

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

TWIN CHAIN

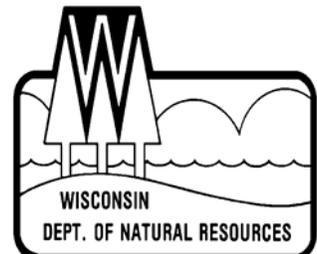
VILAS COUNTY

2007-08



Treaty Fisheries Publication

**Written by Tim Tobias
Treaty Fisheries Technician
Wisconsin DNR
Woodruff, Wisconsin**



CONTENTS

INTRODUCTION	1
GENERAL LAKE INFORMATION	2
Location	2
Physical Characteristics	2
Seasons Surveyed	2
Weather	2
Sportfishing Regulations.....	2
SPECIES CATCH AND HARVEST INFORMATION	2
CREEL SURVEY RESULTS AND DISCUSSION	3
Survey Logistics	3
General Angler Information.....	3
SPECIES INFORMATION AND ACKNOWLEDGMENTS	3-4
CONTACT INFORMATION.....	5

SUMMARY TABLES

Table 1. Sportfishing effort summary	6
Table 2. Creel survey synopsis	7

SPECIES CATCH AND HARVEST INFORMATION

Gamefish

Figure 1. Walleye.....	8
Figure 2. Northern Pike	9
Figure 3. Muskellunge	10
Figure 4. Smallmouth Bass	11
Figure 5. Largemouth Bass.....	12

Panfish

Figure 6. Yellow Perch	13
Figure 7. Bluegill	14
Figure 8. Pumpkinseed.....	15
Figure 9. Rock Bass	16
Figure 10. Black Crappie	17

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.

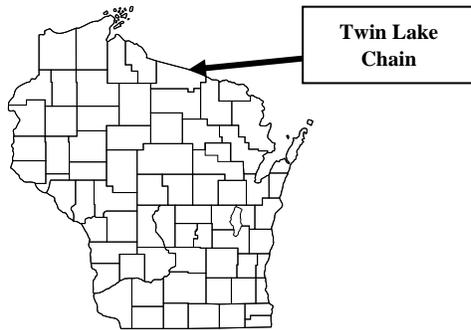
Creel survey clerks travel their lakes using a boat or snowmobile to count numbers of anglers on a lake at predetermined times, and to interview anglers who have completed their fishing trip to collect data on what species they fished for, catch, harvest, lengths of fish harvested, marks (finclips or 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.

Also included are general information about the lake, discussion of results of the survey, and detailed summaries, by species, of fishing effort, catch and harvest.

GENERAL LAKE INFORMATION



Location

The Twin Lake Chain is located in the town of Phelps in Vilas County.

Physical Characteristics

North and South Twin Lake cover a combined 3,430 acres, have a maximum depth of 45 feet, and 13.7 miles of total shoreline. It is a moderately fertile drainage lake. The outlet is controlled by a dam operated by the Wisconsin Valley Imporvement Company. Bottom substrate is seventy- percent sand, twenty- percent muck, and ten-percent gravel. Ninety percent of the shoreline is privately owned. There are three public launches on the chain.

Seasons Surveyed

The creel survey started on opening day (May 5th) of the 2007 gamefishing season and ran through March 02, 2008. The only portion of the gamefishing season not covered by the survey was November 1 to December 1, due to unsafe ice conditions.

Weather

Spring weather conditions were normal. Ice cleared the lake on approximately April 22nd.

Harvest Regulations

The following seasons, daily bag limits, and length limits were in place on The Twin Lake Chain during the 2007 gamefish season.

<u>Species</u>	<u>Season</u>	<u>Bag Limit</u>	<u>Minimum Size</u>
Largemouth Bass & Smallmouth Bass	5/5-6/15	catch and release	
Muskellunge	5/5-3/02	5 of each	14 inches
Northern Pike	5/26-11/30	1	34 inches
Walleye	5/5-3/02	3*	15"
Panfish	none	25	none

* The statewide bag limit was 5 fish, but due to tribal declarations it was reduced on this lake.

SPECIES CATCH AND HARVEST INFORMATION

Angling information is summarized for each species caught or fished for (Figures 2-10). Each species page has up to five graphs depicting the following:

- ESTIMATED FISHING EFFORT**
 Total calculated number of hours during each month that anglers spent fishing for a species.
- ESTIMATED 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.
- ESTIMATED CATCH AND HARVEST**
 Calculated number of fish of the indicated species caught or harvested

by all anglers regardless of their intended target.

4. LENGTH DISTRIBUTION OF HARVESTED FISH

All fish of a species that were measured by the creel clerk during the entire survey season.

5. LARGEST AND AVERAGE LENGTH OF FISH HARVESTED

Largest and average length of harvested fish of the indicated species measured by the creel clerk each month.

Survey Logistics

There were no unusual problems associated with the survey. The department also conducted creel surveys in 1996 and 1991.

General Angler Information

Anglers spent 93,946 hours fishing the Twin Chain within the standard daylight survey period during the 2007-08 gamefishing season (Table 1). Fishing activity during the 2007 fishing season peaked in June (19,196 hours) and was lowest in December (4,185 hours).

SPECIES INFORMATION

Walleye (Table 2, Figure 1)

Walleye were the most sought after target of anglers who fished the Twin Chain during the 2007 gamefishing season. Anglers directed 44,278 hours of effort at walleye within the standard daylight survey period during the 2007 season. That was almost double the hours that walleye anglers focused on Twin Lake walleye during the 1996 season (22,765 hours).

Anglers caught 22,052 and harvested 3,801 walleye from the Twin Chain during the

2007 season. The 2007 catch of 22,052 fish was 2.5 times higher than the 1996 catch of 8,824 fish. Projected harvest increased by 1,444 walleye from 2,357 in 1996 to 3,801 fish harvested in 2007.

Walleye anglers spent less time on average to catch a walleye during the 2007 season (2.0 hours) than during the 1996 season (2.6 hours). This may have been due to an increase in walleyes under 15 inches found in the 2007 spring fisheries survey. The number of fish under 15 inches jumped from an estimated population of 7,587 fish in 1996 to 9,109 fish in 2007. Walleye anglers also expended more effort to harvest a walleye from the Twin Chain in 2007 (11.7 hours) than in 1996 (9.8 hours).

The average length of walleye harvested was 15.9 inches in 2007 compared to 18 inches in 1996.

Walleye fishing effort on the Twin Chain during the 2007 season was highest in May (9,079 hours). Catch (6,454) was highest in May, and harvest (916) of walleye was highest in February. The largest harvested walleye measured by the creel clerk was a 29.1-inch fish caught in August.

Northern Pike (Table 2, Figures 2)

Although Just a small amount of the Directed effort was for northern pike on the Twin Chain, catch (2,216) has increased considerably from the 1996 survey (14). Anglers devoted 4,121 hours of effort to pursuing northern pike during the 2007 season compared to 0 during the 1996 season.

Muskellunge (Table 2, Figures 3)

A two year netting muskellunge population estimate was completed in 2007. The results of the 2007 adult population showed an increase in the average size of adult

muskellunge from 34 inches in the 1996 survey to approximately 40 inches in the 2007 survey. The 2007 population estimated 467 adult fish (all males, all females and unknowns ≥ 30.0 inches at marking) present, while 1996 population was considerably higher at 1,770 adults

Muskellunge were the second most sought after fish by anglers during the 2007 gamefishing season. About 25 percent of directed effort was focused on muskellunge. Anglers directed 31,466 hours of effort pursuing Muskellunge, down 31% from the 1996 survey (45,549 hours). Total catch of muskellunge decreased from 1,758 in 1996 to 592 in 2007. Catch was highest in June (171 fish). Anglers fished 57 hours to catch a muskellunge during the 2007 season.

The largest Muskellunge measured by the clerk was a 43.9-inch fish, caught in September.

Smallmouth Bass (Table 2, Figures 4)
Smallmouth bass populations are low in the Twin Chain. Only one percent of directed effort was focused on Smallmouth bass.

Total catch of Smallmouth bass decreased from 901 fish in the 1996 survey to 498 fish in 2007. Projected harvest of smallmouth bass was twelve fish.

Largemouth Bass (Table 2, Figure 5)
Less than one percent of directed effort was focused on largemouth bass. Catch rate increased from 254 fish in 1996 to 561 fish in the 2007 survey.

Panfish (Table 2, Figures 1&6-17)
An estimated 15,009 yellow perch were harvested from the Twin Chain in 2007, up from 12,307 fish in 1996. The greatest monthly catch of yellow perch during the 2007 season occurred in December (9107

fish). The number of yellow perch caught in 2007 (39481) was 29 % lower than the catch in 1996 (50,887 fish). The average length of yellow perch measured by the clerk was 8.6 inches in 2007 compared to 8.1 in the 1996 survey.

Twelve percent of directed effort was focused on bluegill. Anglers caught 22,531 and harvested 7,258 during the 2007 season. The average length of bluegill measured was 6.7 inches. Anglers caught over 3 times more bluegill in 2007 compared to the 1996 season, but average length was similar at 6.5 inches.

Other species of panfish taken, but considered of only minimal importance during the 2007 survey include rock bass, pumpkinseed and black crappie.

ACKNOWLEDGEMENTS

Lynn Robinson was the survey clerk on the lake from May through October, and Doug Day from December through March.

We also thank all the anglers who took the time to offer information about their fishing trip to the survey clerk. Without your cooperation this survey would not have been possible.

This creel survey report was reviewed by Mike Coshun, Steven 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. Requests should be directed to:

Mike Coshun
Treaty Fisheries Biologist
Wisconsin Department of Natural
Resources
8770 Hwy J
Woodruff, Wi. 54568
(715-358-9209)
michael.coshun@dnr.state.wi.us

Table 1. Sportfishing effort summary, North & South Twin Lakes, 2007-08 season.

Month	Total Angler Hours	Total Angler Hours/Acre	Vilas County Average Hours/Acre	Statewide Average Hours/Acre
May	12106	3.5	5.4	5.8
June	19196	5.6	7.1	6.1
July	16230	4.7	7.7	6.4
August	11881	3.5	6.7	5.4
September	9826	2.9	4.2	3.8
October	5303	1.5	2.0	1.6
December	4185	1.2	0.5	1.7
January	5131	1.5	0.7	1.5
February	9365	2.7	0.9	1.3
March	725	0.2	0.1	**
*Summer Total	74541	21.7	34.1	29.1
*Winter Total	19405	5.7	2.1	4.5
Grand Total	93946	27.4	36.2	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 Twin 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 Twin 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 Twin Chain to other lakes statewide.

Table 2. Comparison of creel survey synopses, North & South Twin Lakes, 1996-97 and 2007-08 fishing seasons.

CREEL YEAR: 2007-08

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	44278	35.10%	22052	2.0	3801	11.7	15.9
Northern Pike	4121	3.27%	2216	6.0	880	10.2	23.9
Muskellunge	31466	24.94%	592	57.1	26	1208.8	43.8
Smallmouth Bass	1661	1.32%	498	9.3	12	142.9	14.3
Largemouth Bass	902	0.72%	561	6.6	20	44.6	15.3
Yellow Perch	25900	20.53%	39481	0.7	15009	1.8	8.6
Bluegill	14834	11.76%	22531	0.7	7258	2.1	6.7
Pumpkinseed	1868	1.48%	1764	1.2	669	3.4	6.4
Rock Bass	73	0.06%	402	1.3	85	1.3	7.7
Black Crappie	1044	0.83%	210	7.7	106	9.8	10.6

* 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: 1996-97

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	22765	25.96%	8824	2.6	2357	9.8	18.0
Northern Pike	0	0.00%	23	0.0	23	0.0	28.0
Muskellunge	45549	51.94%	1758	27.9	14	3333.0	42.0
Smallmouth Bass	520	0.59%	901	0.0	0	0.0	0.0
Largemouth Bass	199	0.23%	254	0.0	27	0.0	14.0
Yellow Perch	13145	14.99%	50887	0.3	12307	1.1	8.1
Bluegill	3356	3.83%	7282	0.5	1466	2.3	6.5
Pumpkinseed	1735	1.98%	2424	0.9	250	8.4	6.3
Rock Bass	317	0.36%	689	1.3	131	2.9	7.8
Black Crappie	109	0.12%	377	0.6	377	0.6	10.9

WALLEYE

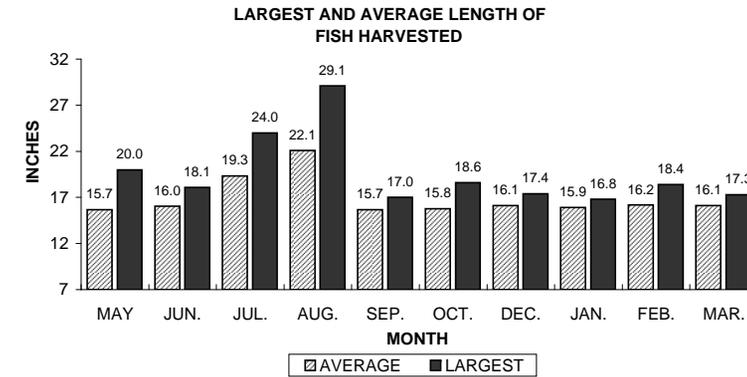
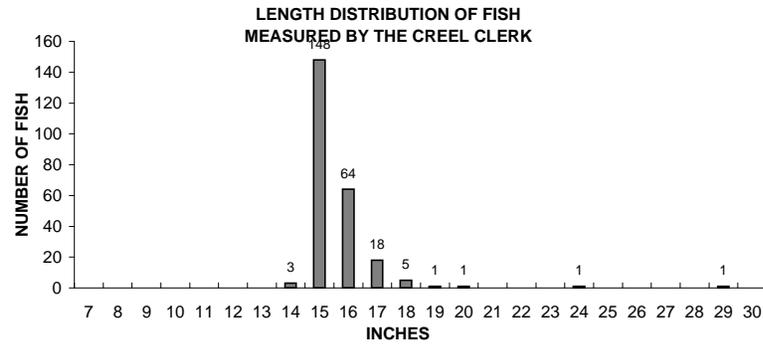
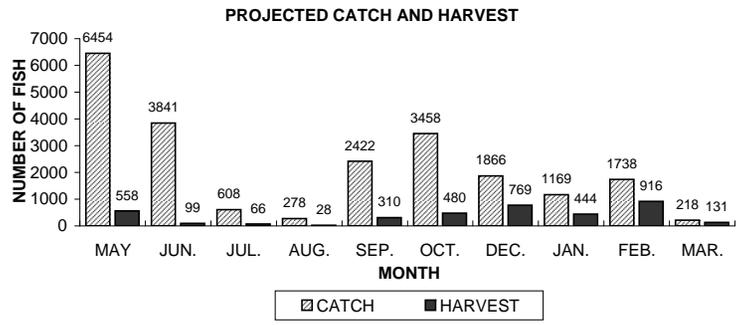
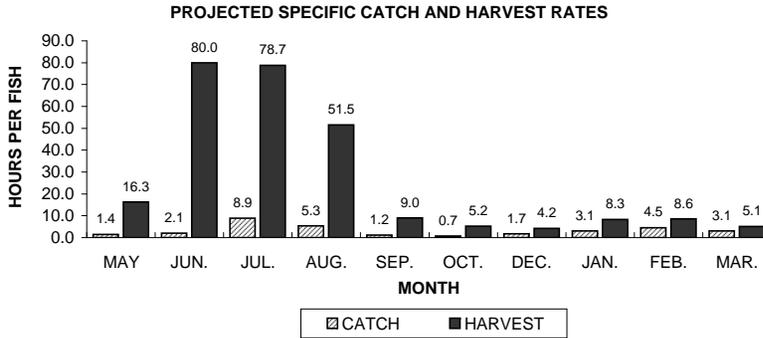
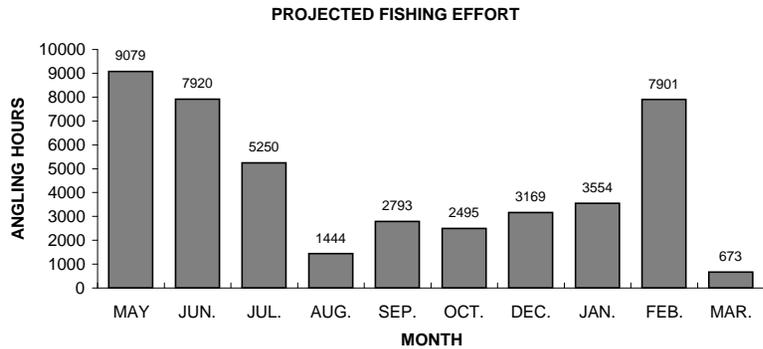
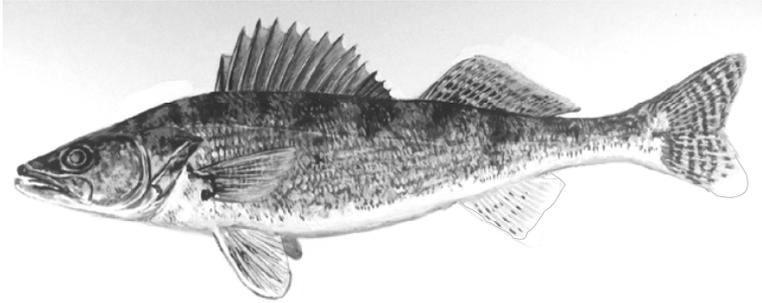


Figure 1. Walleye sportfishing effort, catch, harvest, and length distribution, Twin Chain, during 2007-08.

NORTHERN PIKE

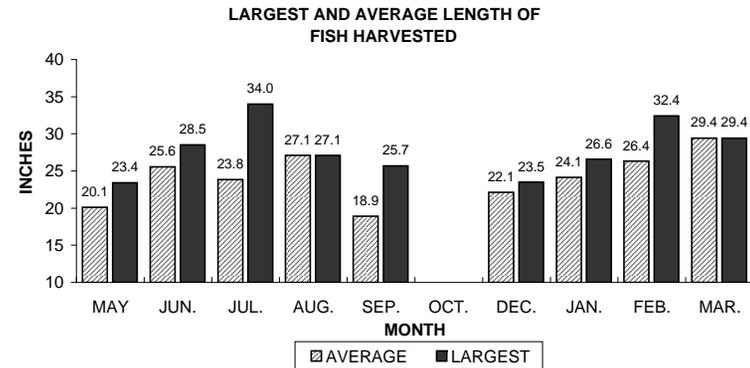
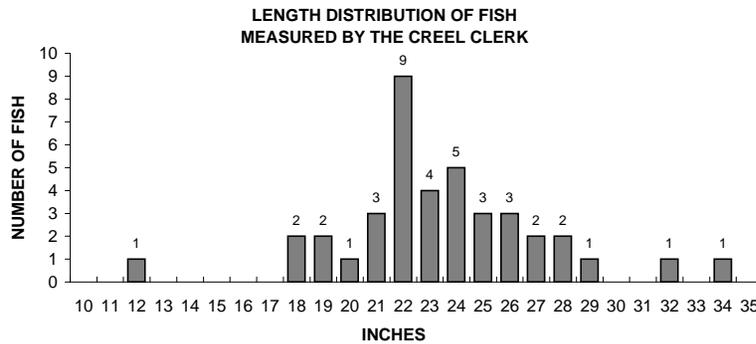
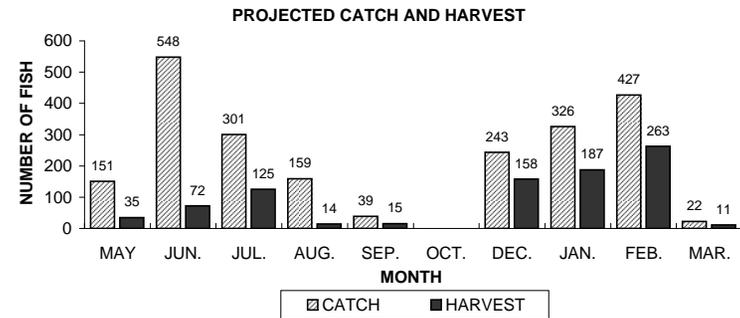
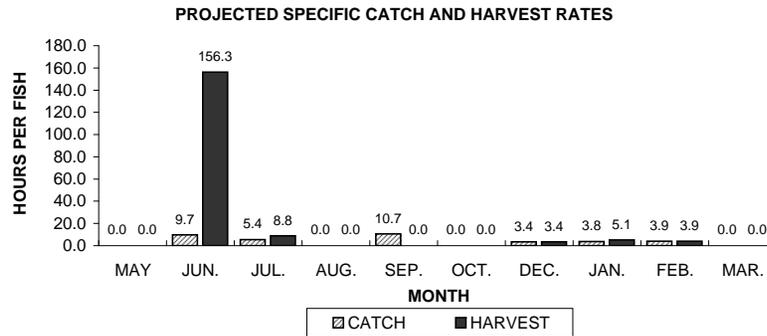
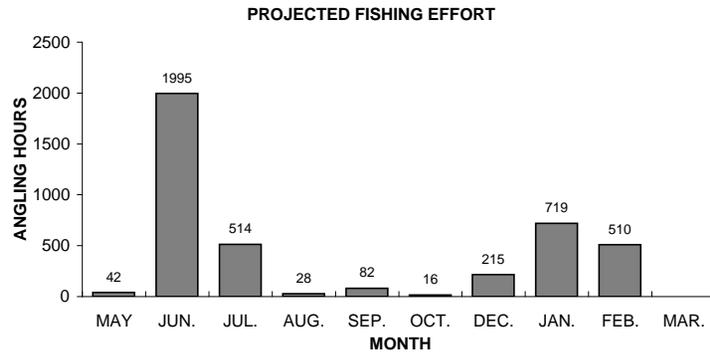
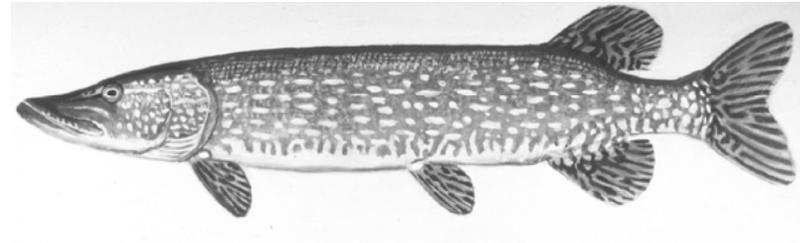


Figure 2. Northern pike sportfishing effort, catch, harvest, and length distribution, Twin Chain, during 2007-08.

MUSKELLUNGE

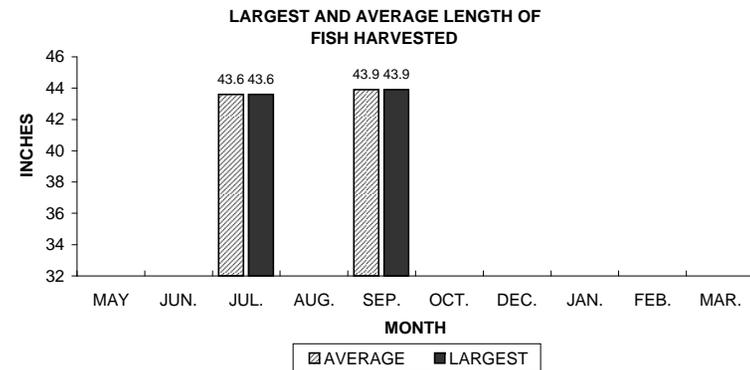
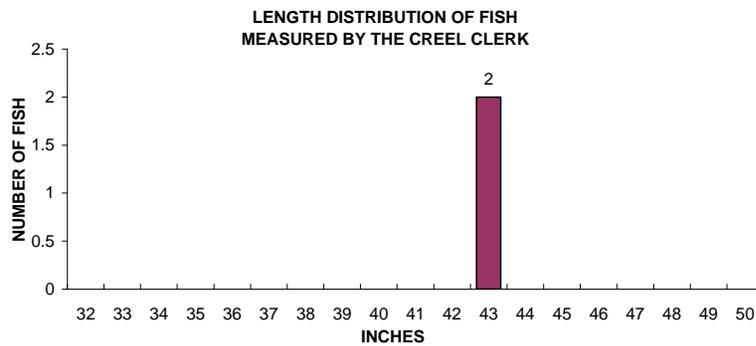
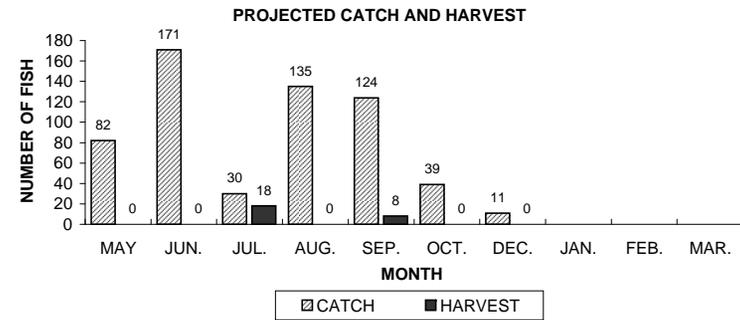
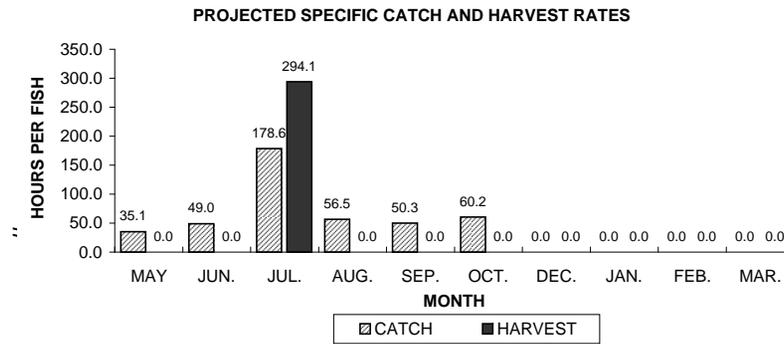
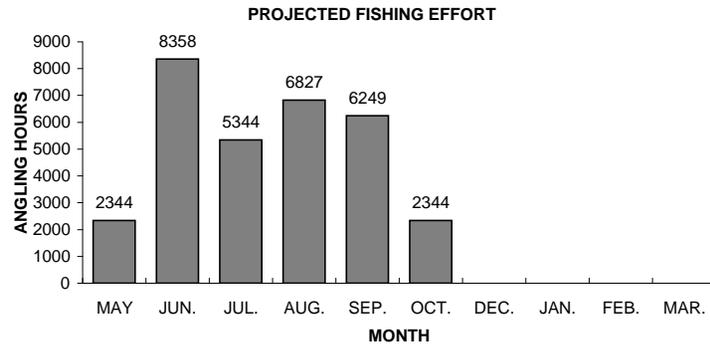
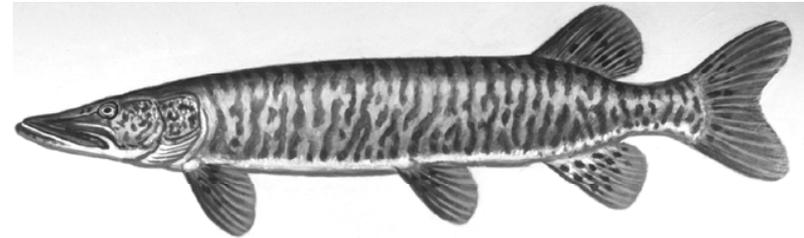


Figure 3. Muskellunge sportfishing effort, catch, harvest, and length distribution, Twin Chain, during 2007-08.

SMALLMOUTH BASS

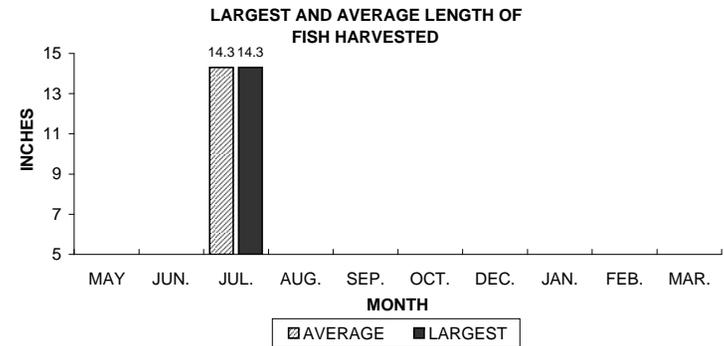
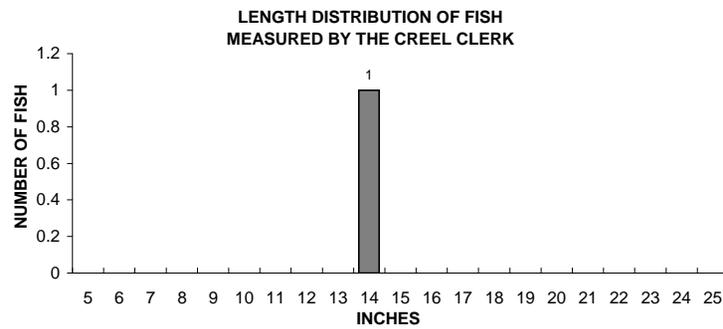
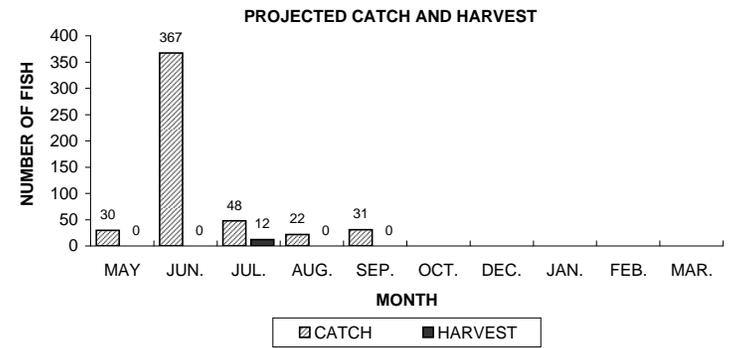
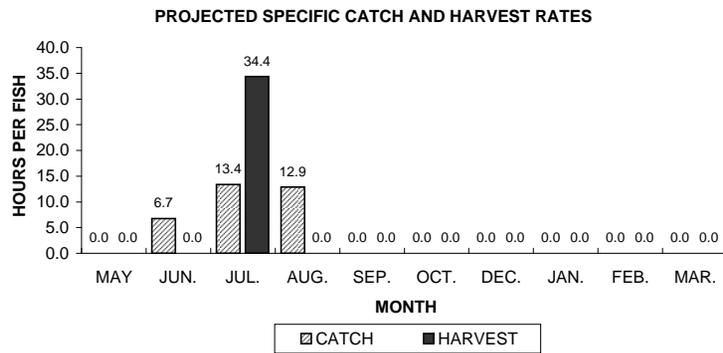
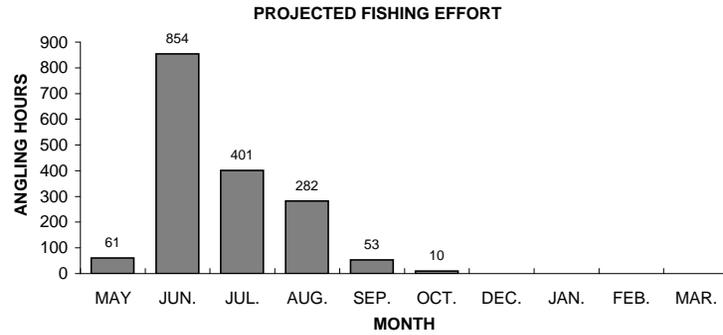
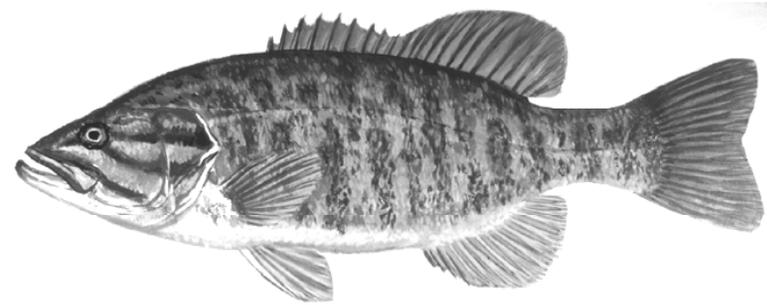


Figure 4. Smallmouth bass sportfishing effort, catch, harvest, and length distribution, Twin Chain, during 2007-08.

LARGEMOUTH BASS

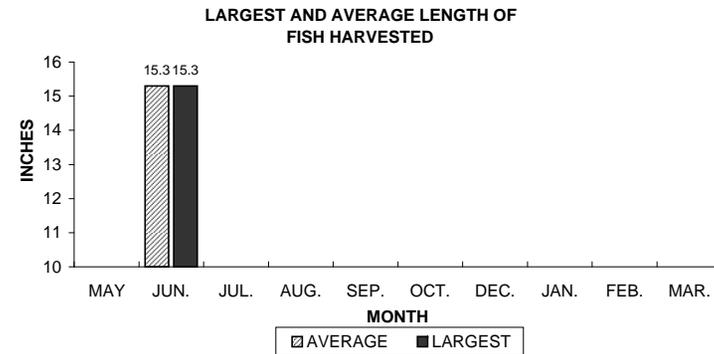
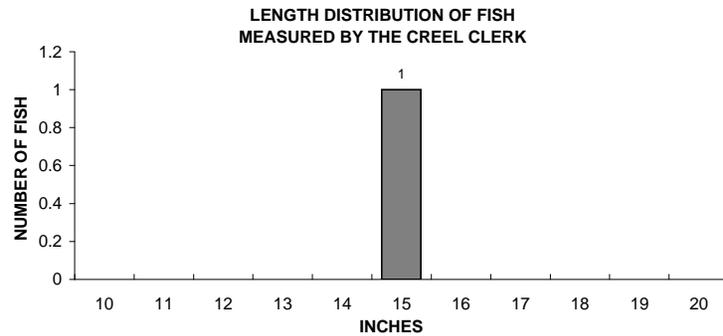
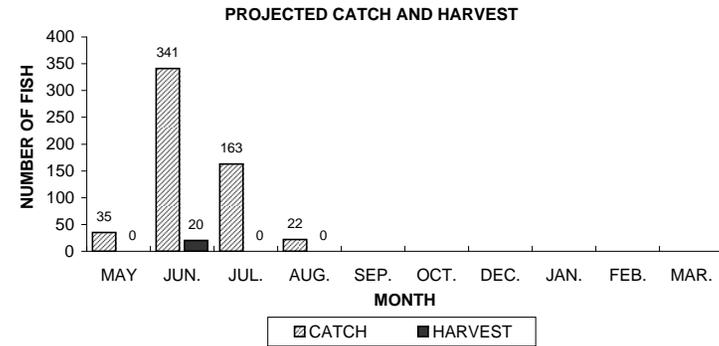
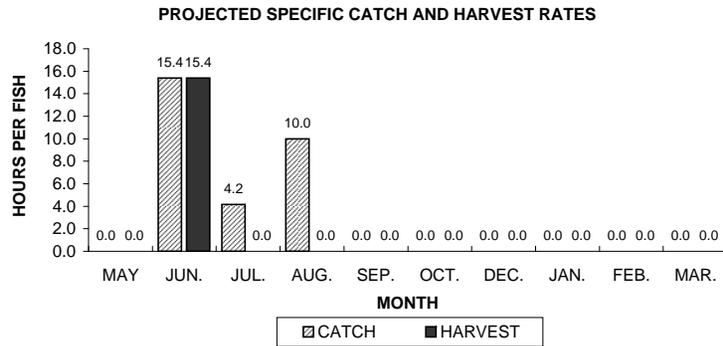
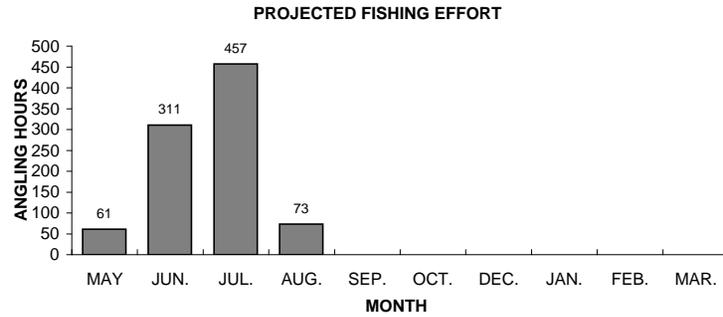
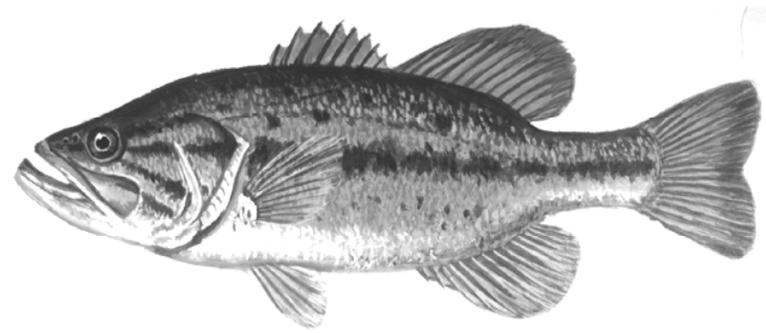


Figure 5. Largemouth bass sportfishing effort, catch, harvest, and length distribution, Twin Chain, during 2007-08.

YELLOW PERCH

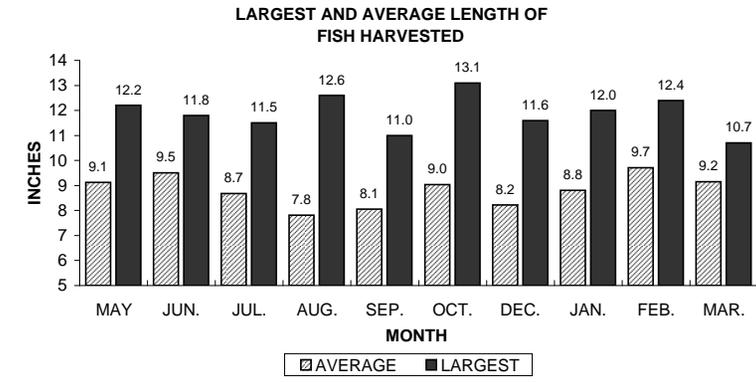
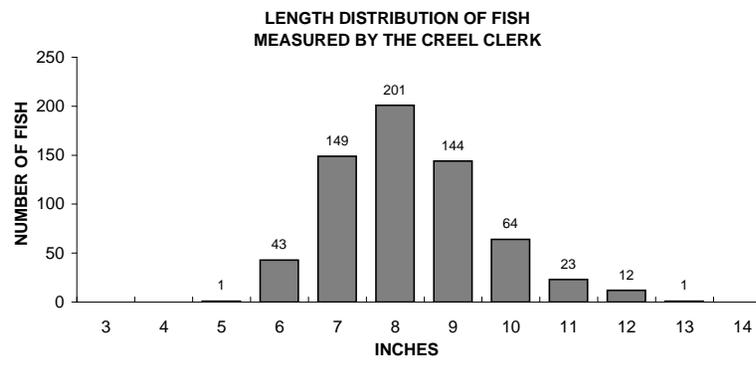
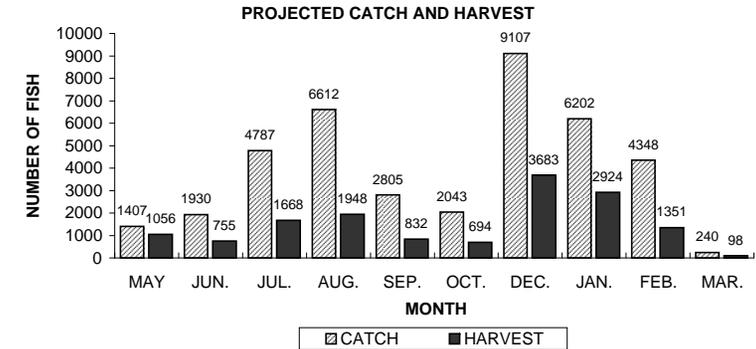
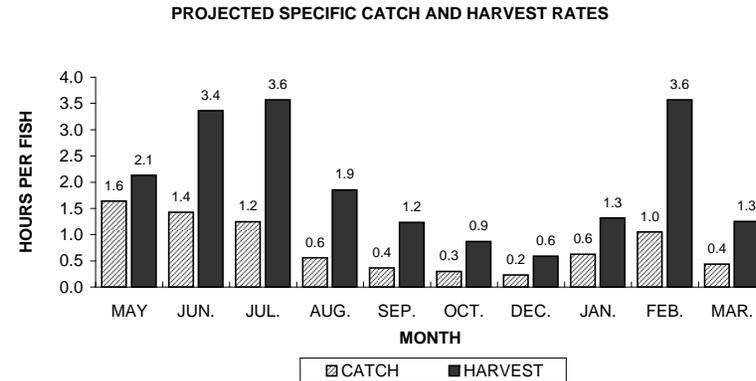
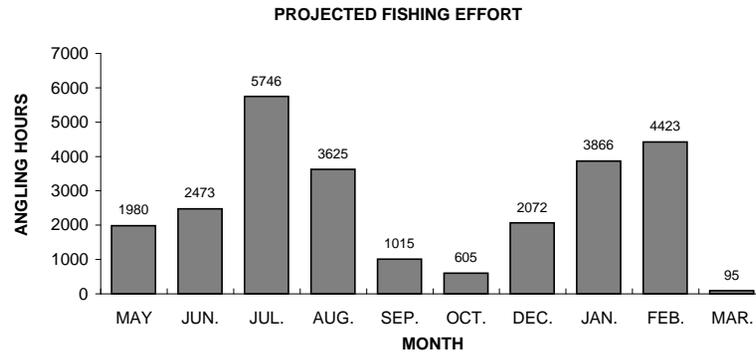
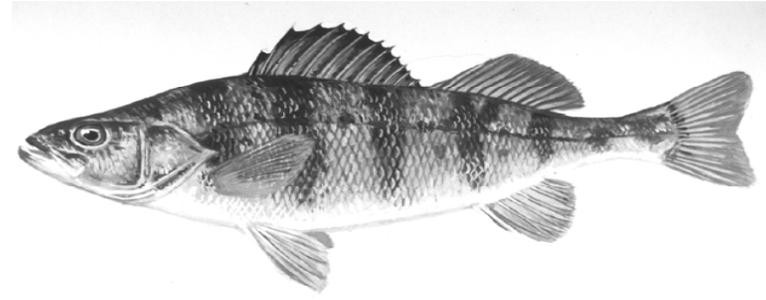


Figure 6. Yellow perch sportfishing effort, catch, harvest, and length distribution, Twin Chain, during 2007-08.

BLUEGILL

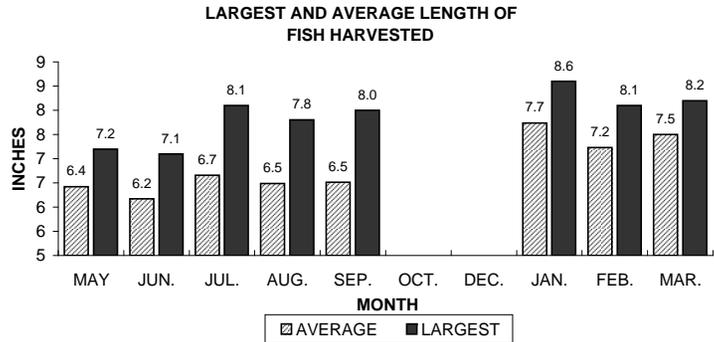
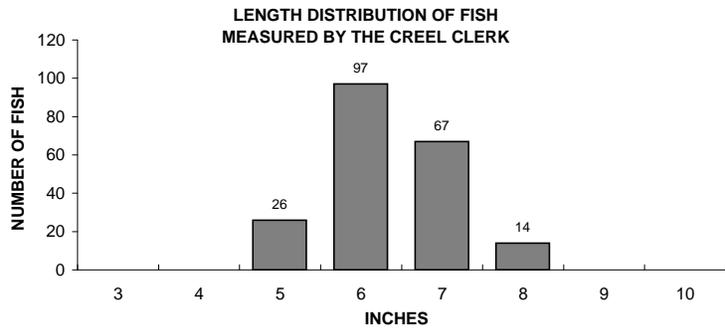
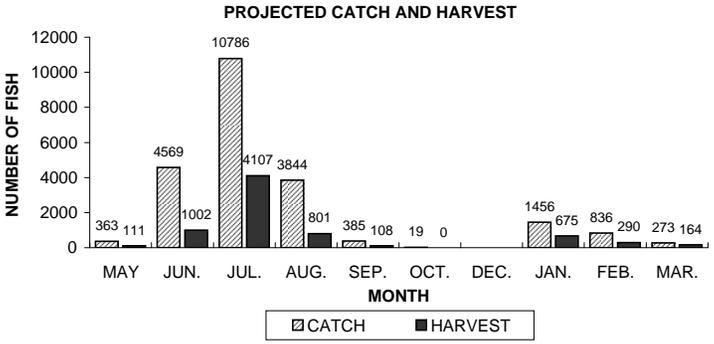
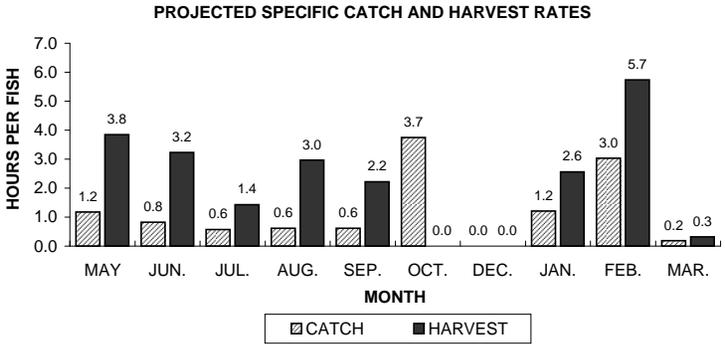
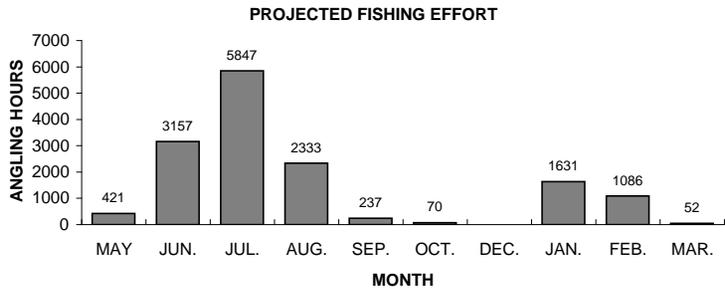
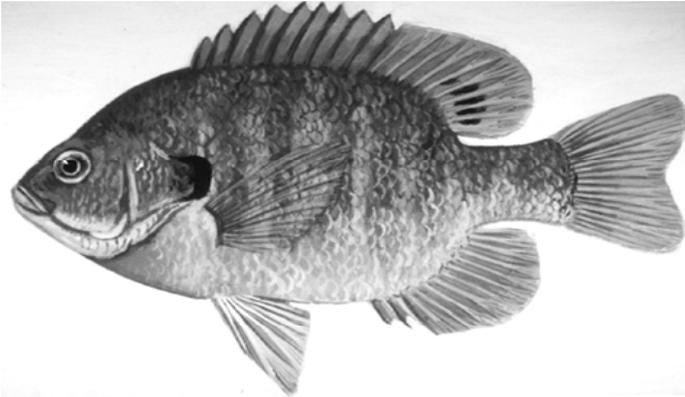


Figure 7. Bluegill sportfishing effort, catch, harvest, and length distribution, Twin Chain, during 2007-08.

PUMPKINSEED

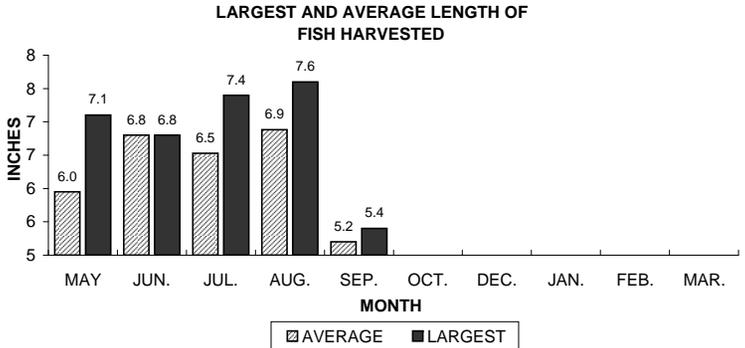
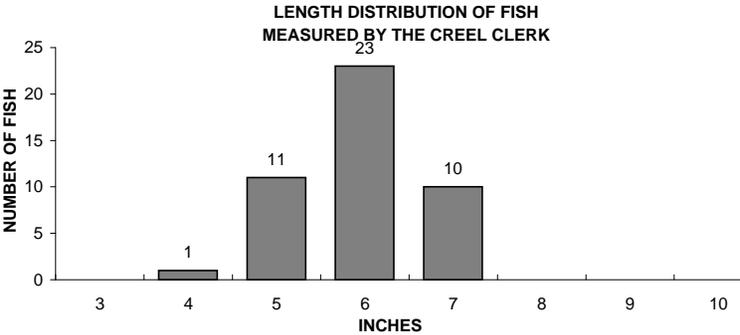
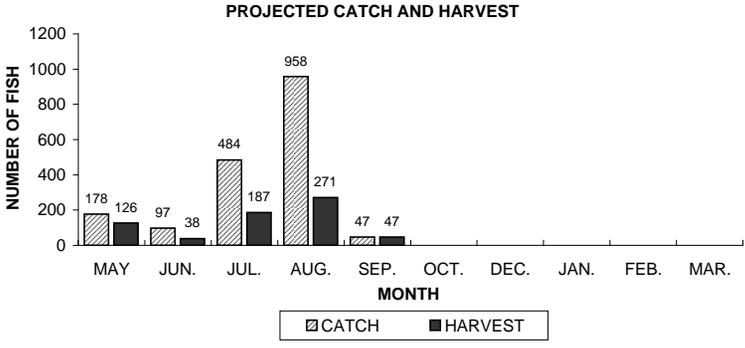
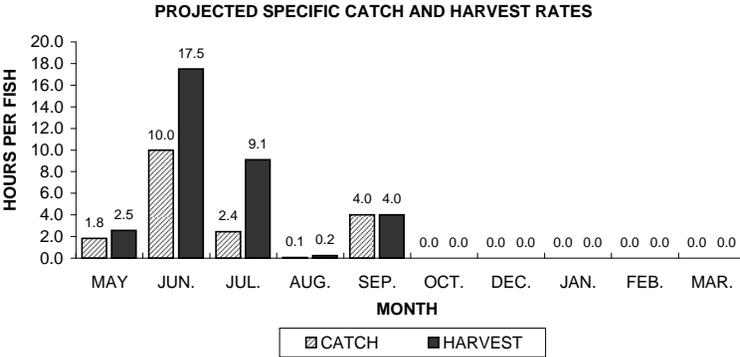
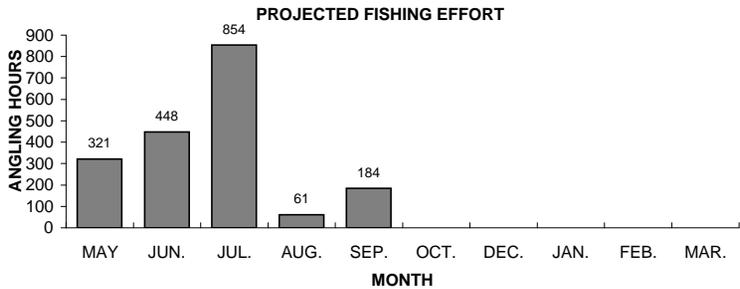
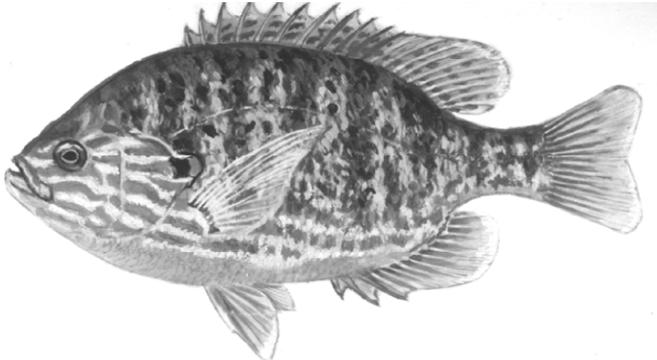


Figure 8. Pumpkinseed sportfishing effort, catch, harvest, and length distribution, Twin Chain, during 2007-08.

ROCK BASS

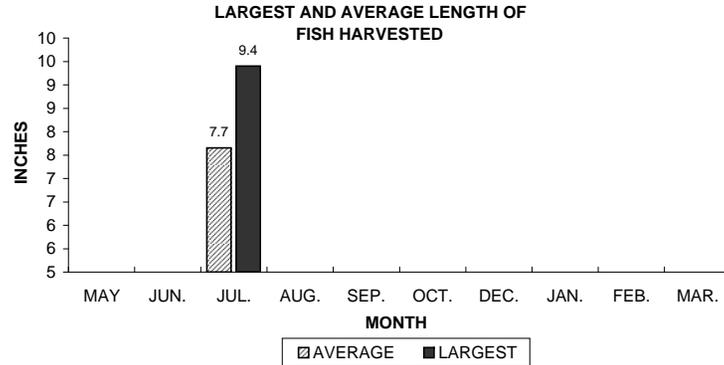
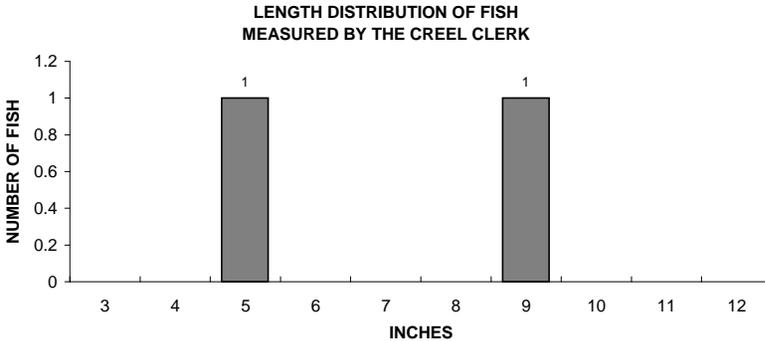
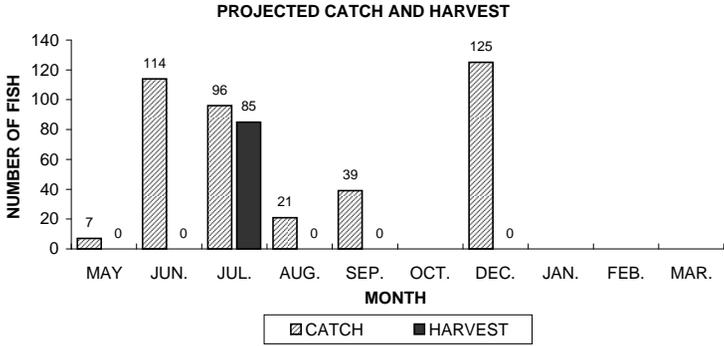
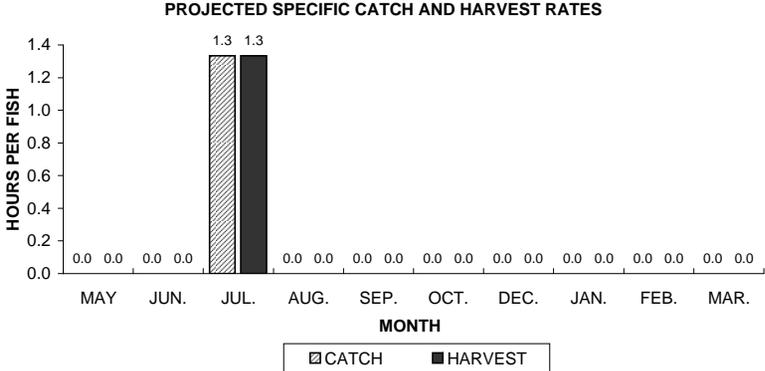
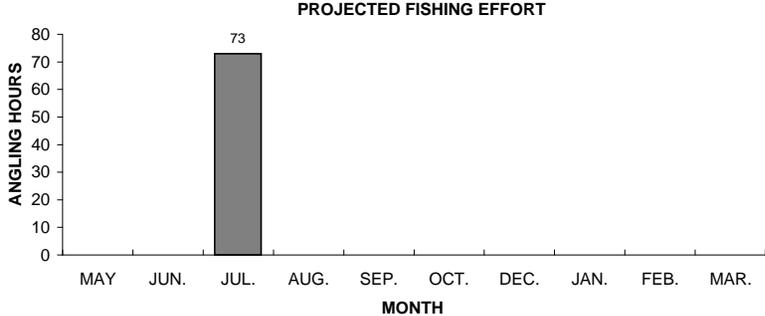
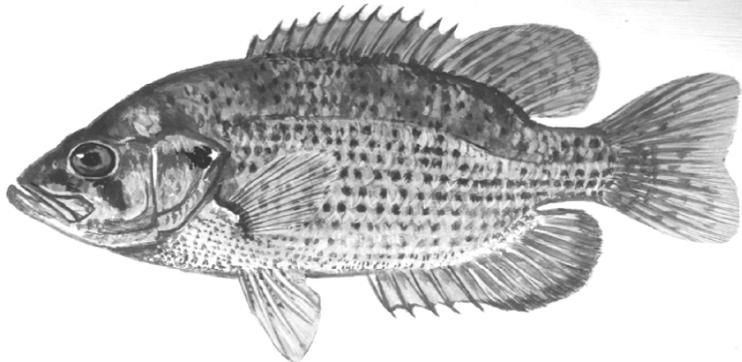


Figure 9. Rock bass sportfishing effort, catch, harvest, and length distribution, Twin Chain, during 2007-08.

BLACK CRAPPIE

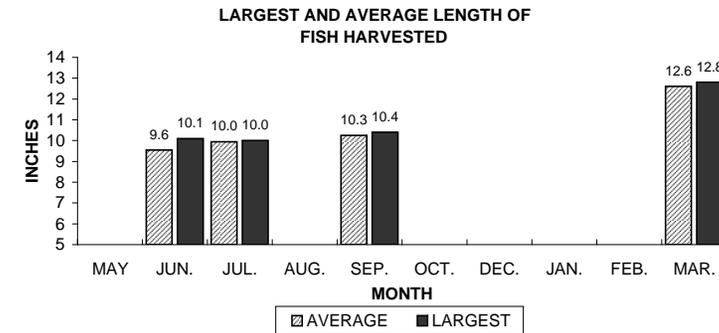
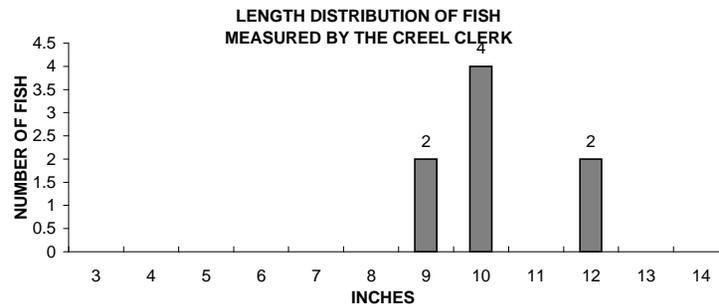
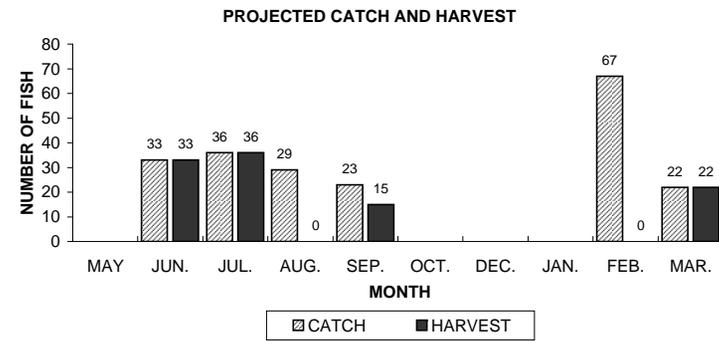
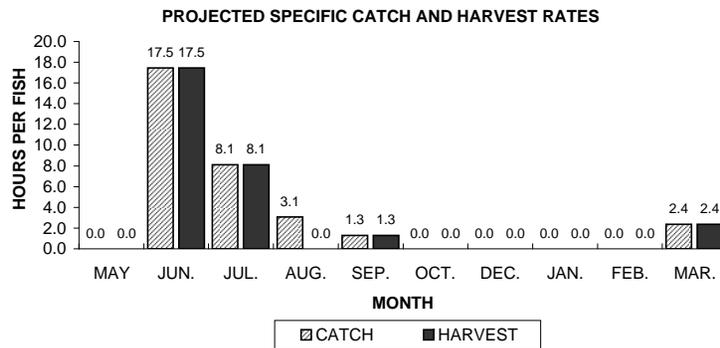
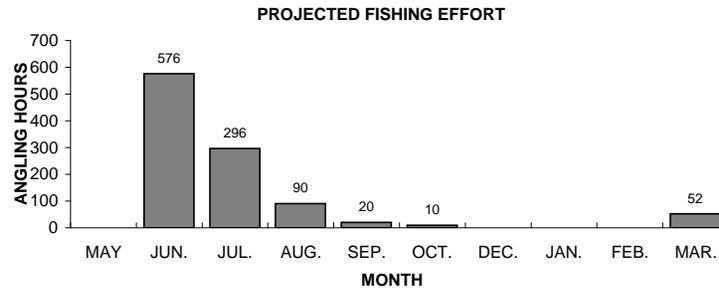
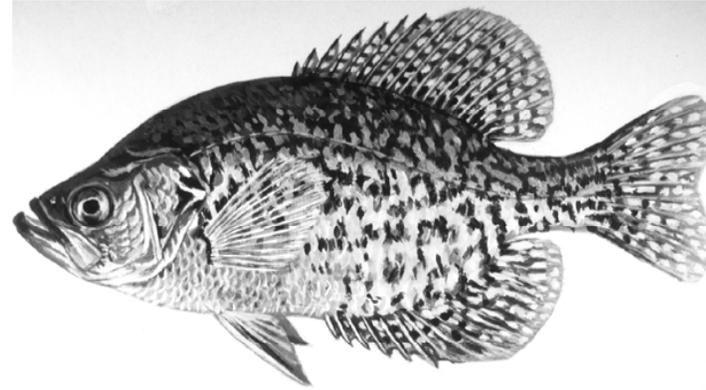


Figure 10. Black crappie sportfishing effort, catch, harvest, and length distribution, Twin Chain, during 2007-08.