WISCONSIN DEPARTMENT OF NATURAL RESOURCES
CREEL SURVEY REPORT

ALLEQUASH LAKE

VILAS COUNTY

2010-11

Treaty Fisheries Publication

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Treaty Fisheries Technician

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SUMMARY TABLES

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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.

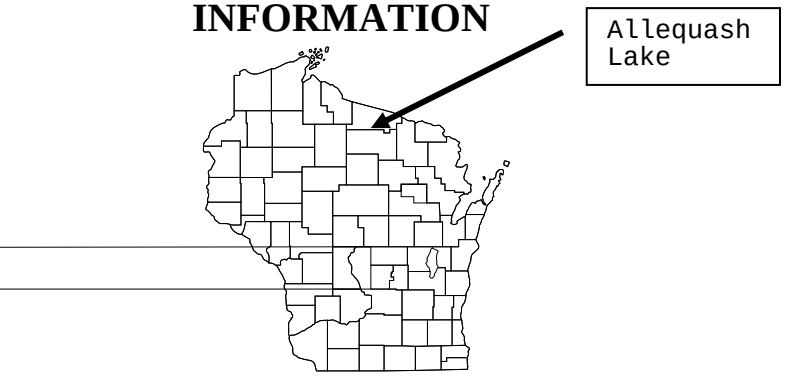
You may have encountered a DNR creel survey clerk on a recent fishing trip. We appreciate your cooperation during an interview. The survey only takes a moment of your time and it gives the Department valuable information needed for management of the fishery.

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

GENERAL LAKE INFORMATION



Location
Allequash Lake is located in Vilas County six miles south of the Town of Boulder Junction.

Physical Characteristics
Allequash Lake is a 426-acre drainage lake with a maximum depth of 24 feet. The north basin littoral substrate consists primarily of sand and gravel while the southern basin is predominantly muck. Allequash Lake is a drainage lake of high fertility with clear water of moderate transparency.

Seasons Surveyed
The period referred to in this report as the 2010-11 fishing season ran from May 1, 2010 through March 6, 2011. The open water creel survey ran from May 1 through October 31, 2010 and the ice fishing creel survey ran from December 1, 2010 through March 6, 2011.

Weather
Ice-out on Allequash Lake was around March 27, 2010. Fishable-ice formed on Allequash Lake in early December.

Sportfishing Regulations
The following seasons, daily bag limits, and length limits were in place on Allequash Lake during the 2010-fishing season:

Largemouth Bass&	5/01-6/18	Catch&Release	
Smallmouth Bass	6/19-3/06	5	14"
Musky	5/29-11/30	1	40"
Northern Pike	5/01-3/06	5	none
Walleye	5/01-3/06	5	15"
Panfish	year round	25	none
Rock Bass	year round	none	none

SPECIES CATCH AND HARVEST INFORMATION

Angling effort, catch, and harvest information is summarized for each species in Table 2 and Figures 1-10. Information presented about species whose fishing season extends beyond March 6 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 first time the department conducted a creel survey on Allequash Lake.

General Angler Information
Anglers spent 15,993 hours or 37.5 hours per acre fishing Allequash Lake during the 2010 season (Table 1). That was more than the Vilas County average of 34.5 hours per acre. August was the most heavily fished month (9.3 hours per acre). Fishing effort was lightest in December (0.8 hour per acre).

RESULTS BY SPECIES

Walleye (Table 2, Figure 1)
Walleye received the 11 percent of the directed fishing effort (3,251 hours) during the 2010 season. Walleye fishing effort was greatest in June (588 hours). December had the least amount of walleye fishing effort (127 hours).

Total catch of walleye was 538 fish with a harvest of 156 fish. Highest catch (283 fish) and harvest (44 fish) occurred in August. Anglers fished 8.7 hours to catch and 23.4 hours to harvest a walleye during 2010.

The mean length of harvested walleye was 16.6 inches and the largest walleye measured was a 24.0-inch fish.

Northern Pike (Table 2, Figure 2)
Fishing effort directed at northern pike was 2,576 hours during the 2010 season. Northern pike fishing effort was greatest in August (467 hours).

Total catch of northern pike was 1,035 fish with a harvest of 190 fish.

The mean length of harvested northern pike was 21.2 inches and the largest northern pike measured was a 29.0-inch fish.

Muskellunge (Table 2, Figure 3)
Anglers spent 1,185 hours targeting muskellunge during the 2010 season. Muskellunge fishing effort was greatest in July (305 hours).

The muskellunge population is very low in Allequash Lake. Caution should be used in comparing catch and harvest in past surveys and other lakes to Allequash Lake. Total catch of muskellunge was 29 fish with no fish harvested. Highest catch (11 fish) occurred in July. Anglers fished 106.4 hours to catch a muskellunge during 2010.

Smallmouth Bass (Table 2, Figure 4) Fishing effort targeted at smallmouth bass was 576 hours during the 2010 season. Smallmouth bass fishing effort was greatest in June (292 hours).

Total catch of smallmouth bass was 271 fish with 11 harvested. Highest catch (99 fish) occurred in August. Anglers fished 8.5 hours to catch a smallmouth bass during 2010.

Largemouth Bass (Table 2, Figure 5) Fishing effort directed at largemouth bass was 2,520 hours during the 2010 season. Largemouth bass fishing effort was greatest in July (765 hours).

Total catch of largemouth bass was 1,423 fish with a harvest of 109 fish. Highest catch (561 fish) occurred in June. Anglers fished 3.0 hours to catch a largemouth bass during 2010.

Panfish (Table 2, Figures 6-10)

Creel estimates for panfish should be considered as minimum values. Treaty creel surveys cover only the gamefish season and effort directed at panfish continues all year.

Bluegills were the most sought after fish species during the 2010 survey. Fishing effort directed at bluegill was 10,251 hours.

Total catch of bluegill was 14,558 fish with 9,067 harvested. The mean length of bluegill harvested was 7.6 inches.

Yellow perch were the second most sought after panfish species during the survey. Fishing effort directed at yellow perch was 5,586 hours.

Total catch of yellow perch was 2,922 fish with 1,281 harvested. The mean length of yellow perch harvested was 9.2 inches

Black crappies were the third most sought after panfish species during the survey. Fishing effort directed at black crappies was 3,143 hours.

Anglers caught 979 black crappies and harvested 678 fish. The mean length of black crappie harvested was 10.7 inches.

Pumpkinseeds and rock bass were also caught in low numbers during the 2010 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, Steve Kramer, Joelle Underwood, Marty Kiepke, Jason Halverson, and Tim Tobias. Fisheries management staff included Steve Gilbert, Wes Jahns and Mike Vogelsang. John Logan and Mike Rynski were the creel clerks on Allequash 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.

This creel report was reviewed by, Steve Gilbert and Dennis Scholl of the Wisconsin Department of Natural Resources, Woodruff, Wisconsin.

Additional copies of this report and those covering other local lakes can be obtained online at: http://dnr.wi.gov/fish/ceded/reports.

Table 1. Sportfishing effort summary, Allequash Lake, 2010-11 season.

Month	Total Angler Hours	Total Angler Hours/Acre	Vilas County Average Hours/Acre	Statewide Average Hours/Acre
May	1413	3.3	5.3	5.8
June	3066	7.2	6.8	6.1
July	3926	9.2	7.4	6.4
August	3945	9.3	6.4	5.4
September	1445	3.4	4.1	3.8
October	855	2.0	2.0	1.6
December	341	0.8	0.5	1.7
January	434	1.0	0.8	1.5
February	408	1.0	1.0	1.3
March	161	0.4	0.2	**
*Summer Total	14650	34.4	32.1	29.1
*Winter Total	1343	3.2	2.4	4.5
Grand Total	15993	37.5	34.5	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 Allequash 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 Allequash 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 Allequash Lake to other lakes statewide.

Table 2. Comparison of creel survey synopses, Allequash Lake, 2010-11 fishing seasons.

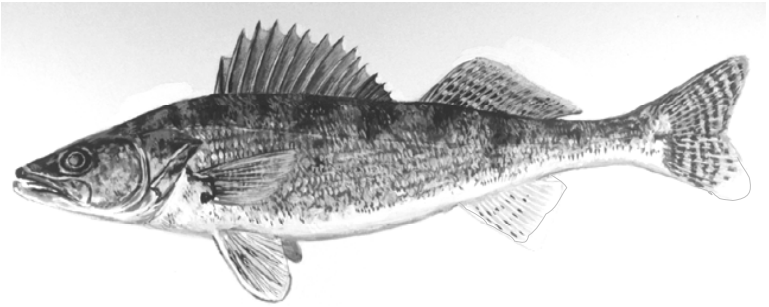
CREEL YEAR: 2010-11

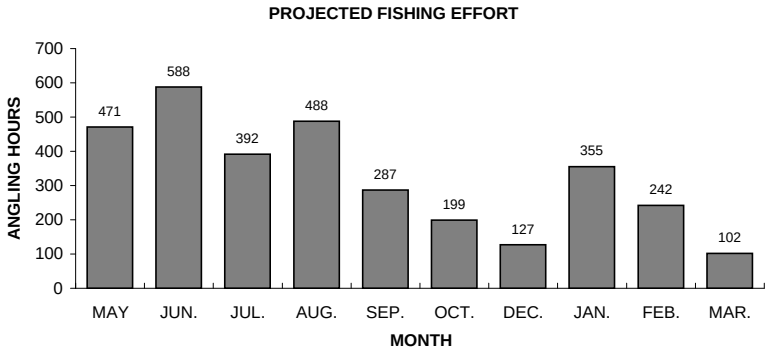
SPECIES	DIRECTED EFFORT (Hours)	PERCENT OF TOTAL	TOTAL CATCH	SPECIFIC CATCH RATE (Hrs/Fish) *	TOTAL HARVEST	SPECIFIC HARVEST RATE (Hrs/Fish) **	MEAN LENGTH OF HARVESTED FISH
Walleye	3251	11.01%	538	8.7	156	23.4	16.6
Northern Pike	2576	8.73%	1035	5.0	190	14.8	21.2
Muskellunge	1185	4.01%	29	106.4	0		
Smallmouth Bass	576	1.95%	271	8.5	11	114.9	14.7
Largemouth Bass	2520	8.54%	1423	3.0	109	24.7	15.9
Yellow Perch	5586	18.92%	2922	2.1	1281	4.5	9.2
Bluegill	10251	34.73%	14558	0.7	9067	1.1	7.6
Pumpkinseed	209	0.71%	81	4.0	37	6.4	6.8
Rock Bass	220	0.75%	369	1.4	119	2.0	7.2
Black Crappie	3143	10.65%	979	3.5	678	4.7	10.7

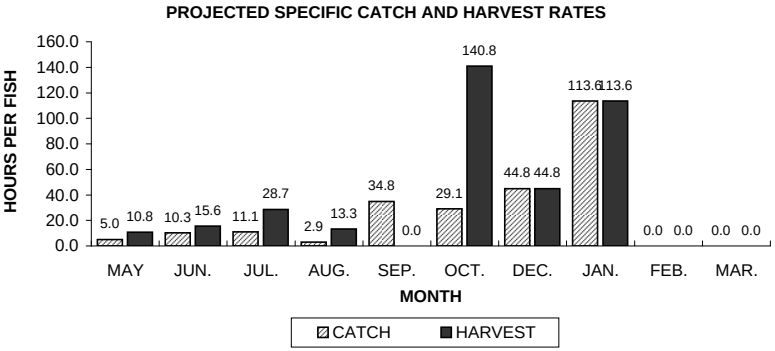
* A blank cell in this column indicates that no fish of a given species were caught by anglers who specifically targeted that species.

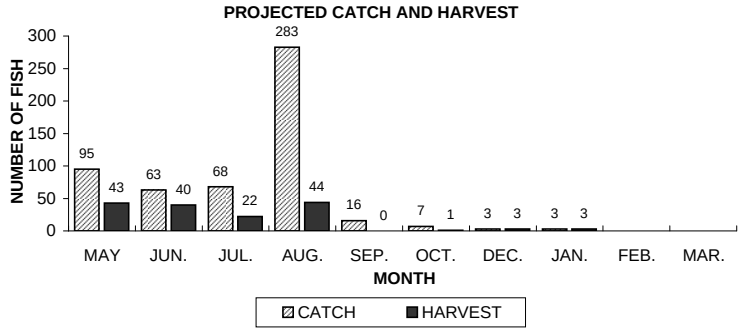
** A blank cell in this column indicates that no fish of a given species were harvested by anglers who specifically targeted that species.

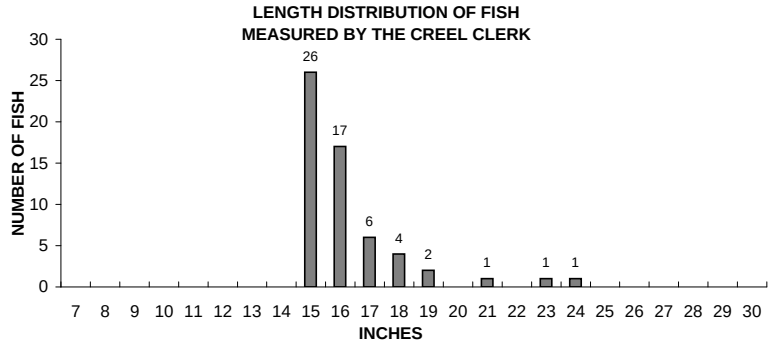
WALLEYE











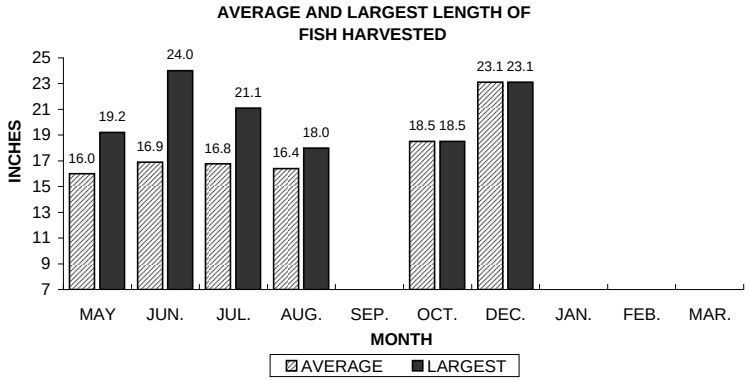
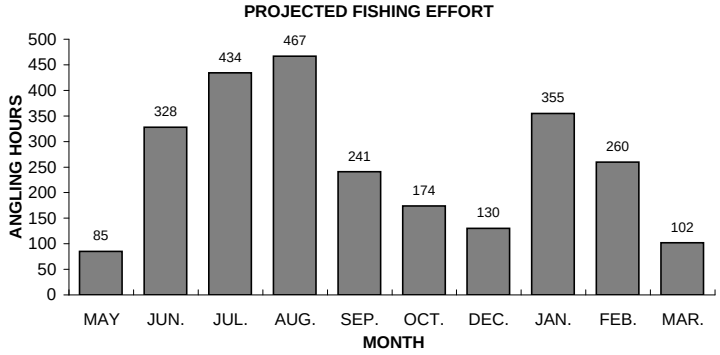
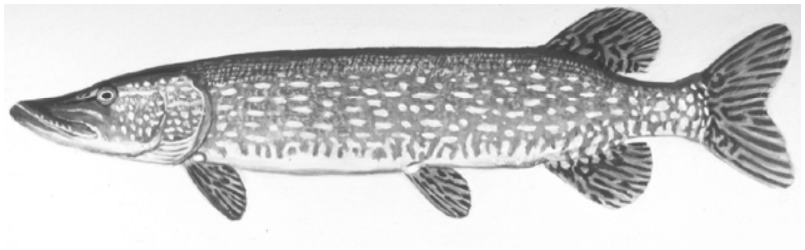
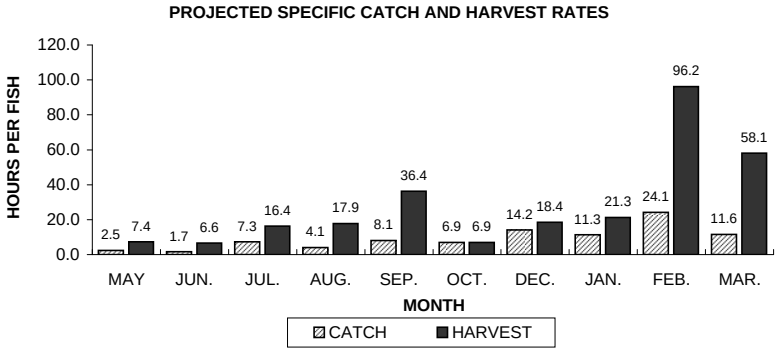


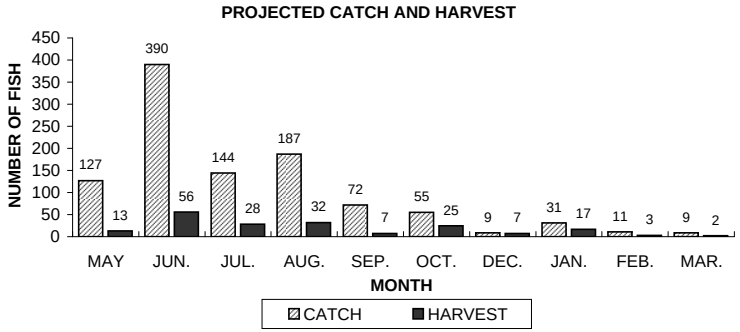
Figure 1. Walleye sportfishing effort, catch, harvest, and length distribution, Allequash Lake, during 2010-11.

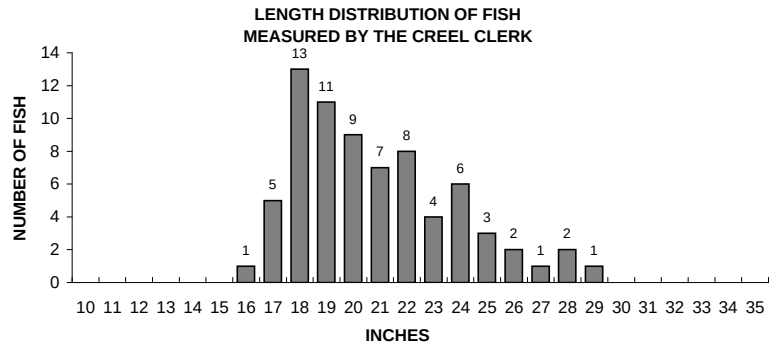


NORTHERN PIKE









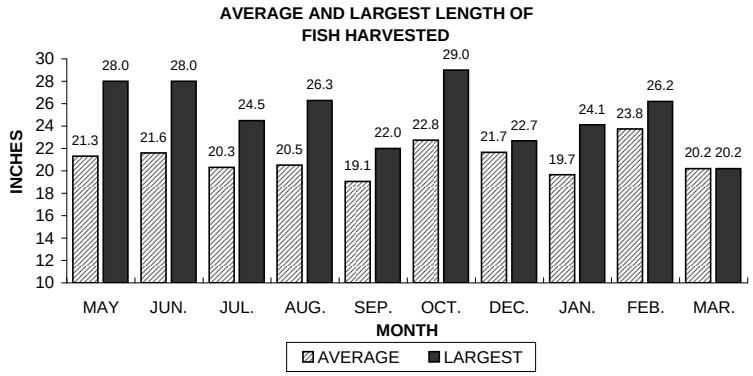
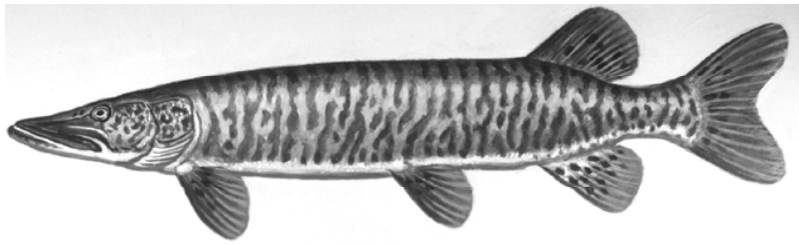
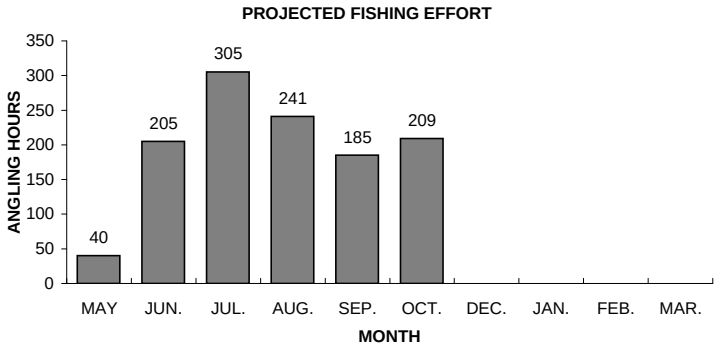
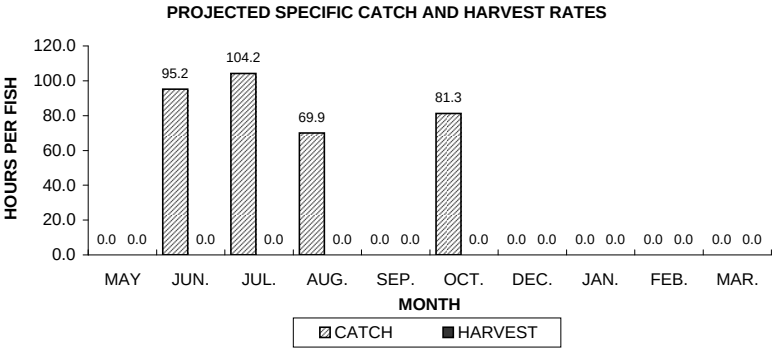


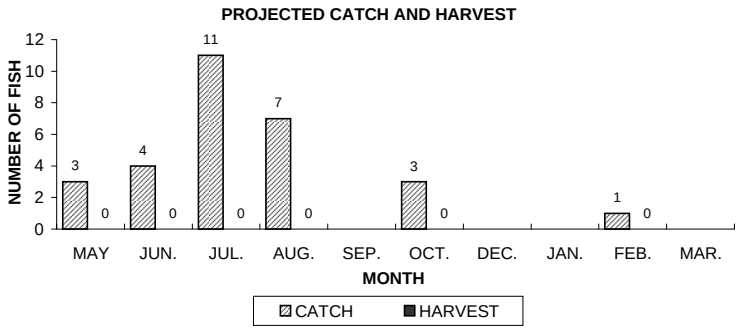
Figure 2. Northern pike sportfishing effort, catch, harvest, and length distribution, Allequash Lake, during 2010-11.

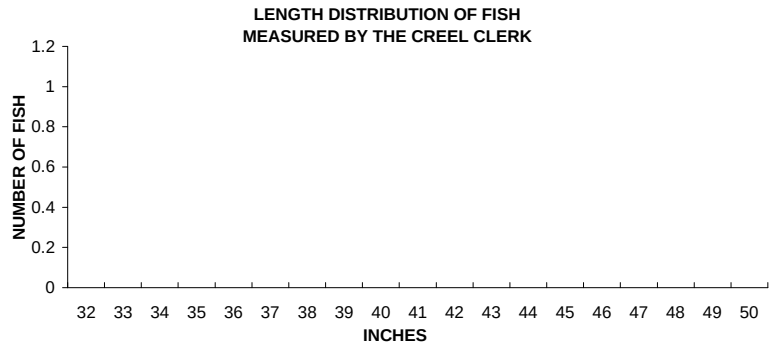
MUSKELLUNGE











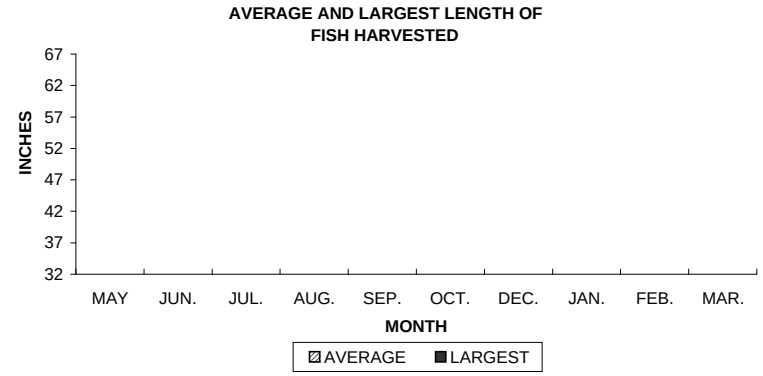
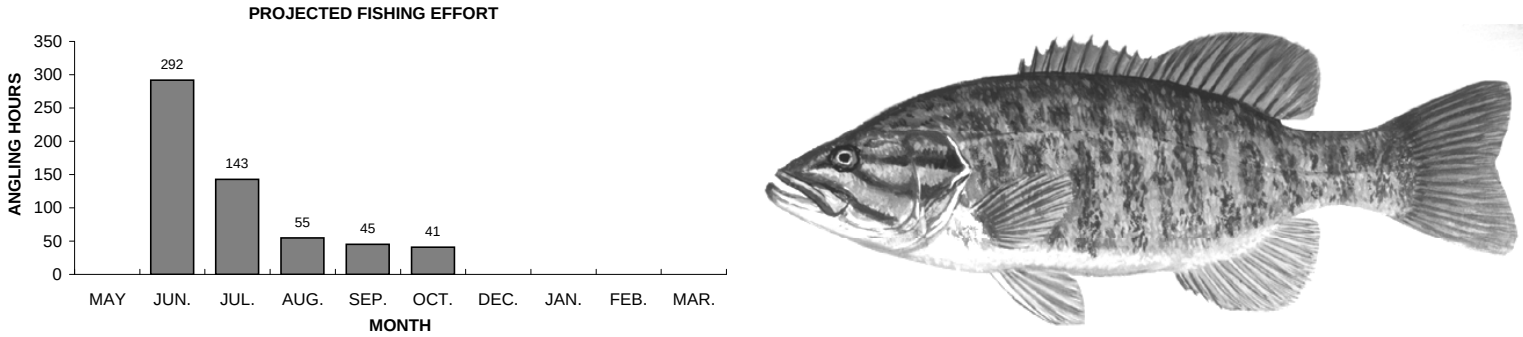
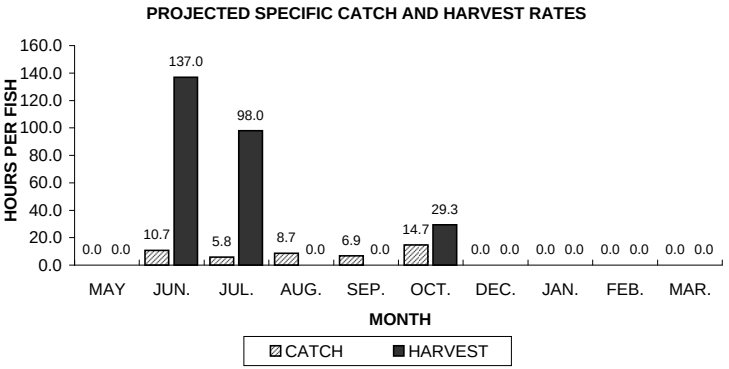
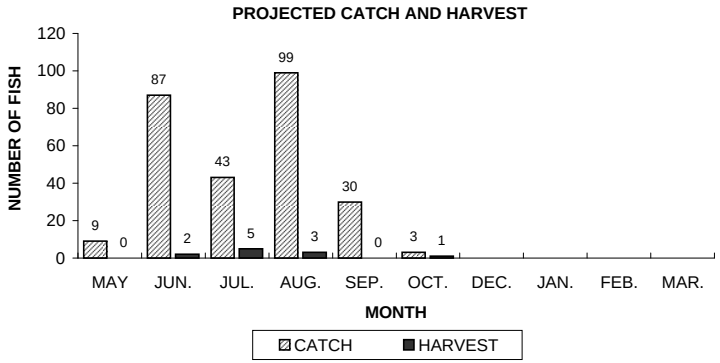


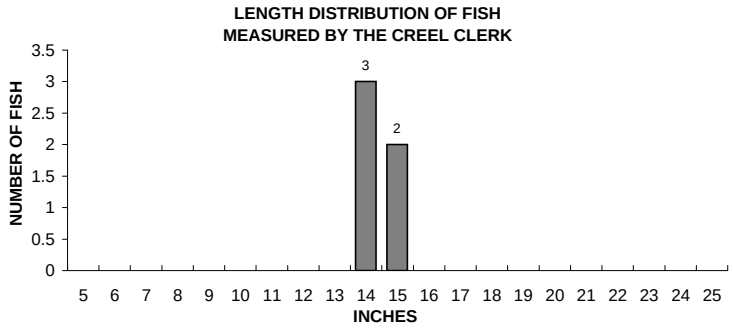
Figure 3. Muskellunge sportfishing effort, catch, harvest, and length distribution, Allequash Lake, during 2010-11.

SMALLMOUTH BASS









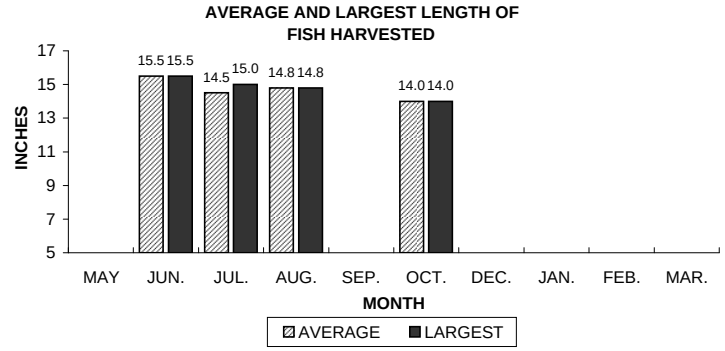
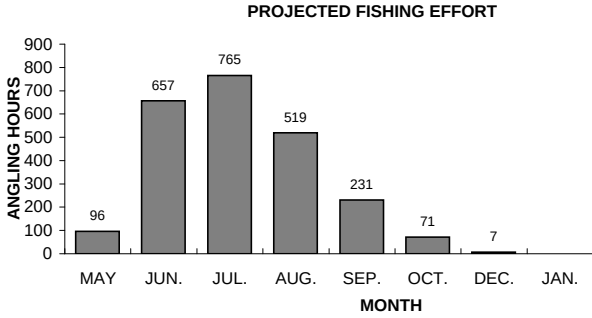
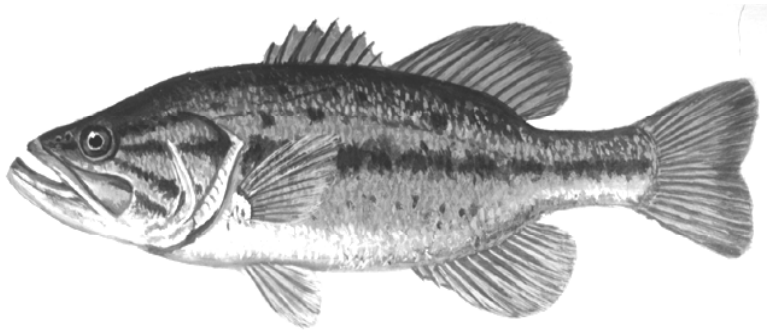
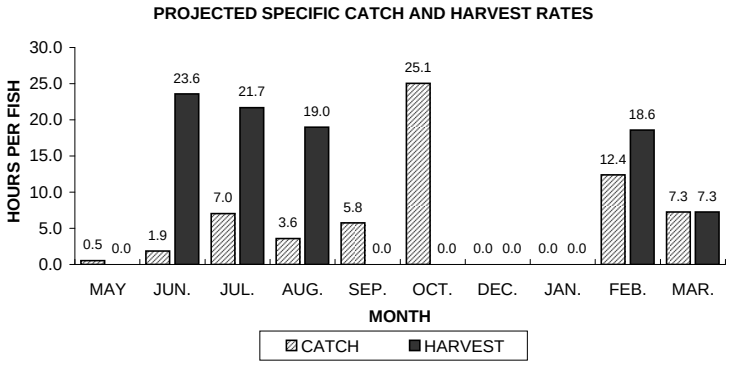


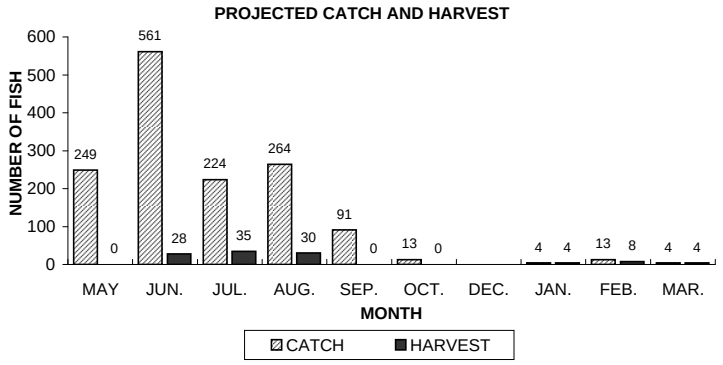
Figure 4. Smallmouth bass sportfishing effort, catch, harvest, and length distribution, Allequash Lake, during 2010-11.

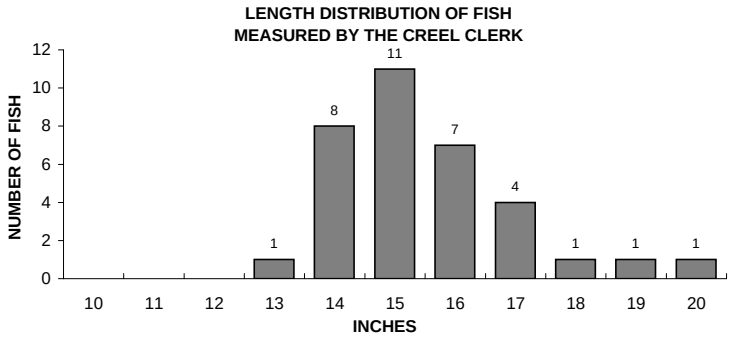
LARGEMOUTH BASS











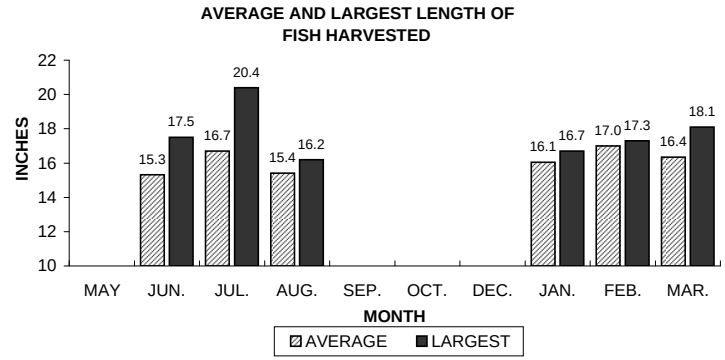
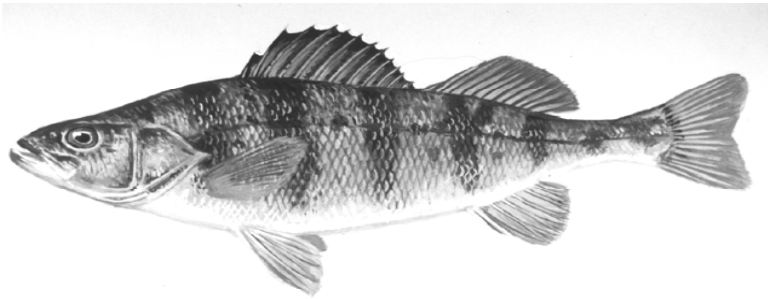
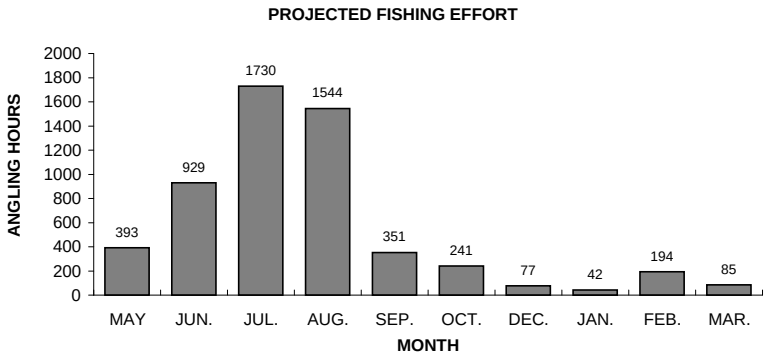
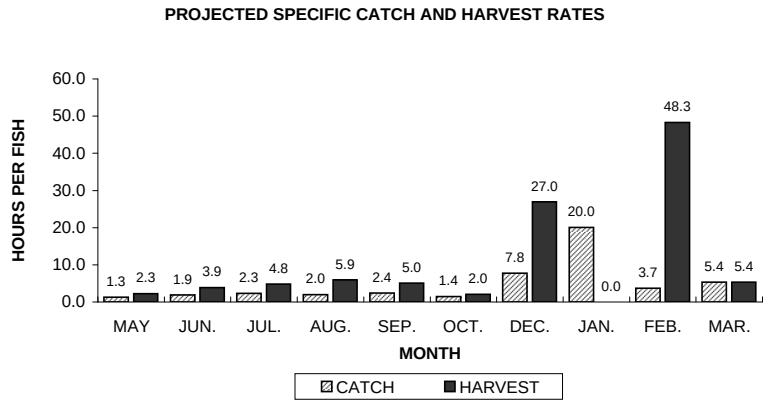


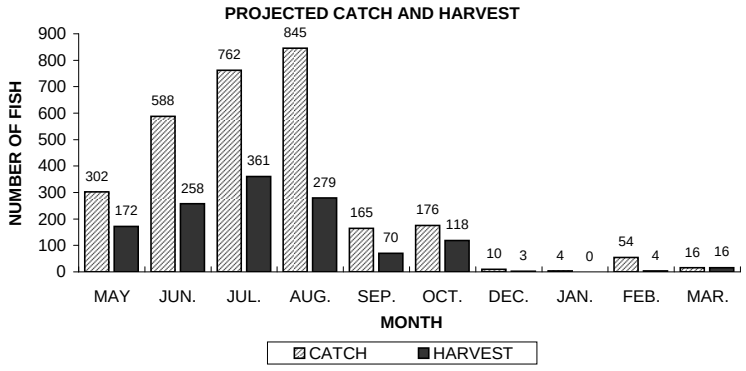
Figure 5. Largemouth bass sportfishing effort, catch, harvest, and length distribution, Allequash Lake, during 2010-11.

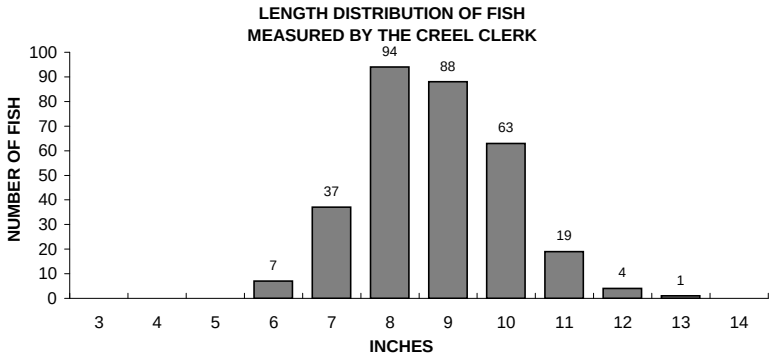
YELLOW PERCH











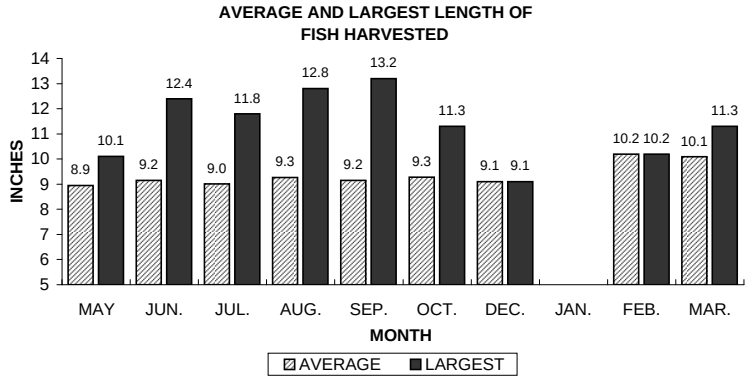
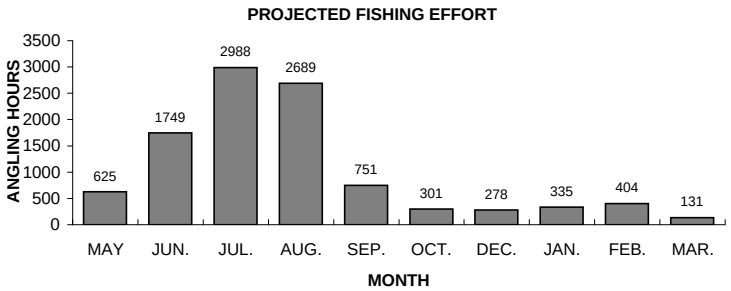
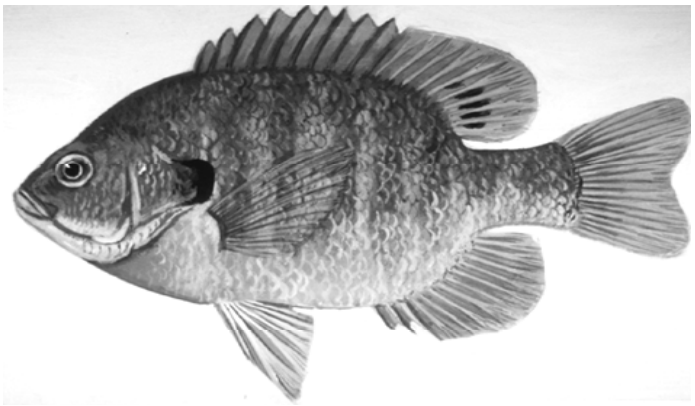
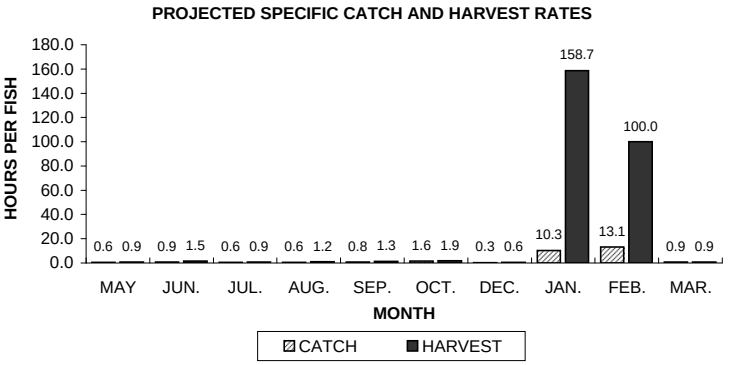


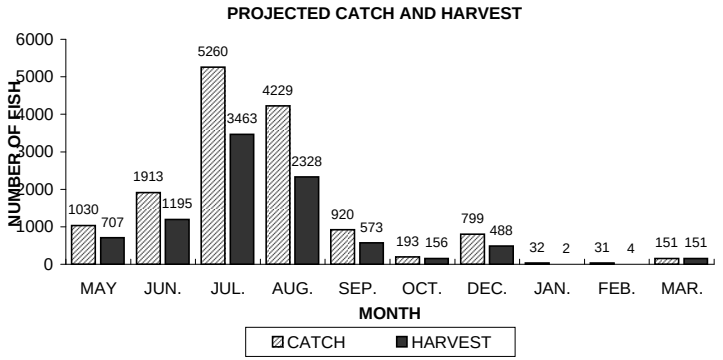
Figure 6. Yellow perch sportfishing effort, catch, harvest, and length distribution, Allequash Lake, during 2010-11.

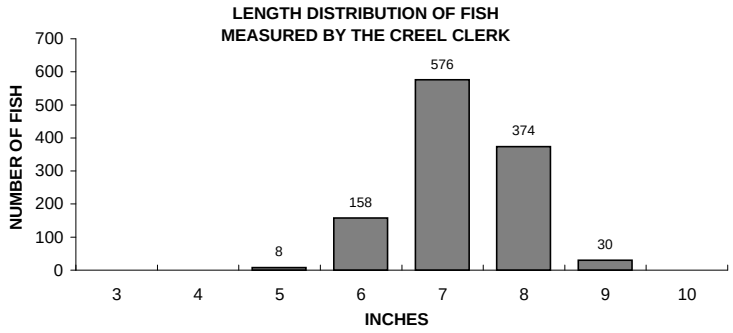
BLUEGILL











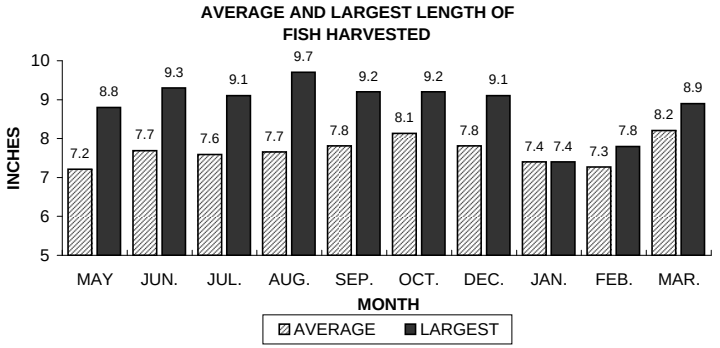
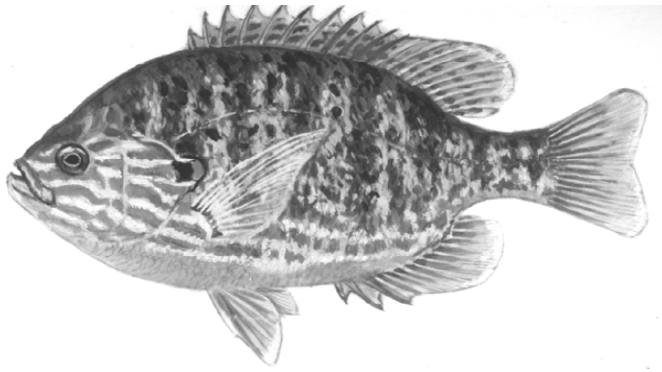
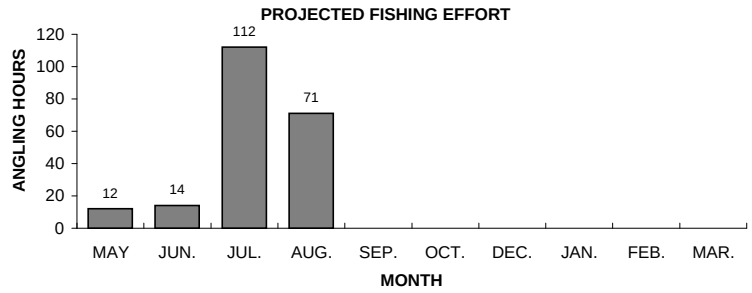
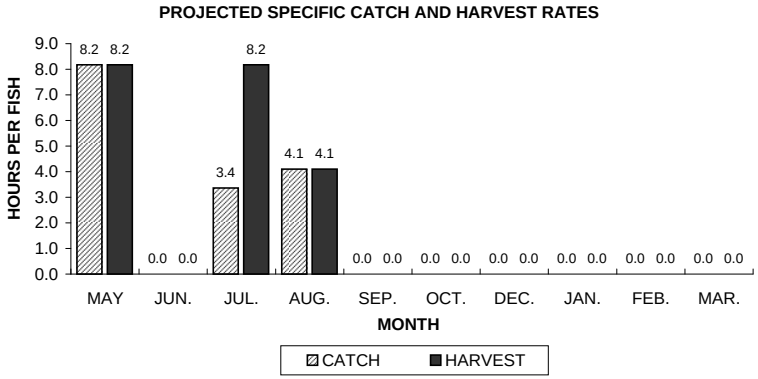


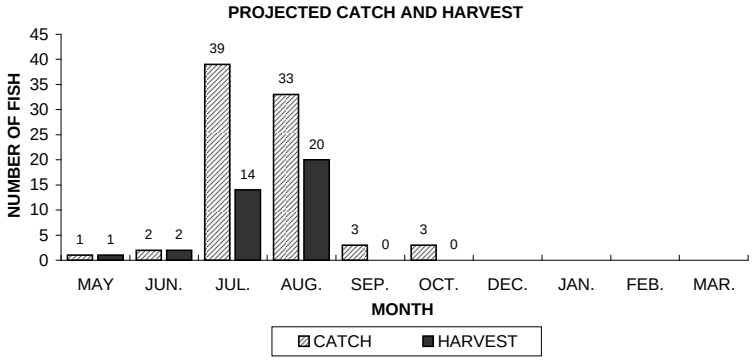
Figure 7. Bluegill sportfishing effort, catch, harvest, and length distribution, Allequash Lake, during 2010-11.

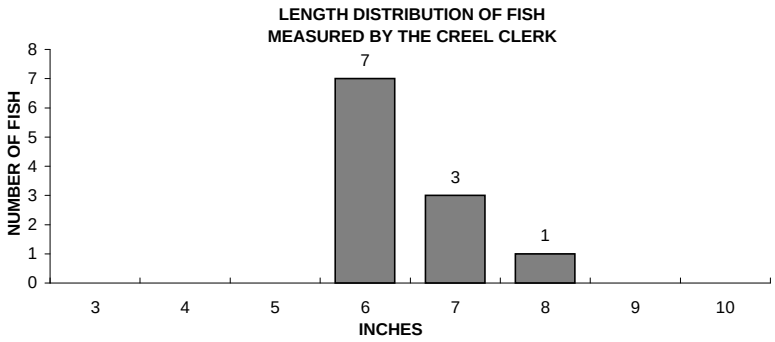
PUMPKINSEED











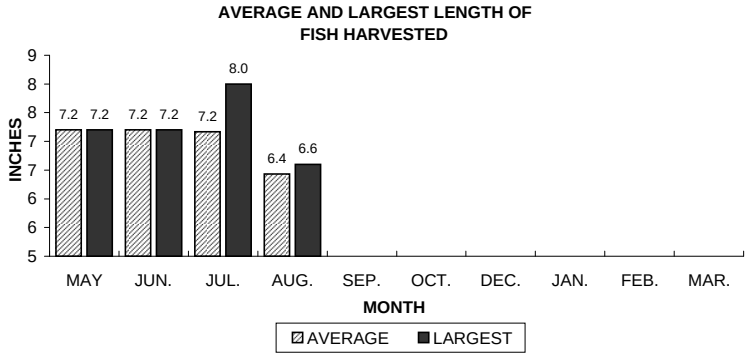
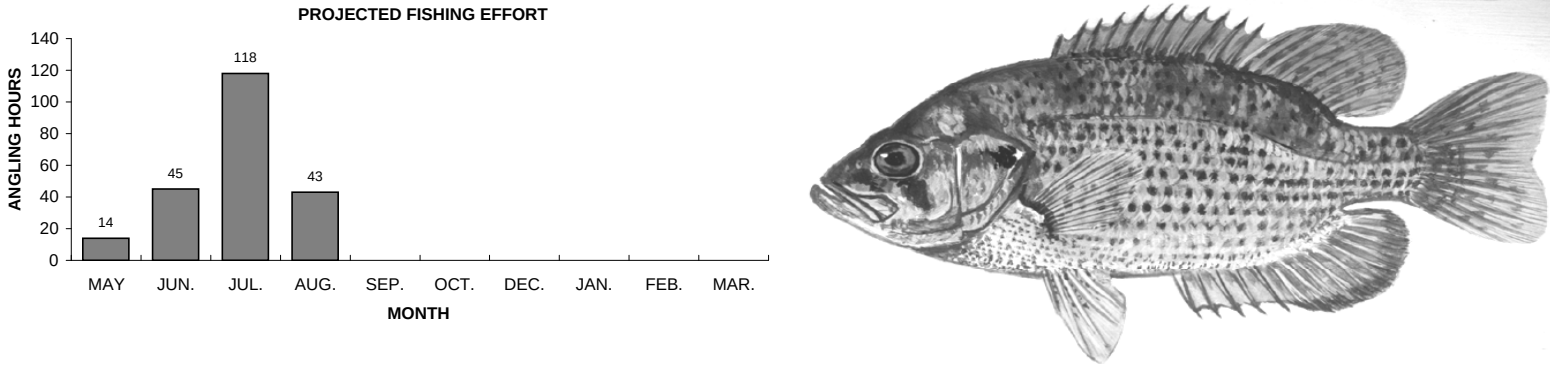
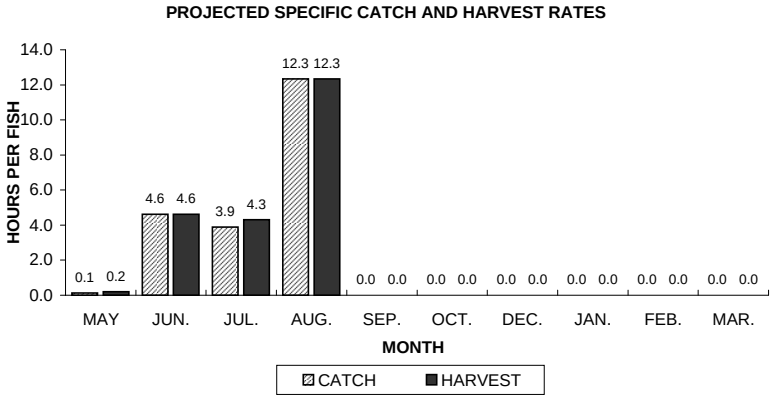
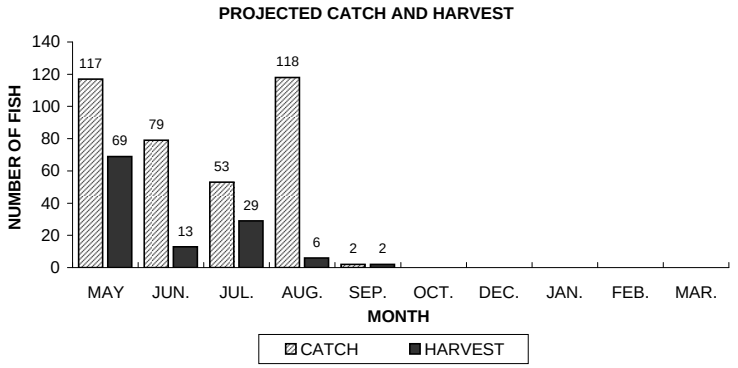


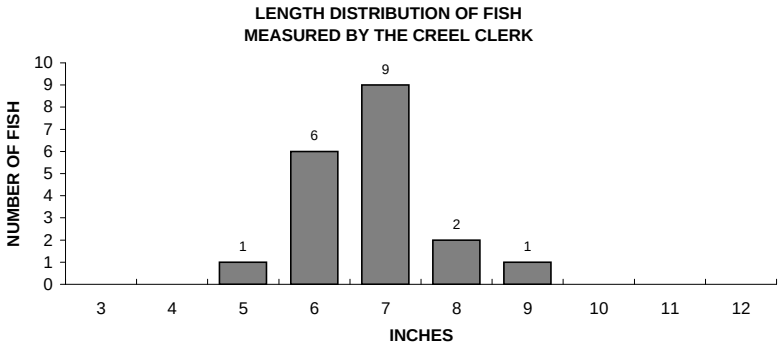
Figure 8. Pumpkinseed sportfishing effort, catch, harvest, and length distribution, Allequash Lake, during 2010-11.

ROCK BASS









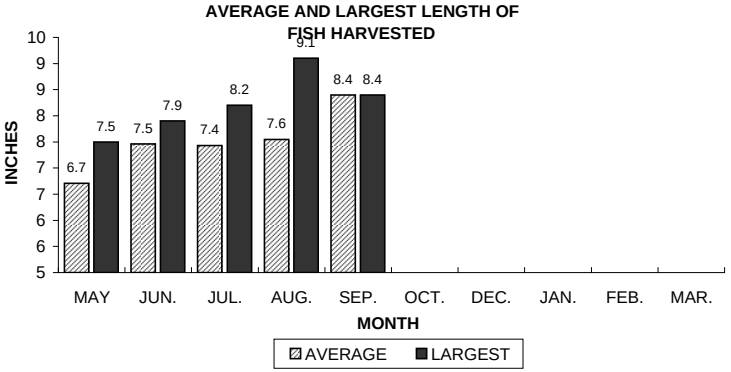
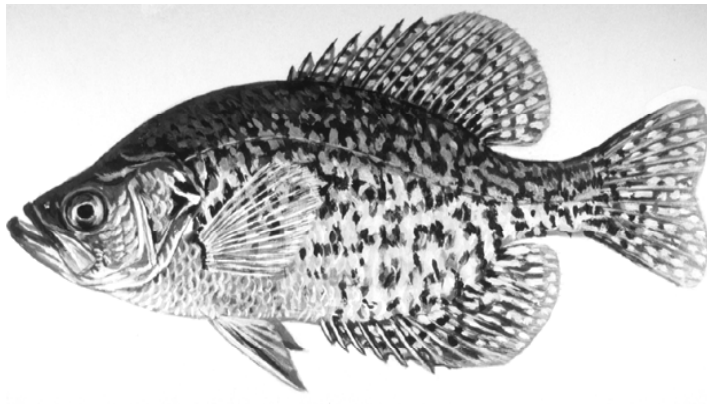
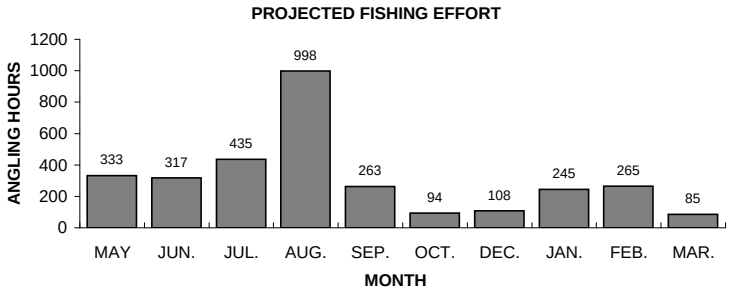
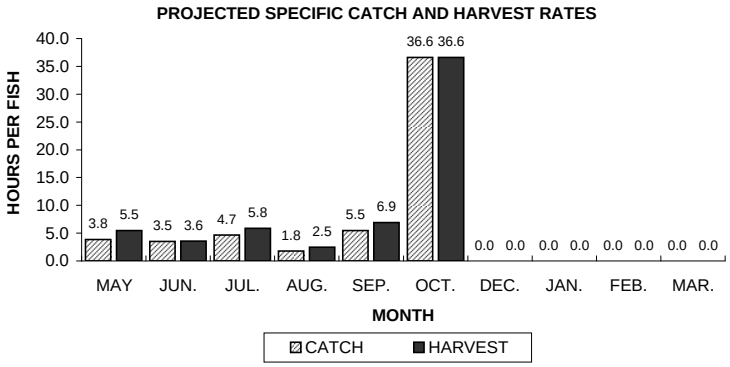


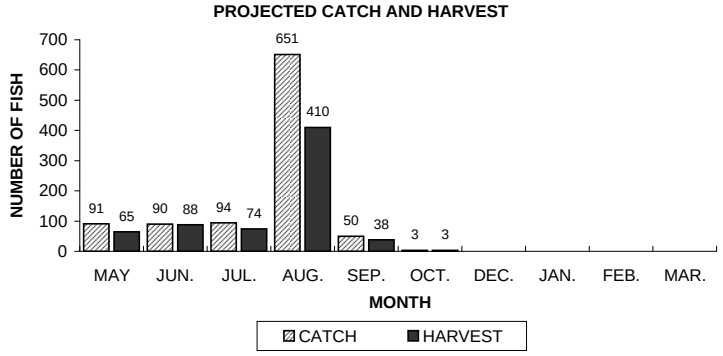
Figure 9. Rock bass sportfishing effort, catch, harvest, and length distribution, Allequash Lake, during 2010-11.

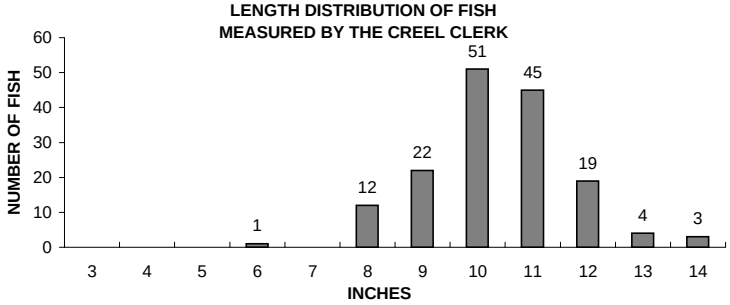
BLACK CRAPPIE











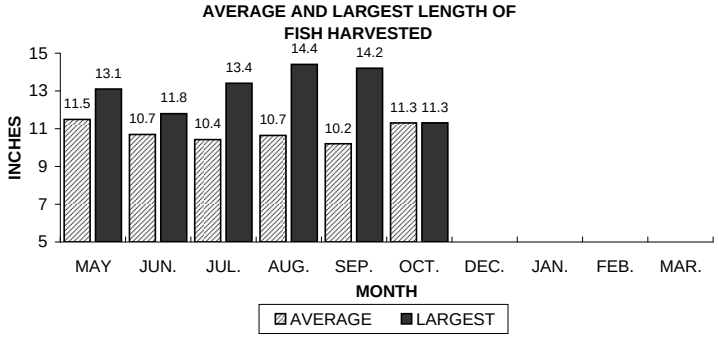


Figure 10. Black crappie sportfishing effort, catch, harvest, and length distribution, Allequash Lake, during 2010-11.