WISCONSIN DEPARTMENT OF NATURAL RESOURCES
CREEL SURVEY REPORT

TOMAHAWK LAKE
(INCLUDING LITTLE TOMAHAWK LAKE)

ONEIDA COUNTY

2009-10

Treaty Fisheries Publication

Compiled by Tim Tobias
Treaty Fisheries Technician

June 2010

CONTENTS

SUMMARY TABLES

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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.

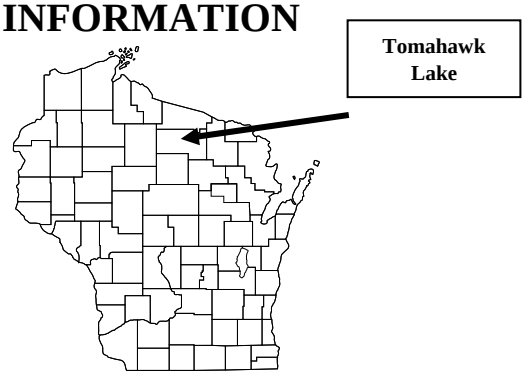
You may have encountered a DNR creel survey clerk on a recent fishing trip. We appreciate your cooperation during an interview. The survey only takes a moment of your time and it gives the Department valuable information needed for management of the fishery.

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

GENERAL LAKE INFORMATION



Location
Tomahawk Lake and Little Tomahawk Lake are located in Oneida County in the Town of Lake Tomahawk.

Physical Characteristics
Tomahawk Lake is a 3,392-acre drainage lake with a maximum depth of 84 feet. Littoral substrate consists primarily of sand, with substantial amounts of rubble, gravel, and smaller amounts of muck and large rock. Tomahawk is a soft water lake with clear water of high transparency.

Little Tomahawk Lake is a 160-acre spring lake with a maximum depth of 48 feet. Most of the littoral substrate consists of sand with lesser amounts of gravel and muck. Little Tomahawk Lake has navigable water access from Tomahawk Lake and road access from Bird Lake Road.

Seasons Surveyed
The period referred to in this report as the 2009-10 fishing season ran from May 2, 2009 through March 7, 2010. The open water creel survey ran from May 2 through October 31, 2009 and the ice fishing creel survey ran from December 1, 2009 through March 7, 2010.

Weather
Ice-out on Tomahawk Lake was around April 25, 2009. Fishable-ice formed on Tomahawk Lake in early January.

Sportfishing Regulations
The following seasons, daily bag limits, and length limits were in place on Tomahawk Lake and Little Tomahawk Lake during the 2009-fishing season:

Largemouth Bass&	5/02-6/19	Catch&Release	
Smallmouth Bass	6/20-3/07	5	14"
Musky	5/23-11/30	1	34"
Northern Pike	5/02-3/07	5	none
Walleye	5/02-3/07	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 Tomahawk Lake and Little Tomahawk Lake.

SPECIES CATCH AND HARVEST INFORMATION

Angling effort, catch and harvest information is summarized for each species in Table 2 and Figures 1-10. Table 2 also includes a comparison of these statistics with the previous creel survey. Information presented about species whose fishing season extends beyond March 7 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**. During the ice creel season one muskellunge was caught in January and ONE IN February that were not used in the projected catch calculations.** Previous angler creel surveys took place in 1987, 1992 and 1998.

General Angler Information
Anglers spent 98,065 hours or 28.9 hours per acre fishing Tomahawk Lake during the 2009 season (Table 1). That was less than the Oneida County average of 37.5 hours per acre. July was the most heavily fished month (6.2 hours per acre). Fishing effort was lightest in December (0.1 hours per acre).

RESULTS BY SPECIES

Walleye (Table 2, Figure 1)
Anglers spent 24,878 hours targeting walleye. Walleye fishing effort was greatest in July (4,992 hours). December had the least amount of walleye fishing effort (377 hours).

Catch was 419 walleye with a harvest of 254 fish. Highest catch (107 fish) and harvest (58 fish) occurred in June. Anglers fished 94.3 hours to catch and 129.9 hours to harvest a walleye during 2009.

The mean length of harvested walleye was 21.8 inches and the largest walleye measured was a 29.1-inch fish.

Northern Pike (Table 2, Figure 2)
Fishing effort directed at northern pike was 4,957 hours during the 2009 season. Northern pike fishing effort was greatest in January (1,799 hours).

Catch was 819 northern pike with a harvest of 176 fish.

The mean length of harvested northern pike

was 25.5 inches and the largest northern pike measured was a 34.8-inch fish.

Muskellunge (Table 2, Figure 3)
Anglers spent 10,384 hours targeting muskellunge during the 2009 season. Muskellunge fishing effort was greatest in August (3,201 hours).

Total open water catch was 182 fish. Highest catch (50 fish) occurred in July. Anglers fished 119 hours to catch a muskellunge during 2009.

Smallmouth Bass (Table 2, Figure 4)
Fishing effort targeted at smallmouth bass was 37,682 hours during the 2009 season. Smallmouth bass fishing effort was greatest in September (11,399 hours).

Total catch was 51,334 smallmouth bass with a harvest of 1,084 fish. Highest catch (13,405 fish) occurred in July. Anglers fished 1.0 hour to catch and 40.0 hours to harvest a smallmouth bass during 2009.

Largemouth Bass (Table 2, Figure 5)
Fishing effort directed at largemouth bass was 31,385 hours during the 2009 season. Largemouth bass fishing effort was greatest in September (9,986 hours).

Catch was 22,815 largemouth bass with a harvest of 533 fish. Highest catch (7,223 fish) occurred in September. Anglers fished 1.9 hours to catch and 122 hours to harvest a largemouth bass during 2009.

Panfish (Table 2, Figures 6-10)
Bluegills were the most sought after panfish species during the survey. Fishing effort directed at bluegill was 31,159 hours.

Total catch of bluegill was 61,608 fish with 13,886 harvested. The mean length of bluegill harvested was 7.1 inches.

Black crappie were the second most sought after panfish species during the survey. Fishing effort directed at black crappie was 27,906 hours.

Anglers caught 11,721 black crappie and harvested 7,849 fish. The mean length of black crappie harvested was 10.5 inches.

Yellow perch were the third most sought after panfish species during the survey. Fishing effort directed at yellow perch was 24,667 hours.

Total catch of yellow perch was 20,503 fish with 5,539 harvested. The mean length of yellow perch harvested was 8.1 inches.

Pumpkinseeds and rock bass were also caught during the 2009 season.

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, Jason Halverson, Marty Kiepke, Steve Kramer, Tim Tobias and Joelle Underwood. Fisheries management staff included Steve Gilbert, Wes Jahns, John Kubisiak and Steve Timler. Scott Yonker and Keith Worrall were the creel clerks on Tomahawk 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, Tom Steele of the Kemp Natural Resource

Station, 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, Tomahawk Lake, 2009-10 season.

Month	Total Angler Hours	Total Angler Hours/Acre	Oneida County Average Hours/Acre	Statewide Average Hours/Acre
May	9079	2.7	5.4	5.8
June	17053	5.0	7.3	6.1
July	20925	6.2	8.3	6.4
August	17165	5.1	6.3	5.4
September	18371	5.4	3.8	3.8
October	1352	0.4	1.7	1.6
December	476	0.1	1.3	1.7
January	5350	1.6	1.7	1.5
February	7249	2.1	1.6	1.3
March	1045	0.3	0.3	--
*Summer Total	83945	24.7	32.8	29.1
*Winter Total	14120	4.2	4.8	4.5
Grand Total	98065	28.9	37.5	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 Tomahawk 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 Tomahawk 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 Tomahawk Lake to other lakes statewide.

Table 2. Comparison of creel survey synopses, Tomahawk Lake, 1998 and 2009 fishing seasons.

CREEL YEAR: 2009-10

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	24878	12.20%	419	94.3	254	129.9	21.8
Northern Pike	4957	2.43%	819	18.9	176	37.5	25.5
Muskellunge	10384	5.09%	182	119.0	0		
Smallmouth Bass	37682	18.47%	51334	1.0	1084	40.0	14.3
Largemouth Bass	31385	15.39%	22815	1.9	533	122.0	14.0
Yellow Perch	24667	12.09%	20503	1.6	5539	5.0	8.1
Bluegill	31159	15.28%	61608	0.6	13886	2.3	7.1
Pumpkinseed	5137	2.52%	6283	1.2	1830	3.3	7.1
Rock Bass	5818	2.85%	40946	0.6	5642	1.2	7.9
Black Crappie	27906	13.68%	11721	2.5	7849	3.6	10.5

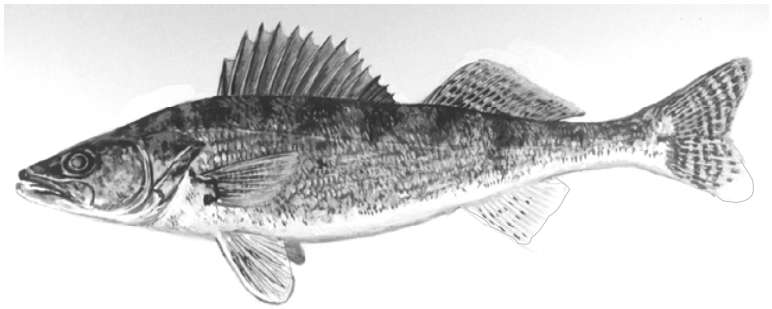
* A blank cell in this column indicates that no fish of a given species were caught by anglers who specifically targeted that species.

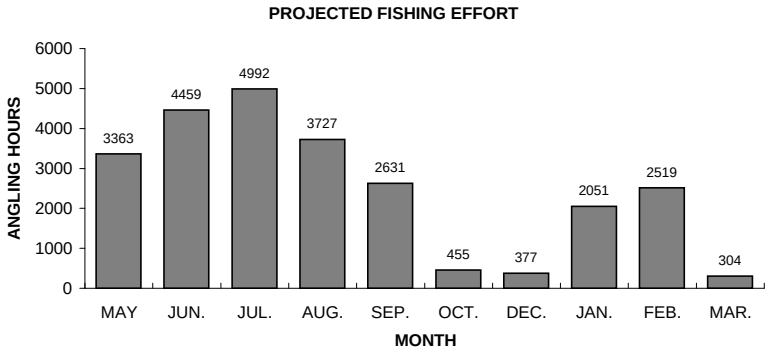
** A blank cell in this column indicates that no fish of a given species were harvested by anglers who specifically targeted that species.

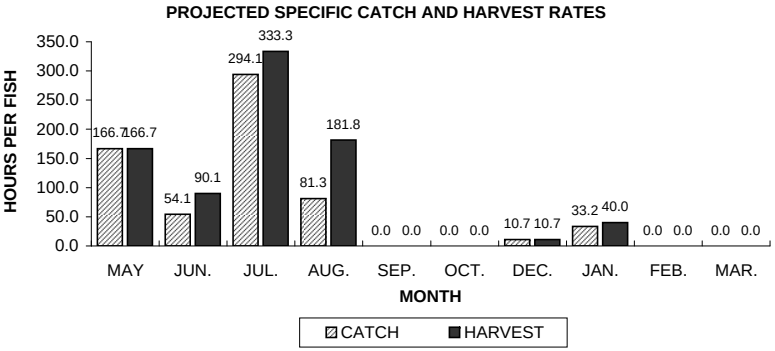
CREEL YEAR: 1998-99

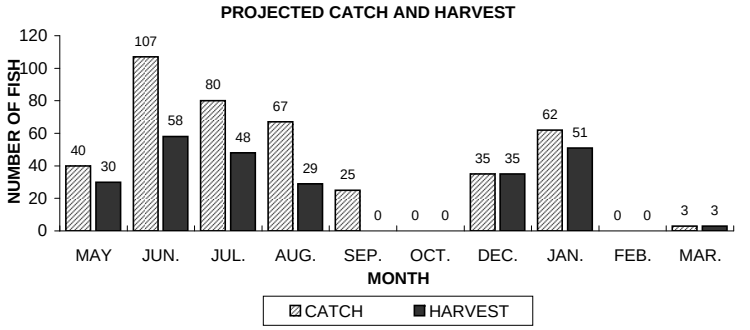
SPECIES	DIRECTED EFFORT (Hours)	PERCENT OF TOTAL	TOTAL CATCH	SPECIFIC CATCH RATE (Hrs/Fish)	TOTAL HARVEST	SPECIFIC HARVEST RATE (Hrs/Fish)	MEAN LENGTH OF HARVESTED FISH
Walleye	34978	26.42%	2765	12.8	1036	34.1	18.6
Northern Pike	4868	3.68%	1586	14.3	178	61.0	24.7
Muskellunge	25587	19.33%	631	47.6	21	1250.0	35.8
Smallmouth Bass	15119	11.42%	9523	2.2	83	400.0	14.5
Largemouth Bass	10225	7.72%	2780	4.7	99	175.4	14.3
Yellow Perch	17912	13.53%	35575	0.7	5699	3.7	7.8
Bluegill	11983	9.05%	7145	2.1	1422	9.9	6.9
Pumpkinseed	2684	2.03%	667	5.9	79	37.9	6.5
Rock Bass	5080	5.22%	4168	2.9	507	18.1	8.1
Black Crappie	3938	2.97%	443	9.7	331	12.7	11.0

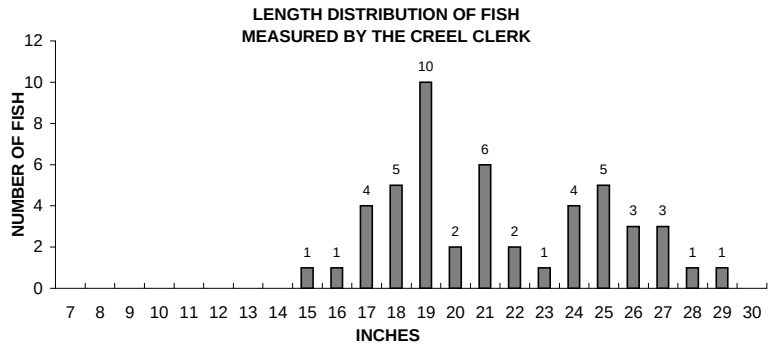
WALLEYE











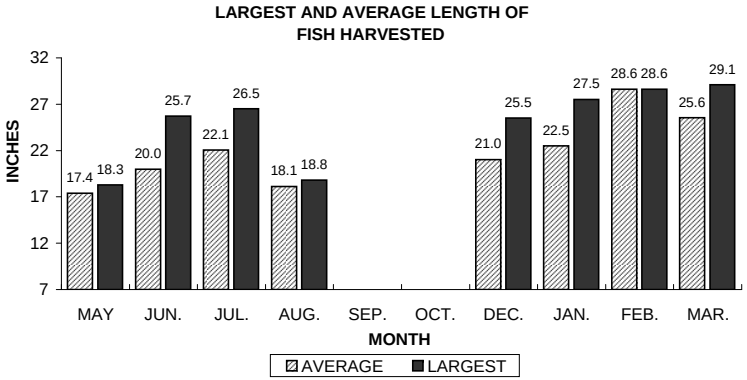
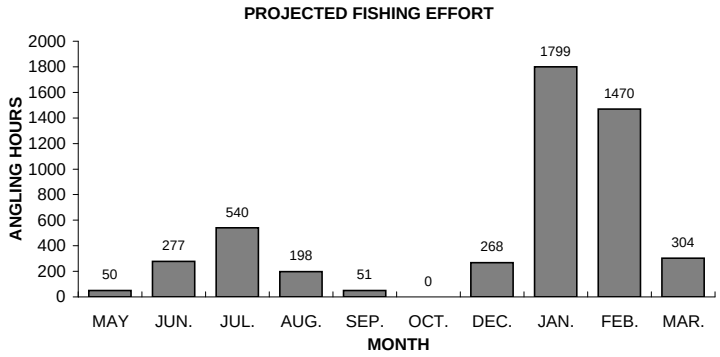
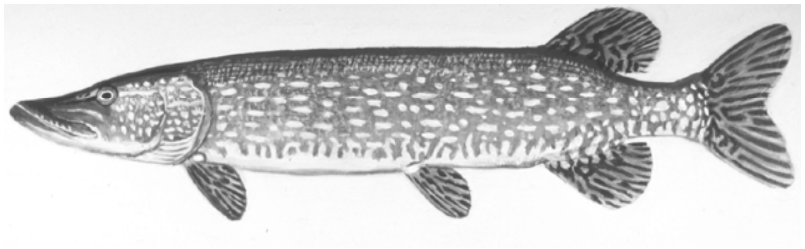
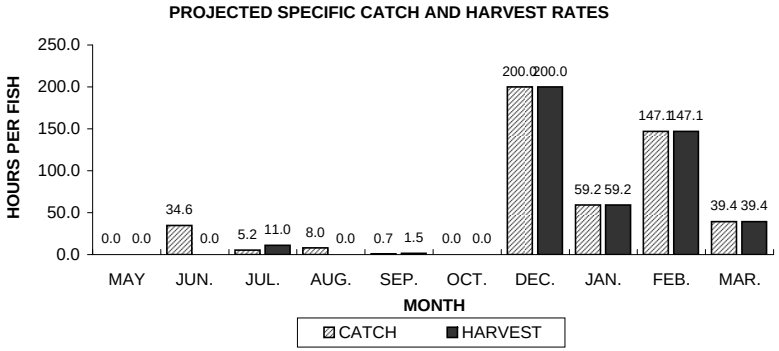


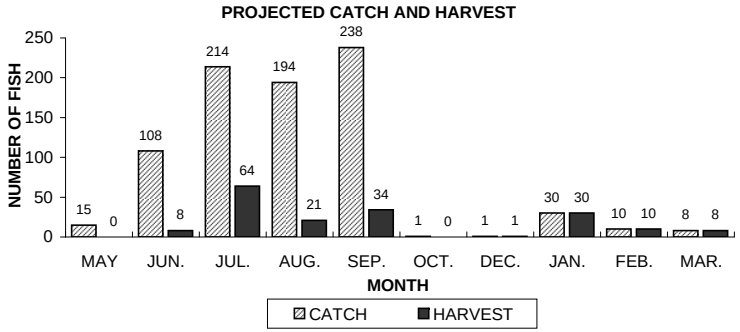
Figure 1. Walleye sportfishing effort, catch, harvest, and length distribution, Tomahawk Lake, during 2009-10.

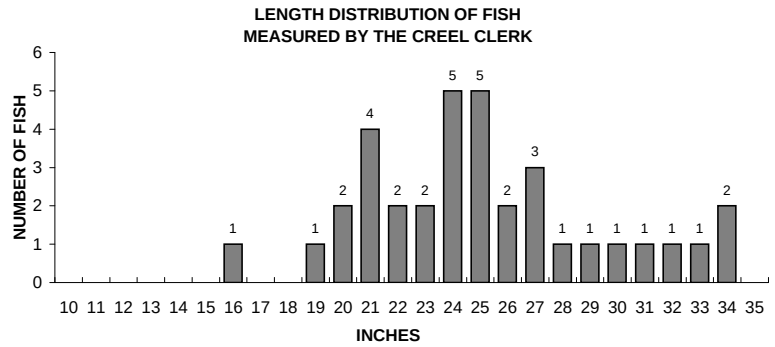


NORTHERN PIKE









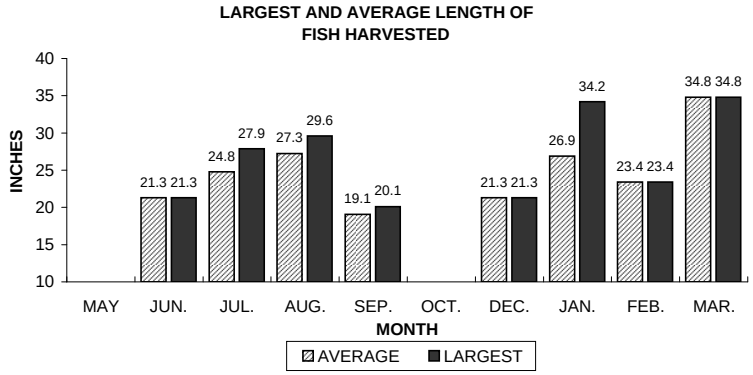
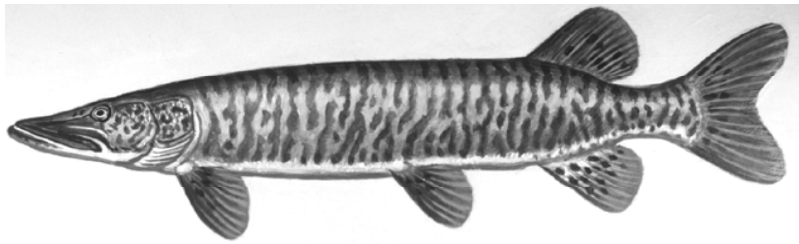
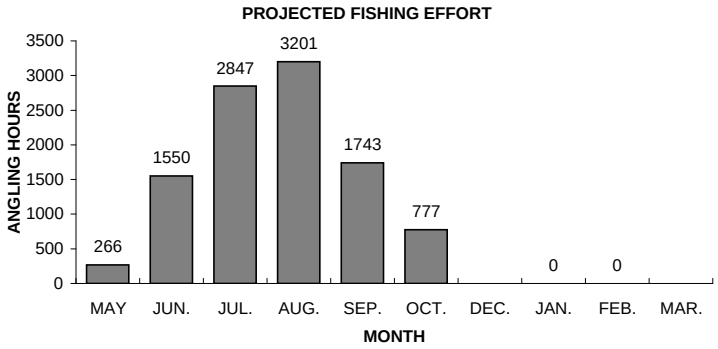
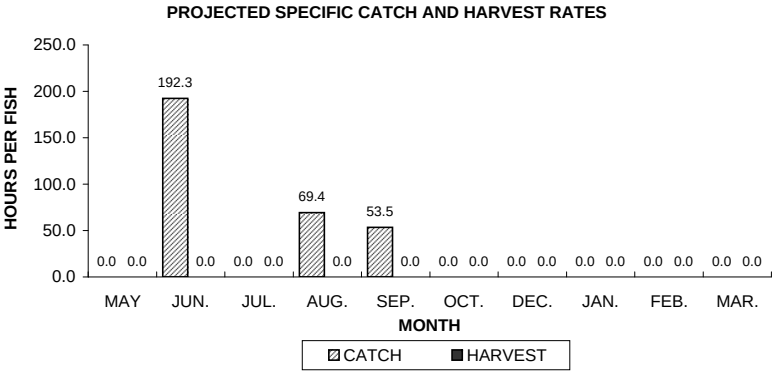


Figure 2. Northern pike sportfishing effort, catch, harvest, and length distribution, Tomahawk Lake, during 2009-10.

MUSKELLUNGE







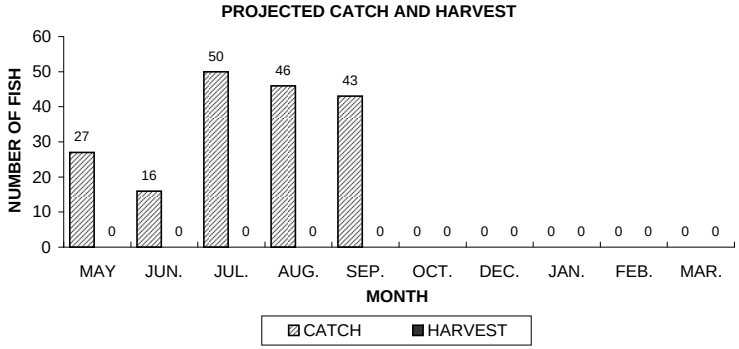
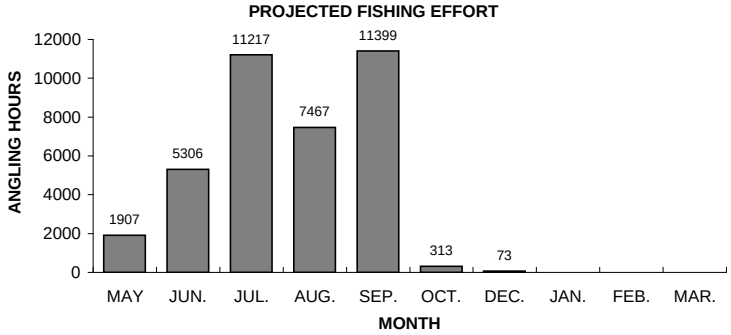
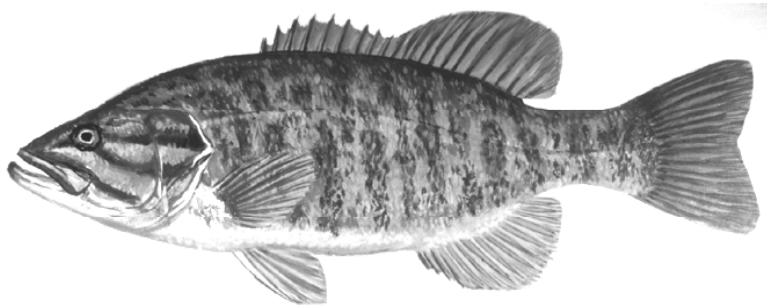
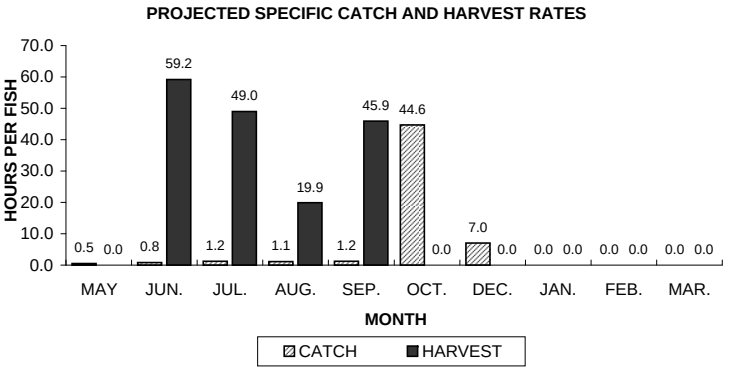


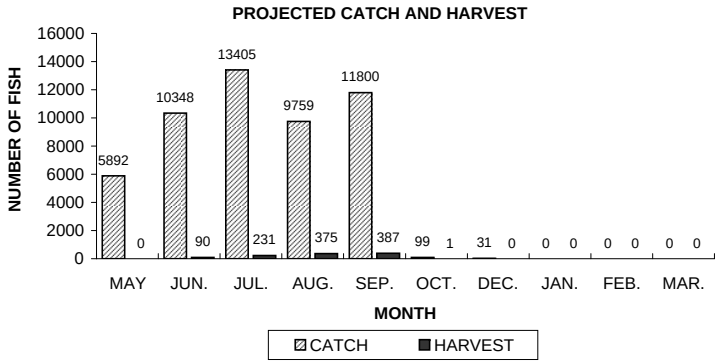
Figure 3. Muskellunge sportfishing effort, catch, harvest, and length distribution, Tomahawk Lake, during 2009-10.

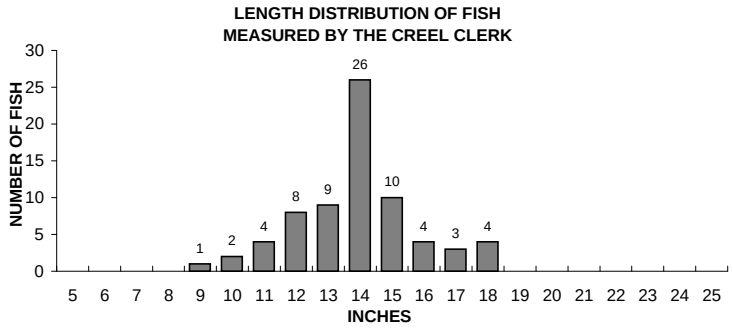
SMALLMOUTH BASS











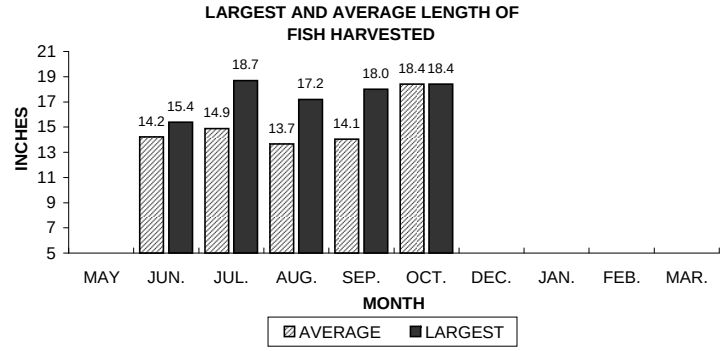
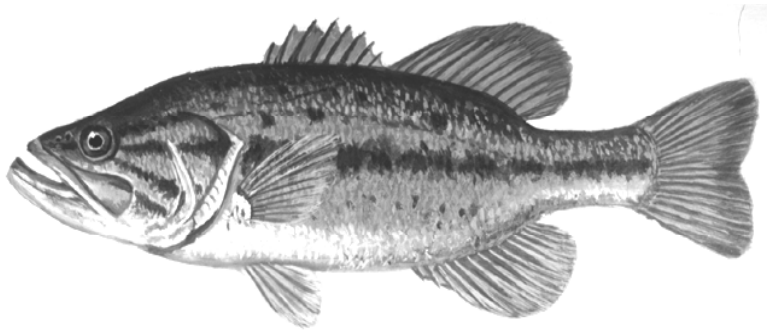
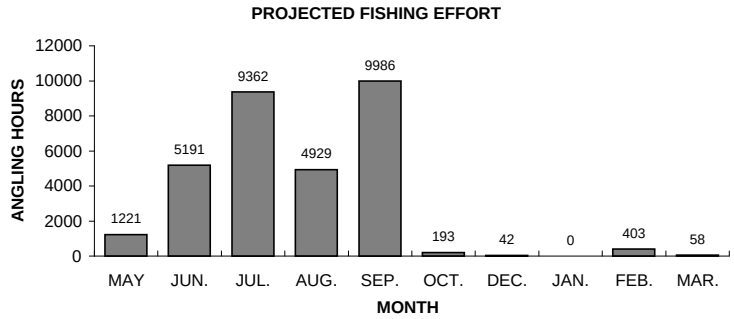
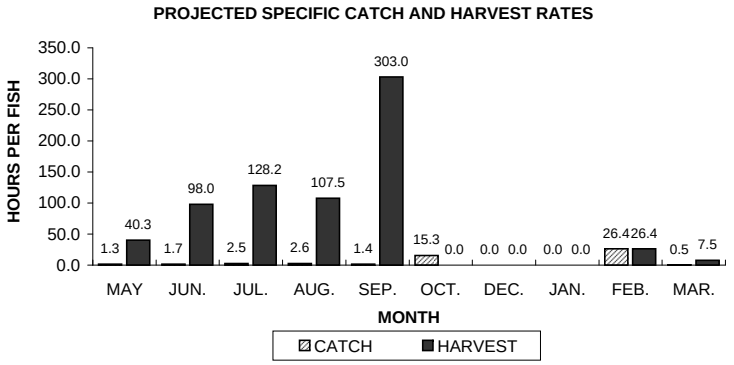


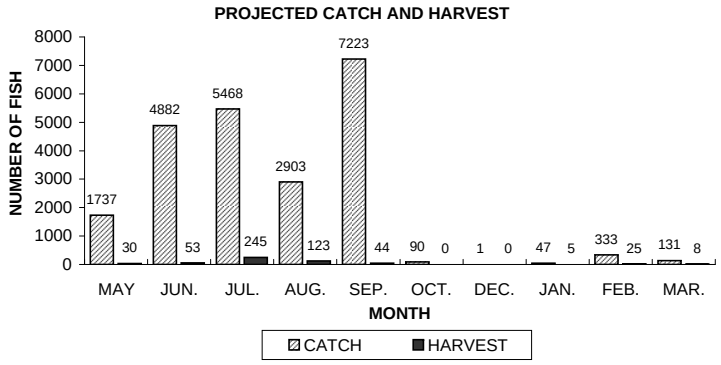
Figure 4. Smallmouth bass sportfishing effort, catch, harvest, and length distribution, Tomahawk Lake, during 2009-10.

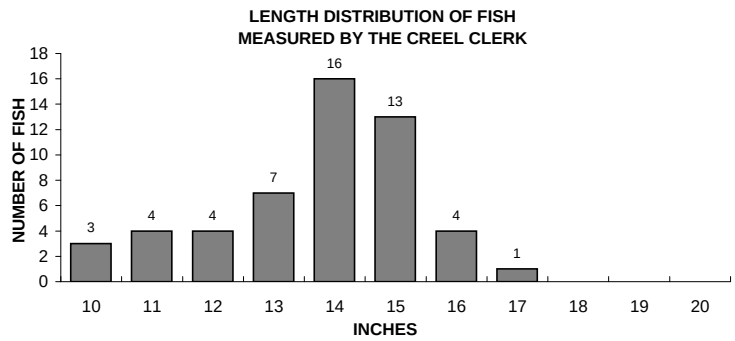
LARGEMOUTH BASS











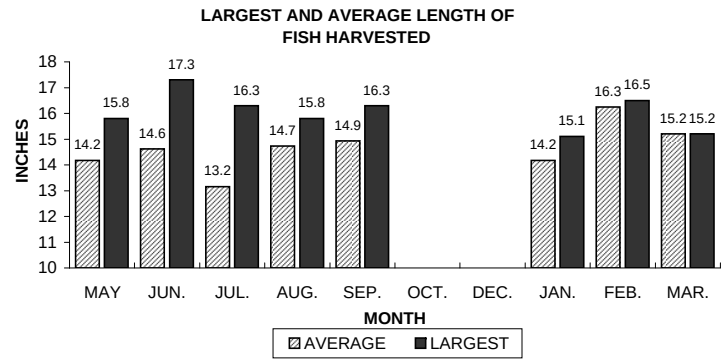
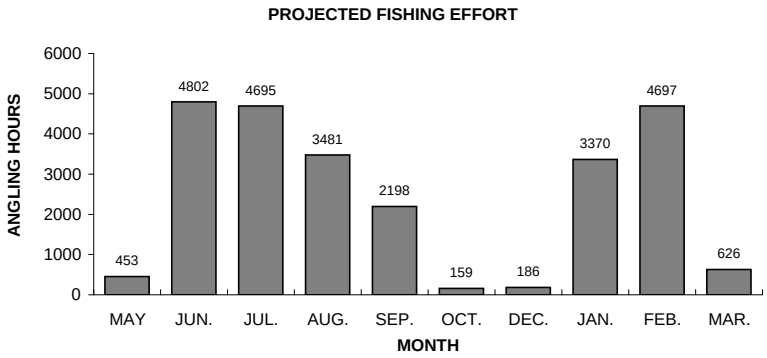
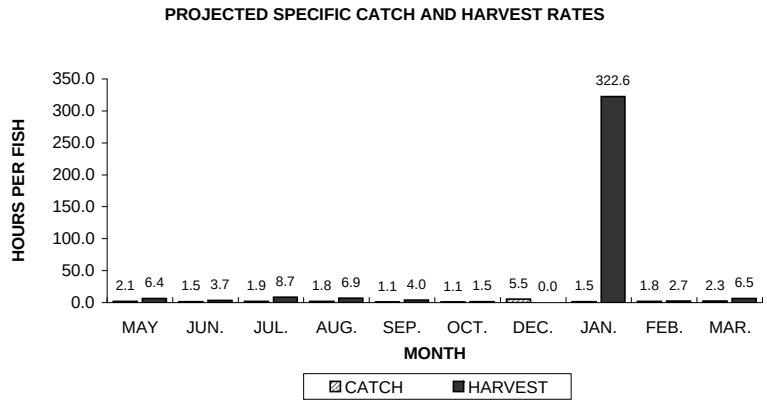
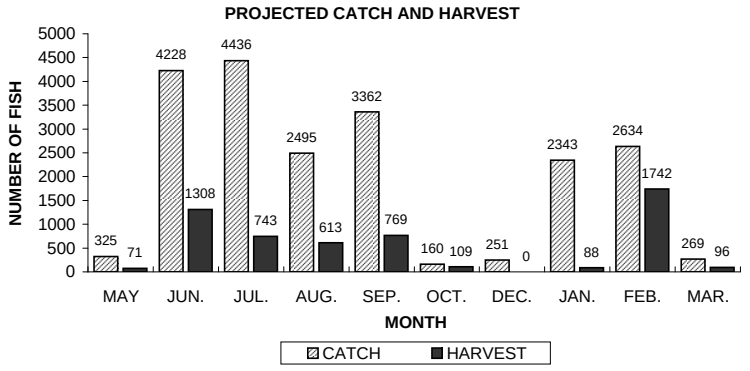


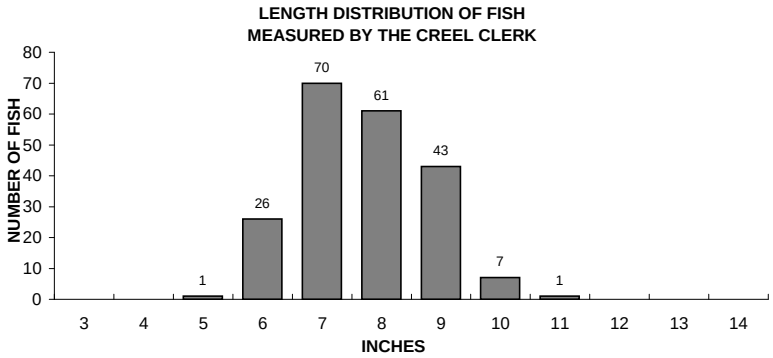
Figure 5. Largemouth bass sportfishing effort, catch, harvest, and length distribution, Tomahawk Lake, during 2009-10.

YELLOW PERCH









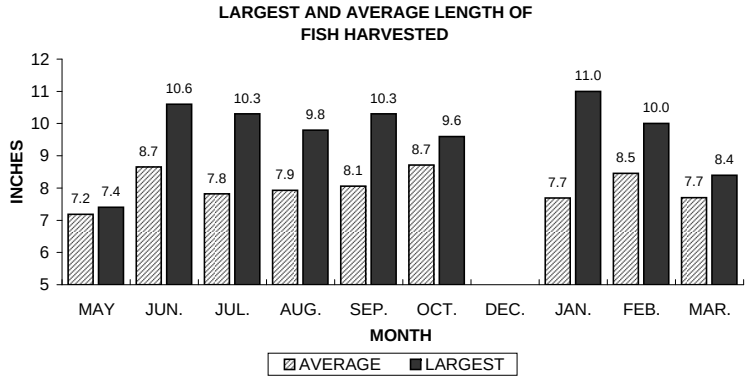
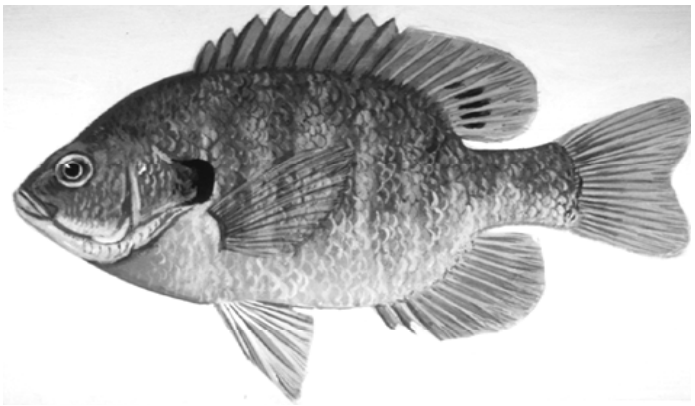
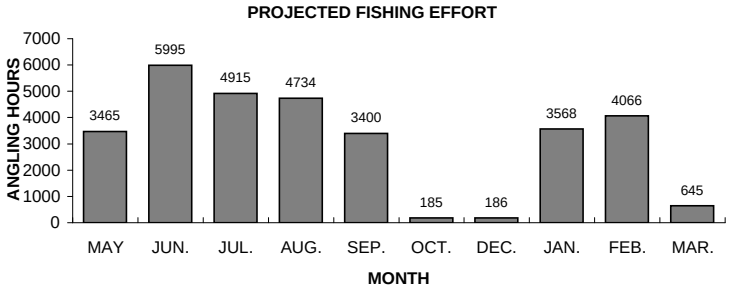
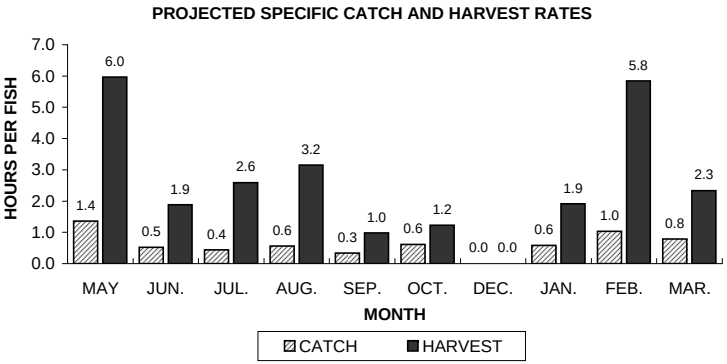


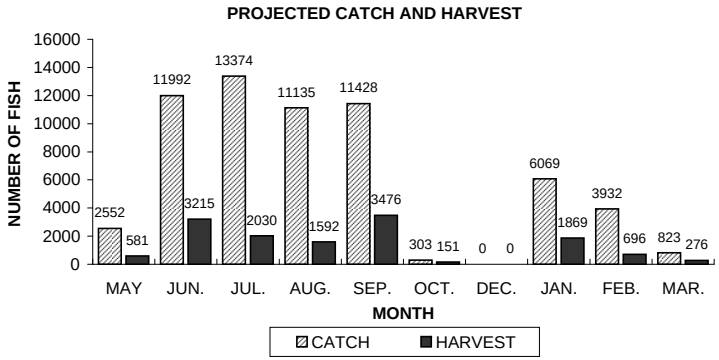
Figure 6. Yellow perch sportfishing effort, catch, harvest, and length distribution, Tomahawk Lake, during 2009-10.

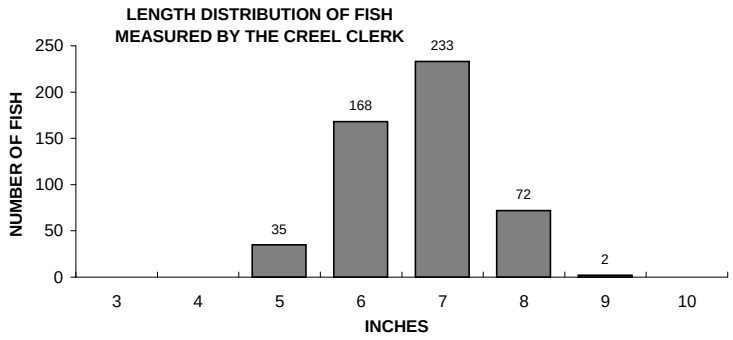
BLUEGILL











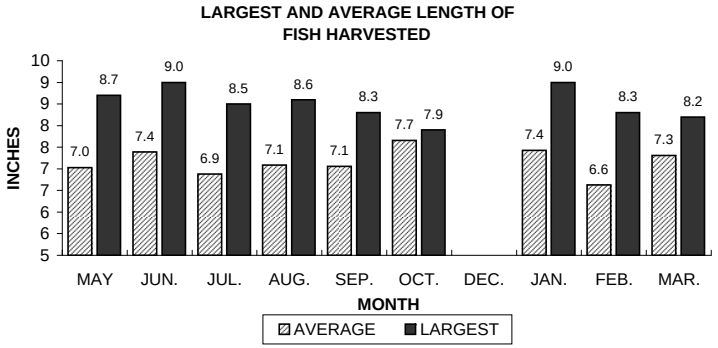
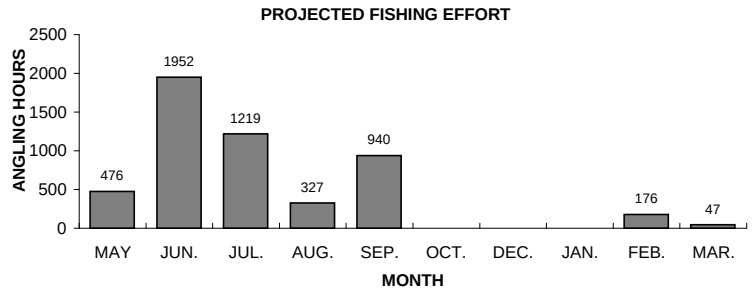
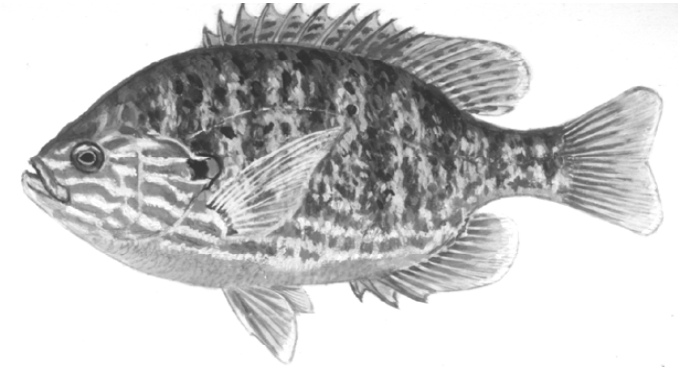
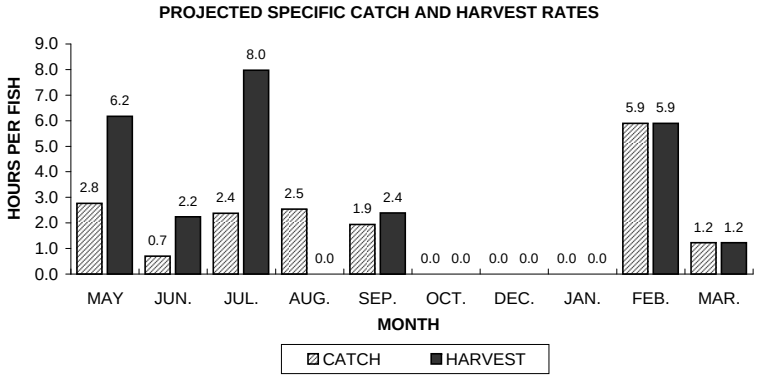


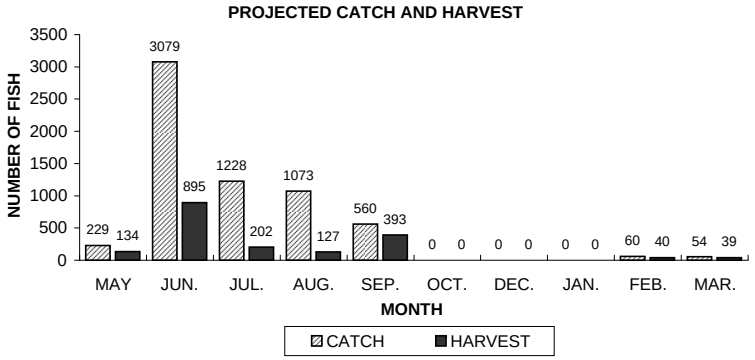
Figure 7. Bluegill sportfishing effort, catch, harvest, and length distribution, Tomahawk Lake, during 2009-10.

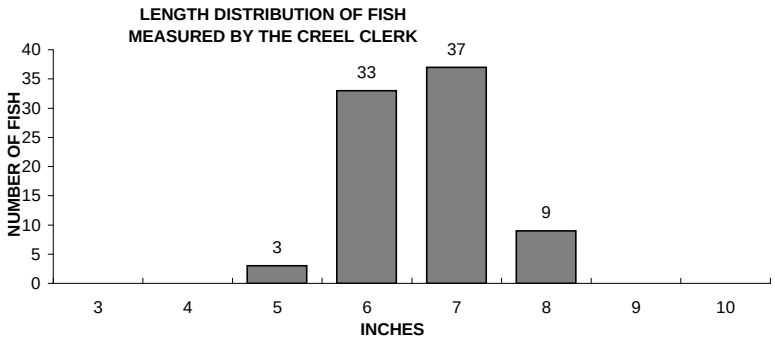
PUMPKINSEED











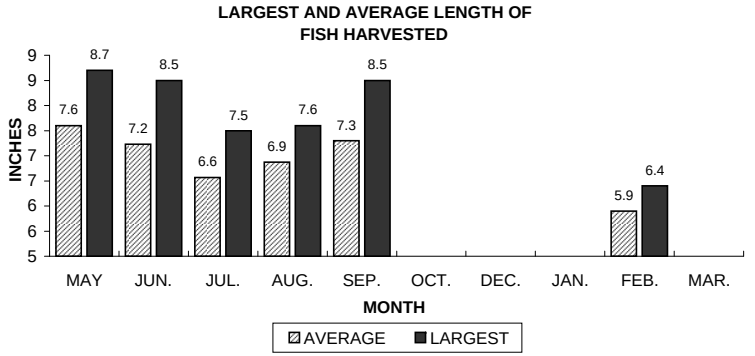
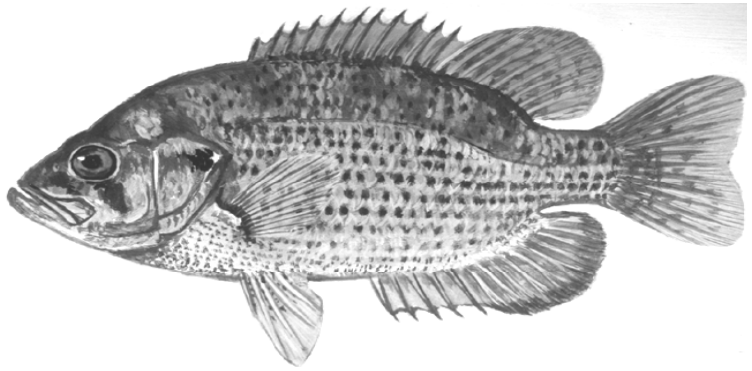
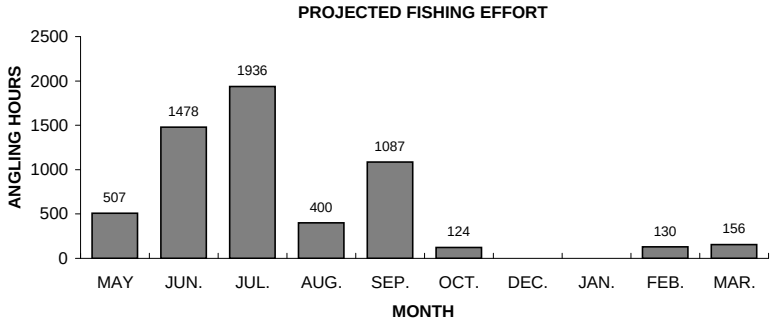
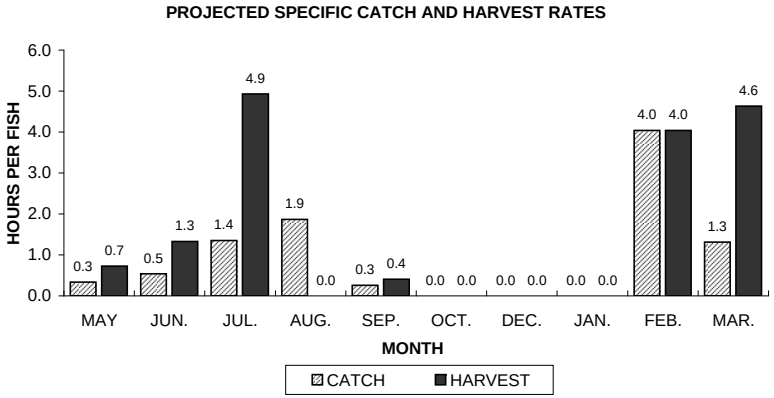


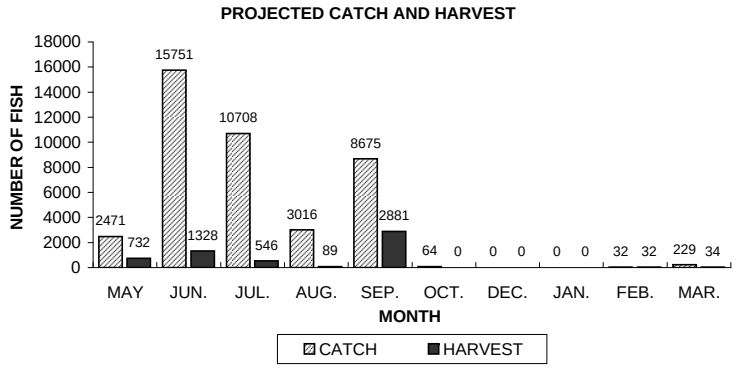
Figure 8. Pumpkinseed sportfishing effort, catch, harvest, and length distribution, Tomahawk Lake, during 2009-10.

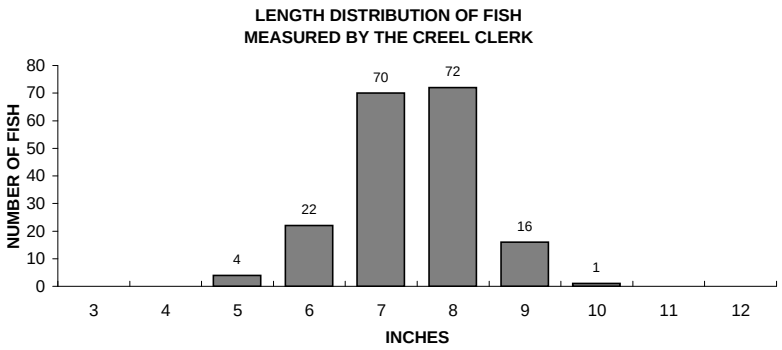
ROCK BASS











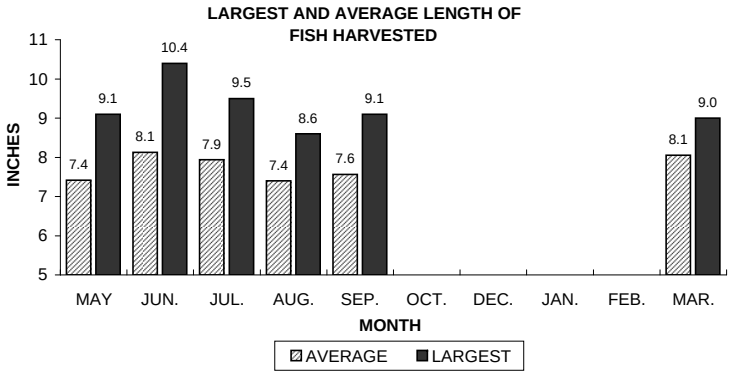
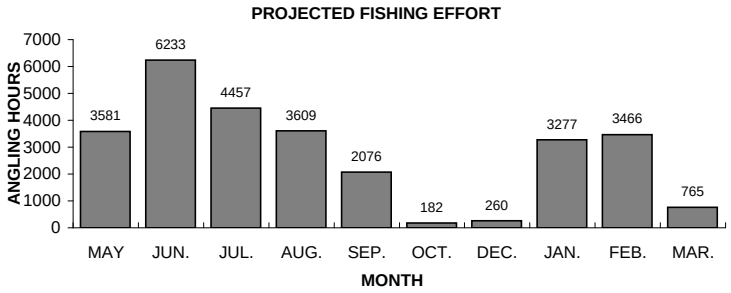
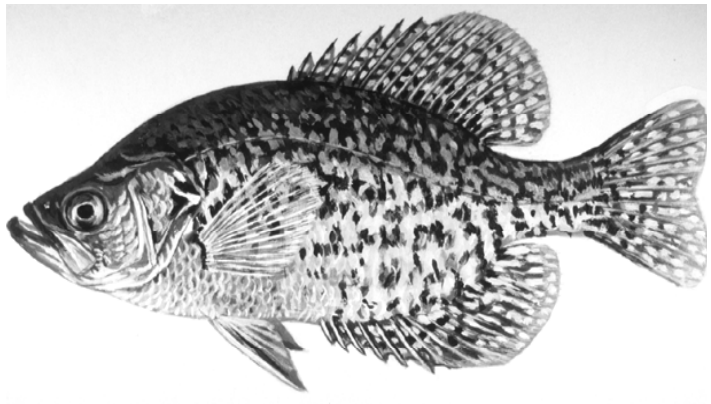
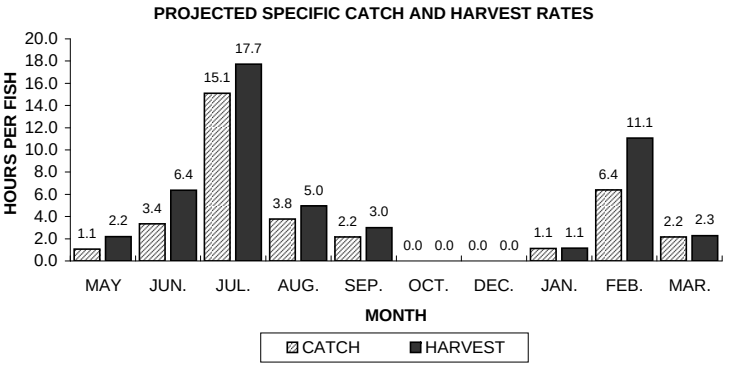


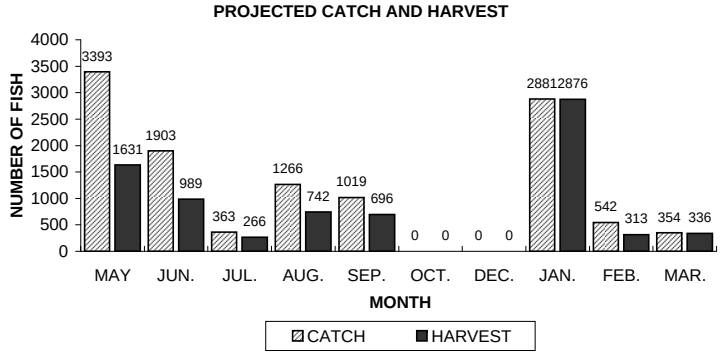
Figure 9. Rock bass sportfishing effort, catch, harvest, and length distribution, Tomahawk Lake, during 2009-10.

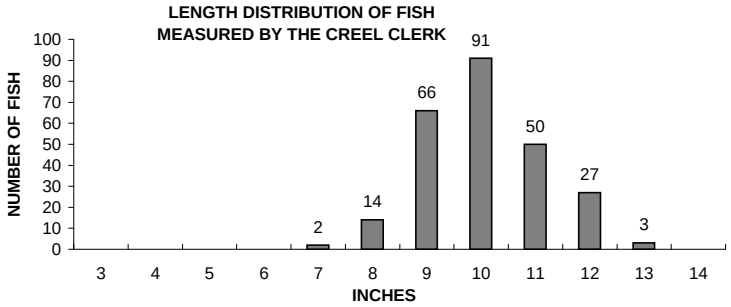
BLACK CRAPPIE











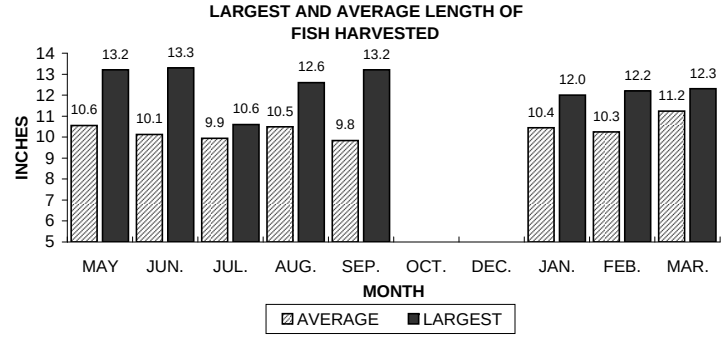


Figure 10. Black crappie sportfishing effort, catch, harvest, and length distribution, Tomahawk Lake, during 2009-10.