

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

SOUTH TURTLE LAKE

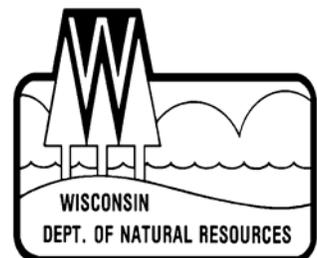
VILAS COUNTY

2010-11



Treaty Fisheries Publication

**Compiled by Tim Tobias
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.

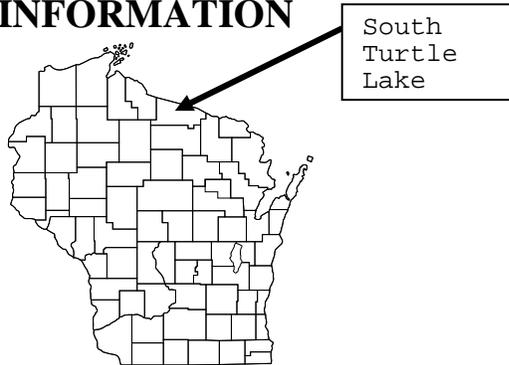
You may have encountered a DNR creel survey clerk on a recent fishing trip. We appreciate your cooperation during an interview. The survey only takes a moment of your time and it gives the Department valuable information needed for management of the fishery.

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

GENERAL LAKE INFORMATION



Location

South Turtle Lake is located in Vilas County in the Town of Winchester.

Physical Characteristics

South Turtle Lake is a 454-acre drainage lake with a maximum depth of 23 feet. South Turtle Lake is one of three lakes that make up the Turtle Chain. The other lakes in the chain (North Turtle and Rock) were also surveyed in 2010. Littoral substrate consists primarily of sand, with lesser amounts of rock, gravel and muck. South Turtle Lake is a drainage lake with slightly alkaline, light brown water of moderate transparency.

Seasons Surveyed

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

October 31, 2010 and the ice fishing creel survey ran from December 1, 2010 through March 6, 2011.

Weather

Ice-out on South Turtle Lake was around March 30, 2011. Fishable-ice formed on South Turtle Lake in mid December.

Sportfishing Regulations

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

Species	Season	Bag Limit	Min. Size
Largemouth Bass & Smallmouth Bass	5/01-6/18	Catch & Release	
	6/19-3/06	5	14"
Musky	5/29-11/30	1	34"
Northern Pike	5/01-3/06	5	none
Walleye	5/01-3/06	2*	none 1 > 14"
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 South Turtle 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 6 should be considered minimum estimates. Each species page has up to five graphs depicting the following:

1. **PROJECTED FISHING EFFORT**
Total calculated number of hours during each month that anglers spent fishing for a species.
2. **PROJECTED SPECIFIC CATCH**

AND HARVEST RATES

Calculated number of hours it takes an angler to catch or harvest a fish of the indicated species. Only information from anglers who were specifically targeting that species is reported.

3. PROJECTED CATCH AND HARVEST

Calculated number of fish of the indicated species caught or harvested by all anglers, regardless of targeted species.

4. LENGTH DISTRIBUTION OF HARVESTED FISH

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

5. LARGEST AND AVERAGE LENGTH OF HARVESTED FISH

Monthly largest and average length of harvested fish of a species. Only those fish measured by the creel survey clerk are reported.

CREEL SURVEY RESULTS AND DISCUSSION

Survey Logistics

The creel survey went well. We encountered no unusual problems conducting the survey or calculating the projections contained in the report. This was the second time the Department conducted a creel survey on South Turtle Lake. The last creel survey of the chain took place in 1991.

General Angler Information

Anglers spent 12,595 hours or 27.7 hours per acre fishing South Turtle Lake during the 2010 season (Table 1). That was less than the Vilas County average of 34.5 hours per acre. July was the most heavily fished month (6.1 hours per acre). Fishing effort

was lightest in December (0.3 hours per acre).

RESULTS BY SPECIES

Walleye (Table 2, Figure 1)

Walleyes received the most fishing pressure of any species during the 2010 season. Anglers spent 4,560 hours targeting walleyes. The greatest fishing effort for walleyes was in July (786 hours). February had the least amount of walleye fishing effort (120 hours).

Total catch of walleyes was 1,762 fish with a harvest of 725 fish. Highest catch (463 fish) and harvest (213 fish) occurred in May.

Anglers fished 2.8 hours to catch and 6.8 hours to harvest a walleyes during 2010.

The mean length of harvested walleyes was 12.7 inches and the largest walleye measured was a 20.5-inch fish.

Northern Pike (Table 2, Figure 2)

Fishing effort directed at northern pike was 555 hours during the 2010 season. Northern pike fishing effort was greatest in August (141 hours).

Total catch of northern pike was 574 fish with a harvest of 97 fish.

The mean length of harvested northern pike was 20.8 inches and the largest northern pike measured was a 23.4-inch fish.

Muskellunge (Table 2, Figure 3)

Anglers spent 4,005 hours targeting muskellunge during the 2010 season. Muskellunge fishing effort was greatest in September (1,071 hours).

Total catch of muskellunge was 125 fish. Highest catch (39 fish) occurred in June. Anglers fished 42.6 hours to catch a muskellunge during 2010.

Smallmouth Bass (Table 2, Figure 4)
Fishing effort targeted at smallmouth bass was 789 hours during the 2010 season. Smallmouth bass fishing effort was greatest in July (252 hours).

Total catch of smallmouth bass was 238 fish. Highest catch 61 fish occurred in both June and August. Anglers fished 6.5 hours to catch a smallmouth bass during 2010.

Largemouth Bass (Table 2, Figure 5)
Fishing effort directed at largemouth bass was 657 hours during the 2010 season. Largemouth bass fishing effort was greatest in August (178 hours).

Total catch of largemouth bass was 986 fish with a harvest of 23 fish. Highest catch (303 fish) occurred in May. Anglers fished 1.5 hours to catch a largemouth bass during 2010.

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 3,346 hours.

Total catch of yellow perch was 7,423 fish with 1,531 harvested. The mean length of yellow perch harvested was 8.8 inches and the largest yellow perch measured was an 11.1 inch fish.

Black crappies were the second most sought after panfish species during the survey. Fishing effort directed at black crappies was 2,381 hours.

Anglers caught 1,190 black crappies and harvested 1,060 fish. The mean length of black crappies harvested was 10.3 inches and the largest black crappie measured was a 13.4 inch fish.

Bluegills were the third most sought after panfish species during the survey. Fishing effort directed at bluegills was 1,995 hours.

Total catch of bluegills was 9,328 fish with 1,676 harvested. The mean length of bluegills harvested was 7.4 inches with the largest measuring 8.2 inches.

Pumpkinseeds and rock bass were both caught during the 2010 season. These species are a minor part of this fishery

ACKNOWLEDGMENTS

Completion of this survey was possible because of the efforts of the technical staff of the fisheries management and Treaty Fisheries Unit. Treaty staff responsible for ensuring completion of this survey included Jeff Blonski, Steve Kramer, Joelle Underwood, Marty Kiepke, Jason Halverson, and Tim Tobias. Fisheries management staff included Steve Gilbert, Wes Jahns, John Kubisiak and Steve Timler. Marty Kiepke was the creel clerk on South Turtle 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, Tom & Julie Rued, 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.

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

Month	Total Angler Hours	Total Angler Hours/Acre	Vilas County Average Hours/Acre	Statewide Average Hours/Acre
May	1654	3.6	5.3	5.8
June	2588	5.7	6.8	6.1
July	2766	6.1	7.4	6.4
August	1709	3.8	6.4	5.4
September	2088	4.6	4.1	3.8
October	1121	2.5	2.0	1.6
December	159	0.3	0.5	1.7
January	238	0.5	0.8	1.5
February	221	0.5	1.0	1.3
March	52	0.1	0.2	**
*Summer Total	11926	26.3	32.1	29.1
*Winter Total	669	1.5	2.4	4.5
Grand Total	12595	27.7	34.5	33.6

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

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

Total Angler Hours is the estimated total number of hours that anglers spent fishing on South Turtle 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 South Turtle 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 South Turtle Lake to other lakes statewide.

Table 2. Comparison of creel survey synopses, South Turtle Lake, 2010-11 Fishing seasons.

CREEL YEAR: 2010-11

SPECIES	DIRECTED EFFORT (Hours)	PERCENT OF TOTAL	TOTAL CATCH	SPECIFIC CATCH RATE (Hrs/Fish) *	TOTAL HARVEST	SPECIFIC HARVEST RATE (Hrs/Fish) **	MEAN LENGTH OF HARVESTED FISH
Walleye	4560	23.51%	1762	2.8	725	6.8	12.7
Northern Pike	555	2.86%	574	4.6	97		20.8
Muskellunge	4005	20.65%	125	42.6	0		
Smallmouth Bass	789	4.07%	238	6.5	0		
Largemouth Bass	657	3.39%	986	1.5	23	65.8	14.7
Yellow Perch	3346	17.25%	7423	0.6	1531	2.5	8.8
Bluegill	1995	10.29%	9328	0.3	1676	1.3	7.4
Pumpkinseed	711	3.67%	995	1.8	75	17.2	7.1
Rock Bass	395	2.04%	1128	2.2	128	4.9	7.4
Black Crappie	2381	12.28%	1190	2.2	1060	2.5	10.3

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: 1991-92

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	6571	25.40%	1651	4.0	158	41.5	18.5
Northern Pike	1365	5.28%	361	12.3	130	19.5	24.0
Muskellunge	7690	29.72%	303	29.0	16	476.2	42.8
Smallmouth Bass	368	1.42%	230	5.5	31	43.7	13.4
Largemouth Bass	161	0.62%	89	6.8	13	34.1	13.4
Yellow Perch	3125	12.08%	4595	1.0	733	4.6	7.5
Bluegill	3028	11.70%	7304	0.4	2091	1.5	7.1
Pumpkinseed	296	1.14%	432	0.7	136	2.6	6.5
Rock Bass	2239	8.65%	1105	2.1	181	12.4	6.4
Black Crappie	1028	3.97%	648	1.6	513	2.1	11.2

WALLEYE

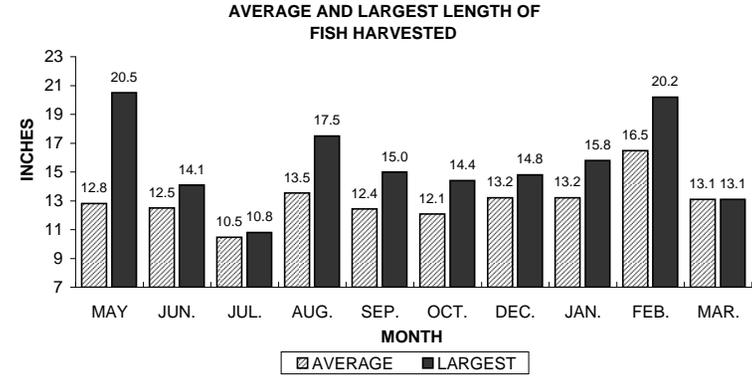
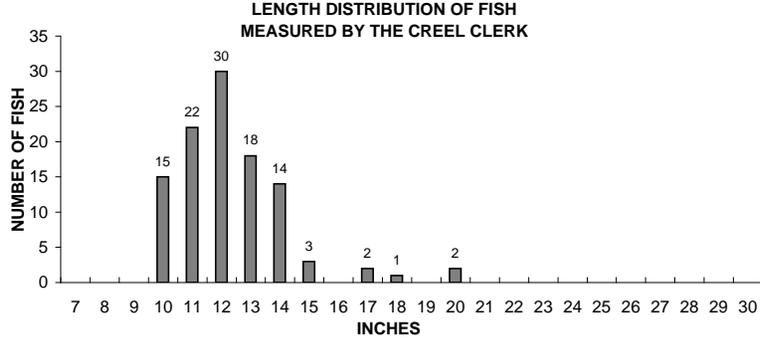
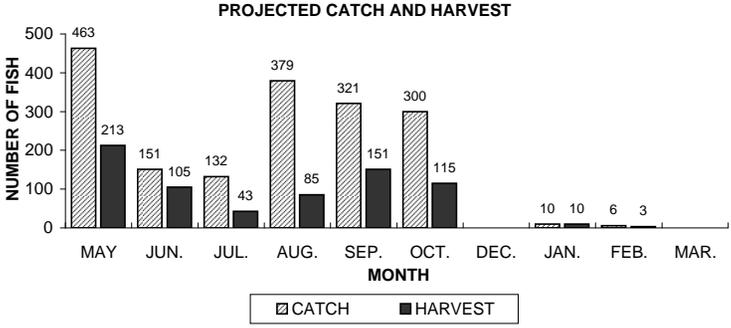
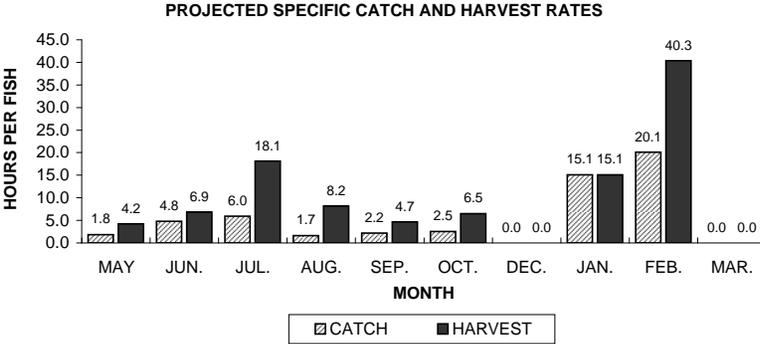
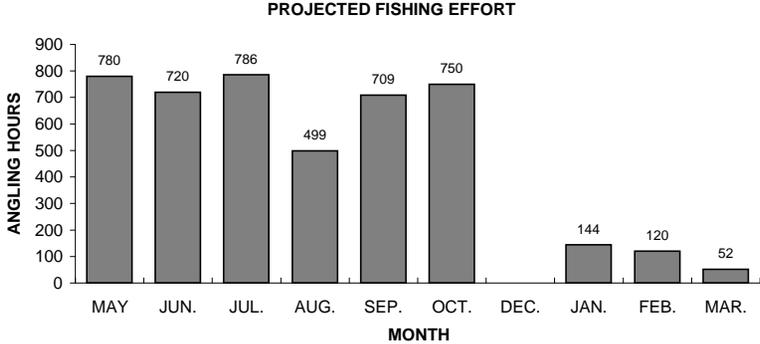
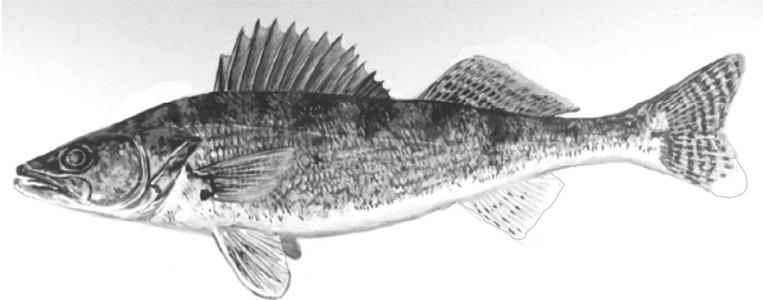


Figure 1. Walleye sportfishing effort, catch, harvest, and length distribution, South Turtle Lake, during 2010-11.

NORTHERN PIKE

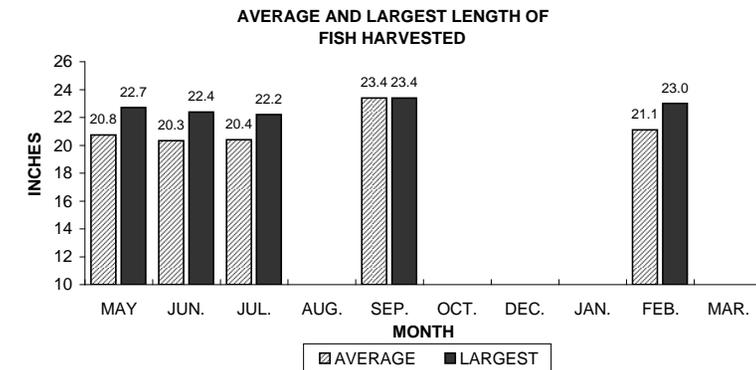
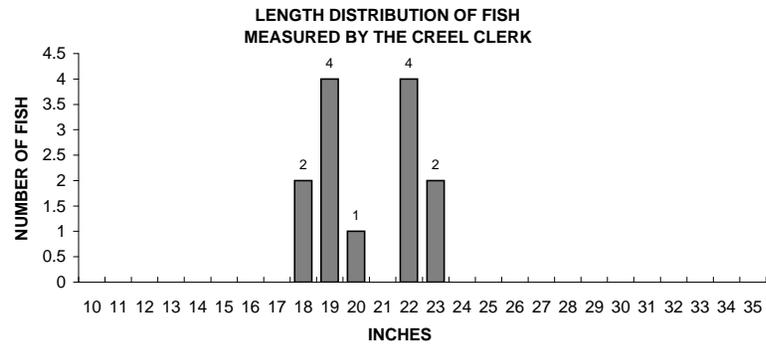
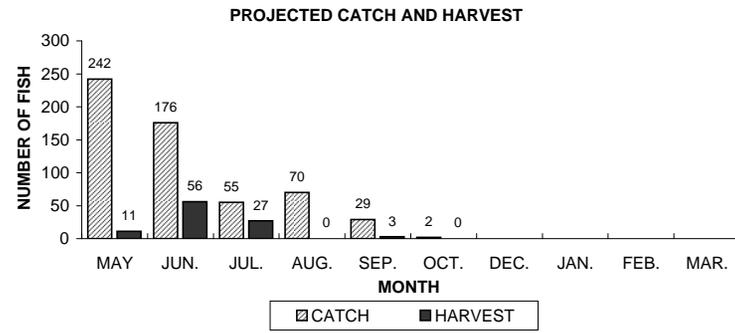
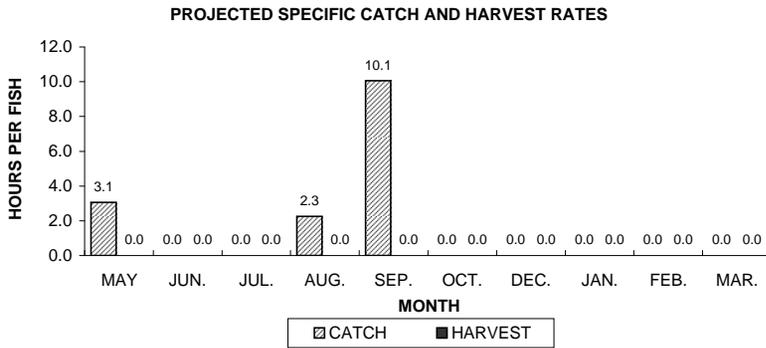
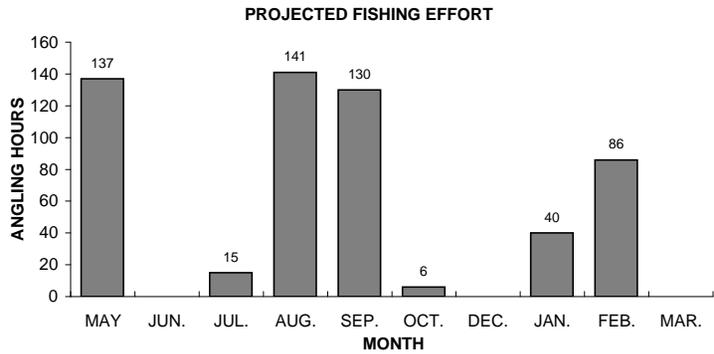
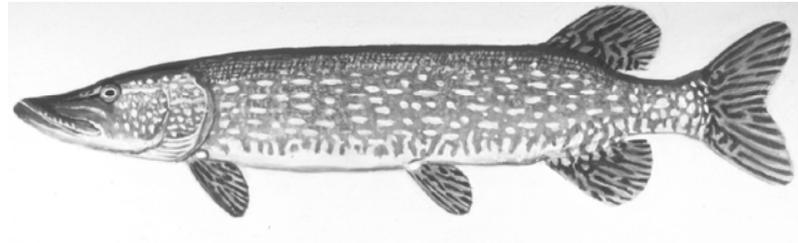
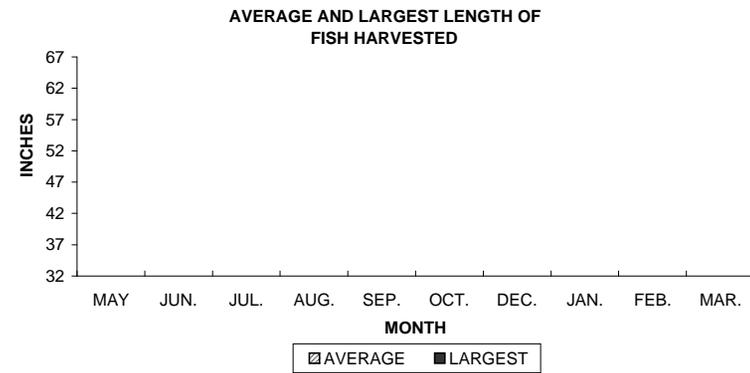
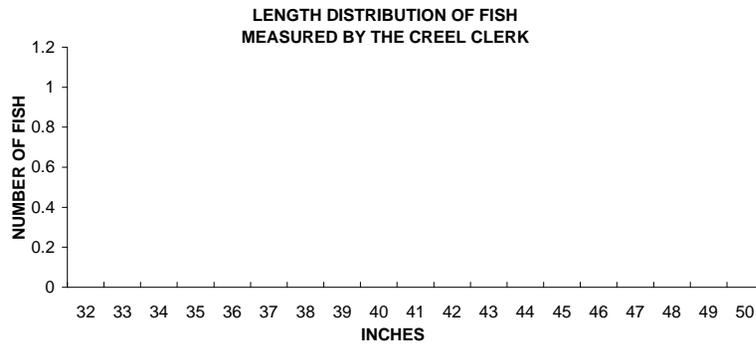
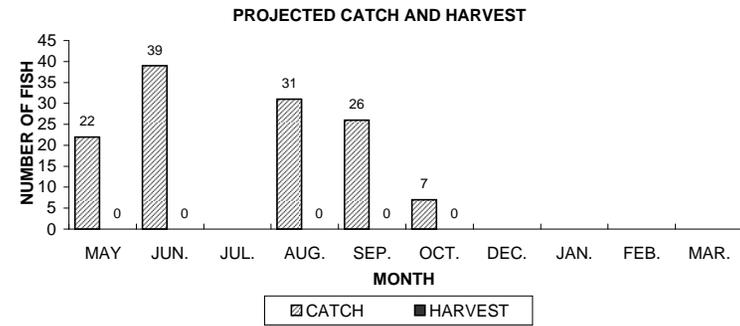
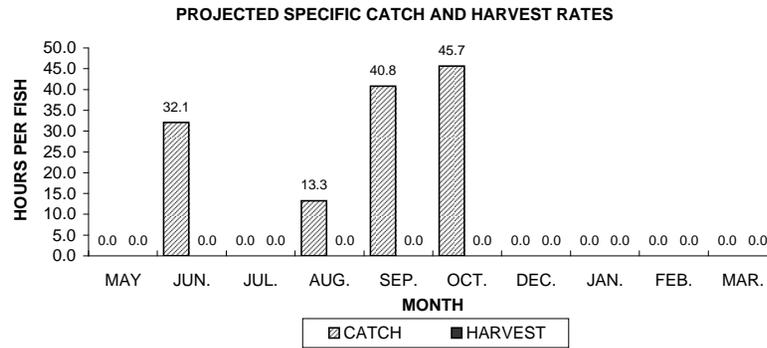
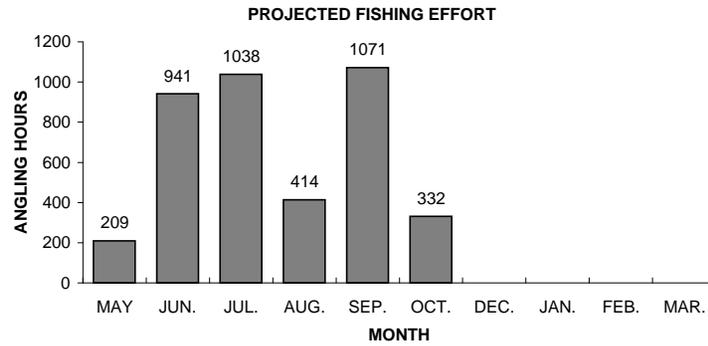
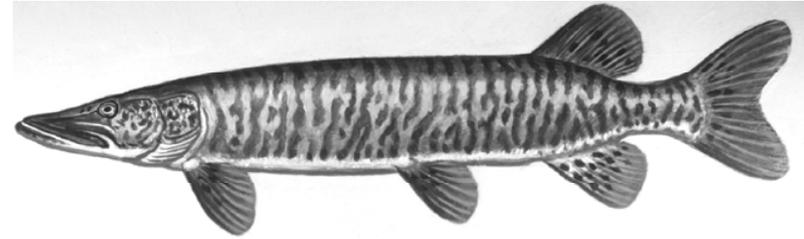


Figure 2. Northern pike sportfishing effort, catch, harvest, and length distribution, South Turtle Lake, during 2010-11.

MUSKELLUNGE



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

SMALLMOUTH BASS

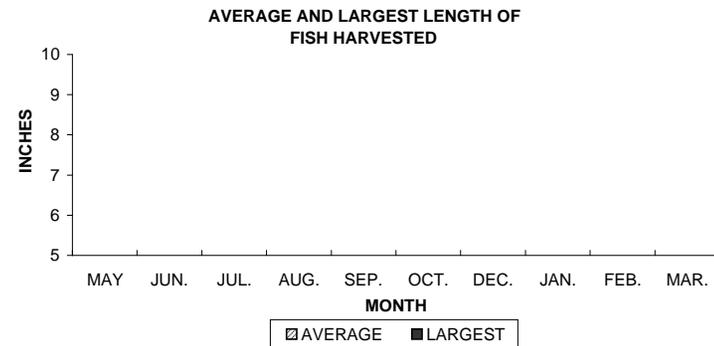
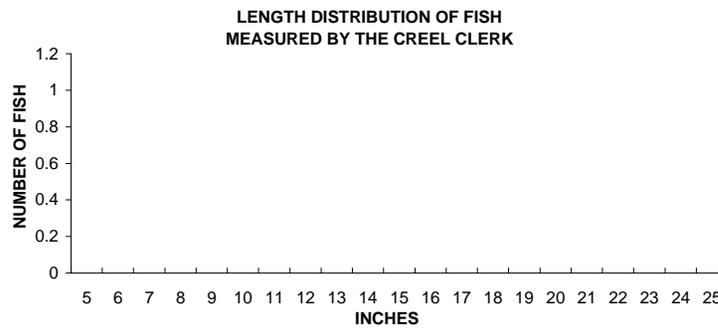
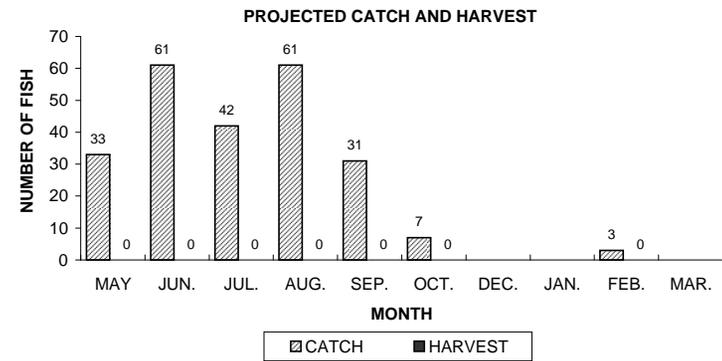
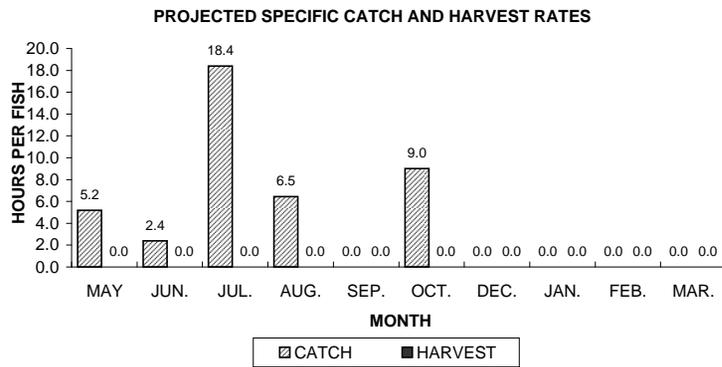
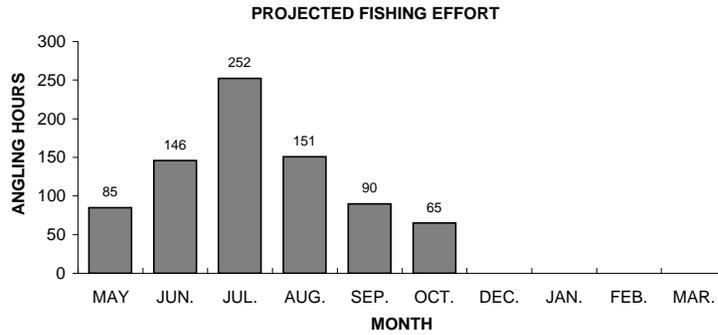
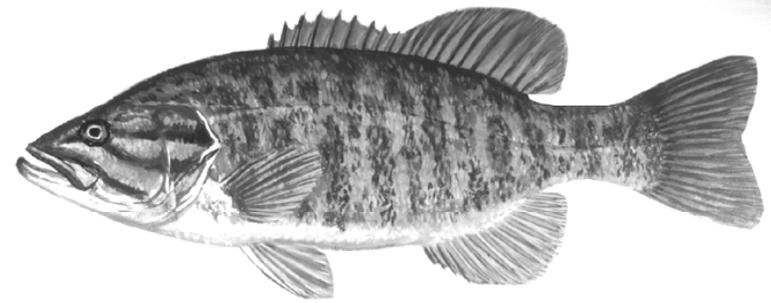


Figure 4. Smallmouth bass sportfishing effort, catch, harvest, and length distribution, South Turtle Lake, during 2010-11.

LARGEMOUTH BASS

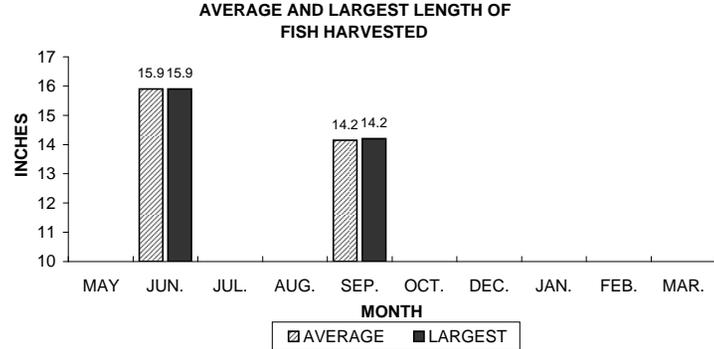
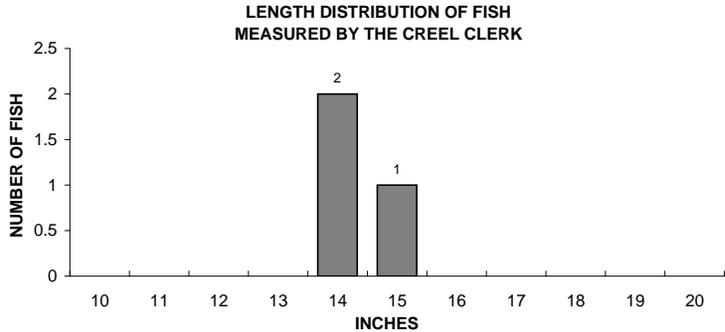
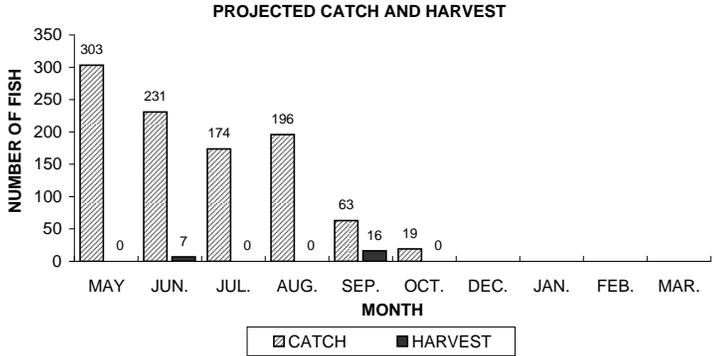
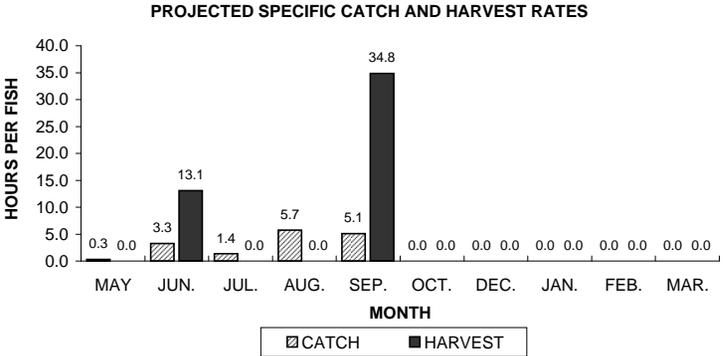
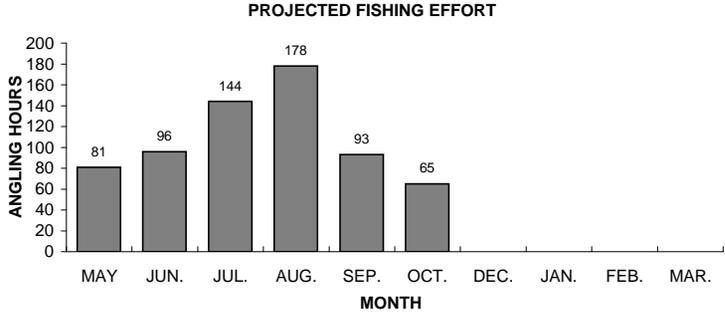
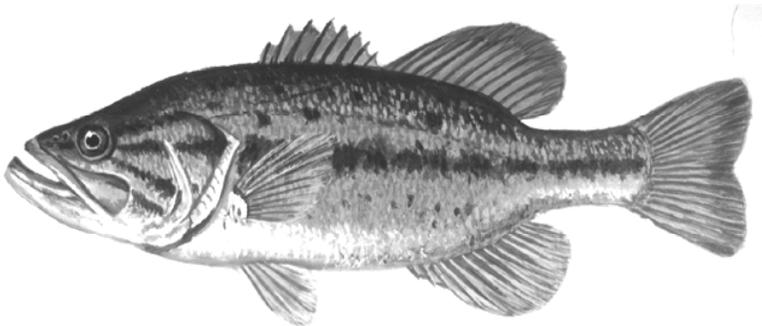


Figure 5. Largemouth bass sportfishing effort, catch, harvest, and length distribution, South Turtle Lake, during 2010-11.

YELLOW PERCH

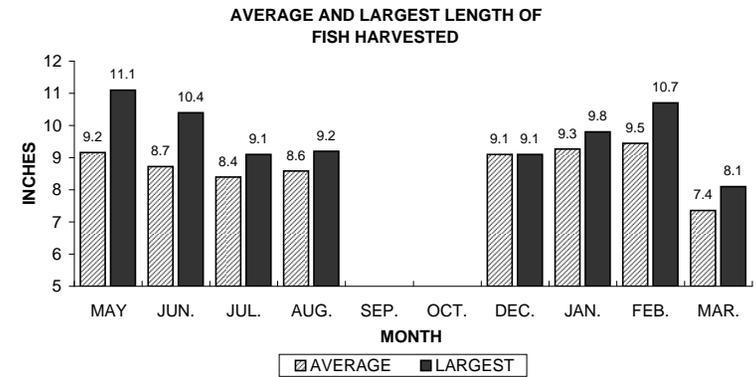
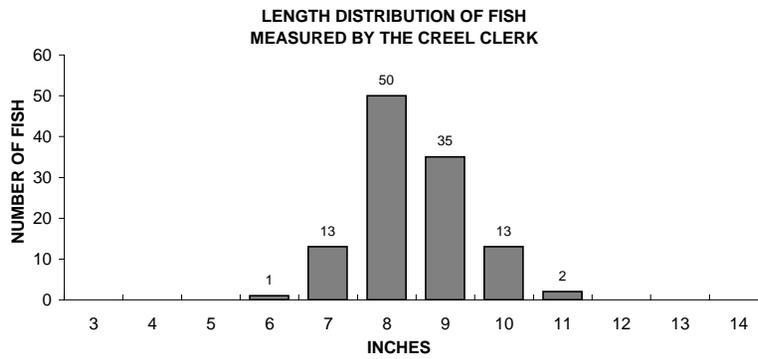
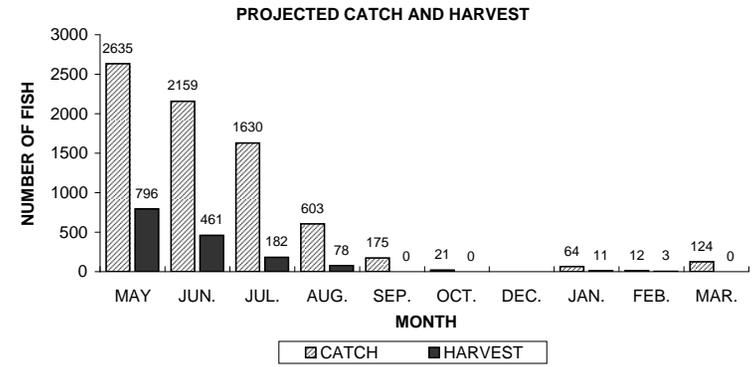
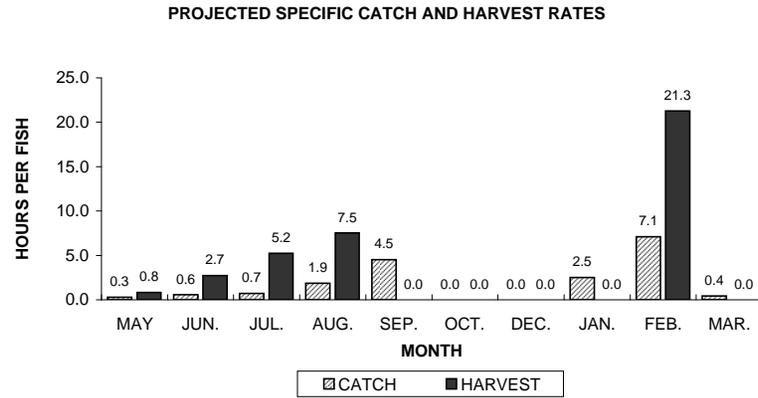
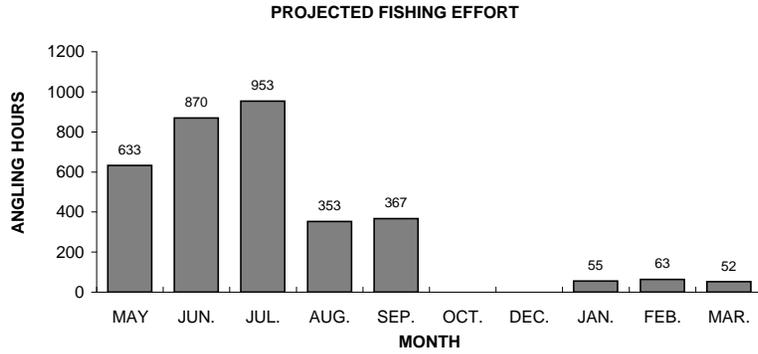
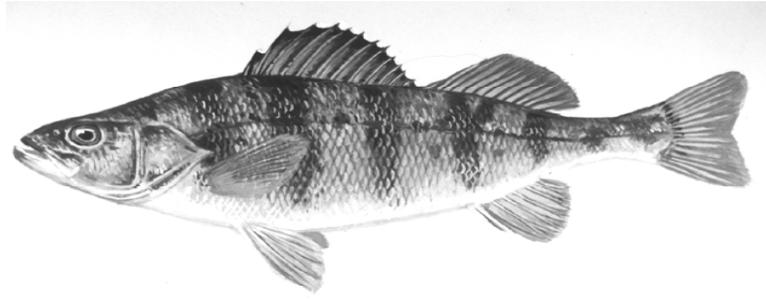


Figure 6. Yellow perch sportfishing effort, catch, harvest, and length distribution, South Turtle Lake, during 2010-11.

BLUEGILL

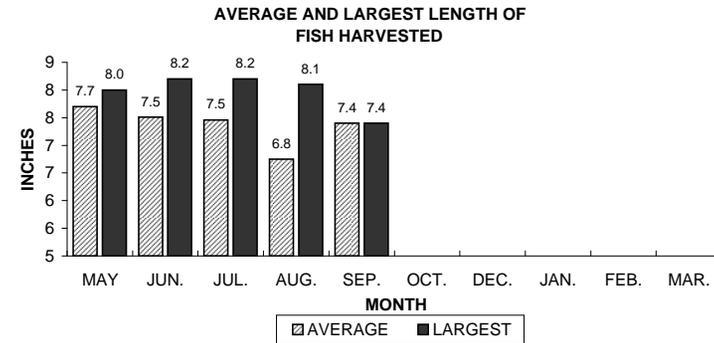
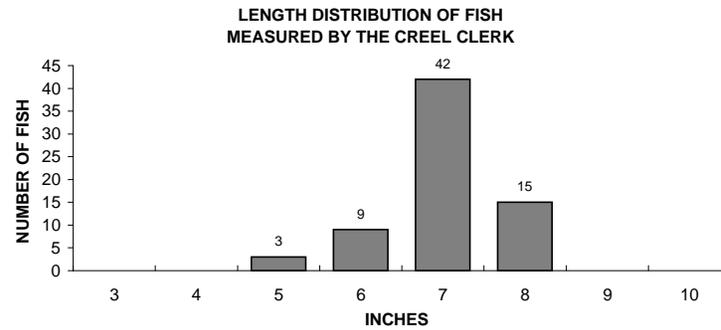
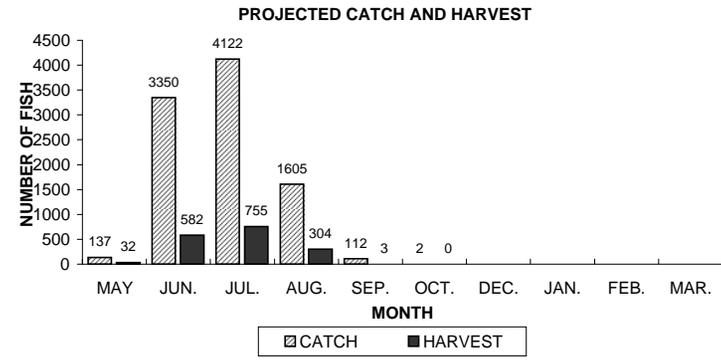
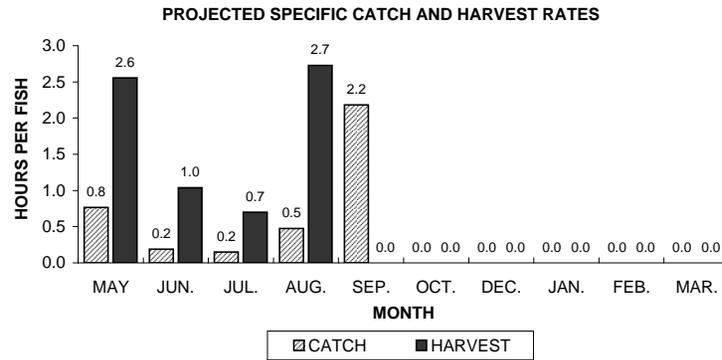
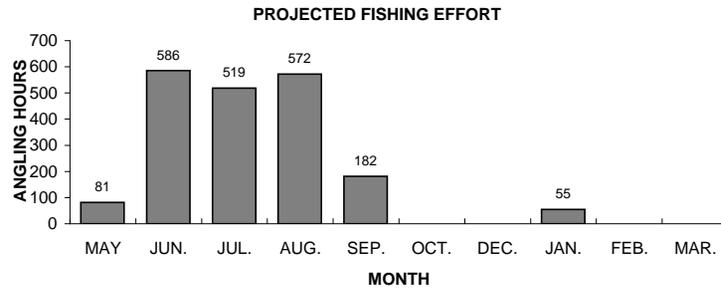
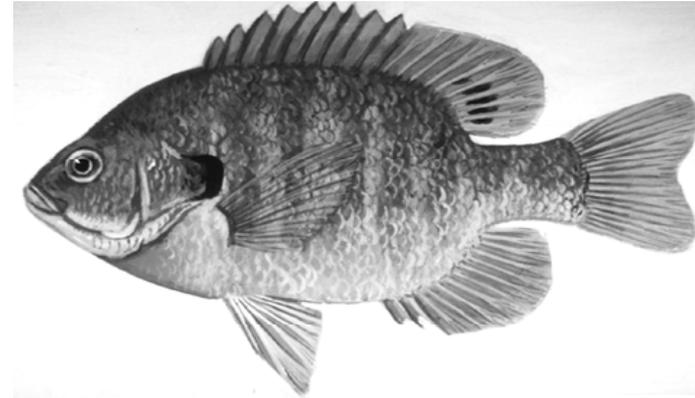


Figure 7. Bluegill sportfishing effort, catch, harvest, and length distribution, South Turtle Lake, during 2010-11.

PUMPKINSEED

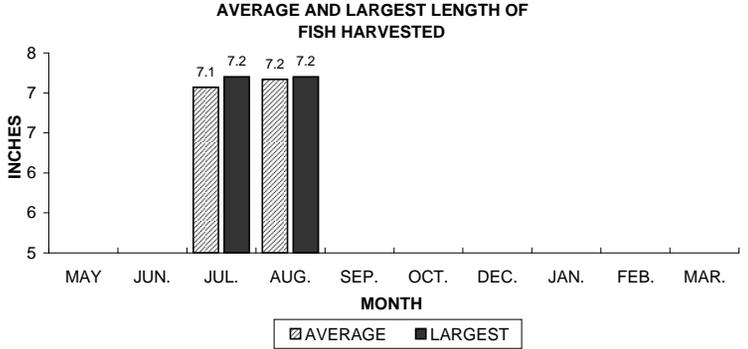
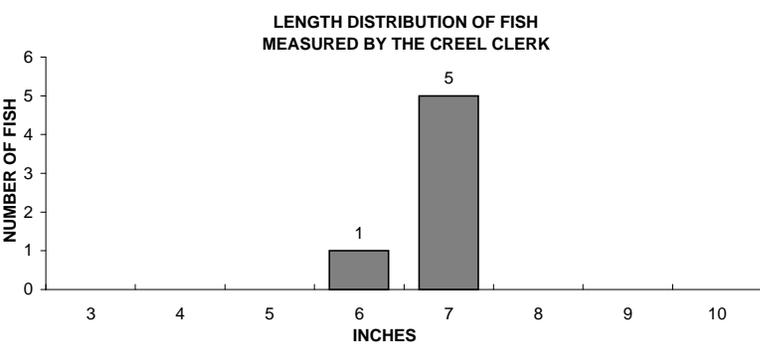
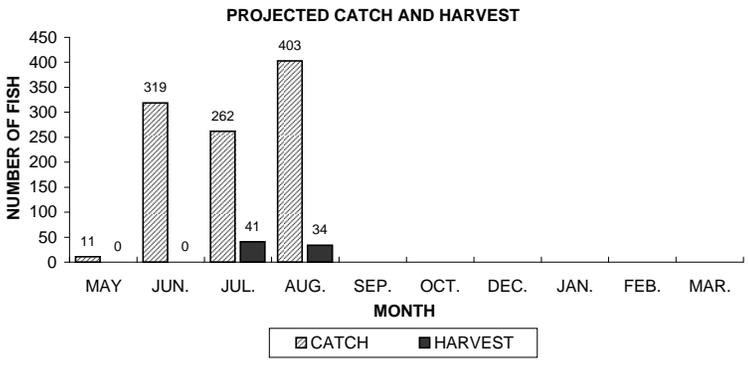
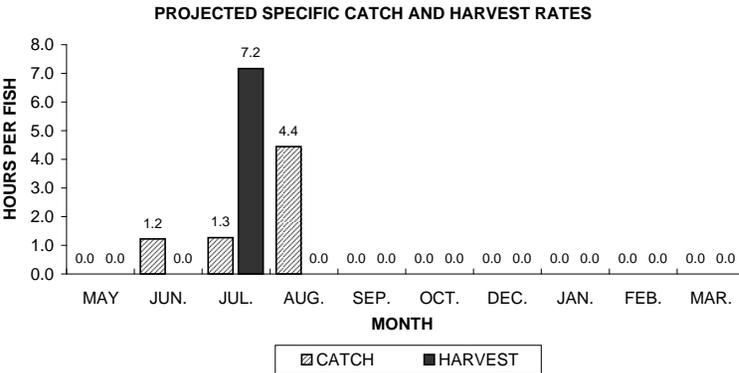
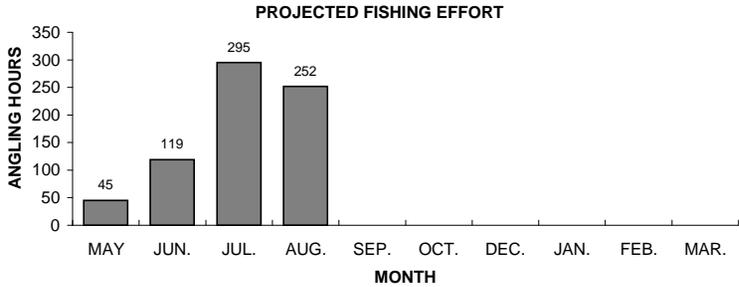
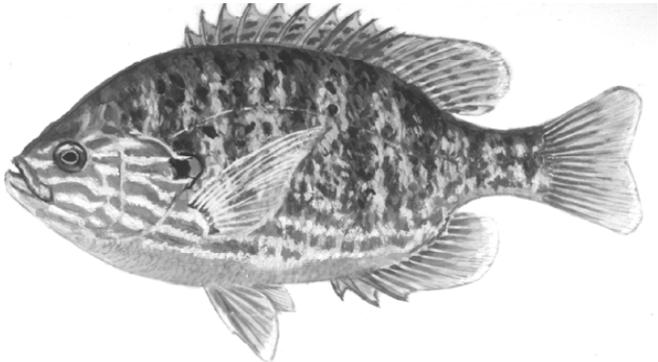


Figure 8. Pumpkinseed sportfishing effort, catch, harvest, and length distribution, South Turtle Lake, during 2010-11.

ROCK BASS

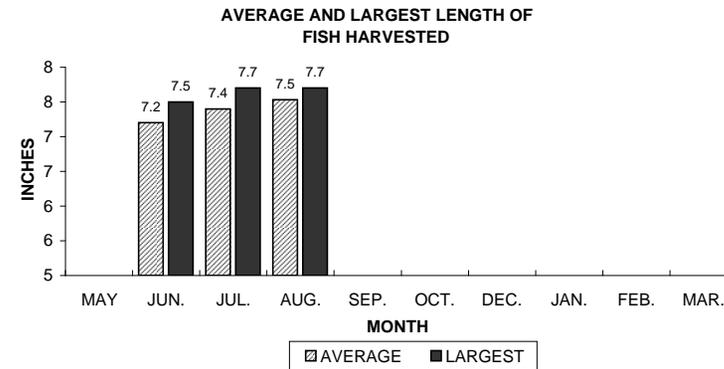
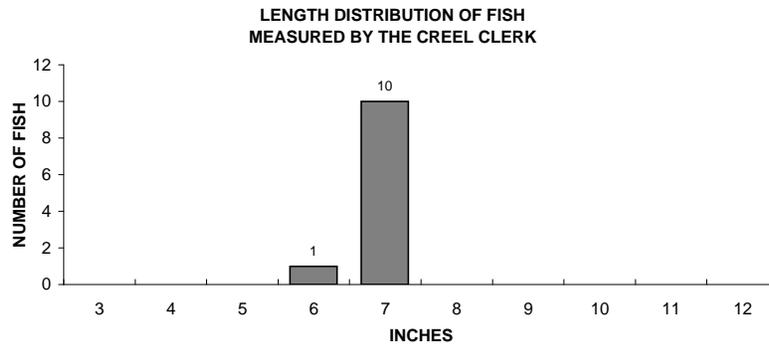
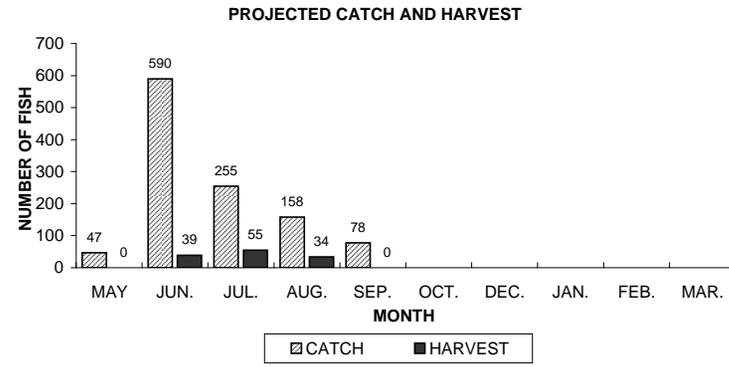
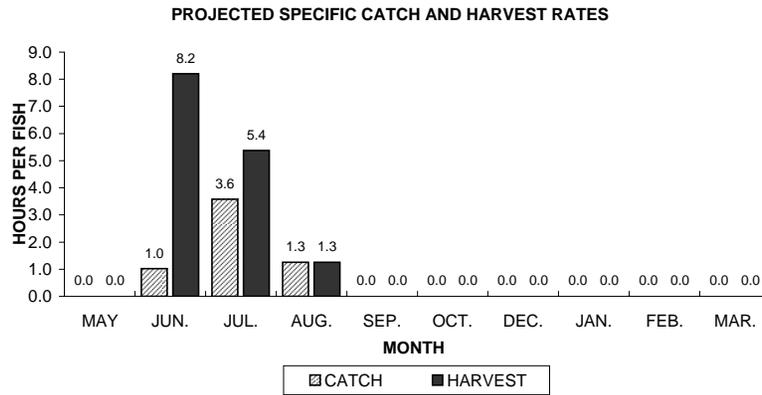
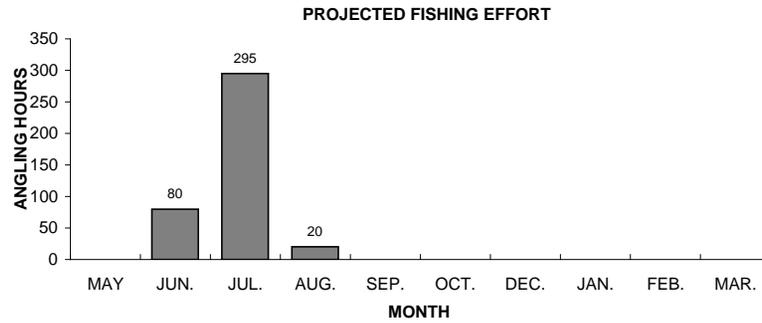
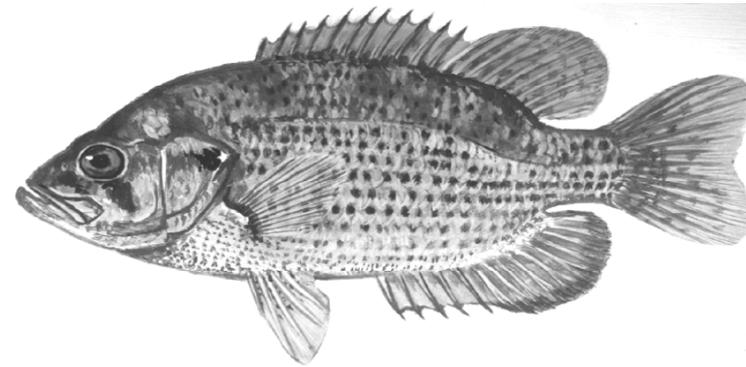


Figure 9. Rock bass sportfishing effort, catch, harvest, and length distribution, South Turtle Lake, during 2010-11.

BLACK CRAPPIE

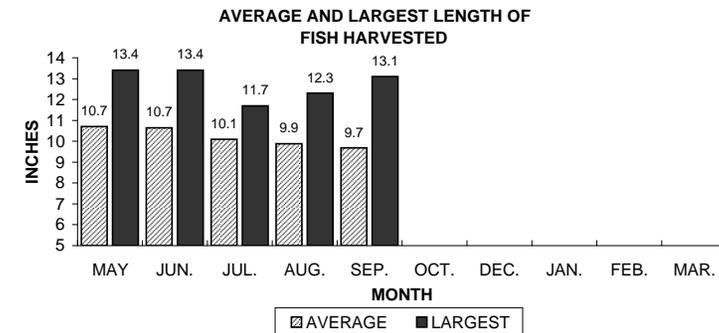
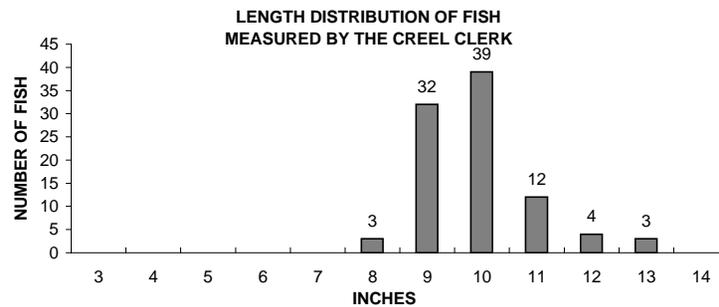
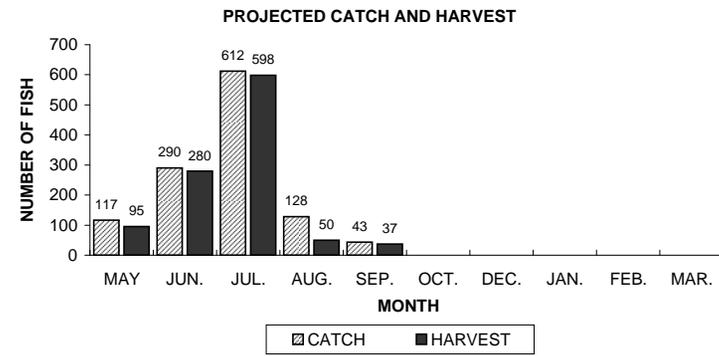
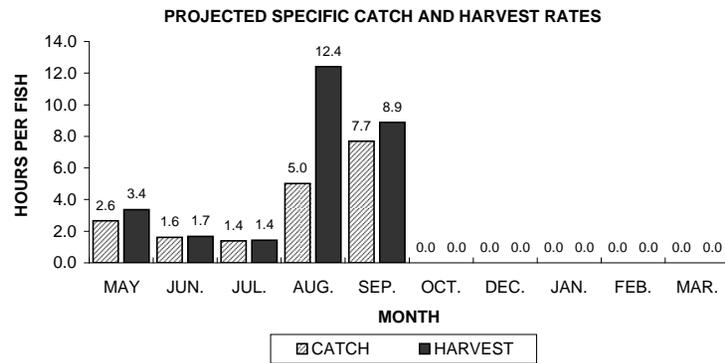
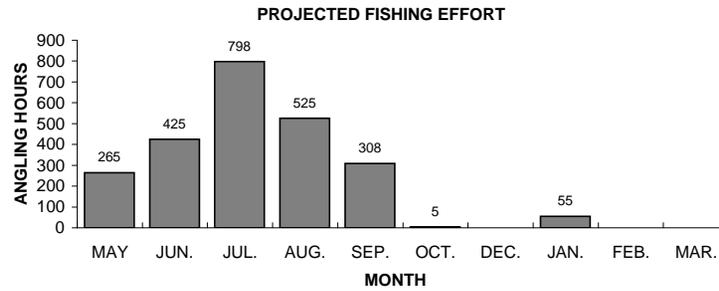
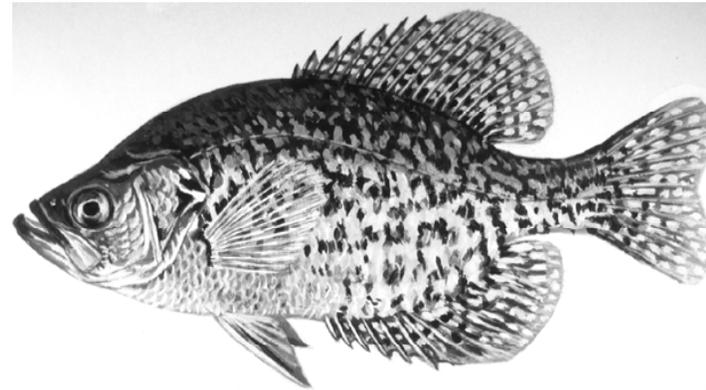


Figure 10. Black crappie sportfishing effort, catch, harvest, and length distribution, South Turtle Lake, during 2010-11.