



Open-Water Spearing and Netting in the 1837 Minnesota Ceded Territory During the 2000-2001 Quota Year

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ABSTRACT

The 2000-2001 quota-year was the third year that open-water spear and net fishing was conducted by eight Ojibwa Bands in the 1837 Minnesota ceded territory. A total of 403 Band members participated in the fishery. Of the four lakes with effort, spearing occurred in four and gill-netting in one. Fish were harvested in all waterbodies that received effort. A total of 29,362 fish weighing 58,273 pounds were harvested. Walleye made up approximately 86% of the catch (25,274 fish, 47,766 pounds). Other species harvested included 1,555 northern pike (7,461 pounds), 770 yellow perch (569 pounds), 617 burbot (1,121 pounds), and 554 tullibee (489 pounds). Most of the harvest occurred in Mille Lacs Lake during spring, which included 24,412 walleye weighing 45,151 pounds and 1,415 northern pike weighing 6,615 pounds. Of these walleye, more were taken by gill-netting (22,371 fish, 40,490.9 pounds) than by spearing (2,041 fish, 4,659.6 pounds). For all lakes combined, average length was 17.8 inches for walleye and 26.3 inches for northern pike; average weight was 1.9 and 4.8 pounds, respectively. The tribal harvest of quota and cap regulated fish species was maintained within established limits on all lakes through an intensive harvest management system that included daily permits, complete monitoring and daily reporting of the catch, and daily adjustments to quotas.

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INTRODUCTION

A U.S. Supreme Court decision issued on March 24, 1999 reaffirmed the rights of eight Chippewa tribes to hunt, fish, and gather off-reservation in the Minnesota area reserved by a treaty with the United States government signed in 1837 (Figure 1). This report presents data for harvest and effort by Chippewa spearers and gill-netters in 1837 Minnesota ceded territory waters (Figure 2) during the 2000-2001 quota year which ran from April 1, 2000 through March 31, 2001. Most of the harvest and effort occurred in Mille Lacs Lake throughout a 32 day period in the spring of 2000 (April 1 through May 2). However, additional harvest and effort occurred in Mille Lacs Lake during the fall (September 5 through November 24) and in three other lakes during the spring of 2000.

Eight Chippewa bands participated in the 2000-2001 fishery including two Minnesota bands (Mille Lacs and Fond du Lac) and six Wisconsin bands (Bad River, Lac Courte Oreilles, Lac du Flambeau, Mole Lake, Red Cliff, and St. Croix) (Figure 1). During the previous year, a fishery by eight Chippewa bands occurred in which 54,038 pounds of fish including 46,128 pounds of walleye were taken (Milroy, David, Krueger, and Madsen, 2005).

REGULATIONS

Harvest was strictly regulated and completely monitored under provisions of the “1837 Treaty Conservation Code for the Minnesota Ceded Territory” as amended January 27, 1997. This tribal code contains regulations that govern the use of spears and nets to harvest fish. The code was jointly developed with the State of Minnesota, approved by the federal court, and individually adopted by the Chippewa bands.

The exercise of treaty fishing rights in the 1837 Minnesota ceded territory was also subject to provisions of the “Interim Treaty Fisheries Management Plan for the 1837 Minnesota Ceded Territory for the Years 1998-2002”. This harvest management plan provided for the gradual development of treaty fisheries in the 1837 Minnesota ceded territory and established tribal walleye quotas for Mille Lacs Lake for a five year period, beginning with the 1998-1999 quota-year. Under this plan, the tribal walleye quota for Mille Lacs Lake in 1998-1999 was set at 40,000 pounds and was to increase at a rate of 15,000 pounds annually. Thus, the tribal walleye quota for 2000-2001 was set at 70,000 pounds.

In addition to the Treaty Conservation Code and Interim Treaty Fisheries Management Plan, a set of protocols were agreed to by the State of Minnesota and its Department of Natural Resources and the Chippewa bands. These protocols identified methods to calculate threshold and harvestable surplus levels for ceded territory waters, established procedures for information exchange, and provided an operational framework for the 1837 Minnesota Ceded Territory Fisheries Committee.

PERMIT SYSTEM AND HARVEST MONITORING

A comprehensive harvest management system based upon daily permits, monitoring of the entire catch, daily reporting, and daily updates of quotas for quota or cap regulated species was used as follows.

Each night that a tribe intended to spear or net, a tribal representative contacted the Great Lakes Indian Fish and Wildlife Commission (GLIFWC) office in Odanah, Wisconsin around noon to notify staff of the selected lakes, boat landings, and walleye bag limits for spearing. At the same time quotas for walleye and northern pike were updated and the number of permits (Figure 3) that could be issued was determined. For spearing, the number of issuable permits was determined by dividing the remaining tribal quota for a lake by the nightly bag limit selected for that lake. For netting, the number of issuable permits was determined by dividing the remaining tribal walleye quota by an assigned catch rate value. An assigned catch rate value of 200 pounds of walleye per net was used from ice-out until April 25. The catch rate value was reduced to 100 pounds of walleye per net on April 26, and further reduced to 50 pounds of walleye per net on April 29. Tribal members could either pick up a permit at a registration station or a boat-landing

One or more creel clerk-warden teams were assigned to each lake and each designated boat landing on Mille Lacs Lake where permits had been or were scheduled to be issued. All off-reservation spearing and netting was monitored by creel teams under the supervision of GLIFWC staff or by Fond du Lac Band tribal wardens and biologists. All on-reservation spearing and netting in Mille Lacs Lake was monitored by creel teams under the supervision of Mille Lacs Band tribal wardens. Prior to the season, written instructions, equipment, data forms, and training were provided to creel clerks and others involved with harvest monitoring and reporting.

For spearing, clerk-warden monitoring teams typically arrived at the designated boat landing before dusk and stayed until spearing ended. Upon the return of each boating party, a catch report form (Appendix A) was completed by a monitoring team to include time spearing started, the time it ended, permit numbers, plus the name and tribal identification number of each spearer. When available, tribal members could be issued one or more additional spearing permits.

For netting, clerk-warden teams arrived at the designated boat landing or monitoring location prior to scheduled net-lift times. Most nets were set in the evening, fished overnight, and lifted the following morning. Some nets were lifted at night, fish removed, and then reset. Lift times and locations were scheduled in advance and written on each permit issued. Nets could be checked prior to the designated lift time only if monitoring personnel were present. A catch report form was completed for each net-lift under each permit.

All fish harvested were to be identified to species, counted, and weighed in the aggregate by species. For spearing, length and sex information were collected from the first 100 walleye plus all walleye in the last boat. Length and sex information were also collected from a sub-sample of netted walleye and for most individuals of other species. For walleye, a sample of spines was collected for aging.

Harvest and effort for each lake were totaled by harvest method and reported by around 10 A.M. the following day to administrative staff at the GLIFWC office in Odanah, Wisconsin. Catch report forms and nightly summary sheets for all spearing and netting that had occurred were also faxed to the GLIFWC office each morning and used to double-check reported totals. During spring the total harvest by lake, by band, and by species was transmitted to tribal and Minnesota Department of Natural Resources (MnDNR) representatives around 10 a.m. that same day and were used to update walleye tribal quotas. After the spring season, harvest summaries were provided monthly to MnDNR representatives during months with spearing or netting effort. For net-lift data collected after and not reported by 10 a.m., the number of net-lifts outstanding was multiplied by the assigned catch rate, and the total subtracted from a Band's quota until the actual data were reported and could be used.

RESULTS AND DISCUSSION

FISHING EFFORT

NUMBER OF PARTICIPANTS

A total of 403 tribal members speared, netted, or speared and netted during the 2000 spring fishery in Minnesota (Table 1, Appendix B). Of this total, 29% were Mille Lacs Band members, 25% were Fond du Lac Band members, and 46% were from the six Wisconsin bands combined. Compared to 1999, the total number of participants increased by 156 persons or 63%. Except for Red Cliff, this increase in participants occurred for all Bands.

Table 1. Number of tribal members from eight Chippewa bands who speared, netted, or speared and netted during the 2000 spring fishery.

Gear	Mille Lacs	Fond du Lac	Bad River	Lac Courte Oreilles	Lac du Flambeau	Mole Lake	Red Cliff	St. Croix	Total
Spearing only	5	25	0	0	0	0	0	1	31
Netting only	78	16	38	34	21	15	13	15	230
Spearing and Netting	36	58	8	0	24	0	0	16	142
2000 Spring Total	119	99	46	34	45	15	13	32	403
1999 Spring Total	109	21	28	25	21	13	13	17	247
1998 Spring Total	69	34	13	7	15	0	4	10	152

After the 2000 spring season, the only fishing that occurred was by 18 Mille Lacs band members who netted in Mille Lacs Lake.

NUMBER OF PERMITS USED

For all lakes combined, a total of 1,069 permits were used during spring 2000 (Table 2, Appendix B) up from 1999 with 794 permits. More netting permits (777) were used than spearing permits (292). More permits were used by the Mille Lacs Band (441) and the Fond du Lac Band (193) than the individual Wisconsin bands. Of the total permits, 41% were used by Mille Lacs Band members, 18% by Fond du Lac Band members, and 41% by Wisconsin band members. Similar to 1999, Mille Lacs Band members used more permits for netting (342) while Fond du Lac Band members used more permits for spearing (136). After spring, Mille Lacs Band members used 153 permits for netting in Mille Lacs Lake.

Table 2. Number of permits used by eight Chippewa bands during spring 2000.

Gear	Mille Lacs	Fond du Lac	Bad River	Lac Courte Oreilles	Lac du Flambeau	Mole Lake	Red Cliff	St. Croix	Total
Spearing	99	136	8	0	22	0	0	27	292
Netting	342	57	86	67	71	42	28	84	777
2000 Total	441	193	94	67	93	42	28	111	1,069
Percent of 2000 total	41%	18%	9%	6%	9%	4%	3%	10%	
1999 Total	328	188	54	44	45	47	33	52	794
1998 Total	198	155	43	30	36	0	15	33	510

NUMBER OF DAYS FISHED

Overall, spearing or netting effort occurred on 87 dates during the 2000-2001 quota year (Appendix C). During a 32 day period in spring (April 1 through May 2), spearing effort occurred in Mille Lacs Lake on 19 dates while netting occurred on all 32 days. In three other lakes, spring spearing occurred for one night per lake and on three separate dates. During the remainder of the quota year netting occurred in Mille Lacs Lake on 55 dates.

NUMBER OF BOAT-HOURS

A total of 324.1 boat-hours of spearing effort occurred during the 2000-2001 quota year (Table 3), all of which occurred during spring 2000 (Appendix C). Fond du Lac Band spearkers accounted for half of the boat-hour effort (50%). More spearing effort occurred in Mille Lacs Lake (94%) than the three other lakes that received effort combined (6%), an increase from the 1999 season where 53% of the spearing effort occurred in Mille Lacs Lake.

Table 3. Number of spearing boat-hours by eight Chippewa bands during the 2000-2001 quota year.

Lakes	Mille Lacs	Fond du Lac	Bad River	Lac Courte Oreilles	Lac du Flambeau	Mole Lake	Red Cliff	St. Croix	Total
Mille Lacs	89.8	150.5	6.25	0	34.55	0	0	23.5	304.6
Goose	4.25	0	0	0	0	0	0	0	4.25
Green	0	12.5	0	0	0	0	0	0	12.5
Razor	2.75	0	0	0	0	0	0	0	2.75
2000 Total	96.8	163	6.25	0	34.55	0	0	23.5	324.1
Percent of 2000 Total	30%	50%	2%	0	11%	0	0	7%	
1999 Total	106.9	233.2	8.5	0	10.4	7.8	6.4	9.6	382.8
1998 Total	56.0	156.5	15.5	23.6	23.6	0	23.1	21.6	319.9

NUMBER OF NET-LIFTS

A total of 951 gill-net lifts occurred during the 2000-2001 quota year, of which 798 lifts occurred during spring 2000 (Table 4, Appendix D). All the spring effort occurred in Mille Lacs Lake with Mille Lacs Band members accounting for 43% of the effort and most lifts being with 1.75 inch mesh nets. After spring a total of 153 net lifts occurred in Mille Lacs Lake. All the effort occurred with 1.75 inch mesh during the fall season.

Table 4. Number of net-lifts by eight Chippewa bands during the 2000-2001 quota year.

Season	Lake	Gill-net mesh (inches)	Mille Lacs	Fond du Lac	Bad River	Lac Courte Oreilles	Lac du Flambeau	Mole Lake	Red Cliff	St. Croix	Total
Spring 2000	Mille Lacs	1.25	16	1	0	0	0	0	0	0	17
Spring 2000	Mille Lacs	1.5	18	0	0	0	0	0	0	1	19
Spring 2000	Mille Lacs	1.75	306	56	91	68	87	42	28	83	761
Spring 2000	Mille Lacs	2.0	1	0	0	0	0	0	0	0	1
Spring Sub-total			341	57	91	68	87	42	28	84	798
Fall	Mille Lacs	1.75	153	0	0	0	0	0	0	0	153
2000 Total			494	57	91	68	87	42	28	84	951
1999 Total			427	34	50	44	44	32	28	40	699
1998 Total			181	41	25	20	24	0	6	22	319

HARVEST

TOTAL HARVEST

During the 2000-2001 quota year, a total of 29,362 fish (58,273 pounds) from 14 taxa were harvested from four lakes (Table 5). Most fish were taken from Mille Lacs Lake; including 29,274 fish or 99.7% of the total number, and 58,064 pounds or 99.6% of the total weight. The only other lake with more than 100 pounds of fish harvested was Green Lake in Chisago County (38 fish and 117 pounds).

Walleye, the species sought during most spearing and netting, made up most of the harvest. Walleye harvest comprised 25,274 fish or 86% of the total number, and 47,766 pounds or 82% of the total weight (Table 5). Northern pike and burbot were the only other species for which harvest exceeded 1,000 pounds. Harvest exceeded 200 pounds (and 200 fish) for three other taxa: yellow perch, tullibee, and sucker. Harvest was below 100 pounds for the remaining taxa.

Table 5. Number and pounds of 14 fish taxa harvested from 4 lakes with effort during the 2000-2001 quota year.

Lake County	Goose Chisago	Green Chisago	Mille Lacs Mille Lacs	Razor Pine	Total	Percent of Total
Area in Acres	442	1,715	132,516	100	134,773	
Species / Taxa NUMBER						
Walleye	48	35	25,191		25,274	86.08%
Northern Pike		2	1,552	1	1,555	5.30%
Yellow Perch			770		770	2.62%
Burbot			617		617	2.10%
Tullibee			554		554	1.89%
Smallmouth Bass			50		50	0.17%
Largemouth Bass		1	1		2	0.01%
Bass sp.			6	1	7	0.02%
Muskellunge			3		3	0.01%
Rock Bass			132		132	0.45%
Crappie sp.			25		25	0.09%
Sucker sp.			319		319	1.09%
Bullhead sp.			52		52	0.18%
Carp			1		1	0.00%
Bowfin			1		1	0.00%
Total	48	38	29,274	2	29,362	100.00%
Percent of Total	0.16%	0.13%	99.70%	0.01%	100.00%	
Species / Taxa POUNDS						
Walleye	85.8	103.0	47,577.3		47,766.1	81.97%
Northern Pike		11.8	7,444.1	4.6	7,460.5	12.80%
Yellow Perch			568.8		568.8	0.98%
Burbot			1,121.4		1,121.4	1.92%
Tullibee			488.8		488.8	0.84%
Smallmouth Bass			69.4		69.4	0.12%
Largemouth Bass		2.2	1.2		3.4	0.01%
Bass sp.			14.2	2.4	16.6	0.03%
Muskellunge			36.4		36.4	0.06%
Rock Bass			84.5		84.5	0.15%
Crappie sp.			15.0		15.0	0.03%
Sucker sp.			554.2		554.2	0.95%
Bullhead sp.			50.3		50.3	0.09%
Carp			28.4		28.4	0.05%
Bowfin			9.6		9.6	0.02%
Total	85.8	117.0	58,063.6	7.0	58,273.4	100.00%
Percent of Total	0.15%	0.20%	99.64%	0.01%	100.00%	

Harvest of five species of fish was regulated by a quota in Mille Lacs Lake (Table 6, Appendices E, F1-F9). For walleye, 68% of the 70,000 pound quota for the 2000-2001 quota year was taken. For northern pike, 65% of the 11,500 pound quota was harvested. The percent of the quota harvested for the three other species was less than 10%.

Table 6. Overall tribal quota, declaration and harvest in pounds and percent of declaration taken during the 2000-2001 quota year for five fish species in Mille Lacs Lake.

	Walleye	Northern Pike	Yellow Perch	Tullibee	Burbot
Quota	70,000	11,500	135,000	12,000	14,000
Declaration	70,000	11,500	104,570	11,742	13,200
Harvest	47,577	7,444	569	489	1,121
Percent of Declaration Harvested	68%	65%	0.5%	4%	8%

Prior to the 2000-2001 quota year, four tribes declared a walleye quota for 23 lakes other than Mille Lacs Lake (Figure 2, Appendices G1-G4). Of these 23 lakes, the walleye quota was shared by two tribes on seven lakes. Effort occurred in three lakes and walleye were harvested in two (Table 5). In Goose Lake (Chisago County) Mille Lacs Band members speared 85.8 pounds (71.5%) of the 120 pound quota. Mille Lacs Band members also speared in Razor Lake (Pine County), but no walleye were taken. In Green Lake, Fond du Lac members speared 103 pounds of the 1,000 pound quota.

MILLE LACS LAKE HARVEST

Fourteen taxa of fish were harvested from Mille Lacs Lake during the 2000-2001 quota year (Table 5). The majority of harvested fish were walleye, which comprised 25,191 fish or 86% of the total number and 47,577 pounds (Appendix F1) or 82% of the overall weight. Northern pike and burbot were the only other species where harvest exceeded 1,000 pounds. For northern pike 7,444 pounds or 13% of the overall weight was harvested. For burbot 1,121 pounds or 2% of the overall weight was taken. Harvest exceeded 200 pounds for three other taxa: yellow perch, tullibee and sucker.

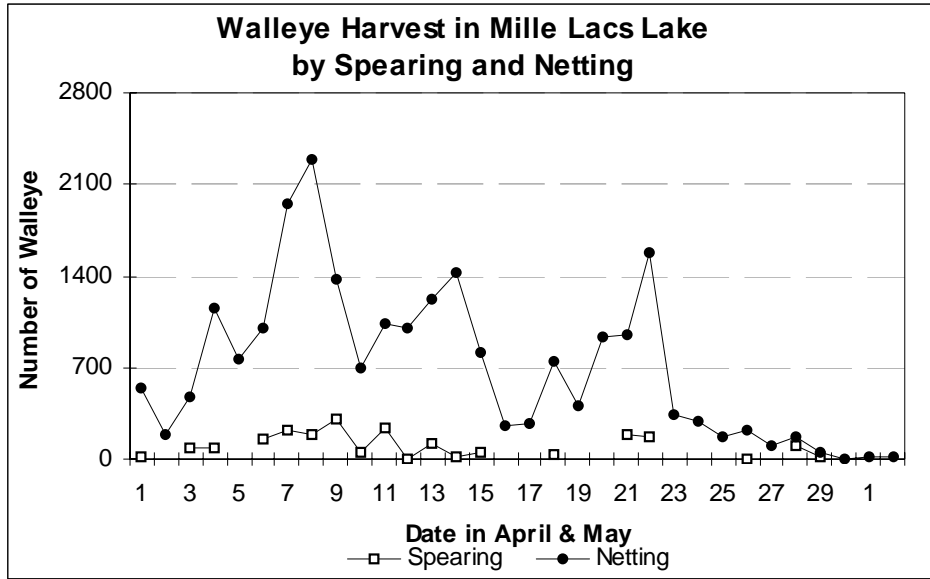
Harvest During Spring 2000. For the six fish taxa with more than 200 pounds taken a greater percent of the total weight was harvested in spring than after spring with the exception of tullibee (Table 7, Appendix F1). For walleye and northern pike, the percent of the total weight harvested in spring was 95% and 89%, respectively. For the four other species with more than 200 pounds taken, the percent harvested in spring was 97% for burbot, 93% for yellow perch, 83% for sucker, and 4% for tullibee. During spring 2000, the weight of walleye harvested was near or exceeded 1,000 pounds on most dates from April 4 to April 22 (Figure 4).

Table 7. Number and pounds of fish harvested in Mille Lacs Lake during spring 2000 and after spring.

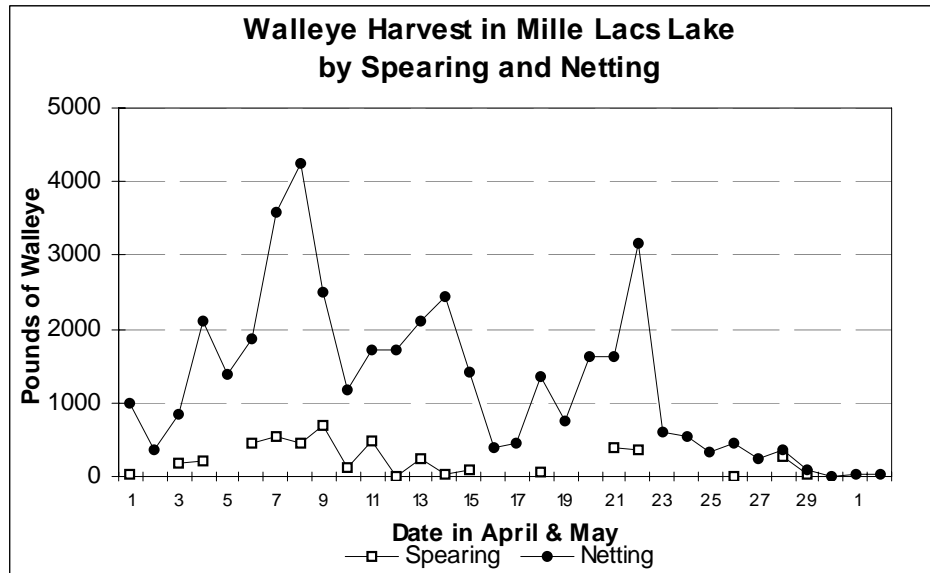
Species / Taxa	Spring		After Spring		Total		Percent of Total Pounds in Spring
	Number	Pounds	Number	Pounds	Number	Pounds	
Walleye	24,412	45,150.5	779	2,426.8	25,191	47,577.3	94.9%
Northern Pike	1,415	6,615.0	137	829.1	1,552	7,444.1	88.9%
Yellow Perch	714	530.6	56	38.2	770	568.8	93.3%
Burbot	599	1,089.2	18	32.2	617	1,121.4	97.1%
Tullibee	24	21.8	530	467	554	488.8	4.5%
Sucker sp.	262	457.6	57	96.6	319	554.2	82.6%
Smallmouth Bass	30	38.8	20	30.6	50	69.4	
Largemouth Bass	1	1.2			1	1.2	
Bass sp.	6	14.2			6	14.2	
Muskellunge	2	22	1	14.4	3	36.4	
Rock Bass	92	58.9	40	25.6	132	84.5	
Crappie	19	10.2	6	4.8	25	15	
Bullhead sp.	18	16.1	34	34.2	52	50.3	
Carp	1	28.4			1	28.4	
Bowfin	1	9.6			1	9.6	
Total	27,596	54,064.1	1,678	3,999.5	29,274	58,063.6	93.1 %

Figure 4. Number (a) and pounds (b) of walleye harvested daily in Mille Lacs Lake by spearing and netting during spring 2000.

a)



b)



Harvest by Method During Spring 2000. The majority of harvest from Mille Lacs Lake during spring 2000 was with gill-nets (Appendix F1). For walleye, the weight harvested was much greater for gill-nets (40,490.9 pounds) than for spearing (4,659.6 pounds) (Appendix D). In addition, the percent of the spring weight harvested with gill-nets was 100% for northern pike and tullibee, 99.9% for burbot, 99.5% for yellow perch, 89.7% for walleye, and 62.2% for sucker.

CATCH PER EFFORT

Spearing CPE During Spring 2000. During spring 2000 a total of 324.1 boat-hours of spearing was recorded in which 2,124 walleye weighing 4,848 pounds were speared (Table 8, Appendices F1, G1-G5). Overall catch per effort (total harvest / total boat-hours) for walleye during spring was 6.6 fish and 15.0 pounds per boat-hour. The highest catch rate (walleye/boat-hour) was in Goose Lake (Chisago County) (11.3) followed by Mille Lacs Lake (6.7).

Table 8. Spearing CPE (catch per effort; number or pounds of walleye per boat-hour) for four lakes with effort during spring 2000.

Lake	County	Area	Harvest-Walleye Number	Harvest-Walleye Pounds	Effort-Boat-Hours	CPE (Number)	CPE (Pounds)
Mille Lacs L	Mille Lacs	132,516	2,041	4,659.6	304.6	6.7	15.3
Goose L	Chisago	442	48	85.8	4.25	11.3	20.2
Razor L	Pine	100	0	0.0	2.75	0.0	0.0
Green L	Chisago	1,715	35	103.0	12.5	2.8	8.2
		134,773	2,124	4,848.4	324.1	6.6	15.0

Gill-Net CPE During Spring 2000. For gill-netting during spring in Mille Lacs Lake, a total of 798 net-lifts were recorded in which 22,371 walleye weighing 40,410 pounds were caught. Overall catch per effort (total harvest / total net-lifts) for walleye was 28 fish and 51 pounds per net-lift (Figure 5, Figure 6, Appendix D). For 1¾ inch mesh gill-nets (includes one 2 inch mesh net-lift) a total of 762 net-lifts were observed in which 21,460 walleye weighing 38,869.5 pounds were harvested. The walleye catch per effort for 1¾ inch mesh gill-nets was 28 fish and 51 pounds. For 1½ inch mesh gill-nets a total of 19 net-lifts were recorded in which 519 walleye weighing 926 pounds were taken. The walleye catch per effort for 1½ inch mesh gill-nets was 27 fish and 49 pounds. For 1¼ inch mesh gill-nets a total of 17 net-lifts were recorded in which 392 walleye weighing 696 pounds were taken. The walleye catch per effort for 1¼ inch mesh gill-nets was 23 fish and 41 pounds.

Figure 5. Gill-net catch per effort (CPE) in numbers for walleye harvested from Mille Lacs Lake during spring 2000.

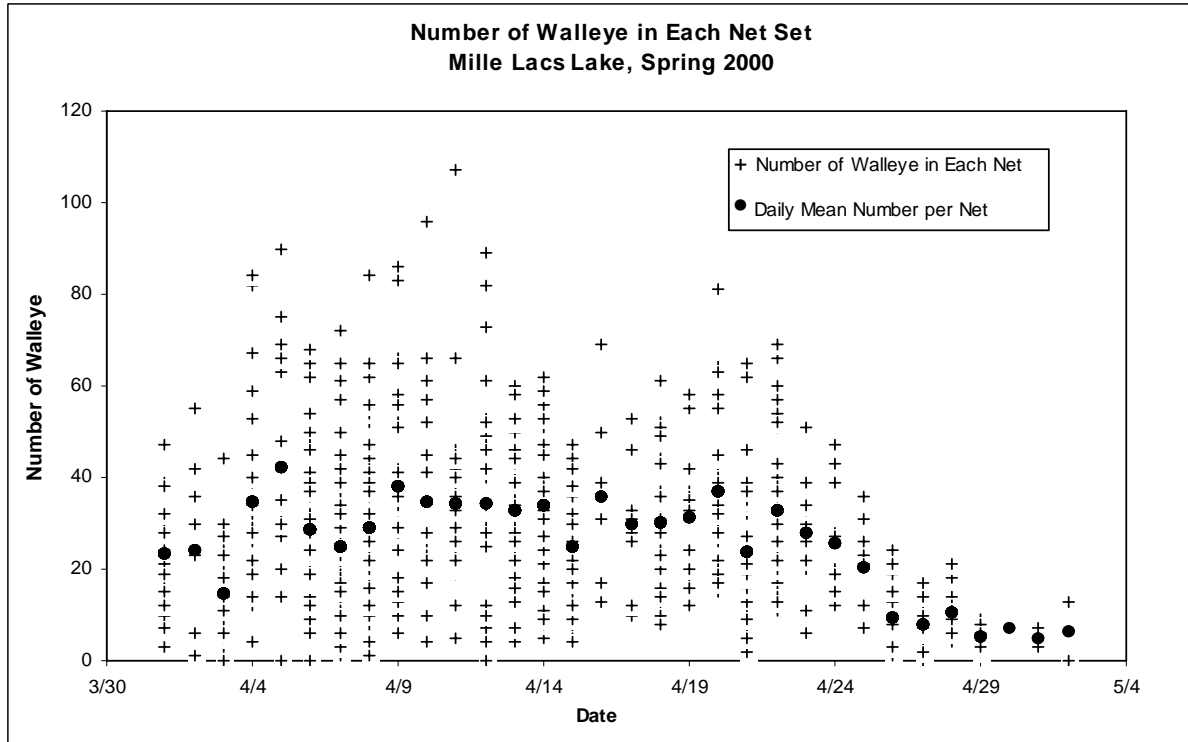
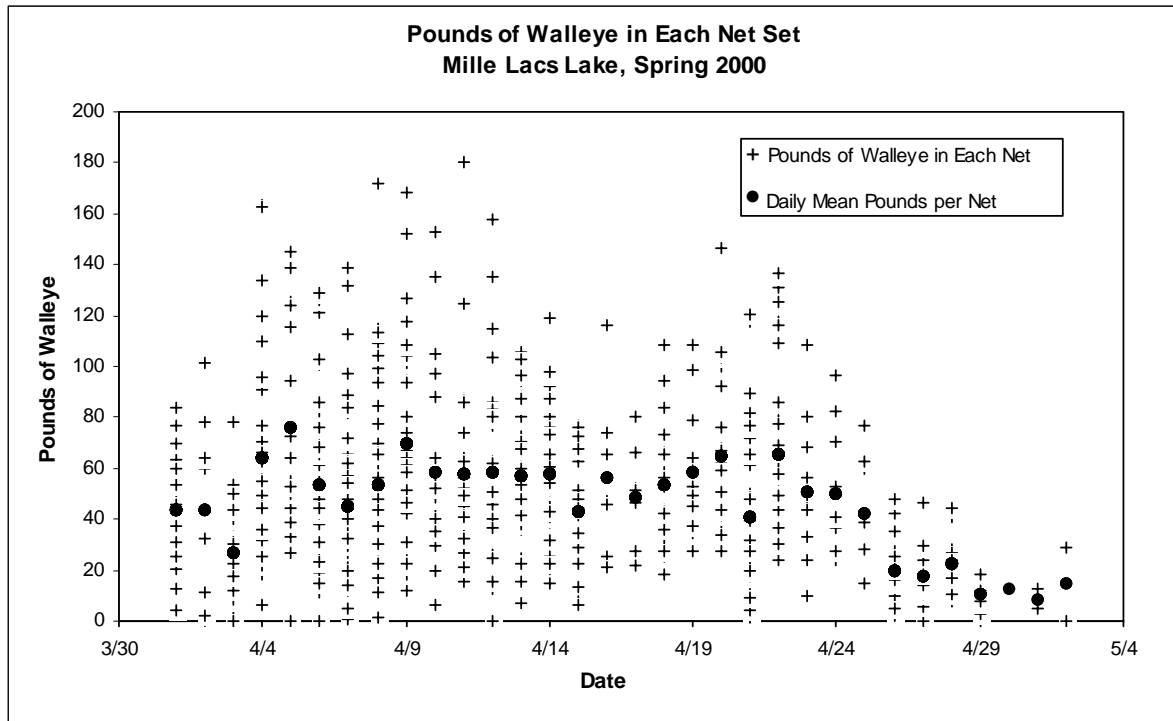


Figure 6. Gill-net catch per effort (CPE) in pounds for walleye harvested from Mille Lacs Lake during spring 2000.

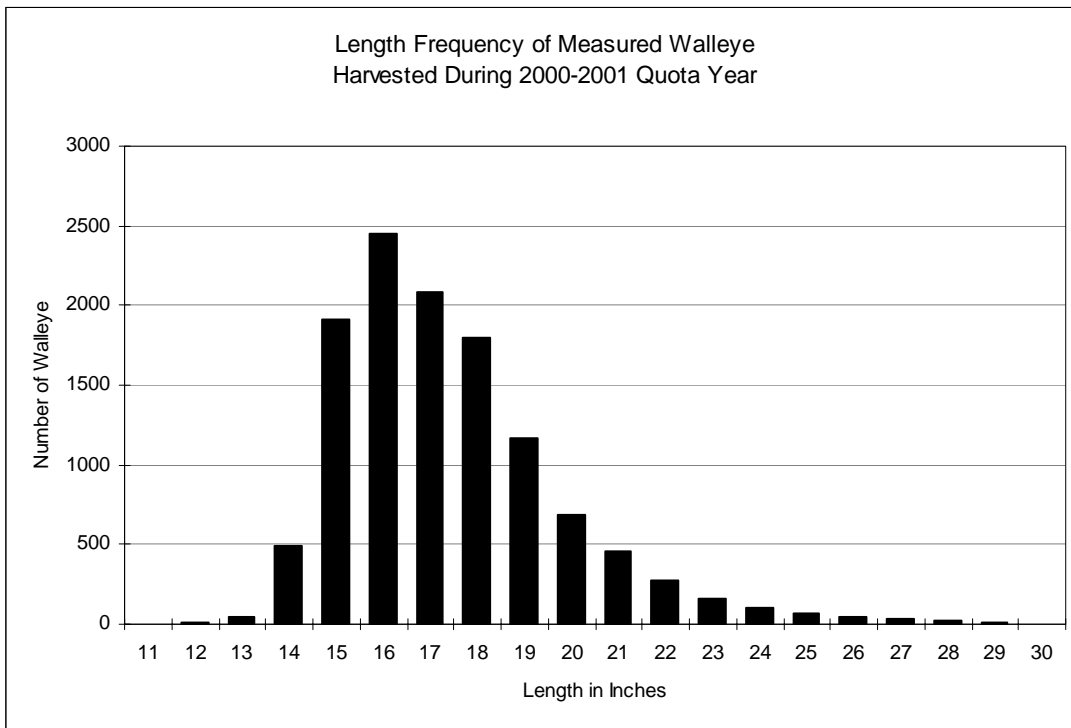


WALLEYE MEAN LENGTH AND MEAN WEIGHT

Length was measured for a total of 11,807 walleye (47% of the catch) and aggregate weight was recorded for all 25,274 walleye harvested (Appendix H). Overall, mean length of measured walleye was 17.8 inches (Figure 8) and mean weight was 1.9 pounds. For the two lakes where at least one hundred pounds of walleye were harvested, mean length of measured walleye and mean weight were 19.7 inches and 2.9 pounds in Green Lake (Chisago County), and 18.2 inches and 2.2 pounds in Mille Lacs Lake.

For walleye harvested from Mille Lacs Lake during spring 2000, mean length and weight of measured walleye were: 17.2 inches and 1.8 pounds for 1¼ inch mesh net, 17.4 inches and 1.8 pounds for 1½ inch mesh net, 17.5 inches and 1.8 pounds for 1¾ inch mesh net, 19.9 inch and 3.0 pounds for the 2 inch mesh net, and 18.5 inches and 2.3 pounds for spearing (Appendix H). Most walleye (85% of the catch) were harvested in spring with 1¾ inch mesh net. After spring, walleye were harvested only with 1¾ inch mesh net; mean length of measured walleye and mean weight were 20.5 inches and 3.1 pounds.

Figure 7. Length frequency of measured walleye during the 2000-2001 quota year.



SEX COMPOSITION OF THE WALLEYE CATCH

During the 2000-2001 quota year, 10,859 walleye were measured and sexed. An additional 7,765 walleye were sexed but not measured. The majority of the sexable walleye were male: 17,647 of 18,624 fish or 95% (Figure 8, Appendix H). Females (977 fish) comprised 5% of the sexable harvest. Sex could not be determined for 402 walleye.

For walleye harvested from Mille Lacs Lake during spring 2000, sex ratios (male:female) by gear were: 29:1 in 1¼ inch mesh net, 14:1 in 1½ inch mesh net, 20:1 in 1¾ inch mesh net, 1:1 in the 2 inch mesh net, and 11:1 by spearing (Appendix H). Respective mean lengths for male and female walleye captured by these gear were: 17.0 and 21.5 inches for 1¼ inch mesh net, 17.2 and 20.7 inches for 1½ inch mesh net, 17.3 and 20.5 inches for 1¾ inch mesh net, 19.4 and 20.6 inches for 2 inch mesh net, and 18.0 and 23.7 inches by spearing (Figure 9).

Figure 8. Estimated number of male and female walleye harvested per inch group during the 2000-2001 quota year.

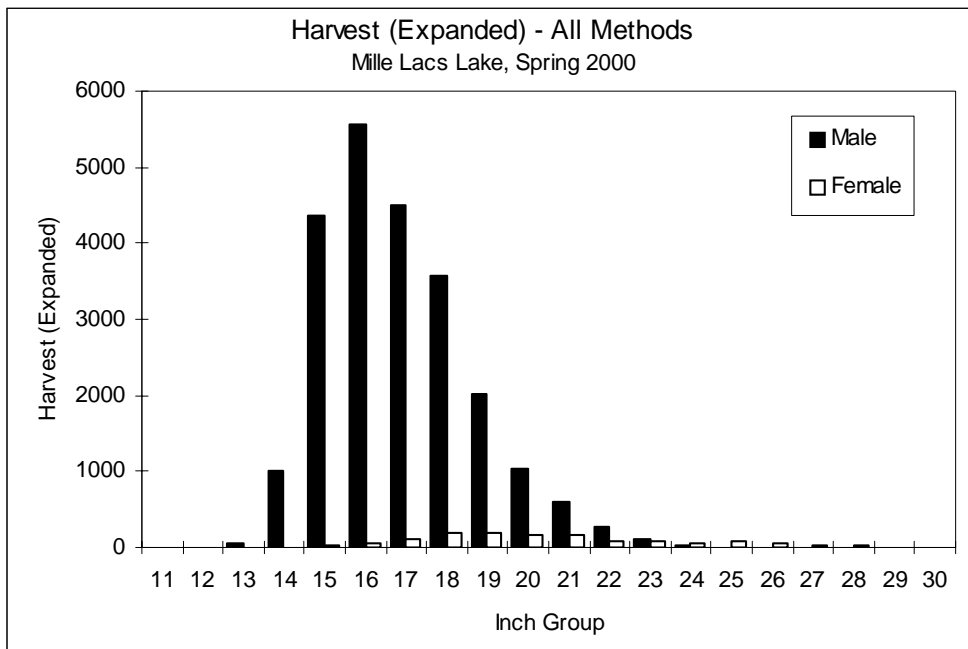
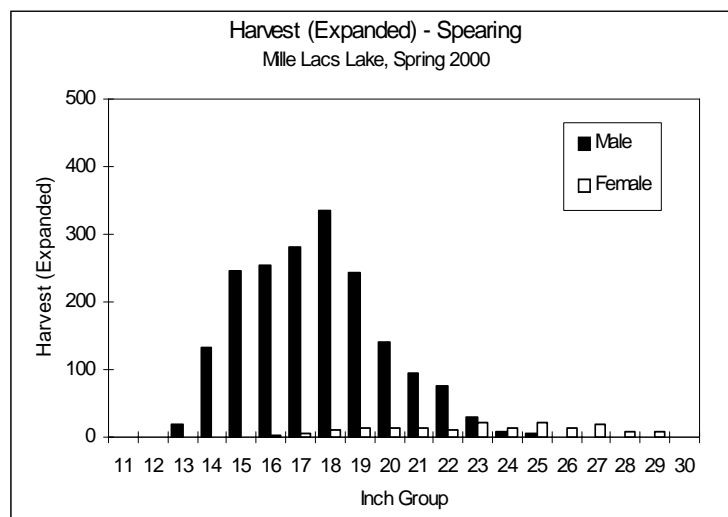
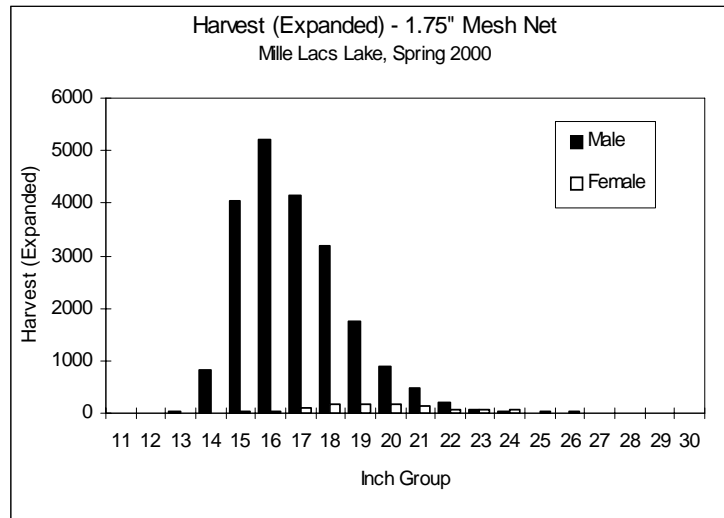
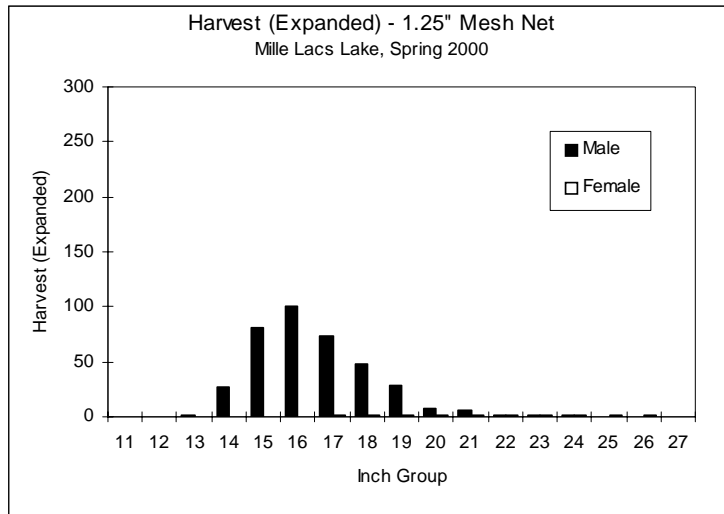


Figure 9. Estimated number of male and female walleye harvested per inch group with 1¼ and 1¾ inch (bar mesh) gill-nets, and spears from Mille Lacs Lake during spring 2000. Note varying scales on each graph.



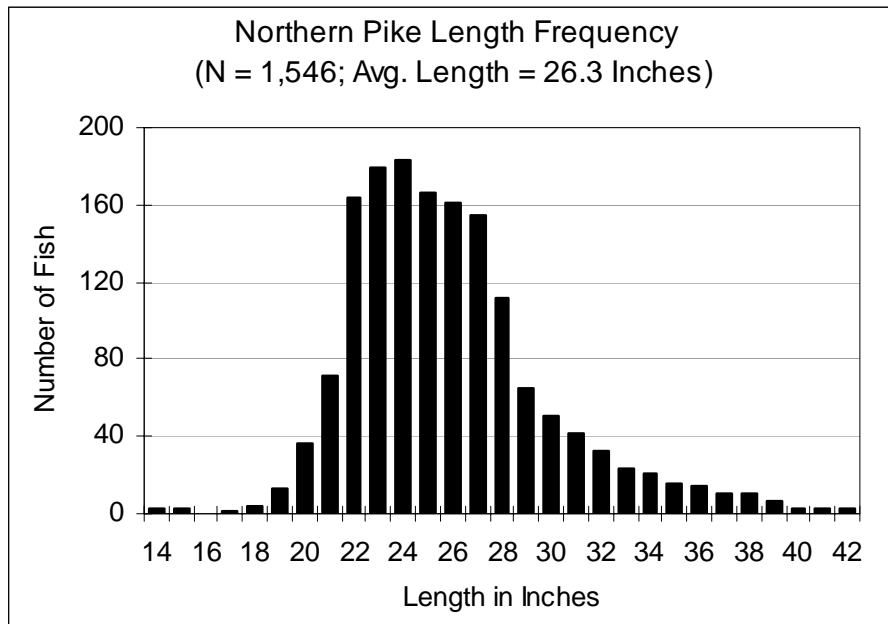
NORTHERN PIKE HARVEST

A total of 1,555 northern pike weighing 7,461 pounds were harvested from three lakes during the 2000-2001 quota year (Table 5, Appendix I). Average weight of all northern pike harvested was 4.8 pounds. Of the 1,546 northern pike with length measured the average length was 26.3 inches (Figure 10, Appendix I). Nearly all of the northern pike harvested (1,552 fish, 7,444 pounds) were taken from Mille Lacs Lake. Green Lake, in Chisago County, had 2 fish at 11.8 pounds, while Razor Lake, in Pine County, had 1 fish at 4.6 pounds.

Most northern pike (1,466 fish, 7,088 pounds) in Mille Lacs Lake were harvested with 1¾ inch gill-nets and most of these were taken in spring (1,329 fish, 6,258 pounds). Overall, 64.9% of the northern pike quota in Mille Lacs Lake (11,500 pounds) was harvested (Table 6, Appendices E and F1).

For the 1,207 sexable northern pike, 70% were male and 30% were female. Average length was 25.0 inches for males and 28.1 inches for females. Another 174 fish were examined but sex could not be determined.

Figure 10. Length frequency of measured northern pike harvested during the 2000-2001 quota year.

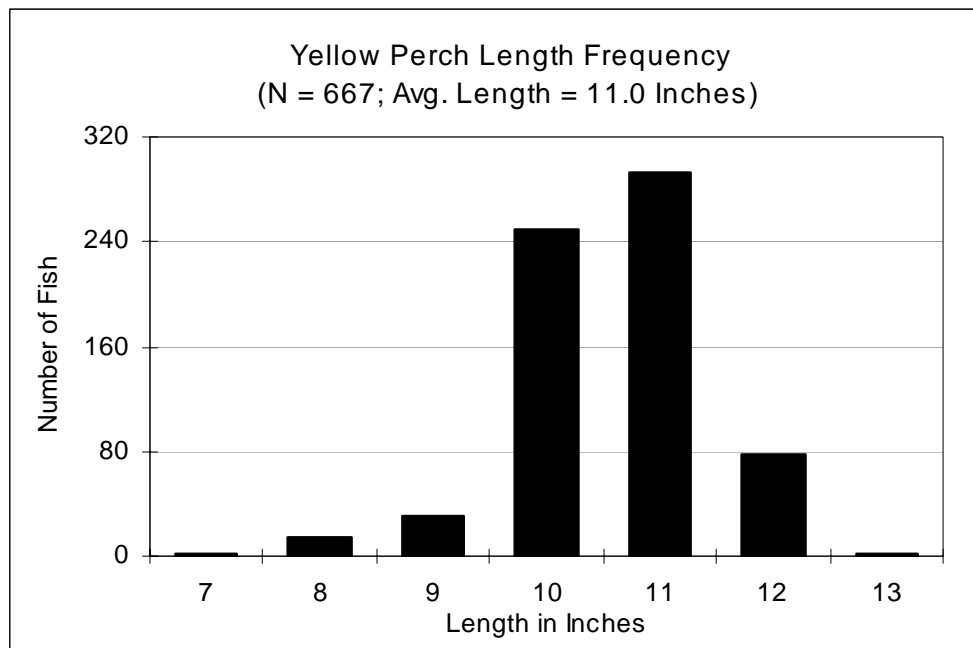


YELLOW PERCH HARVEST

A total of 770 yellow perch weighing 569 pounds were harvested from Mille Lacs Lake, with an average weight of 0.7 pounds (Table 5, Appendix J). Yellow perch were not harvested from any of the other 3 lakes that received effort. The majority of yellow perch (88%) were harvested during spring 2000 in 1.75 inch gill-nets. Overall, about 0.5% of the yellow perch quota in Mille Lacs Lake (104,570 pounds) was harvested (Table 6, Appendices E and F1).

Of the 667 yellow perch with length measured, average length was 11.0 inches (Figure 11, Appendix J). For the 572 sexable yellow perch, 28% were male and 72% were female, with average length of 10.7 inches for males and 11.1 inches for females.

Figure 11. Length frequency of measured yellow perch harvested from Mille Lacs Lake during the 2000-2001 quota year.



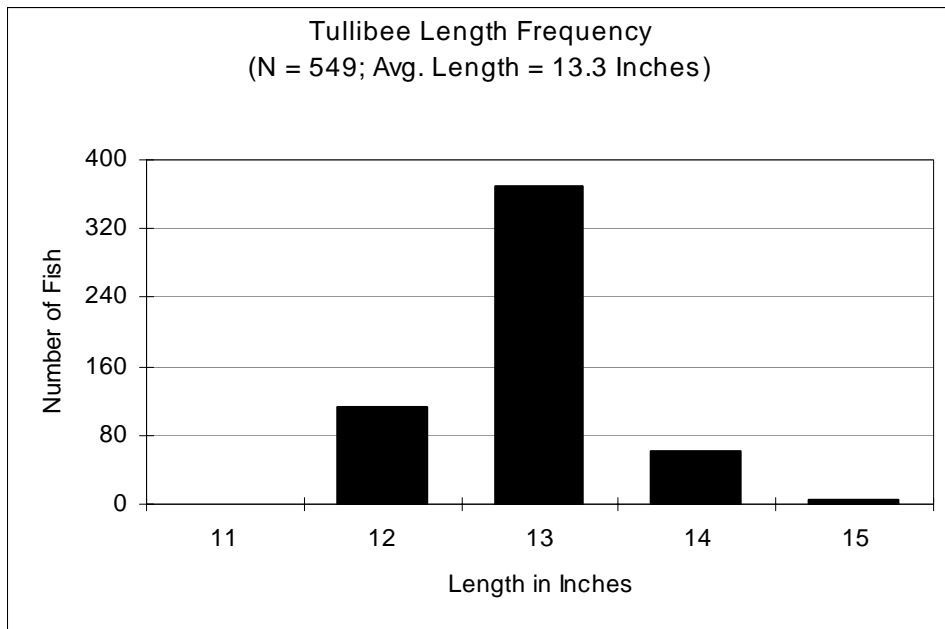
TULLIBEE HARVEST

A total of 554 tullibee (aka. cisco) weighing 489 pounds, with an average weight of 0.9 pounds, were harvested from Mille Lacs Lake during the 2000-2001 quota year (Table 5, Appendix K). Tullibee were not harvested from any of the other lakes that received effort. The majority of tullibee (96%) were taken after spring in 1.75 inch gill-nets. Overall, 4.2% of the total tullibee quota in Mille Lacs Lake (11,742 pounds) was harvested (Table 6, Appendices E and F1).

Unlike other quota species, the majority of tullibee were taken after spring. All of the tullibee were harvested in gill-nets. A total of 420 tullibee or 76% of the annual harvest, were taken in nets during a three day period in mid-November.

Of the 549 tullibee with length measured the average length was 13.3 inches (Figure 12, Appendix K). Of the 465 sexable tullibee, 71% were male and 29% were female with an average length was 13.3 inches for males and 13.4 inches for females.

Figure 12. Length frequency of measured tullibee harvested from Mille Lacs Lake during the 2000-2001 quota year.

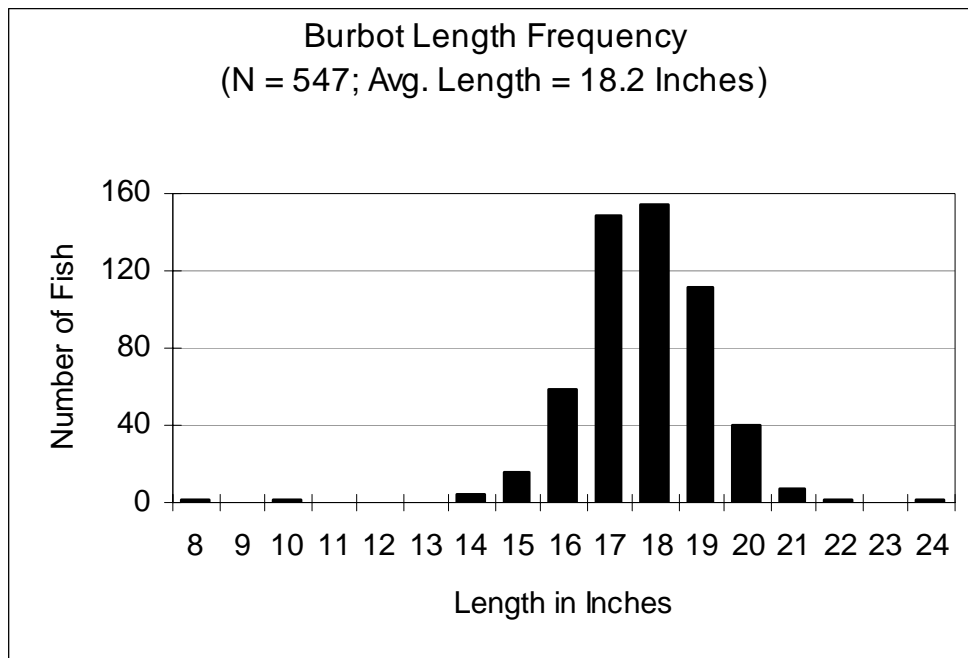


BURBOT HARVEST

A total of 617 burbot weighing 1,121 pounds were harvested from Mille Lacs Lake during the 2000-2001 quota year (Table 5, Appendix L). Burbot were not harvested from any other lakes that received effort. The majority of burbot (92%) were taken during spring 2000 in 1.75 inch gill-nets. Overall, around 8.5% of the total burbot quota in Mille Lacs Lake (13,200 pounds) was harvested (Table 6, Appendices E and F1).

Of the 547 burbot with length measured, average length was 18.2 inches (Figure 13, Appendix L). Average weight of the 617 burbot harvested was 1.8 pounds. Only one burbot was sexable, a female with a length of 18.9 inches.

Figure 13. Length frequency of measured burbot harvested from Mille Lacs Lake during the 2000-2001 quota year.



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The authors extend thanks to Annie Thannum and Kim Campy for their diligence in compiling nightly harvest statistics, in providing these data to tribal and MnDNR representatives, and in updating each day the list of quotas for lakes selected for harvest, along with the adjusted quota, the bag limits, and the number of permits available for each lake. In addition, we thank tribal fisheries biologists, tribal wardens, fisheries technicians, and creel clerks for all their efforts throughout the season. Finally, we thank the tribal members who fished and patiently allowed the monitoring of the catch.

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