WISCONSIN DEPARTMENT OF NATURAL RESOURCES
CREEL SURVEY REPORT

KAWAGUESAGA LAKE

ONEIDA COUNTY

2009-10

Treaty Fisheries Publication

Compiled by Tim Tobias
Treaty Fisheries Technician

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CONTENTS

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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.

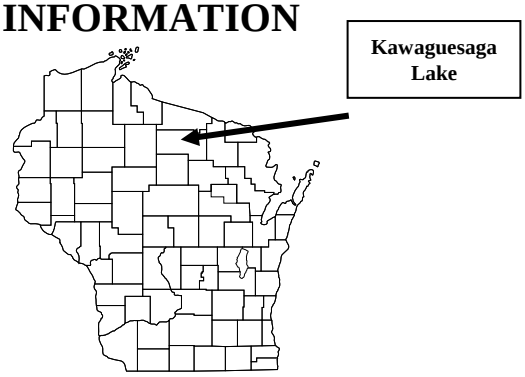
You may have encountered a DNR creel survey clerk on a recent fishing trip. We appreciate your cooperation during an interview. The survey only takes a moment of your time and it gives the Department valuable information needed for management of the fishery.

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

GENERAL LAKE INFORMATION



Location
Kawaguesaga Lake is located in Oneida County in the Town of Minocqua.

Physical Characteristics
Kawaguesaga Lake is a 670-acre drainage lake with a maximum depth of 44 feet. Littoral substrate consists primarily of sand, with lesser amounts of gravel, and some muck. Kawaguesaga is a soft water lake with slightly acidic, clear water of moderate transparency.

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 Kawaguesaga Lake was around April 21, 2009. Fishable-ice formed on Kawaguesaga Lake in mid December.

Sportfishing Regulations
The following seasons, daily bag limits, and length limits were in place on Kawaguesaga 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 Kawaguesaga 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. Previous angler creel surveys took place in 1987, 1992 and 1998.

General Angler Information
Anglers spent 30,262 hours or 45.2 hours per acre fishing Kawaguesaga Lake during the 2009 season (Table 1). That was more than the Oneida County average of 37.5 hours per acre. June was the most heavily fished month (8.0 hours per acre). Fishing effort was lightest in December (1.1 hours per acre).

RESULTS BY SPECIES

Walleye (Table 2, Figure 1) Walleye were the most sought after gamefish species during the 2009 season. Anglers spent 10,308 hours targeting walleye. Walleye fishing effort was greatest in June (1,606 hours). December had the least amount of walleye fishing effort (307 hours).

Catch was 914 walleye with a harvest of 405 fish. Highest catch (253 fish) occurred in October and harvest (120 fish) occurred in May. Anglers fished 11.5 hours to catch and 26.4 hours to harvest a walleye during 2009.

The mean length of harvested walleye was 17.3 inches and the largest walleye measured was a 27.0-inch fish.

Northern Pike (Table 2, Figure 2)
Fishing effort directed at northern pike was 4,269 hours during the 2009 season. Northern pike fishing effort was greatest in February (905 hours).

Catch was 1,577 northern pike with a harvest of 428 fish.

The mean length of harvested northern pike was 27.3 inches and the largest northern pike measured was a 37.3-inch fish.

Muskellunge (Table 2, Figure 3)
Anglers spent 5,271 hours targeting muskellunge during the 2009 season. Muskellunge fishing effort was greatest in August (1,293 hours).

Catch was 322 fish. Highest catch (100 fish) occurred in August. Anglers fished 18.6 hours to catch a muskellunge during 2009.

Smallmouth Bass (Table 2, Figure 4)
Fishing effort targeted at smallmouth bass was 4,524 hours during the 2009 season. Smallmouth bass fishing effort was greatest in July (1,183 hours).

Catch was 3,790 smallmouth bass with a harvest of 196 fish. Highest catch (1,587 fish) occurred in September. Anglers fished 2.5 hours to catch a smallmouth bass during 2009.

The mean length of harvested smallmouth bass was 16.6 inches and the largest smallmouth bass measured was an 18.9-inch fish harvested in August.

Largemouth Bass (Table 2, Figure 5)
Fishing effort directed at largemouth bass was 3,843 hours during the 2009 season. Largemouth bass fishing effort was greatest in July (1,115 hours).

Catch was 7,682 largemouth bass with a harvest of 161 fish. Highest catch (2,038 fish) occurred in June. Anglers fished 1.3 hours to catch a largemouth bass during 2009.

Panfish (Table 2, Figures 6-10)
Yellow perch were the most sought after panfish species during the 2009 survey. Fishing effort directed at yellow perch was 10,636 hours.

Anglers caught 16,120 yellow perch and harvested 9,101 fish. The mean length of yellow perch harvested was 8.7 inches.

Bluegills were the second most sought after panfish species during the survey. Fishing effort directed at bluegill was 8,803 hours.

Total catch of bluegill was 37,119 fish and 14,756 harvested. The mean length of bluegill harvested was 7.7 inches.

Total catch of **black crappie** was 2,322 fish with 1,640 harvested. The mean length of black crappie harvested was 10.9 inches.

Anglers caught 10,240 **rock bass** and harvested 619. The mean length of rock bass taken was 9.0 inches.

Pumpkinseeds were also caught during the 2009 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 included Jeff Blonski, Jason Halverson, Marty Kiepke, Steve Kramer, Tim Tobias and Joelle Underwood. Dave Stahmer and Bob Consolo were the creel clerks on Kawaguesaga 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, Jane Mason and Fred and Cathy Zemp, who generously allowed the department to keep a boat and snowmobile respectively 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, Kawaguesaga Lake, 2009-10 season.

Month	Total Angler Hours	Total Angler Hours/Acre	Oneida County Average Hours/Acre	Statewide Average Hours/Acre
May	3244	4.8	5.4	5.8
June	5374	8.0	7.3	6.1
July	4346	6.5	8.3	6.4
August	4272	6.4	6.3	5.4
September	3787	5.7	3.8	3.8
October	1010	1.5	1.7	1.6
December	766	1.1	1.3	1.7
January	2958	4.4	1.7	1.5
February	3154	4.7	1.6	1.3
March	1351	2.0	0.3	**
*Summer Total	22033	32.9	32.8	29.1
*Winter Total	8229	12.3	4.8	4.5
Grand Total	30262	45.2	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 Kawaguesaga 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 Kawaguesaga 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 Kawaguesaga Lake to other lakes statewide.

Table 2. Comparison of creel survey synopses, Kawaguesaga 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	10308	19.51%	914	11.5	405	26.4	17.3
Northern Pike	4269	8.08%	1577	6.6	428	11.0	27.3
Muskellunge	5271	9.97%	322	18.6	0		
Smallmouth Bass	4524	8.56%	3790	2.5	196	31.3	16.6
Largemouth Bass	3843	7.27%	7682	1.3	161	38.0	17.3
Yellow Perch	10636	20.13%	16120	0.8	9101	1.2	8.7
Bluegill	8803	16.66%	37119	0.2	14756	0.6	7.7
Pumpkinseed	0	0.00%	260		198		7.9
Rock Bass	323	0.61%	10240	1.0	619	1.4	9.0
Black Crappie	4867	9.21%	2322	2.3	1640	3.0	10.9

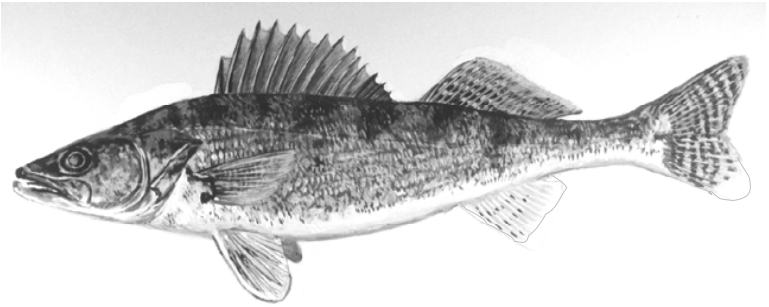
* A blank cell in this column indicates that no fish of a given species were caught by anglers who specifically targeted that species.

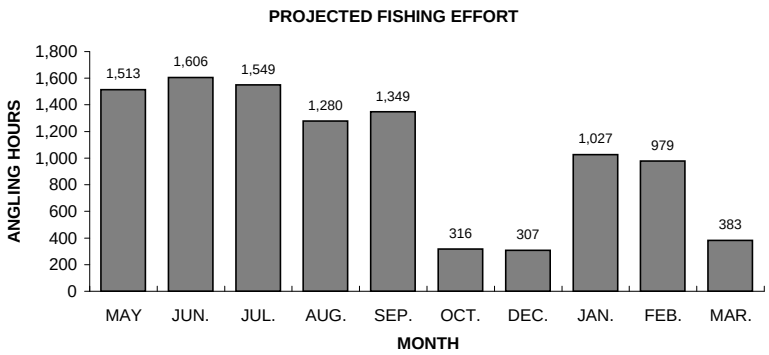
** A blank cell in this column indicates that no fish of a given species were harvested by anglers who specifically targeted that species.

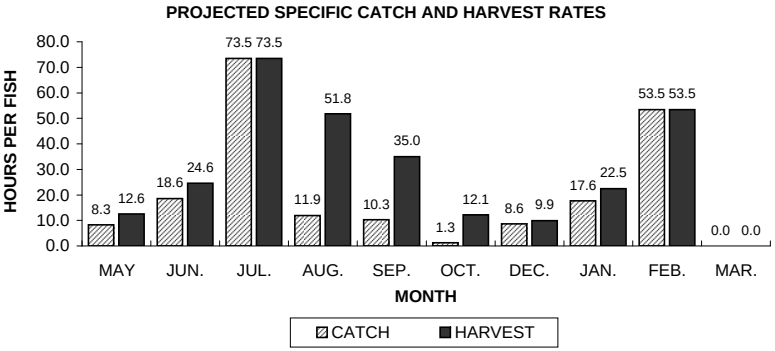
CREEL YEAR: 1998-99

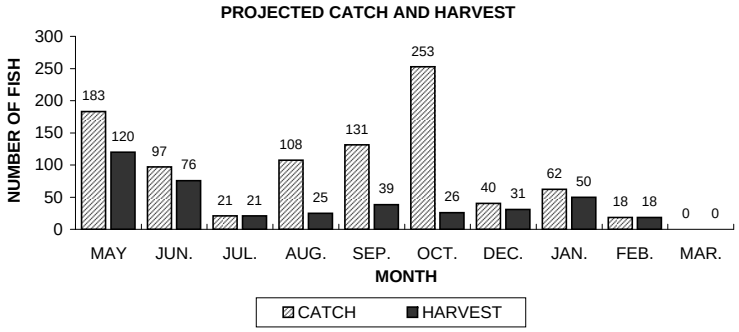
SPECIES	DIRECTED EFFORT (Hours)	PERCENT OF TOTAL	TOTAL CATCH	SPECIFIC CATCH RATE (Hrs/Fish)	TOTAL HARVEST	SPECIFIC HARVEST RATE (Hrs/Fish)	MEAN LENGTH OF HARVESTED FISH
Walleye	9007	16.92%	2131	4.4	182	75.2	16.1
Northern Pike	2578	4.84%	2962	8.8	96	192.3	24.5
Muskellunge	12328	23.16%	483	29.4	0	0.0	
Smallmouth Bass	4370	8.21%	1724	4.0	14	0.0	13.8
Largemouth Bass	5529	10.39%	1748	3.5	0	0.0	
Yellow Perch	8196	15.40%	22273	0.5	7467	1.1	7.4
Bluegill	8476	15.92%	13691	0.7	6394	1.4	6.5
Pumpkinseed	751	1.41%	1425	1.4	661	1.5	6.4
Rock Bass	38	0.07%	2374	2.9	132	2.9	6.0
Black Crappie	1955	3.67%	722	3.2	309	6.5	10.0

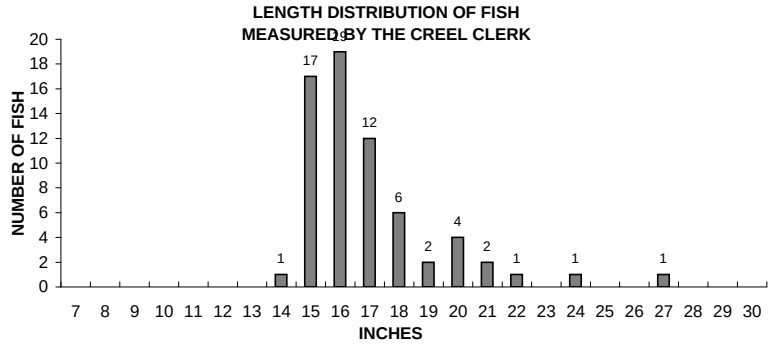
WALLEYE











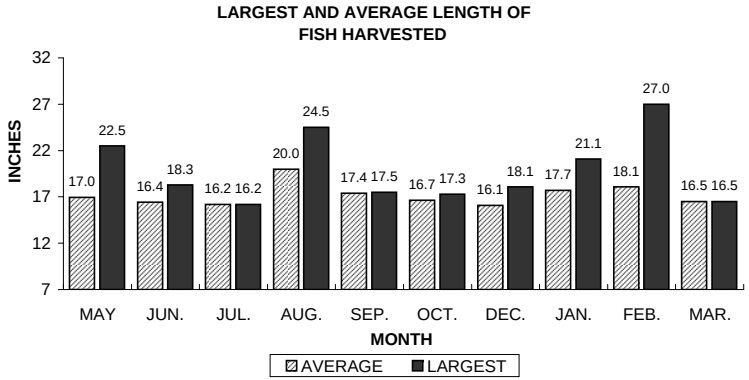


Figure 1. Walleye sportfishing effort, catch, harvest, and length distribution, Kawaguesaga Lake, 2009-10 fishing seasons.

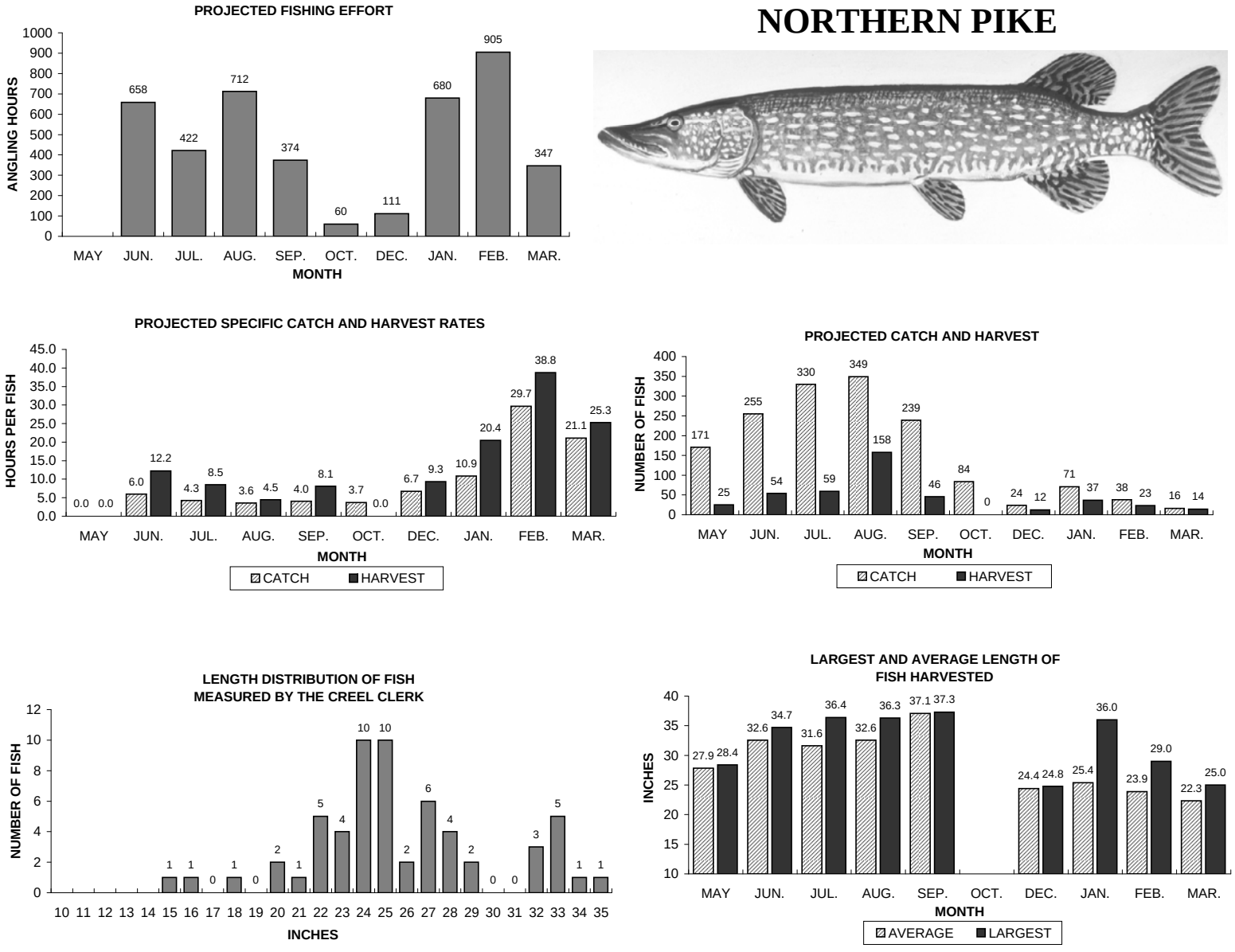
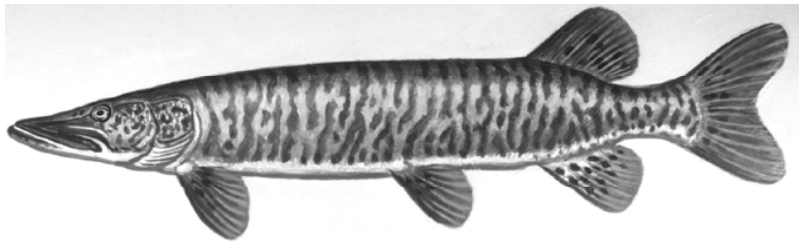
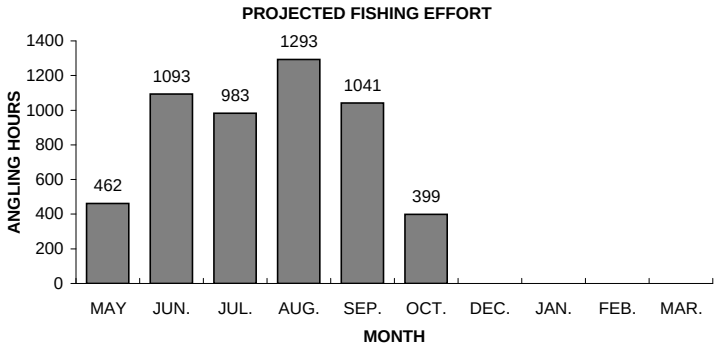
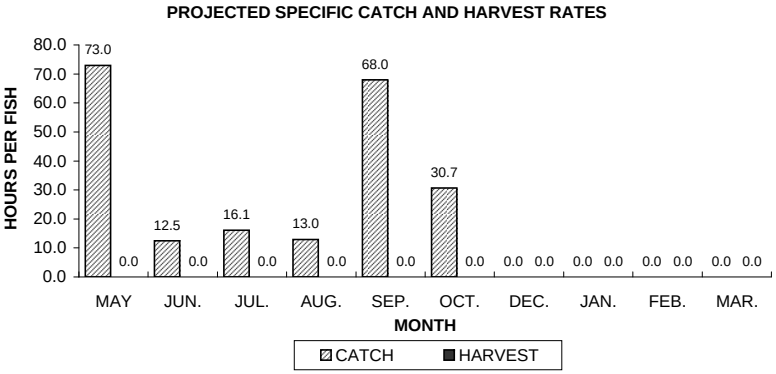


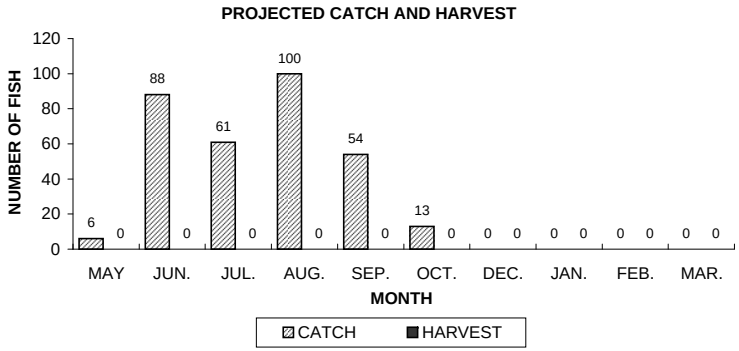
Figure 2. Northern pike sportfishing effort, catch, harvest, and length distribution, Kawaguesaga Lake, 2009-10 fishing seasons.

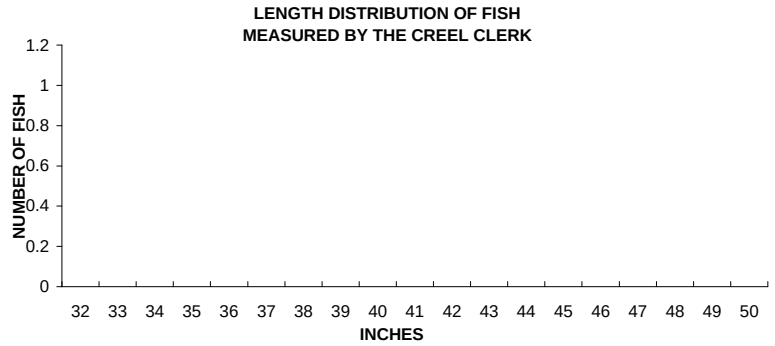
MUSKELLUNGE











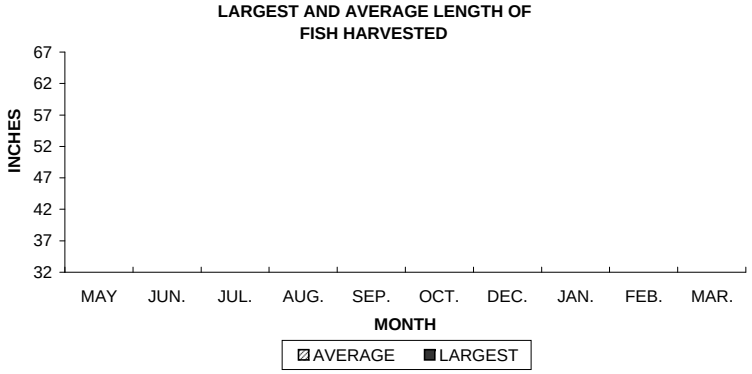
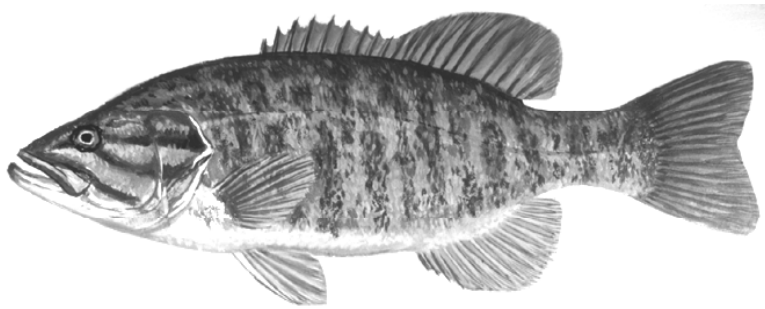
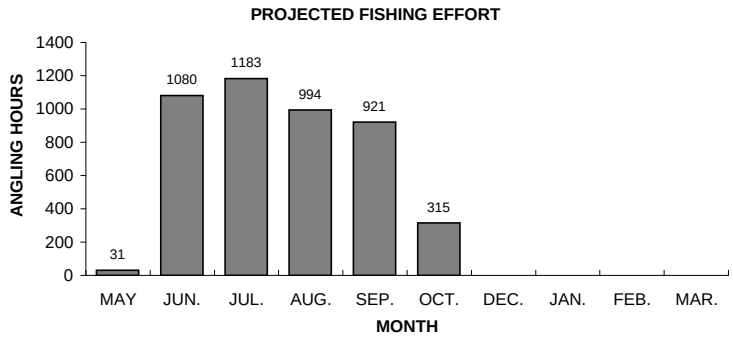
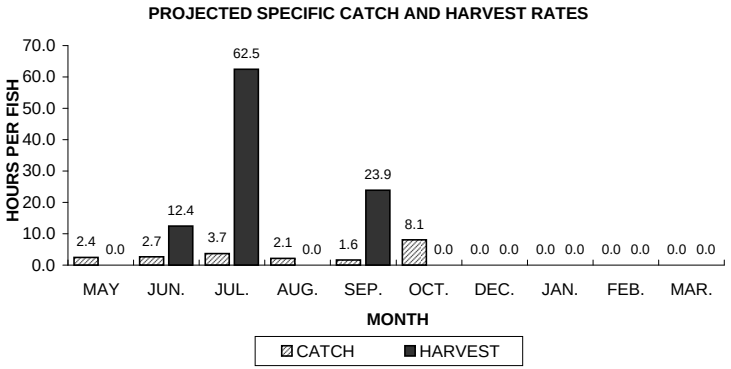


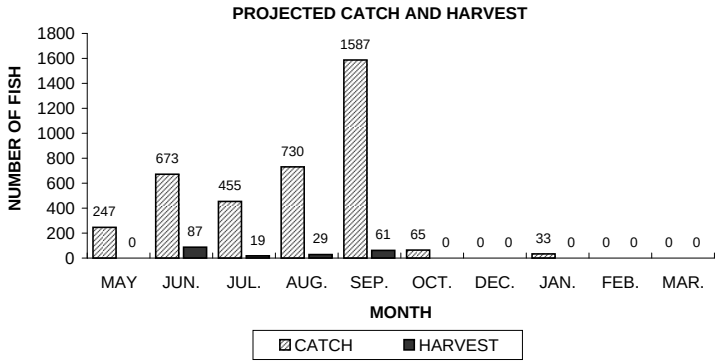
Figure 3. Muskellunge sportfishing effort, catch, harvest, and length distribution, Kawaguesaga Lake, 2009-10 fishing seasons.

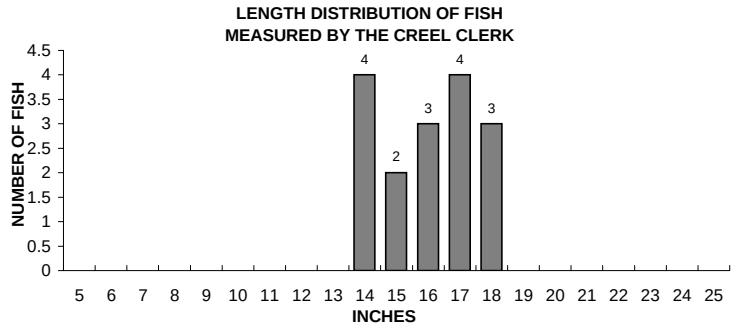
SMALLMOUTH BASS











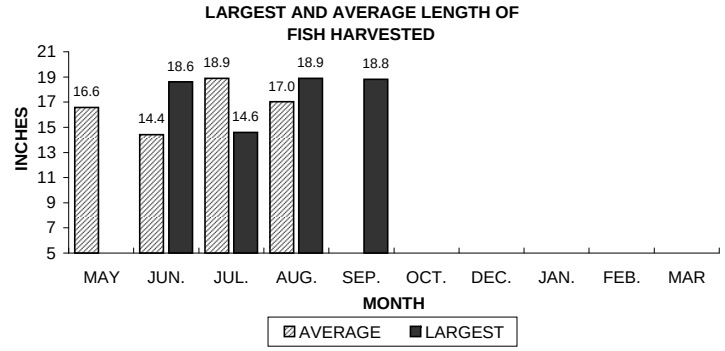
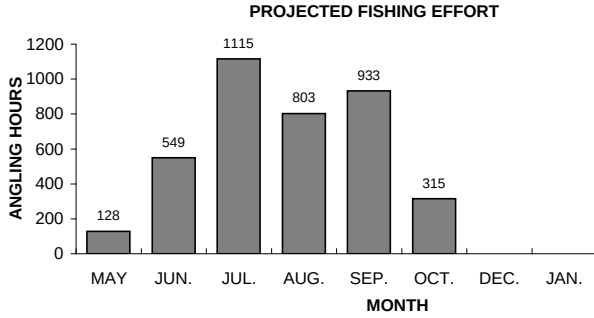
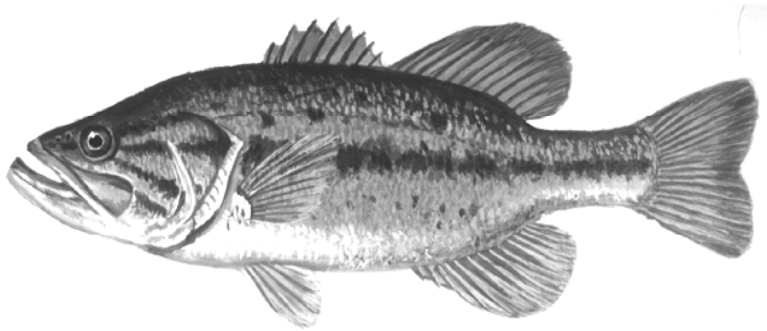
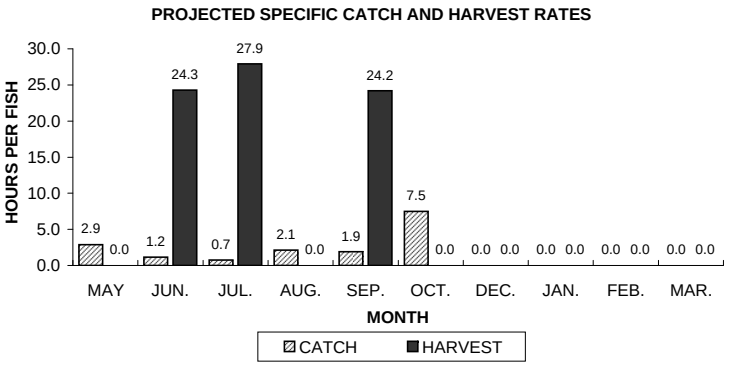


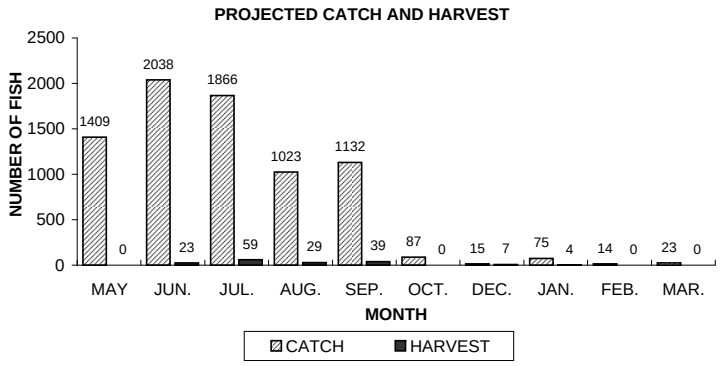
Figure 4. Smallmouth bass sportfishing effort, catch, harvest, and length distribution, Kawaguesaga Lake, 2009-10 fishing seasons.

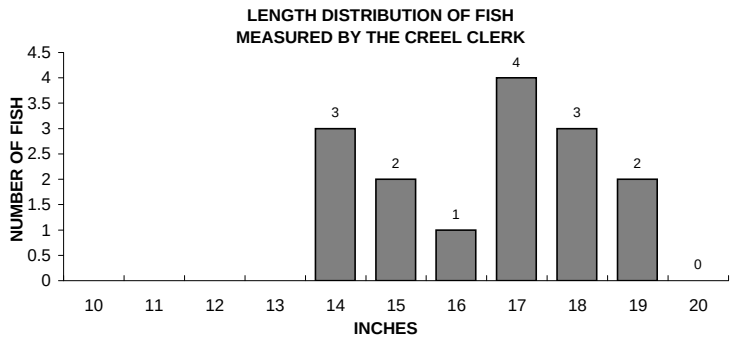
LARGEMOUTH BASS











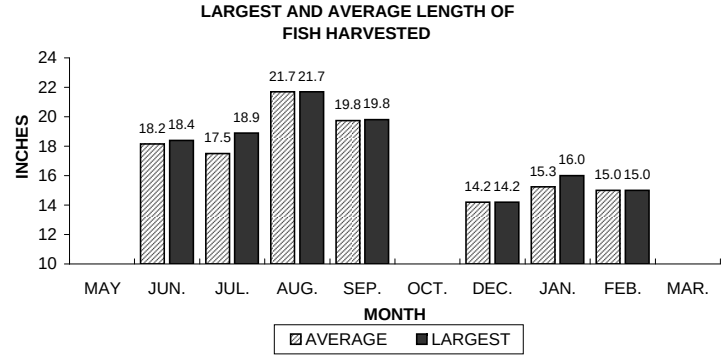
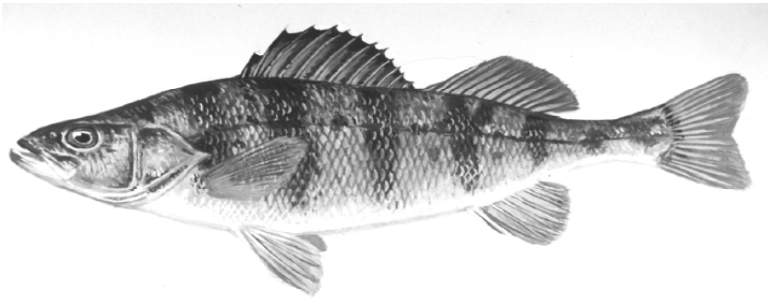
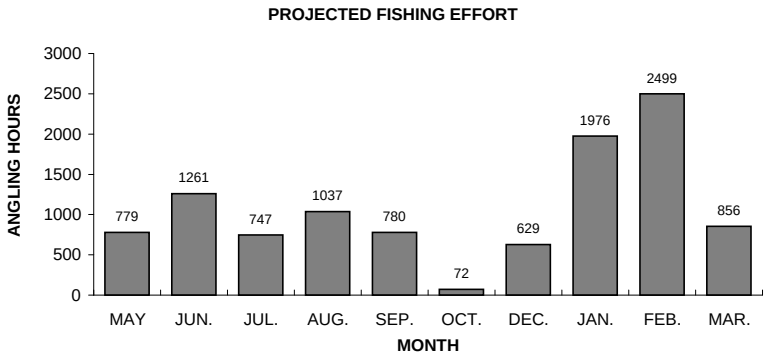
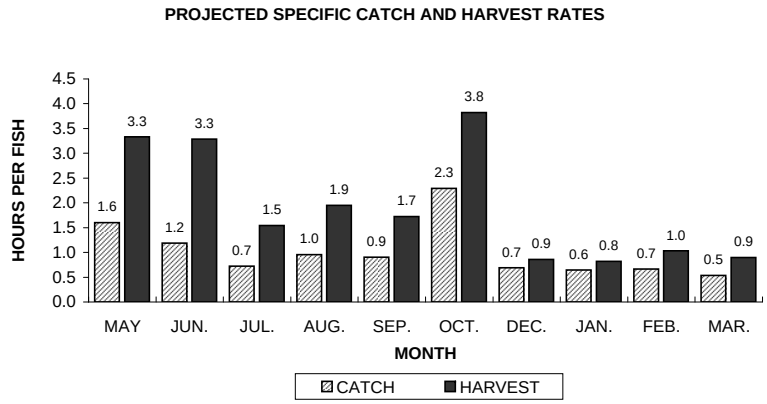


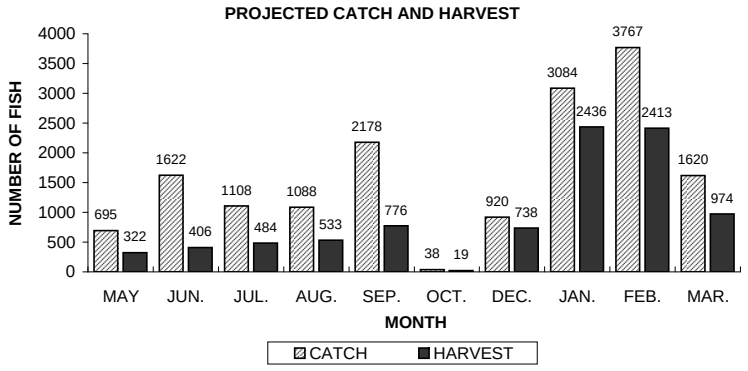
Figure 5. Largemouth bass sportfishing effort, catch, harvest, and length distribution, Kawaguesaga Lake, 2009-10 fishing seasons.

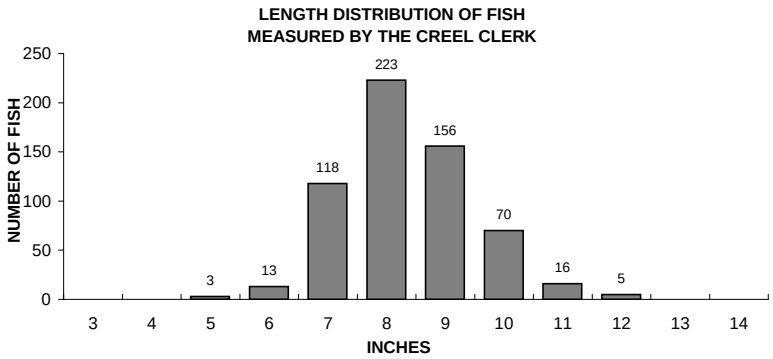
YELLOW PERCH











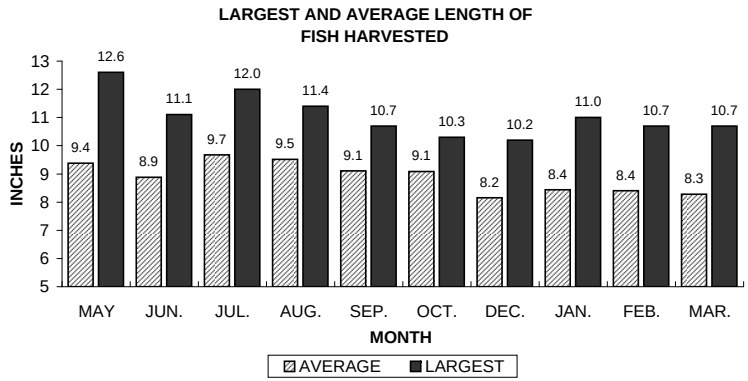
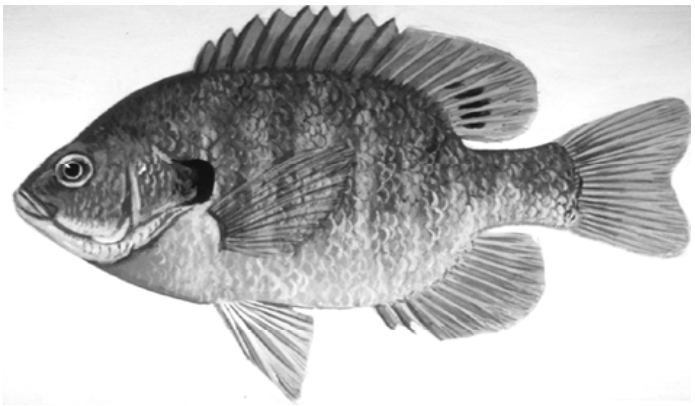
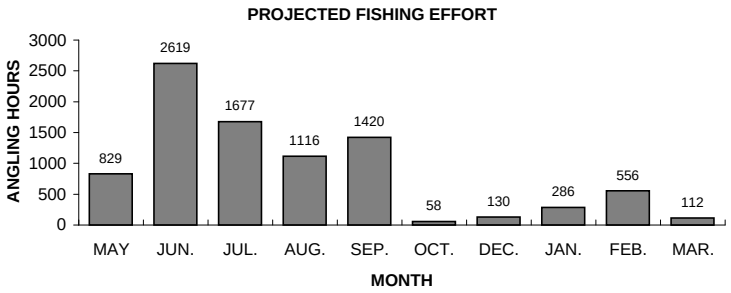
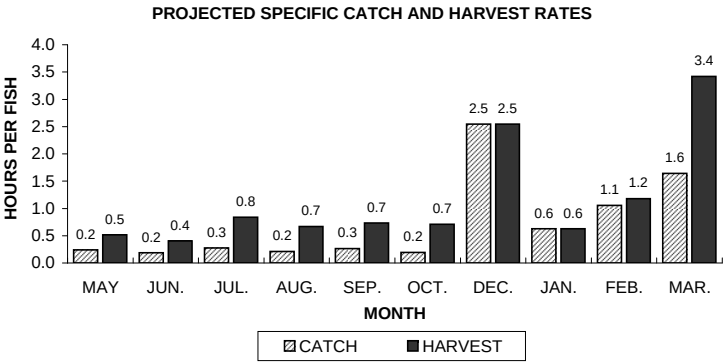


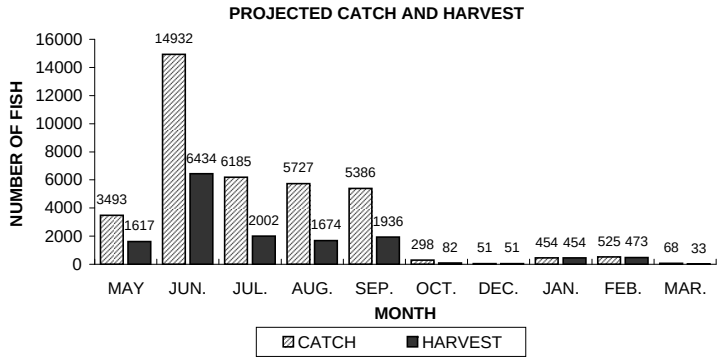
Figure 6. Yellow perch sportfishing effort, catch, harvest, and length distribution, Kawaguesaga Lake, 2009-10 fishing seasons.

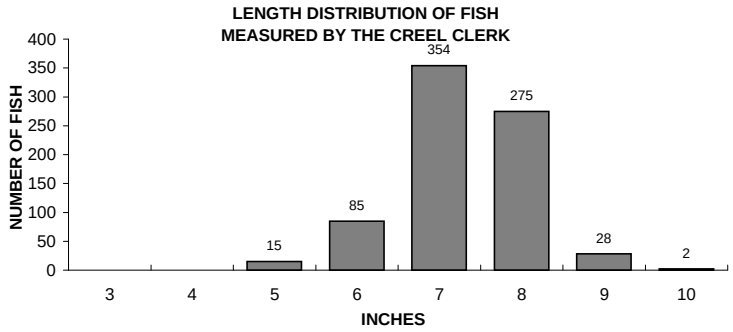
BLUEGILL











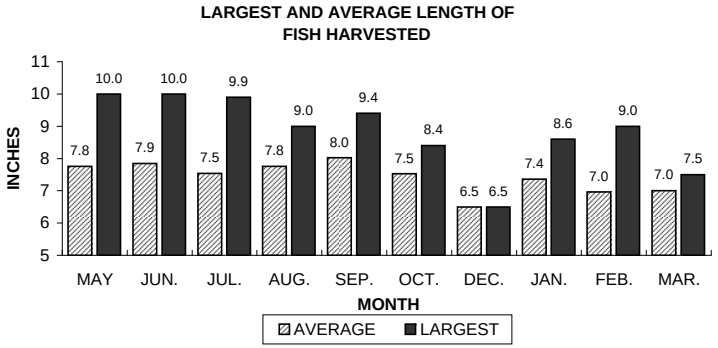


Figure 7. Bluegill sportfishing effort, catch, harvest, and length distribution, Kawaguesaga Lake, 2009-10 fishing seasons.

PUMPKINSEED

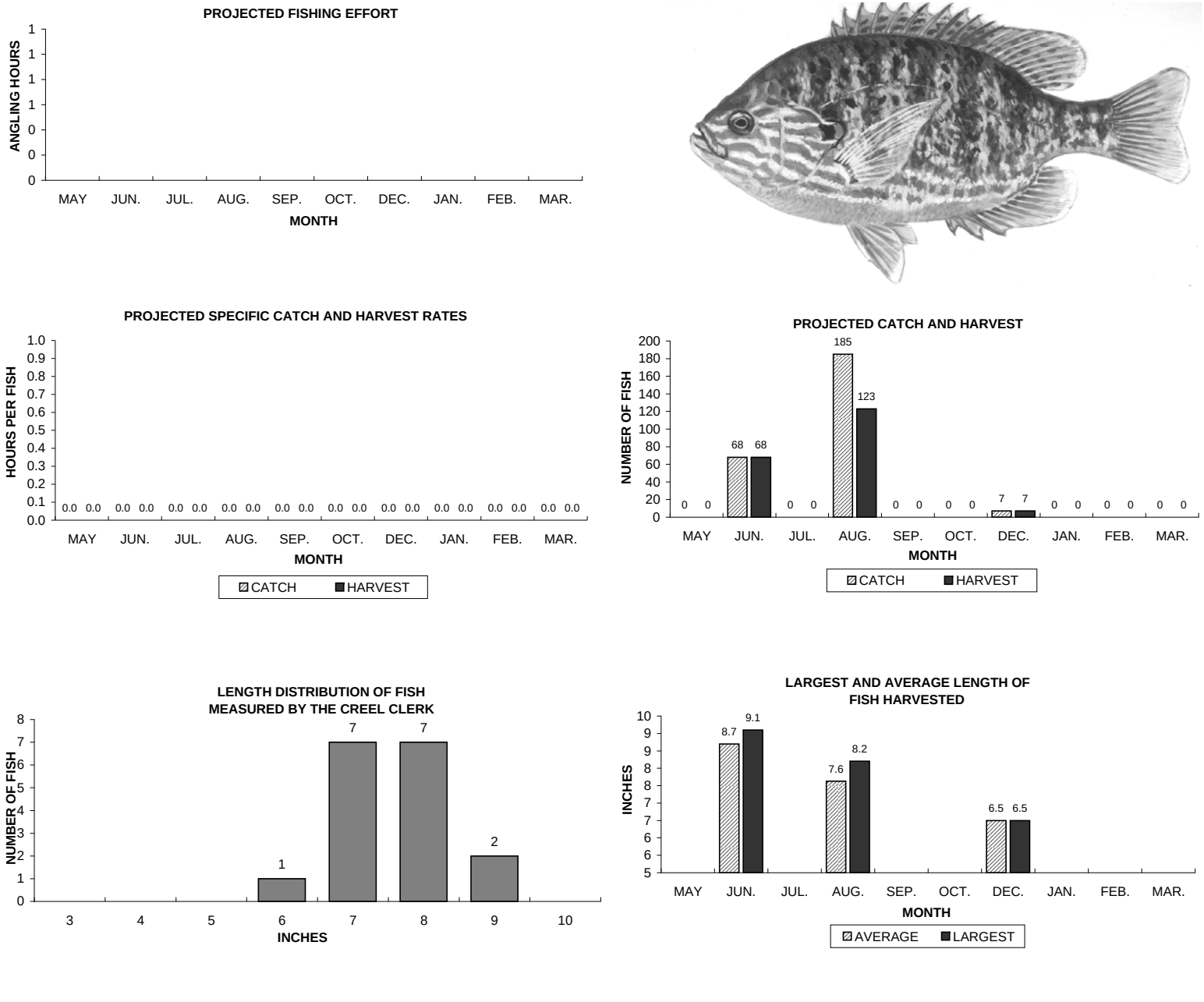
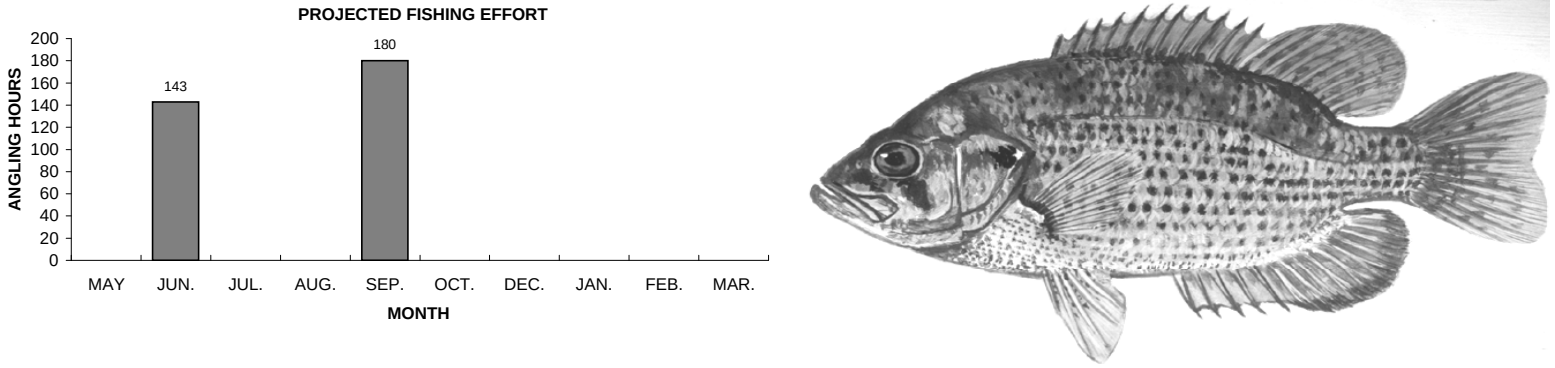
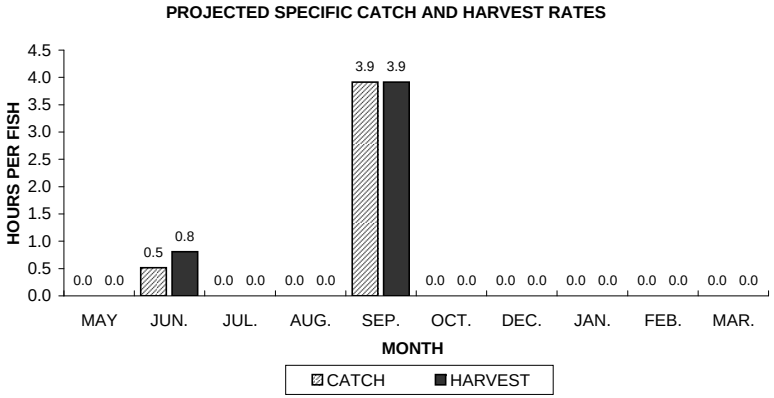
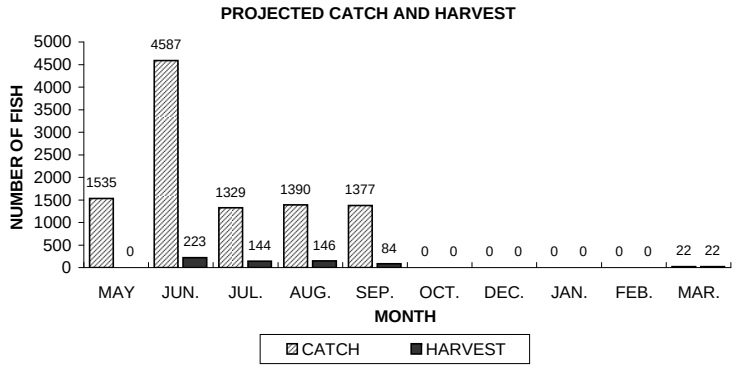


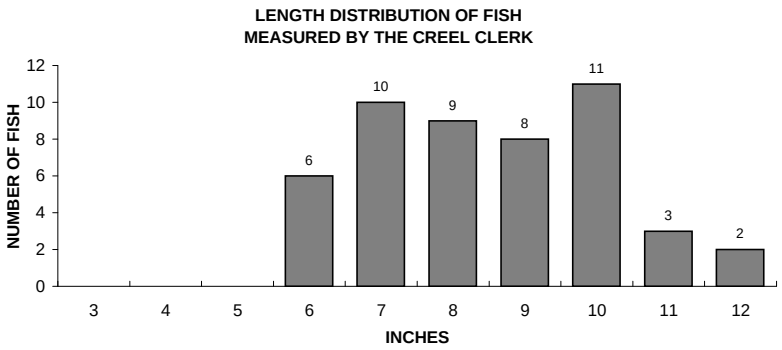
Figure 8. Pumpkinseed sportfishing effort, catch, harvest, and length distribution, Kawaguesaga Lake, 2009-10 fishing seasons.

ROCK BASS









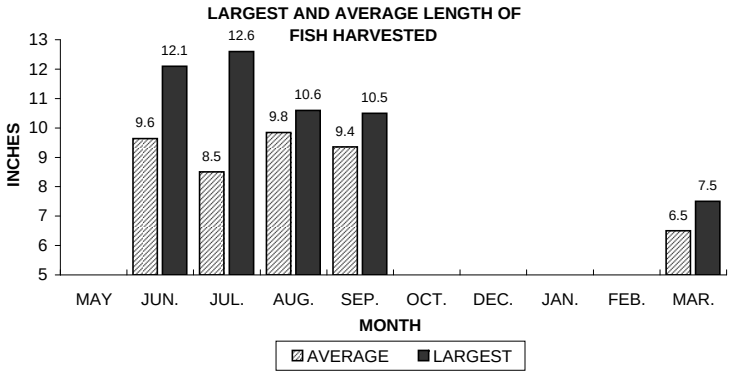
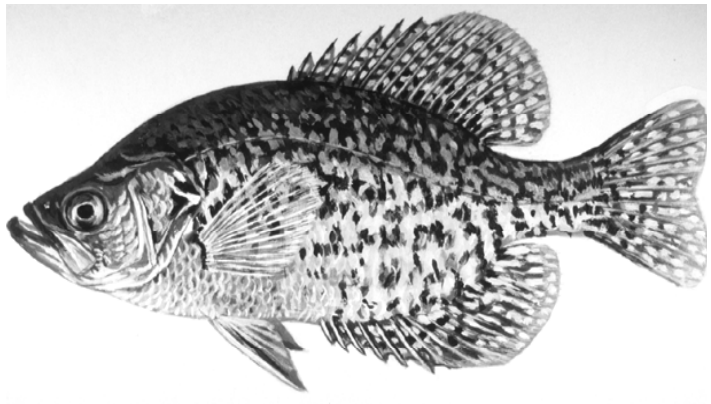
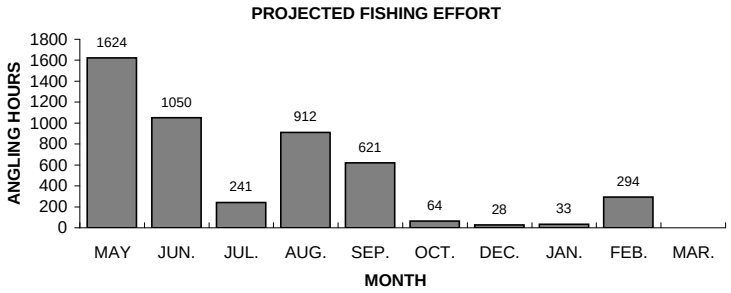
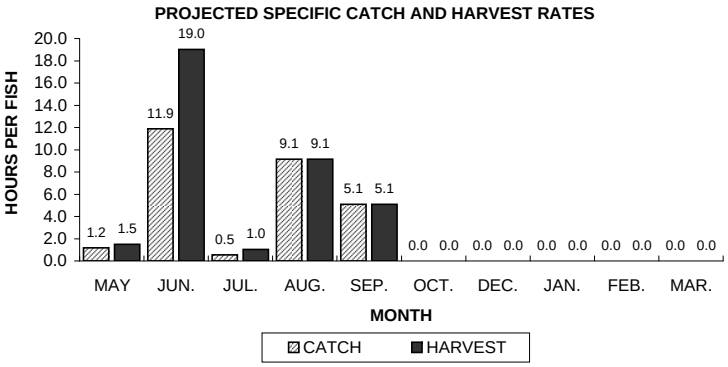


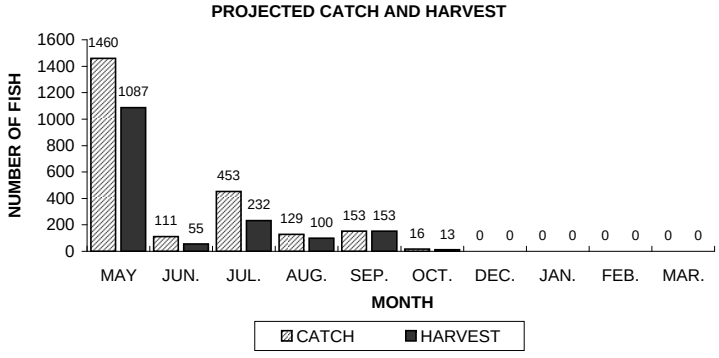
Figure 9. Rock bass sportfishing effort, catch, harvest, and length distribution, Kawaguesaga Lake, 2009-10 fishing seasons.

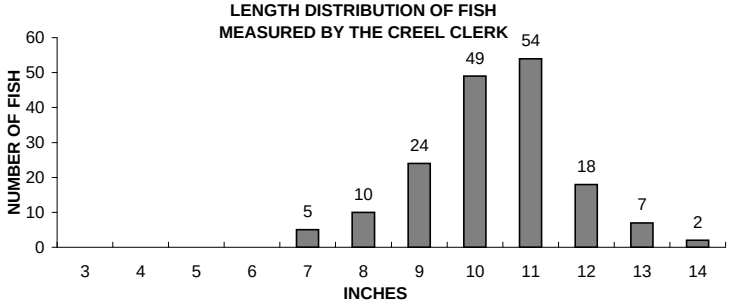
BLACK CRAPPIE











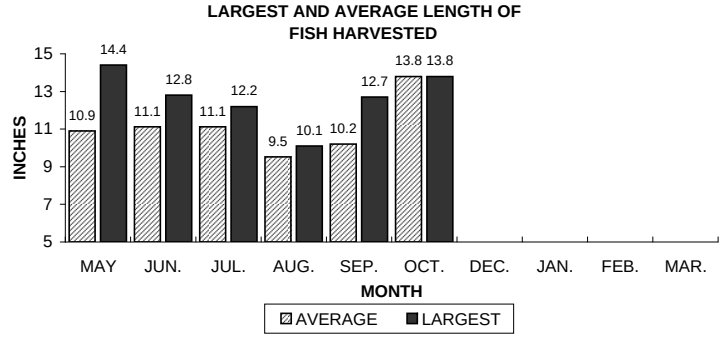


Figure 10. Black crappie sportfishing effort, catch, harvest, and length distribution, Kawaguesaga Lake, 2009-10 fishing seasons.