



# **Open Water Spearing in Northern Wisconsin by Chippewa Indians During 1995**

by

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## ABSTRACT

Nineteen ninety-five (1995) marked the eleventh consecutive spring that spear fishing was conducted by Chippewa tribes in off-reservation waters of northern Wisconsin. A total of 411 tribal members participated in this traditional fishery. Spearing occurred on 153 lakes and walleye were harvested from all except in 4 lakes. A total of 30,952 fish was taken with 97.7% of the catch (30,249 fish) being walleye. Numbers of other gamefish harvested were 299 muskellunge, 187 bass, and 32 northern pike. Average lengths were 15.3 inches for walleye and 37.3 inches for muskellunge. No spearing or netting occurred in summer and fall. The tribal walleye quota was exceeded on 4 lakes by a total of 14 fish. Except for these 4 instances, harvest of walleye and muskellunge was maintained within the established limits by a nightly permit system and by complete monitoring of the catch.

## TABLE OF CONTENTS

	PAGE
LIST OF TABLES .....	ii
LIST OF FIGURES .....	iii
INTRODUCTION .....	1
Regulations .....	1
Permit System and Monitoring .....	1
RESULTS AND DISCUSSION .....	4
Fishing Effort .....	4
Number of Spearers.....	4
Number of Spearer-nights or Permits Used .....	6
Number of Boat-hours .....	8
Total Harvest .....	10
Walleye Harvest .....	11
Mean Length .....	12
Sex Composition of Catch .....	13
Catch Per Effort (CPE) .....	15
Muskellunge Harvest .....	16
Bass Harvest .....	18
Northern Pike Harvest .....	20
ACKNOWLEDGMENTS .....	22
LITERATURE CITED .....	23
LIST OF APPENDICES .....	24

## LIST OF TABLES

TABLE		PAGE
1	Number of spearkers on lakes selected by six Wisconsin Chippewa bands during spring spearing from 1986-1995 .....	4
2	Number of spearer-nights on lakes selected by six Wisconsin Chippewa bands during spring spearing from 1986-1995 .....	6
3	Number of spearer boat-hours on lakes selected by six Wisconsin Chippewa bands during spring spearing from 1986-1995 .....	8
4	Number of interviews and average length of spearing trip (in boat-hours) during spring spearing from 1989-1995 .....	9
5	Number of various fish species harvested during spring spearing seasons from 1990-1995 .....	10
6	Number and percent of walleye that were sexed and were male, female, or unknown sex during spring spearing seasons from 1985-1995 .....	13

## LIST OF FIGURES

FIGURE	PAGE
1	Map depicting the ceded territory in northern Wisconsin ..... 2
2	Off-reservation Treaty Fishing Permit used during spring 1995 ..... 3
3	Number of spearkers during spring spearing seasons from 1986-1995 ..... 5
4	Number of spearker-nights during spring spearing seasons from 1986-1995 ..... 7
5	Number of boat-hours of effort during spring spearing seasons from 1986-1995..... 9
6	Number of walleye harvested during spring spearing seasons from 1985-1995..... 11
7	Length frequency of walleye speared during 1995 and during the ten year period 1985-1995 ..... 12
8	Sex composition of the walleye harvest during spring spearing seasons from 1985-1995 ..... 14
9	Walleye CPE (number per boat-hour) by lake during the 1995 spring spearing season ..... 15
10	Number of muskellunge harvested during spring spearing seasons from 1985-1995 ..... 17
11	Length frequency of muskellunge speared during 1995 and during the eleven year period 1985-1995 ..... 17
12	Number of bass harvested during spring spearing seasons from 1985-1995 ..... 19
13	Length frequency of bass speared during 1995 and during the eleven year period 1985-1995 ..... 19
14	Number of northern pike harvested during spring spearing seasons from 1985-1995 ..... 21
15	Length frequency of northern pike speared during 1995 and during the ten year period 1986-1995 ..... 21

## INTRODUCTION

This report presents data for harvest and effort by Chippewa spearers in ceded territory waters of northern Wisconsin (Figure 1) during spring 1995. 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 1995, neither spearing nor gill netting took place in summer and fall.

## 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

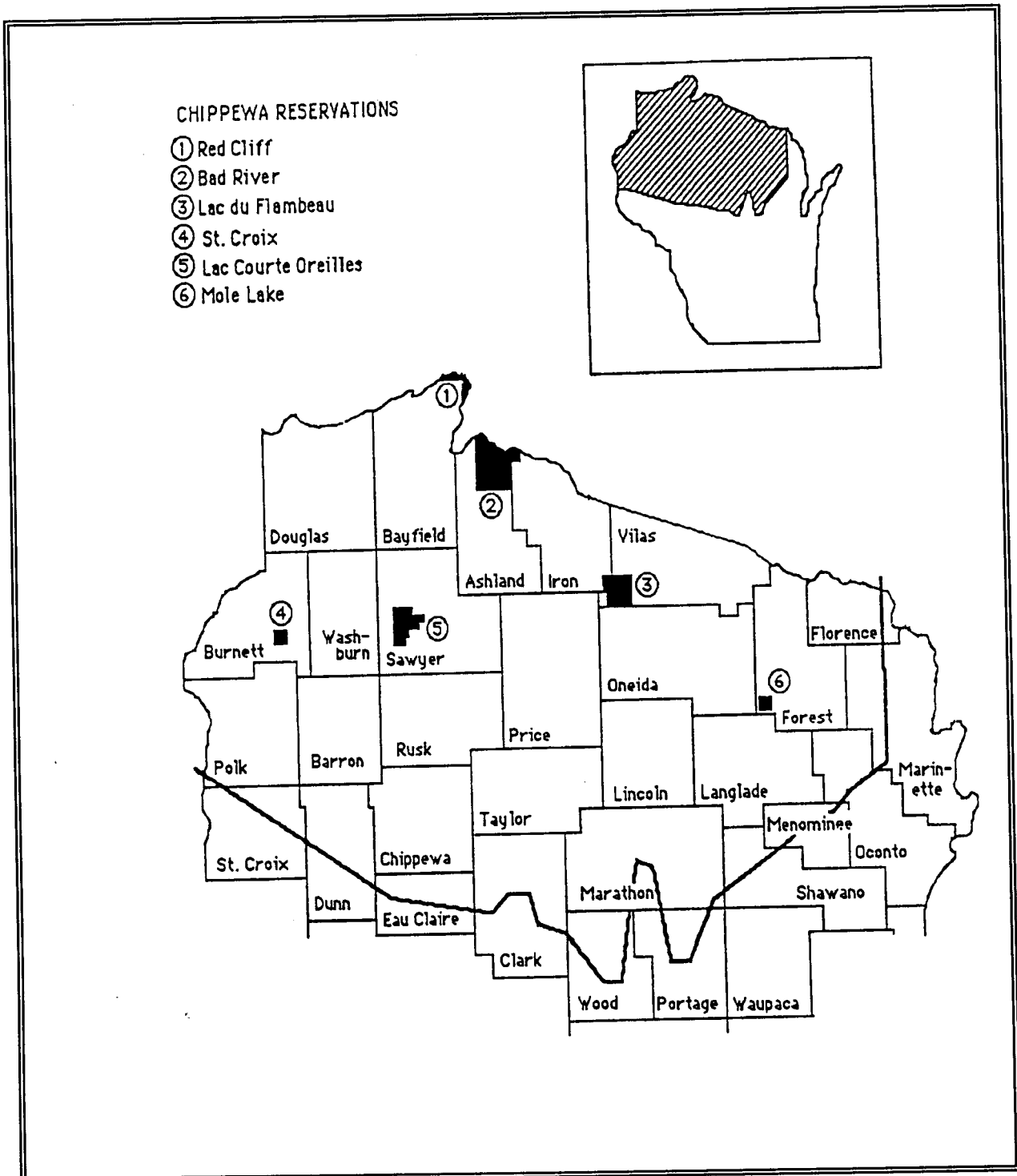
The permit system has operated the same since 1988. Permits (Figure 2) were issued at a tribal office during the day or at the designated boat landing at night. The number of permits that could be issued was determined daily by dividing the remaining Tribal Quota (TQ) for a lake by the nightly bag limit 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 1995 open-water season.

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

**FRONT**

<b>Spearing Times:</b>		<b>Number of:</b>	
Starting _____		Walleye per boat _____	
Ending _____		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 spearkers, the number of spearker-nights, and the number of boat-hours.

**Number of spearkers.** All tribal members spearing under permits issued by each tribe were counted as an individual spearker for that tribe regardless of whether the spearker was an enrolled member of the tribe issuing permits. A total of 421 tribal members participated in the 1995 spring spear fishery (Table 1, Figure 3, Appendix A). None of these individuals speared under two or more permit systems. Compared to 1994 the total number of spearkers increased by 3 persons or less than 1%.

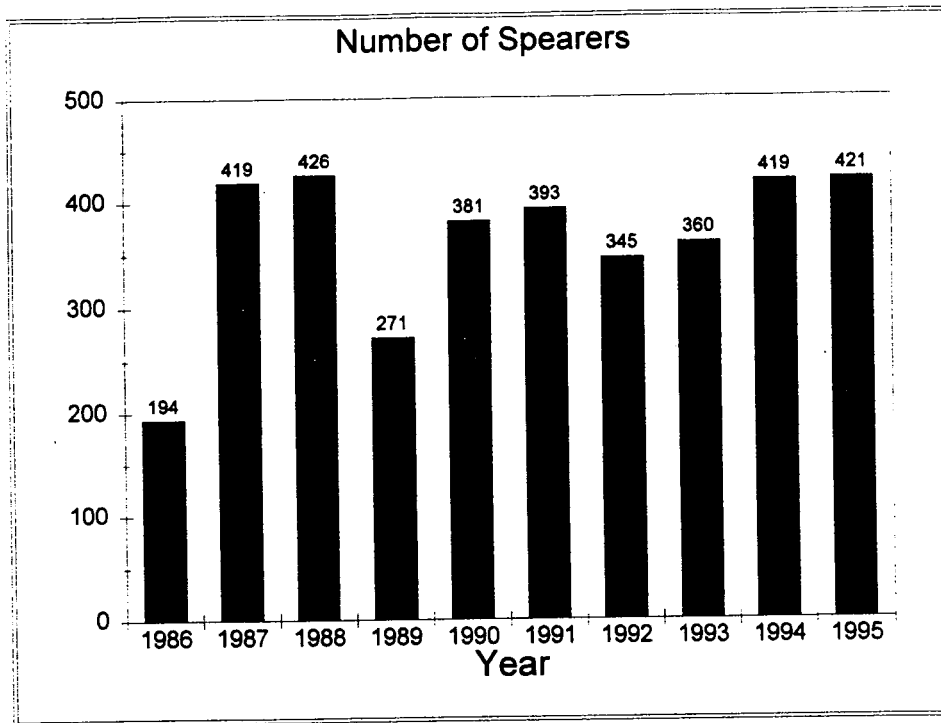
All persons spearing on lakes selected by Bad River, Lac du Flambeau and Red Cliff were members of that tribe (39, 150, and 44 persons, respectively). On lakes selected by Lac Courte Oreilles, 1 of the 68 spearkers belonged to another tribe (St. Croix). One person from Lac Courte Oreilles was included in the 49 members spearing under permits issued by Mole Lake. Of the 67 persons spearing on lakes selected by St. Croix, 18 were members of another tribe (1 from Bad River, 1 from Lac Courte Oreilles, 1 from Lac du Flambeau, and 15 from Mille Lacs).

**Table 1.** Number of spearkers on lakes selected by six Wisconsin Chippewa bands during spring spearing 1986-1995<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
1995	39	68	150	53	44	67	421
PERCENT CHANGE: 1994-1995	4%	1%	1%	1%	5%	1%	0%

- <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, 3 in 1994, and 0 in 1995.
- <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, 14 in 1994, and 15 in 1995.

**Figure 3.** Number of spearers during spring spearing seasons from 1986-1995.



**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 1,755 spearer-nights was recorded during spring 1995 (Table 2, Figure 4, Appendix B). Nearly 40% of this effort (677 spearer-nights) occurred on lakes selected by Lac du Flambeau. Spearer-nights on lakes selected by the other five tribes ranged from 135 at Red Cliff to 323 at St. Croix. Compared to 1994, effort increased by 83 spearer-nights or 5%.

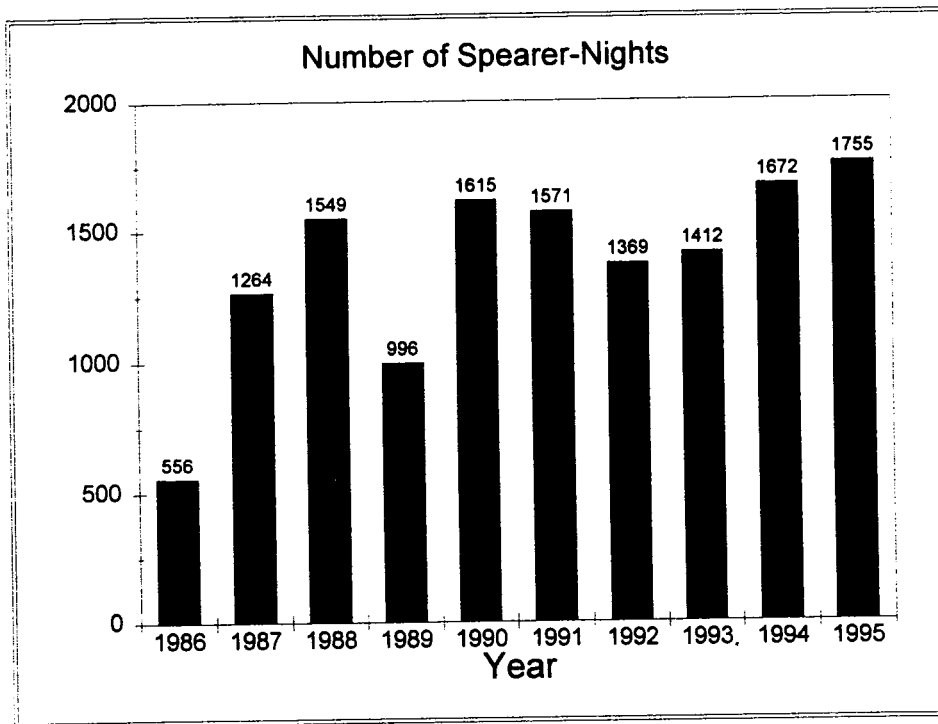
**Table 2.** Number of spearer-nights on lakes selected by six Wisconsin Chippewa bands during spring spearing from 1986-1995.

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
1995	164	215	677	241	135	323	1755
PERCENT CHANGE: 1994-1995	27%	-16%	-3%	44%	2%	12%	5%

<sup>1</sup> Includes spearer-nights for Mille Lacs tribe: 2 in 1990, 3 in 1991, 0 in 1992, 1 in 1993, 6 in 1994, and 0 in 1995.

<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, 34 in 1994, and 59 in 1995.

**Figure 4.** Number of spearer-nights during spring spearing seasons from 1986-1995.





**Number of Boat-Hours.** A total of 1,951 boat-hours of effort was recorded in 1995 (Table 3, Figure 5, Appendix B). Compared to 1994, the number of boat-hours decreased by 4% (82 boat-hours). About one-third of the effort (618 boat-hours or 32%) occurred on lakes selected by Lac du Flambeau. Boat-hours on lakes selected by the other five tribes ranged from 144 at Red Cliff to 369 at St. Croix.

**Table 3.** Number of spearer boat-hours on lakes selected by six Wisconsin Chippewa bands during spring spearing from 1986-1995 .

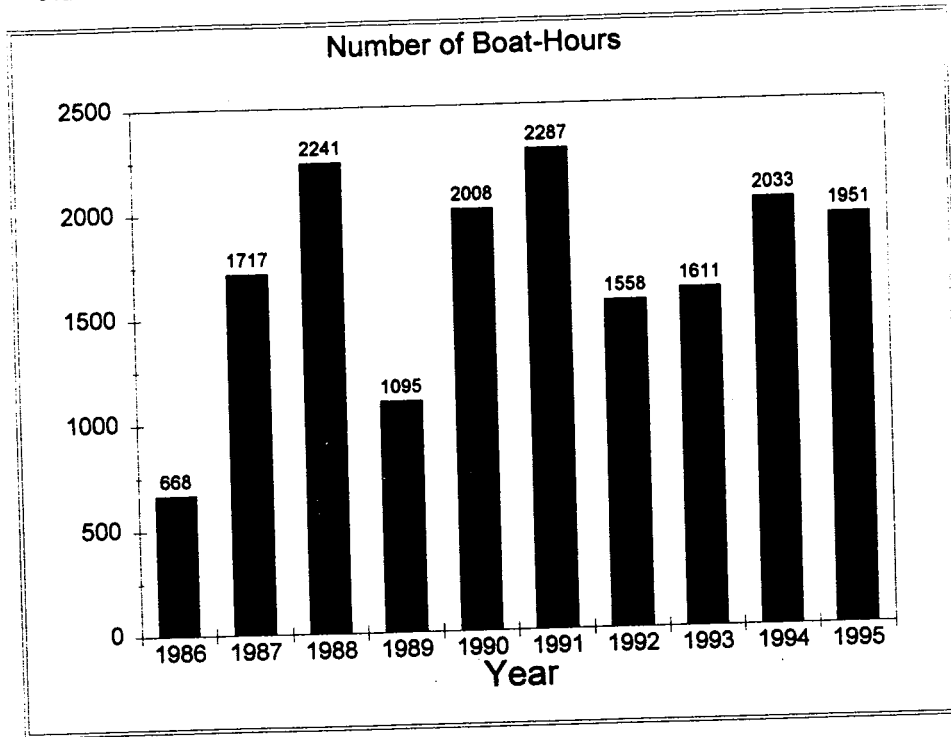
Year	BRV <sup>1</sup>	LCO <sup>2</sup>	LDF	MLK	RCF	STC <sup>3</sup>	Total:
1986	2	53	440	95		78	668
1987	46	163	976	252		280	1717
1988	173	247	1094	393		334	3341
1989	135	122	364	155	109	210	1095
1990	254	151	787	298	181	338	2008
1991	288	283	704	344	226	444	2288
1992	206	221	453	218	178	281	1558
1993	201	290	459	297	164	200	1611
1994	172	356	743	247	133	381	2033
1995	163	359	618	298	144	369	1951
PERCENT CHANGE: 1994-1995	-5%	1%	-17%	21%	8%	-3%	-4%

<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 1988-1995.

**Figure 5.** Number of boat-hours of effort during spring spearing seasons from 1986-1995.



For all tribes combined, a total of 794 interviews were conducted and all effort was recorded. Average length of a trip was 2.5 boat-hours (Table 4).

**Table 4.** Number of interviews and average length of spearing trip (in boat-hours) during spring spearing from 1989-1995.

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
1995	2.1	3.5	2.0	2.8	2.7	2.5	2.5
1995 Boat-hours:	163	359	618	298	144	369	1951
1995 interviews with effort:	76	102	309	107	54	146	794
1994 interviews without effort:	0	0	0	0	0	0	0

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

## Total Harvest

Thirteen taxa of fish were harvested during the 1995 spring spear fishery (Table 5). Of the 30,952 fish taken, 97.7% were walleye. Percentages of the total catch for other game fish species were 1.0% for muskellunge, 0.6% for bass, and 0.1% for northern pike. Also, 3 sturgeon and 1 burbot were speared in 1995. No trout were reported in 1995. Other species combined (panfish and rough fish) totaled 181 fish and made up the remaining 0.6% of the harvest.

**Table 5.** Number of various fish species harvested during spring spearing seasons from 1991-1995.

Taxa:	1991	1992	1993	1994	1995
Walleye	23,018	21,188	24,532	25,922	30,249
Muskellunge	185	165	188	244	299
Bass Species	3	18	79	37	11
Largemouth Bass	130	85	100	174	121
Smallmouth Bass	14	31	21	50	55
Northern Pike	41	28	19	30	32
Lake Sturgeon					3
Trout Species	1				
Rock Bass	4	2			1
Crappie	31	26	43	40	109
Bluegill	1	5	6	9	5
Yellow Perch	8	9	10	8	8
Bullhead			1		
Sucker	28	17	31	40	55
Carp	1		2	1	3
Burbot	1			8	1
Bowfin	3				
Cisco					
<b>TOTAL:</b>	<b>23,469</b>	<b>21,574</b>	<b>25,032</b>	<b>26,563</b>	<b>30,952</b>

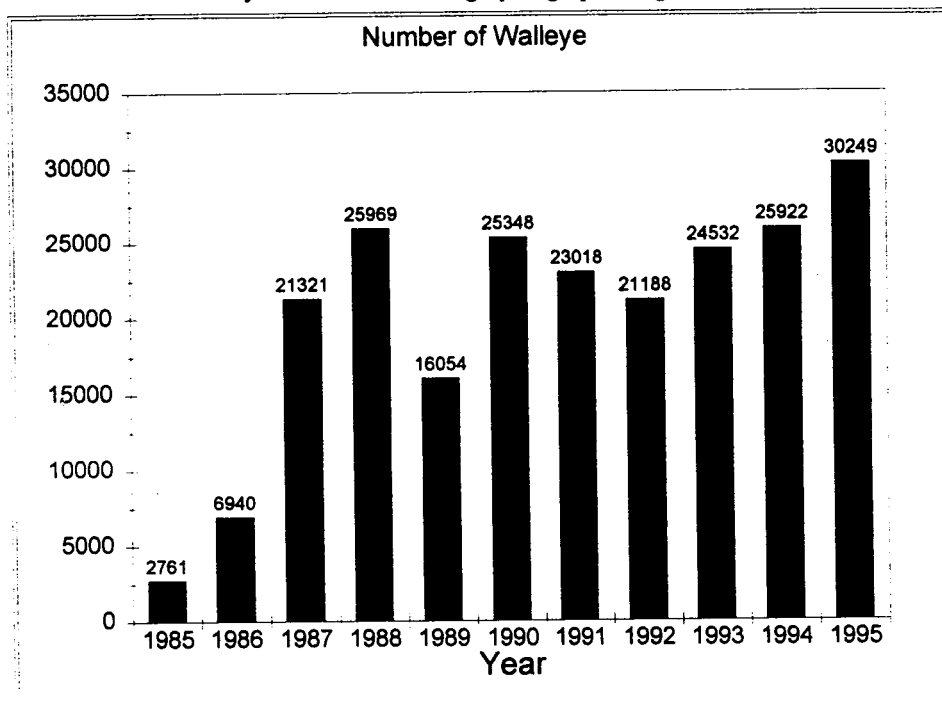
## Walleye Harvest

Tribal quotas (TQ) for walleye were selected for 222 lakes and totaled 41,283 walleye. The percent of the "safe harvest" selected as tribal quotas for lakes in 1995 ranged from 29.5% (High Lake, Vilas County) to 83.9% (Gordon Lake, Ashland County). Two tribes selected the same lake in 10 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 Wisconsin tribes.

Tribal spearers harvested a total of 30,249 walleye from 149 lakes (Table 5, Figure 6, Appendix B). Spearfishing also occurred in another 4 lakes [Duck Lake (Barron County), Pine Lake (Iron County), Deer Lake (Polk County), and Trego Lake (Washburn County)] but no walleye were harvested. Harvest in 1995 (30,249) was higher than in any of the previous ten years (1985-1994). The percent of the total walleye quota harvested was 73%. Values for the tribal walleye quota and percent of this quota harvested from 1989-1995 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%
1995	41,283	222	30,249	73%

**Figure 6.** Number of walleye harvested during spring spearing seasons from 1985-1995.

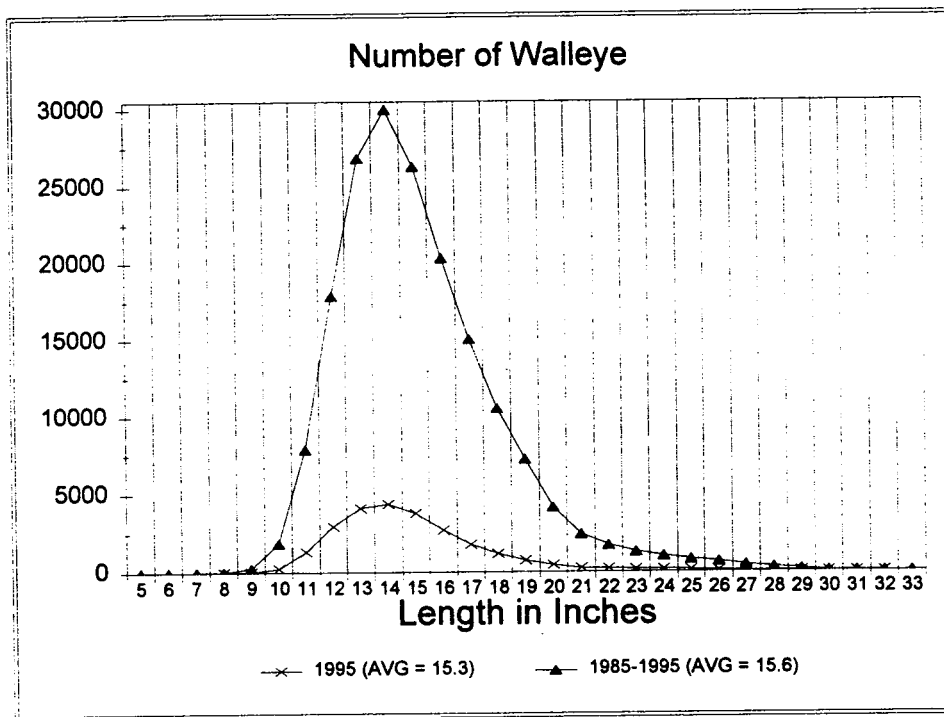




**Mean Length.** A total of 24,605 walleye (81.3% of the catch) was measured in 1995 (Appendices C and D). The mean length was 15.3 inches, slightly less than the average length in 1994 (15.4 inches) and during 1987-1991 (range: 15.7-16.0 inches) but greater than the average length in 1993 (15.2 inches) and in 1992 (15.1 inches). Size restrictions were identical during each of these nine 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 11 spring spearing seasons combined, 79.0% of the walleye harvest has been measured (177,067 of 223,302 fish) (Figure 7; Appendix D). Average length for this 11 year sample was 15.6 inches. Also, 7.3% of the walleye (12,923 fish) were 20 inches or larger and 1.3% (2,366 fish) were 25 inches or larger.

**Figure 7.** Length frequency of walleye speared during 1995 and during the eleven year period from 1985-1995.



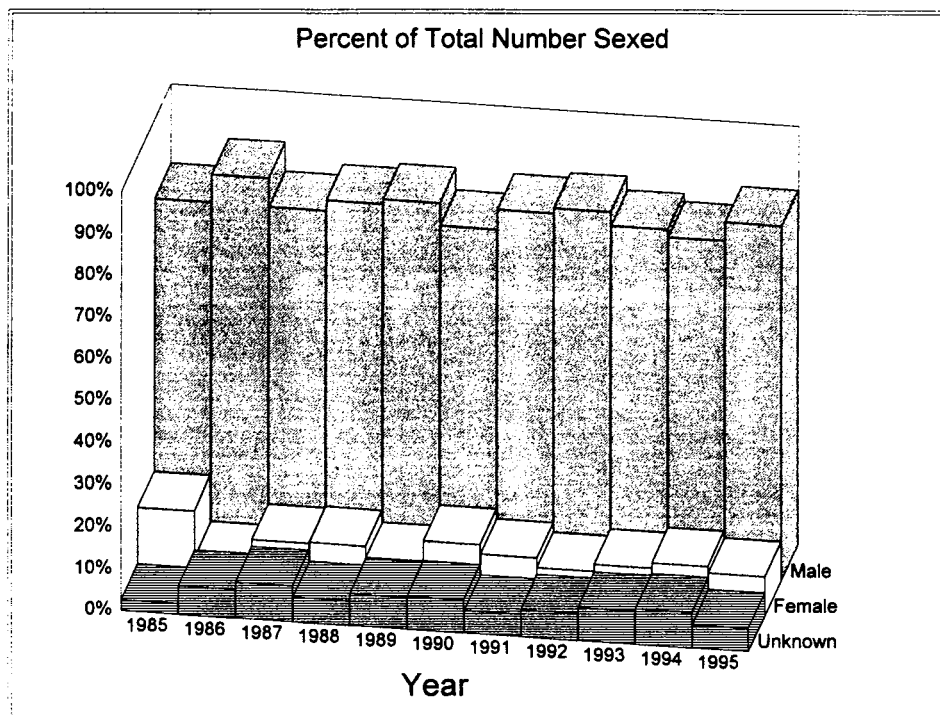
**Sex Composition of Catch.** The majority of walleye measured in 1995 were male: 20,897 of 24,605 fish or 85% (Table 6). Females (2,339 fish) comprised 10% of the measured harvest, while those whose sex could not be determined (1,369 fish) made up 5%. Males made up 90% of sexable fish.

For the 11 spring spearing seasons combined, a total of 176,055 walleye have been sexed (Table 6, Figure 8). Of these, 83% were male, 10% were female, and 7% 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 1985-1995.

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%
1995	30,249	20,897	85%	2,339	10%	1,369	5%	24,605	81%
<b>Total:</b>	<b>223,302</b>	<b>146,266</b>	<b>83%</b>	<b>17,458</b>	<b>10%</b>	<b>12,331</b>	<b>7%</b>	<b>176,055</b>	<b>79%</b>

**Figure 8.** Sex composition of the walleye harvest during spring spearing seasons from 1985-1995.



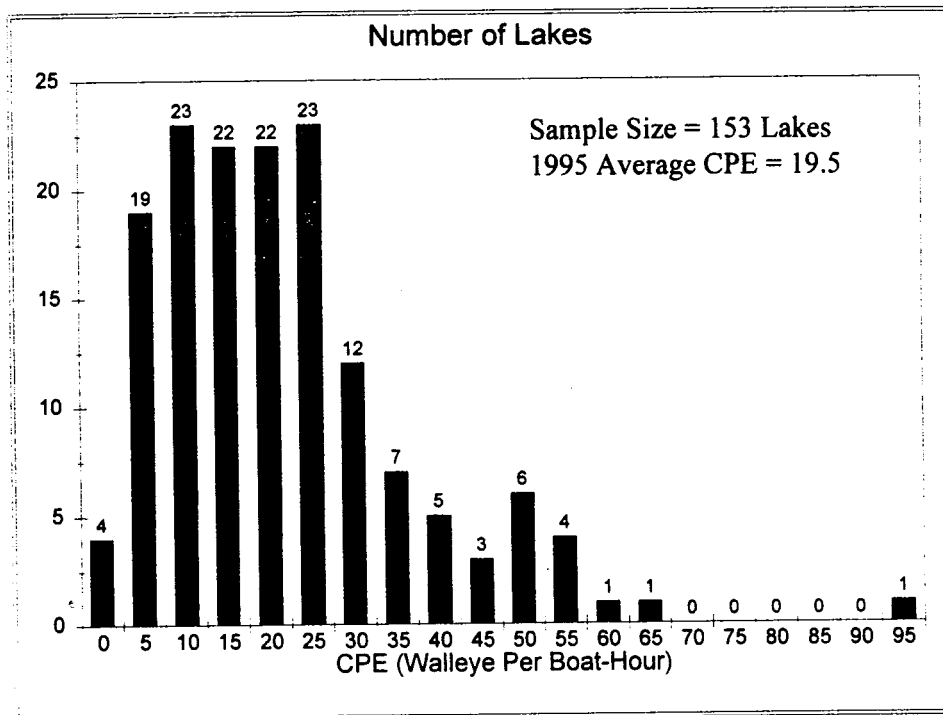
**Catch per effort (CPE).** In 1995 a total of 1,951 boat-hours of spearing was recorded in which 30,249 walleye were caught. Overall catch per effort was 15.5 walleye per boat-hour (Appendix B).

Catch rates for the 153 lakes speared in 1995 ranged from 0.0 to 91.1 and averaged 19.5 (Appendix B, Figure 9). Boat-hour effort was recorded for all lakes during spring 1995. 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
1995	153	0.0-91.1	19.5

(Biological Issues Group 1988, Kmiecik and Shively 1990, Kmiecik 1991, Kmiecik and Ngu 1992, Ngu and Kmiecik 1993, Ngu 1993, and Ngu 1994).

**Figure 9.** Walleye CPE (number per boat-hour) by lake during the 1995 spring spearing season.





## Muskellunge Harvest

A total of 299 muskellunge were taken from 59 lakes during spring 1995 (Figure 10, Appendix E). This harvest represented 21.9% of the combined tribal muskellunge quota of 1,364 fish selected for 153 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%
1995	1,364	153	299	21.9%

The number of muskellunge harvested from each of these 59 lakes ranged from 1 to 22 fish (Appendix E). Ten or more muskellunge were harvested from 10 lakes, 6-9 muskellunge were taken from 8 lakes, and 1-5 fish were speared in 41 lakes. In addition, the number of muskellunge harvested per surface-acre of water averaged 0.0028 and ranged from 0.0001 to 0.0129. No muskellunge were speared from the other 94 lakes.

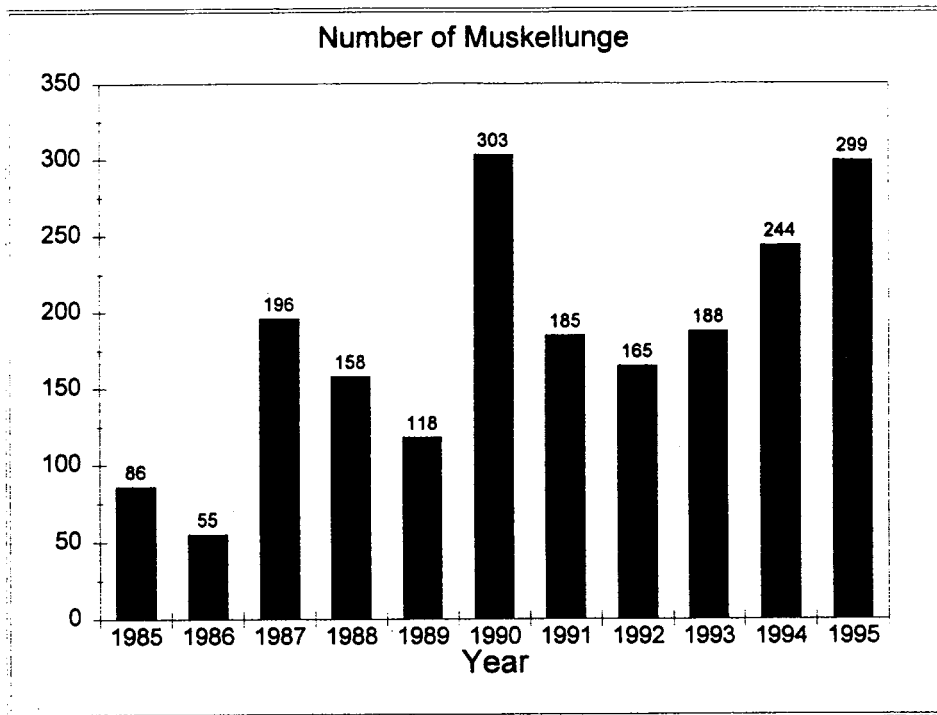
Lengths of the 297 measured muskellunge averaged 37.3 inches and ranged from 15.3 to 50.0 inches (Appendix F, Figure 11). During the eleven spring seasons combined, 1,950 of 1,997 speared muskellunge have been measured. Average length for this sample of fish was 36.5 inches (range: 13.5-53.0 inches).

Of the measured catch in 1995, 17.2% (51 of 297 muskellunge) were 32 inches and smaller, while 7.4% (22 fish) were 45 inches and larger. For the 1,950 muskellunge measured from 1985-1995, 456 fish or 23.4% of the sample were less than or equal to 32 inches; 131 fish or 6.7% were 45 inches and larger (Appendix F).

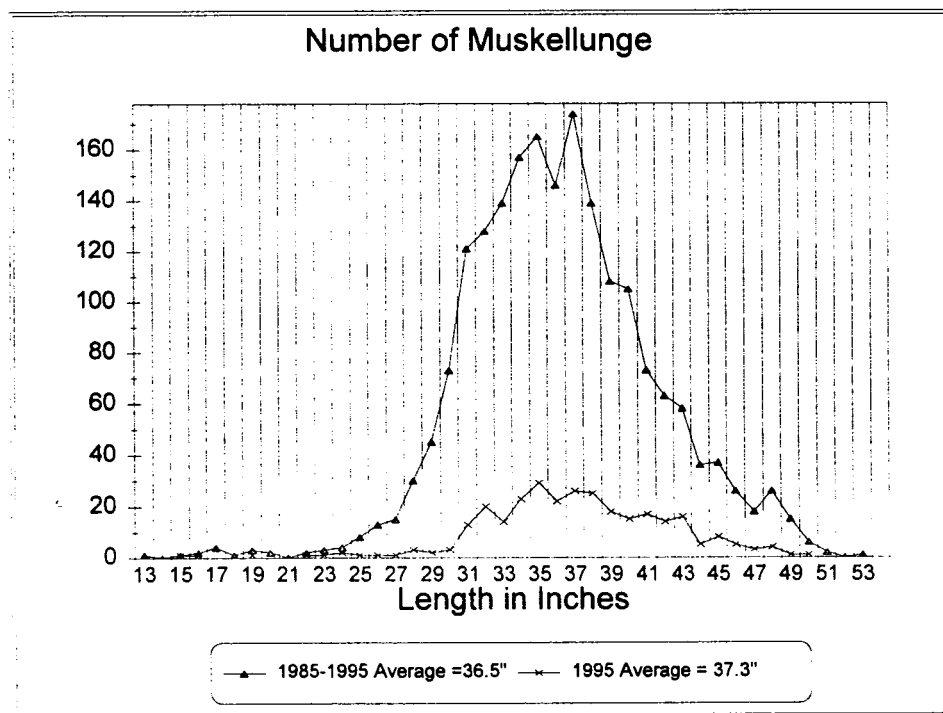
The number of muskellunge per spearer averaged 0.71 for all tribes combined. In other words, 71 muskellunge were taken for every 100 spearers. From 1987-1994 the number per spearer ranged from 0.16 to 1.19. For individual tribes in 1995, the number per spearer was highest for Lac Courte Oreilles members (1.02) compared to the other 5 tribes (range: 0.07-0.95).

Catch per boat-hour in 1995 averaged 0.15 muskellunge and fell at the upper end of the range from 1987-1994 (0.07 - 0.15).

**Figure 10.** Number of muskellunge harvested during spring spearing seasons from 1985-1995.



**Figure 11.** Length-frequency of muskellunge speared during spring 1995 and during the eleven year period 1985-1995.



## **Bass Harvest**

A total of 187 bass were harvested from 39 lakes in 131 counties (Appendix G). Species was recorded for 176 bass. A total of 121 largemouth bass were taken from 17 lakes in 9 counties and averaged 15.4 inches. Ten or more largemouth were speared from 5 lakes, 6-9 from 2 lakes, and 5 or less were taken from 10 lakes. The number harvested per surface acre of water averaged 0.0065 largemouth bass (range: 0.0010-0.0546).

A total of 55 smallmouth bass were speared from 22 lakes in 10 counties. Average length was 15.9 inches. Five or fewer fish were taken from all but three lakes: 7 smallmouth were taken from Round Lake (Sawyer County), 8 smallmouth were taken from Little St. Germain Lake (Vilas County), and 8 fish from Middle Eau Claire Lake (Bayfield County). The number harvested per surface acre averaged 0.0016 smallmouth bass (range:0.0004-0.0136).

Lengths of 185 measured bass ranged from 11.0-21.6 inches (Figure 13) and averaged 15.6 inches (Appendix H). Of the 1,766 bass speared during the eleven spearing seasons combined, 1,630 have been measured. Average length for this sample was 15.3 inches (annual range:15.0-15.8 inches).

The majority of largemouth bass (101 fish or 84% of the total) were taken from 10 lakes speared by St. Croix. St. Croix members also speared the majority of bass from 1987 to 1994 (range: 63%-89%) .

For all tribes combined the number of bass per spearer (CPE) was 0.44. CPE ranged from 0.37 to 0.66 from 1987-1994. For individual tribes, CPE (bass per spearer) was highest for St. Croix (1.82) as was the case during the previous 8 seasons (range: 1.14 - 3.33). Catch per spearer for the other five tribes ranged from 0.13 to 0.27 bass.

The combined tribal catch rate for bass in 1995 was 0.10 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 0.33 in 1995.

Figure 12. Number of bass harvested during spring spearing seasons from 1985-1995.

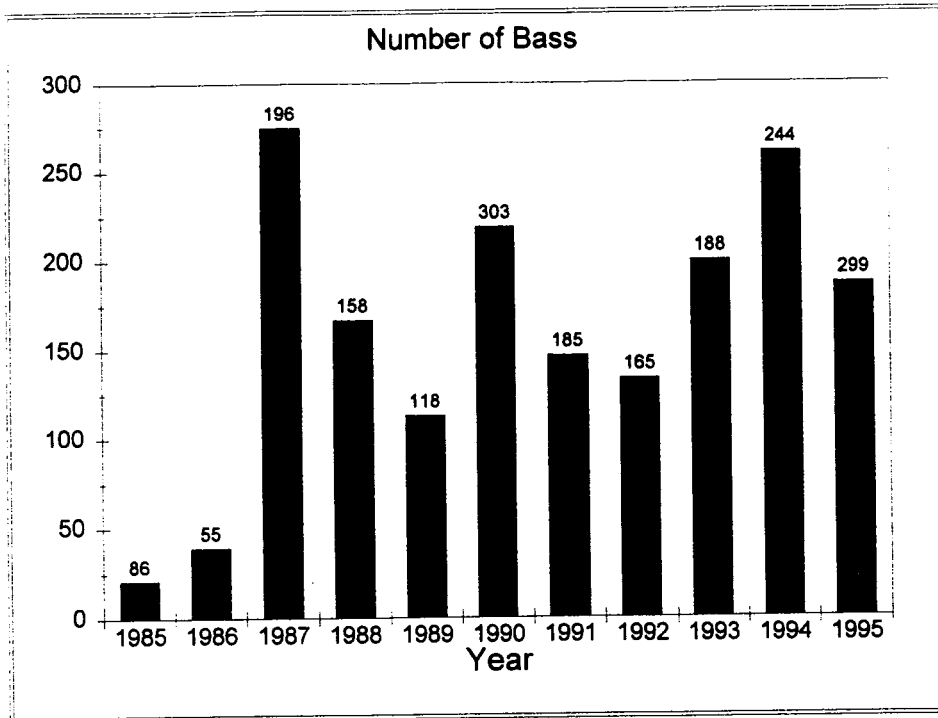
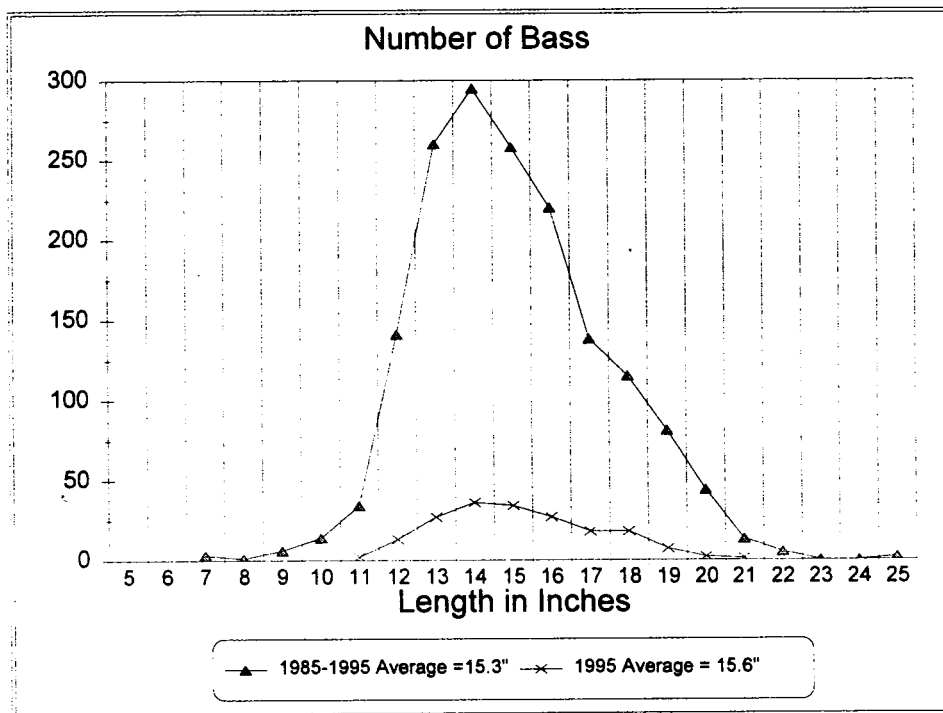


Figure 13. Length-frequency for bass taken during 1995 and during the eleven year period 1985-1995.

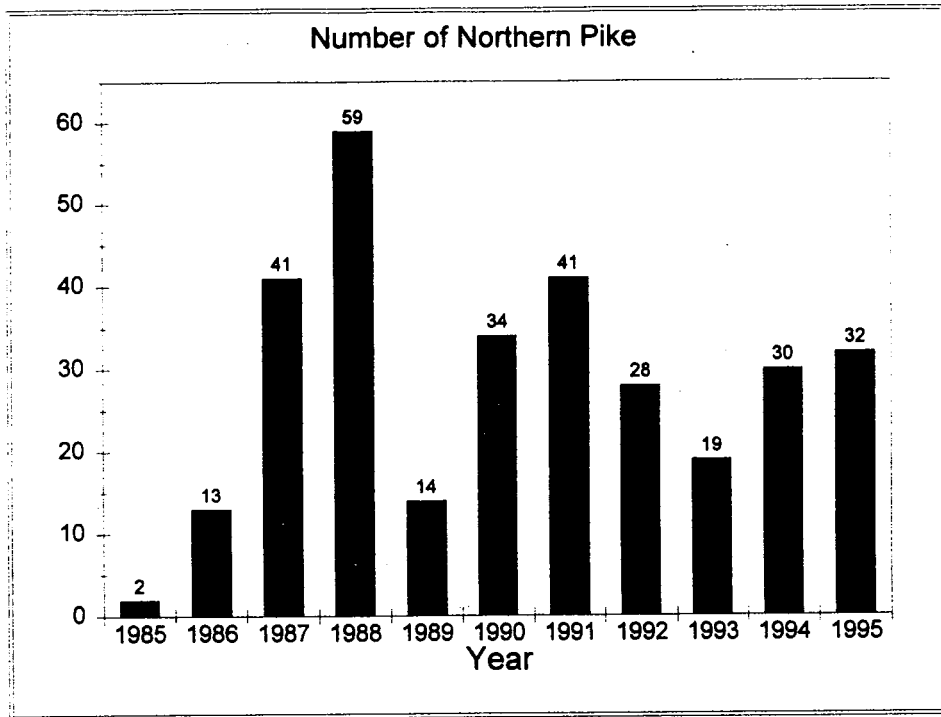


## **Northern Pike Harvest**

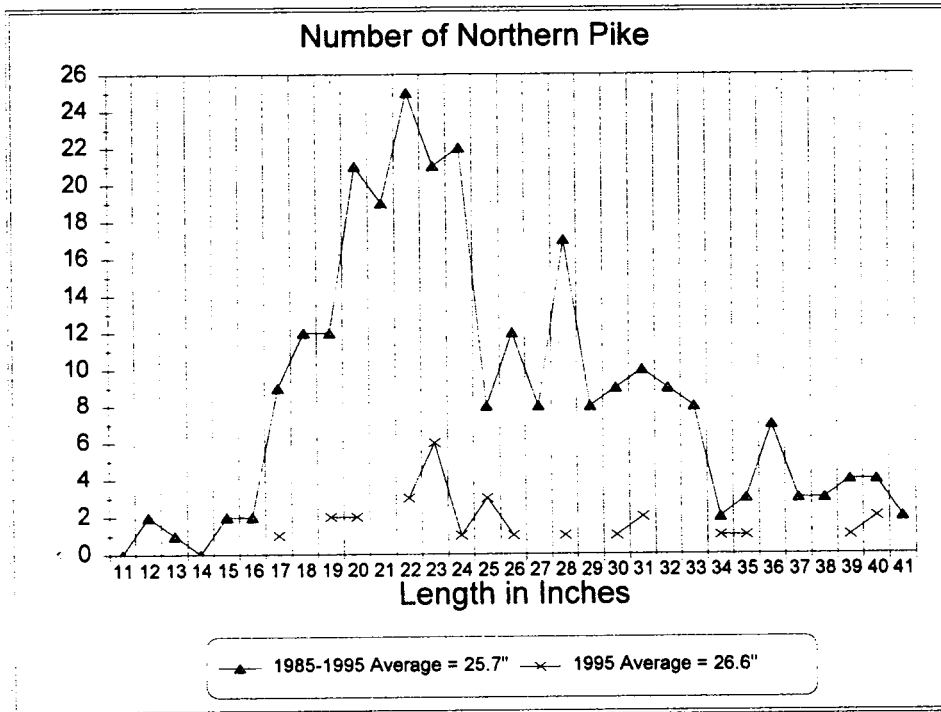
A total of 32 northern pike were harvested from 17 lakes in 8 counties (Appendix G). As in 1994, the number speared per lake never exceeded 4 fish except for Yellow Lake (Burnett County) where 7 northern pike were taken. Catch per surface acre of water averaged 0.0007 (range: 0.0002-0.0039).

Lengths of 28 measured northern pike ranged from 17.9 to 40.6 inches and averaged 26.6 inches (Appendix I, Figure 15). During the eleven spring seasons combined a total of 315 northern pike have been speared (Appendix I). Of these, 265 were measured and length averaged 25.7 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 1985-1995.



**Figure 15.** Length frequency of northern pike speared during 1995 and during the ten year period from 1986-1995.



## ACKNOWLEDGMENTS

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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 Sharon Shananaquet for entering all the spring spearing data. Finally, I would like to thank Neil Kmiecik for editing this report.

## LITERATURE CITED

- Biological Issues Group. 1988. Report on Biological Issues. Plaintiff's Exhibit 106, Lac Courte Oreilles Band, et al. v. State of Wisconsin, et. al., W.D. Wis. No. 74-c-313.
- Kmiecik, N. and J. D. Shively. 1989. Spear Fishery of the Lake Superior Tribes of Chippewa Indians, Spring 1988. Great Lakes Indian Fish and Wildlife Commission Administrative Report 89-2. 43 pp.
- Kmiecik, N. and J. D. Shively. 1990. Open Water Spearing and Netting in Northern Wisconsin by Chippewa Indians during 1989. Great Lakes Indian Fish and Wildlife Commission, Administrative Report 90-1. 40 pp.
- Kmiecik, N. 1991. Spear Fishery of the Lake Superior Tribes of Chippewa Indians, Spring 1990. Great Lakes Indian Fish and Wildlife Commission, Administrative Report 91-4. 42 pp.
- Kmiecik, N. and H. H. Ngu. 1992. Open water Spearing and Netting in Northern Wisconsin by Chippewa Indians during 1991. Great Lakes Indian Fish and Wildlife Commission, Administrative Report 92-8. 46 pp.
- Ngu, H. and N. Kmiecik. 1993. Open water Spearing and Netting in Northern Wisconsin by Chippewa Indians during 1992. Great Lakes Indian Fish and Wildlife Commission, Administrative Report 93-4. 45 pp.
- Ngu, H. 1994. Open water Spearing and Netting in Northern Wisconsin by Chippewa Indians during 1993. Great Lakes Indian Fish and Wildlife Commission, Administrative Report 94-1. 46 pp.
- Ngu, H. 1995. Open water Spearing and Netting in Northern Wisconsin by Chippewa Indians during 1994. Great Lakes Indian Fish and Wildlife Commission, Administrative Report 95-03. 45 pp.



## LIST OF APPENDICES

APPENDIX	PAGE
A Number of tribal members that speared one or more nights on lakes selected by six Wisconsin Chippewa bands during the 1995 spring spear fishery .....	25
B Number of walleye harvested nightly on lakes speared by six Wisconsin Chippewa bands during spring 1995. Also, balance of quota, number of boat-hours and catch per effort (CPE = walleye per boat-hour) per lake .....	26
C Total number of walleye measured by per inch group and sexed during spring spearing 1995. Data arranged alphabetically by tribe, county, and lake .....	34
D Number of walleye per inch group taken during spring spearing seasons from 1985-1995 .....	38
E Number, average length, and harvest per acre of muskellunge from various lakes during spring spearing in 1995 .....	39
F Number of muskellunge per inch group taken during spring spearing seasons from 1985-1995 .....	40
G Number, average length, and harvest per acre of bass (largemouth and smallmouth), and northern pike from various lakes during spring spearing in 1995 .....	41
H Number of bass (largemouth and smallmouth combined) taken during spring spearing seasons from 1985-1995 .....	42
I Number of northern pike per inch group taken during spring spearing seasons from 1985-1995 .....	43

Appendix A. Number of tribal members that speared one or more nights on lakes selected by six Wisconsin Chippewa bands during the 1995 spring spear fishery.

Number of Nights	BRV	LCO	LDF	MLK	RCF	STC	Total:	Percent of Total:
1	17	25	47	10	17	18	134	31.8%
2	8	13	24	8	13	15	81	19.2%
3	6	9	15	6	5	4	45	10.7%
4	6	7	14	9	4	9	49	11.6%
5		4	10	4	1	5	24	5.7%
6		5	17	5	2	2	31	7.4%
7		2	9	4	2	4	21	5.0%
8		3	3	1		3	10	2.4%
9			3	2		2	7	1.7%
10	2		3	3		1	9	2.1%
11			2	1		1	4	1.0%
12			1			2	3	0.7%
13			1				1	0.2%
14						1	1	0.2%
15			1				1	0.2%
16								0.0%
17								0.0%
18								0.0%
19								0.0%
20								0.0%
Total:	39	68	150	53	44	67	421	100%

Appendix B. Number of walleye harvested nightly on lakes selected by six Wisconsin Chippewa bands during spring 1995. 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.

County	Bad River	Lake	Area	Walleye Safe Harvest	Tribal Quota	Apr 18	20	21	22	23	24	25	26	27	28	29	30	May 1	2	3	4	5	12	13	Total Harvest	Quota Balance	Boat-Hour	CPE
ASHLAND	BEAR L	204	88	48	18																			0	48	2.6	8.9	
BAYFIELD	DIAMOND L	341	42	23																				23	0	2.6	8.9	
BAYFIELD	L OWEN	1323	251	72																				72	0	4.2	17.3	
BAYFIELD	NAMEKAGON L	3227	1702	650									330	72										650	0	25.2	25.8	
BURNETT	CLAM R FL	473	193	105										320										0	105	5.7	52.9	
CHIPPewa	L WISSOTA	6300	2109	1159																				300	859	6.8	34.2	
CHIPPewa	LONG L	1052	601	240	200				32															232	8	2.9	22.9	
DOUGLAS	DOUGLAS	292	123	67											179									67	0	2.9	33.6	
IRON	WHITEFISH L	832	326	179																				0	51	5.3	33.6	
IRON	ECHO L	220	94	51																				0	77	2.0	0.0	
IRON	L OF THE FALLS	338	141	77																				0	30	2.0	0.0	
IRON	LONG L	396	76	30																				0	80	7.4	22.6	
IRON	PINE L	312	131	72																				0	72	2.0	0.0	
IRON	SPIDER L	352	146	80																				0	80	7.4	22.6	
IRON	TRUDE L	781	307	168																				168	0	2.0	19.1	
IRON	TURTLE-FLAMBEAU FL	13545	4244	540																				105	47	2.6	39.8	
RUSK	CHAIN L	468	191	105																				105	0	2.6	39.8	
RUSK	FIRESIDE LAKES	302	127	69																				117	0	2.6	45.7	
RUSK	ISLAND L	526	213	117																				96	0	2.0	48.0	
SAWYER	CONNORS L	429	176	96																				240	0	18.5	13.0	
SAWYER	NELSON L	2503	903	240																				221	1	11.4	19.4	
SAWYER	TEAL L	1049	404	222																				221	28	4.1	5.4	
VILAS	ANNABELLE L	213	91	50																				0	202	4.5	7.1	
VILAS	BIG CROOKED L	682	507	202																				32	11	2.1	49.5	
VILAS	BLACK OAK L	584	72	43																				103	1	2.1	7.1	
VILAS	CRAB L	949	192	104																				0	104	2.7	37.5	
VILAS	FOREST L	466	190	104																				100	13	3.3	26.8	
VILAS	HARRIS L	507	206	113																				87	0	2.7	37.5	
VILAS	HIGH L	734	295	87																				0	73	3.0	26.8	
VILAS	LOST CANOE L	249	135	73																				87	0	2.7	32.8	
VILAS	MAMIE L	400	159	84																				0	84	3.0	32.8	
VILAS	N TURTLE L	369	153	84																				0	84	12.0	27.4	
VILAS	PRESCUE ISLE CHAIN (3 Lakes)*	1571	612	330																				330	0	3.0	14.3	
VILAS	S TURTLE L	454	185	101																				43	58	3.6	14.3	
VILAS	TENDERFOOT L	437	157	86																				86	0	3.6	23.8	
	Area in acres:	42880																										
	Number of walleye:	15542		5874	200	300	240	254	74	50	260	330	415	179	523	143	379	11	75	198	168	22	32	3853	2021			
	Number of spearer-nights:			8	6	10	14	5	2	10	11	24	7	22	6	10	4	4	3	4	7	7	2	164				
	Number of interviews with effort:			4	3	5	5	2	1	4	5	10	4	4	11	3	6	2	1	4	4	4	1	76				
	Number of interviews without effort:			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
	Number of boat-hours:			5.3	5.7	14.9	6.7	5.8	3.2	10.9	12.4	19.6	5.3	20.7	7.9	10.8	5.0	2.8	8.7	8.8	4.1	4.5			163.0			
	Catch-per-effort:			37.9	52.9	16.1	37.9	12.7	15.5	23.8	26.6	21.2	33.6	25.3	18.2	35.1	2.2	26.5	22.9	19.2	5.4	7.1			23.6			

Appendix B (continued). Number of walleye harvested nightly on lakes selected by six Wisconsin Chippewa bands during spring 1995. 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.

County	Lac Courte Oreilles	Area	Walleye Safe Harvest	Tribal Quota	Apr 21	22	23	24	25	26	27	28	29	30	May 1	2	3	4	5	Total Harvest	Quota Balance	Boat-Hour	CPE
CHIPPewa	Lake HOLCOMBE FL	3890	1355	745	**															0	745		*
SAWYER	GRIMH FL	86	39	21		**	86													0	21	8.09	10.6
SAWYER	GRINDSTONE L	3111	231	92																86	6	16.92	5.3
SAWYER	L CHETAC	1920	164	90	90															90	0	179.8	9.7
SAWYER	L CHIPPewa	15300	3154	1734		168	292	416	650	24	134	60	0	**	0	0	0	**	**	1744	-10	51.84	11.9
SAWYER	LAC COURTE OREILLES	5039	1122	617		289	273	50	8	16	**	**	**	**	6	2	**	**	616	1	34	4.08	2.0
SAWYER	LITTLE ROUND L	229	78	42				**	43	**	26	**	5	**	**				74	197	59	20.55	3.6
SAWYER	LOST LAND L	1304	494	271															0	59	0	50.78	11.7
SAWYER	RADISSON FL	255	108	59						481	112	18	3	**	0	**	0	0	596	0	1	20.92	9.4
SAWYER	ROUND L	3054	1085	596		50	54	38	37	**	**	18							197	1	18	9.4	*
SAWYER	SAND L	928	361	198															75	34			
SAWYER	TEAL R FL	75	34	18															0	0			
SAWYER	WHITEFISH L	786	169	67		64	5	4	4	5	4	4	4	4	4	4	4	4	64	3		6.25	10.2
	Number of lakes:	13			2	5	5	4	4	5	5	4	4	4	4	4	4	4					
	Area in acres:	35977																					
	Number of walleye:		8394	4550	90	551	705	504	738	521	272	78	8	0	6	2	0	0	3475	1075			
	Number of spearer-nights:				6	30	46	25	28	25	19	6	5		4	7	6	6	215				
	Number of interviews with effort:				3	12	23	13	13	12	10	3	3		2	3	2	2	102				
	Number of interviews without effort:				0	0	0	0	0	0	0	0	0		0	0	0	0	0				
	Number of boat-hours:				16.9	54.1	77.9	47.2	59.4	34.3	27.8	9.7	7.3		5.47	8.2	5.9	3.5	359.2				
	Catch-per-effort:				5.3	10.2	9.1	10.7	12.4	15.2	9.8	8.0	1.1		1.1	0.2	0.0	0.0	0.0				9.7

Appendix B (continued). Number of walleye harvested nightly on lakes selected by six Wisconsin Chippewa bands during spring 1995. 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.

County	Lac du Flambeau	Area	Walleye Sale Harvest	Tribal Quota	21	22	23	24	25	26	27	28	29	30	May 1	2	3	4	5	6	7	Total Harvest	Quota Balance	Boat- Hour	CPE	
IRON	BIG PINE L	632	252	138																		138	138	10.34	19.4	
IRON	GILE FL	3384	640	351																		201	150	10.34	36.1	
IRON	TURTLE-FLAMBEAU FL	13545	4244	2000	**	**							1841	154								1995	5	55.2	55.2	
LINCOLN	ALEXANDER L	677	269	147	**	**																0	147	20.85	17.1	
LINCOLN	L MOHAWKSIN	1910	704	387	78	94	63	122														357	30	20.85	21.7	
LINCOLN	RICE R FL CHAIN (3 Lakes)*	3764	1407	773	408	149	103	15	95													770	3	35.44	21.7	
LINCOLN	SPIRIT R FL	1663	146	80	**	**																0	80	80	*	
MARATHON	BIG EAU PLEINE RESERVOIR	6830	1073	590	**	90																0	590	3.25	27.7	
ONEIDA	BEARSKIN L	400	165	90																		90	0	3.25	27.7	
ONEIDA	BOOM L	437	179	98																		0	98	0	8.4	
ONEIDA	BUCKSKIN L	634	48	26			25															26	0	3.08	8.4	
ONEIDA	CARROL L	335	41	22														19	**	**		0	0	3.25	6.8	
ONEIDA	CLEAR L	846	331	182		153																180	2	13.91	12.9	
ONEIDA	CRESCENT L	612	245	73			67	27														67	6	2.92	22.9	
ONEIDA	DAM L	744	294	161								159										159	2	10.5	15.1	
ONEIDA	EMMA L	223	95	28					**	**												0	28	2	10.5	15.1
ONEIDA	GEORGE L	435	178	97			50		**	**												50	47	2	25.0	
ONEIDA	HASBROOK L	302	127	69				69	**	**												69	0	2.17	31.8	
ONEIDA	HAT RAPIDS FL	650	259	142	**	**																0	142	0	31.8	
ONEIDA	JULIA L	401	33	19																		0	19	19	*	
ONEIDA	KATHERINE L	590	248	136		132																0	136	4	3.66	36.7
ONEIDA	KAWAGUESAGA L	670	266	146							143											145	1	7	20.1	
ONEIDA	L THOMPSON	382	158	86			61															61	25	4.42	13.8	
ONEIDA	LONG L	620	105	57							272											34	0	2.25	15.1	
ONEIDA	MEDICINE L	372	222	133										34								0	99	2	2.25	15.1
ONEIDA	MINOCCUA L	1360	514	282																		284	-2	5.91	48.1	
ONEIDA	MOEN L	460	188	56			56															66	0	2	28.0	
ONEIDA	MUSKELLUNGE L	284	121	66				66														0	0	2.41	27.4	
ONEIDA	ONEIDA L	255	108	59																		0	59	0	4.5	
ONEIDA	ONEIDA L	2035	746	410										289	60	61						410	0	4.5	91.1	
ONEIDA	RAINBOW FL	1326	502	276	**	**																0	276	0	40.7	
ONEIDA	RHINELANDER FL	540	218	119								112										112	7	2.75	40.7	
ONEIDA	SAND L	368	152	83																		0	83	0	40.7	
ONEIDA	SPIRIT L	392	162	89			88															88	1	1.5	58.7	
ONEIDA	SQUASH L	392	162	89																		88	1	1.5	58.7	
ONEIDA	SQUIRREL L	1317	917	504				411	90													504	0	15.5	32.5	
ONEIDA	TOMAHAWK CHAIN (2 Lakes)*	3552	1285	695							593											695	0	28.68	24.2	
ONEIDA	TWO SISTERS L	719	76	41				41														41	0	2.5	16.4	
ONEIDA	WILLOW FL	5135	1632	489	**	**								**	153	232	**					400	0	19.08	21.0	
PRICE	BUTTERNUT L	1006	389	213										**								0	213	2	4.0	
PRICE	DUROY L	379	157	86				8						**								8	8	2	4.0	
PRICE	LAC SAULT DORE	561	226	124																		0	124	0	4.0	
PRICE	LONG L	418	172	94				**														0	94	2	8.88	
PRICE	PIKEL	806	316	173																		171	2	8.88	19.3	
PRICE	ROUND L	726	287	157					149	22												157	0	9.74	16.1	
PRICE	SOLBERG L	859	558	334					134	23												0	334	0	9.74	16.1
PRICE	TURNER L	149	65	35					34													34	1	2.75	12.4	

Appendix B (continued). Number of walleye harvested nightly on lakes selected by six Wisconsin Chippewa bands during spring 1995. 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.

County	Lac du Flambeau	Area	Walleye		Tribal	Interviews													Total	Quota	Boat-	CPE				
			Sale	Harvest		21	22	23	24	25	26	27	28	29	30	May	1	2					3	4	5	6
VILAS	LAKE	274	110	82	21	22	23	24	25	26	27	28	29	30	May	1	2	3	4	5	6	7	0	82	1.33	61.7
VILAS	ALDER L	380	157	86									82										0	4	0.58	51.7
VILAS	ANVIL L	320	134	73																			0	73	36.67	21.2
VILAS	ARMOUR L	505	57	31																			1	0	9.17	19.8
VILAS	BIG ARBOR VITAE L	1090	1036	777					637	118	22												0	0	3.17	41.0
VILAS	BIG L 142N-R6E-S4	850	332	182							157												0	2	11.42	17.3
VILAS	BIG L T44N-R41W-S16	771	241	132						183													0	0	4.25	32.9
VILAS	BIG MUSKELLUNGE L	930	361	198								101											0	3	3.17	53.6
VILAS	BIG PORTAGE L	638	255	140								170											0	3	19.59	15.4
VILAS	BIG SAND L	1408	289	173							187												5	108	2.25	50.7
VILAS	BIG ST GERMAIN L	1617	558	306						114													2	2	9.41	24.9
VILAS	BIRCH L	528	213	117							114												0	0	8.67	18.0
VILAS	BOULDER L	524	212	116							**												0	0	12.01	18.6
VILAS	CATFISH L	1012	313	234						167													0	10	4.59	37.9
VILAS	CLEAR L	555	209	156						223													3	3	7	20.4
VILAS	CRANBERRY L	956	312	233						174													3	16	9.34	28.5
VILAS	EAGLE L	572	237	177						174													0	11	6.25	33.4
VILAS	FISHTRAP L	329	195	146																			1	1	2.75	42.5
VILAS	ISLAND L	1023	377	282								254											0	0	9.63	28.5
VILAS	L LAURA	599	458	274							**	20											0	11	11.7	42.5
VILAS	LAC VIEUX DESERT	4300	1961	220					117														0	1	8	1.5
VILAS	LITTLE ARBOR VITAE L	534	216	118						8		172											0	41	3.67	46.9
VILAS	LITTLE ST GERMAIN L	980	97	53						4													0	14	3.75	45.3
VILAS	LONG L	872	340	186																			0	0	7.41	12.4
VILAS	OXBOW L	511	284	170																			0	3	10.02	22.7
VILAS	PAPOOSE L	428	160	95																			0	4	7.43	25.8
VILAS	PLUM L	1108	425	233						227													0	6	3.5	14.9
VILAS	REST L	607.73	257	192																			0	4	10.9	24.2
VILAS	SNIPE L	239	102	56																			0	6	22.17	28.2
VILAS	SQUAW L	785	361	270			118	146				606											0	0	33.83	21.0
VILAS	STAR L	1206	834	625								19											0	7	710	13.1
VILAS	TROUT L	3816	1185	710									480										0	7	52.25	18.2
VILAS	TWIN LAKES CHAIN (2 Lakes)*	3430	1253	689									41										1	1	2.25	
VILAS	WHITE SAND L	728	77	42																			0	0		
	Area in acres:	80																								
	Number of walleye:	98130.7																							14552	3438
	Number of spearer-nights:																									677
	Number of interviews with effort:																									309
	Number of interviews without effort:																									0
	Number of boat-hours:																									617.1
	Catch-per-effort:																									

Appendix B (continued). Number of walleye harvested nightly on lakes selected by six Wisconsin Chippewa bands during spring 1995. 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.

County	Mole Lake	Area	Walleye Safe Harvest	Tribal Quota	Apr 17	18	19	20	21	22	23	24	25	26	27	28	29	3	4	Total Harvest	Quota Balance	Boat- Hour	CPE
FLORENCE	FAY L	247	32	19																4	15	2.67	1.5
FLORENCE	HALSEY L	512	58	34																7	27	1.95	3.6
FLORENCE	KEYES L	202	87	52						53										53	-1	2.3	23.0
FLORENCE	PATTEN L	255	187	112						**		111								111	1	3.18	34.9
FOREST	BUTTERNUT L	1292	588	352								129	25					346		346	6	15.68	22.1
FOREST	FRANKLIN L	892	257	154																154	0	7.91	19.5
FOREST	LUCERNE	1026	100	59	59															59	0	3	3
FOREST	L METONGA	2157	787	472																472	0	46.69	10.1
FOREST	LILY L	211	129	77		13														77	4	3.52	20.7
FOREST	PINE L	1670	147	88		**														88	0	5.12	17.2
FOREST	ROBERTS L	414	259	155						154										154	1	8.8	8.8
FOREST	STEVENS L	295	37	22							22									22	0	1.33	16.5
LANGLADE	ENTERPRISE L	502	204	122		120														120	2	4.84	24.8
LANGLADE	GREATER BASS L	246	11	6																6	6		*
LANGLADE	JESSIE L	35	6	3																3	3		*
LANGLADE	LAWRENCE L	50	8	4																4	4		*
LANGLADE	LOWER POST L	377	45	26					**											26	0		*
LANGLADE	MOCCASIN L	110	16	9																9	9		*
LANGLADE	OTTER L	90	14	8																8	8	3	2.7
LANGLADE	ROLLING STONE L	672	72	43			8													43	0		*
LANGLADE	ROSE L	109	16	9																9	9		*
LANGLADE	SAWYER L	168	23	13																13	13		*
LANGLADE	WHITE L	166	23	13																13	13		*
MARINETTE	HIGH FALLS RESERVOIR	1498	562	337																337	0		*
MARINETTE	JOHNSON FALLS FL	68	31	18																18	18		*
MARINETTE	ARCHIBALD L	430	19	11			**	**												11	11		*
MARINETTE	MAIDEN L	290	32	19			**	**												19	19		*
OCONTO	WHEELER L	293	365	218					60											211	7	11.92	17.7
OCONTO	BIG FORK L	690	306	183						99										165	18	16.92	9.8
OCONTO	BIG L	865	376	225						110										215	10	8.25	26.1
OCONTO	BIG STONE L	548	185	110																110	0	5.42	20.3
OCONTO	CLEARWATER L	351	146	87																87	0	8.7	*
OCONTO	COLUMBUS L	670	266	159						73										159	0	15.9	*
OCONTO	CRESCENT L	612	245	73																73	0	2.33	31.3
OCONTO	EMMA L	223	95	28																28	28		*
OCONTO	FIFTH L	240	102	61						**										61	1		*
OCONTO	FOURMILE L	218	97	58							**									57	57	2	0.5
OCONTO	FOURTH L	258	109	65																65	65		*
OCONTO	INDIAN L	397	47	28																28	28		*
OCONTO	ISLAND L	295	31	18																18	18		*
OCONTO	LAUREL L	232	138	82						**										19	63	6.88	2.8
OCONTO	LITTLE FORK L	354	343	205								120		1		18				120	85	9.11	13.2
OCONTO	LONE STONE L	172	75	44						5				**						44	5	2.67	1.9
OCONTO	LOWER NINEMILE L	646	70	41																41	41		*
OCONTO	MOEN L	460	188	56																56	56		*
OCONTO	PELICAN L	3585	1257	754																754	-1	61.5	12.3
OCONTO	PLANTING GROUND L	1012	253	151						75										149	2	7.43	20.1
OCONTO	ROUND L	150	15	8																8	8		*
OCONTO	SEVENMILE L	503	204	122		103														121	1	5.92	20.4
OCONTO	VIRGIN L	276	116	69						**										69	0		*
OCONTO	WHITEFISH L	205	26	15						**										15	0	3	5.0
OCONTO	WILLOW FL	5135	1632	489																489	0	48.9	*
OCONTO	KENTUCK L	957	433	259																259	0	29.49	8.8
OCONTO	LAC VIEUX DESERT	4300	961	220																218	2	15.42	14.1
OCONTO	LITTLE PORTAGE L	170	74	44																44	44		*
OCONTO	Number of lakes:	55			2	6	5	4	6	8	8	6	7	6	5	3	2	1	1				
OCONTO	Area in acres:	37801																					
OCONTO	Number of walleye:		11905	6109	179	262	746	287	434	494	325	355	286	87	371	236	11	16	18		2002		
OCONTO	Number of spearer-nights:				5	28	38	16	21	25	17	20	19	8	19	16	4	4	1		4107		
OCONTO	Number of interviews with effort:				3	10	16	7	9	12	8	9	10	4	9	6	2	1	1		107		
OCONTO	Number of interviews without effort:				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
OCONTO	Number of boat-hours:				7.8	28.5	50.6	21.2	31.0	28.2	18.4	22.3	2	8.8	26.2	17.3	4.6	2.7	2.5			298.3	
OCONTO	Catch-per-effort:				22.8	9.2	14.7	13.6	14.0	17.5	17.7	15.9	2	9.9	14.2	13.6	2.4	5.9	7.2			13.8	

Appendix B (continued). Number of walleye harvested nightly on lakes selected by six Wisconsin Chippewa bands during spring 1995. 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.

County	Red Cliff	Area	Walleye Harvest	Tribal Quota	Apr 17	Apr 18	Apr 19	Apr 20	Apr 21	Apr 22	Apr 23	Apr 24	Apr 25	Apr 26	Apr 27	Apr 28	Apr 29	Apr 30	May 1	May 2	May 3	May 4	May 5	Total Harvest	Quota Balance	Boat-Hour	CPE		
ASHLAND	GORDON L	142	62	52	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	0	52	1910		*	
BAYFIELD	BONY L	191	26	21	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	0	21	1918		*	
BAYFIELD	JACKSON L	142	23	17	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	0	17	1910		*	
BAYFIELD	L OWEN	1323	251	72	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	0	72	1335		*	
BAYFIELD	LONG L	263	111	93	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	0	93	1335		*	
BAYFIELD	MIDDLE EAU CLAIRE L	902.2	481	365	30	**	**	**	222	57	**	**	**	**	**	**	**	**	**	**	**	**	**	0	365	21.01	17.4		
BAYFIELD	NAMKAGON L	3227	1702	650	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	0	647	29.07	22.3		
BAYFIELD	PIKE L CHAIN (4 Lakes)*	714	309	180	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	0	177	11.92	14.8		
BAYFIELD	SISKIWT L	1030	254	147	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	0	90	3	8.3		
BAYFIELD	UPPER EAU CLAIRE L	426	175	146	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	0	142	18.01	7.9		
DOUGLAS	L MINNESUNG	432	177	148	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	0	146	5	5.6		
DOUGLAS	L NEBAGAMON	914	289	219	0	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	0	28	120	17.5	9.5	
DOUGLAS	LOWER EAU CLAIRE L	802	316	184	0	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	0	167	52	11.41	16.1	
DOUGLAS	LYMAN L	403	166	139	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	0	184	0	139	*	
DOUGLAS	UPPER ST CROIX L	855	334	280	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	0	334	139	16.1	*	
SAWYER	MOOSE L	1670	622	521	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	0	521	280	*		
SAWYER	NELSON L	2503	903	240	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	0	129	129	13.57	8.2	
SAWYER	SISSABAGAMA L	719	285	239	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	0	239	239	13.57	8.2	
	Number of lakes:	19		3	3	3	3	4	2	3	2	4	2	1	4	2	5	2	2	1	1	1	3	2					
	Area in acres:	16988		3828	30	0	85	55	222	139	151	210	245	183	67	219	47	0	43	101	66	30	25	1918	1910				
	Number of spearer-nights:		6624	8	6	8	10	10	10	10	7	12	14	14	5	5	5	0	4	6	5	3	2	135					
	Number of interviews with effort:			3	2	3	5	5	5	4	3	5	4	4	2	5	2		1	1	2	2	1	54					
	Number of interviews without effort:			0	0	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0					
	Number of boat-hours:			2.3	8.9	4.7	15.0	12.0	12.0	5.5	15.0	11.0	7.8	9.3	14.1	4.1			2.7	7.6	9.9	10.0	3.0			143.9			
	Catch-per-effort:			12.9	9.5	11.7	14.8	11.6	27.5	14.0	22.3	23.5	7.2	15.5	11.5				16.1	13.3	6.7	3.0	8.3			13.3			



Appendix B (continued) Number of walleye harvested nightly on lakes selected by six Wisconsin Chippewa bands during spring 1995. 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.

County	St. Croix	Area	Safe Harvest	Tribal Quota	April 15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	May 1	2	3	4	Total Harvest	Quota Balance	Boat-Hour	CPE
BARRON	BEAR L	1358	125	68														68							68	0	1.92	35.4
BARRON	BEAVER DAM L	1112	72	28														28							28	0	3.5	8.0
BARRON	DUCK L	100	45	24														0							0	24	1.33	0.0
BARRON	RED CEDAR L	1841	680	373										172	**	54	89	357	42	**					357	16	32.34	11.0
BARRON	SAND L	322	57	22														20	20	**					20	2	7.75	2.6
BARRON	SILVER L	337	140	76														31	**						54	22	13.25	4.1
BURNETT	BIG MCKENZIE L	1185	452	248	73	151	24	15										248	**						248	0	26.76	9.3
BURNETT	DEVILS L	1001	98	53										**				53							53	0	7.41	7.2
BURNETT	LIPSETT L	393	19	7														0							0	7	0	*
BURNETT	LITTLE YELLOW L	348	145	79														41							41	38	8	5.1
BURNETT	SAND L	962	88	35														35							35	0	9.08	3.9
BURNETT	YELLOW L	2287	831	457														18							290	167	45.94	6.3
POLK	BALSAM L	2054	416	166														155							155	11	21.25	7.3
POLK	BIG BUTTERNUT L	378	156	85														81							81	4	11.85	6.8
POLK	BIG ROUND L	1015	100	54														37							37	17	18.25	2.0
POLK	DEER L	807	0	0														0							0	0	5.42	2.0
POLK	HALF MOON L	579	233	128														0							0	0	8.58	22.0
POLK	PIPE L	270	114	62														62							62	0	5.64	7.2
POLK	WAPOGASSET L	1186	158	63		60			41									60							60	3	5.5	10.6
WASHBURN	BALSAM L	130	57	31														43							43	25	6.5	7.8
WASHBURN	BASS L T37N-R10W-S7	188	116	46						46								46							46	0	4.25	86.6
WASHBURN	BASS L T40N-R10W-S17	144	20	10						18								18							18	4	82.25	0.0
WASHBURN	BASS L T40N-R13W-S29	772	56	22														368							368	133	0	3
WASHBURN	L NANCY	3290	1254	501														0							0	0	18.24	0.0
WASHBURN	MCLAIN L	150	10	3														32							32	0	0	0.0
WASHBURN	MIDDLE MCKENZIE L	530	59	32														0							0	0	19.01	0.0
WASHBURN	RICE L	132	58	31														0							0	0	0	0.0
WASHBURN	SHELL L	2580	331	132														129							129	3	19.01	0.0
WASHBURN	TREGO L	451	52	28														0							0	28	1.75	0.0
	Number of lakes:	30			3	4	5	4	5	5	5	5	5	5	5	5	4	4	4	4	4	4	4	4				
	Area in acres:	26197			73	258	106	19	149	107	263	64	20	252	146	178	188	186	96	36	41	100	1	61	2344			
	Number of walleye:				13	19	23	10	22	16	26	17	15	23	15	16	21	23	11	4	7	21	12	9	323			
	Number of spearer-nights:				6	9	9	2	9	8	13	6	8	11	7	6	9	10	6	2	3	11	6	5	146			
	Number of interviews with effort:				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
	Number of interviews without effort:				10.3	20.4	18.7	0.8	13.8	17.4	24.7	15.1	14.3	24.0	23.4	25.0	26.2	37.1	20.8	6.3	16.4	22.3	18.0	14.5	369.4			
	Number of boat-hours:				7.1	12.6	5.7	23.8	10.8	6.1	10.6	4.2	1.4	10.5	6.2	7.1	7.2	5.0	4.6	5.7	2.5	4.5	0.1	4.2				
	Catch-per-effort:																											6.3

Appendix B (concluded). Number of walleye harvested nightly on lakes selected by six Wisconsin Chippewa bands during spring 1995. Also, balance of quota, number of boat-hours, catch per effort (CPE - walleye per boat-hour), number of spearer-rights, number of interviews with effort, and number of interviews without effort.

Six Tribal Bands Combined:		Area																															Total Harvest	Quota Balance	Boat-Hour	CPE
Area	Safe Harvest	Tribal Quota	April 15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	1	2	3	4	5	6	12	13										
Number of lakes:	222		3	4	10	14	13	17	28	34	31	31	32	30	32	25	32	28	26	21	23	29	24	10	2											
Area in acres:	225639																																			
Number of walleye:		41283	73	258	315	481	980	749	1735	2120	1906	2276	2931	2558	2957	2574	2793	1251	1582	1290	582	352	386	46	22	32					30249					
Number of spearer-rights:			13	19	36	46	66	46	91	127	113	129	140	142	146	130	140	68	76	95	58	32	28	9	2	3					1755					
Number of interviews with effort:			6	9	15	16	27	21	44	54	59	61	64	63	76	58	62	27	34	39	24	16	13	4	1	1					794					
Number of interviews without effort:			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0					0					
Number of boat-hours:			10.3	20.4	28.9	34.6	73.3	48.9	125.8	142.4	150.8	139.8	187.7	153.1	168.9	143.2	143.3	60.8	77.1	85.4	62.7	43.7	30.0	9.2	4.1	4.5					1951					
Catch-per-effort:			7.1	12.6	10.9	13.9	13.4	15.3	13.8	14.9	12.6	16.3	15.6	16.7	17.5	18.0	19.5	20.6	20.5	15.1	9.3	8.1	12.9	5.0	5.4	7.1					15.5					

Appendix C. Total number of walleye harvested and measured per inch group and sexed during spring in 1995. Data arranged alphabetically by tribe, county, and lake.

County	Lake	Area	INCH GROUP:																																Total Harvested	Total Measured	Total Inches	Mean Length	Male	Female	Unknown	Total Sexed
			8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32															
BAYFIELD	DIAMOND L	341	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	23	23	455.0	18.9	21	1	1	1	23						
BAYFIELD	L OWEN	1323					5	4	5	15	25	1	3	1	5	3	2	2	1	2									72	72	1183.5	16.4	59	10	3	72						
BAYFIELD	NAMEKAGON L	3227	3	29	99	88	88	40	35	15	12	4	4	2	2	2	2	2	1	1	1							650	334	4612.2	13.8	309	24	1	334							
CHIPPEWA	L WISSOTA	6300	1	9	39	53	59	27	6	2	2	2	2	2	1	8	3	2	2	2								300	200	2580.0	12.9	199	1	1	200							
CHIPPEWA	LONG L	1052	1	4	33	49	44	26	11	8	3	2	2	1	1	8	3	2	2	2								232	182	2417.3	13.3	181	1	1	182							
CHIPPEWA	BOND L	292														4	4	4	1	1								67	67	1160.3	17.3	37	13	17	67							
DOUGLAS	WHITEFISH L	832																										179	129	1160.3	17.3	37	13	17	179							
IRON	TRUDE L	781	1	9	30	45	32	21	11	10	3	5	5	3	1	3	5	5	5	5								168	168	2235.5	13.3	165	6	5	168							
IRON	TURTI-FLAMBEAU FL	15645																										493	393	5645.9	14.4	371	16	6	393							
RUSK	CHANEL	468																										105	105	1582.3	15.1	101	3	1	105							
RUSK	ISLAND L	526	2	15	25	27	19	15	4	2	2	3	2	2	2	2	2	2	2	2								117	117	1742.8	14.9	116	1	1	117							
SAWYER	CONNORS L	429																										96	96	1372.0	14.3	84	6	6	96							
SAWYER	NELSON L	2503	2	10	6	24	34	16	2	3	3	3	3	4	8	2	2	2	2	2								240	240	3855.7	16.1	217	15	8	240							
SAWYER	TEAL L	1049																										221	161	2477.3	15.4	88	61	12	161							
VILAS	ANNABELLE L	213	1	2	1	1	3	4	7	1	4	6	7	2	2	2	2	2	2	2								32	32	555.2	17.4	22	4	4	32							
VILAS	BLACK OAK L	584																										103	103	1329.6	12.9	99	4	4	103							
VILAS	GRAB L	949																										100	100	1363.1	13.6	87	13	13	100							
VILAS	HARRIS L	507																										87	87	1357.6	15.6	39	10	38	87							
VILAS	HIGHL	734																										87	87	1307.8	15.0	74	9	4	87							
VILAS	MAMIE L	400																										330	282	4331.8	15.4	207	31	44	282							
VILAS	PRESQUE ISLE L	1571																										43	43	607.9	14.1	28	15	15	43							
VILAS	S TURTLE L	369																										86	86	1323.7	15.4	77	1	1	86							
VILAS	TENDERFOOT L	437																										86	86	1323.7	15.4	77	1	1	86							
	Sub-total:	38432	1	5	43	260	521	576	503	421	332	203	91	50	44	19	25	11	6	8	6	2	1	1	0	0	0	3553	3129	45797.3	14.6	2703	243	183	3129							

Appendix C (continued). Total number of walleye harvested and measured per inch group and sexed during spring in 1995. Data arranged alphabetically by tribe, county, and lake.

County	Lake	Area	INCH GROUP:																																Total Harvested	Total Measured	Total Inches	Mean Length	Male	Female	Unknown	Total Sexed
			8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32															
SAWYER	GRINDSTONE L	3111																										86	86	1442.8	16.8	69	14	3	86							
SAWYER	L CHETAC	1920																										90	90	1468.6	16.3	85	5	5	90							
SAWYER	L CHIPPEWA	15300																										1744	1744	26040.4	14.9	1523	185	36	1744							
SAWYER	LAC COURTE OREILLES	5039																										616	616	10484.0	17.0	544	52	20	616							
SAWYER	LITTLE ROUND L	229																										8	8	141.1	17.6	8	8	8	8							
SAWYER	LOST LAND L	1304																										74	74	1272.1	17.2	52	18	4	74							
SAWYER	ROUND L	3054																										596	596	9159.2	15.4	507	76	13	596							
SAWYER	SAND L	928																										197	197	3373.2	17.1	111	71	15	197							
SAWYER	WHITEFISH L	786																										64	64	1007.2	15.7	50	6	8	64							
	Sub-total:	31671	0	0	5	85	319	524	684	638	432	258	166	113	71	37	34	31	34	17	4	17	5	1	0	0	0	3475	3475	54388.6	15.7	2949	427	99	3475							





Appendix C (concluded). Total number of walleye harvested and measured per inch group and sexed during spring in 1995. Data arranged alphabetically by tribe, county, and lake.

County	St. Croix	Lake	Area	INCH GROUP:																													Total Harvested	Total Measured	Total Inches	Mean Length	Male	Female	Unknown	Total Sexed
				8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32												
				0%	1%	5%	12%	17%	18%	15%	11%	7%	5%	3%	2%	1%	1%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%											
BARRON	BEAR L	1338	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	68	28	1159.6	17.1	67	1	1	68					
BARRON	BEAVER DAM L	1112																										28	28	498.0	17.8	27			28					
BARRON	RED CEDAR L	1841			1																							357	357	5542.4	15.5	339	13	5	357					
BARRON	SAND L	322				8	54	48	45	59	42	36	33	20	6	1	1	1	1	1	2							20	20	355.1	17.8	17	3		20					
BARRON	SILVER L	337							3	2	2	4	3	2	3	3	3	3	3	3	3	3	3	3	3	3	3	54	54	896.1	16.6	46	6	2	54					
BURNETT	BIG MCKENZIE L	1185					4	16	27	48	61	43	26	8	3	3	3	3	3	3	3	3	3	3	3	3	3	248	248	4123.0	16.6	233	8	7	248					
BURNETT	DEVILS L	1001					6	4	9	8	9	9	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	53	53	858.4	16.2	51	2		53					
BURNETT	LITTLE YELLOW L	348							1	3	9	10	4	3	3	3	3	3	3	3	2							41	41	726.2	17.7	29	12		41					
BURNETT	SAND L	962								1	1	6	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	35	35	690.6	19.4	22	10		35					
BURNETT	YELLOW L	2287				1	5	28	36	57	57	36	24	15	14	11	4	5	2	1	1	2						290	290	4813.2	16.6	236	34	20	290					
BURNETT	BALSAML	2054						5	27	42	17	18	25	8	7	1	1	1	1	1	1	2						155	155	2611.9	16.9	87	4	64	155					
BURNETT	BIG BUTTERNUT L	378					13	12	8	3	6	9	3	3	3	2	2	2	2	2	2	2	2	2	2	2	2	37	37	645.7	17.5	27	3	7	37					
BURNETT	BIG ROUND L	1015					2	2	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	81	81	1404.9	17.3	64	17		81					
BURNETT	HALF MOON L	579					2	3	4	4	12	17	22	29	20	2	4	4	4	4	4	4	4	4	4	4	4	62	62	2125.2	17.9	113	6	5	62					
BURNETT	PIPE L	270						2	2	5	15	13	15	5	4	1	1	1	1	1	1	1	1	1	1	1	1	43	43	1044.2	17.4	57	3	3	43					
BURNETT	WAFOGASSET L	1196								14	4	1	6	13	8	4	4	4	4	4	4	4	4	4	4	4	4	60	60	1044.2	17.4	57	3	5	60					
BURNETT	BALSAML	295								3	3	3	2	3	1	2	2	2	2	2	2	2	2	2	2	2	2	46	46	611.0	13.3	46	2		46					
BURNETT	BASS L T40N-R10W-S17	188								2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	18	18	349.2	19.4	15	2		18					
BURNETT	WASHBURN L NANCY	772								1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	368	368	6284.9	17.1	309	47	12	368					
BURNETT	WASHBURN L LONG	3290								6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	32	32	559.8	17.5	28	4		32					
BURNETT	WASHBURN MIDDLE MCKENZIE L	530								1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	129	129	2038.4	15.8	109	9	11	129					
BURNETT	WASHBURN SHELL L	2580								34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	129	129	2038.4	15.8	109	9	11	129					
BURNETT	WASHBURN Sub-total:	23890	0	0	1	18	131	231	319	383	337	257	257	146	86	44	25	23	31	15	19	8	11	2	0	0	0	2344	2344	39121.0	16.7	2017	194	133	2344					
Total: For All Tribes			209803	2	32	219	1311	2955	4113	4360	3768	2703	1756	1159	729	440	238	195	164	158	109	80	57	36	16	3	1	1	30249	24605	375476.4	15.3	20897	2339	1369	24605				
Percent of total (%)				0%	0%	1%	5%	12%	17%	18%	15%	11%	7%	5%	3%	2%	1%	1%	1%	1%	0%	0%	0%	0%	0%	0%	0%													

Appendix D. Number of walleye per inch group taken during spring spearing seasons from 1985-1995.

Inch Group	Number of walleye in:											11 Year Total	Percent of Total				
	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995						
5															1	0.0%	
6		1													4	0.0%	
7															5	0.0%	
8	2	3	17	3	1	4	4	1	3	2					33	0.0%	
9	5	49	123	10	4	14	36	3	45	63					260	0.1%	
10	31	358	558	678	306	649	957	243	905	386					219	1.1%	
11	140	680	1,282	1,688	925	1,513	1,979	2,444	2,101	1,186					1,311	4.5%	
12	265	928	1,892	2,755	1,684	2,370	2,582	3,507	3,636	3,110					2,955	10.1%	
13	286	1,068	2,133	3,289	2,222	2,917	2,777	3,252	4,032	3,666					4,113	15.2%	
14	293	985	1,895	2,951	2,154	2,856	2,543	2,375	3,111	3,368					4,360	16.9%	
15	247	939	1,666	2,311	1,919	2,295	2,031	1,696	1,993	2,517					2,703	14.9%	
16	172	801	1,374	1,658	1,390	1,862	1,687	1,207	1,323	1,796					1,756	8.5%	
17	145	458	1,113	1,297	1,010	1,288	1,216	878	812	1,120					1,159	5.9%	
18	118	255	811	932	634	932	811	562	589	850					729	4.1%	
19	33	149	513	596	328	556	590	261	308	383					440	2.3%	
20	25	72	259	316	210	307	303	199	218	267					238	1.4%	
21	18	50	148	214	109	202	249	171	148	205					195	1.0%	
22	18	23	116	134	76	160	151	129	120	189					164	0.7%	
23	11	9	86	124	67	100	111	85	101	145					158	0.6%	
24	7	10	76	89	48	107	102	66	80	98					109	0.4%	
25	9	3	57	75	45	71	86	65	54	91					80	0.4%	
26	10	1	42	56	31	63	46	42	33	55					57	0.2%	
27	5		28	32	18	30	39	25	27	30					36	0.2%	
28	8		25	30	8	15	15	17	12	12					16	0.1%	
29	11		8	9	3	5	6	6	1	5					3	0.0%	
30	6		2		2	1									1	0.0%	
31	2														1	0.0%	
32	1														1	0.0%	
33																13	0.0%
34																3	0.0%
35																1	0.0%
36																1	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	24,605	177,067	100%				
Total Length:	30,382	106,051	226,789	306,926	211,645	295,047	291,543	275,331	301,713	335,322	375,476	2,756,225					
Average Length:	16.3	15.5	15.9	15.8	16.0	15.9	15.7	15.1	15.2	15.4	15.3	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	30,249	223,302					
Percent Measured:	68%	99%	67%	75%	83%	73%	81%	86%	81%	84%	81%	79%					

Appendix E. Number harvested, number measured, average length, and harvest per acre of muskellunge from various lakes during spring spearing in 1995.

Tribe	County	Lake	Area	Number Harvested	Number Measured	Total Inches	Average Length	Number Per Acre	
STC	BARRON	SAND L	322	3	3	112.1	37.4	0.0093	
RCF	BAYFIELD	MIDDLE EAU CLAIRE L	902.2	1	1	19.4	19.4	0.0011	
BRV	BAYFIELD	NAMEKAGON L	3227	1	1	41.1	41.1	0.0003	
STC	BURNETT	BIG MCKENZIE L	1185	4	4	147.6	36.9	0.0034	
STC	BURNETT	YELLOW L	2287	10	10	318.6	31.9	0.0044	
RCF	DOUGLAS	LOWER EAU CLAIRE L	802	2	2	60.2	30.1	0.0025	
LDF	IRON	TURTLE-FLAMBEAU FL	13545	1	1	39.0	39.0	0.0001	
LDF	LINCOLN	L NOKOMIS (RICE R FL CHAIN=3)	2433	3	3	112.2	37.4	0.0012	
LDF	ONEIDA	BEARSKIN L	400	1	1	34.3	34.3	0.0025	
LDF	ONEIDA	BUCKSKIN L	634	4	4	143.5	35.9	0.0063	
LDF	ONEIDA	CARROL L	335	2	2	60.2	30.1	0.0060	
LDF	ONEIDA	CRESCENT L	612	1	1	34.5	34.5	0.0016	
LDF	ONEIDA	DAM L	744	1	1	34.7	34.7	0.0013	
LDF	ONEIDA	KATHERINE L	590	1	1	38.5	38.5	0.0017	
LDF	ONEIDA	KAWAGUESAGA L	670	1	1	33.3	33.3	0.0015	
LDF	ONEIDA	L THOMPSON	382	1	1	43.0	43.0	0.0026	
MLK	ONEIDA	LAUREL L	232	3	3	121.3	40.4	0.0129	
LDF	ONEIDA	MINOCQUA L	1360	2	2	69.6	34.8	0.0015	
MLK	ONEIDA	PELICAN L	3585	21	21	774.7	36.9	0.0059	
LDF	ONEIDA	RAINBOW FL	2035	1	1	32.3	32.3	0.0005	
LDF	ONEIDA	SQUIRREL L	1317	4	4	153.0	38.3	0.0030	
LDF	ONEIDA	TOMAHAWK L (TOM. CHAIN=2)	3392	19	19	663.6	34.9	0.0056	
STC	POLK	DEER L	807	10	10	385.8	38.6	0.0124	
LDF	PRICE	PIKE L	806	3	3	109.6	36.5	0.0037	
LCO	SAWYER	GRINDSTONE L	3111	1	1	37.3	37.3	0.0003	
LCO	SAWYER	L CHIPPEWA	15300	22	22	879.7	40.0	0.0014	
LCO	SAWYER	LAC COURTE OREILLES	5039	10	10	377.0	37.7	0.0020	
LCO	SAWYER	LOST LAND L	1304	12	12	420.2	35.0	0.0092	
LCO	SAWYER	ROUND L	3054	8	8	328.0	41.0	0.0026	
LCO	SAWYER	SAND L	928	9	9	307.5	34.2	0.0097	
LCO	SAWYER	WHITEFISH L	786	7	7	251.8	36.0	0.0089	
BRV	VILAS	ANNABELLE L	213	1	1	38.0	38.0	0.0047	
LDF	VILAS	BIG ARBOR VITAE L	1090	9	9	348.4	38.7	0.0083	
LDF	VILAS	BIG L (771)	771	1	1	24.4	24.4	0.0013	
LDF	VILAS	BIG L (850)	850	6	6	213.0	35.5	0.0071	
LDF	VILAS	BIG MUSKELLUNGE L	930	4	4	158.0	39.5	0.0043	
LDF	VILAS	BIG ST GERMAIN L	1617	8	8	308.9	38.6	0.0049	
LDF	VILAS	BIRCH L	528	1	1	38.0	38.0	0.0019	
LDF	VILAS	BOULDER L	524	1	1	34.4	34.4	0.0019	
LDF	VILAS	CATFISH L	1012	2	2	66.6	33.3	0.0020	
LDF	VILAS	CLEAR L	555	6	6	213.0	35.5	0.0108	
LDF	VILAS	EAGLE L	572	2	2	64.8	32.4	0.0035	
LDF	VILAS	FISHTRAP L	329	1	1	35.0	35.0	0.0030	
BRV	VILAS	HIGH L	734	1	1	37.3	37.3	0.0014	
LDF	VILAS	ISLAND L	1023	2	2	66.7	33.4	0.0020	
MLK	VILAS	KENTUCK L	957	2	2	77.0	38.5	0.0021	
LDF	VILAS	L LAURA	599	2	2	68.0	34.0	0.0033	
LDF	VILAS	LAC VIEUX DESERT	4300	5	5	188.5	37.7	0.0012	
MLK	VILAS	LAC VIEUX DESERT	4300	3	3	110.9	37.0	0.0007	
LDF	VILAS	LITTLE ARBOR VITAE L	534	2	2	64.6	32.3	0.0037	
LDF	VILAS	LITTLE ST GERMAIN L	980	5	5	166.0	33.2	0.0051	
LDF	VILAS	N TWIN L (TWIN LAKES CHAIN=2)	2788	11	11	387.5	35.2	0.0039	
BRV	VILAS	PRESQUE ISLE L (P.I. CHAIN=3)	1280	2	2	78.3	39.2	0.0016	
LDF	VILAS	REST L	607.73	4	2	73.4	36.7	0.0066	
LDF	VILAS	SNIPE L	239	2	2	65.9	33.0	0.0084	
LDF	VILAS	STAR L	1206	4	4	150.0	37.5	0.0033	
LDF	VILAS	TROUT L	3816	15	15	623.6	41.6	0.0039	
LDF	VILAS	WHITE SAND L	728	4	4	157.0	39.3	0.0055	
STC	WASHBURN	MIDDLE MCKENZIE L	530	5	5	208.7	41.7	0.0094	
STC	WASHBURN	SHELL L	2580	19	19	822.2	43.3	0.0074	
Total:				108319	299	297	11072		
Average:							37.3	0.0028	



Appendix F. Number of muskellunge per inch group taken during spring spearing seasons from 1985-1995.

Inch Group	Number of muskellunge in:											11 Years Total	Percent of Total
	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995		
13						1						1	0.1%
14												0	0.0%
15											1	1	0.1%
16			1								1	2	0.1%
17				3			1					4	0.2%
18								1				1	0.1%
19				1					1		1	3	0.2%
20			2									2	0.1%
21												0	0.0%
22						1					1	2	0.1%
23		1					1				1	3	0.2%
24		1						1			2	4	0.2%
25	1		1		1	1			2	1	1	8	0.4%
26				1	2	3	1	1	3	1	1	13	0.7%
27			3	3	2	2		1	1	2	1	15	0.8%
28	2		3	1	5	4	5	1	3	3	3	30	1.5%
29	2	2	7	5	3	6	4	8	4	2	2	45	2.3%
30	8	3	4	6	6	15	6	5	6	11	3	73	3.7%
31	6	3	14	9	9	24	12	8	9	14	13	121	6.2%
32	7	2	15	13	11	18	10	7	11	14	20	128	6.6%
33	3	6	12	10	8	25	11	18	12	20	14	139	7.1%
34	8	1	16	10	8	20	20	13	21	17	23	157	8.1%
35	7	7	12	10	10	26	17	11	10	26	29	165	8.5%
36	2	4	12	7	6	20	18	18	22	15	22	146	7.5%
37	8	8	17	11	10	29	20	14	15	16	26	174	8.9%
38		6	12	9	7	27	11	12	14	16	25	139	7.1%
39	2	1	10	10	6	16	7	11	10	17	18	108	5.5%
40	1	2	8	6	5	19	16	11	11	11	15	105	5.4%
41	1	2	5	9	3	12	4	5	5	10	17	73	3.7%
42	1	1	4	6	5	6	3	4	8	11	14	63	3.2%
43	2	2	3	6	3	6	5	4	4	7	16	58	3.0%
44	2		3	7		5		4	6	4	5	36	1.8%
45			4	8	2	1	5	1	1	7	8	37	1.9%
46		1	4	3		2	2		1	8	5	26	1.3%
47	3		2	1	2	3	1	1	1	1	3	18	0.9%
48		1	4	1	1	2	3	2	3	5	4	26	1.3%
49	1		2	1	1	3	1		2	3	1	15	0.8%
50	1				1		1		1	1	1	6	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	297	1950	100%
Total Length:	2,407	1,994	6,507	5,805	4,175	10,761	6,725	5,845	6822	9034	11072	71146.3	
Average Length:	35.4	36.2	36.2	36.7	35.7	36.1	36.4	36.1	36.5	37.2	37.3	36.5	
Total Number Speared:	86	55	196	158	118	303	185	165	188	244	299	1997	
Percent Measured:	79.1%	100.0%	91.8%	100.0%	99.2%	98.3%	100.0%	98.2%	99.5%	99.6%	99.3%	97.6%	

Appendix G. Number, average length (inches), and harvest per acre (largemouth and smallmouth) and northern pike from various lakes during spring spearing in 1995.

Tribe	County	Lake	AREA	Species	Number Harvested	Number Measured	Total Inches	Average Length	Number Per Acre
Stc	Burnett	Yellow L	2287	Bas	1	1	13.0	13.0	0.0004
Ldf	Oneida	Bearskin L	400	Bas	1	1	16.0	16.0	0.0025
Ldf	Oneida	Squirrel L	1317	Bas	1	1	16.5	16.5	0.0008
Stc	Polk	Balsam L	2054	Bas	7	7	114.1	16.3	0.0034
Ldf	Vilas	Papoose L	428	Bas	1	1	12.2	12.2	0.0023
					Total number measured:		11	171.8	15.6
					Total number harvested:		6486		11
Stc	Barron	Sand L	322	Lmb	1	1	14.0	14.0	0.0031
Rcf	Bayfield	Middle Eau Claire L	902.2	Lmb	1	1	18.3	18.3	0.0011
Stc	Burnett	Big Mckenzie L	1185	Lmb	2	2	26.4	13.2	0.0017
Stc	Burnett	Little Yellow L	348	Lmb	19	19	306.1	16.1	0.0546
Stc	Burnett	Yellow L	2287	Lmb	10	10	169.9	17.0	0.0044
Brv	Douglas	Bond L	292	Lmb	5	5	87.0	17.4	0.0171
Mlk	Florence	Halsey L	512	Lmb	2	2	29.5	14.8	0.0039
Mlk	Florence	Keyes L	202	Lmb	4	4	59.3	14.8	0.0198
Stc	Polk	Balsam L	2054	Lmb	8	8	129.4	16.2	0.0039
Stc	Polk	Big Round L	1015	Lmb	18	18	259.8	14.4	0.0177
Stc	Polk	Half Moon L	579	Lmb	1	1	13.4	13.4	0.0017
Lco	Sawyer	Lost Land L	1304	Lmb	6	6	91.0	15.2	0.0046
Ldf	Vilas	Fishtrap L	329	Lmb	1	1	20.0	20.0	0.0030
Mlk	Vilas	Kentuck L	957	Lmb	1	1	19.0	19.0	0.0010
Stc	Washburn	Long L	3290	Lmb	28	28	407.4	14.5	0.0085
Stc	Washburn	Middle Mckenzie L	530	Lmb	11	11	165.1	15.0	0.0208
Stc	Washburn	Shell L	2580	Lmb	3	3	52.6	17.5	0.0012
					Total number measured:		121	1868.2	15.4
					Total number harvested:		18688.2		121
Stc	Barron	Red Cedar L	1841	Smb	1	1	14.4	14.4	0.0005
Rcf	Bayfield	L Owen	1323	Smb	1	1	15.0	15.0	0.0008
Rcf	Bayfield	Middle Eau Claire L	902.2	Smb	8	8	146.1	18.3	0.0089
Rcf	Bayfield	Upper Eau Claire L	1030	Smb	2	2	32.5	16.3	0.0019
Stc	Burnett	Yellow L	2287	Smb	1	1	13.0	13.0	0.0004
Mlk	Florence	Fay L	247	Smb	1	1	12.5	12.5	0.0040
Mlk	Forest	Butternut L	1292	Smb	1	1	15.1	15.1	0.0008
Ldf	Oneida	Minocqua L	1360	Smb	1	1	15.0	15.0	0.0007
Stc	Polk	Big Butternut L	378	Smb	1	1	12.7	12.7	0.0026
Lco	Sawyer	Lost Land L	1304	Smb	1	1	12.6	12.6	0.0008
Lco	Sawyer	Round L	3054	Smb	7	7	119.3	17.0	0.0023
Brv	Vilas	Black Oak L	584	Smb	2				0.0034
Ldf	Vilas	Clear L	555	Smb	1	1	17.2	17.2	0.0018
Mlk	Vilas	Kentuck L	957	Smb	3	3	45.0	15.0	0.0031
Ldf	Vilas	Lac Vieux Desert	4300	Smb	3	3	50.0	16.7	0.0007
Ldf	Vilas	Little St Germain L	980	Smb	8	8	113.3	14.2	0.0082
Brv	Vilas	Presque Isle Chain (3 Lakes)	1571	Smb	1	1	16.8	16.8	0.0006
Ldf	Vilas	Star L	1206	Smb	1	1	15.2	15.2	0.0008
Ldf	Vilas	Twin Lakes Chain (2 Lakes)	2788	Smb	1	1	18.2	18.2	0.0004
Stc	Washburn	Balsam L	295	Smb	4	4	60.8	15.2	0.0136
Stc	Washburn	Long L	3290	Smb	5	5	78.1	15.6	0.0015
Stc	Washburn	Shell L	2580	Smb	1	1	17.8	17.8	0.0004
					Total number measured:		53	840.6	15.9
					Total number harvested:		34124.2		55
Stc	Barron	Red Cedar L	1841	Nop	1	1	23.6	23.6	0.0005
Stc	Barron	Silver L	337	Nop	1	1	26.0	26.0	0.0030
Stc	Burnett	Big Mckenzie L	1185	Nop	1	1	23.5	23.5	0.0008
Stc	Burnett	Little Yellow L	348	Nop	1	1	20.3	20.3	0.0029
Stc	Burnett	Yellow L	2287	Nop	7	7	178.7	25.5	0.0031
Mlk	Forest	L Metonga	2157	Nop	1	1	31.8	31.8	0.0005
Ldf	Lincoln	Rice R FI Chain (3 Lakes)	3764	Nop	4				0.0011
Mlk	Oneida	Pelican L	3585	Nop	2	2	63.7	31.9	0.0006
Lco	Sawyer	L Chippewa	15300	Nop	3	3	70.2	23.4	0.0002
Lco	Sawyer	Lac Courte Oreilles	5039	Nop	1	1	22.0	22.0	0.0002
Lco	Sawyer	Lost Land L	1304	Nop	1	1	23.5	23.5	0.0008
Lco	Sawyer	Round L	3054	Nop	3	3	105.1	35.0	0.0010
Brv	Vilas	Harris L	507	Nop	2	2	42.5	21.3	0.0039
Brv	Vilas	Tenderfoot L	437	Nop	1	1	20.4	20.4	0.0023
Stc	Washburn	L Nancy	772	Nop	1	1	30.5	30.5	0.0013
Stc	Washburn	Long L	3290	Nop	1	1	22.0	22.0	0.0003
Stc	Washburn	Shell L	2580	Nop	1	1	40.0	40.0	0.0004
					Total number measured:		28	743.8	26.6
					Total number harvested:		47787		32

Appendix H. Number of bass per inch group (largemouth and smallmouth) taken during spring spearing seasons from 1985-1995.

Inch Group	Number of bass in:											11 Year Total	Percent of Total	
	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995			
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		0.9%
11	1	1	8		7	3	1	5	1	5	2	34		2.1%
12	2	2	16	7	10	30	11	11	7	32	13	141		8.7%
13	3	6	43	21	14	35	36	16	18	41	27	260		16.0%
14		2	33	27	17	47	34	20	42	37	36	295		18.1%
15	7	8	25	21	17	26	21	21	40	38	34	258		15.8%
16		12	30	19	19	25	11	13	29	35	27	220		13.5%
17		3	20	15	11	19	9	5	16	22	18	138		8.5%
18	1	2	15	9	4	16	9	11	13	17	18	115		7.1%
19	1		7	11	8	9	6	6	15	11	7	81		5.0%
20		1	5	7	1	2	2	3	12	9	2	44		2.7%
21	1	1	2	1		1			2	4	1	13		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%
<b>Total No. Measured:</b>	17	39	210	144	111	215	144	112	198	256	185	1,630	100%	
<b>Total Length:</b>	255	602	3,199	2,275	1,694	3,246	2,165	1,708	3,002	3,931	2,881	24,959		
<b>Average Length:</b>	15.0	15.4	15.2	15.8	15.3	15.1	15.0	15.3	15.2	15.4	15.6	15.3		
<b>Total No. Speared:</b>	21	39	275	167	113	219	147	136	201	261	187	1,766		
<b>Percent Measured:</b>	81.0%	100.0%	76.4%	86.2%	98.2%	98.2%	98.0%	82.4%	98.5%	98.1%	98.9%	92.3%		

Appendix I. Number of northern pike per inch group taken during spring spearing seasons from 1985-1995.

Inch Group	Number of northern pike in:											11 Year Total	Percent of Total
	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995		
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	1	9	3.4%
18			1	1	1	4	4			1		12	4.5%
19				2	1	1	4		1	1	2	12	4.5%
20		2		2	5	1	6	1	1	1	2	21	7.9%
21			2	10	1	3		1	1	1		19	7.2%
22		2	3	2		4	4	2	2	3	3	25	9.4%
23		1	2	2	2	2	1	3	2	2	6	21	7.9%
24		1	3	2	2	3	6	1	3	2	1	22	8.3%
25			1	1			2	1			3	8	3.0%
26				5		1	2	2		1	1	12	4.5%
27			1	1	1	2	1	1		1		8	3.0%
28			7	2	1	1	1		1	3	1	17	6.4%
29				1	1	2	1		2	1		8	3.0%
30			1	1			1		1	4	1	9	3.4%
31			2	3		1		1	1		2	10	3.8%
32			3	2		1		1	1	2		9	3.4%
33		1			1	1	2	1		2		8	3.0%
34							1				1	2	0.8%
35							1	1			1	3	1.1%
36		1		2		1	1	1		1		7	2.6%
7				1	1				1			3	1.1%
38						1				2		3	1.1%
39		1		1					1		1	4	1.5%
40		1					1				2	4	1.5%
41				1					1			2	0.8%
Total No. Measured:	0	12	28	45	14	32	40	18	19	29	28	265	100%
Total Length:	0	312	724	1,152	334	776	986	453	527	792	744	6,799	
Average Length:	NA	26.0	25.9	25.6	23.9	24.2	24.6	25.2	27.7	27.3	26.6	25.7	
Total No. Speared:	2	13	41	59	14	34	41	30	19	30	32	315	
Percent Measured:	0.0%	92.3%	68.3%	76.3%	100.0%	94.1%	97.6%	60.0%	100.0%	96.7%	87.5%	84.1%	

