

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

ARCHIBALD LAKE

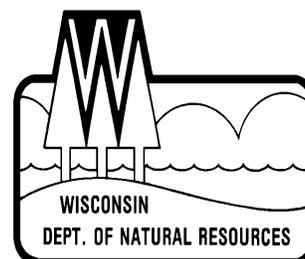
OCONTO COUNTY

2011-12



Treaty Fisheries Publication

**Compiled by Tim Tobias & Jeff Blonski
Treaty Fisheries Technicians**



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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.

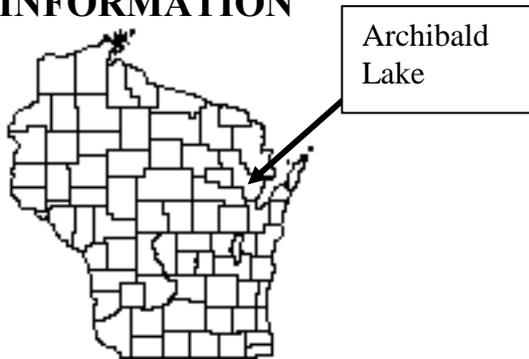
You may have encountered a DNR creel survey clerk on a recent fishing trip. We appreciate your cooperation during an interview. The survey only takes a moment of your time and it gives the Department valuable information needed for management of the fishery.

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

GENERAL LAKE INFORMATION



Location

Archibald Lake is located in Oconto County in the Town of Lakewood.

Physical Characteristics

Archibald Lake is a 393 acre drainage lake with a maximum depth of 50 feet. Littoral substrate consists primarily of sand, with lesser amounts of muck, and gravel. Archibald Lake is a soft water drainage lake with slightly acidic, clear water of moderate transparency.

Seasons Surveyed

The period referred to in this report as the 2011-12 fishing season ran from May 7, 2011 through March 4, 2012. The open water creel survey ran from May 7 through October 31, 2011 and the ice fishing creel survey ran from December 1, 2012 through March 4, 2012.

Weather

Ice-out on Archibald Lake was around April 27, 2011. Fishable-ice formed on Archibald Lake in mid December.

Sportfishing Regulations

The following seasons, daily bag limits, and length limits were in place on Archibald Lake during the 2011-12 fishing season:

		Catch&Release	
Largemouth Bass& Smallmouth Bass	5/7-6/17	5	14"
Musky	5/28-11/30	1	40"
Northern Pike	5/7-3/4	5	none
Walleye	5/7-3/4	3*	15"
Panfish	year round	25	none
Rock Bass	year round	none	none

* The statewide bag limit was 5 walleye, but due to tribal declarations it was reduced on Archibald 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 4 should be considered minimum estimates. Each species page has up to five graphs depicting the following:

1. **PROJECTED FISHING EFFORT**
Total calculated number of hours during each month that anglers spent fishing for a species.
2. **PROJECTED SPECIFIC CATCH AND HARVEST RATES**
Calculated number of hours it takes an angler to catch or harvest a fish of the indicated species. Only information from anglers who were

specifically targeting that species is reported.

- 3. PROJECTED CATCH AND HARVEST**
Calculated number of fish of the indicated species caught or harvested by all anglers, regardless of targeted species.
- 4. LENGTH DISTRIBUTION OF HARVESTED FISH**
All fish of a species that were measured by the clerk during the entire creel survey season.
- 5. LARGEST AND AVERAGE LENGTH OF HARVESTED FISH**
Monthly largest and average length of harvested fish of a species. Only those fish measured by the creel survey clerk are reported.

CREEL SURVEY RESULTS AND DISCUSSION

Survey Logistics

The creel survey went well. We encountered no unusual problems conducting the survey or calculating the projections contained in the report. This was the second time the Department conducted a creel survey on Archibald Lake. The last treaty survey took place in 1992-93.

General Angler Information

Anglers spent 22,320 hours or 56.8 hours per acre fishing Archibald Lake during the 2011-12 season (Table 1). That was less than the Oconto County average of 70.6 hours per acre. January was the most heavily fished month (10.4 hours per acre). Fishing effort was lightest in December (2.3 hours per acre) for those months when the

entire month was creeled.

RESULTS BY SPECIES

Walleye (Table 2, Figure 1)

Fishing effort directed at walleye was 3,981 hours during the 2011-12 season. The greatest fishing effort for walleyes was in January (891 hours). October had the least amount of walleye fishing effort (157 hours).

Total catch of walleyes was 78 fish with a harvest of 60 fish. Highest catch (25 fish) and harvest (15 fish) occurred in May. Anglers fished 55.6 hours to catch and 72.5 hours to harvest a walleyes during 2011-12.

The mean length of harvested walleyes was 18.6 inches and the largest walleye measured was a 24.6 inch fish.

Northern Pike (Table 2, Figure 2)

Fishing effort directed at northern pike was 7,749 hours during the 2011-12 season. Northern pike fishing effort was greatest in January (2814 hours).

Total catch of northern pike was 1,338 fish with a harvest of 245 fish.

The mean length of harvested northern pike was 19.3 inches and the largest northern pike measured was a 31.2 inch fish.

Muskellunge (Table 2, Figure 3)

Anglers spent 3,289 hours targeting muskellunge during the 2011-12 season. Muskellunge fishing effort was greatest in October (1,212 hours).

Total catch of muskellunge was 65 fish. Highest catch (21 fish) occurred in October. Anglers fished 67.6 hours to catch a muskellunge during 2011-12.

Largemouth Bass (Table 2, Figure 4)

Fishing effort directed at largemouth bass was 7,473 hours during the 2011-12 season. Largemouth bass fishing effort was greatest in July (1,814 hours).

Total catch of largemouth bass was 6,854 fish with a harvest of 39 fish. Highest catch (1,940 fish) occurred in May. Anglers fished 1.6 hours to catch a largemouth bass during 2011-12

Panfish (Table 2, Figures 5-9)

Bluegills were the most sought after panfish species during the survey. Fishing effort directed at bluegills was 12,013 hours.

Total catch of bluegills was 15,217 fish with 4,501 harvested. The mean length of bluegills harvested was 7.2 inches.

Yellow perch were the second most sought after panfish species during the survey. Fishing effort directed at yellow perch was 10,938 hours.

Total catch of yellow perch was 11,212 fish with 4,323 harvested. The mean length of yellow perch harvested was 8.2 inches.

Black crappies were the third most sought after panfish species during the survey. Fishing effort directed at black crappies was 5,527 hours.

Anglers caught 3,059 black crappies and harvested 1,723 fish. The mean length of black crappies harvested was 9.9 inches.

Pumpkinseeds and rock bass were also caught during the 2011-12 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, Joelle Underwood, Marty Kiepkke, Jason Halverson, and Tim Tobias. Neal Lowery and Keith Worrall were the creel clerks on Archibald 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 cooperators, Joe Harrison and Bud & Nancy Mueller, who generously allowed the Department to keep a boat and snowmobile on their property during this survey.

This creel report was reviewed by, Christopher "Chip" Long 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 or online at:

<http://dnr.wi.gov/fish/ceded/reports.html>

Table 1. Sportfishing effort summary, Archibald Lake, 2011-12 season.

Month	Total Angler Hours	Total Angler Hours/Acre	Oconto County Average Hours/Acre	Statewide Average Hours/Acre
May	2840	7.2	6.7	5.8
June	2798	7.1	16.3	6.1
July	2800	7.1	14.6	6.4
August	2228	5.7	12.9	5.4
September	1561	4.0	4.2	3.8
October	1755	4.5	1.3	1.6
December	920	2.3	4.7	1.7
January	4080	10.4	5.3	1.5
February	3144	8.0	4.5	1.3
March	196	0.5	0.1	**
*Summer Total	13981	35.6	56.0	29.1
*Winter Total	8339	21.2	14.6	4.5
Grand Total	22320	56.8	70.6	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 Archibald 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 Archibald 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 Archibald Lake to other lakes statewide.

Table 2. Creel survey synopses, Archibald Lake, 2011-12 fishing season.

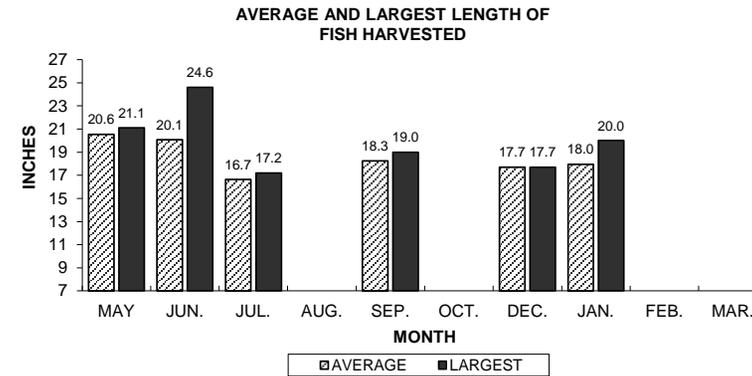
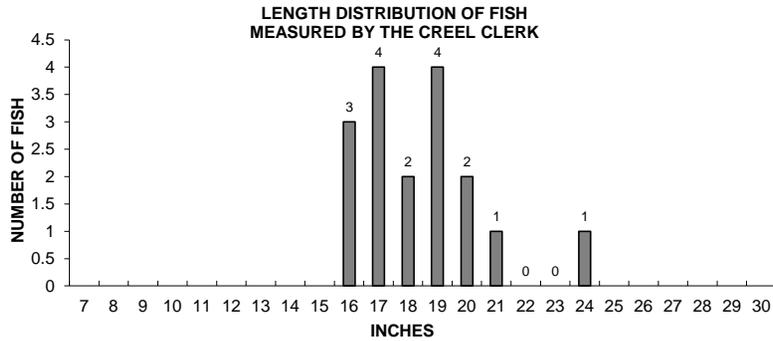
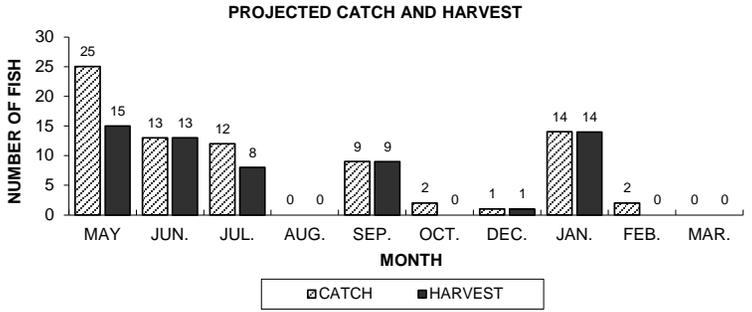
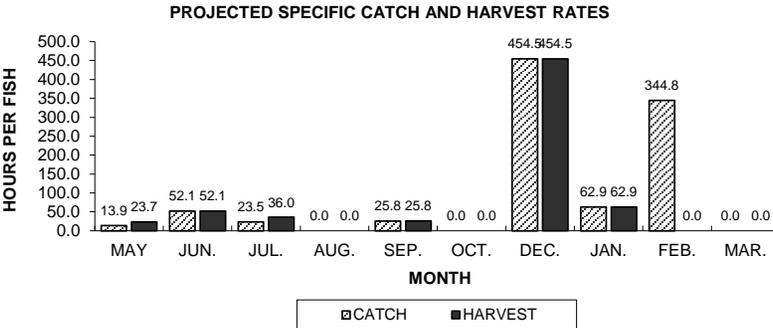
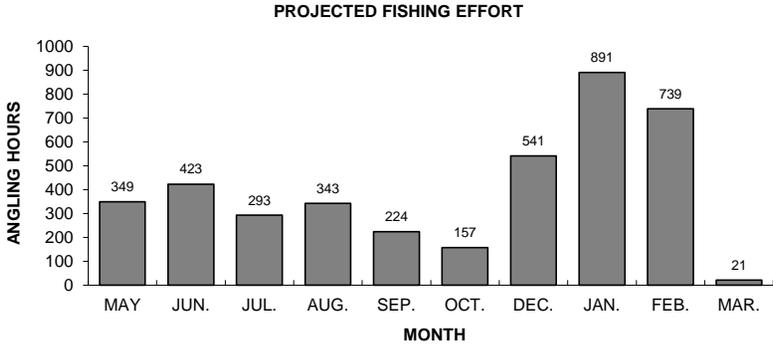
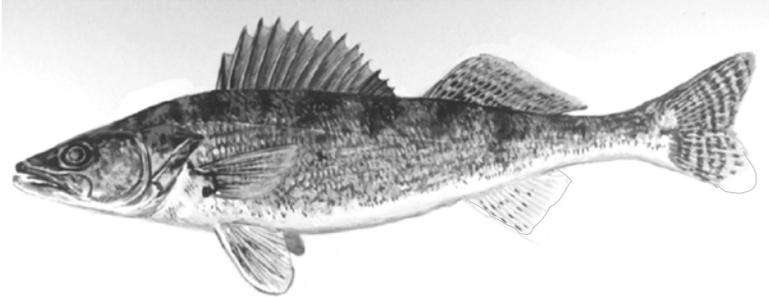
CREEL YEAR: 2011-12

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	3981	7.53%	78	55.6	60	72.5	18.6
Northern Pike	7749	14.66%	1338	7.2	245	40.2	19.3
Muskellunge	3289	6.22%	65	67.6	0		
Largemouth Bass	7473	14.13%	6854	1.6	39	204.1	14.9
Yellow Perch	10938	20.69%	11212	1.0	4323	2.5	8.2
Bluegill	12013	22.72%	15217	0.8	4501	2.7	7.2
Pumpkinseed	495	0.94%	405	1.8	204	3.0	7.7
Rock Bass	1408	2.66%	3891	0.8	825	1.7	8.2
Black Crappie	5527	10.45%	3059	1.8	1723	3.2	9.9

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

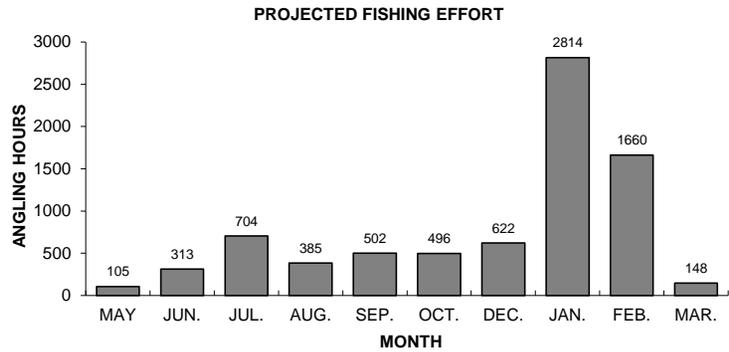
** A blank cell in this column indicates that no fish of a given species were harvested by anglers who specifically targeted that species.

WALLEYE

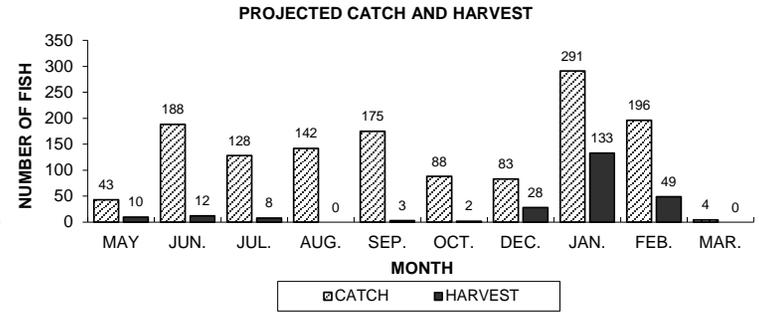
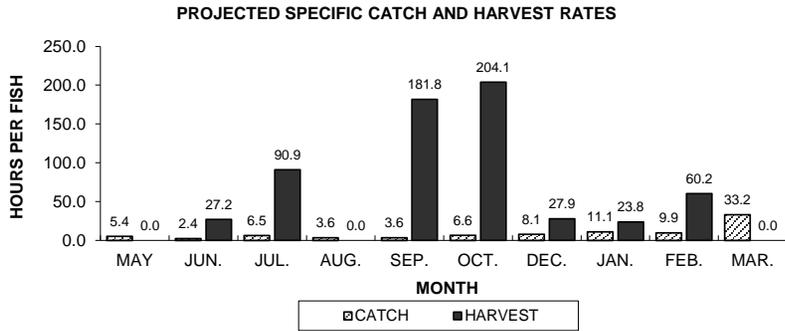
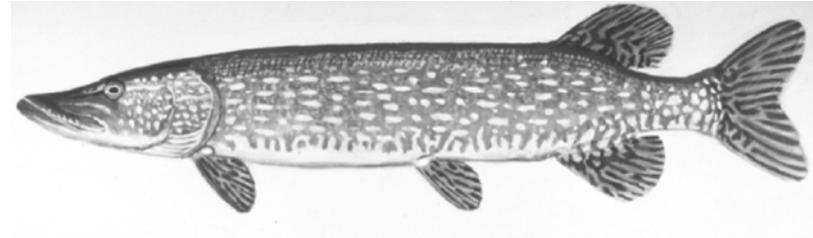


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Figure 1. Walleye sportfishing effort, catch, harvest, and length distribution, Archibald Lake, during 2011-12.



NORTHERN PIKE



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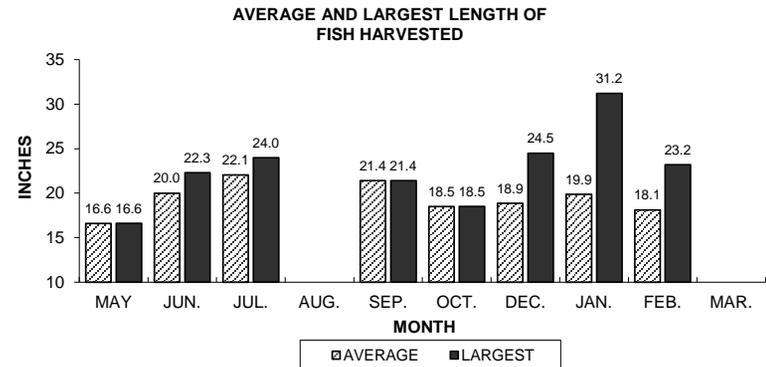
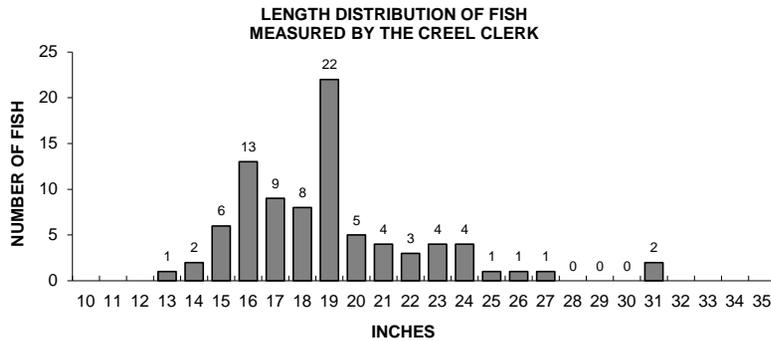
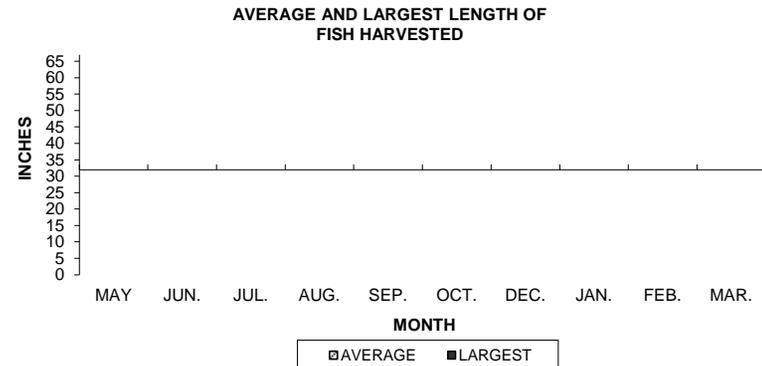
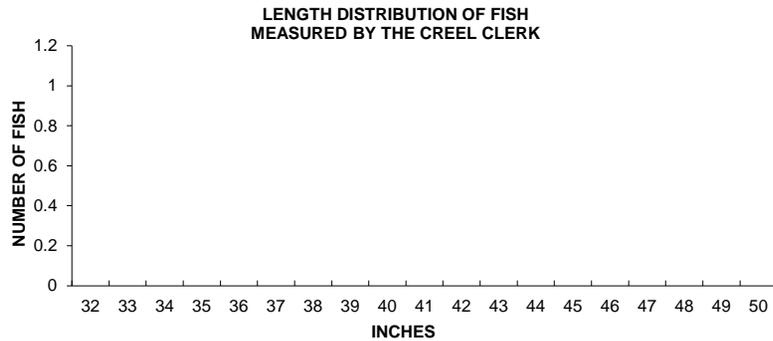
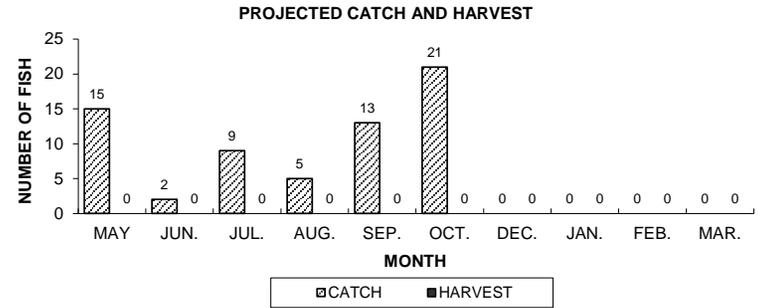
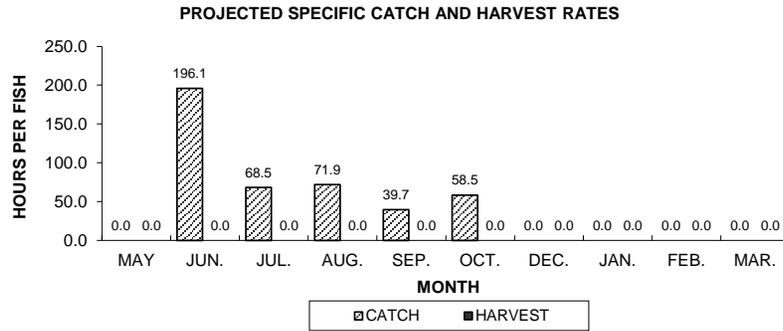
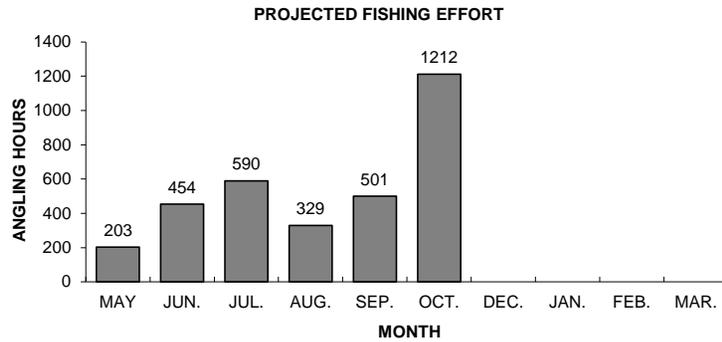
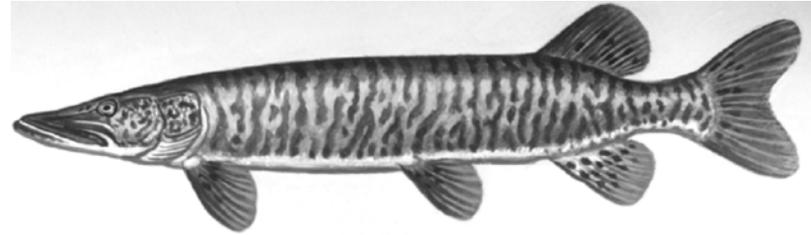


Figure 2. Northern pike sportfishing effort, catch, harvest, and length distribution, Archibald Lake, during 2011-12.

MUSKELLUNGE



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Figure 3. Muskellunge sportfishing effort, catch, harvest, and length distribution, Archibald Lake, during 2011-12.

LARGEMOUTH BASS

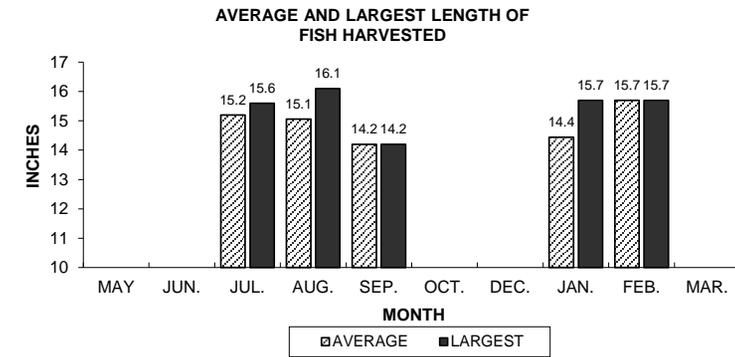
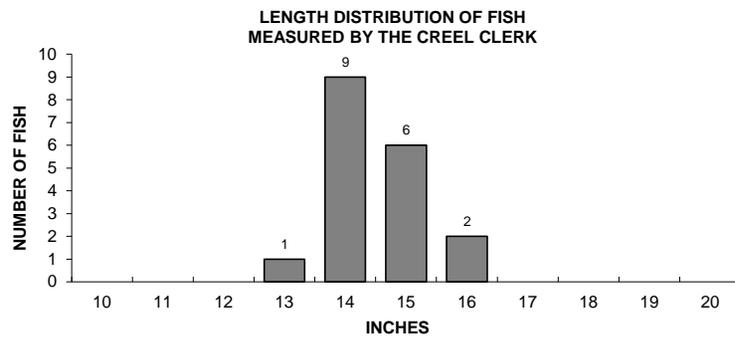
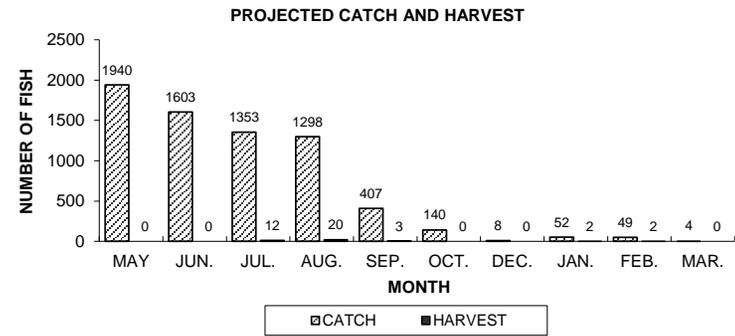
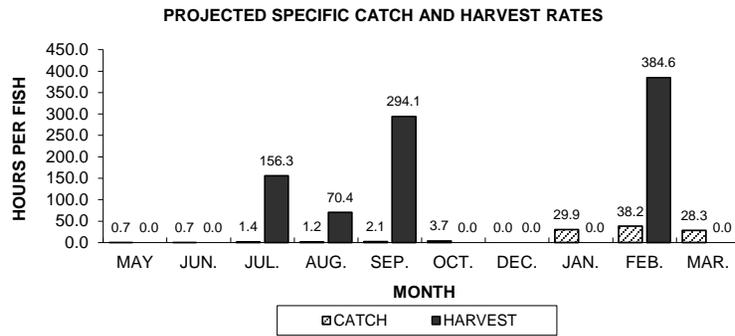
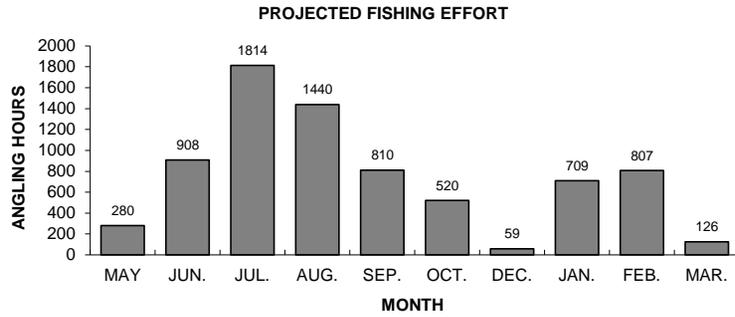
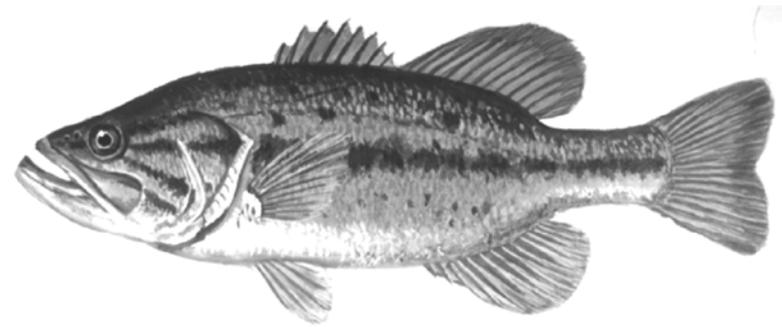
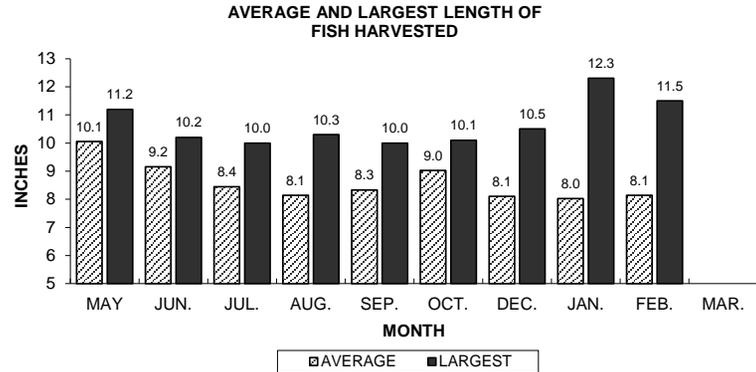
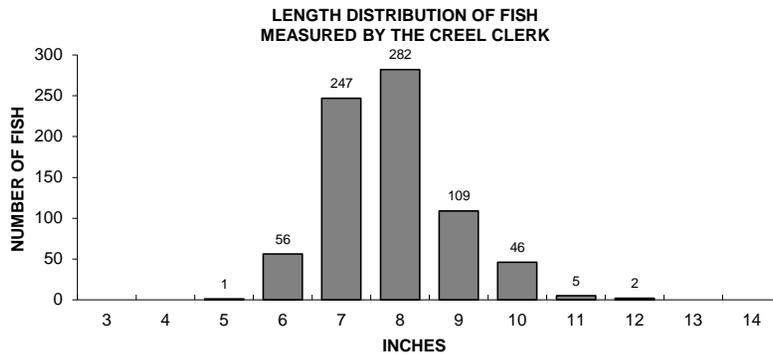
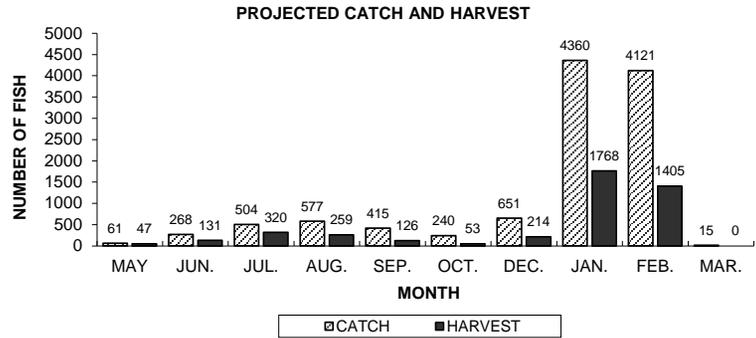
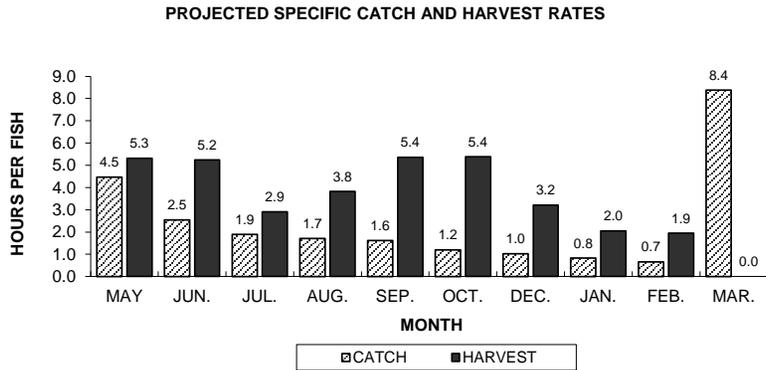
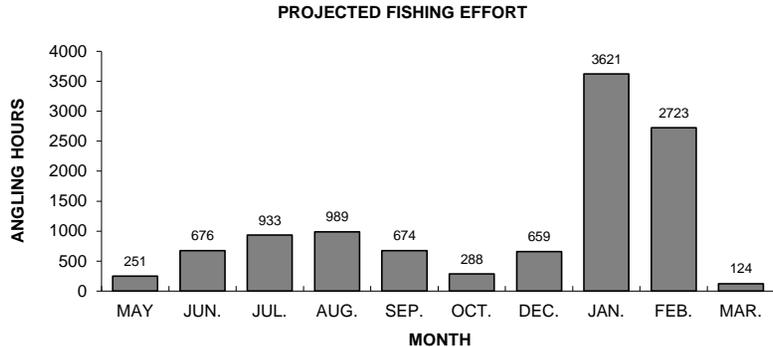


Figure 4. Largemouth bass sportfishing effort, catch, harvest, and length distribution, Archibald Lake, during 2011-12.

YELLOW PERCH



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Figure 5. Yellow perch sportfishing effort, catch, harvest, and length distribution, Archibald Lake, during 2011-12.

BLUEGILL

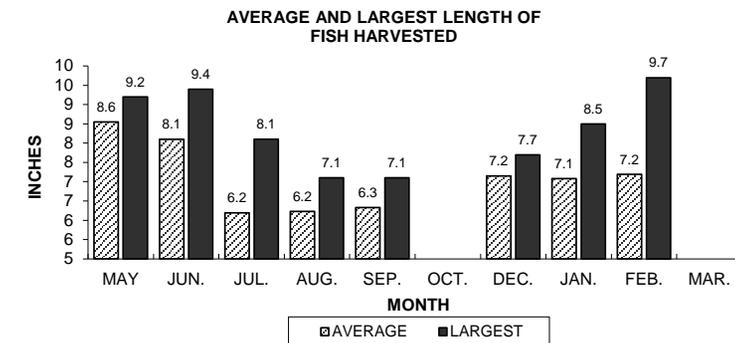
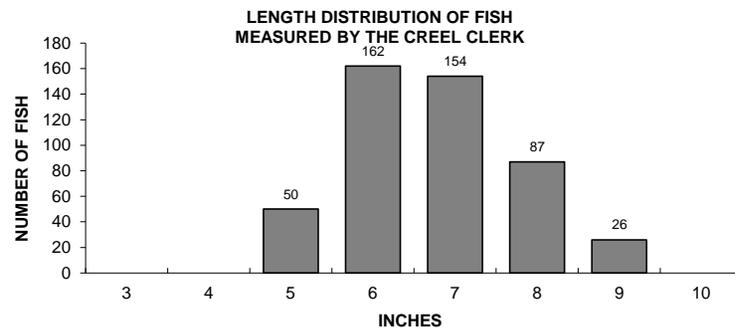
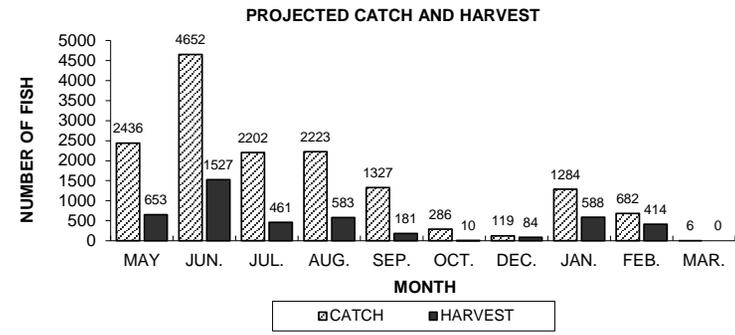
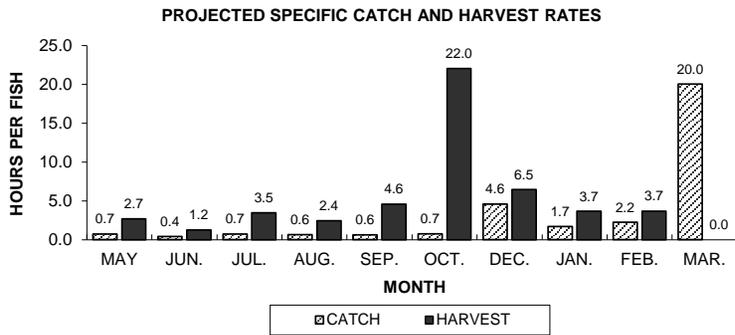
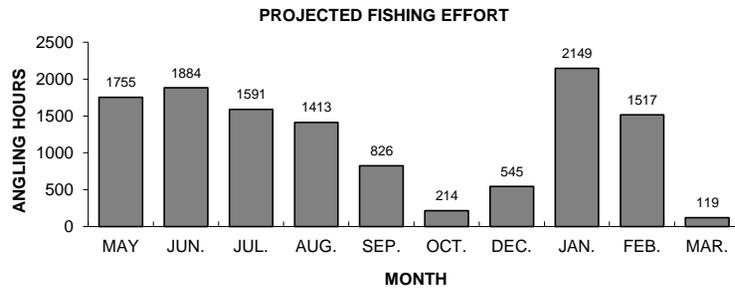
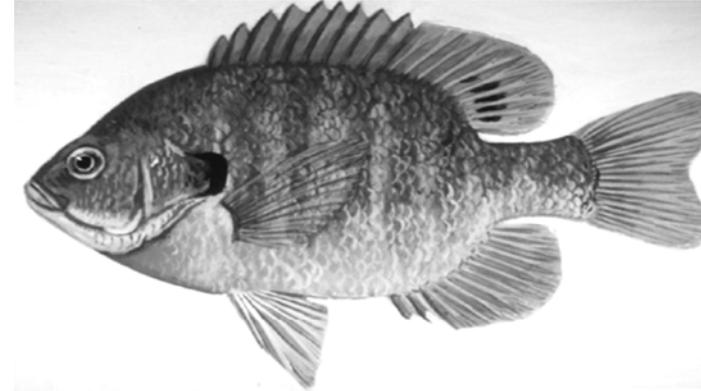


Figure 6. Bluegill sportfishing effort, catch, harvest, and length distribution, Archibald Lake, during 2011-12.

PUMPKINSEED

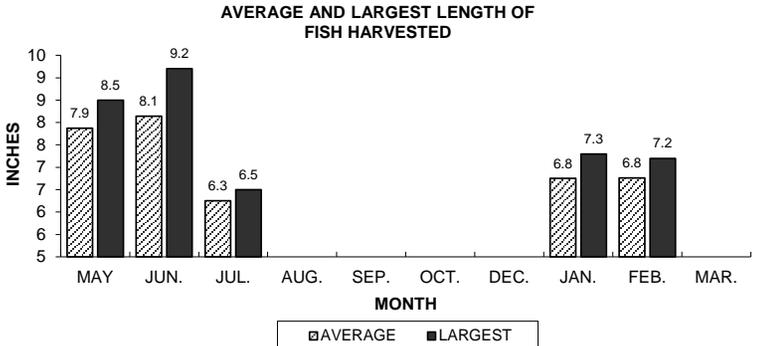
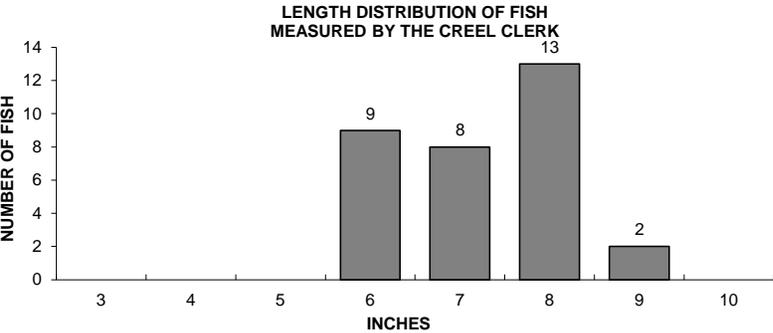
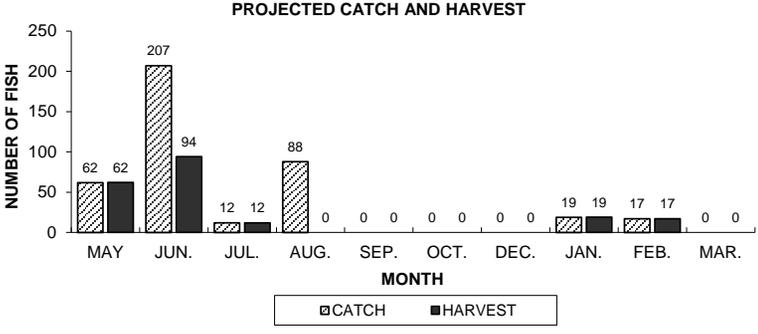
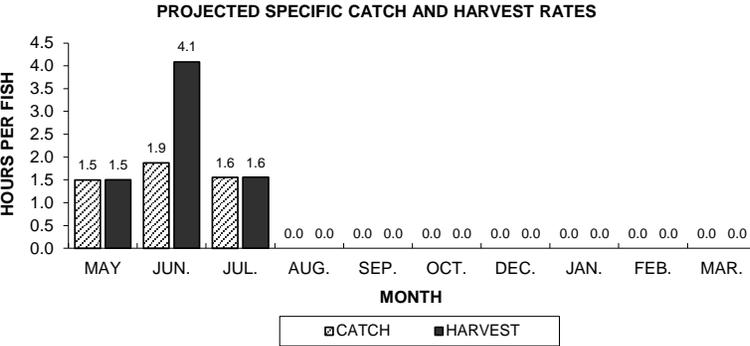
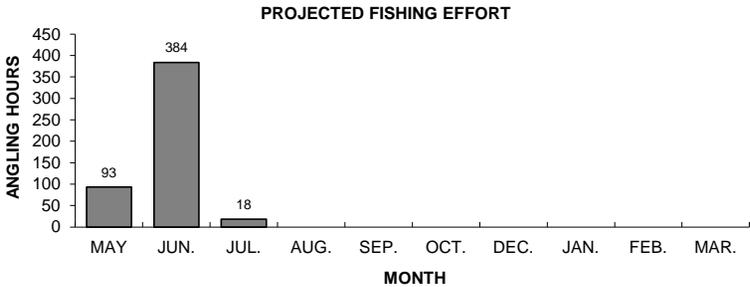
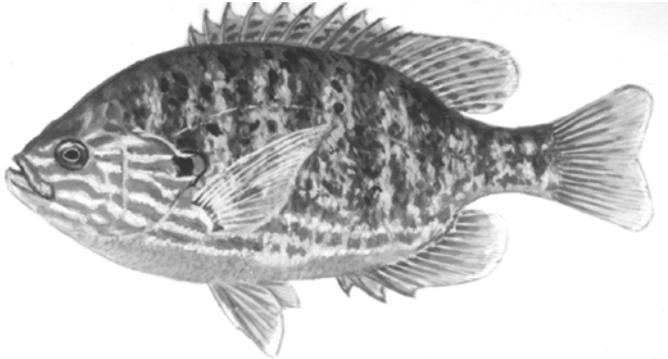


Figure 7. Pumpkinseed sportfishing effort, catch, harvest, and length distribution, Archibald Lake, during 2011-12.

ROCK BASS

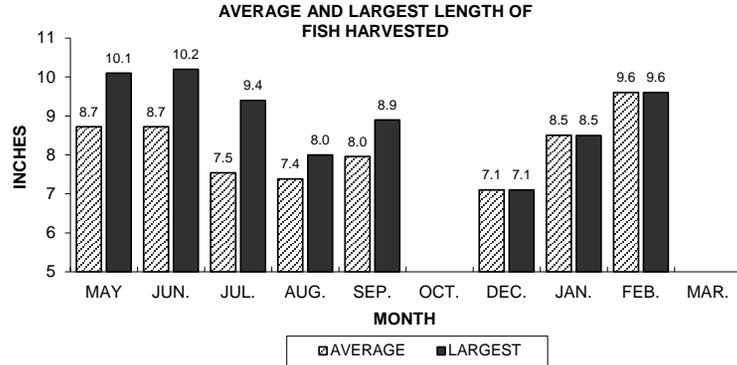
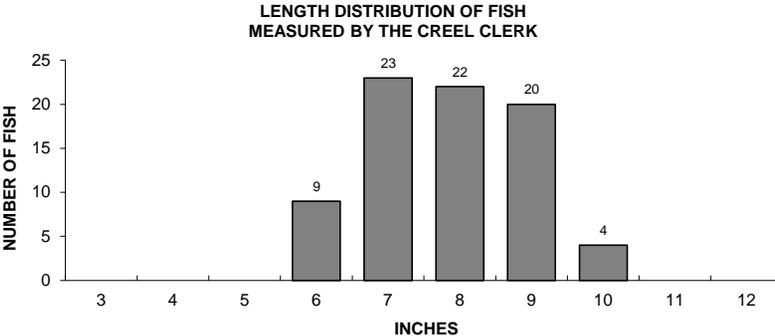
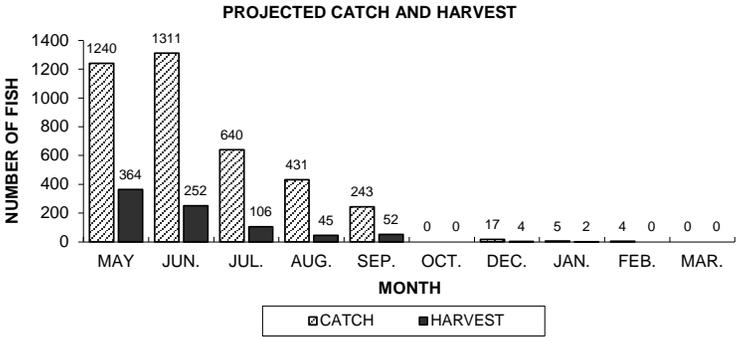
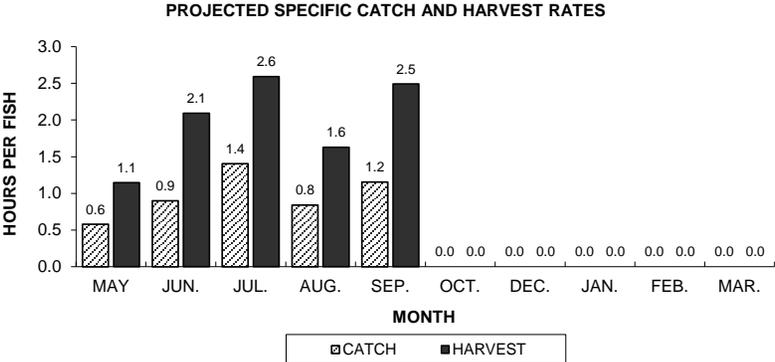
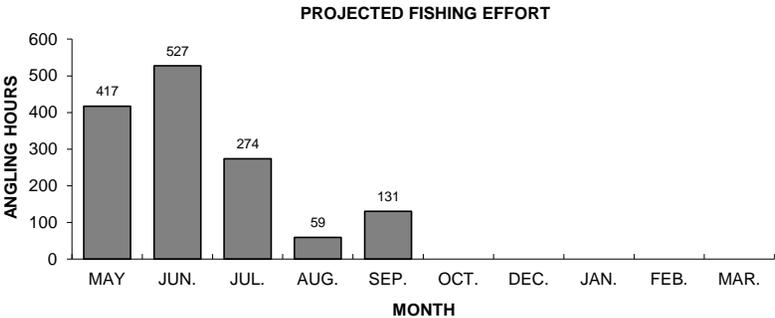
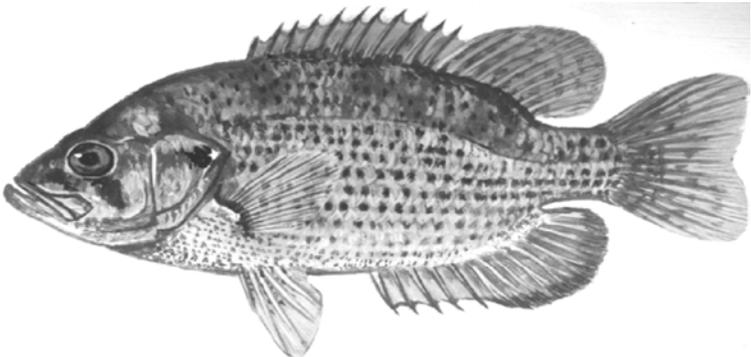


Figure 8. Rock bass sportfishing effort, catch, harvest, and length distribution, Archibald Lake, during 2011-12.

BLACK CRAPPIE

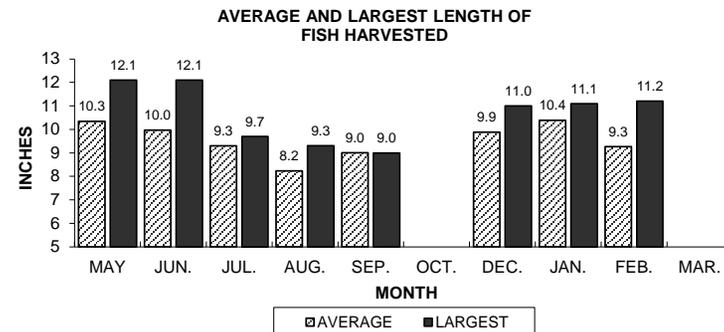
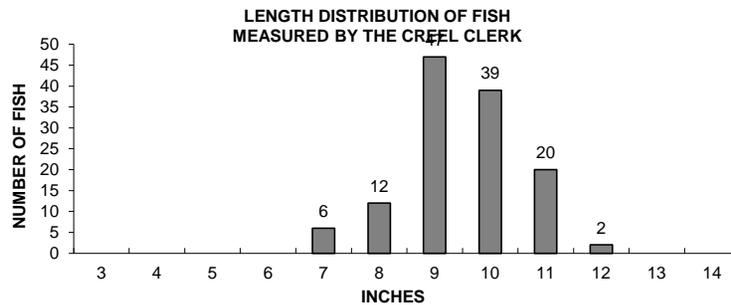
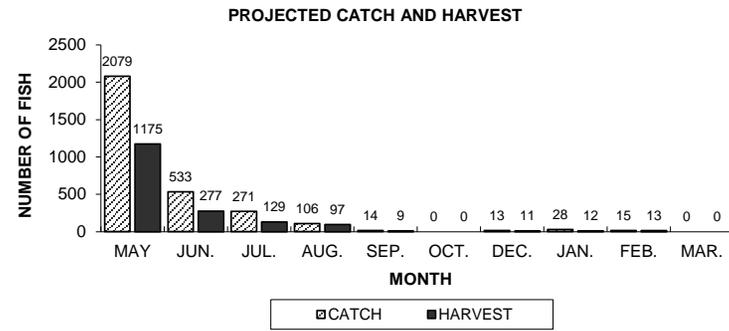
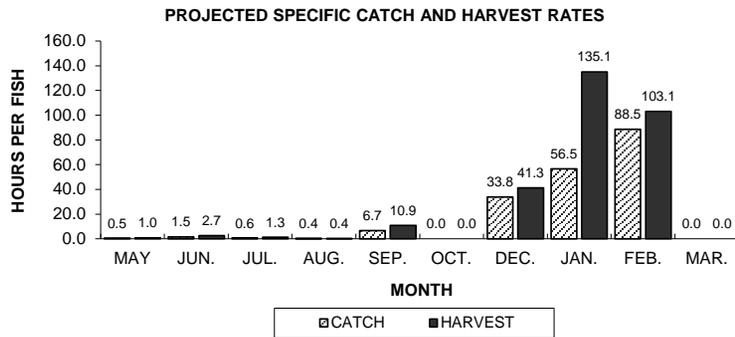
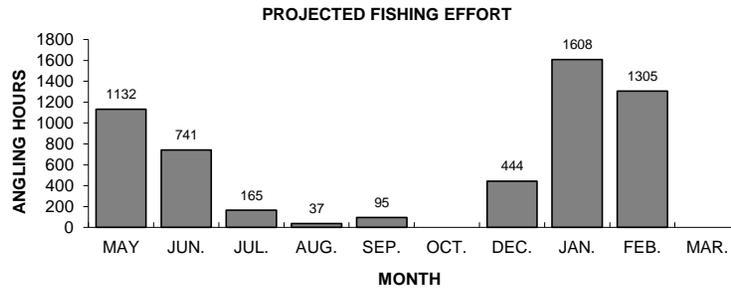
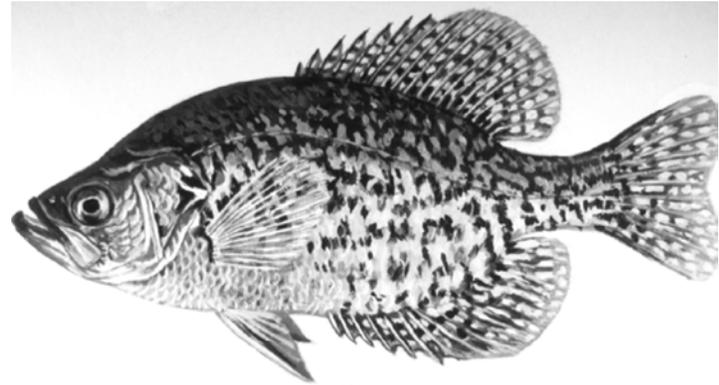


Figure 9. Black crappie sportfishing effort, catch, harvest, and length distribution, Archibald Lake, during 2011-12.