



# Open Water Spearing in Northern Wisconsin by Chippewa Indians During 1994

by

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## **ABSTRACT**

Nineteen ninety-four (1994) marked the tenth consecutive spring that spear fishing was conducted by Chippewa tribes in off-reservation waters of northern Wisconsin. A total of 419 tribal members participated in this traditional fishery. Spearing occurred on 137 lakes and walleye were harvested from all except in Fireside Lake (Rusk County). A total of 26,563 fish was taken with 98% of the catch (25,922 fish) being walleye. Numbers of other gamefish harvested were 244 muskellunge, 261 bass, and 30 northern pike. Average lengths were 15.4 inches for walleye and 37.2 inches for muskellunge. The tribal walleye quota was exceeded on five lakes by a total of 26 fish. Except for these five instances, harvest of walleye and muskellunge was maintained within the established limits by a nightly permit system and by complete monitoring of the catch.

Fall spearing occurred on 3 dates during September. A total of 60 fish including 59 walleye were taken from 3 lakes. Average length for walleye was 14.8 inches.

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## INTRODUCTION

This report presents data for harvest and effort by Chippewa spearers in ceded territory waters of northern Wisconsin (Figure 1) during spring 1994. In 1989 two other seasonal fisheries occurred in off-Reservation waters for the first time since recognition of treaty fishing rights: fall spearing and summer gill netting. During 1994, fall spearing occurred on 3 dates in September but no summer spearing or gill netting took place.

## REGULATIONS

Regulations governing the use of spears and nets for harvesting walleye and muskellunge were adopted by each of the six Wisconsin tribes and became permanent in 1989. A listing of the major differences between permanent regulations and negotiated interim rules that governed tribal harvest in 1988 can be found in Kmiecik and Shively (1990).

## PERMIT SYSTEM AND MONITORING

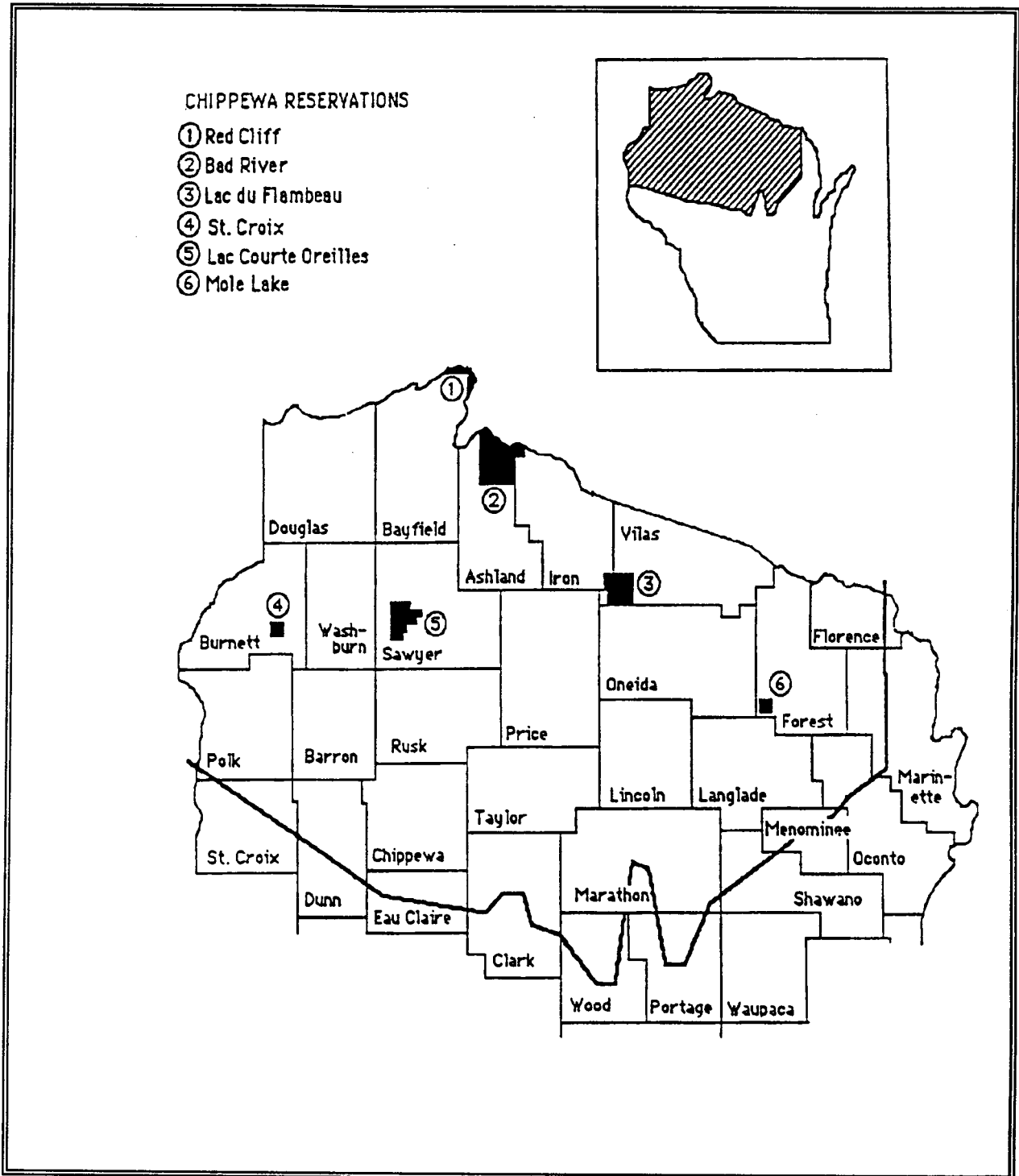
The permit system has operated the same since 1988. Permits (Figure 2) were issued at a tribal office during the day or at the designated boat landing at night. The number of permits that could be issued was determined daily by dividing the remaining Tribal Quota (TQ) for a lake by the nightly bag limit selected for that lake. Lakes were closed to further spearing of walleye and to all netting once the walleye TQ was reached. However, spearing permits could be issued for harvest of other species.

All spearing was monitored by tribal creel clerks under the supervision of GLIFWC wardens and biologists. A set of instructions for collecting biological data was provided to creel clerks at a training meeting about two weeks prior to the season.

During spearing, teams of creel clerks and wardens were assigned to each lake in some areas and only to lakes where permits had been issued in other areas. These teams arrived at the designated boat landing before dark and prepared a work area. Upon return of each boating party, a catch report form was completed. For species other than walleye, all fish were identified, counted, sex determined, and measured. For walleye, all fish were counted. Also, the first 100 walleye plus all those in the last boat were measured and sex determined. In addition, permits were collected and a record made of each person's tribal ID number, the time spearing started and the time it ended.

Harvest and effort for each lake were totaled and reported by 9 a.m. the following day to administrative staff at the Great Lakes Indian Fish and Wildlife Commission (GLIFWC) office in Odanah. Starting in 1993 all catch report forms were also faxed in daily. These data were then transmitted to tribal and WDNR representatives by 10 a.m. and used to update walleye and muskellunge TQ's. At the same time, tribal representatives notified GLIFWC of the lakes and bag limits selected for spearing that night. Harvest was reported regularly in newspapers throughout Wisconsin.

Figure 1. Map depicting the ceded territory in northern Wisconsin. Heavy line indicates approximate ceded territory boundary.





**Figure 2.** Off-Reservation Treaty Fishing Permit used during the 1994 open-water season.

28	29	30	31	Month _____	1	2	3	4	5
27	<b>Off-Reservation Treaty Fishing Permit</b> <input type="checkbox"/> Spearing <input type="checkbox"/> Fyke Netting No <b>0250</b> <input type="checkbox"/> Seining <input type="checkbox"/> Gill Netting								6
26	Tribal ID Number _____ of _____ Reservation Signature of Permittee: _____								7
25	Issued by: _____ of _____ Reservation Water: _____ County: _____								8
24	Bag Limit: Walleye _____ Muskellunge _____								9
23	Other Restrictions: _____								10
22									11
21	20	19	18	17	16	15	14	13	12

**FRONT**

<b>Spearing Times:</b>		<b>Number of:</b>	
Starting _____	Ending _____	Walleye per boat _____	Musky per boat _____
<b>WALLEYE LENGTHS</b>			
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

**BACK**

## RESULTS AND DISCUSSION

### Fishing Effort

As in previous years, effort in the spring spear fishery was measured in three ways: by the number of spearers, the number of spearer-nights, and the number of boat-hours.

**Number of spearers.** All tribal members spearing under permits issued by each tribe were counted as an individual spearer for that tribe regardless of whether the spearer was an enrolled member of the tribe issuing permits.

A total of 419 tribal members participated in the 1994 spring spear fishery (Table 1, Figure 3, Appendix A). None of these individuals speared under two or more permit systems. Compared to 1993 the total number of spearers increased by 60 persons or 17%.

All persons spearing on lakes selected by Bad River, Lac du Flambeau and Red Cliff were members of their tribe (31, 134, and 31 persons, respectively). On lakes selected by Lac Courte Oreilles, 5 of the 70 spearers were members of another tribe (3 from Mille Lacs, 2 from St. Croix). One person from Lac Courte Oreilles was included in the 49 members spearing under permits issued by Mole Lake. Of the 70 persons spearing on lakes selected by St. Croix, 17 were members of another tribe (2 from Bad River, 1 from Lac Courte Oreilles, and 14 from Mille Lacs).

**Table 1.** Number of spearers on lakes selected by six Wisconsin Chippewa bands during spring spearing 1986-1994<sup>1</sup>.

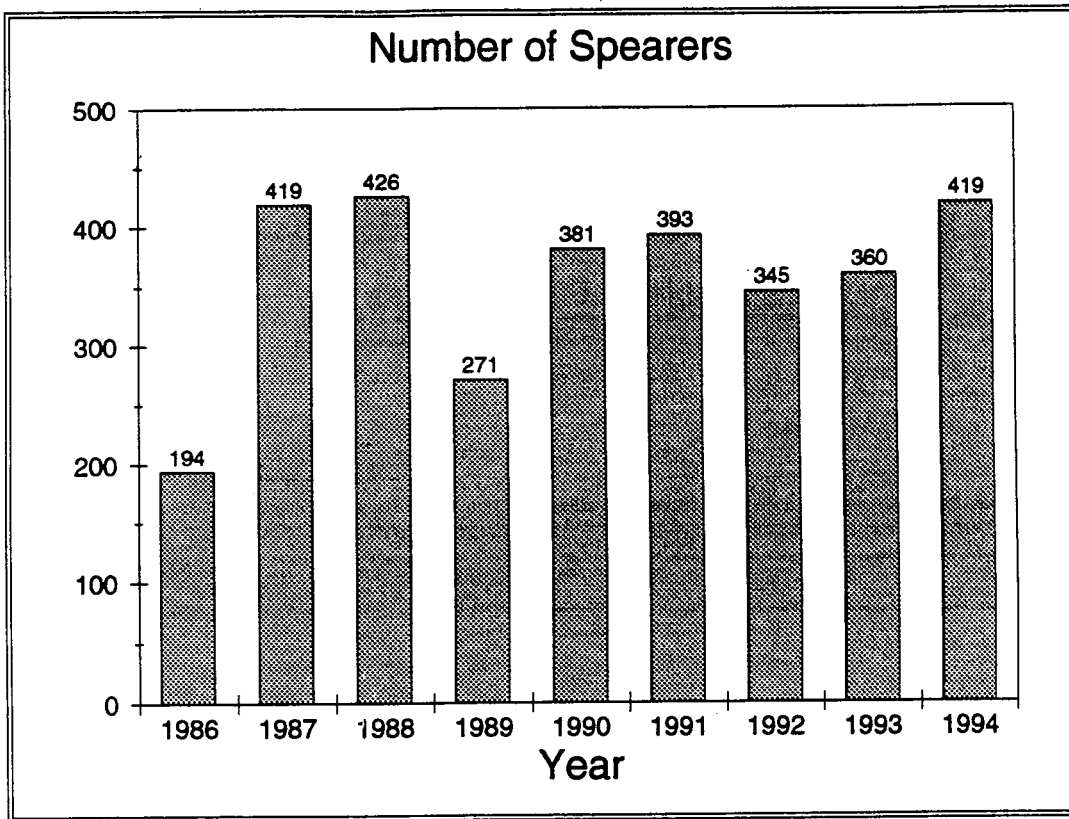
YEAR	BRV	LCO <sup>2</sup>	LDF	MLK	RCF	STC <sup>3</sup>	TOTAL:
1986	2	26	119	32		15	194
1987	22	58	206	70		63	419
1988	35	48	200	63	14	66	426
1989	27	30	118	31	23	42	271
1990	46	43	142	46	40	64	381
1991	38	56	137	50	47	65	393
1992	36	41	112	40	52	64	345
1993	34	72	111	55	36	51	359
1994	31	87	134	66	31	70	419
PERCENT CHANGE: 1993-1994	-9%	21%	21%	20%	-14%	37%	17%

<sup>1</sup> Abbreviations for the various bands are: BRV = Bad River, LCO = Lac Courtes Oreilles, LDF = Lac du Flambeau, MLK = Mole Lake, RCF = Red Cliff, and STC = St. Croix.

<sup>2</sup> Includes members from Mille Lacs tribe: 1 in 1990, 2 in 1991, 0 in 1992, 1 in 1993, and 3 in 1994.

<sup>3</sup> Includes members from Mille Lacs tribe: 7 in 1988, 8 in 1989, 11 in 1990, 15 in 1991, 13 in 1992, 4 in 1993, and 14 in 1994.

**Figure 3.** Number of spearers during spring spearing seasons from 1986-1994.



**Number of Spearer-nights or Permits Used.** In a previous report (Kmiecik 1991), special clarification was given to the definition of "spearer-nights". It should be understood that the total number of "spearer-nights" is not simply the total number of nights that all tribal members speared, because some individuals speared under more than one permit on a single night. Additional permits have been issued at night at a boat landing on a "first come, first served" basis and only when enough fish remained in the tribal quota for a lake so that other permits could be issued. Persons receiving a second, third, or fourth permit may have speared on the same lake, a different lake, or both the same and a different lake. With this clarification in mind, this effort statistic will continue to be referred to as spearer-nights, but it can also be viewed as a count of the total number of permits used.

A total of 1,672 spearer-nights were recorded during spring 1994 (Table 2, Figure 4, Appendix B). Nearly 42% of this effort (700 spearer-nights) occurred on lakes selected by Lac du Flambeau. Spearer-nights on lakes selected by the other five tribes ranged from 129 at Bad River to 289 at St. Croix. Compared to 1993, effort increased by 257 spearer-nights or 18%.

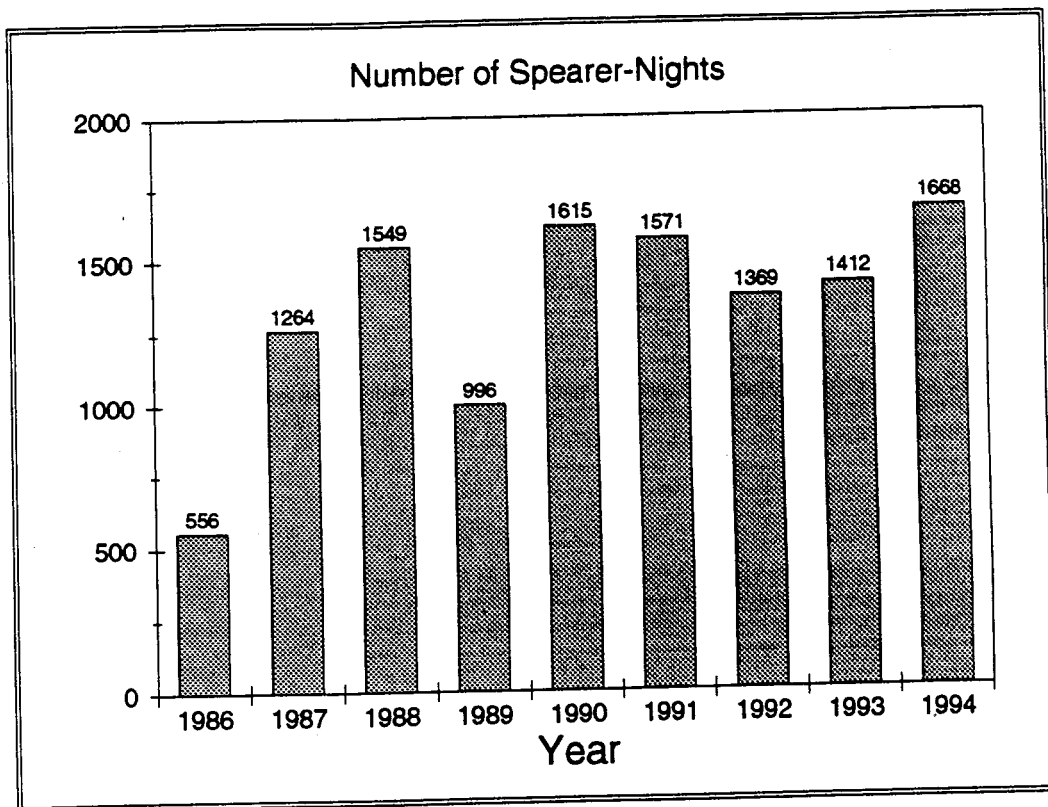
**Table 2.** Number of spearer-nights on lakes selected by six Wisconsin Chippewa bands during spring spearing from 1986-1994.

YEAR	BRV	LCO <sup>1</sup>	LDF	MLK	RCF	STC <sup>2</sup>	TOTAL:
1986	2	50	382	72		50	556
1987	43	140	695	205		181	1264
1988	64	165	788	249	37	246	1549
1989	70	109	429	120	100	168	996
1990	174	116	751	221	124	229	1615
1991	151	216	605	201	160	238	1571
1992	140	140	512	177	168	232	1369
1993	172	218	469	241	144	171	1415
1994	129	255	700	167	132	289	1672
PERCENT CHANGE: 1993-1994	-25%	17%	49%	-31%	-8%	69%	18%

<sup>1</sup> Includes spearer-nights for Mille Lacs tribe: 2 in 1990, 3 in 1991, 0 in 1992, 1 in 1993, and 6 in 1994.

<sup>2</sup> Includes spearer-nights for Mille Lacs tribe: 22 in 1988, 29 in 1989, 35 in 1990, 45 in 1991, 53 in 1992, 9 in 1993, and 34 in 1994.

Figure 4. Number of spearer-nights during spring spearing seasons from 1986-1994.



**Number of Boat-Hours.** A total of 2,033 boat-hours of effort were recorded in 1994 (Table 3, Figure 5, Appendix B). Compared to 1993, the number of boat-hours increased by 26% (422 boat-hours). More than one-third of the effort (743 boat-hours or 37%) occurred on lakes selected by Lac du Flambeau. Boat-hours on lakes selected by the other five tribes ranged from 133 at Red Cliff to 381 at St. Croix.

**Table 3.** Number of spearer boat-hours on lakes selected by six Wisconsin Chippewa bands during spring spearing from 1986-1994 .

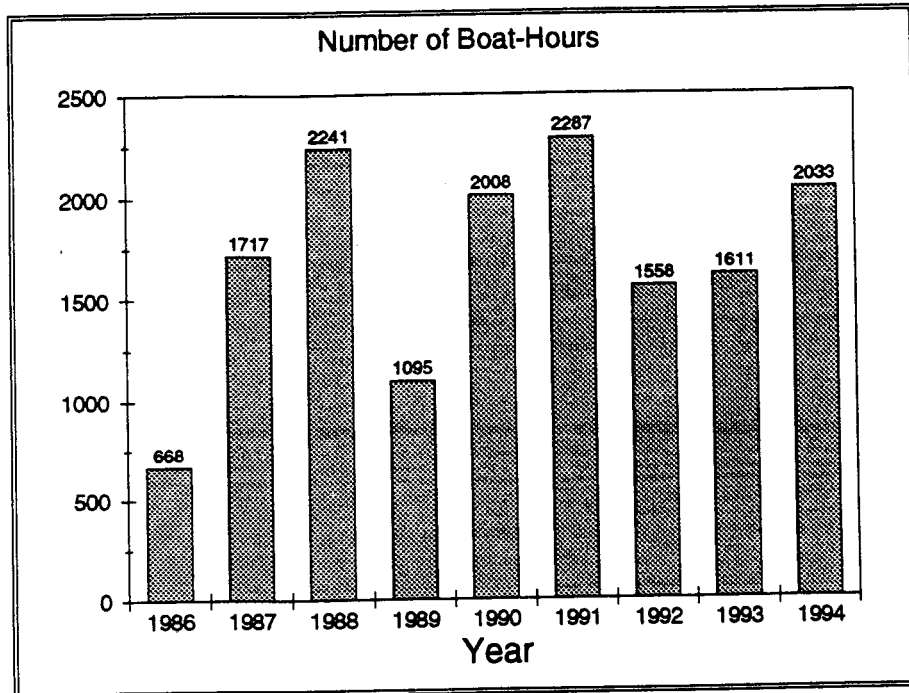
Year	BRV <sup>1</sup>	LCO <sup>2</sup>	LDF	MLK	RCF	STC <sup>3</sup>	Total:
1986	2	53	440	95		78	668
1987	46	163	976	252		280	1717
1988	173	247	1094	393		334	3341
1989	135	122	364	155	109	210	1095
1990	254	151	787	298	181	338	2008
1991	288	283	704	344	226	444	2288
1992	206	221	453	218	178	281	1558
1993	201	290	459	297	164	200	1611
1994	172	356	743	247	133	381	2033
PERCENT CHANGE: 1993-1994	-14%	23%	62%	-17%	-19%	91%	26%

<sup>1</sup>Includes Red Cliff boat-hours in 1988.

<sup>2</sup>Includes effort for Mille Lacs tribe in 1990, 1991, 1993, and 1994.

<sup>3</sup>Includes effort for Mille Lacs tribe from 1988-1994.

**Figure 5.** Number of boat-hours of effort during spring spearing seasons from 1986-1994.



For all tribes combined, a total of 687 interviews were conducted and effort was recorded for all. For these 687 interviews, average length of a trip was 3.0 boat-hours (Table 4).

**Table 4.** Number of interviews and average length of spearing trip (in boat-hours) during spring spearing from 1989-1994.

YEAR	AVERAGE LENGTH OF TRIP:						TOTAL
	BRV	LCO <sup>1</sup>	LDF	MLK	RCF	STC <sup>1</sup>	
1989	4.1	2.4	2.5	2.6	2.5	2.7	2.7
1990	3.3	2.8	2.7	3.1	3.5	3.1	3.1
1991	3.9	3	2.8	3.9	2.8	3.5	3.3
1992	3	3.2	2	2.8	2.4	2.4	2.5
1993	3.2	3.0	2.9	3.5	2.3	3.0	2.6
1994	3.2	3.0	2.9	3.5	2.3	3.0	3.0
1994 Boat-hours:	172	356	743	247	133	379	2033
1994 interviews with effort:	54	119	259	70	57	128	687
1994 interviews without effort:	0	0	0	0	0	0	0

<sup>1</sup>Includes effort for Mille Lacs tribe.

## Total Harvest

Eleven taxa of fish were harvested during the 1994 spring spear fishery (Table 5). Of the 26,563 fish taken, 97.6% were walleye. Percentages of the total catch for other game fish species were 0.9% for muskellunge, 1.0% for bass, and 0.1% for northern pike. No trout were speared in 1994. Other species combined (panfish and rough fish) totaled 106 fish and made up the remaining 0.4% of the harvest.

**Table 5.** Number of various fish species harvested during spring spearing seasons from 1990-1994 (1985-1994).

Taxa:	1990	1991	1992	1993	1994
Walleye	25,348	23,018	21,188	24,532	25,922
Muskellunge	303	185	165	188	244
Bass Species	3	3	18	79	37
Largemouth Bass	167	130	85	100	174
Smallmouth Bass	49	14	31	21	50
Northern Pike	34	41	28	19	30
Lake Sturgeon	3				
Trout Species	2	1			
Rock Bass	20	4	2		
Crappie	87	31	26	43	40
Bluegill	6	1	5	6	9
Yellow Perch	25	8	9	10	8
Bullhead	5			1	
Sucker	72	28	17	31	40
Carp	1	1		2	1
Burbot	7	1			8
Bowfin	2	3			
Cisco					
<b>TOTAL:</b>	<b>26,134</b>	<b>23,469</b>	<b>21,574</b>	<b>25,032</b>	<b>26,563</b>



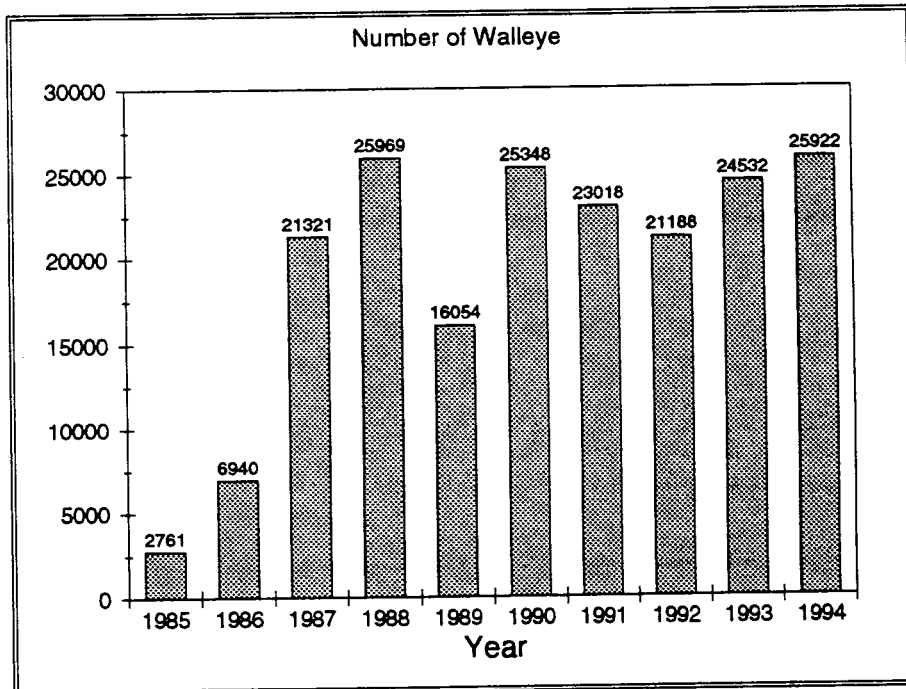
## Walleye Harvest

Tribal quotas (TQ) for walleye were selected for 218 lakes and totaled 44,821 walleye. The percent of the "safe harvest" selected as tribal quotas for lakes in 1994 ranged from 30% (Squaw Lake, Sawyer County) to 84% (Moose Lake, Sawyer County). Two tribes selected the same lake in 13 instances and agreed on various inter-tribal allocation formulas to keep the TQ within the selected percentage. No lakes were selected by more than two tribes.

Tribal spearers harvested a total of 25,922 walleye from 136 lakes (Table 5, Figure 6, Appendix B). Spearing occurred in Fireside Lake (Rusk County) but no walleye were harvested. Harvest in 1994 (25,922) was higher than in any of the previous nine years (1985-1993) except in 1988 when the harvest was 25,969. The percent of the total walleye quota harvested was 58%. Values for the tribal walleye quota and percent of this quota harvested from 1989-1993 were as follows:

Year	Tribal Walleye Quota	Number of Lakes	Number Harvested	Percent of Quota Harvested
1989	43,801	254	16,054	37%
1990	41,373	178	25,348	61%
1991	39,090	204	23,018	59%
1992	38,863	222	21,188	55%
1993	42,112	220	24,532	58%
1994	44,821	218	25,922	58%

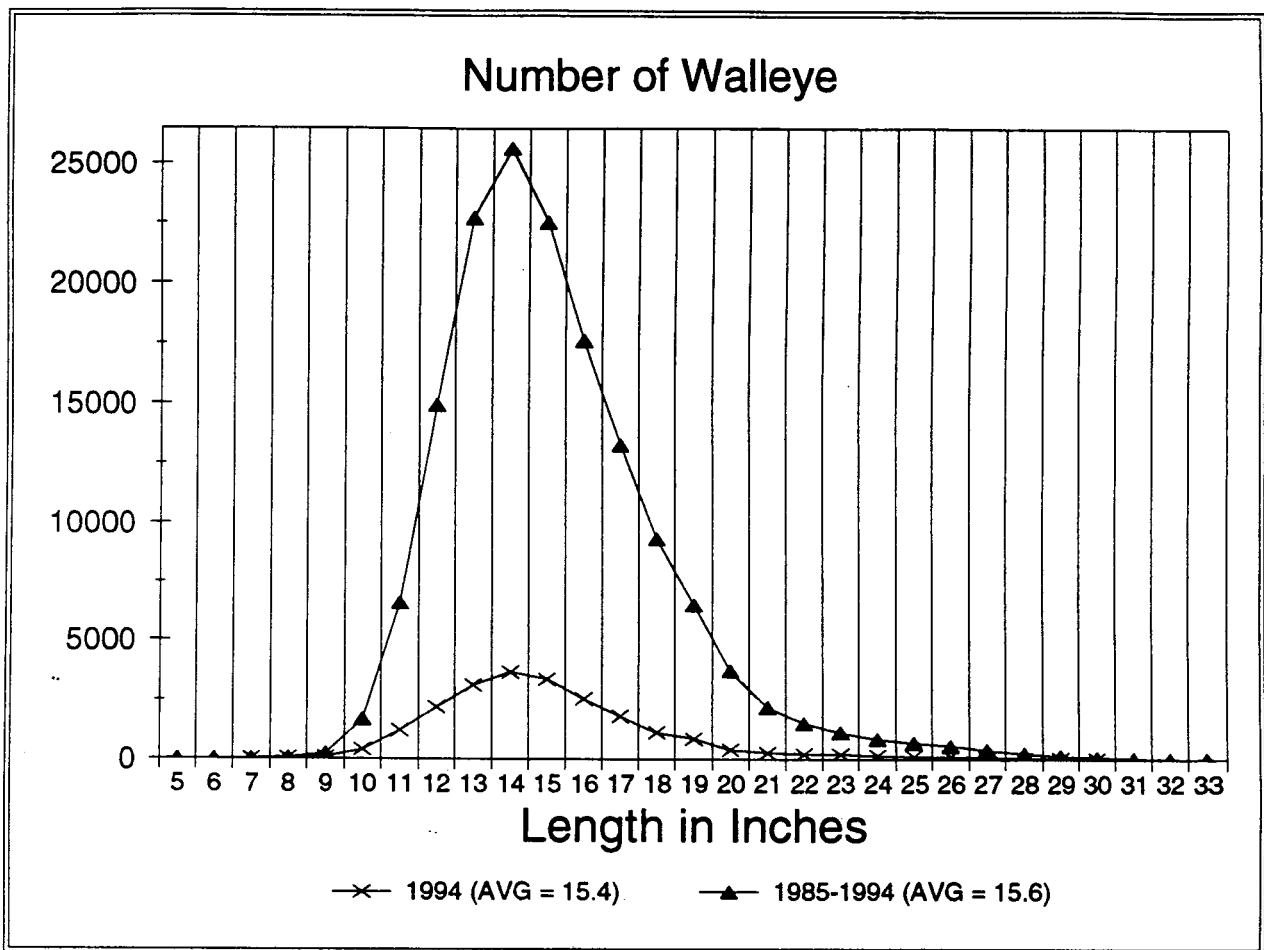
**Figure 6.** Number of walleye harvested during spring spearing seasons from 1985-1994.



**Mean Length.** A total of 21,726 walleye (84% of the catch) were measured in 1994 (Appendices C and D). Average length in 1994 (15.4 inches) was less than the average length during 1987-1991 (range: 15.7-16.0 inches) but greater than the average length in 1993 (15.2 inches) and in 1992 (15.1 inches). Size restrictions were identical during each of these eight years; all walleye were to be under 20 inches except that each permit authorized the harvest of one walleye of 20-24 inches and one of any size.

For the 10 spring spearing seasons combined, 79.0% of the walleye harvest has been measured (152,462 of 193,053 fish) (Figure 7; Appendix D). Average length for this 10 year sample was 15.6 inches. Also, 7.5% of the walleye (11,425 fish) were 20 inches or larger and 1.4% (2,063 fish) were 25 inches or larger.

**Figure 7.** Length frequency of walleye speared during 1994 and during the ten year period from 1985-1994.



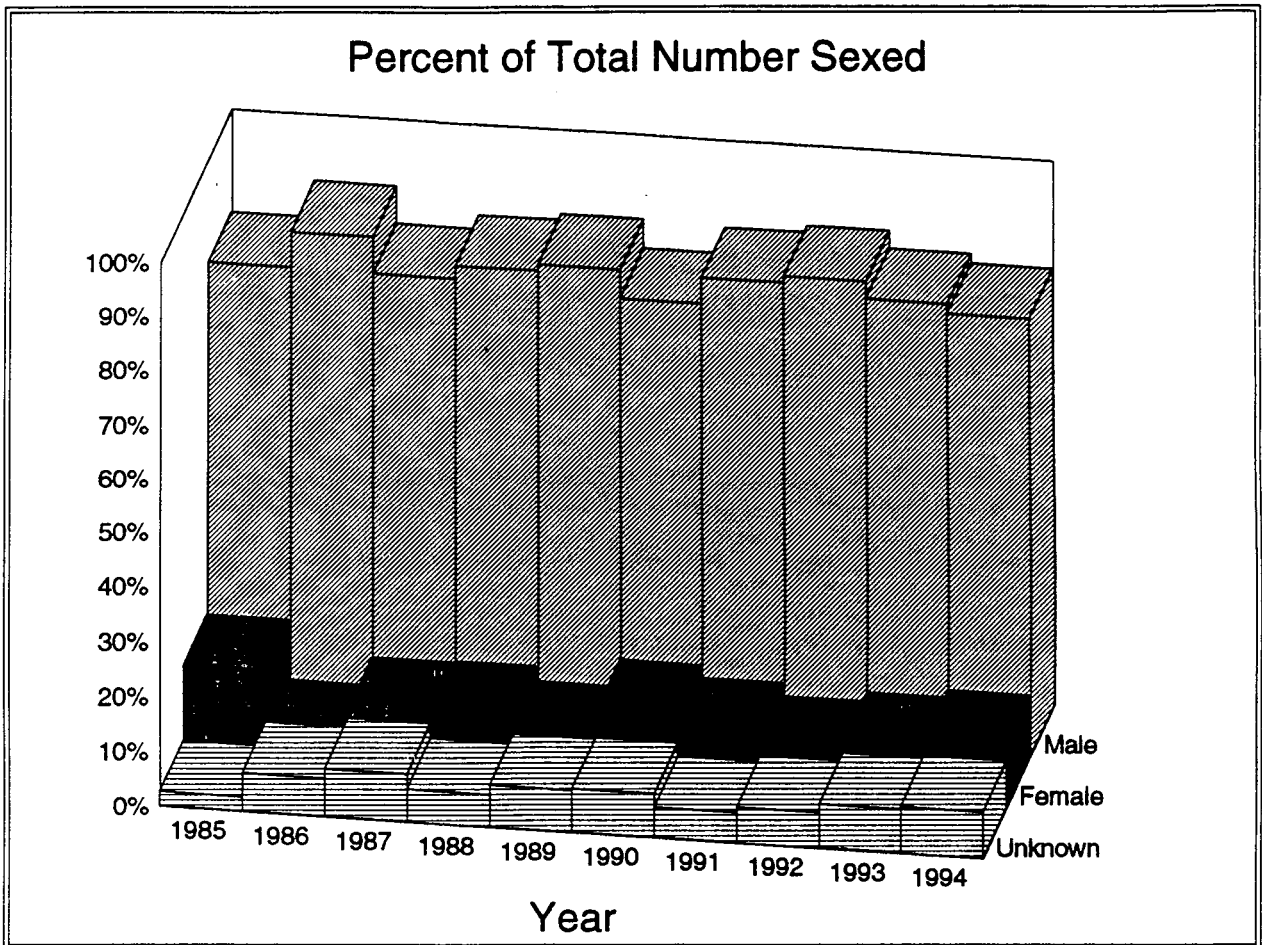
**Sex Composition of Catch.** The majority of walleye measured in 1994 were male: 17,467 of 21,726 fish or 80% (Table 6). Females (2,407 fish) comprised 11% of the measured harvest, while those whose sex could not be determined (1,852 fish) made up 9%. Males made up 88% of sexable fish.

For the 10 spring spearing seasons combined, a total of 151,450 walleye have been sexed (Table 6, Figure 8). Of these, 83% were male, 10% were female, and 7.0% were of undetermined or unknown sex. Factors which influence the number of males and females speared were described by Kmiecik and Shively (1990).

**Table 6.** Number and percent of walleye that were sexed and were male, female, or unknown sex during spring spearing seasons from 1985-1994.

Year	Total Harvested	Male		Female		Unknown		Total Sexed:	
		Number	Percent	Number	Percent	Number	Percent	Number	Percent
1985	2,761	696	81%	138	16%	22	3%	856	31%
1986	6,940	6,013	88%	356	5%	473	7%	6,842	99%
1987	21,321	11,539	81%	1,456	10%	1,229	9%	14,224	67%
1988	25,969	16,193	84%	2,033	10%	1,142	6%	19,368	75%
1989	16,054	11,222	85%	1,030	8%	1,002	8%	13,254	83%
1990	25,348	14,693	79%	2,342	13%	1,465	8%	18,500	73%
1991	23,018	15,626	84%	1,926	10%	999	5%	18,551	81%
1992	21,188	15,563	85%	1,473	8%	1,190	7%	18,226	86%
1993	24,532	16,357	82%	1,958	10%	1,588	8%	19,903	81%
1994	25,922	17,467	80%	2,407	11%	1,852	9%	21,726	84%
<b>Total:</b>	<b>193,053</b>	<b>125,369</b>	<b>83%</b>	<b>15,119</b>	<b>10%</b>	<b>10,962</b>	<b>7%</b>	<b>151,450</b>	<b>78%</b>

**Figure 8.** Sex composition of the walleye harvest during spring spearing seasons from 1985-1994.



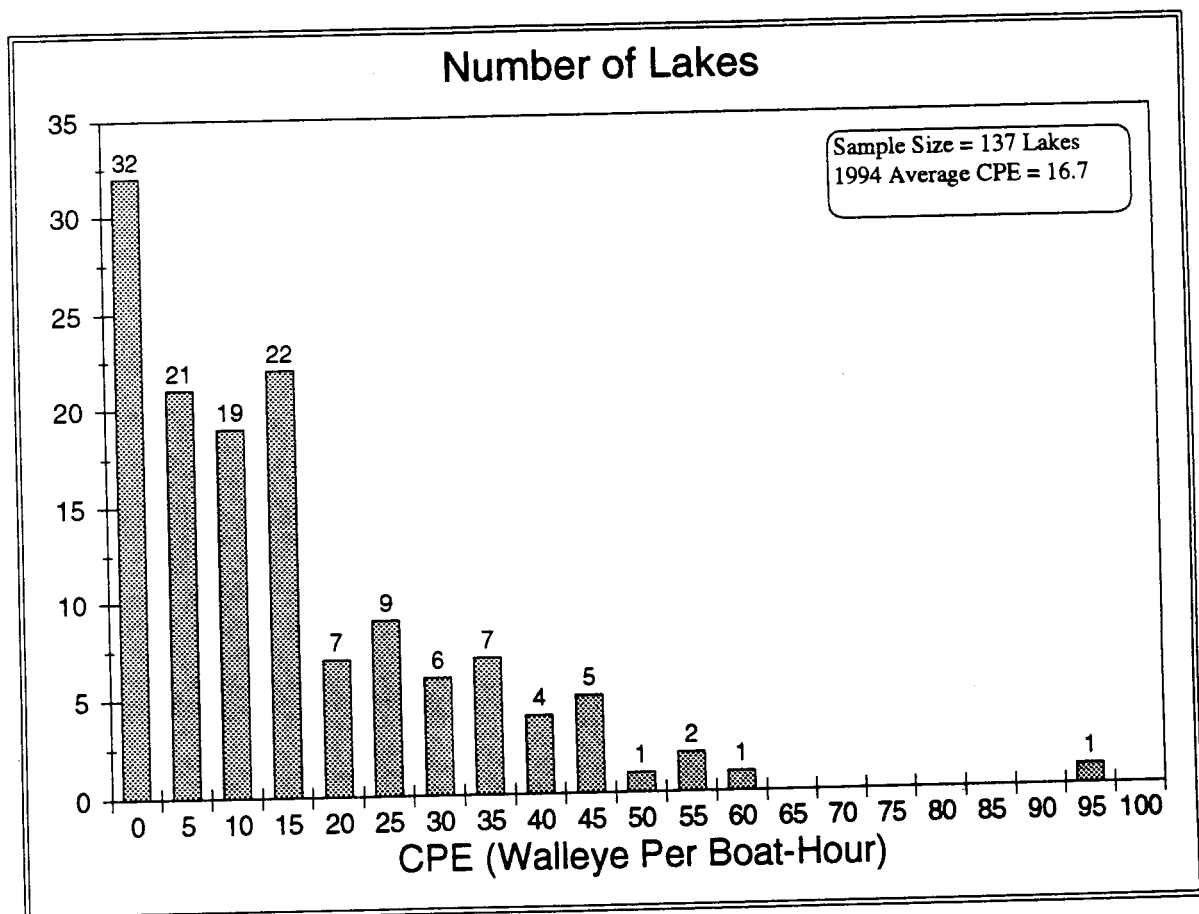
**Catch per effort (CPE).** In 1994 a total of 2,033 boat-hours of spearing was recorded in which 25,922 walleye were caught. Overall catch per effort was 12.8 walleye per boat-hour (Appendix B).

Catch rates for the 137 lakes speared in 1994 ranged from 0.0 to 95.2 and averaged 16.7 (Appendix B, Figure 9). Boat-hour effort was recorded for all lakes during spring 1994. Similar statistics for the years 1987-1994 were as follows:

Year	Number of Lakes	Range:CPE	Average:CPE
1987	66	0.0-46.4	12.2
1988	91	0.0-84.1	14.2
1989	98	0.0-63.9	18.5
1990	117	0.0-45.1	14.3
1991	159	0.0-46.5	11.3
1992	153	0.0-68.0	16.1
1993	134	0.0-123.5	15.2
1994	137	0.0-95.2	16.7

(Biological Issues Group 1988, Kmiecik and Shively 1990, Kmiecik 1991, Ngu and Kmiecik 1992, Ngu 1993).

**Figure 9.** Walleye CPE (number per boat-hour) by lake during the 1994 spring spearing season.



## Muskellunge Harvest

A total of 244 muskellunge were taken from 49 lakes during spring 1994 (Figure 10, Appendix E). This harvest represented 18.4% of the combined tribal muskellunge quota of 1,326 fish selected for 158 lakes. Similar muskellunge quota statistics for the years 1990 to 1994 were as follows:

Year	Tribal Muskellunge Quota	Number of Lakes	Number Harvested	Percent of Quota Harvested
1990	1,148	117	303	26.4%
1991	1,240	155	185	14.9%
1992	1,240	155	165	13.3%
1993	1,223	134	188	15.5%
1994	1,326	158	244	18.4%

The number of muskellunge harvested from each of these 49 lakes ranged from 1 to 20 fish (Appendix E). Ten or more muskellunge were harvested from 5 lakes, 6-9 muskellunge were taken from 10 lakes, and 1-5 fish were speared in 34 lakes. In addition, the number of muskellunge harvested per surface-acre of water averaged 0.0030 and ranged from 0.0004 to 0.0125. No muskellunge were speared from the other 109 lakes.

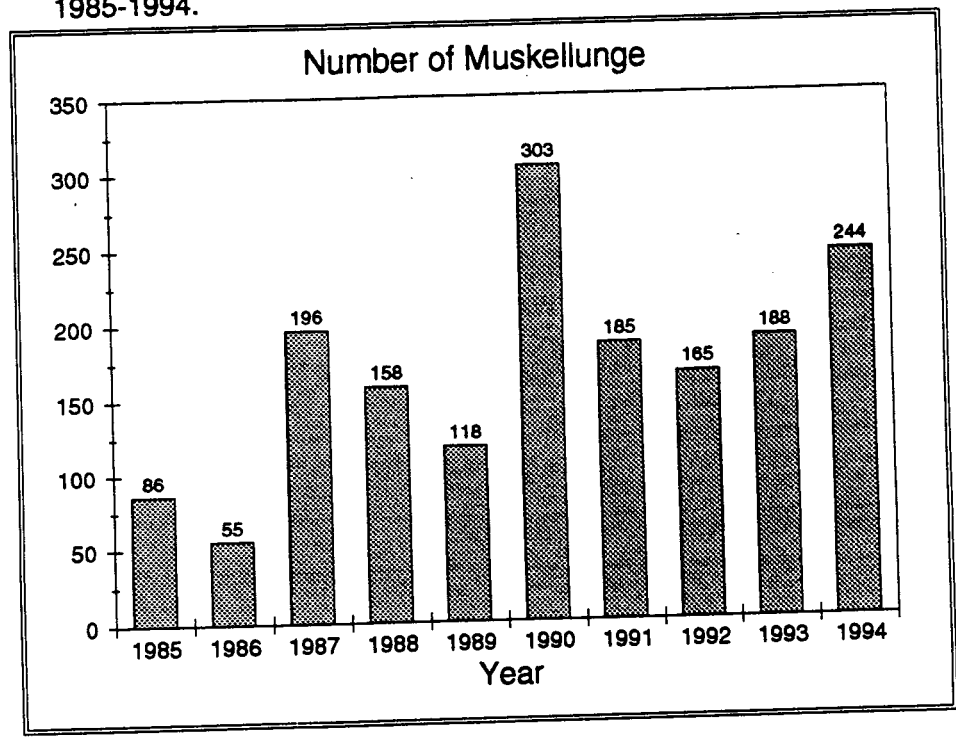
Lengths of the 243 measured muskellunge averaged 37.2 inches and ranged from 25.5 to 50.3 inches (Appendix F, Figure 11). During the ten spring seasons combined, 1,653 of 1,698 speared muskellunge have been measured. Average length for this sample of fish was 36.3 inches (range: 13.5-53.0 inches).

Of the measured catch in 1994, 19.8% (48 of 243 muskellunge) were 32 inches and smaller, while 10.3% (25 fish) were 45 inches and larger. For the 1,653 muskellunge measured from 1985-1994, 405 fish or 24.5% of the sample were less than or equal to 32 inches; 109 fish or 6.6% were 45 inches and larger (Appendix F).

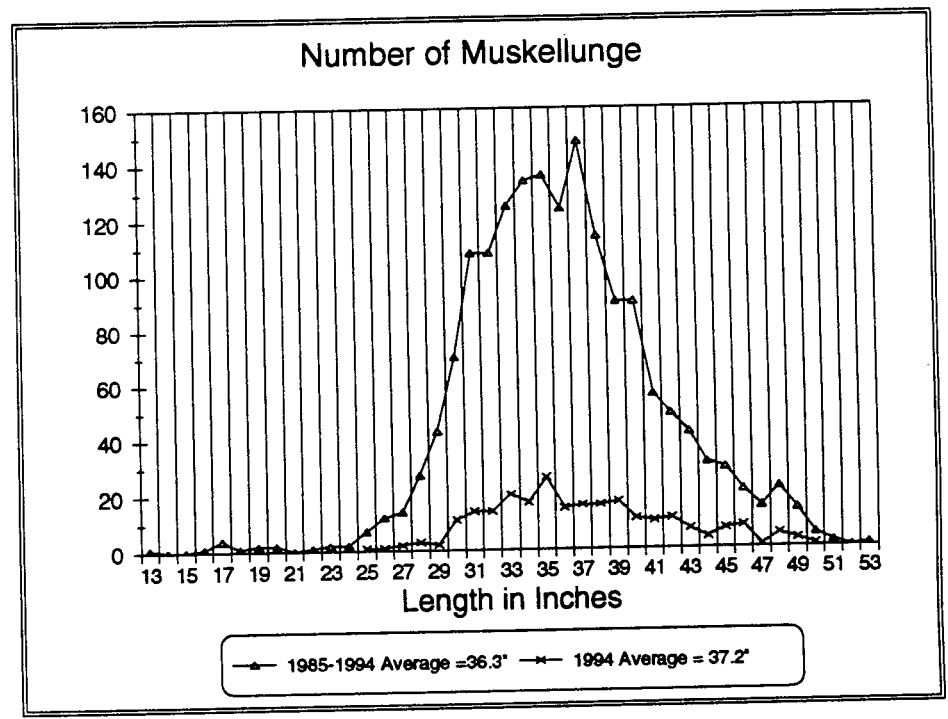
The number of muskellunge per spearer averaged 0.58 for all tribes combined. In other words, 58 muskellunge were taken for every 100 spearers. From 1987-1993 the number per spearer ranged from 0.37 to 0.80. For individual tribes, the number per spearer was highest for Lac du Flambeau members (1.19) compared to the other 5 tribes (range: 0.16-0.49).

Catch per boat-hour in 1994 averaged 0.12 muskellunge and was within the range from 1987-1993 (0.07 - 0.15).

**Figure 10.** Number of muskellunge harvested during spring spearing seasons from 1985-1994.



**Figure 11.** Length-frequency of muskellunge speared during spring 1994 and during the ten year period 1985-1994.



## Bass Harvest

A total of 261 bass was harvested from 39 lakes in 13 counties (Appendix G). Species was recorded for 224 largemouth bass and smallmouth bass combined. A total of 174 largemouth bass were taken from 24 lakes in 9 counties and averaged 15.5 inches. Ten or more largemouth were speared from 4 lakes, 6-10 from 3 lakes, and 5 or less were taken from 17 lakes. The number harvested per surface acre of water averaged 0.0061 bass (range: 0.0002-0.0394).

A total of 50 smallmouth bass were speared from 15 lakes in 9 counties. Average length was 15.6 inches. Fewer than 4 fish were taken from all but three lakes: where 19 smallmouth were taken from Bearskin Lake (Oneida County), 9 bass were taken from Middle Eau Claire Lake (Bayfield County), and 7 fish from Butternut Lake (Forest County). The number harvested per surface acre averaged 0.0014 bass (range:0.0001-0.0475).

Lengths of 256 measured bass ranged from 6.70-25.5 inches (Figure 13) and averaged 15.4 inches (Appendix H). Average lengths during the 9 seasons (1985-1993) ranged from 15.0 to 15.8 inches. Of the 1,579 bass speared during the ten spearing seasons combined, 1,445 have been measured. Average length for this sample was 15.3 inches.

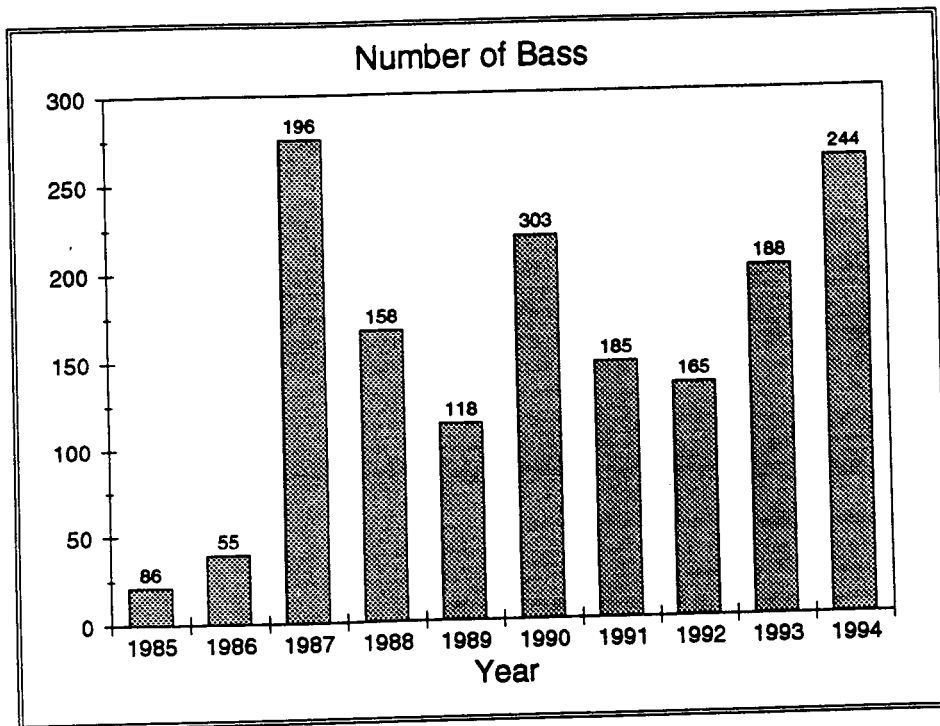
The majority of largemouth bass (155 fish or 89% of the total) were taken from 13 lakes speared by St. Croix. St. Croix members also speared the majority of bass from 1987 to 1993 (range: 63%-88%) .

For all tribes combined the number of bass per spearer (CPE) was 0.62. CPE ranged from 0.37 to 0.66 from 1987-1993. For individual tribes, CPE (bass per spearer) was highest for St. Croix (2.66) as was the case during the previous 7 seasons (range: 1.14 - 3.33). Catch per spearer for the other five tribes ranged from 0.03 to 0.52 bass.

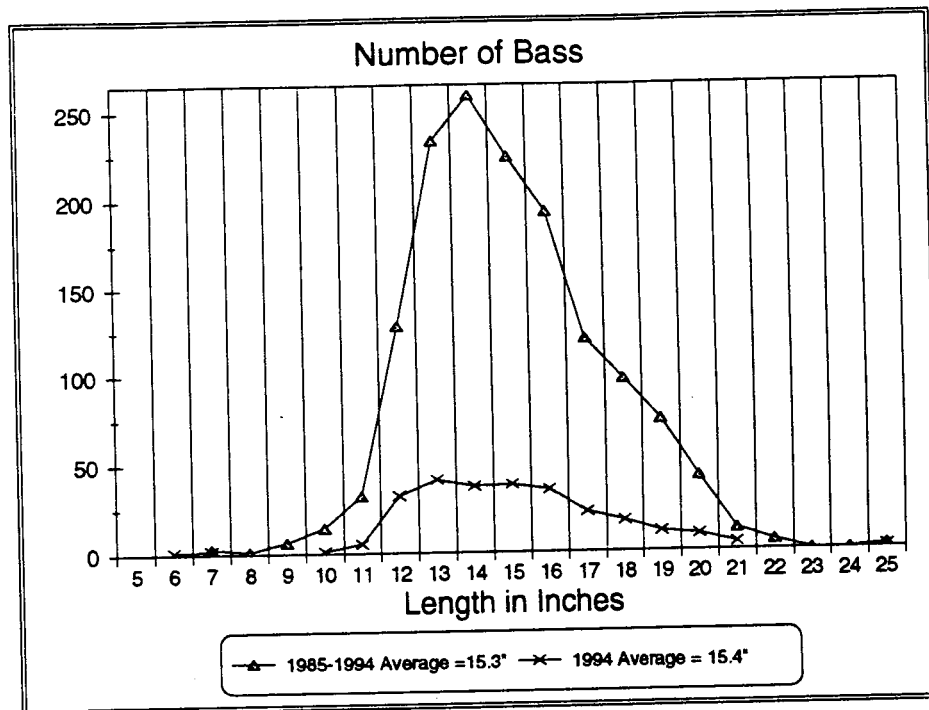
The combined tribal catch rate for bass in 1994 was 0.13 bass per boat-hour which was within the range of CPE's from 1987-1993 (0.06 to 0.14). Bass per boat-hour for St. Croix spearers was 0.49 in 1994.



**Figure 12.** Number of bass harvested during spring spearing seasons from 1985-1994.



**Figure 13.** Length-frequency for bass taken during 1994 and during the ten year period 1985-1994.



## **Northern Pike Harvest**

A total of 30 northern pike were harvested from 20 lakes in 10 counties (Appendix G). As in 1993, the number speared per lake never exceeded 4 fish. Catch per surface acre of water averaged 0.0008 (range: 0.0001-0.0139).

Lengths of 29 measured northern pike ranged from 17.8 to 38.5 inches and averaged 27.3 inches (Appendix I, Figure 15). During the ten spring seasons combined a total of 283 northern pike have been speared (Appendix I). Of these, 237 were measured and length averaged 25.5 inches. Harvest of pike continues to be incidental and an insignificant component of the fishery.

Figure 14. Number of northern pike taken during spring spearing seasons from 1985-1994.

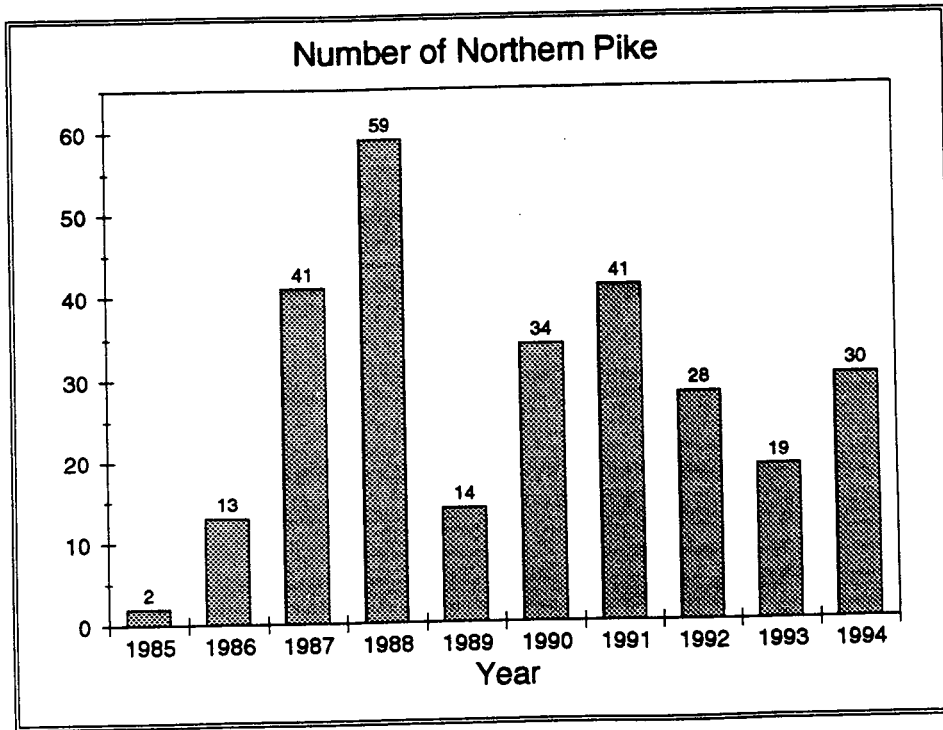
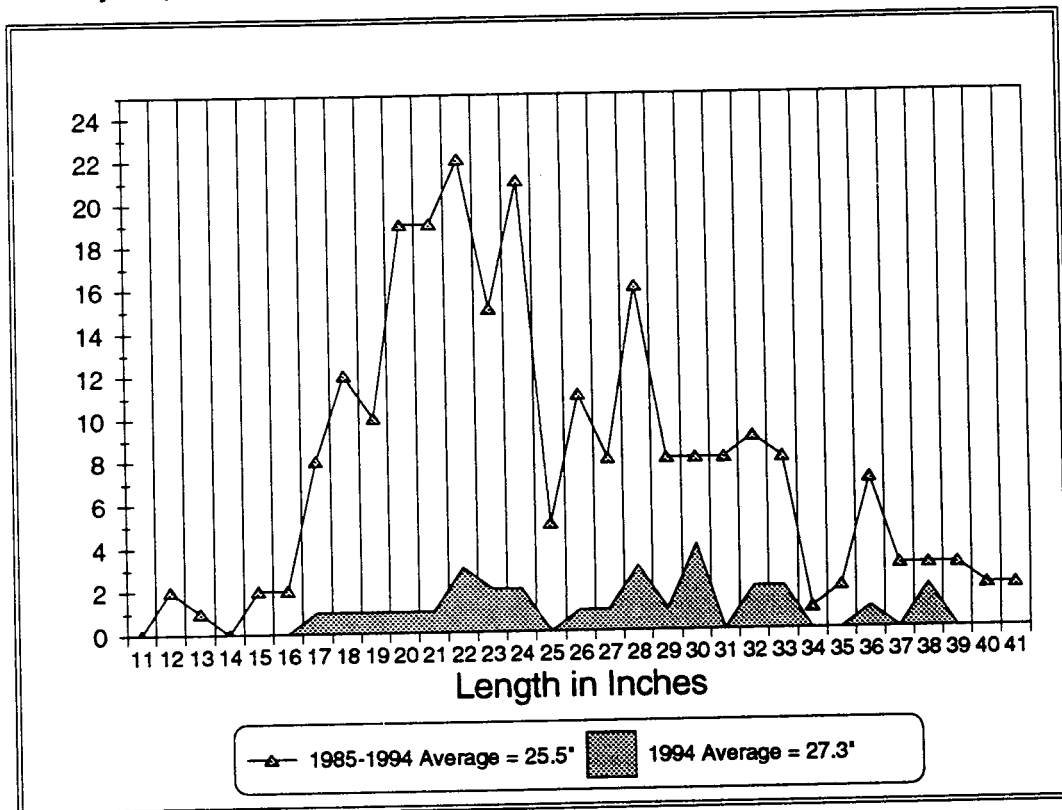


Figure 15. Length frequency of northern pike speared during 1994 and during the nine year period from 1986-1994.



## Fall Spearing

Fall spearing occurred on one night each in Nelson Lake (Sawyer County), Trude Lake (Iron County), and Turtle-Flambeau Flowage (Iron County) during September. All three lakes were speared by tribal members from Bad River. Total effort for the three lakes combined was 16.3 boat-hours and 8 spearer-nights (Table 7). All 59 walleye taken were measured and averaged 14.8 inches (range: 9.2 inches-23.7 inches). The number of walleye caught per boat-hour was 3.6. The one (1) northern pike harvested from Nelson Lake measured 29.2 inches.

**Table 7.** Number of fish harvested during fall spearing in 1994.

LAKE	COUNTY	DATE	WAE	NOP	BOAT-HOUR	SPEARER-NIGHTS
NELSON L	SAWYER	9/23/94	1	1	10.0	4
TRUDE L	IRON	9/24/95	50	0	3.8	2
TURTLE-FLAMBEAU	IRON	9/25/95	8	0	2.5	2
TOTAL:			59	1	16.3	8

## ACKNOWLEDGMENTS

The author extends a "Meegwitch" to the following workers who assisted with monitoring the fishery (either as creel clerk or seasonal warden) or who issued permits and helped to update and compile harvest data each day:

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Lac Vieux Desert (LVD) - Rebecca Antone, Zachary Bailey, Joyce Hazen, Joseph Jackson, Thomas McGeshick, and Magaret Neimi.

Mole Lake (MLK) - Joseph Ackley, Karol John Bostwick, Brad Becker, Vance Greene, Robert Johnson, Wendell Maki, Tracy Mayer, David McGeshick, Irvin McGeshick, Louis McGeshick, Mildred McGeshick, Willard McGeshick, Frank Olds, Shawn Rachal, Mary Lee Randall, Rob Renkes, James Smith, Ron Smith, Randy White, and Keith Van Zile.

Red Cliff (RCF) - Chris Bear, Mark Bresette, Jerome Brooks, Earl Gordon, Frank Gordon, Michael LaGrew, George A. Newago, Tony Newago, and Arthur Pratt

St. Croix (STC) - Ginette Canfield, Joleen Clement, Barry Dykstra, Lynn Patty Holmems, Ardyth Morgan, Roger Mulroy, Laura Oustigoff, Randy Phernetton, William Scanlon, and Alice Taylor.

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The patience and humor of tribal members during the nightly counting and measuring of fish continues to be recognized and appreciated.

Thanks also go to Annie Thannum and Kim Campy for their diligence in compiling nightly harvest statistics, in providing these data to tribal and WDNR representatives, and in updating each day the list of lakes selected for harvest, along with the adjusted quota, the bag limits, and the number of permits available for each lake. Special thanks to Sirella Ford for entering all the spring spearing data. Finally, I would like to thank Neil Kmiecik for editing this report.

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Appendix A. Number of tribal members that speared one or more nights on lakes selected by six Wisconsin Chippewa bands during the 1994 spring spear fishery.

Number of Nights	BRV	LCO	LDF	MLK	RCF	STC	Total:	Percent of Total:
1	10	43	25	29	12	29	148	35.3%
2	9	13	22	7	6	12	69	16.5%
3	3	12	17	11	6	3	52	12.4%
4	4	7	10	11	4	7	43	10.3%
5	2	4	12	2		3	23	5.5%
6	1	4	14	3	1	7	30	7.2%
7		2	9	1	1	2	15	3.6%
8			10			1	11	2.6%
9		1	7	2		4	14	3.3%
10								0.0%
11		1	2		1	1	5	1.2%
12			3			1	4	1.0%
13	2		2				4	1.0%
14								0.0%
15								0.0%
16								0.0%
17								0.0%
18								0.0%
19								0.0%
20			1				1	0.2%
Total:	31	87	134	66	31	70	419	100%





















Appendix B (concluded). Number of walleye harvested nightly on lakes selected by six Wisconsin Chippewa bands from April 13 through April 30 during spring 1994. Also, balance of quota, number of boat-hours, catch per effort (CPE - walleye per boat-hour), number of spearer-nights, number of interviews with effort, and number of interviews without effort.

Six tribal bands combined:	Lake	Area	Walleye Sale Harvest	Tribal Quota	April							Total Harvest	Quota Balance	Boat-Hour	CPE												
					13 W	14 TH	15 F	16 SA	17 SU	18 M	19 TU					20 W	21 TH	22 F	23 SA	24 SU	25 M	26 TU	27 W	28 TH	29 F	30 SA	
Grand Total (All bands combined):	218				4	3	5	8	4	4	4	19	31	32	40	33	33	33	26	32	30	24	23				
Number of lakes:	493049																										
Area in acres:	94442	44821			338	128	58	383	286	67	613	2304	2209	3142	2702	2808	1802	1385	1654	736	2050	883	23548	21273			
Number of walleye:					23	22	9	28	21	14	46	136	148	209	145	144	116	86	98	44	100	58	1447				
Number of spearer-nights:					12	10	5	13	8	6	14	50	59	85	58	62	47	38	42	19	43	24	585				
Number of interviews with effort:					0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
Number of interviews without effort:					27.7	24.1	11.2	32.5	29.0	13.6	43.2	163.0	201.9	283.7	202.3	165.2	118.8	88.6	98.6	46.8	119.4	60.4	1730.8				
Number of boat-hours:					12.2	5.3	5.2	11.8	9.9	4.9	14.2	14.1	10.9	11.1	13.4	17.0	15.0	15.6	16.8	15.7	17.2	14.6					
Catch-per-effort (CPE):																											13.6

Appendix B (concluded). Number of walleye harvested nightly on lakes selected by six Wisconsin Chippewa bands from May 1 through May 14 during spring 1994. Also, balance of quota, number of boat-hours, catch per effort (CPE - walleye per boat-hour), number of spearer-nights, number of interviews with effort, and number of interviews without effort.

Six tribal bands combined:	Lake	Area	Walleye Sale Harvest	Tribal Quota	May							Total Harvest	Quota Balance	Boat-Hour	CPE												
					1 SU	2 M	3 TU	4 W	5 TH	6 F	7 SA					8 SU	9 M	10 TU	11 W	12 TH	13 F	14 SA					
Grand Total (All bands combined):	218				22	21	17	18	9	13	10	6	3	2	2	1	1	2									
Number of lakes:	493049																										
Area in acres:	94442	44821			892	588	289	158	25	319	89	9	0	1	2	0	2	0	25922	18899							
Number of walleye:					64	65	35	10	8	20	8	3	4	2	2	1	2	1	3	0	1672						
Number of spearer-nights:					26	24	15	5	3	9	2	2	2	1	1	1	1	1	0	687							
Number of interviews with effort:					0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
Number of interviews without effort:					86.7	81.4	43.8	16.6	10.1	31.5	8.8	4.7	5.0	3.3	3.0	3.0	3.0	4.0	0.0	2032.7							
Number of boat-hours:					10.3	7.2	6.6	9.5	2.5	10.1	10.1	1.9	0.0	0.3	0.7	0.0	0.5										
Catch-per-effort (CPE):																											12.8

County	Lake	Area	Inch Group:																														Number Harvested	Sample Size	Total Inches	Average Length	M	F	U
			7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30													
Bayfield	L Owen	1323	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	89	89	1439.2	16.2	80	9	4						
Bayfield	Narxagon L	3227				1	9	26	14	17	20	7	8	5	6	4	1	1	1								391	178	2593.9	14.6	161	13	13						
Chippewa	L Wissota	6300			1	5	3	2	1	2	30	17	8	3	2	2	1	1									15	15	168.7	11.2	1	1	14						
Chippewa	Long L	1052				1	10	14	44	33	32	14	5	4	2	1	1										213	160	2298.9	14.4	151	5	4						
Iron	Spider L	352			1	5	14	8	16	22	13	1	3	1	1	1											84	84	1139.2	13.6	76	8							
Iron	Trude L	781				1	9	22	26	17	5	4	2	1	1	1											88	88	1194.4	13.6	88	3	80						
Iron	Turtle-Flambeau Fl	13545		2	4	35	83	114	61	52	34	23	16	12	2	5	1	1									451	439	5803.2	13.2	356	3	80						
Rusk	Chain L	468				1	1	9	12	17	18	20	14	9	7	4	3	2	1	1							100	100	1545.8	15.5	91	9	9						
Rusk	Island L	526				1	1	3	8	17	20	20	10	7	4	2	1	1									112	112	1743.6	15.6	106	4	2						
Sawyer	Connors L	429			1	9	13	19	3	11	12	9	6	3	3	2	1	1	1								92	92	1288.3	14.0	50	6	36						
Sawyer	Nelson L	2503							11	37	85	81	40	27	10	7	3	1	1	1							307	307	5006.1	16.3	262	39	6						
Sawyer	Trail L	1049							7	22	25	13	8	9	13	10	5	3	4	4	1						179	126	2070.9	16.4	106	20	25						
Vilas	Annabelle L	213			1	6	5	8	20	8	3	25	8	2	2	1	1	1									52	52	677.8	13.0	27	18	8						
Vilas	Crab L	949				2	8	10	15	14	17	7	5	2	3	2	1	1	1								134	134	1997.2	14.9	108	6	6						
Vilas	Harris L	507			2	4	15	14	17	7	7	5	4	1	1	1	1	1	1								82	82	1107.7	13.5	76	5	5						
Vilas	Lynx L	339				6	11	13	22	16	13	5	4	1	1	1	1	1	1								76	76	1045.7	13.8	71	5	5						
Vilas	Presque Isle L (P.I. Chain=3)	1280				1	1	4	4	4	4	1	1	1	1	1	1	1	1								179	179	2632.0	14.7	145	34	34						
Vilas	S Turtle L	454			1	1	1	4	4	4	1	1	1	1	1	1	1	1	1								13	13	160.7	12.4	12	1	1						
Vilas	Tenderfoot L	437			1	1	1	1	1	1	1	1	1	1	1	1	1	1	1								220	220	3176.7	14.4	161	18	41						
	Sub-total:	35734	1	6	17	105	222	352	407	401	376	280	145	96	64	33	20	14	12	6	2	4	1	1	1	0	2877	2546	37090.0	14.6	2128	189	229						

Appendix C (continued). Total number of walleye harvested per inch group and sexed during spring 1994. Data were arranged alphabetically by tribe, county, and lake.

County	Lake	Area	Inch Group:																														Number Harvested	Sample Size	Total Inches	Average Length	M	F	U
			7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30													
Lac Courte Oreilles	Grindstone L	3111					5	12	38	40	69	48	36	18	9	5	3	2	1	1	2	2	1	1	1	1		291	291	4651.0	16.0	252	29	10					
Sawyer	L Chippewa	15300			2	4	6	28	131	120	155	103	52	29	21	9	7	7	11	11	2	2	4	1	1	1	825	824	12610.5	15.3	572	139	113						
Sawyer	Lac Courte Oreilles	5039						1	25	55	39	30	80	82	70	94	32	24	17	14	18	12	5	5	4	4	607	607	10949.7	18.0	489	111	7						
Sawyer	Little Found L	229																									4	4	83.8	21.0	1	3	6						
Sawyer	Lost Land L	1304						7	43	104	151	131	71	4	2	1	1	1	1	1	1	4	1	1	1	16	16	283.9	17.7	10	3	6							
Sawyer	Round L	3054						1	10	19	19	27	27	20	20	9	6	7	1	1	1	1	1	1	1	585	585	8922.1	15.3	512	62	11							
Sawyer	Sand L	928						3	1	10	15	19	27	27	20	3	3	3	3	1	1	1	1	1	1	128	128	2127.5	16.6	114	11	3							
Sawyer	Whitelish L	786						3	12	12	13	11	7	2	3	3	3	1	1	1	1	1	1	1	1	79	79	1358.4	17.2	59	17	3							
	Sub-total:	29751	0	2	4	7	41	215	339	381	425	341	226	146	142	58	46	39	42	33	20	8	10	7	0	2	2535	2534	40986.9	16.2	2009	372	153						







Appendix D. Number of walleye per inch group taken during spring spearing seasons from 1985-1994.

Inch Group	Number of walleye in:										10 Year Total	Percent of Total
	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994		
5									1		1	0.0
6		1							3		4	0.0
7							1	1	1		5	0.0%
8				3	1	4	4	3	4	12	31	0.0%
9	2	3	17	10	4	14	36	34	45	63	228	0.1%
10	5	49	123	121	60	183	229	243	245	386	1,644	1.1%
11	31	358	558	678	306	649	957	957	905	1,186	6,585	4.3%
12	140	680	1,282	1,688	925	1,513	1,979	2,444	2,101	2,170	14,922	9.8%
13	265	928	1,892	2,755	1,684	2,370	2,582	3,507	3,636	3,110	22,729	14.9%
14	286	1,068	2,133	3,289	2,222	2,917	2,777	3,252	4,032	3,666	25,642	16.8%
15	293	985	1,895	2,951	2,154	2,856	2,543	2,375	3,111	3,368	22,531	14.8%
16	247	939	1,666	2,311	1,919	2,295	2,031	1,696	1,993	2,517	17,614	11.6%
17	172	801	1,374	1,658	1,390	1,862	1,687	1,207	1,323	1,796	13,270	8.7%
18	145	458	1,113	1,297	1,010	1,288	1,216	878	812	1,120	9,337	6.1%
19	118	255	811	932	634	932	811	562	589	850	6,494	4.3%
20	33	149	513	596	328	556	590	261	308	383	3,717	2.4%
21	25	72	259	316	210	307	303	199	218	267	2,176	1.4%
22	18	50	148	214	109	202	249	171	148	205	1,514	1.0%
23	18	23	116	134	76	160	151	129	120	189	1,116	0.7%
24	11	9	86	124	67	100	111	85	101	145	839	0.6%
25	7	10	76	89	48	107	102	66	80	98	683	0.4%
26	9		57	75	45	71	86	65	54	91	553	0.4%
27	10	3	42	56	31	63	46	42	33	55	381	0.2%
28	5	1	28	32	18	30	39	25	27	30	235	0.2%
29	8		25	30	8	15	15	17	12	12	142	0.1%
30	11		8	9	3	5	6	6	1	5	54	0.0%
31	6		2		2	1		1			12	0.0%
32	2										2	0.0%
33	1										1	0.0%
34												0.0%
35												0.0%
36												0.0
Total No. Measured:	1,868	6,842	14,224	19,368	13,254	18,500	18,551	18,226	19,903	21,726	152,462	100%
Total Length:	30,382	106,051	226,789	306,926	211,645	295,047	291,543	275,331	301,713	335,322	2,380,748	
Average Length:	16.3	15.5	15.9	15.8	16.0	15.9	15.7	15.1	15.2	15.4	15.6	
Total No. Speared:	2,761	6,940	21,321	25,969	16,054	25,348	23,018	21,188	24,532	25,922	193,053	
Percent Measured:	68%	99%	67%	75%	83%	73%	81%	86%	81%	84%	79%	

Appendix E. Number harvested, number measured, average length, and harvest per acre of muskellunge from various lakes during spring spearing in 1994.

Tribe	County	Lake	Area	Number Harvested	Number Measured	Total Inches	Average Length	Number Per Acre
Stc	Barron	Sand L	322	1	1	40.4	40.4	0.0031
Rcf	Bayfield	Upper Eau Claire L	1030	5	5	199.9	40.0	0.0049
Stc	Burnett	Big Mckenzie L	530	4	4	151.4	37.9	0.0075
Mlk	Forest	Roberts L	414	1	1	37.0	37.0	0.0024
Ldf	Lincoln	L Nokomis	2433	4	4	143.4	35.9	0.0016
Ldf	Oneida	Bearskin L	400	5	5	174.9	35.0	0.0125
Mlk	Oneida	Big Stone L	548	2	2	70.9	35.5	0.0036
Ldf	Oneida	Buckskin L	634	4	4	144.7	72.4	0.0063
Ldf	Oneida	Clear L	846	1	1	49.0	49.0	0.0012
Ldf	Oneida	Crescent L	612	4	4	127.9	32.0	0.0065
Ldf	Oneida	Katherine L	590	1	1	33.0	33.0	0.0017
Ldf	Oneida	Kawaguesaga L	670	7	7	251.8	36.0	0.0104
Ldf	Oneida	Minocqua L	1360	6	6	210.6	35.1	0.0044
Mlk	Oneida	Pelican L	3585	7	7	268.1	38.3	0.0020
Ldf	Oneida	Squirrel L	1317	3	3	103.4	34.5	0.0023
Ldf	Oneida	Tomahawk L	3392	19	19	689.2	36.3	0.0056
Ldf	Oneida	Two Sisters L	719	2	2	63.7	31.9	0.0028
Brv	Rusk	Chain L	468	2	2	57.9	29.0	0.0043
Lco	Sawyer	Grindstone L	3111	2	2	83.8	41.9	0.0006
Lco	Sawyer	L Chippewa	15300	17	17	705.5	41.5	0.0011
Lco	Sawyer	Lac Courte Oreilles	5039	2	2	66.9	33.5	0.0004
Lco	Sawyer	Lost Land L	1304	2	2	64.4	32.2	0.0015
Lco	Sawyer	Round L	3054	13	13	544.7	41.9	0.0043
Lco	Sawyer	Sand L	928	5	5	191.3	38.3	0.0054
Lco	Sawyer	Whitefish L	786	2	2	69.6	34.8	0.0025
Brv	Vilas	Annabelle L	213	1	1	33.0	33.0	0.0047
Ldf	Vilas	Big Arbor Vitae L	1090	8	8	279.8	35.0	0.0073
Ldf	Vilas	Big L	850	6	6	218.8	36.5	0.0071
Ldf	Vilas	Big Muskellunge L	930	5	5	197.5	39.5	0.0054
Ldf	Vilas	Big Sand L	1408	1	1	41.5	41.5	0.0007
Ldf	Vilas	Big St Germain L	1617	6	6	200.3	64.9	0.0037
Ldf	Vilas	Catfish L	1012	1	1	33.0	33.0	0.0010
Ldf	Vilas	Clear L	555	2	2	80.0	40.0	0.0036
Brv	Vilas	Crab L	949	1	1	41.0	41.0	0.0011
Ldf	Vilas	Fishtrap L	329	1	1	28.0	28.0	0.0030
Ldf	Vilas	High L	734	5	4	127.8	32.0	0.0068
Ldf	Vilas	Lac Vieux Desert	4300	7	7	247.1	35.3	0.0016
Ldf	Vilas	Little Arbor Vitae L	534	2	2	73.9	37.0	0.0037
Ldf	Vilas	Little St Germain L	980	2	2	59.7	29.9	0.0020
Brv	Vilas	Lynx L	339	2	2	65.4	32.7	0.0059
Brv	Vilas	Presque Isle L	1280	2	2	72.0	36.0	0.0016
Ldf	Vilas	Plum L	1108	5	5	204.4	40.9	0.0045
Ldf	Vilas	Star L	1206	6	6	221.8	37.0	0.0050
Brv	Vilas	Tenderfoot L	437	2	2	60.7	30.4	0.0046
Ldf	Vilas	Tenderfoot L	437	2	2	74.8	37.4	0.0046
Ldf	Vilas	Trout L	3816	17	17	664.8	39.1	0.0045
Ldf	Vilas	N Twin L	2788	20	20	703.5	35.2	0.0072
Ldf	Vilas	White Sand L	728	8	8	277.7	34.7	0.0110
Stc	Washburn	Middle Mckenzie L	530	3	3	127.0	42.3	0.0057
Stc	Washburn	Shell L	2580	8	8	356.8	44.6	0.0031
Total:			80142	244	243	9033.6		
Average:							37.2	0.0030

Appendix F. Number of muskellunge per inch group taken during spring spearing seasons from 1985-1994.

Inch Group	Number of muskellunge in:										10 Years Total	Percent of Total
	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994		
13						1					1	0.1%
14											0	0.0%
15											0	0.0%
16			1								1	0.1%
17				3			1				4	0.2%
18								1			1	0.1%
19				1					1		2	0.1%
20			2								2	0.1%
21											0	0.0%
22						1					1	0.1%
23		1					1				2	0.1%
24		1						1			2	0.1%
25	1		1		1	1			2	1	7	0.4%
26				1	2	3	1	1	3	1	12	0.7%
27			3	3	2	2		1	1	2	14	0.8%
28	2		3	1	5	4	5	1	3	3	27	1.6%
29	2	2	7	5	3	6	4	8	4	2	43	2.6%
30	8	3	4	6	6	15	6	5	6	11	70	4.2%
31	6	3	14	9	9	24	12	8	9	14	108	6.5%
32	7	2	15	13	11	18	10	7	11	14	108	6.5%
33	3	6	12	10	8	25	11	18	12	20	125	7.6%
34	8	1	16	10	8	20	20	13	21	17	134	8.1%
35	7	7	12	10	10	26	17	11	10	26	136	8.2%
36	2	4	12	7	6	20	18	18	22	15	124	7.5%
37	8	8	17	11	10	29	20	14	15	16	148	9.0%
38		6	12	9	7	27	11	12	14	16	114	6.9%
39	2	1	10	10	6	16	7	11	10	17	90	5.4%
40	1	2	8	6	5	19	16	11	11	11	90	5.4%
41	1	2	5	9	3	12	4	5	5	10	56	3.4%
42	1	1	4	6	5	6	3	4	8	11	49	3.0%
43	2	2	3	6	3	6	5	4	4	7	42	2.5%
44	2		3	7		5		4	6	4	31	1.9%
45			4	8	2	1	5	1	1	7	29	1.8%
46		1	4	3		2	2		1	8	21	1.3%
47	3		2	1	2	3	1	1	1	1	15	0.9%
48		1	4	1	1	2	3	2	3	5	22	1.3%
49	1		2	1	1	3	1		2	3	14	0.8%
50	1				1		1		1	1	5	0.3%
51				1		1					2	0.1%
52											0	0.0%
53		1									1	0.1%
Total Number Measured:	68	55	180	158	117	298	185	162	187	243	1653	100%
Total Length:	2,407	1,994	6,507	5,805	4,175	10,761	6,725	5,845	6822	9034	60,075	
Average Length:	35.4	36.2	36.2	36.7	35.7	36.1	36.4	36.1	36.5	37.2	36.3	
Total Number Speared:	86	55	196	158	118	303	185	165	188	244	1698	
Percent Measured:	79.1%	100.0%	91.8%	100.0%	99.2%	98.3%	100.0%	98.2%	99.5%	99.6%	97.3%	



Appendix G. Number, average length (inches), and harvest per acre of bass (largemouth and smallmouth) and northern pike from various lakes during spring spearing in 1994

Tribe	County	Lake	Area	Species	Number Harvested	Number Measured	Total Inches	Average Length	Number Per Acre
Mlk	Florence	Patten L	255	Bas	1	1	25.5	25.5	0.0039
Mlk	Forest	Roberts L	414	Bas	1	1	14.7	14.7	0.0024
Mlk	Oneida	Long L	620	Bas	3	3	26.7	8.9	0.0048
Ldf	Oneida	Minocqua L	1360	Bas	1	1	13.2	13.2	0.0007
Mlk	Oneida	Pelican L	3585	Bas	1	1	15.0	15.0	0.0003
Ldf	Oneida	Tomahawk L	3392	Bas	1	1	11.0	11.0	0.0003
Stc	Polk	Balsam L	2054	Bas	16	16	255.3	16.0	0.0078
Stc	Polk	Big Round L	1015	Bas	11	11	156.6	14.2	0.0108
Ldf	Vilas	Rest L	608	Bas	1	1	7.0	7.0	0.0016
Stc	Washburn	Long L	3290	Bas	1	1	12.3	12.3	0.0003
Total number measured:						37	537.3	14.5	
Total number harvested:			16593		37				0.0022
Stc	Barron	Bear L	1358	Lmb	8	8	116.3	14.5	0.0059
Stc	Barron	Beaver Dam L	1112	Lmb	2	2	36.8	18.4	0.0018
Rcf	Bayfield	Lower Eau Claire L	802	Lmb	1	1	18.2	18.2	0.0012
Rcf	Bayfield	Middle Eau Claire L	902	Lmb	6	6	102.2	17.0	0.0067
Stc	Burnett	Big Mckenzie L	530	Lmb	13	13	184.6	14.2	0.0245
Stc	Burnett	Little Yellow L	348	Lmb	3	3	48.4	16.1	0.0086
Mlk	Florence	Halsey L	512	Lmb	2	2	34.5	17.3	0.0039
Mlk	Florence	Keyes L	202	Lmb	1	1	12.5	12.5	0.0050
Mlk	Florence	Patten L	255	Lmb	1	1	12.5	12.5	0.0039
Brv	Iron	Spider L	352	Lmb	1	1	16.3	16.3	0.0028
Stc	Polk	Balsam L	2054	Lmb	81	81	1321.3	16.3	0.0394
Stc	Polk	Big Buttemut L	378	Lmb	1	1	14.3	14.3	0.0026
Stc	Polk	Big Round L	1015	Lmb	3	3	48.6	16.2	0.0030
Stc	Polk	Half Moon L	579	Lmb	19	19	257.4	13.5	0.0328
Stc	Polk	Wapogasset L	1186	Lmb	1	1	12.5	12.5	0.0008
Lco	Sawyer	Round L	3054	Lmb	1	1	17.9	17.9	0.0003
Lco	Sawyer	Whitefish L	786	Lmb	2	2	30.0	15.0	0.0025
Ldf	Vilas	Lac Vieux Desert	4300	Lmb	1	1	18.7	18.7	0.0002
Ldf	Vilas	Little St Germain L	980	Lmb	1	1	17.0	17.0	0.0010
Ldf	Vilas	Plum L	1108	Lmb	2	2	30.5	15.3	0.0018
Stc	Washburn	Bass L	144	Lmb	2	2	27.7	13.9	0.0139
Stc	Washburn	Long L	3290	Lmb	11	6	71.6	11.9	0.0033
Stc	Washburn	Middle Mckenzie L	530	Lmb	8	8	114.5	14.3	0.0151
Stc	Washburn	Shell L	2580	Lmb	3	3	51.7	17.2	0.0012
Total number measured:						169	2616.0	15.5	
Total number harvested:			28357		174				0.0061
Stc	Barron	Beaver Dam L	1112	Smb	1	1	16.1	16.1	0.0009
Rcf	Bayfield	Middle Eau Claire L	902	Smb	9	9	142.6	15.8	0.0100
Mlk	Forest	Buttemut L	1292	Smb	7	7	115.1	16.4	0.0054
Mlk	Forest	L Lucerne	1026	Smb	1	1	13.0	13.0	0.0010
Mlk	Langlade	Enterprise L	502	Smb	1	1	13.2	13.2	0.0020
Ldf	Lincoln	L Nokomis	2433	Smb	1	1	16.7	16.7	0.0004
Ldf	Oneida	Bearskin L	400	Smb	19	19	301.4	15.9	0.0475
Stc	Polk	Big Round L	1015	Smb	1	1	14.5	14.5	0.0010
Stc	Polk	Half Moon L	579	Smb	1	1	12.2	12.2	0.0017
Lco	Sawyer	L Chippewa	15300	Smb	2	2	27.5	13.8	0.0001
Lco	Sawyer	Lac Courte Oreilles	5039	Smb	1	1	14.1	14.1	0.0002
Lco	Sawyer	Round L	3054	Smb	3	3	51.5	17.2	0.0010
Lco	Sawyer	Whitefish L	786	Smb	1	1	13.8	13.8	0.0013
Ldf	Vilas	Big Muskellunge L	930	Smb	1	1	12.6	12.6	0.0011
Ldf	Vilas	White Sand L	728	Smb	1	1	13.7	13.7	0.0014
Total Number Measured:						50	778.0	15.6	
Total Number Harvested:			35098		50				0.0014
Rcf	Bayfield	Upper Eau Claire L	1030	Nop	1	1	38.5	38.5	0.0010
Stc	Burnett	Little Yellow L	348	Nop	1	1	19.8	19.8	0.0029
Stc	Burnett	Yellow L	2287	Nop	3	3	78.9	26.3	0.0013
Brv	Chippewa	Long L	1052	Nop	1	1	38.5	38.5	0.0010
Mlk	Florence	Keyes L	202	Nop	1	1	28.2	28.2	0.0050
Mlk	Florence	Patten L	255	Nop	1	1	28.2	28.2	0.0039
Ldf	Iron	Turtle-Flambeau Fl	13545	Nop	1	1	17.8	17.8	0.0001
Ldf	Oneida	Kawaguesaga L	670	Nop	1	1	30.1	30.1	0.0015
Stc	Polk	Balsam L	2054	Nop	3	3	87.0	29.0	0.0015
Stc	Polk	Big Round L	1015	Nop	1	1	21.1	21.1	0.0010
Stc	Polk	Half Moon L	579	Nop	1	1	30.0	30.0	0.0017
Lco	Sawyer	Little Round L	229	Nop	1	1	27.5	27.5	0.0044
Lco	Sawyer	Round L	3054	Nop	4	4	105.4	26.4	0.0013
Ldf	Vilas	Little St Germain L	980	Nop	1	1	30.0	30.0	0.0010
Ldf	Vilas	Plum L	1108	Nop	1	1	33.0	33.0	0.0009
Ldf	Vilas	Star L	1206	Nop	1	1	32.8	32.8	0.0008
Brv	Vilas	Tenderfoot L	437	Nop	1	1	22.0	22.0	0.0023
Stc	Washburn	Bass L	144	Nop	2	2	54.0	27.0	0.0139
Stc	Washburn	Long L	3290	Nop	3	2	46.0	23.0	0.0009
Stc	Washburn	Shell L	2580	Nop	1	1	23.4	23.4	0.0004
Total number measured:						29	792.2	27.3	
Total number harvested:			36065		30				0.0008

Appendix H. Number of bass per inch group (largemouth and smallmouth) taken during spring spearing seasons from 1985-1994.

Inch Group	Number of bass in:										10 Year Total	Percent of Total	
	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994			
5													0.0%
6											1		0.0%
7					1						2	3	0.2%
8			1									1	0.1%
9	1	1	2			1	1					6	0.4%
10			2	4	1	1	2	1	2	1		14	1.0%
11	1	1	8		7	3	1	5	1	5		32	2.2%
12	2	2	16	7	10	30	11	11	7	32		128	8.9%
13	3	6	43	21	14	35	36	16	18	41		233	16.1%
14		2	33	27	17	47	34	20	42	37		259	17.9%
15	7	8	25	21	17	26	21	21	40	38		224	15.5%
16		12	30	19	19	25	11	13	29	35		193	13.4%
17		3	20	15	11	19	9	5	16	22		120	8.3%
18	1	2	15	9	4	16	9	11	13	17		97	6.7%
19	1		7	11	8	9	6	6	15	11		74	5.1%
20		1	5	7	1	2	2	3	12	9		42	2.9%
21	1	1	2	1		1			2	4		12	0.8%
22			1	1	1		1		1			5	0.3%
23												0	0.0%
24												0	0.0%
25				1						1		2	0.1%
Total No. Measured:	17	39	210	144	111	215	144	112	198	256	1,445	100%	
Total Length:	255	602	3,199	2,275	1,694	3,246	2,165	1,708	3,002	3,931	22,078		
Average Length:	15.0	15.4	15.2	15.8	15.3	15.1	15.0	15.3	15.2	15.4	15.3		
Total No. Speared:	21	39	275	167	113	219	147	136	201	261	1,579		
Percent Measured:	81.0%	100.0%	76.4%	86.2%	98.2%	98.2%	98.0%	82.4%	98.5%	98.1%	91.5%		

Appendix I. Number of northern pike per inch group taken during spring spearing seasons from 1985-1994.

Inch Group	Number of northern pike in:										10 Year Total	Percent of Total
	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994		
11											0	0.0%
12		1						1			2	0.8%
13				1							1	0.4%
14											0	0.0%
15			1			1					2	0.8%
16						2					2	0.8%
17		1	1	2	1		1	1		1	8	3.4%
18			1	1	1	4	4			1	12	5.1%
19				2	1	1	4		1	1	10	4.2%
20		2		2	5	1	6	1	1	1	19	8.0%
21			2	10	1	3		1	1	1	19	8.0%
22		2	3	2		4	4	2	2	3	22	9.3%
23		1	2	2		2	1	3	2	2	15	6.3%
24		1	3	2		3	6	1	3	2	21	8.9%
25			1	1			2	1			5	2.1%
26				5		1	2	2		1	11	4.6%
27			1	1	1	2	1	1		1	8	3.4%
28			7	2	1	1	1		1	3	16	6.8%
29				1	1	2	1		2	1	8	3.4%
30			1	1			1		1	4	8	3.4%
31			2	3		1		1	1		8	3.4%
32			3	2		1			1	2	9	3.8%
33		1			1	1	2	1		2	8	3.4%
34							1				1	0.4%
35							1	1			2	0.8%
36		1		2		1	1	1		1	7	3.0%
37				1	1				1		3	1.3%
38						1				2	3	1.3%
39		1		1					1		3	1.3%
40		1					1				2	0.8%
41				1					1		2	0.8%
Total No. Measured:	0	12	28	45	14	32	40	18	19	29	237	100%
Total Length:	0	312	724	1,152	334	776	986	453	526.8	792.2	6,055	
Average Length:	NA	26.0	25.9	25.6	23.9	24.2	24.6	25.2	27.7	27.3	25.5	
Total No. Speared:	2	13	41	59	14	34	41	30	19	30	283	
Percent Measured:	0.0%	92.3%	68.3%	76.3%	100.0%	94.1%	97.6%	60.0%	100.0%	96.7%	83.7%	





