

WISCONSIN DEPARTMENT OF NATURAL RESOURCES CREEL SURVEY REPORT

DIAMOND LAKE

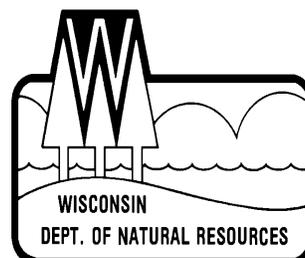
Bayfield County

2012-2013



Treaty Fisheries Publication

April 2013



INTRODUCTION

The Wisconsin Department of Natural Resources regularly conducts fishery surveys of area lakes and reservoirs to gather information on species composition, population size, reproductive success, size/age distribution, and growth rates. The information from the netting and electrofishing surveys helps the WDNR determine the best management practices for that body of water. Another important aspect of a fishery is the amount of harvest that is occurring on the lake. This information is collected by creel census or creel survey.

On lakes in the Ceded Territory of Wisconsin, harvest of fish is divided between sport anglers and the six Chippewa tribal bands. The six Chippewa tribal bands harvest fish under rights governed by federal treaties of 1837 and 1842. Most tribal fish harvest is done by spearing during a short period of time in the spring. All speared fish are individually counted by tribal creel clerks, allowing for a complete “census” of the tribal fish harvest in the spring.

Information is also collected on the effects of sport angler harvest on fish populations. Because it would be impractical and costly to conduct a complete “census” of the fish harvested by sport anglers on area lakes, a creel survey is conducted to estimate the amount of fish harvested by sports anglers.

A creel survey is a sampling tool used to measure the fishing activities of the sport anglers and to estimate the amount of fish harvested on a body of water. Creel surveys are designed to have a creel clerk on a lake, working random shifts, and forty hours each week throughout the fishing season. Each month these shifts cover a sample of all the daylight hours. Creel clerks travel their

lakes using a boat, snowmobile or vehicle to count and to interview anglers.

The information collected from anglers during the interview includes the species of fish being targeted, catch and harvest, lengths of harvested fish, and hours of fishing effort. Typically only anglers that have completed their fishing trip are interviewed because it provides the most accurate information and it avoids the need to disturb anglers while they are fishing.

You may have encountered one of the DNR creel clerks on a recent fishing trip. The survey only takes a moment of your time and we appreciate your cooperation during an interview. The information collected gives the DNR valuable knowledge required for management of the fishery.

The data collected during the survey is processed by a computer program and summarized by month to calculate estimates of the total fishing pressure, fishing effort directed at each species, catch and harvest rates, and the number of fish caught and harvested.

This creel survey report will provide you with four types of estimated information for this body of water:

1. Overall fishing pressure
2. Fishing effort directed at each species
3. Catch and harvest rates
4. Numbers of fish caught and harvested.

Also included in this report are physical information about the lake, discussion of results of this survey and detailed summaries by species.

GENERAL LAKE INFORMATION

Location

Diamond Lake is located northeast of Cable, Wisconsin in Bayfield County and is part of the Chequamegon National Forest.

Physical Characteristics

Diamond Lake is a 341 acre drainage lake in the Lake Superior basin. The lake has a maximum depth of 83 feet and the water clarity is high. There is public landing located on the south end of the lake off Pioneer Road.

Seasons Surveyed

An open water creel survey was conducted from opening day of gamefish season on May 5, 2012 and ran through the end of October. Winter creel was conducted from December 1st through the close of the gamefish season on March 3, 2013.

Harvest Regulations

The following seasons, daily bag limits, and length limits were in place on this lake in 2012-2013:

<u>Species</u>	<u>Season</u>	<u>Bag Limit</u>	<u>Min. Size</u>
Walleye*	5/05-3/01	2	**
Largemouth Bass	6/16-3/01	5	14"
Smallmouth Bass	6/16-3/01	5	14"
Northern Pike	5/05-3/01	1	32"
Panfish	all year	25	none

*The walleye bag limit may have been reduced due to tribal declarations.

**15" minimum length limit, but walleye from 20"-28" may not be kept and only one fish over 28" allowed.

SPECIES CATCH AND HARVEST INFORMATION

Angling information is summarized on a single page for each species. If a page for a particular species is not present in this section it is because no one reported fishing for that species and/or none were caught. Each species page has up to five graphs covering the following:

FIGURE 1.
ESTIMATED FISHING EFFORT
 Total calculated number of hours during each month that anglers spent fishing for this species.

FIGURE 2.
ESTIMATED ANGLER CATCH AND HARVEST RATES
 Calculated number of hours it takes an angler to catch or harvest a fish of this species. Only information from anglers who were **specifically** targeting this species is reported here.

Figure 3.
ESTIMATED ANGLER CATCH AND HARVEST
 Calculated number of fish of this species caught or harvested by all anglers. This estimate also includes the **incidental** catch and harvest of fish by anglers that were not specifically targeting this species.

FIGURE 4.
LENGTH DISTRIBUTION OF HARVESTED FISH MEASURED BY CLERK
 All fish of this species measured by the clerk during the entire creel survey season.

FIGURE 5.

**AVERAGE LENGTH AND
LARGEST FISH HARVESTED**

Average length and the largest fish of this species harvested each month.

Only those fish measured by the creel clerk are reported here.

Seasonal Angler Effort Summary

The table provides a summary by month of the total angler hours and total angler hours per acre. Also, the table compares county average and statewide average to current survey results.

Additional copies of this report and those covering other local lakes can be obtained from Treaty Fisheries Biologist in Spooner WI or WDNR Webpage.

Question about the report can be directed to Gene Hatzenbeler
WDNR Spooner Office
810 W. Maple Street
Spooner, WI 54801
Phone: (715)635-4164
Email: Gene.Hatzenbeler@Wisconsin.gov

ACKNOWLEDGEMENTS

This survey could not have been completed if not for the efforts of the technical staff of the Treaty Fisheries Unit, especially Donna Sorensen who collected the angler interviews. Gene Hatzenbeler provided logistic support for the survey. Todd Brecka delivered and maintained all equipment. Jill Sunderland assisted with training and the scheduling for the creel clerks. Misty Rood and Mac McInroy were responsible for data entry and quality assurance. Jake Jacobson and Mac McInroy filled in when clerks needed a day off.

The Department would like to thank Chris and Dorothy Melland. They generously allowed the department to keep a boat at their property during this survey.

We would also like to 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.

WALLEYE

FIGURE 1. ESTIMATED FISHING EFFORT

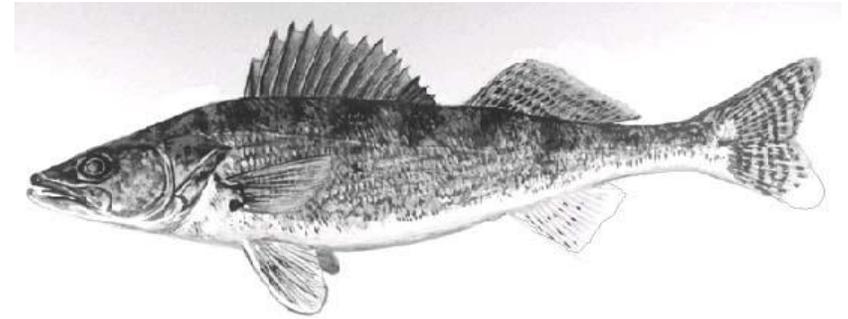
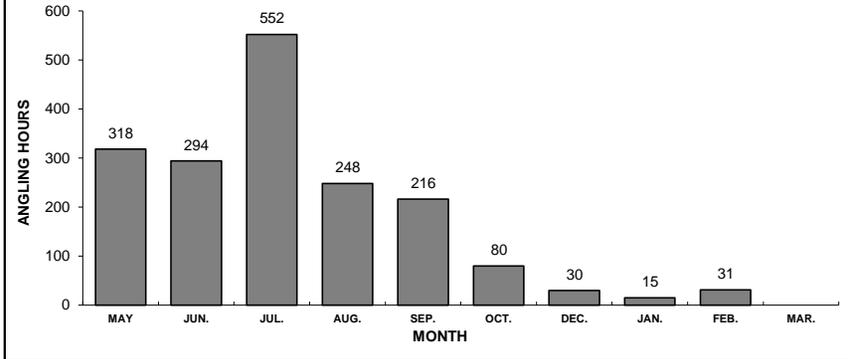


FIGURE 2. ESTIMATED ANGLER CATCH AND HARVEST RATES

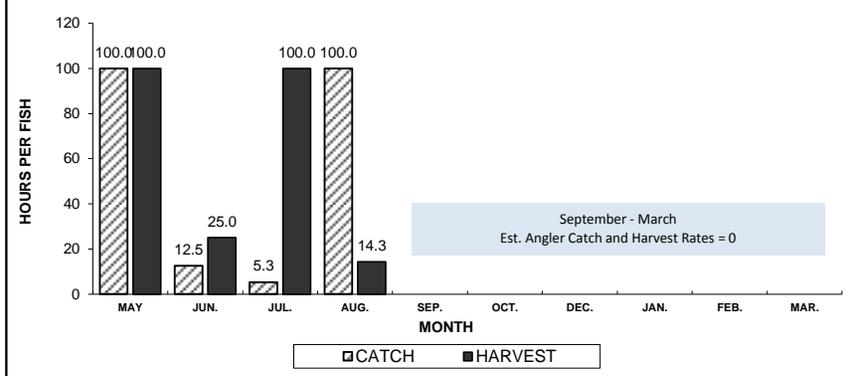


FIGURE 3. ESTIMATED ANGLER CATCH AND HARVEST

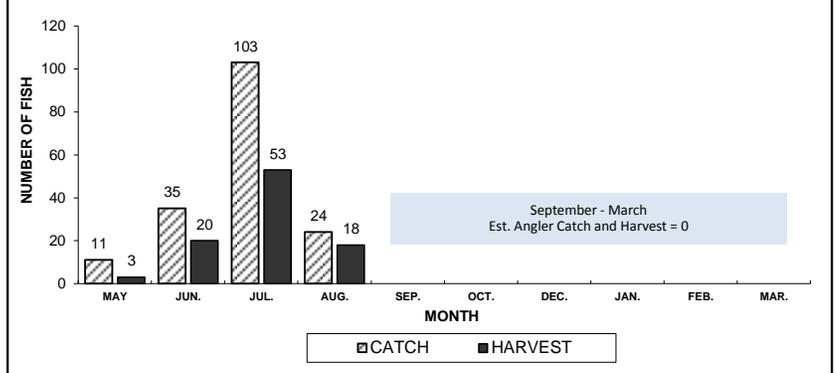


FIGURE 4. LENGTH DISTRIBUTION OF HARVEST FISH MEASURED BY CLERK

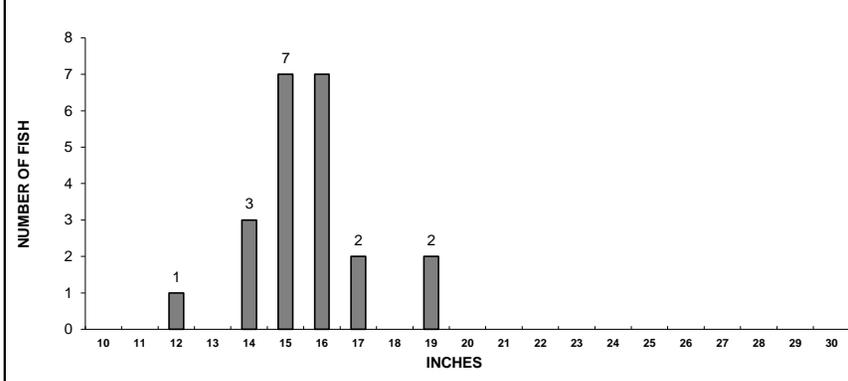
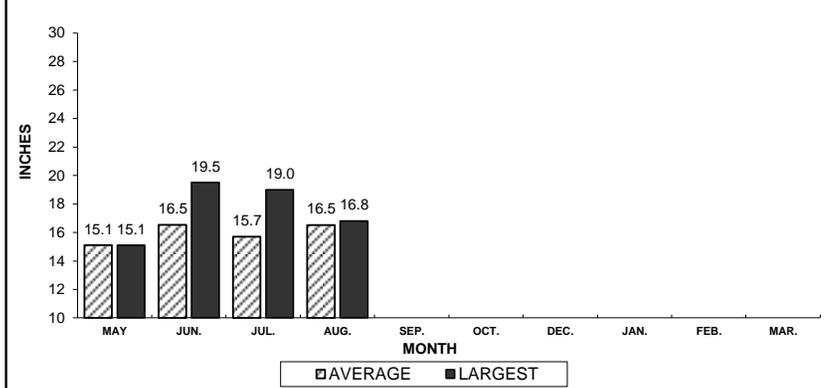


FIGURE 5. AVERAGE LENGTH AND LARGEST FISH HARVESTED



NORTHERN PIKE

FIGURE 1. ESTIMATED FISHING EFFORT

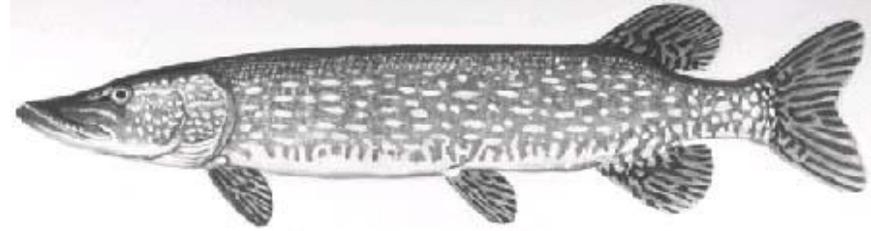
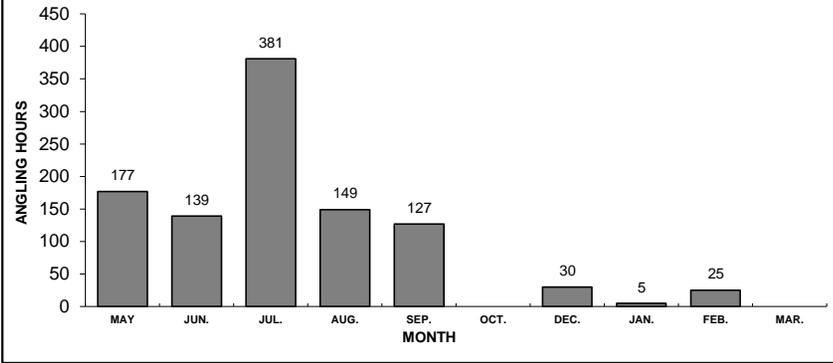


FIGURE 2. ESTIMATED ANGLER CATCH AND HARVEST RATES

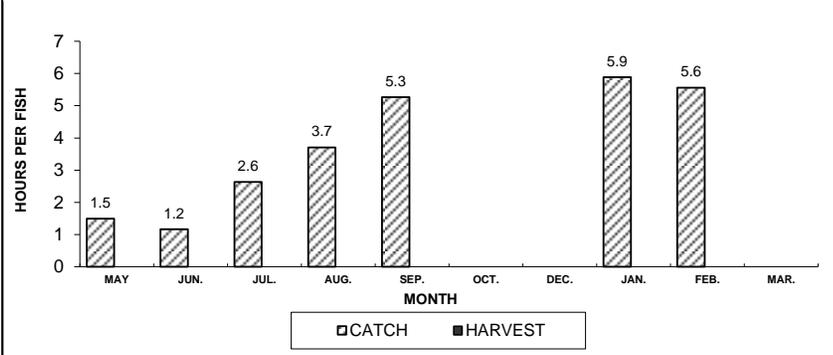


FIGURE 3. ESTIMATED ANGLER CATCH AND HARVEST

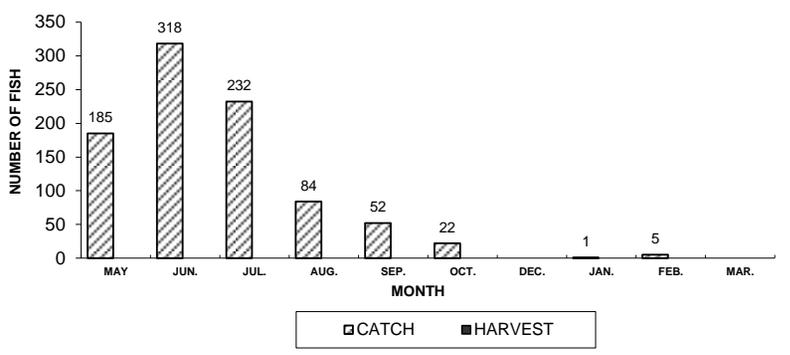


FIGURE 4. LENGTH DISTRIBUTION OF HARVESTED FISH MEASURED BY CLERK

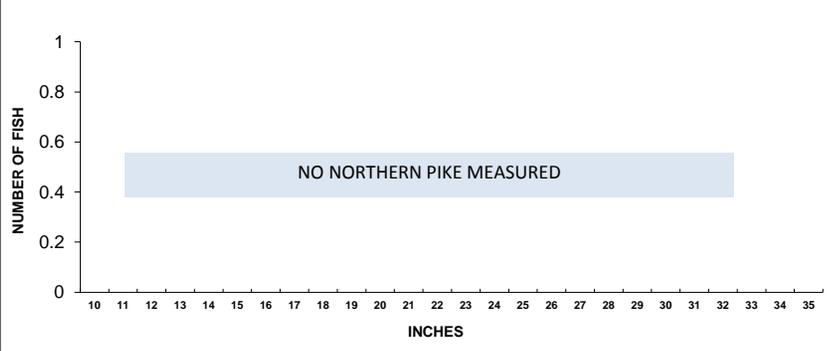
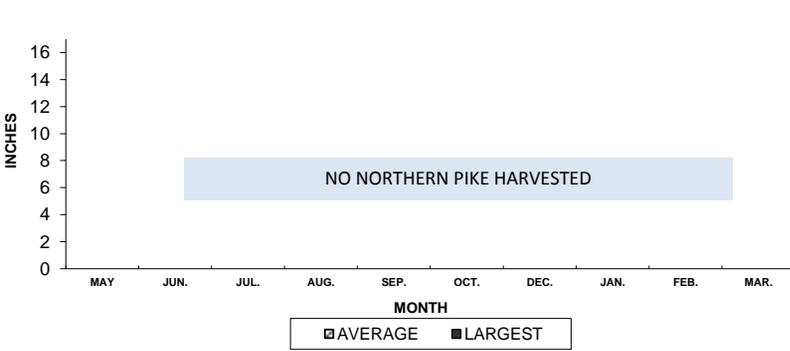


FIGURE 5. AVERAGE LENGTH AND LARGEST FISH HARVESTED



SMALLMOUTH BASS

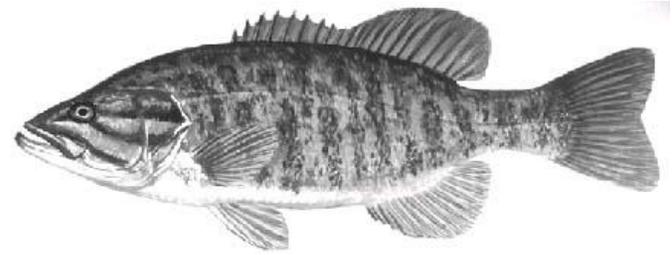


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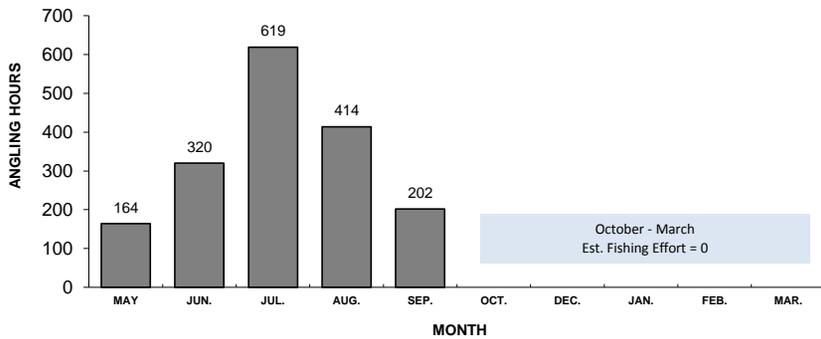


FIGURE 2. ESTIMATED ANGLER CATCH AND HARVEST RATES

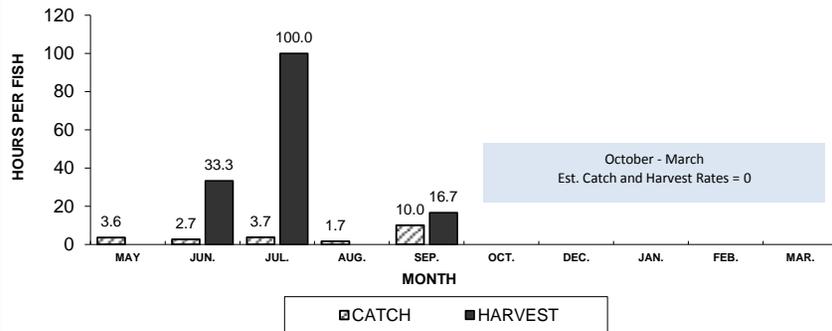


FIGURE 3. ESTIMATED ANGLER CATCH AND HARVEST

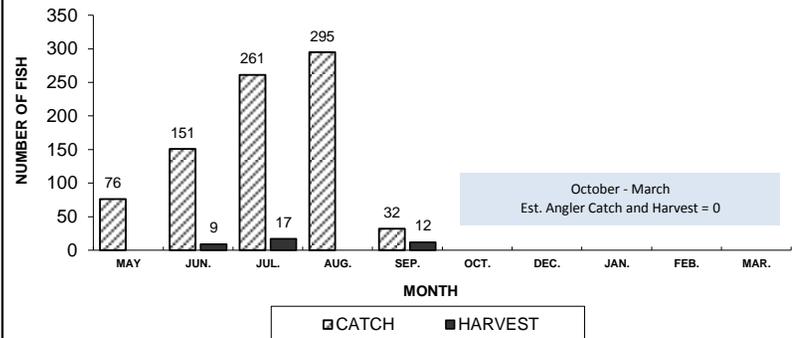


FIGURE 4. LENGTH DISTRIBUTION OF HARVESTED FISH MEASURED BY CLERK

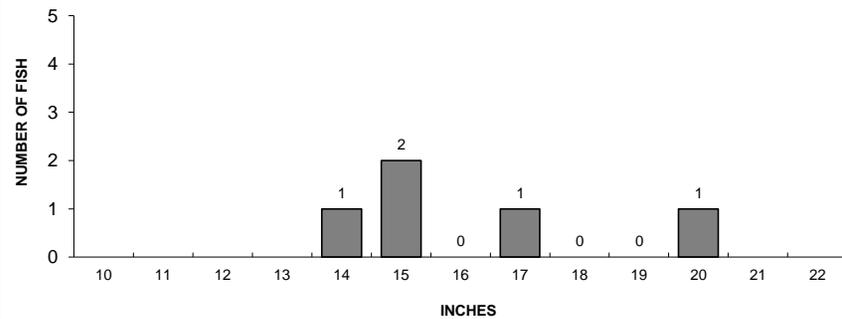
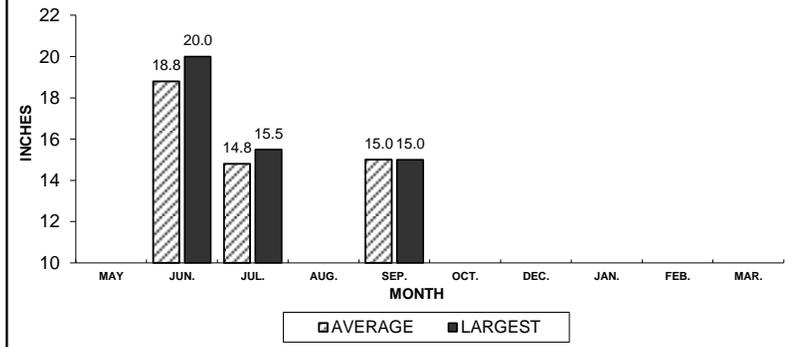


FIGURE 5. AVERAGE LENGTH AND LARGEST FISH HARVESTED



LARGEMOUTH BASS

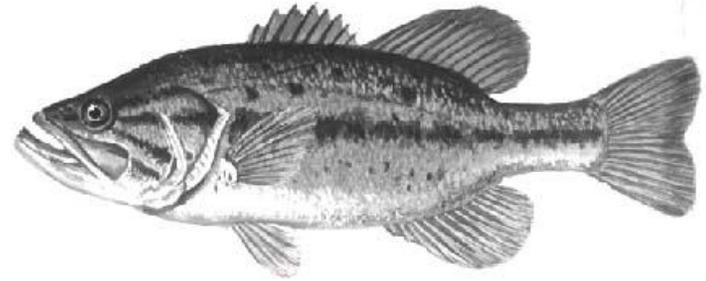


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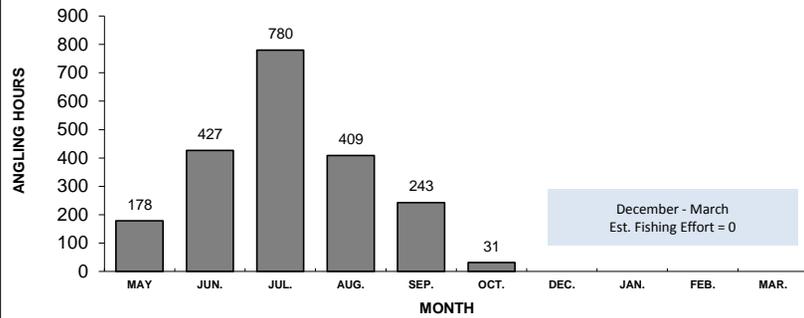


FIGURE 2. ESTIMATED ANGLER CATCH AND HARVEST RATES

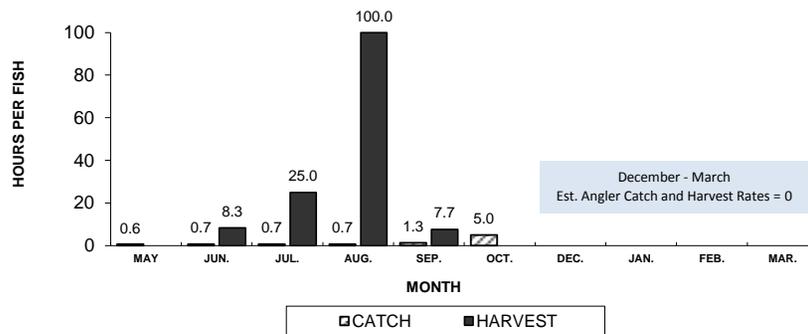


FIGURE 3. ESTIMATED ANGLER CATCH AND HARVEST

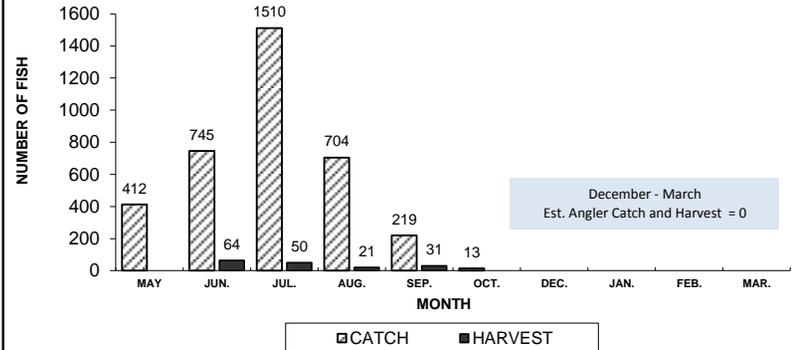


FIGURE 4. LENGTH DISTRIBUTION OF HARVESTED FISH MEASURED BY CLERK

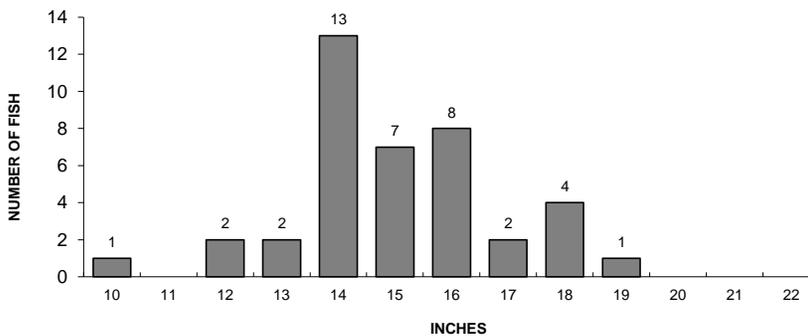
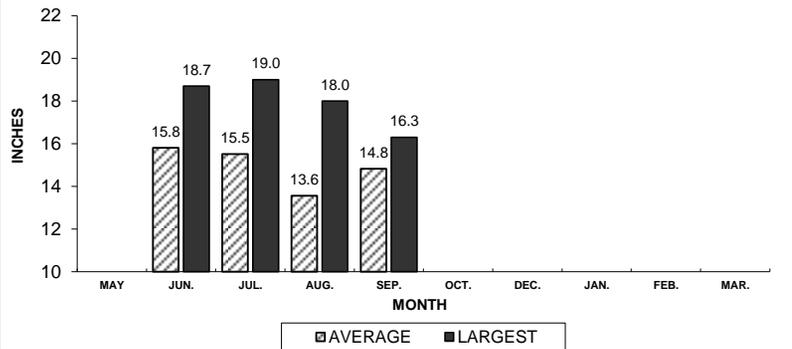


FIGURE 5. AVERAGE LENGTH AND LARGEST FISH HARVESTED



BLUEGILL

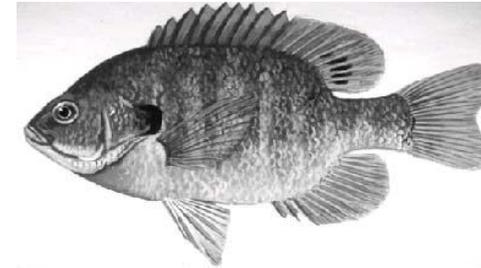


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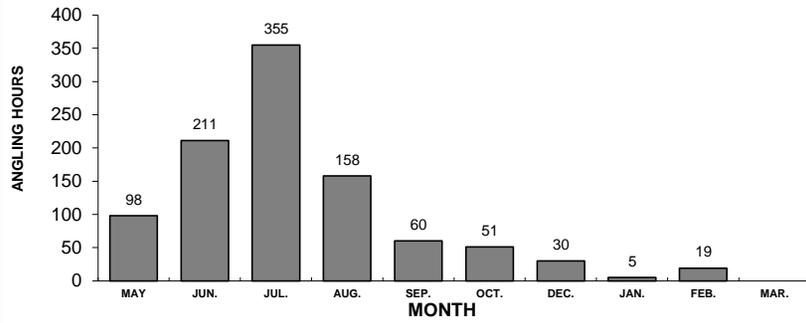


FIGURE 2. ESTIMATED ANGLER CATCH AND HARVEST RATES

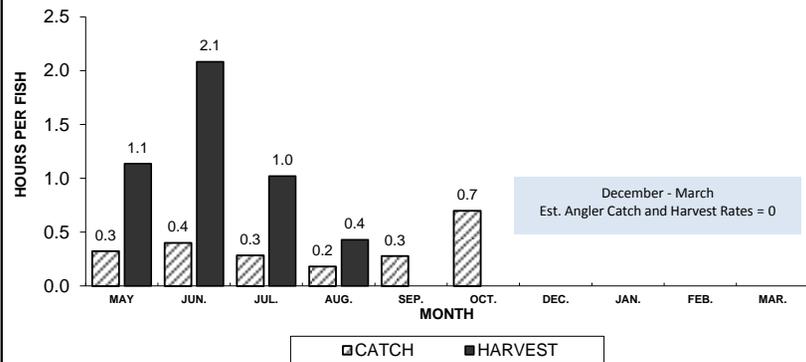


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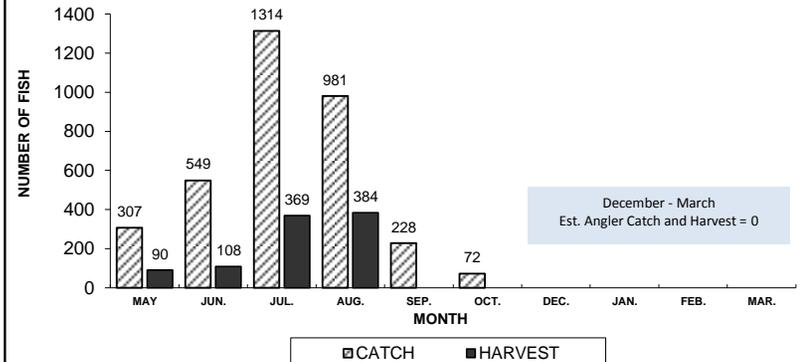


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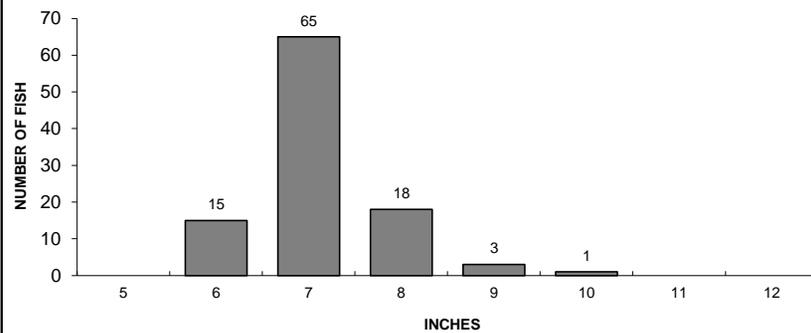
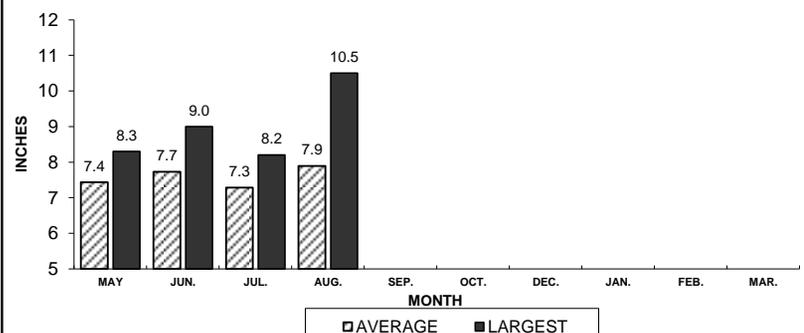


FIGURE 5. AVERAGE LENGTH AND LARGEST FISH HARVESTED



PUMPKINSEED

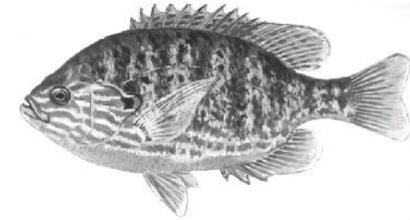


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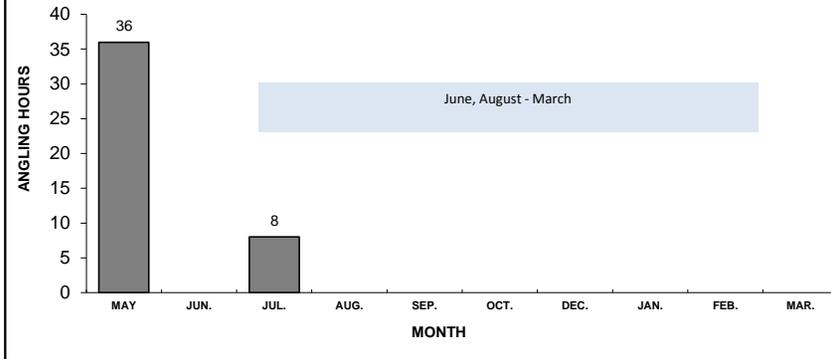


FIGURE 2. ESTIMATED ANGLER CATCH AND HARVEST RATES

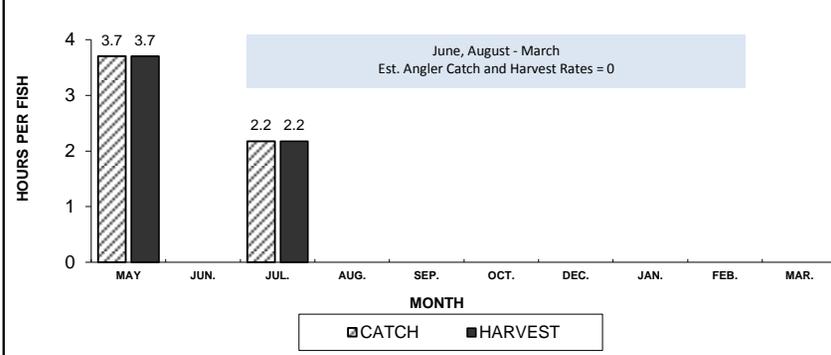


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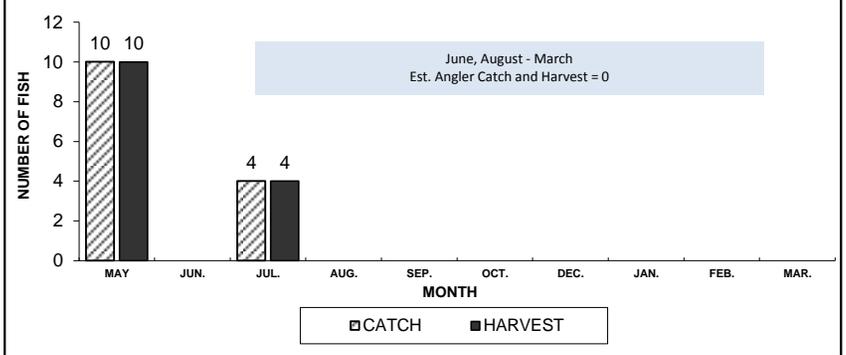


FIGURE 4. LENGTH DISTRIBUTION OF HARVESTED FISH MEASURED BY CLERK

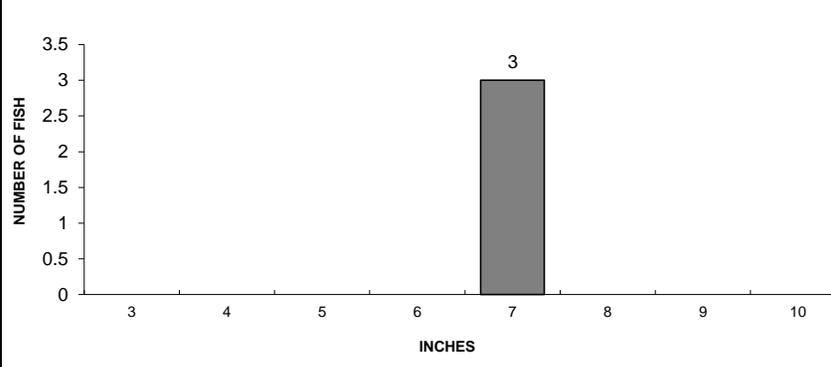
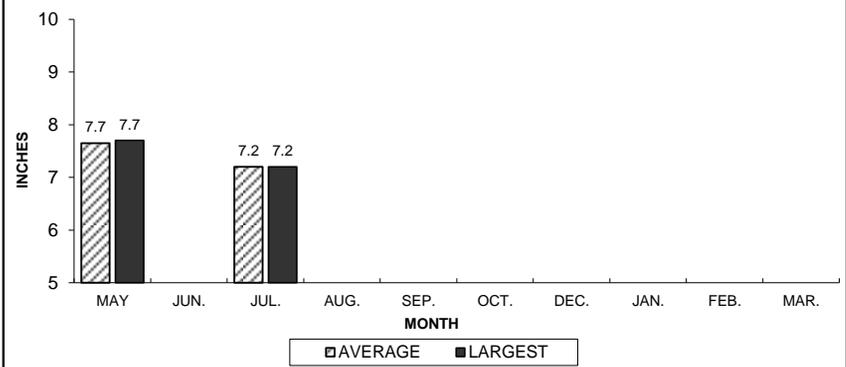


FIGURE 5. AVERAGE LENGTH AND LARGEST FISH HARVESTED



BLACK CRAPPIE

FIGURE 1. ESTIMATED FISHING EFFORT

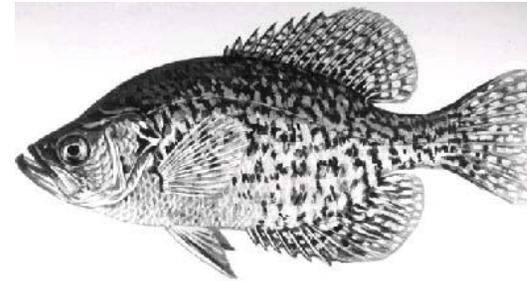
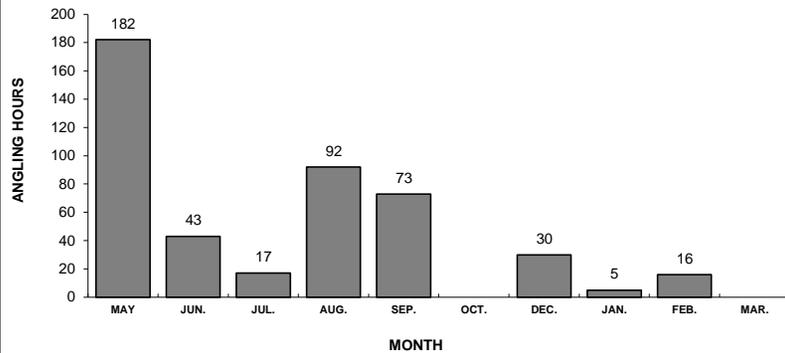


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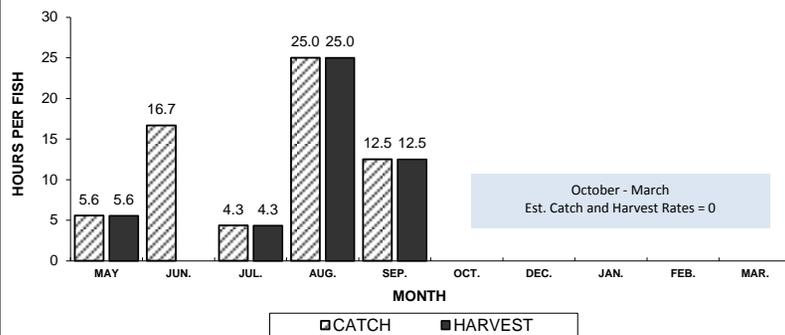


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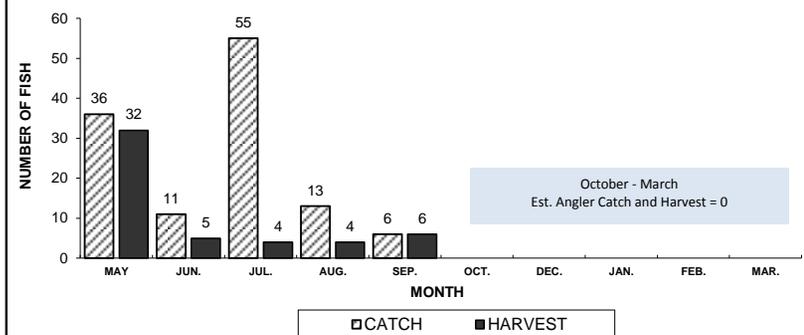


FIGURE 4. LENGTH DISTRIBUTION OF HARVESTED FISH MEASURED BY CLERK

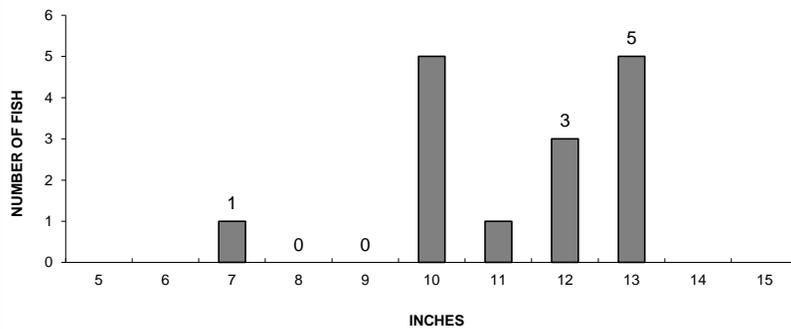
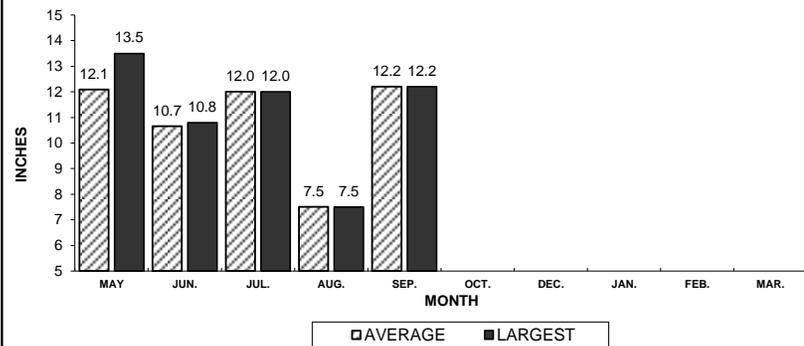
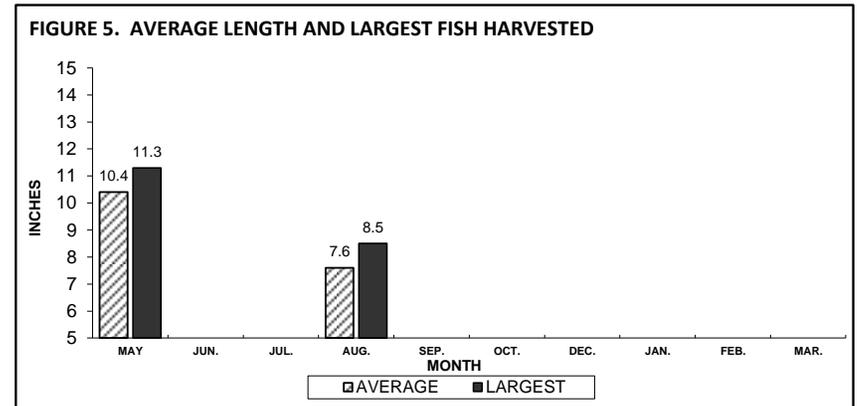
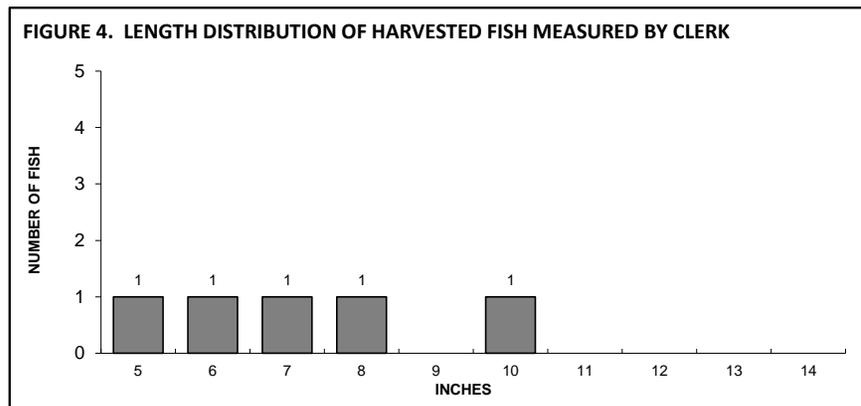
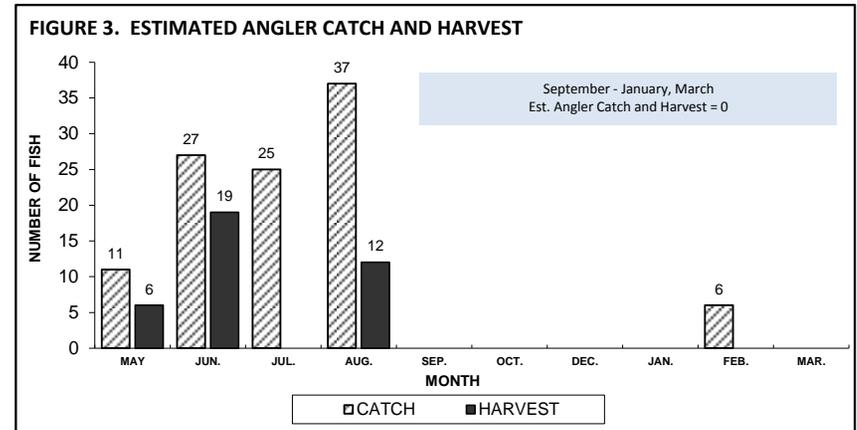
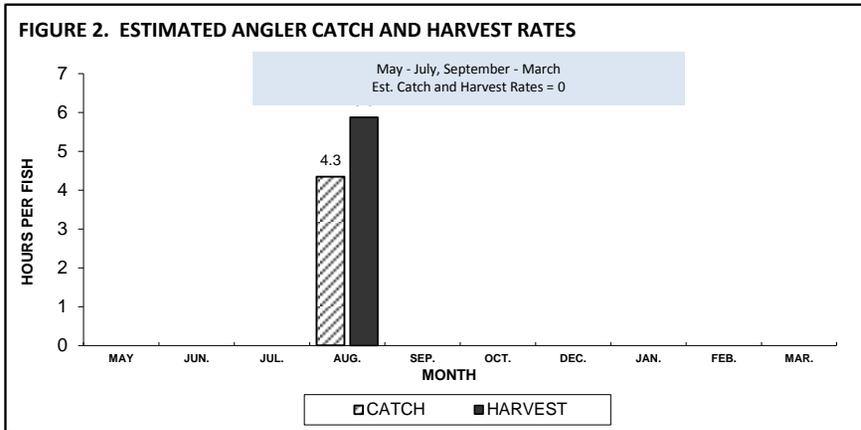
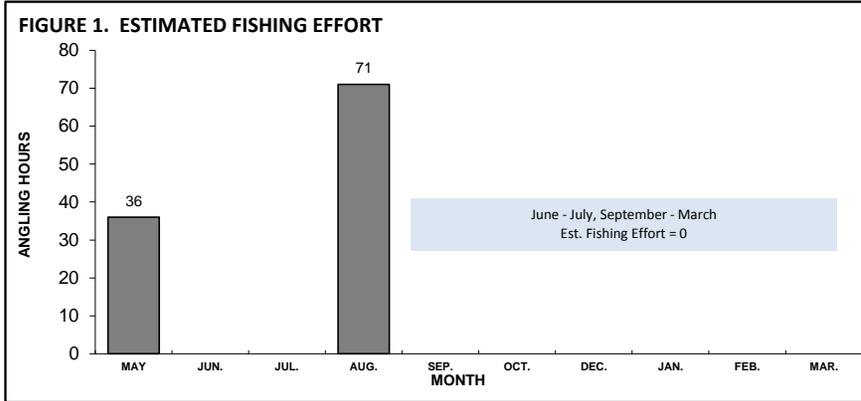
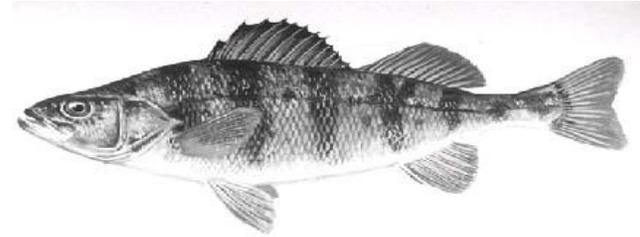


FIGURE 5. AVERAGE LENGTH AND LARGEST FISH HARVESTED

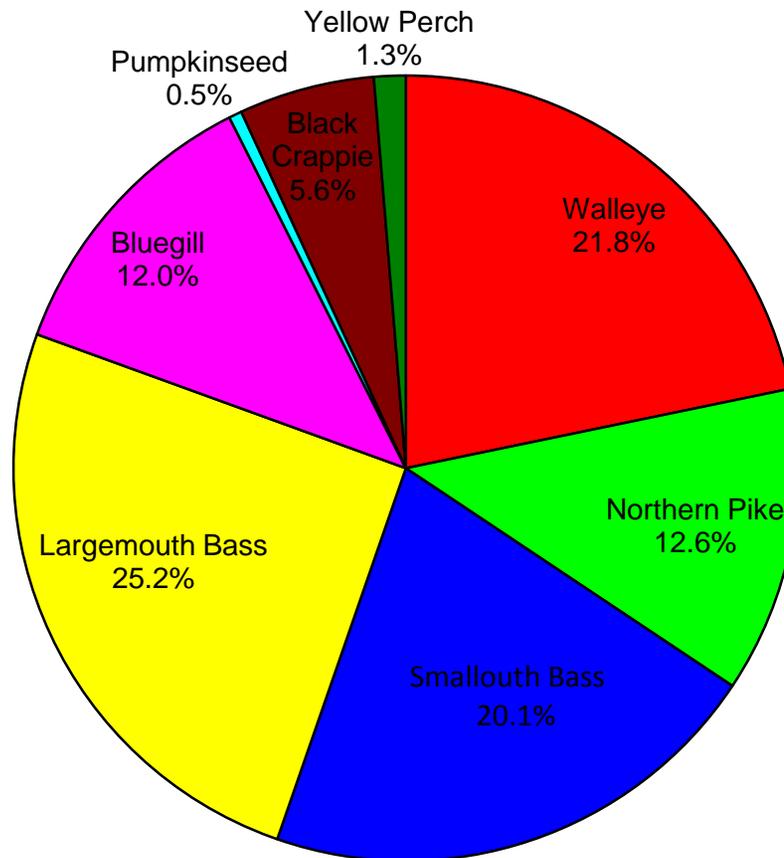


YELLOW PERCH



TOTAL ANNUAL ANGLER DIRECTED EFFORT BY SPECIES Diamond Lake 2012-2013

This graph illustrates the percentage of time that anglers spent fishing for each species during the entire creel survey. The percentages are based on the species of fish anglers told the clerk they were fishing for, not what they actually caught. If a particular species is not present in the graph it is because no one reported they were fishing for that species.



CREEL SURVEY HISTORY/SYNOPSIS

DIAMOND LAKE, BAYFIELD COUNTY

CREEL YEAR: 2012-2013

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	1784	21.76%	173	11.1	94	20.0	16.1
Northern Pike	1033	12.60%	899	2.3	0	0.0	0.0
Smallmouth Bass	1719	20.96%	815	2.9	38	50.0	16.4
Largemouth Bass	2068	25.22%	3603	0.7	166	16.7	15.3
Bluegill	987	12.04%	3451	0.3	951	1.1	7.5
Pumpkinseed	44	0.54%	14	3.2	14	3.2	7.5
Black Crappie	458	5.59%	121	9.1	51	10.0	11.6
Yellow Perch	107	1.30%	106	6.3	37	8.3	8.7

CREEL YEAR: 2009-2010

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	1025	11.15%	26	0.0	3	0.0	29.0
Northern Pike	1365	14.85%	1247	2.4	33	50.0	24.0
Smallmouth Bass	2233	24.29%	1064	2.9	10	0.0	18.9
Largemouth Bass	2201	23.94%	3524	0.9	81	33.3	15.9
Bluegill	1204	13.10%	5111	0.3	1264	1.0	7.2
Pumpkinseed	111	1.21%	24	50.0	12	0.0	6.9
Black Crappie	687	7.47%	675	0.2	527	1.3	11.0
Yellow Perch	366	3.98%	265	7.7	91	8.3	9.2

CREEL YEAR: 2006-07

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	1095	15.27%	69	16.7	0	0.0	0.0
Northern Pike	1373	19.15%	798	2.1	0	0.0	26.0
Smallmouth Bass	1420	19.80%	382	6.3	13	100.0	13.9
Largemouth Bass	1840	25.66%	1126	2.3	65	33.3	15.1
Bluegill	939	13.09%	4501	0.3	669	1.4	7.0
Pumpkinseed	11	0.15%	205	0.6	0	0.0	0.0
Black Crappie	335	4.67%	619	0.6	202	2.2	10.2
Yellow Perch	158	2.20%	217	4.5	64	4.5	8.5

SEASONAL ANGLER EFFORT SUMMARY

2012-2013

Estimated angler fishing effort on Diamond Lake for each month surveyed and by season.

Month	Number of Angler Party Interviews	Total Angler Hours	Total Angler Hours/Acre	Bayfield County Average Hours/Acre	Statewide Average Hours/Acre
May	25	661	1.9	3.6	5.8
June	33	834	2.4	5.3	6.1
July	60	1476	4.3	5.6	6.4
August	38	633	1.9	4.3	5.4
September	19	459	1.3	2.3	3.8
October	7	131	0.4	1.2	1.6
December	1	30	0.1	0.6	1.7
January	3	20	0.1	0.9	1.5
February	7	52	0.2	0.9	1.3
March	0	46	0.1		**
*Summer Total	193	4194	12.3	22.2	29.1
*Winter Total	11	148	0.4	2.4	4.5
Grand Total	204	4342	12.7	24.6	33.6

*"Summer" is May-October; "Winter" is December-March

**Too few lakes have been surveyed in March to give a meaningful statewide average.

Number of Angler Party Interviews is the number of groups of anglers interviewed by the creel clerk. A party is considered the members of a group who fish together in the same boat, ice shanty, or from shore. The clerk fills out one interview form for each group of anglers. The number of individual anglers actually contacted by the clerk is usually much greater than the number of groups listed in this table since most groups consist of more than one angler.

Total Angler Hours is the estimated total number of hours that anglers spent fishing on this 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 this lake to others.

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 this lake to other lakes statewide.