

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

BALLARD CHAIN

(Ballard, White Birch and Irving Lakes)

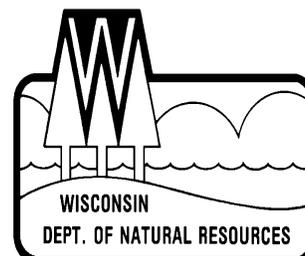
VILAS COUNTY

2011-12



Treaty Fisheries Publication

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



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Cover Art: Steve Hilt, Minocqua, WI

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.

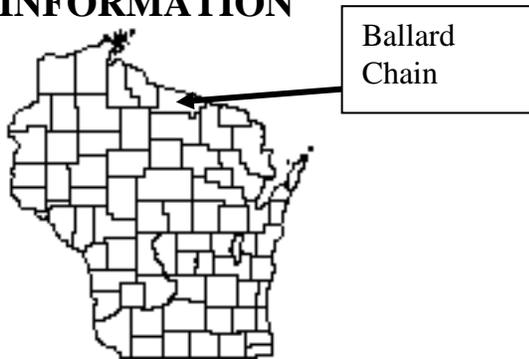
You may have encountered a DNR creel survey clerk on a recent fishing trip. We appreciate your cooperation during an interview. The survey only takes a moment of your time and it gives the Department valuable information needed for management of the fishery.

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

GENERAL LAKE INFORMATION



Location

Ballard Chain is located in Vilas County in the Town of Star Lake.

Physical Characteristics

Ballard Chain is a 1,025 acre drainage chain with a total of three lakes (Ballard, Irving, and White Birch). Littoral substrate consists primarily of sand, gravel and muck. Lakes of the Ballard Chain can be categorized as moderately fertile, alkaline with relatively clear water.

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 Ballard Chain occurred about April 22, 2011. Fishable-ice formed on Ballard Chain in mid December.

Sportfishing Regulations

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

	Season	Catch&Release	
Largemouth Bass& Smallmouth Bass	5/7-6/17	5	14"
Musky	5/28-11/30	1	34"
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 Ballard Chain.

SPECIES CATCH AND HARVEST INFORMATION

Angling effort, catch, and harvest information is summarized for each species for the entire chain in Table 2 and Figures 1-10. Tables 3, 4 and 5 compare the individual lakes 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 third time the Department has conducted a creel survey of the Ballard Chain. The last creel survey took place in 2001-02.

General Angler Information

Anglers spent 33,244 hours or 32.4 hours per acre fishing Ballard Chain during the 2011-12 season (Table 1). That was less than the Vilas County average of 34.6 hours per acre. July was the most heavily fished month (7.6 hours per acre). Fishing effort was lightest in December (0.8) hours per acre) for those months when the entire

month was creeled.

RESULTS BY SPECIES

Walleye (Table 2, Figure 1)

Anglers spent 3,896 hours targeting walleyes. The greatest fishing effort for walleyes was in January (693 hours). October had the least amount of walleye fishing effort (110 hours).

Total catch of walleyes was 694 fish with a harvest of 190 fish. Highest catch (196 fish) occurred in June and harvest (79 fish) occurred in December. Anglers fished 6.4 hours to catch and 21.4 hours to harvest a walleyes during 2011.

The mean length of harvested walleyes was 19.3 inches and the largest walleye measured was a 27.1-inch fish.

Northern Pike (Table 2, Figure 2)

Fishing effort directed at northern pike was 1,806 hours during the 2011 season. Northern pike fishing effort was greatest in January (402 hours).

Total catch of northern pike was 856 fish with a harvest of 156 fish.

The mean length of harvested northern pike was 22.0 inches and the largest northern pike measured was a 32.0-inch fish.

Muskellunge (Table 2, Figure 3)

Anglers spent 12,700 hours targeting muskellunge during the 2011 season. Muskellunge fishing effort was greatest in July (3,121 hours).

Total catch of muskellunge was 301 fish. Highest catch (83 fish) occurred in October. Anglers fished 49.0 hours to catch a muskellunge during 2011.

Smallmouth Bass (Table 2, Figure 4)

Smallmouth bass are only a minor part of the Ballard Chain fishery and only accounted for 35 hours of directed effort.

Most of the 378 smallmouth bass caught were projected from only three angler interviews. Caution should be used in interpreting that catch which is not consistent with our netting and electrofishing results.

Largemouth Bass (Table 2, Figure 5)

Fishing effort directed at largemouth bass was 1,719 hours during the 2011 season. Largemouth bass fishing effort was greatest in August (491 hours).

Total catch of largemouth bass was 6,308 fish with a harvest of 14 fish. Highest catch (2,107 fish) occurred in July. Anglers fished 1.4 hours to catch a largemouth bass during 2011.

Panfish (Table 2, Figures 6-10)

Yellow perch were the most sought after panfish species during the survey. Fishing effort directed at yellow perch was 17,787 hours.

Total catch of yellow perch was 49,743 fish with 17,379 harvested. The mean length of yellow perch harvested was 8.4 inches

Bluegills were the second most sought after panfish species during the survey. Fishing effort directed at bluegills was 15,549 hours.

Total catch of bluegills was 55,155 fish with 8,482 harvested. The mean length of bluegills harvested was 7.7 inches.

Black crappies were the third most sought after panfish species during the survey. Fishing effort directed at black crappies was 3,438 hours.

Anglers caught 1,839 black crappies and harvested 968 fish. The mean length of black crappies harvested was 8.9 inches.

Pumpkinseeds and rock bass were also caught during the 2011 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 Kiepke, Jason Halverson, and Tim Tobias. John Logan and Marty Kiepke were the creel clerks on Ballard Chain 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, Doug & Libby Scott and Ben & Mary Cleveland, who generously allowed the Department to keep a boat and snowmobile on their property during this survey.

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 from the Woodruff DNR or online at:

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

Table 1. Sportfishing effort summary, the Ballard Chain, 2011-12 season

Month	Total Angler Hours	Total Angler Hours/Acre	Vilas County Average Hours/Acre	Statewide Average Hours/Acre
May	2425	2.4	5.2	5.8
June	3783	3.7	6.8	6.1
July	7764	7.6	7.5	6.4
August	6680	6.5	6.4	5.4
September	5426	5.3	4.2	3.8
October	2979	2.9	2.0	1.6
December	811	0.8	0.5	1.7
January	1293	1.3	0.8	1.5
February	1898	1.9	1.0	1.3
March	184	0.18	0.2	**
*Summer Total	29058	28.3	32.1	29.1
*Winter Total	4186	4.1	2.5	4.5
Grand Total	33244	32.4	34.6	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 the Ballard Chain 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 the Ballard Chain 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 the Ballard Chain to other lakes statewide.

Table 2. Comparison of creel survey synopses, Ballard Chain, 2001 and 2011 fishing seasons.

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	3896	6.53%	694	6.4	190	21.4	19.3
Northern Pike	1806	3.03%	856	6.9	156	19.3	22.0
Muskellunge	12700	21.28%	301	49.0	8	1663.9	36.2
Smallmouth Bass	35	0.06%	378	13.5	0		
Largemouth Bass	1719	2.88%	6308	1.4	14	215.1	15.5
Yellow Perch	17787	29.81%	49743	0.4	17379	1.0	8.4
Bluegill	15549	26.06%	55155	0.3	8482	1.8	7.7
Pumpkinseed	1090	1.83%	1830	1.2	336	3.3	7.2
Rock Bass	1653	2.77%	3713	1.6	393	4.3	7.4
Black Crappie	3438	5.76%	1839	2.2	968	3.8	8.9

* 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: 2001-02

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	6604	19.29%	2993	2.2	420	16.2	17.0
Northern Pike	1029	3.01%	766	9.6	29	42.0	23.9
Muskellunge	23242	67.91%	1489	18.5	12	1870.9	35.6
Largemouth Bass	769	2.25%	388	3.7	0		
Bluegill	1454	4.25%	5040	0.3	2174	0.7	6.7
Black Crappie	145	0.42%	22	27.1	9	27.1	10.6
Yellow Perch	984	2.87%	1631	0.6	807	1.3	8.2
Rock Bass	0	0.00%	91		0		

Table 3. Comparison of creel survey synopses, Ballard Lake, 2011-12 and 2001-02 fishing seasons.

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	2757	7.25%	600	5.1	151	19.0	19.3
Northern Pike	1307	3.44%	569	11.5	78	46.5	22.4
Muskellunge	7980	20.98%	208	44.4	4	2000.0	37.0
Smallmouth Bass	35	0.09%	245	13.4	0		
Largemouth Bass	1329	3.49%	3724	1.6	9	166.7	15.5
Yellow Perch	10327	27.16%	24450	0.4	6045	1.7	8.3
Bluegill	9428	24.79%	41414	0.2	4839	2.0	7.8
Pumpkinseed	845	2.22%	1136	1.8	58	15.8	7.5
Rock Bass	1385	3.64%	3290	1.4	373	3.8	7.3
Black Crappie	2636	6.93%	1681	1.8	901	3.1	8.9

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7 ** 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: 2001-02

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	3278	14.43%	412	8.3	132	27.3	18.5
Northern Pike	920	4.05%	579	8.9	25	39.4	23.6
Muskellunge	17253	75.95%	967	20.5	0		
Largemouth Bass	47	0.21%	63	1.9	0		
Bluegill	323	1.42%	756	0.4	333	1.0	7.2
Black Crappie	89	0.39%	16	33.7	3	33.7	9.5
Yellow Perch	805	3.54%	1485	0.6	729	1.1	8.0
Rock Bass	0	0.00%	31		0		

Table 4. Comparison of creel survey synopses, Irving Lake, 2011-12 and 2001-02 fishing seasons.

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	708	4.28%	78	12.0	26	27.2	17.8
Northern Pike	407	2.46%	276	2.9	74	6.3	21.5
Muskellunge	3092	18.68%	93	38.8	4	833.3	35.3
Smallmouth Bass	0	0.00%	78		0		
Largemouth Bass	390	2.36%	2140	1.1	5		15.4
Yellow Perch	6214	37.55%	22662	0.3	10680	0.6	8.5
Bluegill	4808	29.05%	8632	0.6	2671	1.8	7.6
Pumpkinseed	141	0.85%	78	4.6	25	5.7	7.6
Rock Bass	268	1.62%	123	6.4	20	18.1	8.4
Black Crappie	522	3.15%	90	13.1	32	16.7	8.9

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∞ ** 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: 2001-02

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	2981	40.35%	2567	1.2	276	10.8	16.1
Northern Pike	44	0.60%	133	13.9	3		26.0
Muskellunge	3496	47.32%	384	12.2	0		
Largemouth Bass	28	0.38%	33	2.6	0		
Bluegill	622	8.42%	2274	0.3	1229	0.5	6.8
Black Crappie	56	0.76%	3	20.7	3	20.7	10.0
Yellow Perch	161	2.18%	127	1.9	77	2.8	9.8
Rock Bass	0	0.00%	8		0		

Table 5. Comparison of creel survey synopses, White Birch Lake, 2011-12 and 2001-02 fishing seasons.

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	431	8.46%	16	30.4	13	36.9	22.9
Northern Pike	92	1.81%	11	13.0	4	89.3	20.7
Muskellunge	1628	31.96%	0		0		
Smallmouth Bass	0	0.00%	55		0		
Largemouth Bass	0	0.00%	444		0		
Yellow Perch	1246	24.46%	2631	0.5	654	2.1	8.4
Bluegill	1313	25.78%	5109	0.3	972	1.3	7.5
Pumpkinseed	104	2.04%	616	0.3	253	0.4	7.1
Rock Bass	0	0.00%	300		0		
Black Crappie	280	5.50%	68	4.4	35	8.1	9.4

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** 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: 2001-02

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	345	8.37%	14	23.6	12	27.5	21.7
Northern Pike	65	1.58%	54	63.3	1	63.3	24.2
Muskellunge	2493	60.45%	138	19.5	12	200.0	35.6
Largemouth Bass	694	16.83%	292	4.0	0		
Bluegill	509	12.34%	2010	0.3	612	0.8	6.5
Black Crappie	0	0.00%	3		3		12.3
Yellow Perch	18	0.44%	19	0.9	1	17.0	9.1
Rock Bass	0	0.00%	52		0		

WALLEYE

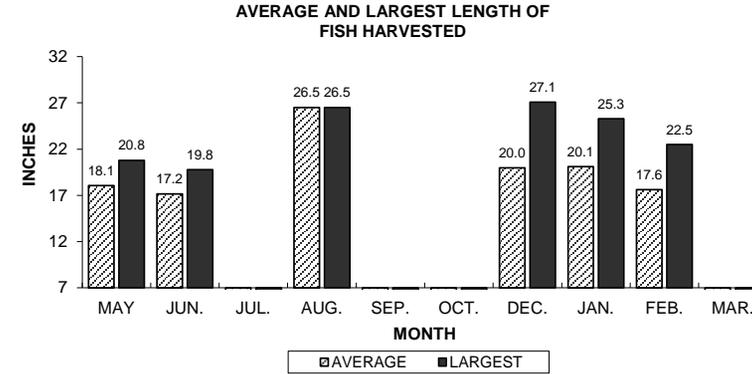
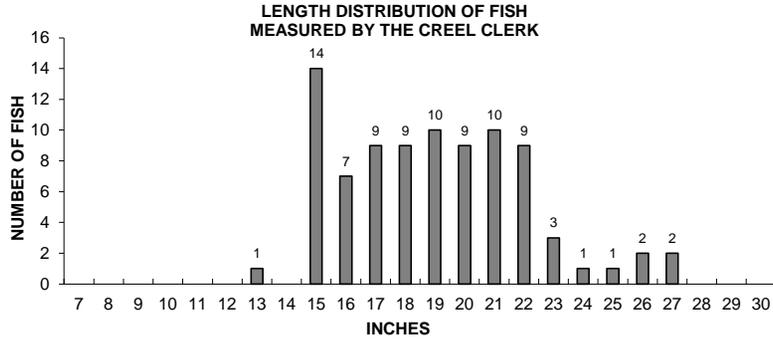
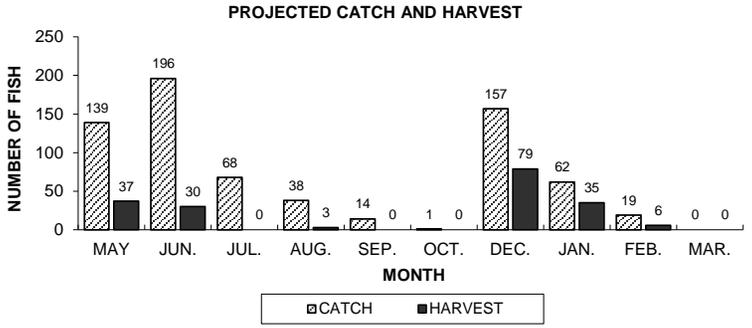
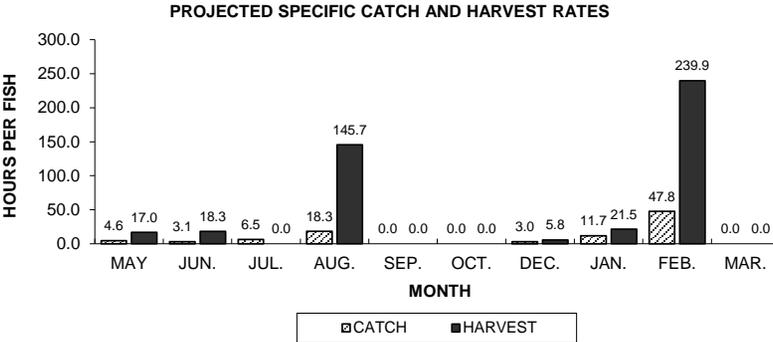
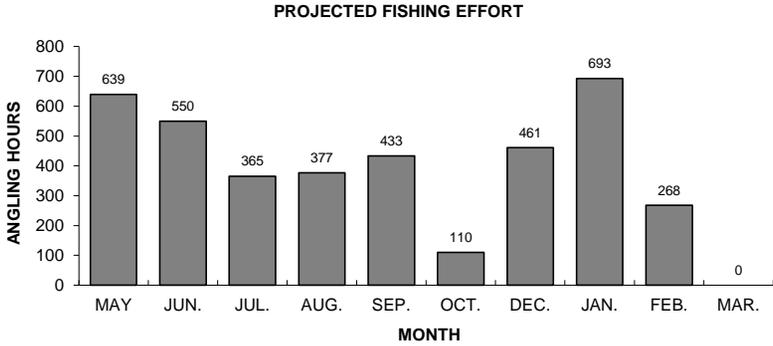
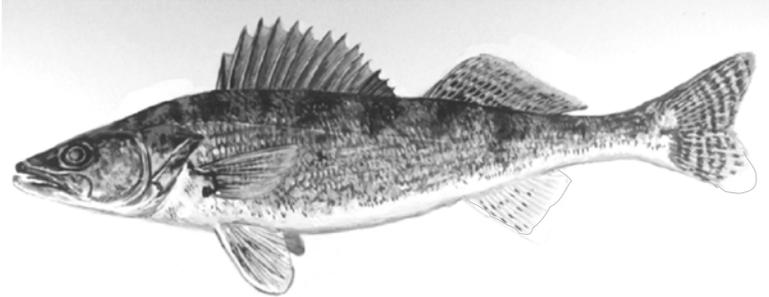


Figure 1. Walleye sportfishing effort, catch, harvest, and length distribution, Ballard Chain, during 2011-12.

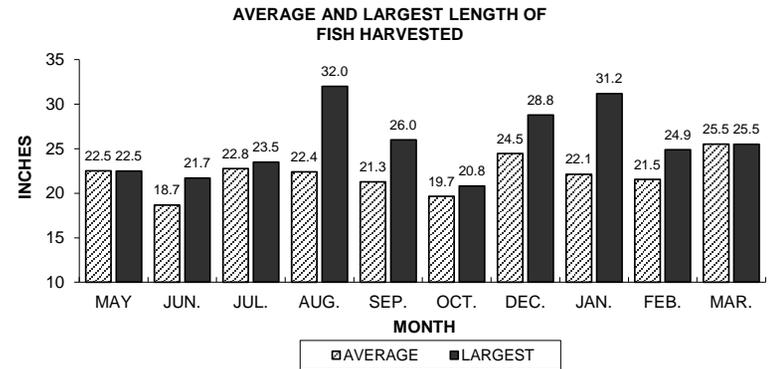
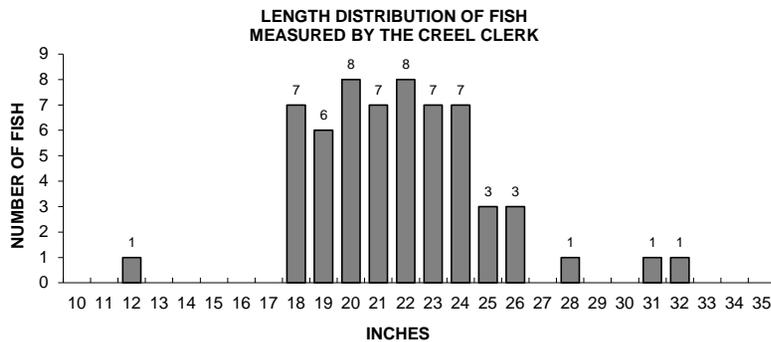
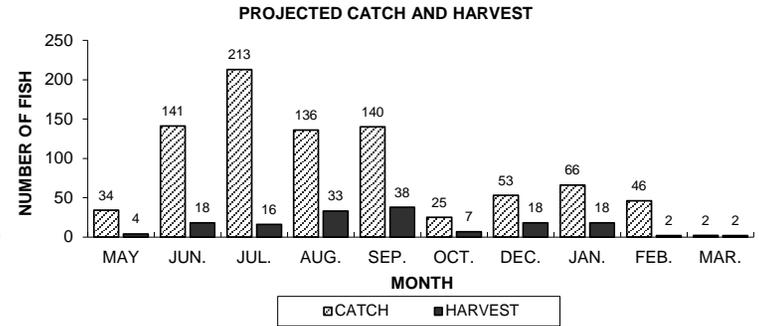
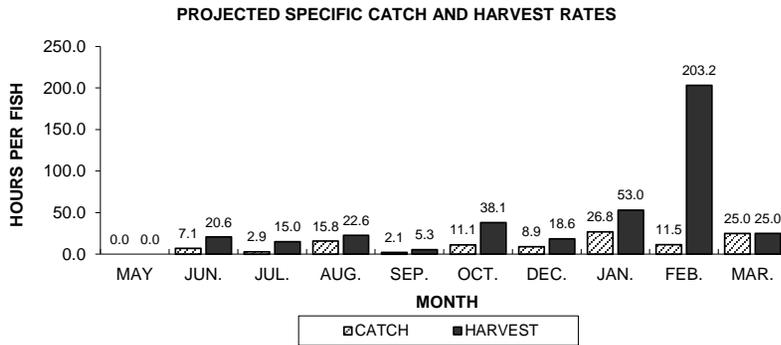
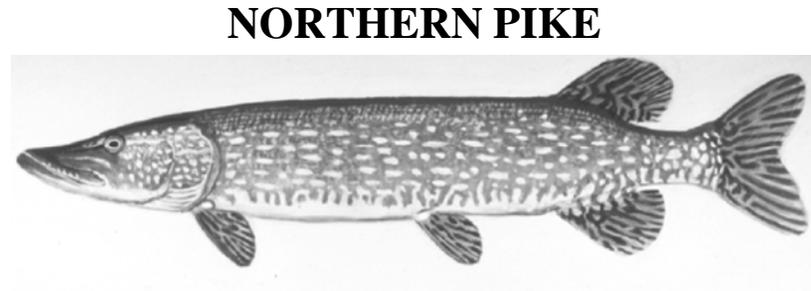
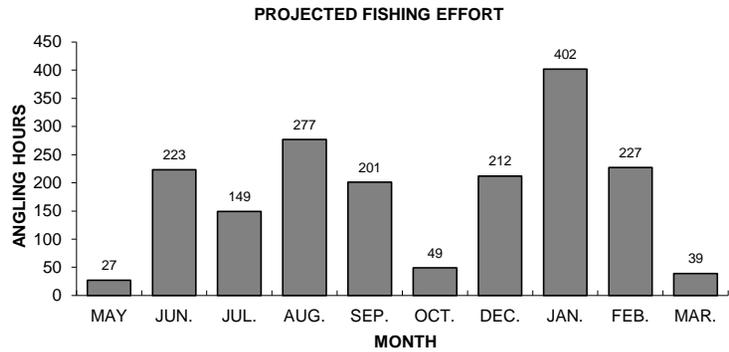
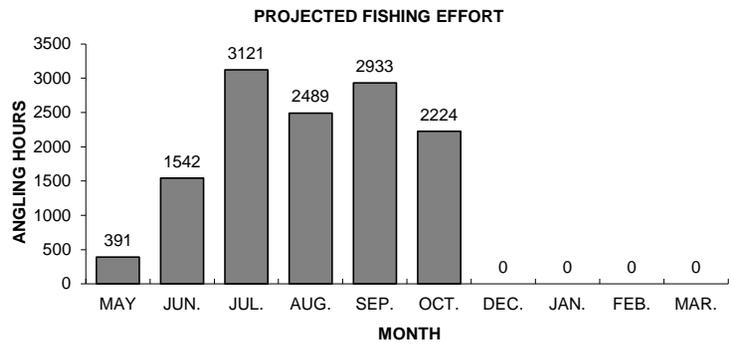


Figure 2. Northern pike sportfishing effort, catch, harvest, and length distribution, Ballard Chain, during 2011-12.



MUSKELLUNGE

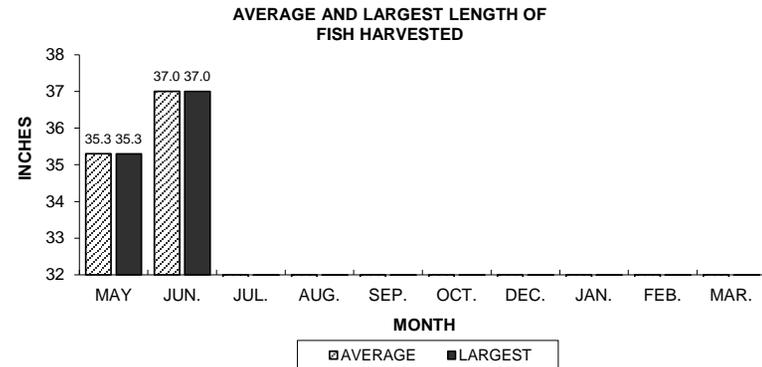
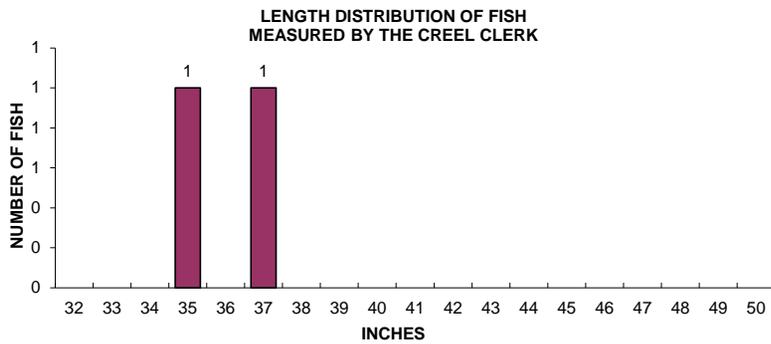
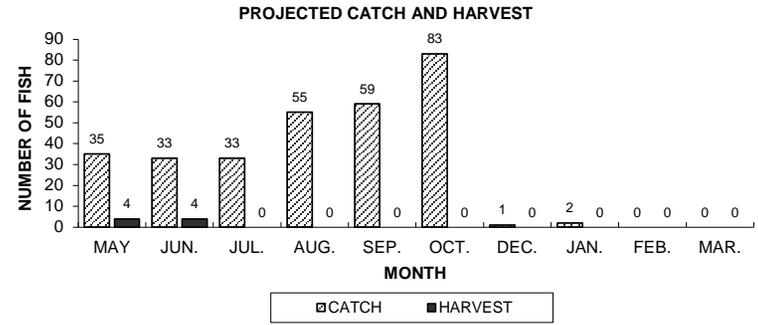
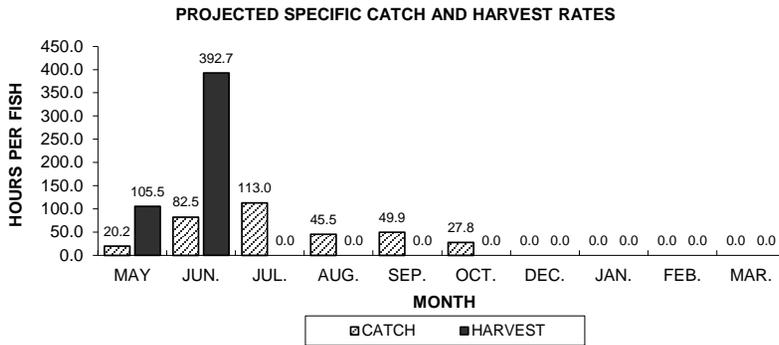


Figure 3. Muskellunge sportfishing effort, catch, harvest, and length distribution, Ballard Chain, during 2011-12.

SMALLMOUTH BASS

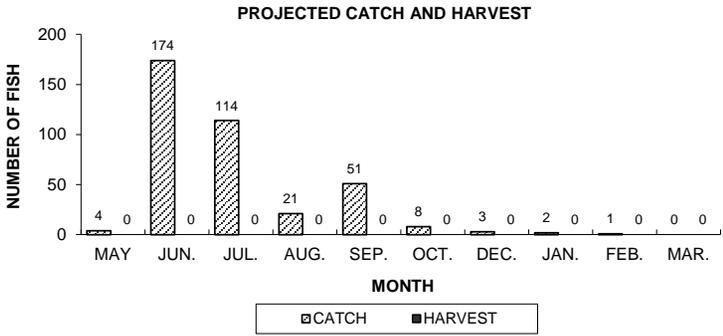
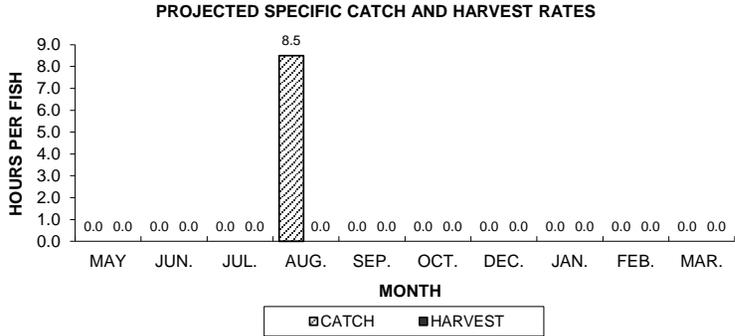
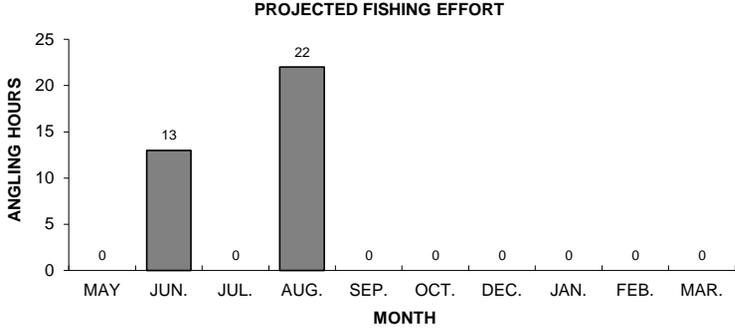
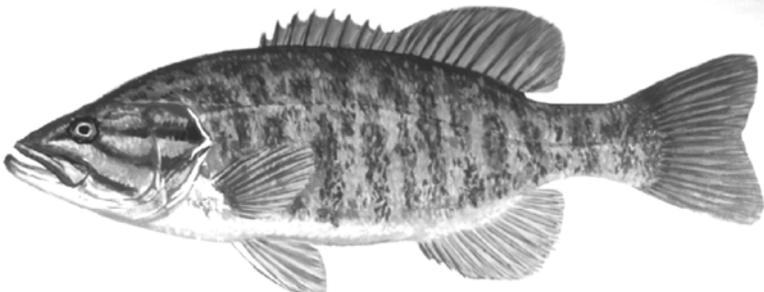


Figure 4. Smallmouth bass sportfishing effort, catch, harvest, and length distribution, Ballard Chain, during 2011-12.

LARGEMOUTH BASS

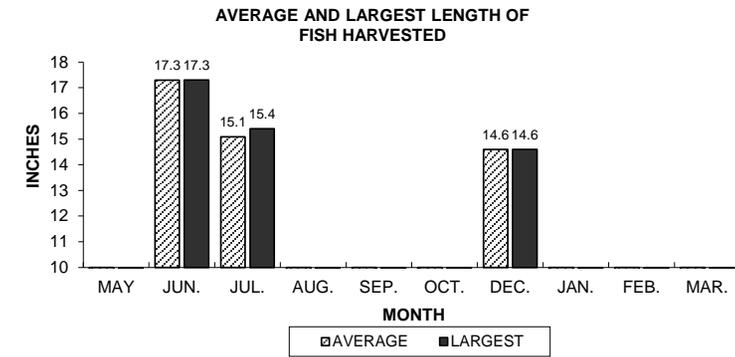
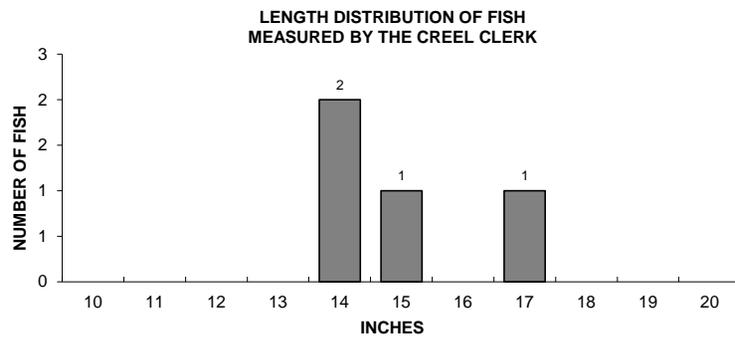
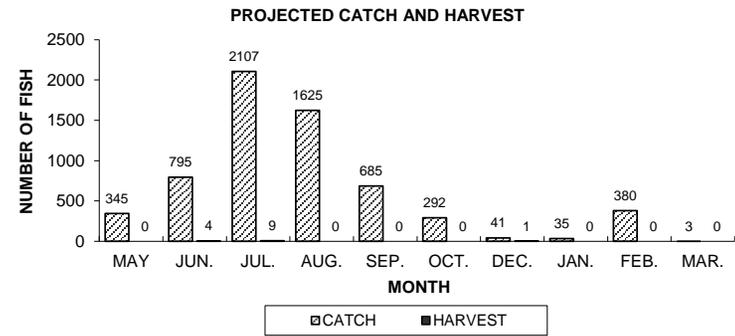
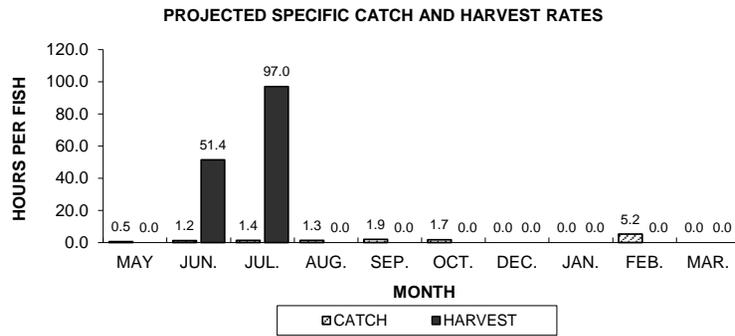
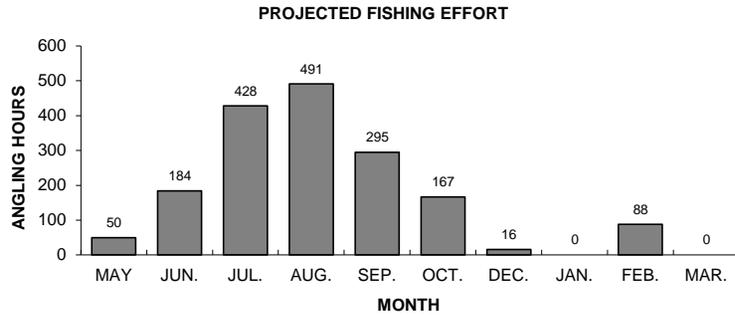
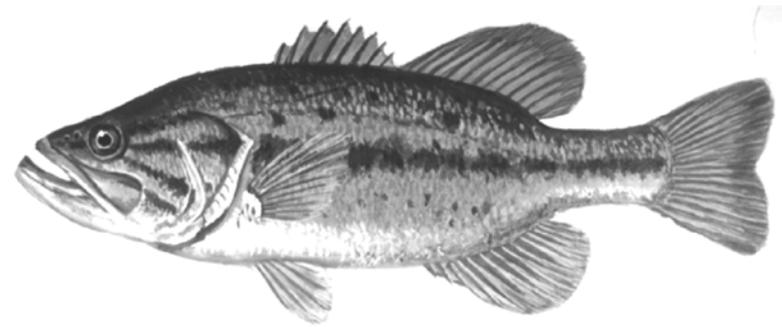


Figure 5. Largemouth bass sportfishing effort, catch, harvest, and length distribution, Ballard Chain, during 2011-12.

YELLOW PERCH

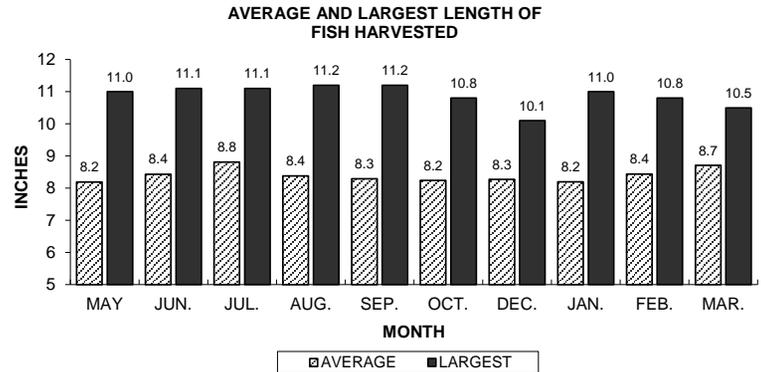
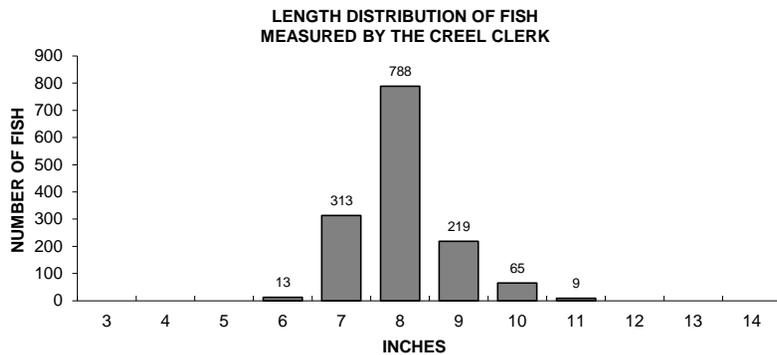
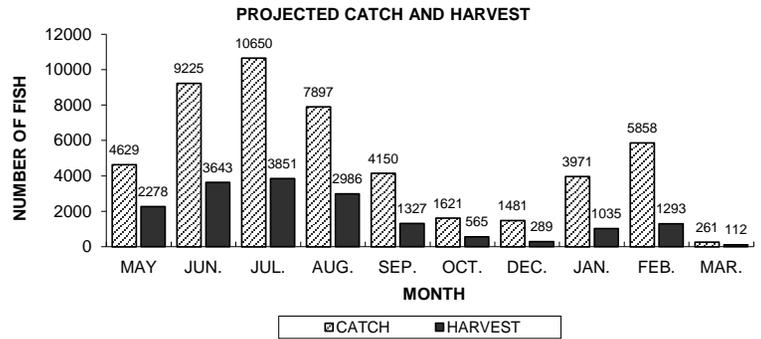
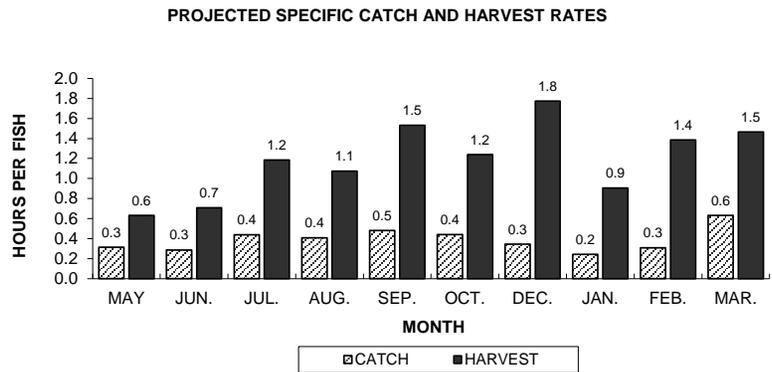
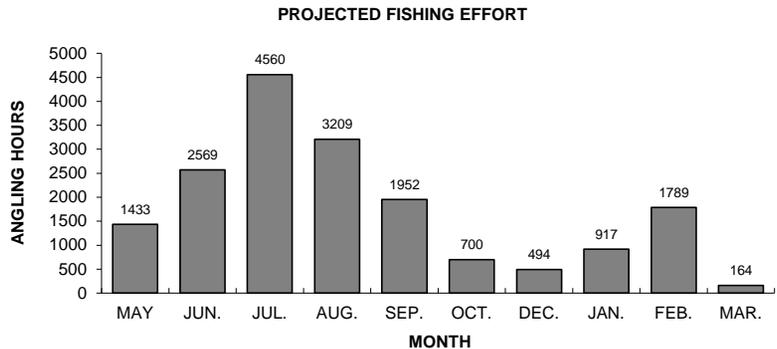


Figure 6. Yellow perch sportfishing effort, catch, harvest, and length distribution, Ballard Chain, during 2011-12.

BLUEGILL

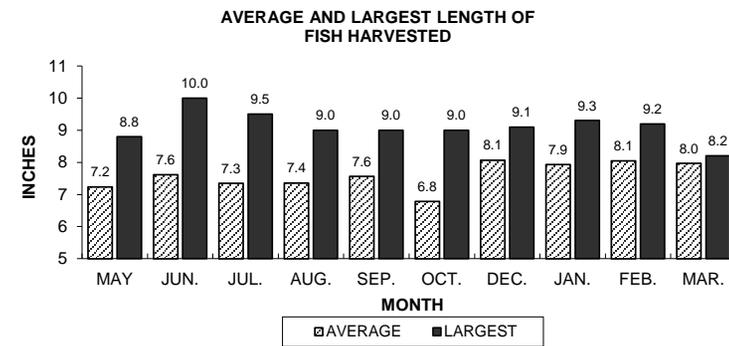
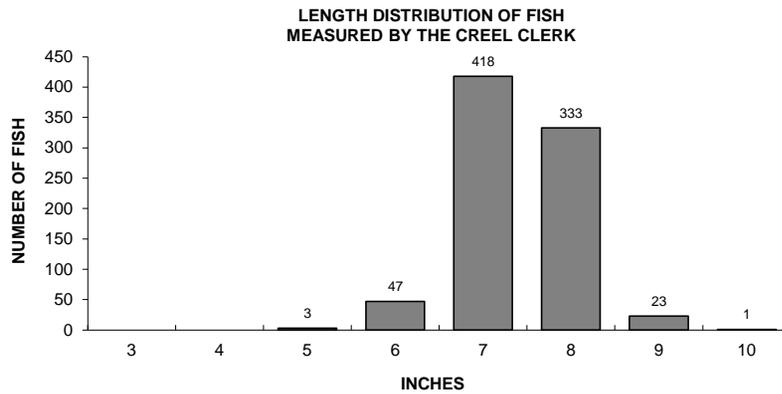
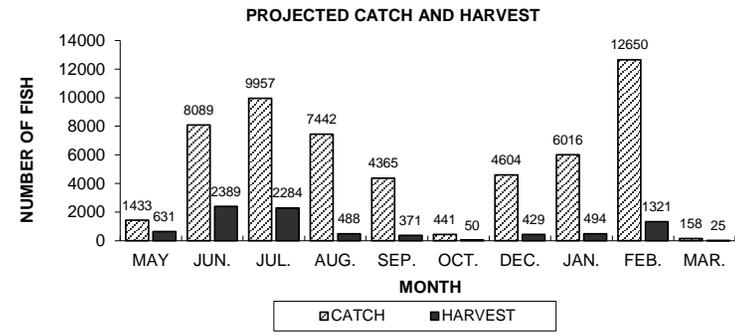
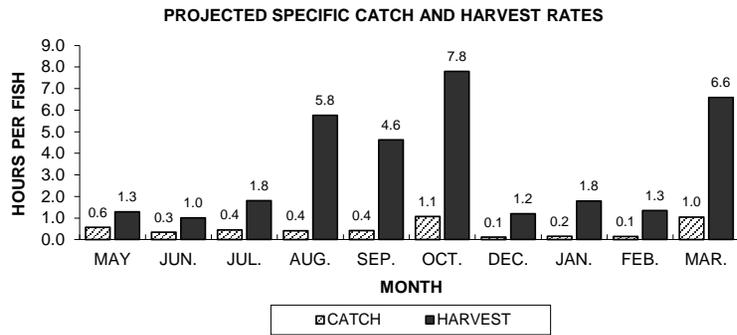
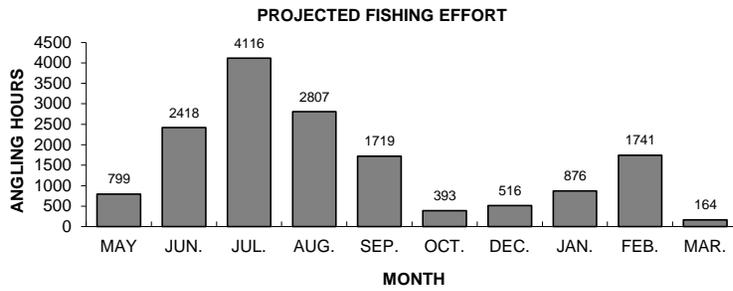
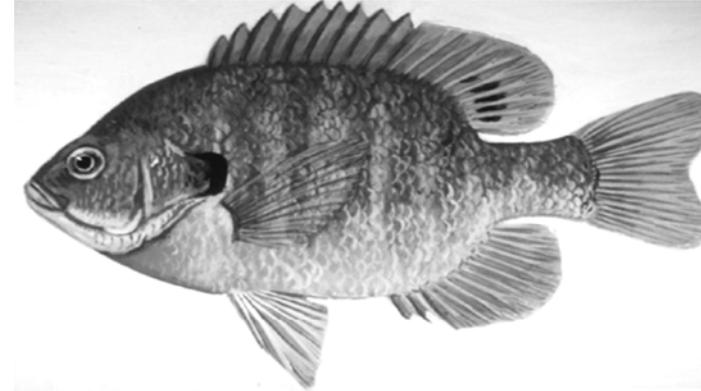


Figure 7. Bluegill sportfishing effort, catch, harvest, and length distribution, Ballard Chain, during 2011-12.

PUMPKINSEED

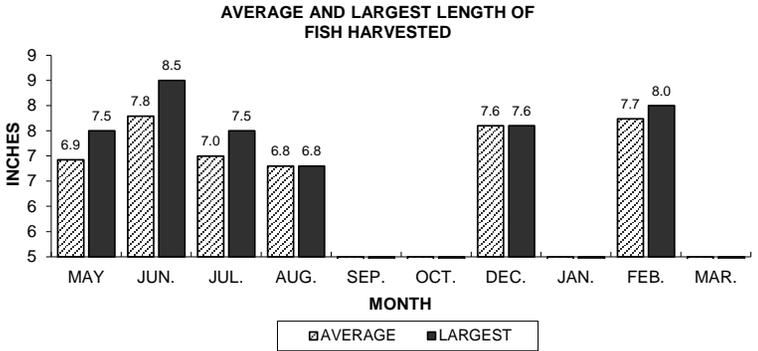
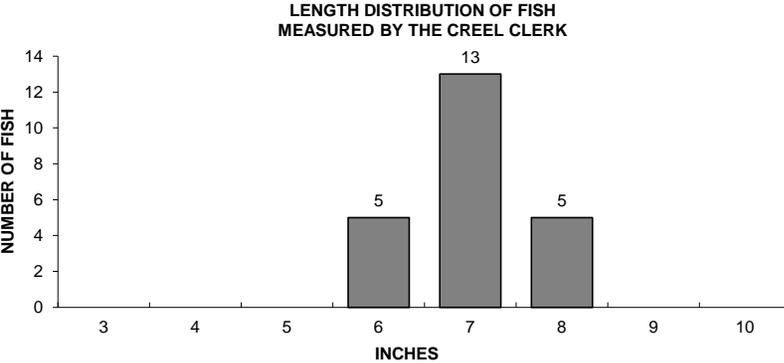
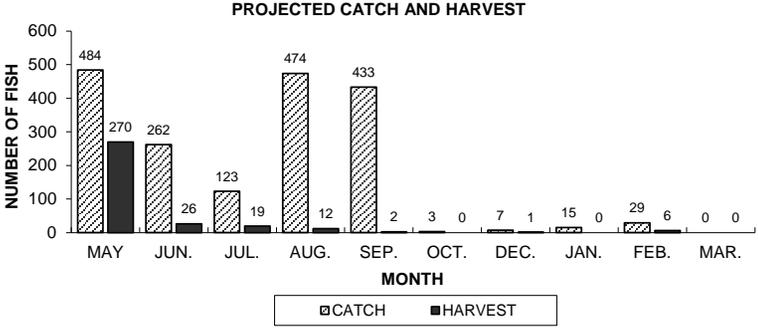
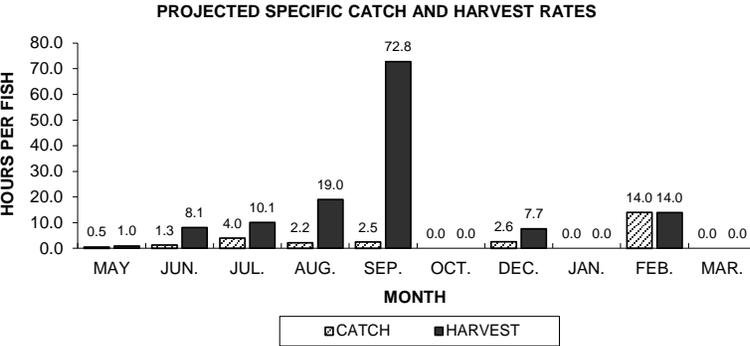
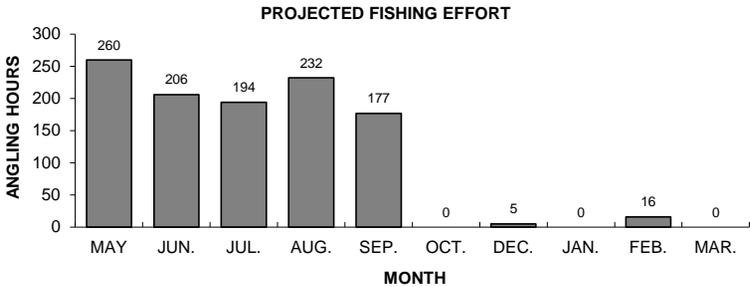
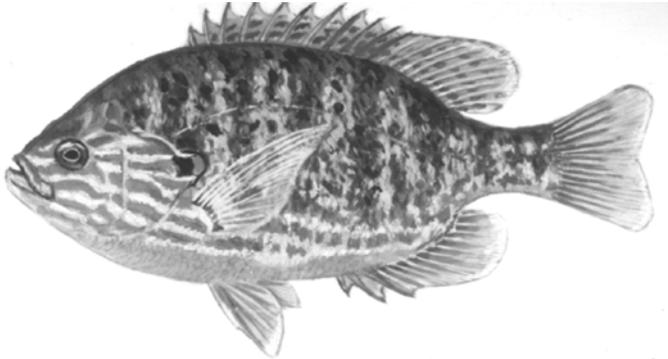


Figure 8. Pumpkinseed sportfishing effort, catch, harvest, and length distribution, Ballard Chain, during 2011-12.

ROCK BASS

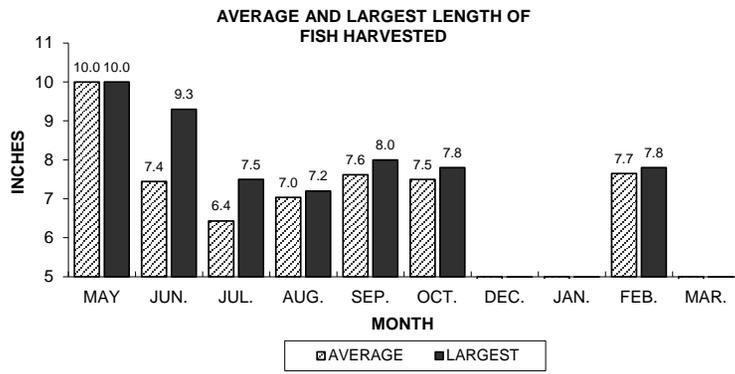
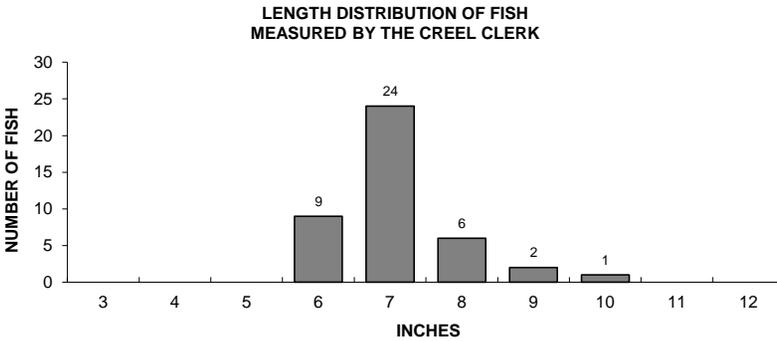
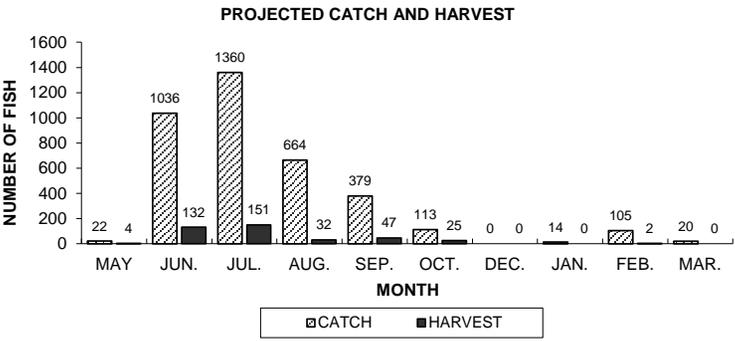
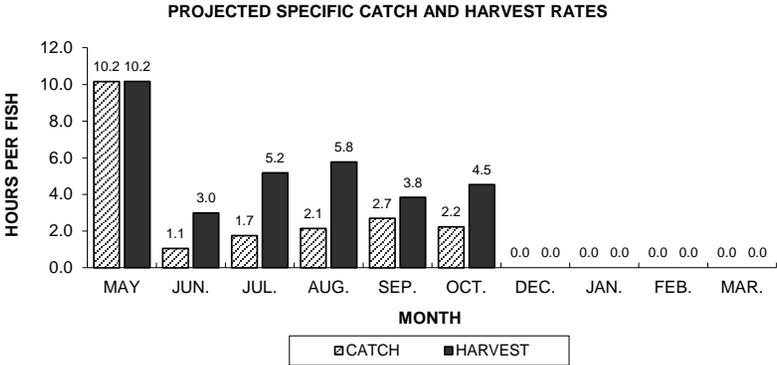
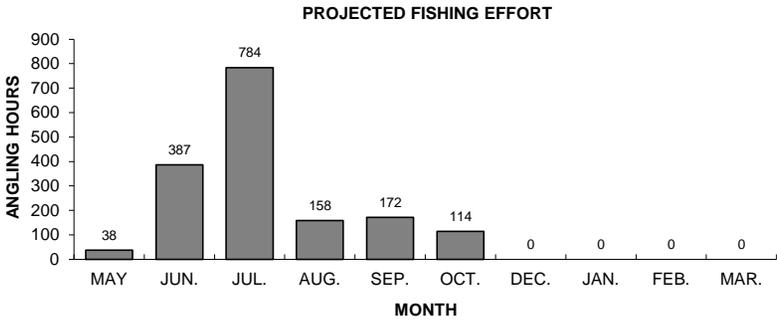
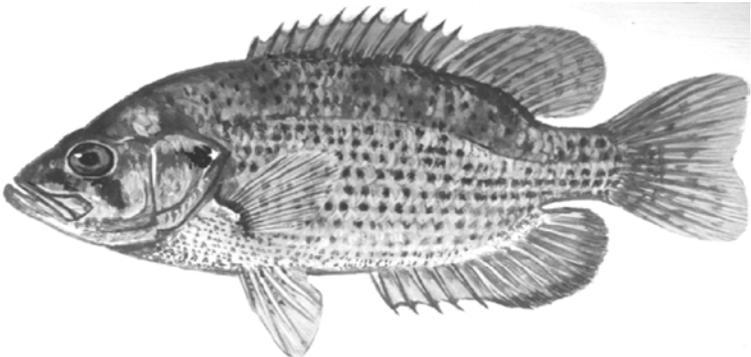


Figure 9. Rock bass sportfishing effort, catch, harvest, and length distribution, Ballard Chain, during 2011-12.

BLACK CRAPPIE

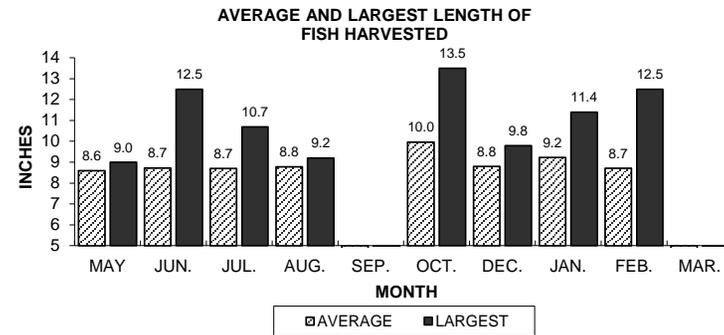
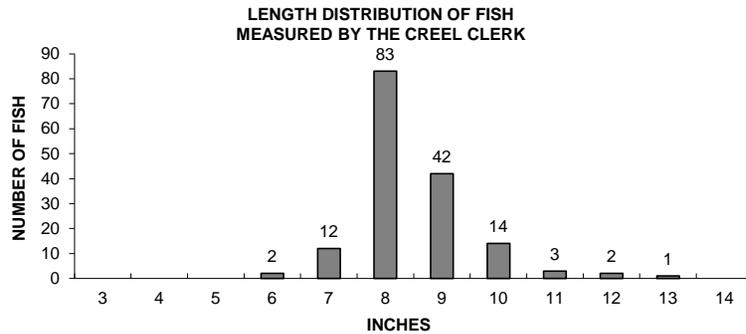
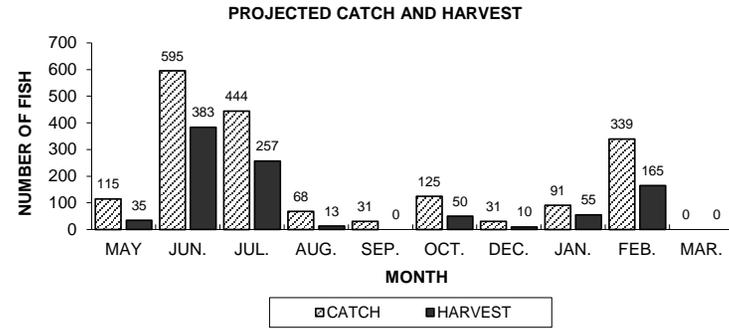
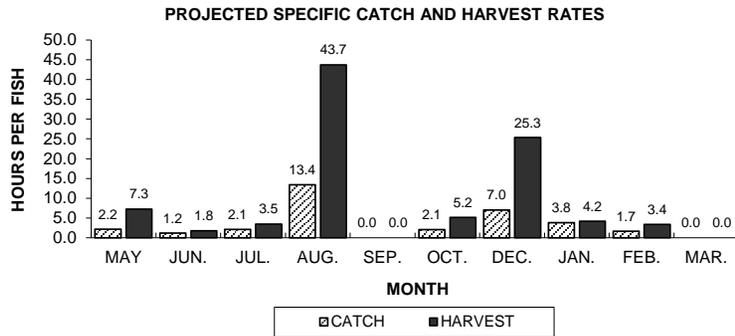
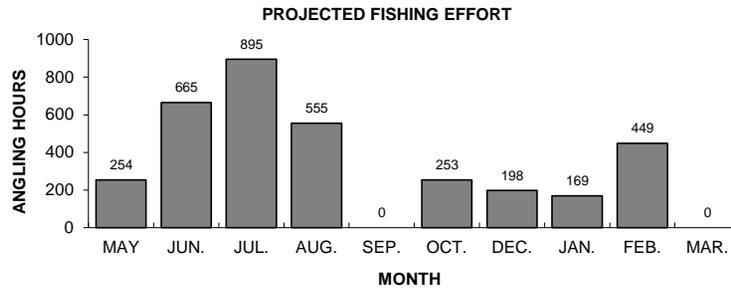
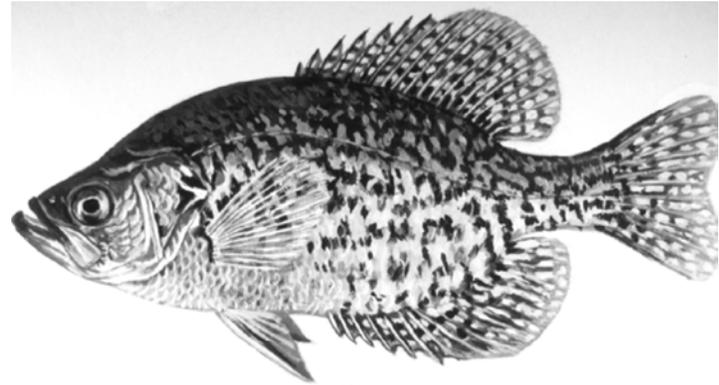


Figure 10. Black crappie sportfishing effort, catch, harvest, and length distribution, Ballard Chain, during 2011-12.