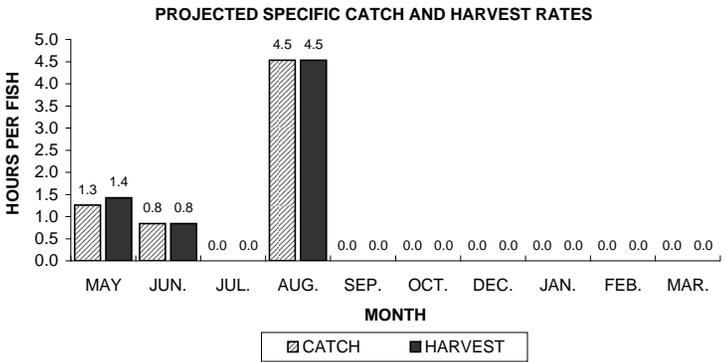
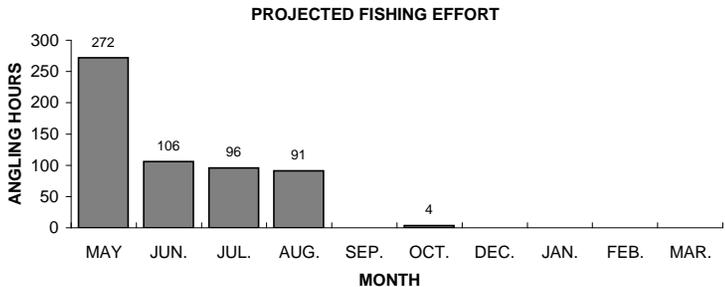
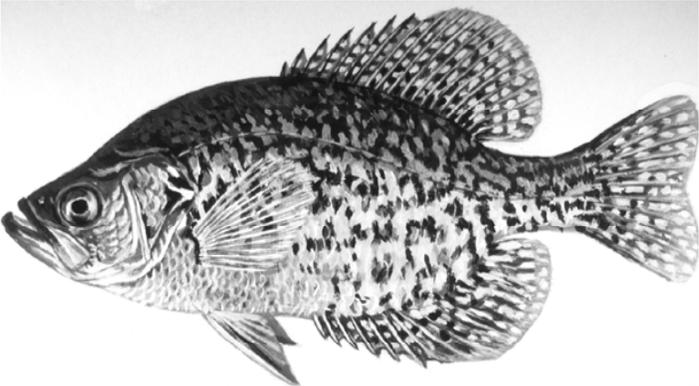


Figure 10. Black crappie sportfishing effort, catch, harvest, and length distribution, Two Sisters Lake, during 2008-09.