



**SPEAR FISHERY
OF THE
LAKE SUPERIOR TRIBES OF CHIPPEWA INDIANS
SPRING 1990
Summary Report**

by
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**GREAT LAKES INDIAN FISH
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ABSTRACT

For the sixth consecutive spring, spear fishing was conducted by Chippewa tribes in off-reservation waters of northern Wisconsin. Fall spearing and summer gill-netting did not occur during 1990 as they did in 1989.

A total of 381 tribal members participated in spearing during spring. Spearing occurred on 119 lakes. Walleye were harvested from all except two lakes (Deer in Polk County and Mohawksin in Lincoln County). A total of 26,134 fish was taken, and 97% of the catch (25,348 fish) was walleye. The numbers of other gamefish harvested were 303 muskellunge, 219 bass, 34 northern pike, 3 sturgeon and 2 trout. Average lengths were 15.9 inches for walleye and 36.1 inches for muskellunge. The tribal walleye quota was exceeded on two lakes by a total of three fish, and the muskellunge quota was exceeded on one lake by one fish. Except for these three instances, harvest of walleye and muskellunge was maintained within the established limits by a nightly permit system and by complete monitoring of the catch.

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INTRODUCTION

This report presents data for harvest and effort by Chippewa spearmen in ceded territory waters of northern Wisconsin (Figure 1) during spring 1990. 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. However, these two fisheries did not materialize in 1990.

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 operated the same as in 1988 and 1989. 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 to genus or species, 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 totalled and reported by 9 a.m. the following day to GLIFWC in Odanah. 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 that night. Harvest was reported daily in newspapers throughout Wisconsin.

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

CHIPPEWA RESERVATIONS

- ① Red Cliff
- ② Bad River
- ③ Lac du Flambeau
- ④ St. Croix
- ⑤ Lac Courte Oreilles
- ⑥ Mole Lake

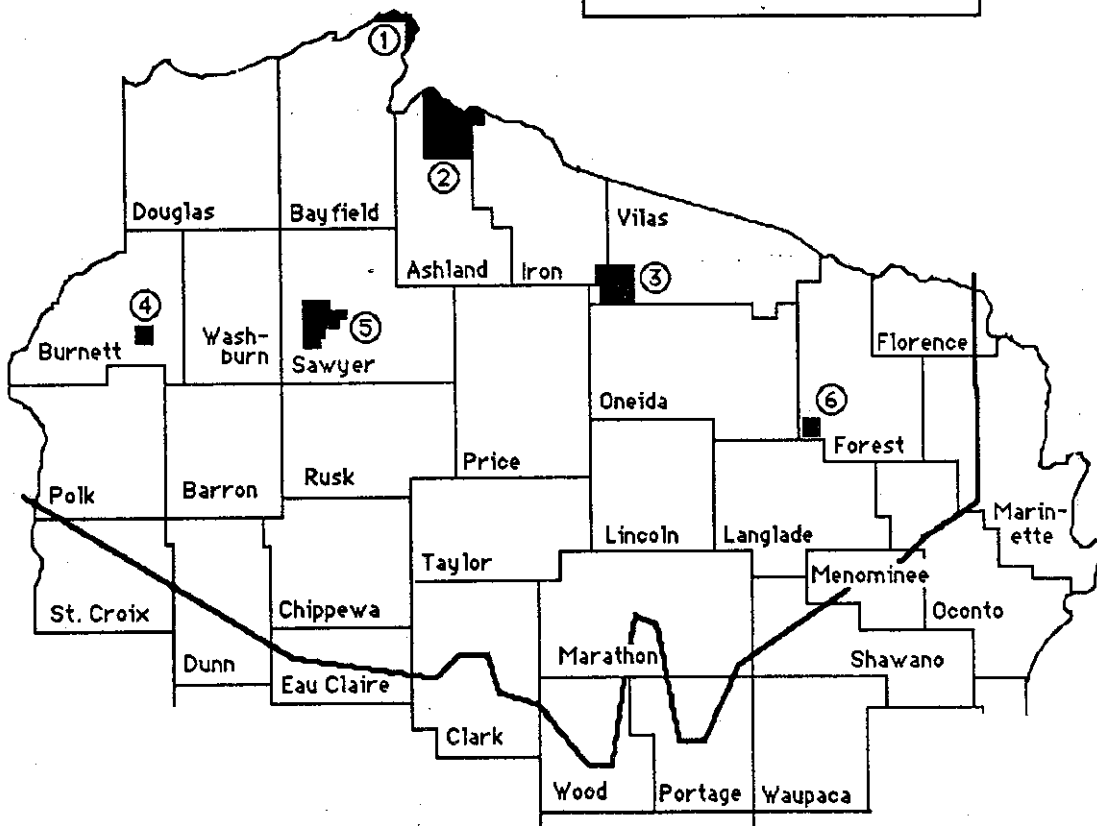
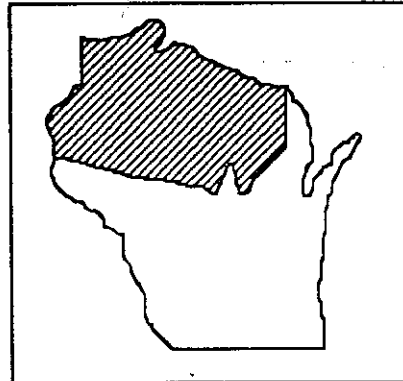


Figure 2. Off-Reservation Treaty Fishing Permit used during the 1989 open-water season.

28	29	30	31	Month _____	1	2	3	4	5
27	Off-Reservation Treaty Fishing Permit				N ^o	1445			6
26	<input type="checkbox"/>	Spearing	<input type="checkbox"/>	Fyke Netting					7
	<input type="checkbox"/>	Seining	<input type="checkbox"/>	Gill Netting					7
25	Tribal ID Number _____ of _____ Reservation								8
	Signature of Permittee: _____								8
24	Issued by: _____ of _____ Reservation								9
23	Water: _____ County: _____								10
	Bag Limit: Walleye _____ Muskellunge _____								10
22	Other Restrictions: _____								11
21	20	19	18	17	16	15	14	13	12

FRONT

Spearing Times:		Number of:	
Starting _____		Walleye per boat _____	
Ending _____		Musky per boat _____	
WALLEYE LENGTHS			
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

BACK

RESULTS AND DISCUSSION

Fishing Effort

Effort in the spring spear fishery continued to be measured in three ways: by the number of spearers, the number of spearer-nights, and the number of boat-hours.

Number of spearers. As in previous years, 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 381 tribal members participated in the 1990 spring spear fishery (Table 1, Appendix A). Sixteen of these individuals speared under the permit system of two tribes and thus, were counted twice. Ten of these persons were enrolled at Lac du Flambeau, 4 at Red Cliff, and 1 each at Bad River and Mille Lacs. No individuals speared under three or more permit systems.

All persons spearing on lakes named by Lac du Flambeau and Mole Lake were members of these tribes (142 and 46 persons, respectively). Of the 64 persons spearing on lakes named by St. Croix, 20 were members of another tribe (1 from LCO, 8 from LDF, and 11 from Mille Lacs). On lakes selected by Bad River, 10 of 46 persons were from a different tribe (1 from Lac Vieux Desert, 4 from Lac du Flambeau, and 5 from Red Cliff. One person from Mille Lacs speared under permits issued by Lac Courte Oreilles and 3 persons from Bad River speared under Red Cliff permits.

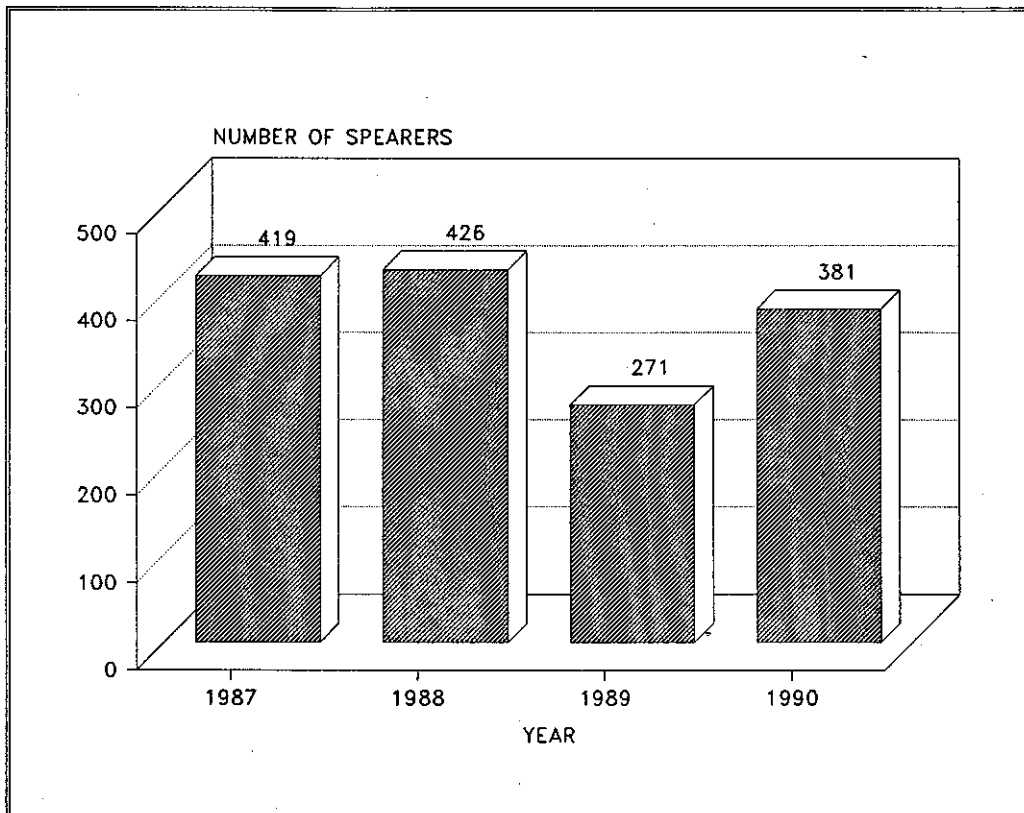
The number of spearers was greater than in 1989 but remained lower than in 1988 when participation was highest (Table 1, Figure 3). Compared to 1989 the total number of spearers increased by 110 persons or 41%. This increase over the 1989 level was noted for each of the 6 tribes. Also, the number of persons spearing under Red Cliff and Bad River permits reached a new high in 1990. However, for the other 4 tribes, more persons participated during the 1988 spring spearing season.

Table 1. Number of spearers on lakes named by six Wisconsin Chippewa bands during spring 1988, 1989, and 1990.

Tribe	Number of Spearers			Percent change: 1989-90
	1988	1989	1990	
Bad River	35	27	46	+ 70%
LCO	48	30	43	+ 43%
LDF	200	118	142	+ 20%
Mole Lake	63	31	46	+ 48%
Red Cliff	14	23	40	+ 74%
St. Croix *	66	42	64	+ 52%
	---	---	---	---
Total:	426	271	381	+ 41%

* = Includes members from Mille Lacs Tribe (7 in 1988, 8 in 1989, and 11 in 1990). Also one Mille Lacs member speared under permits issued by LCO in 1990.

Figure 3. Number of spearers during spring spearing seasons from 1986-1990.



Number of Spearer-nights or Permits Used. In previous reports "spearer-nights" has been described as the number of spearkers times the number of nights that each person speared. However, this description is not complete. Also included has been a count for each instance where a spearker was issued a second or a third permit during that 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 or third 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 spearker-nights.

A total of 1615 spearker-nights were recorded during spring 1990 (Table 2, Appendix B). Roughly half of this effort (751 spearker-nights or 47%) occurred on lakes selected by Lac du Flambeau. Spearker-nights on lakes selected by the other five tribes ranged from 116 at Lac Courte Oreilles to 229 at St Croix.

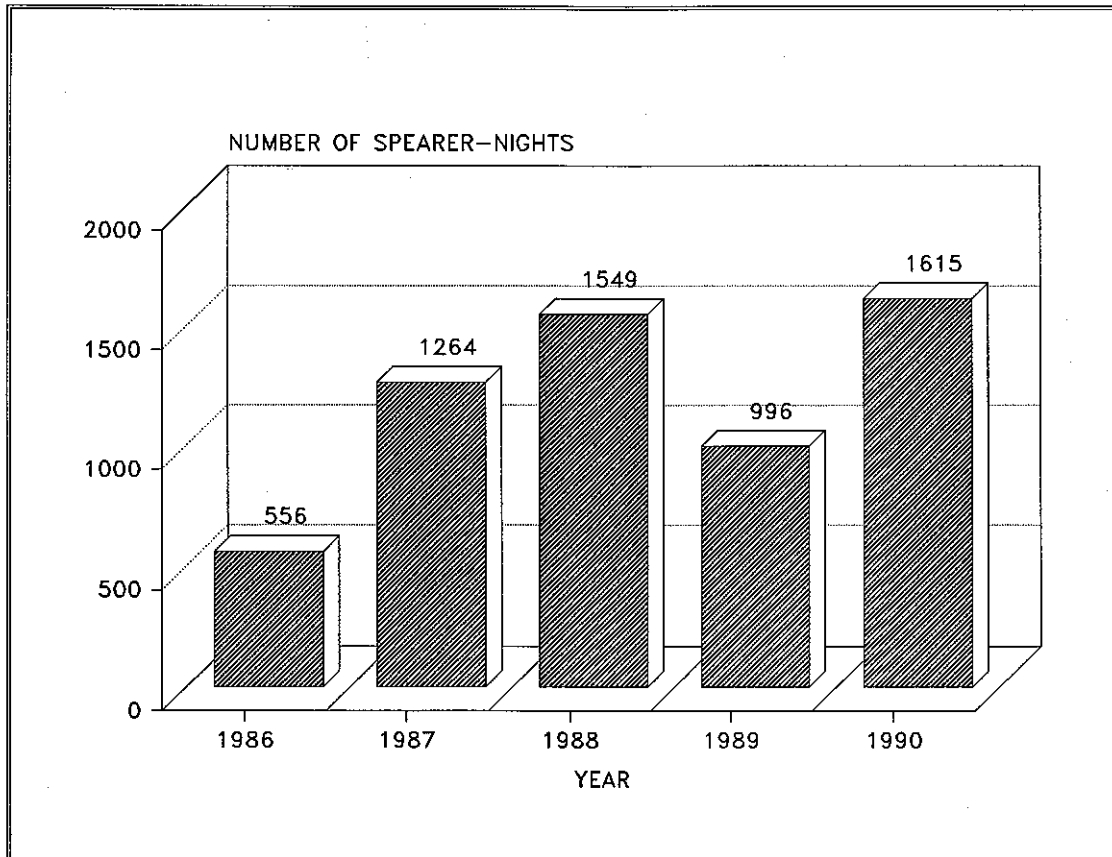
Spearker-night effort in 1990 was higher than any of the previous years (Figure 4). Compared to 1989 (996 spearker-nights), effort increased by 619 spearker-nights or 62% (Table 2). This increase was noted for each of the six tribes. Both Bad River and Red Cliff recorded a new high for number of spearker-nights in 1990 while effort for the other four tribes was greatest in 1988.

Table 2. Number of spearer-nights on lakes named by six Wisconsin Chippewa bands during spring 1988, 1989, and 1990.

Tribe	Number of Spearer-Nights			Percent change: 1989-90
	1988	1989	1990	
Bad River	64	70	174	+ 149%
LCO	165	109	116	+ 6%
LDF	788	429	751	+ 75%
Mole Lake	249	120	221	+ 84%
Red Cliff	37	100	124	+ 24%
St. Croix *	246	168	229	+ 36%
	<u>1,549</u>	<u>996</u>	<u>1,615</u>	<u>+ 62%</u>

* = Includes effort for Mille Lacs Tribe: 22 spearer-nights in 1988, 29 spearer-nights in 1989, and 35 spearer-nights (with 2 additional spearer-nights occurring at LCO) in 1990.

Figure 4. Number of spearer-nights during spring spearing seasons from 1986-1990.



Number of Boat-Hours. A total of 2008 boat-hours of effort were recorded in 1989 (Table 3, Figure 5, Appendix B). Compared to 1988 (1094.6 boat-hours) effort increased by 913.8 boat-hours or 83%. Bad River, Red Cliff, and St Croix recorded a new high for boat-hour effort in 1990 but effort for the other three tribes was greatest in 1988.

Table 3. Number of spearer boat-hours on lakes named by six Wisconsin Chippewa bands during spring 1988, 1989 and 1990.

Tribe	Number of Boat-Hours			Percent change: 1989-90
	1988	1989	1990	
Bad River	172.9	134.8	253.6	+ 88%
LCO *	247.0	121.5	150.7	+ 24%
LDF	1093.7	364.1	786.5	+ 116%
Mole Lake	393.2	155.4	297.8	+ 92%
Red Cliff		109.2	181.4	+ 66%
St. Croix **	333.8	209.6	338.4	+ 61%
	-----	-----	-----	-----
	2240.6	1094.6	2008.4	+ 83%

* = Includes effort for Mille Lacs tribe in 1990.

** = Includes effort for Mille Lacs tribe in all 3 years.

Boat-hour statistics during the past four years have been slightly biased by the fact that not all effort has been recorded. For example, in 1990 for all tribes combined, a total of 682 interviews were conducted and boat-hour effort was noted for 673 or 98.7% of the total (Table 4). These 673 interviews included 98.4% of the walleye that were harvested (24,948 of 25,348). In the three previous years boat-hour effort was recorded for 94-97% of the walleye harvest (Kmiecik and Shively 1990).

Figure 5. Number of boat-hours of effort during spring spearing seasons from 1986-1990.

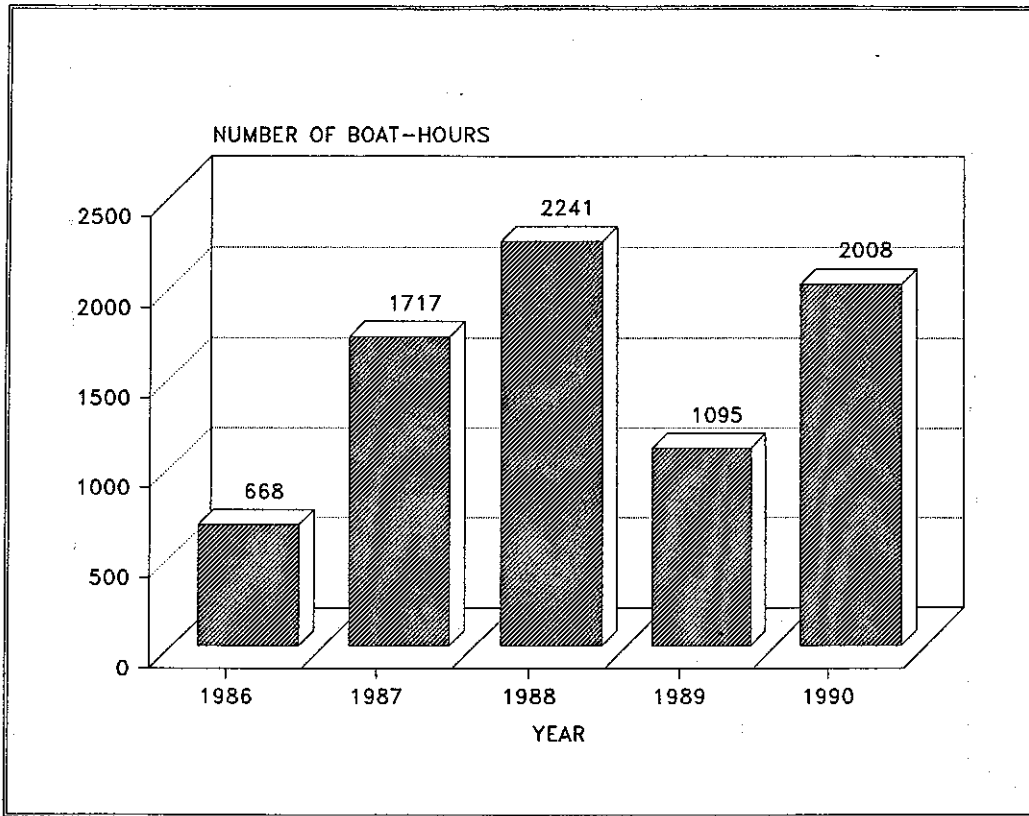


Table 4. Number of interviews and average length of spearing trip (in boat-hours) during spring 1990.

Tribe	Number of interviews		Boat-hours (c)	Average length of trip (c/a)
	with effort (a)	without effort (b)		
Bad River	76	--	253.6	3.3
LCO *	53	--	150.7	2.8
LDF	288	7	786.5	2.7
Mole Lake	95	2	297.8	3.1
Red Cliff	52	--	181.4	3.5
St. Croix *	109	2	338.4	3.1
	-----	-----	-----	-----
	673	9	2,008.4	3.0

* = Includes effort for Mille Lacs tribe.

Total Harvest

Sixteen taxa of fish were harvested during the 1990 spring spear fishery (Table 5). Of the 26,134 fish taken, 97% were walleye. Percentages of the total catch for other game fish species were 1.2% for muskellunge, 0.8% for bass, and 0.1% for northern pike. Also, three sturgeon and two trout were speared. Other species combined (panfish and rough fish) totalled 225 fish and made up the remaining 0.9% of the harvest.

Table 5. Number and percent of various fish species harvested by tribal spearmen during spring spearing seasons from 1985 through 1990

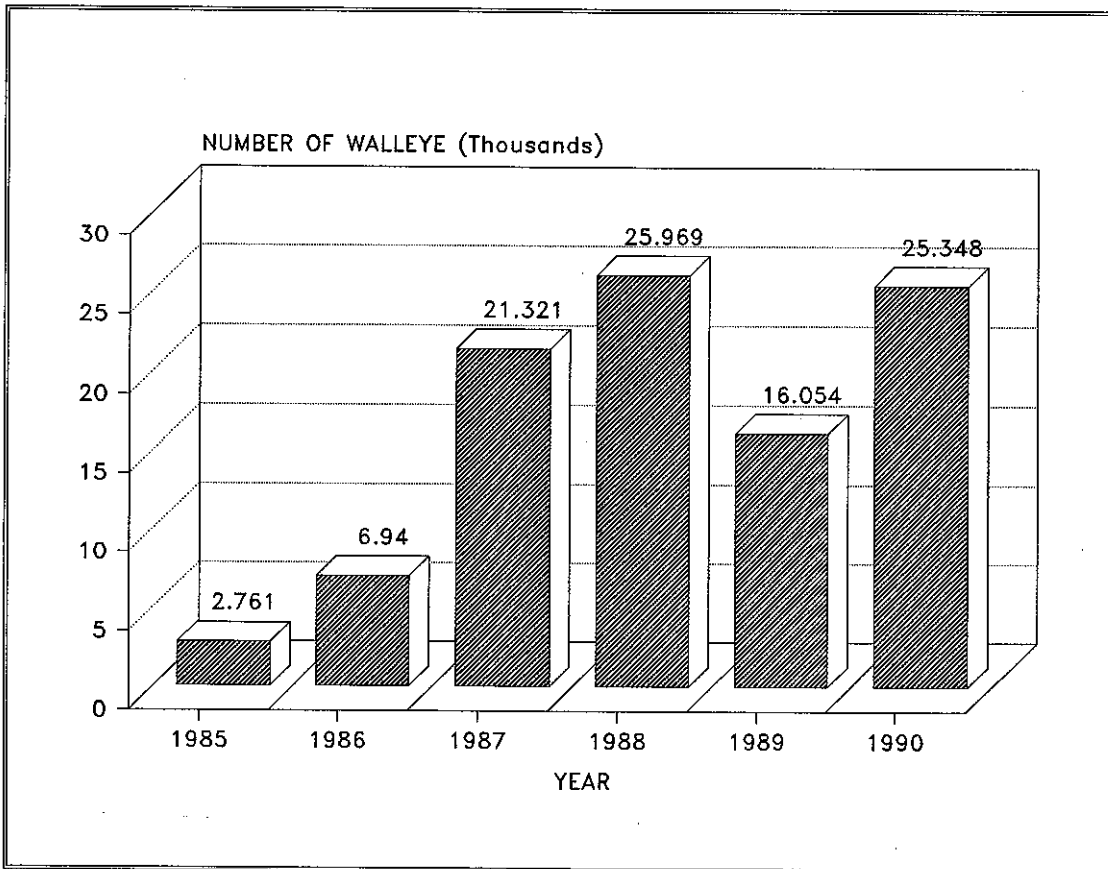
TAXA	NUMBER OF FISH						PERCENT OF TOTAL					
	1985	1986	1987	1988	1989	1990	1985	1986	1987	1988	1989	1990
Walleye	2,761	6,940	21,321	25,969	16,054	25,348	94.75%	98.06%	97.25%	98.08%	97.93%	96.99%
Muskellunge	86	55	196	158	118	303	2.95%	0.78%	0.89%	0.60%	0.72%	1.16%
Bass sp.	21	39	275	167	113	3	0.72%	0.55%	1.25%	0.63%	0.69%	0.01%
Largemouth Bass						167						0.64%
Smallmouth Bass						49						0.19%
Northern Pike	2	13	41	59	14	34	0.07%	0.18%	0.19%	0.22%	0.09%	0.13%
Lake Sturgeon	1		6	2	1	3	0.03%		0.03%	0.01%	0.01%	0.01%
Trout sp.			2		1	2			0.01%		0.01%	0.01%
Rock Bass	12	3	1	23	9	20	0.41%	0.04%	0.00%	0.09%	0.05%	0.08%
Crappie sp.		9	22	47	27	87		0.13%	0.10%	0.18%	0.16%	0.33%
Bluegill	2	2	8	9	3	6	0.07%	0.03%	0.04%	0.03%	0.02%	0.02%
Yellow Perch				17	13	25				0.06%	0.08%	0.10%
Bullhead sp.	1	1	4	2	3	5	0.03%	0.01%	0.02%	0.01%	0.02%	0.02%
Sucker sp.	27	15	48	21	31	72	0.93%	0.21%	0.22%	0.08%	0.19%	0.28%
Carp	1		1	1		1	0.03%		0.00%	0.00%		0.00%
Burbot				1	3	7				0.00%	0.02%	0.03%
Bowfin				1	2	2				0.00%	0.01%	0.01%
Cisco						2					0.01%	
Total:	2,914	7,077	21,925	26,477	16,394	26,134	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

Walleye Harvest

Tribal walleye quotas (TQ's) were selected for 178 lakes and totalled 41,373 walleye, lower than values declared in 1989 (254 lakes and 43,801 walleye). The percent of the "safe harvest" selected as tribal quotas for these lakes ranged from 6.93% to 59.96%. Two tribes selected the same lake in 14 instances and agreed on various inter-tribal allocation formulas to keep the TQ within the selected percentage.

Tribal spearers harvested a total of 25,348 walleye from 117 lakes (Appendix B). Spearfishing occurred on two other lakes (Deer Lake in Polk Co. and Lake Mohawksin in Lincoln Co.) but no walleye were taken. Harvest in 1990 was much greater than in 1989 when 16,054 walleye were taken but slightly lower than in 1988 when 25,969 walleye were speared (Figure 6). Overall, 61.3% of the total walleye TQ was harvested in 1990 compared to 36.6% in 1989.

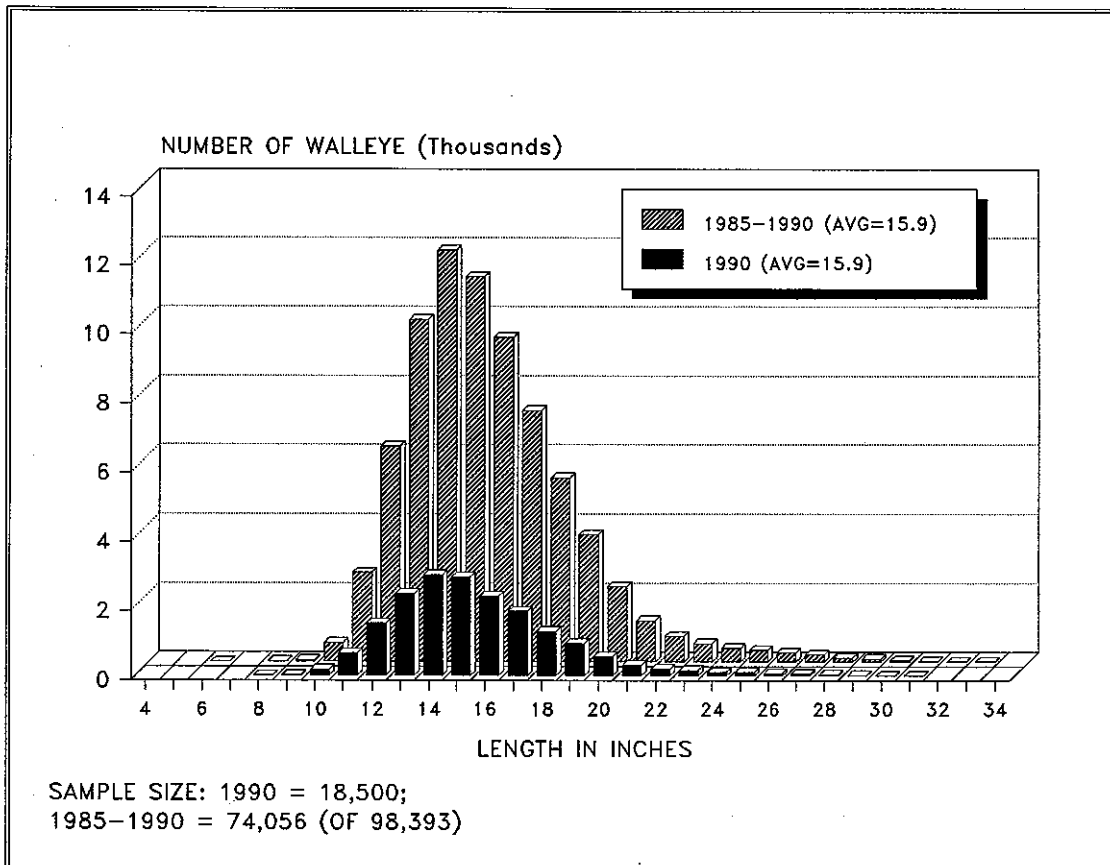
Figure 6. Number of walleye harvested during spring spearing seasons from 1985-1990.



Mean length. A total of 18,500 walleye (73% of the catch) were measured in 1990 (Appendix C). Average length (15.9 inches) was identical or similar to the average in 1987 (15.9 inches), 1988 (15.8 inches), and 1989 (16.0 inches) (Appendix D). Size restrictions have been identical during these four seasons, i.e. 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. Average length was highest in 1985 (16.3 inches) when regulations allowed one fish 20 inches and larger to be harvested and lowest in 1986 (15.5 inches) when one walleye of 20-24 inches and no walleye over 24 inches could be taken.

For the 6 spring spearing seasons combined, 75% of the walleye harvest has been measured (74,056 of 98,393 fish) (Figure 7; Appendix D). Average length for this 6 year sample was 15.9 inches. Also, 8% of the walleye (6,078 fish) were 20 inches or larger and 1.4% (1,049 fish) were 25 inches or larger.

Figure 7. Length frequency of walleye speared during 1990 and during the six year period 1985-1990.



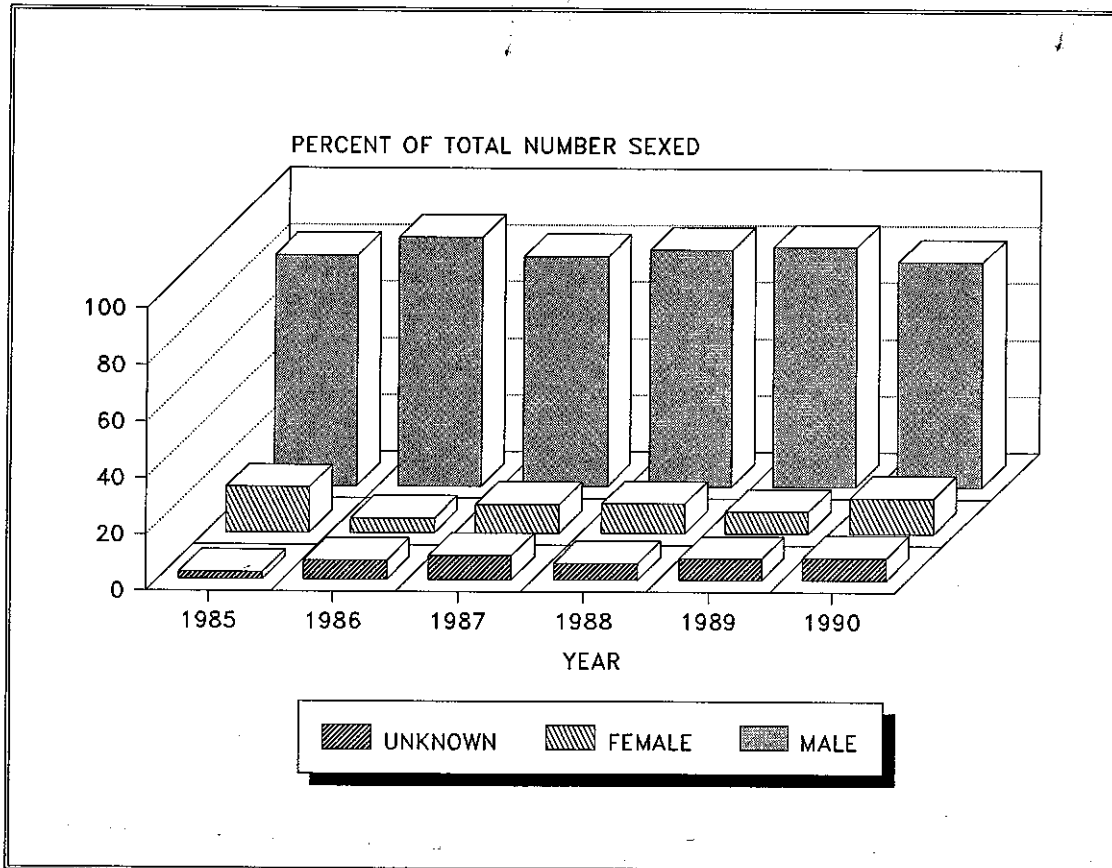
Sex Composition of Catch. The majority of walleye measured in 1990 were male, i.e. 14,693 of 18,500 fish or 79.4% (Table 6). Females (2342 fish) comprised 12.7% of the measured harvest, while those whose sex could not be determined (1465 fish) made up 7.9%. Males made up 86.3% of sexable fish.

For the 6 spring spearing seasons combined, a total of 73,044 walleye have been sexed (Table 6, Figure 8). Of these, 82.6% were male, 10.2% were female, and 7.3% 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 through 1990.

Walleye	Spring Spearing Season						5 Year Total
	1985	1986	1987	1988	1989	1990	
Harvested Number	2,761	6,940	21,321	25,969	16,054	25,348	98,393
Sexed Number	856	6,842	14,224	19,368	13,254	18,500	73,044
Percent	31.0%	98.6%	66.7%	74.6%	82.6%	73.0%	74.2%
Male Number	696	6,013	11,539	16,193	11,222	14,693	60,356
Percent	81.3%	87.9%	81.1%	83.6%	84.6%	79.4%	82.6%
Female Number	138	356	1,456	2,033	1,030	2,342	7,355
Percent	16.1%	5.2%	10.2%	10.5%	7.8%	12.7%	10.1%
Unknown Number	22	473	1,229	1,142	1,002	1,465	5,333
Percent	2.6%	6.9%	8.7%	5.9%	7.6%	7.9%	7.3%

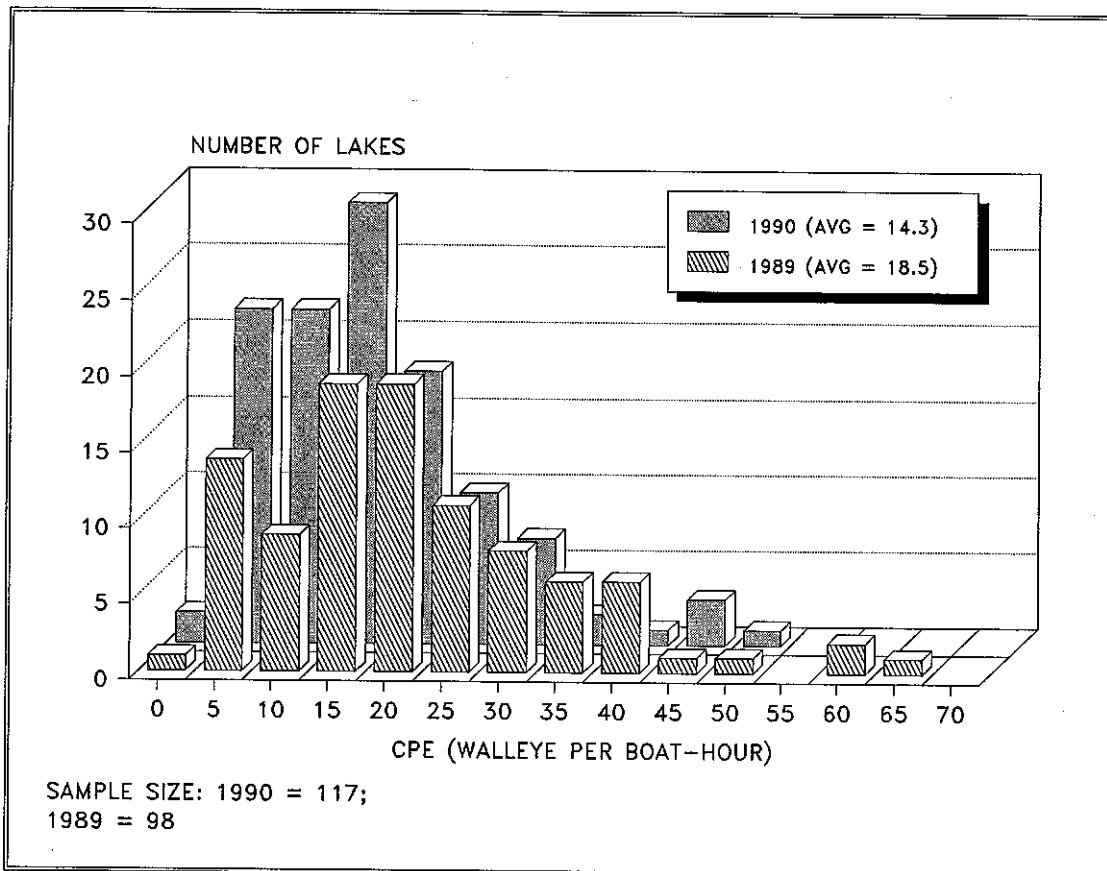
Figure 8. Sex composition of the walleye harvest during spring seasons from 1985-1990.



Catch per effort (CPE). In 1990 a total of 2008 boat-hours of spearing was recorded in which 24,948 walleye were caught. Catch per effort was 12.4 walleye per boat-hour (Appendix B).

Catch rates for 117 of the 119 lakes speared in 1990 ranged from 0.0 to 45.1 walleye per boat-hour (Figure 9; Appendix B) and averaged 14.3 per hour. Average catch rate by lake was 12.2 walleye per hour in 1987 (range: 0.0-46.4, N=66 lakes), 14.2 per hour in 1988 (range: 0.0-84.1, N=91 lakes), and 18.5 per hour in 1989 (range: 0.0-63.9, N=98 lakes) (Biological Issues Group 1988, Kmiecik and Shively 1990).

Figure 9. Walleye CPE (number per boat-hour) by lake during spring spearing seasons in 1989 and 1990.



Muskellunge Harvest

Harvest of muskellunge was greater in 1990 than during any of the five previous spearing seasons (Figure 10, Appendix E). During spring 1990 a total of 303 muskellunge were speared from 57 lakes in 11 counties. This harvest represented 26.4% of the combined tribal muskellunge quota (1148 fish) selected for 136 lakes in 15 counties.

The number of muskellunge harvested from each of these 57 lakes ranged from 1 to 49 fish (Appendix E). Ten or more muskellunge were taken from 7 lakes while 1-3 fish were speared in 32 lakes. In addition, the number of muskellunge harvested per surface-acre of water averaged 0.0036 and ranged from 0.0007 to 0.0607. No muskellunge were speared from the other 79 lakes.

Lengths of the 298 measured muskellunge averaged 36.1 inches (range: 13.5-51.5 inches) (Appendix F, Figure 11). During the six spring seasons combined, 876 of 916 speared muskellunge have been measured. Average length for this sample of fish was 36.1 inches (range: 13.5-53.0 inches).

Of the measured catch in 1990, 19% (57 of 298 muskellunge) were less than 32 inches while 4% (12 fish) were 45 inches and larger. For the 876 muskellunge measured from 1985-1990, 178 fish or 20% of the sample were less than 32 inches; 58 fish or 7% were 45 inches and larger (Appendix E).

The number of muskellunge per spearer averaged 0.80 for all tribes combined. In other words, 80 muskellunge were taken for every 100 spearers. The number per spearer was 0.47 in 1987, 0.37 in 1988, and 0.44 in 1989 (Kmiecik and Shively 1989, 1990). For individual tribes, the number per spearer was higher for Lac du Flambeau (1.15) and St Croix (1.05) compared to the other 4 tribes (range: 0.08-0.63).

Catch per boat-hour in 1990 averaged 0.15 muskellunge. The number per boat hour was 0.11 in 1987, 0.07 in 1988, and 0.11 in 1989.

Figure 10. Number of muskellunge harvested during spring spearing seasons from 1985-1990.

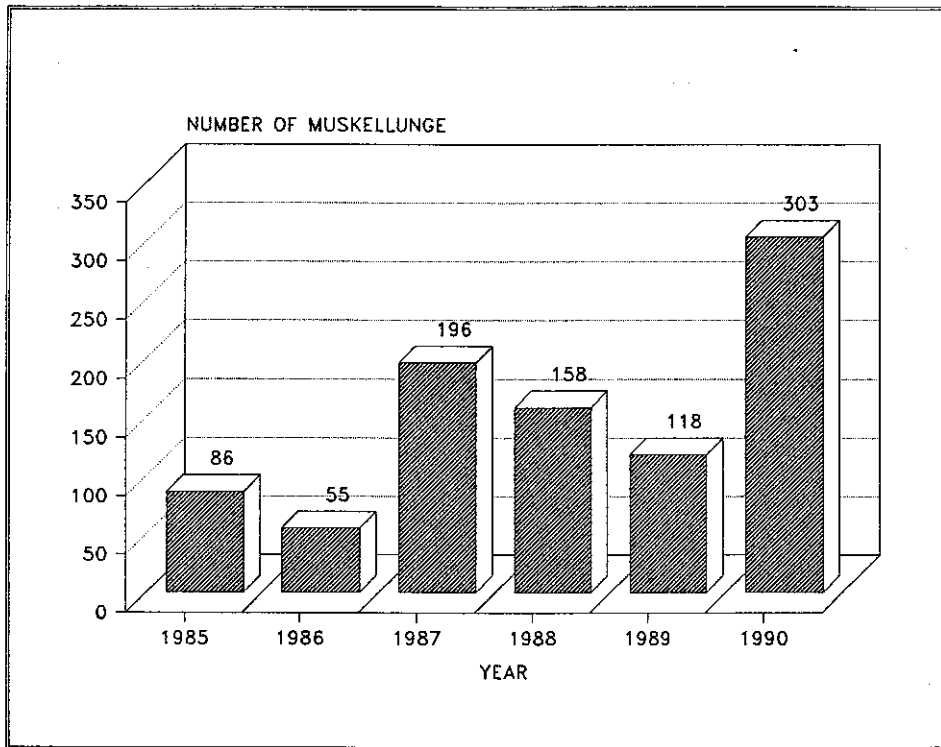
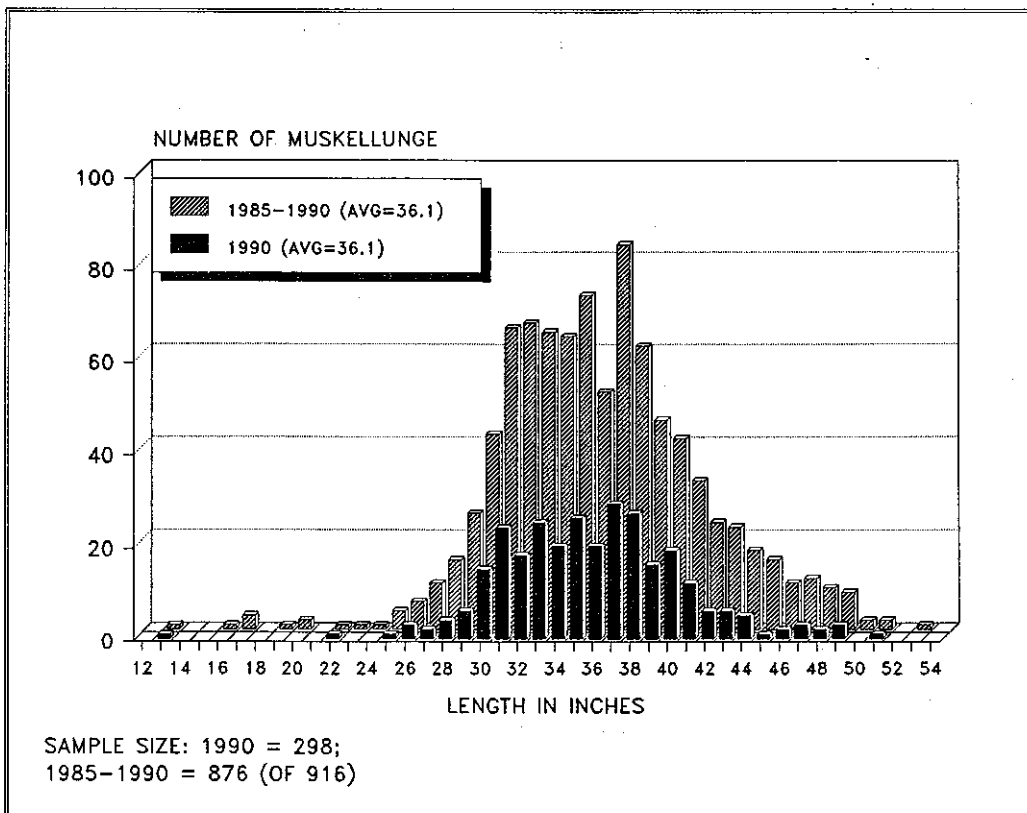


Figure 11. Length-frequency of muskellunge speared during 1990 and during the six year period 1985-1990.



Bass Harvest

Harvest of bass (largemouth and smallmouth combined) was greater in 1990 than during the two previous spring seasons but less than in 1987 (Appendix G, Figure 12). A total of 219 bass were harvested from 25 lakes in 9 counties (Appendix E). The majority of bass (179 fish or 82% of the total) were taken from 12 lakes speared by St. Croix. St. Croix members also speared the majority of bass in the three other years when more than 100 were harvested: 76% in 1987, 75% in 1988, and 78% in 1989 (Kmiecik and Shively 1989, 1990).

Lengths of 215 measured bass ranged from 9.7-21.8 inches (Figure 13) and averaged 15.1 inches (Appendix G). Average lengths during the 5 previous seasons (1985-1989) were 15.0, 15.4, 15.2, 15.8, and 15.3 inches, respectively. Of the 834 bass speared during the six spearing seasons combined, 736 have been measured (Appendix G). Average length for this sample was 15.3 inches.

Species was recorded for 216 bass in 1990 (Appendix E). A total of 167 largemouth bass was taken from 17 lakes in 8 counties and averaged 15.1 inches. Ten or more largemouth were speared from 3 lakes while 3 or less were taken from 11 lakes. The number harvested per surface acre of water averaged 0.0047 bass (range: 0.0001-0.0798).

A total of 49 smallmouth bass were speared from 13 lakes in 6 counties. Average length was 15.1 inches, identical to that for largemouth. Ten or more smallmouth were speared from 1 lake; 3 or less were harvested from 9 lakes. The number harvested per surface acre averaged 0.0022 bass (range: 0.0006-0.0072).

For all tribes combined the number of bass per spearer was 0.57 in 1990 compared to 0.66 in 1987, 0.39 in 1988, and 0.42 in 1989 (Kmiecik and Shively 1989, 1990). For individual tribes CPE (bass per spearer) was highest for St. Croix (2.8), as was the case during the three previous seasons (3.33 in 1987, 2.12 in 1988, and 2.10 in 1989). Catch per spearer for the other five tribes ranged from 0.0 to 0.7 bass in 1990.

The combined tribal catch rate for bass in 1990 was 0.11 bass per boat-hour compared to 0.14 in 1987, 0.07 in 1988, and 0.10 in 1989. Similarly, bass per boat-hour for St. Croix spearers was 0.53 in 1990 and within the range observed during previous seasons (0.72 in 1987, 0.43 in 1988, and 0.42 in 1989).

Figure 12. Number of bass harvested during spring spearing seasons from 1985-1990.

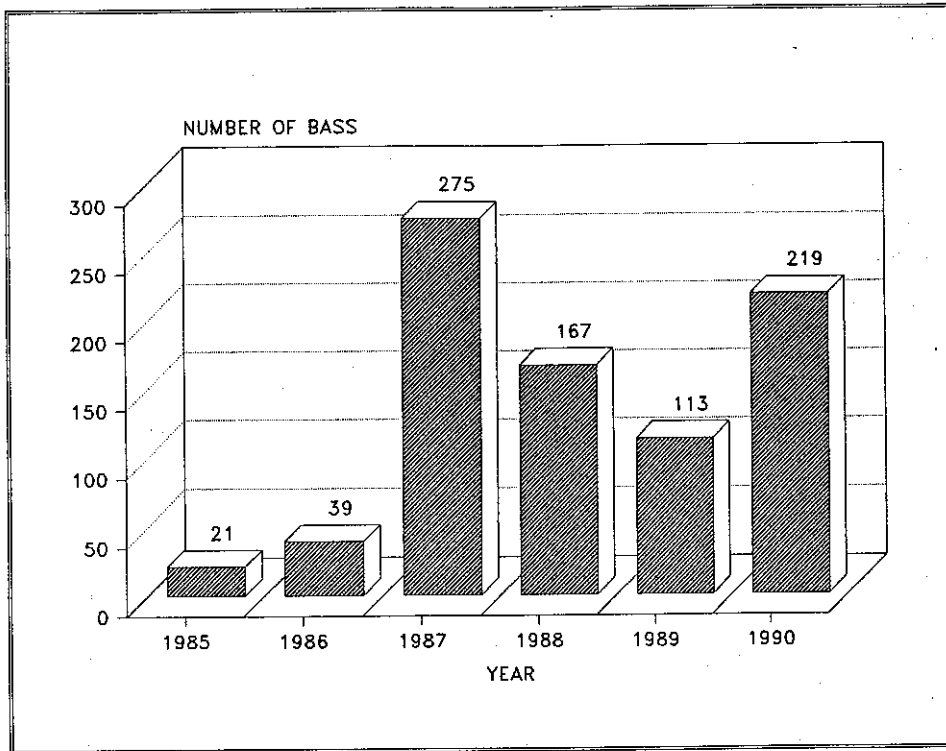
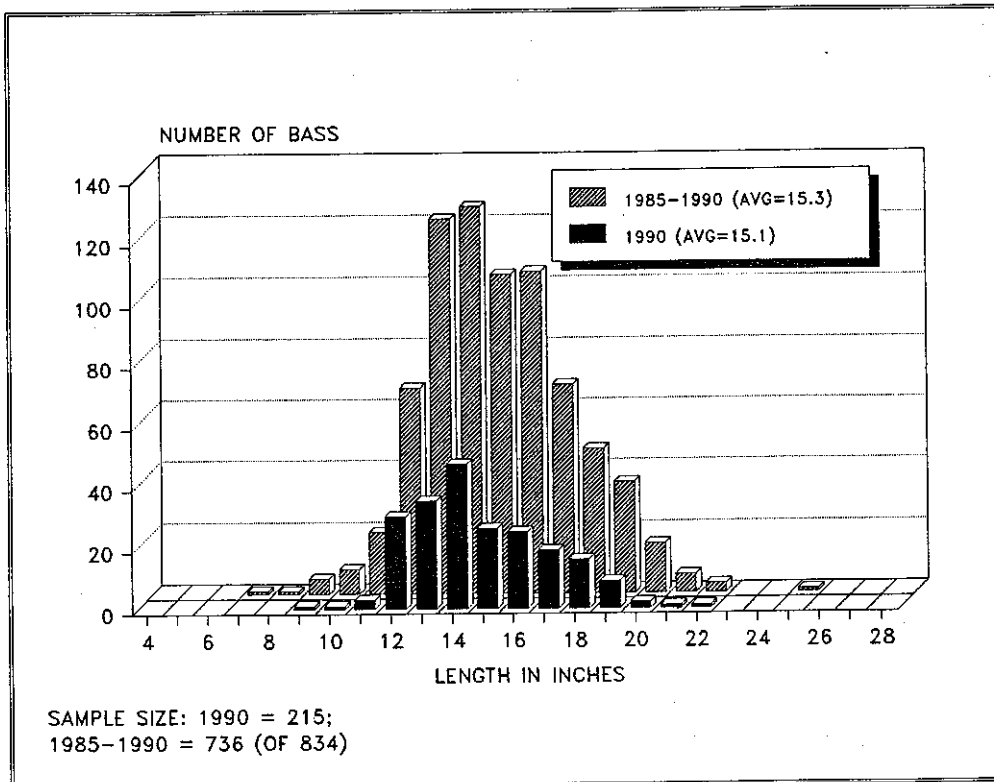


Figure 13. Length-frequency for bass taken during 1990 and during the six year period 1985-1990.



Northern Pike Harvest

Harvest of northern pike was greater in 1990 (34 fish) than during the previous spring season (14 pike) but lower than in 1987 and 1988 (41 and 59, respectively) (Figure 14, Appendix H). St. Croix spearers took 20 northern pike from 11 lakes. Harvest of pike continues to be incidental and an insignificant component of the fishery.

Northern pike were harvested from 22 lakes in 8 counties (Appendix E) and the number speared per lake never exceeded four. Catch per surface acre of water averaged 0.0022 (range: 0.0006-0.0072).

Length of 32 measured northern pike ranged from 15.8-38.0 inches and averaged 24.2 inches (Figure 15). During the six spring seasons combined a total of 163 northern pike have been speared (Appendix H). Of these, 131 were measured and lengths averaged 25.2 inches.

Figure 14. Number of northern pike taken during spring spearing seasons from 1985-1990.

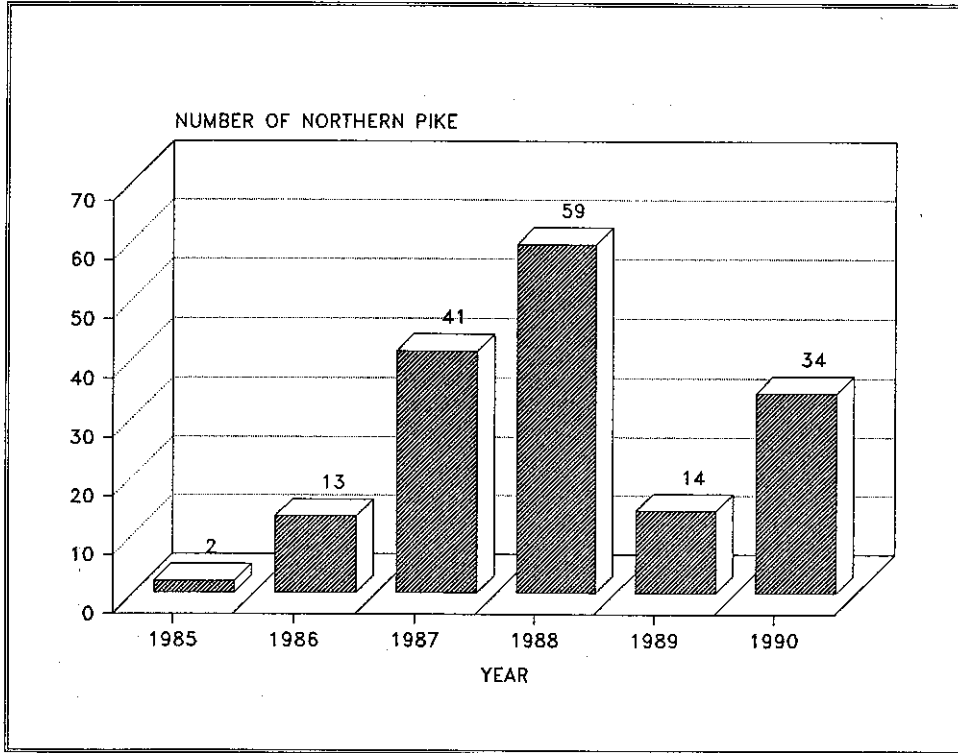
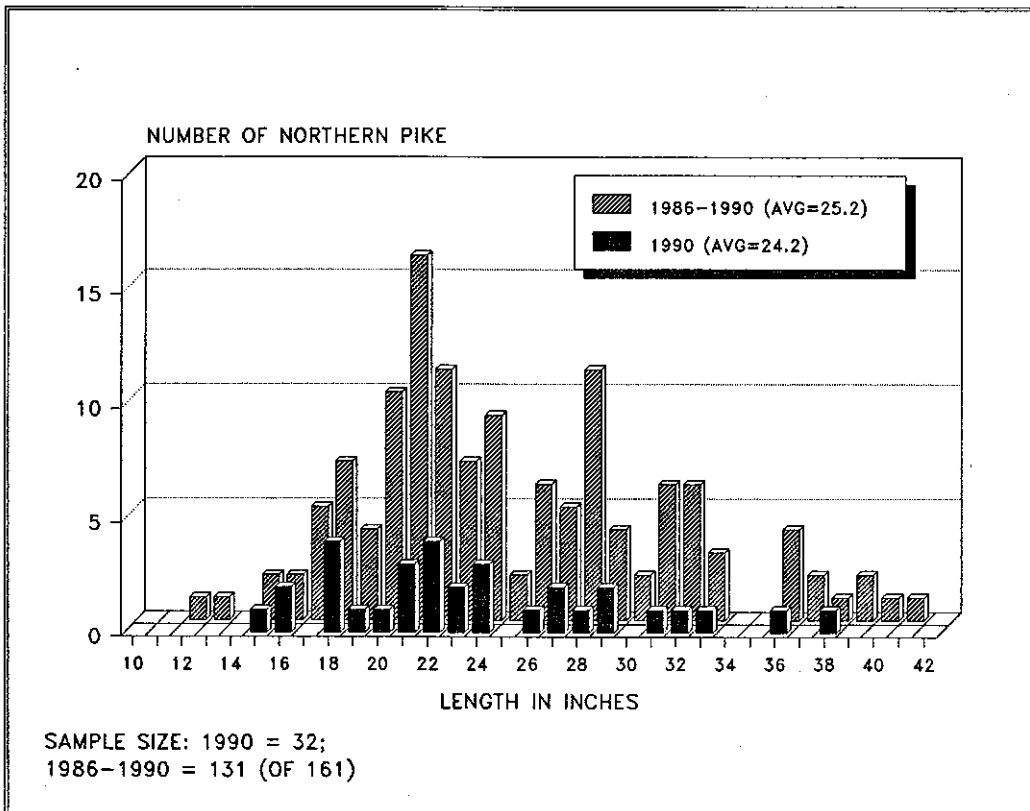


Figure 15. Length frequency of northern pike speared during 1990 and during the five year period 1986-1990.



ACKNOWLEDGMENTS

The author extends a "Meegwitch" to the following tribal 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 du Flambeau (LDF) - Maurice Beson, Charles Chapman, Joseph Cobb, Jerome Cross, Robert LaBarge, Clyde Mann, Lyle Mann, Steve Meshigaud, Sam Nelis, Michael Peltier, Albany Potts Jr., Julia Schuman, Gloria Smith, Thomas Thompson, Susan Wiggins, William Wildcat Jr., George Wolfe, and Richard Zortman;
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- Red Cliff (RC) - Christopher Bear, George Newago, Arthur Pratt, and Robert Pratt;
- St. Croix (STC) - Billie Arbuckle, Charles Bruce, Sandra Bruce, Lynn Holmes, Martin Johnson, Rodney Lowe, Darryl Moose, Jeff Nelson, Ted Nelson Jr., and Connie Rivard.

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I am grateful to Leanne Thannum for her 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.

The patience and humor of tribal members during the nightly counting and measuring of fish is recognized with a Meegwitch.

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APPENDIX A

Number of tribal members that speared one or more nights on lakes named by six Wisconsin Chippewa bands during the 1990 spring spear fishery.

NUMBER OF NIGHTS	LDF	MOLE LAKE	ST. LCO	ST. CROIX	BAD RIVER	RED CLIFF	TOTAL	PERCENT OF TOTAL
1	32	12	16	23	20	19	122	32.0%
2	29	7	13	12	7	7	75	19.7%
3	20	3	3	7	9	3	45	11.8%
4	6	2	3	6		2	19	5.0%
5	5	8	6	2	3	4	28	7.3%
6	8	3	2	3	2	1	19	5.0%
7	9	3		3	2	4	21	5.5%
8	7	3		4			14	3.7%
9	3	3		1	1		8	2.1%
10	6	2		1			9	2.4%
11	5			2	2		9	2.4%
12	6						6	1.6%
13	2						2	0.5%
14							0	0.0%
15							0	0.0%
16	2						2	0.5%
17	2						2	0.5%
TOTAL	142	46	43	64	46	40	381	

APPENDIX B

Number of walleye harvested nightly on lakes speared by six Wisconsin Chippewa bands during spring 1990. Also, number of spearer-nights (sp. nts), boat-hours and CPE (walleye per boat-hour) per lake. CPE data adjusted for missing boat-hour effort.

TRIBE, COUNTY	LAKE	AREA	TRIBAL WALLEYE QUOTA (A)	APRIL							MAY							WALLEYE HARVEST (B)	QUOTA BALANCE (A-B)	SP. BOAT- NTS HOURS (C)	CPE (B/C)	LAKE COUNT										
				17 T	18 W	19 R	20 F	21 SA	22 SU	23 M	24 T	25 W	26 R	27 F	28 SA	29 SU	30 M						31 T	1 W	2 R	3 F	4 F					
BAD RIVER (BRV)																																
	ENGLISH L	244	31									**	**	19	**			12	12	2	2.9	6.6	1									
	GORDON L	142	46								**	**	2					2	44	20	14.7	0.1	2									
	DIAMOND L	341	100								**	**	**	**				0	23	8	11.1	9.0	3A									
	JACKSON L	142	23																0	5	9.1	10.9	4A									
	L OMEN	1323	104			**							39	36.2		43	52	39	30	36.2	18.8	5A										
	MANEKAGON L	3227	721			397	285					43	121	71	192	2	7	17.8	7	17.8	10.8	6										
	PINE L	312	95															472	483	31	61.8	7.6	7A									
	TRUDE L	781	194															158	12	8	9.5	16.6	8A									
	TURTLE-FLAMBEAU FL	15545	955															78	4	6	3.6	21.7	9A									
	PIKE L	806	170															34	140	6	9.7	3.5	11									
	ROUND L	726	82															509	114	23	37.1	13.7	12									
	LOST LAND L	1304	174															142	1	8	11.4	12.5	13									
	NELSON L	2503	623			224	**	**										93	141	9	12.4	7.5	14									
	TEAL L	1049	143															107	1	8	7.4	14.5	15									
	CRAB L	949	234																													
	HARRIS L	507	108																													
TOTAL:				3803	224	397	285	378	378	236	2	14	13.1	18.0	236	111	102	245	30	21	12	70	0	43	121	71	2730	1073				
	NUMBER OF LAKES NAMED:	27901																														
	NUMBER OF SPEARER-NIGHTS:	16																														
	NUMBER OF BOAT-HOURS:																															
	CPE:																															
LAC COURTE OREILLES (LCO)																																
	TEAL L	1049	114																													
	LOST LAND L	1304	139																													
	GRINDSTONE L	3111	333																													
	L CHIPPEWA	15300	1207			46	**	23	**	212	66																					
	LAC COURTE OREILLES	5039	478			45	53	234		**	133																					
	LITTLE ROUND L	229	51																													
	ROUND L	3054	484			25	145	182	69	**	69																					
	SAND L	928	51			**	**	**	**	**	**																					
	SISSABAGAMA L	719	50							**	**																					
	SPIDER L	1454	50																													
	WHITEFISH L	786	68			**	37	15																								
TOTAL:				3025	91	78	439	394	283	283	2	5	10.2	8.9	8.9	294	67	163	0	1	0	1831	1194									
	NUMBER OF LAKES NAMED:	32973																														
	NUMBER OF SPEARER-NIGHTS:	11																														
	NUMBER OF BOAT-HOURS:																															
	NUMBER OF BOAT-HOURS:																															
	CPE:																															

APPENDIX B (CONTINUED)

Number of walleye harvested nightly on lakes speared by six Wisconsin Chippewa bands during spring 1990. Also, number of spearer-nights (sp. nts), boat-hours and CPE (walleye per boat-hour) per lake. CPE data adjusted for missing boat-hour effort.

TRIBE, COUNTY	LAKE	AREA	APRIL							MAY							WALLEYE HARVEST (B)	QUOTA BALANCE (A-B)	SP. BOAT- NTS HOURS (C)	CPE (B/C)	LAKE COUNT
			17 T	18 W	19 R	20 F	21 SA	22 SU	23 M	24 T	25 W	26 R	27 F	28 SA	29 SU	30 M					
LAC DU FLAMBEAU (LDF)																					
IRON	TRUDE L	* 781																			
IRON	TURTLE-FLAMBEAU FL	* 13545			**	2675	1622	221	171												
IRON	GILE FL	3384					**	58	**												
LINCOLN	ALEXANDER FL	677																			
LINCOLN	L MOHAWKSIN	1910	0																		
LINCOLN	SPIRIT R FL	1663	**																		
MARATHON	BIG EAU PLEINE RES	6830	202																		
ONEIDA	ALVA L	201																			
ONEIDA	BEARSKIN L	400	103																		
ONEIDA	BIG L	865																			
ONEIDA	BLUE L	456																			
ONEIDA	CARROL L	335																			
ONEIDA	CHAIN L	219																			
ONEIDA	CLEAR L	846			48				69		**							**			
ONEIDA	COLUMBUS L	670																			
ONEIDA	CRESCENT L	612																			
ONEIDA	DAM L	744	272																		
ONEIDA	HAT RAPIDS FL	650	120																		
ONEIDA	INDIAN L	397																			
ONEIDA	ISLAND L	295																			
ONEIDA	KATHERINE L	590	84		77																
ONEIDA	KAWAGUESAGA L	670																			
ONEIDA	LITTLE FORK L	354																			
ONEIDA	MANSON L	236																			
ONEIDA	MEDICINE L	372																			
ONEIDA	MERCER L	257																			
ONEIDA	MINOCQUA L	1360			173			**			32										
ONEIDA	MOEN L	460																			
ONEIDA	MUSKELLUNGE L	284																			
ONEIDA	PELICAN L	* 3585																			
ONEIDA	PINE L	240																			
ONEIDA	RAINBOW FL	2035	181																		
ONEIDA	RHINELANDER FL	1326																			
ONEIDA	RICE R FL CHAIN	3916																			
ONEIDA	SAND L	540	171					**													
ONEIDA	SHISHOGAMA L	716																			
ONEIDA	SPIRIT L	368																			
ONEIDA	SQUASH L	392																			
ONEIDA	SQUIRREL L	1317																			
ONEIDA	TOMAHAWK L	3392																			
ONEIDA	TWO SISTERS L	705																			
ONEIDA	VIRGIN L	276																			
ONEIDA	WHITEFISH L	205																			
ONEIDA	WILLOW FL	5135	57					**													
PRICE	PIKE L	806																			
PRICE	ROUND L	726																			
PRICE	BLOCKHOUSE L	242																			
PRICE	BUTTERNUT L	1006																			

APPENDIX B (CONTINUED)

Number of walleye harvested nightly on lakes speared by six Wisconsin Chippewa bands during spring 1990. Also, number of spearer-nights (sp. nts), boat-hours and CPE (walleye per boat-hour) per lake. CPE data adjusted for missing boat-hour effort.

TRIBE, COUNTY	LAKE	AREA	APRIL							MAY							WALLEYE HARVEST (B)	QUOTA (A-B)	SP. NITS	BOAT- HOURS (C)	CPE (B/C)	LAKE COUNT
			17	18	19	20	21	22		23	24	25	26	27	28	29						
VILAS	PAPOOSE L	428														95	19	5	6.7	14.1	70	
VILAS	PICKEREL L	293									**					27	4	4.3	6.4	71		
VILAS	PLUM L	1108														184	13	16.1	11.4	72		
VILAS	PRESQUE ISLE L	1280										**				294	16	16.5	17.8	73		
VILAS	REST L	640										40				109	6	3.5	31.6	74		
VILAS	S TURTLE L	454											57			57	4	N/A		75		
VILAS	S TWIN L	642											34			34	7	11.2	3.0	76		
VILAS	SCATTERING RICE L	267														0						
VILAS	SPARKLING L	127														0						
VILAS	SPIDER L	272														33	5	2.9	11.3	77		
VILAS	SQUAW L	785														0						
VILAS	STAR L	1206									179					179	19	7.9	22.6	78		
VILAS	TROUT L	3816														277	15	7.3	38.2	79		
VILAS	WHITE SAND L	728														323	1	25	29.4	80		
VILAS	WILD RICE L	379														86	6	4.2	20.6	81		
VILAS	WOLF L	393														0						
VILAS	YELLOW BIRCH L	202														0						
VILAS	YELLOW BIRCH L	202														0						
VILAS	YELLOW BIRCH L	202														0						
TOTAL:			110567	611	1084	964	3103	2251	1020	283	1448	1058	579	394	376	436	13842	10745				
NUMBER OF LAKES NAMED:			112	6	9	8	8	7	10	7	8	8	9	10	10	10	148		751	786.5	17.2	
NUMBER OF SPEARER-NIGHTS:				58	56	55	97	74	58	38	67	55	35	36	37	30						
NUMBER OF BOAT-HOURS:				69.8	53.0	64.5	113.3	90.8	65.7	24.7	63.8	59.3	32.8	34.7	34.1	27.8						
CPE:				8.8	20.5	14.9	27.4	24.8	15.5	11.5	20.3	17.8	17.6	11.3	7.2	15.7						

APPENDIX B (CONTINUED)

Number of walleye harvested nightly on lakes speared by six Wisconsin Chippewa bands during spring 1990. Also, number of spearer-nights (sp. nts), boat-hours and CPE (walleye per boat-hour) per lake. CPE data adjusted for missing boat-hour effort.

TRIBE, COUNTY	LAKE	AREA	APRIL							MAY							WALLEYE HARVEST (B)	QUOTA BALANCE (A-B)	SP. BOAT- NTS HOURS (C)	CPE (B/C)	LAKE COUNT		
			11 W	12 R	13 F	14 SA	15 SU	16 M	17 T	18 W	19 R	20 F	21 SA	22 SU	23 M	24 T						25 W	26 R
MOLE LAKE (MLK)																							
	BUTTERNUT L	1292								254	49												
FOREST	FRANKLIN L	892									21	199											
FOREST	LUCERNE	1026										**				**							
FOREST	L METONGA	2157	34						101	**	71	**		2	**								
FOREST	PINE L	1670							15	100													
FOREST	ROBERTS L	414																					
MARINETTE	HIGH FALLS RESERVOIR	1498												11	246	22	**						
ONEIDA	PELICAN L	3585						304	295														
ONEIDA	WILLOW FL	5135																					
ONEIDA	BIG FORK L	690																					
ONEIDA	BIG STONE L	548						175															
ONEIDA	LONG L	620						134															
ONEIDA	PLANTING GROUND L	1012																					
ONEIDA	SEVENMILE L	503						151			**												
VILAS	KENTUCK L	957						167			132			172	34								
VILAS	LAC VIEUX DESERT	4300																					
TOTAL:			26299					354	295	0	0			185	280	22	0	0	1438	221	297.8	11.9	
NUMBER OF LAKES NAMED:			16					2	2	0	0		3	2	2	0	2	0	36				
NUMBER OF SPEARER-NIGHTS:								28	19	0	0		15	20	21	19	22	17					
NUMBER OF BOAT-HOURS:								41.8	19.8	0	0		16.8	26.5	32.7	25.5	38.6	37.5	22.1				
CPE:								8.5	14.9				2.0	12.0	12.6	8.7	11.0	16.1	19.7				
RED CLIFF (RC)																							
BAYFIELD	DIAMOND L	341																					
BAYFIELD	JACKSON L	142																					
BAYFIELD	L ONEN	1323																					
BAYFIELD	LONG L	263																					
BAYFIELD	NAMEKAGON L	3227																					
BAYFIELD	BONY L	191																					
BAYFIELD	MIDDLE EAU CLAIRE L	926																					
BAYFIELD	PIKE L CHAIN	945																					
BAYFIELD	UPPER EAU CLAIRE L	1030																					
DOUGLAS	ANNICON L	426																					
DOUGLAS	L MINNESUING	432																					
DOUGLAS	L NEBAGAMON	914																					
DOUGLAS	LOWER EAU CLAIRE L	802																					
DOUGLAS	UPPER ST CROIX L	855																					
TOTAL:			11817					167	116	250	211	613	142	81	189	215	0	0	761	124	181.4	10.9	
NUMBER OF LAKES NAMED:			14					3	3	3	5	1	4	4	6	2	2	0	33				
NUMBER OF SPEARER-NIGHTS:								14	8	16	13	29	10	6	15	13							
NUMBER OF BOAT-HOURS:								25.1	10.5	26.3	24.4	35.3	22.8	6.7	12.7	17.6							
CPE:								6.7	11.0	9.5	8.6	17.4	6.2	12.1	14.9	12.2							

APPENDIX B (CONTINUED)

Number of walleye harvested nightly on lakes speared by six Wisconsin Chippewa bands during spring 1990. Also, number of spearer-nights (sp. nts), boat-hours and CPE (walleye per boat-hour) per lake. CPE data adjusted for missing boat-hour effort.

TRIBE COUNTY	LAKE	AREA	APRIL														WALLEYE QUOTA (A-B)	SP. BOAT-NITS (C)	CPE (B/C)	LAKE COUNT					
			MAY							JUNE											WALLEYE HARVEST (B)				
			10 T	11 W	12 R	13 F	14 SA	15 SU	16 M	17 T	18 W	19 R	20 F	21 SA	22 SU	23 M	24 T	25 W	26 R						
ST. CROIX (STC)			79																	0	79	10	14.4	1.5	100
BARRON	BEAVER DAM L	1112														9				21	13	10.7	8.2	101	
BARRON	SAND L	322																		88	7	5.1	2.7	102	
BURNETT	BIG MCKENZIE L	1185			88	13														14	111	2	2.3	12.2	103
BURNETT	CLAM R FL	473														**				28	12	8.9	1.1	104	
BURNETT	DUNHAM L	243			28															0	24	4	4.5	6.9	105
BURNETT	LIPSETT L	393																		0	35	19	23.4	6.7	106
BURNETT	LITTLE MCGRAW L	55																		31	11	4	8.7	2.1	107
BURNETT	ROONEY L	322			5	0	5				**	31								18	15	8	21.6	2.4	108
BURNETT	SAND L	962								0										156	92	26	40.4	7.8	109
BURNETT	YELLOW L	2287																		18	20	7	5.3	9.1	110
DOUGLAS	RED L	258								237						48				48	4	47	88.6	1.2	111
DOUGLAS	WHITEFISH L	832																		51	4	28	20.7	0.0	112
POLK	WAPOGASSET L	1186																		0	0	4	5.6	2.3	113
POLK	BALSAM L	2054																		315	20	13	14.8	10.1	114
POLK	BIG BUTTERNUT L	378																		4	29	2	5.4	4.3	115
POLK	BIG ROUND L	1015																		109	71	19	34.8	4.5	116
POLK	DEER L	807																		13	0	5	9.2	3.4	117
POLK	HALF MOON L	579				5														13	0	2	2.2	0.9	118
POLK	CEDAR L	1107	64	85																149	121	13	14.8	10.1	119
ST CROIX																				23	16	2	5.4	4.3	
WASHBURN	GILMORE L	389																		157	38	10	11.8	2.0	
WASHBURN	L NANCY	772																		24	68	10	3.4		
WASHBURN	LONG L	3290																		31	-2	5	9.2	3.4	
WASHBURN	MATTHEWS L	263								**	30									2	14	2	2.2	0.9	
WASHBURN	MIDDLE MCKENZIE L	530																		2	814	229	338.4	3.8	
TOTAL:		20814	64	85	121	18	36	0	0	113	237	118	110	44	133	57	134	14	4	1288	814				
	NUMBER OF LAKES NAMED:	24	1	1	3	3	3	0	0	3	1	5	4	5	4	4	5	3	4	49					
	NUMBER OF SPEARER-NIGHTS:		6	7	12	7	22		14	18	11	25	17	20	10	19	30	11							
	NUMBER OF BOAT-HOURS:		6.7	8.1	16.5	8.7	41.1		25.6	26.3	23.1	51.5	24.6	26.9	13.5	29.4	22.9	13.5							
	CPE:		9.6	10.5	7.3	2.1	0.9		4.4	9.0	5.1	2.1	1.8	4.9	4.2	4.6	0.6	0.3							

APPENDIX B (CONCLUDED)

Number of walleye harvested nightly on lakes speared by six Wisconsin Chippewa bands during spring 1990. Also, number of spearer-nights (sp. nts), boat-hours and CPE (walleye per boat-hour) per lake. CPE data adjusted for missing boat-hour effort.

TRIBE, COUNTY	LAKE	TRIBAL WALLEYE QUOTA (A)	APRIL							MAY							WALLEYE HARVEST (B)											
			T	W	R	F	S	SU	M	T	W	R	F	SU	M	T		W	R	F								
GRAND TOTAL:		41375	64	85	475	313	36	0	34	1445	1938	1856	4685	4281	2390	1008	2456	1478	991	424	398	448	142	61	60	182	98	25348
NUMBER OF LAKES NAMED:			1	1	5	5	3	0	1	16	18	27	29	24	28	25	28	24	24	18	16	14	14	12	10	11	9	363
NUMBER OF SPEARER-NIGHTS:			6	7	40	26	22	15	120	109	117	197	179	140	89	135	118	86	39	43	36	15	31	14	13	18	1615	
NUMBER OF BOAT-HOURS:			6.7	8.1	58.3	28.4	41.1	16.8	160	133	163	267.9	230	198	91.6	160	126	94.6	38.6	41	44.3	16	24	13	22	26.7	2008.4	
CPE:			9.6	10.5	8.1	11.0	0.9	2.0	9.0	14.6	11.4	17.5	18.2	12.1	11.0	14.2	11.8	10.5	11.0	6.5	10.1	8.9	2.6	4.7	8.3	3.7	12.4	

* = INTER-TRIBAL TRANSFERS OF WALLEYE DURING THE SEASON OCCURRED ON 6 LAKES AND WERE AS FOLLOWS:
 1) PELICAN L (ONEIDA CO) - 431 FISH FROM LDF QUOTA TO MLK'S,
 2) CRAB L (VILAS CO) - 130 FISH FROM LDF QUOTA TO BRV'S,
 3) HARRIS L (VILAS CO) - 108 FISH FROM LDF QUOTA TO BRV'S,
 4) DIAMOND L (BAYFIELD CO) - 49 FISH FROM RC QUOTA TO BRV'S,
 5) TRUDE L (IRON CO) - 48 FISH FROM LDF QUOTA TO BRV'S,
 6) TURTLE FLAMBEAU FL (IRON CO) - 45 FISH FROM BRV QUOTA TO LDF'S.

** = LAKE NAMED BUT NO SPEARING OCCURRED.
 ~ = BOAT-HOUR EFFORT NOT COMPLETELY RECORDED.

APPENDIX C

Total number of walleye per inch group that were speared during spring 1990. Data arranged by tribe and alphabetically by County and lake.

TRIBE, COUNTY	LAKE	AREA IN ACRES	INCH GROUP																												TOTAL NUMBER	TOTAL LENGTH	MEAN LENGTH	NUMBER PER SEX		
			8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	MALE	FEM	UNK							
BAD RIVER (BRV)	ENGLISH L	244				2	6	2	2	1	1	4																19	279.7	14.7	7	1	11			
	ASHLAND GORDON L	142																									2	25.6	12.8			2				
	BAYFIELD DIAMOND L	* 341								1	2	10	31	28	23	3	1	1										100	1914.9	19.1	98	2				
	BAYFIELD L OWEN	* 1323			3	13	23	14	12	11	10	4	3	2	1	2	1										99	1610.2	16.3	87	12					
	BAYFIELD NAMEKAGON L	* 3227			5	21	42	44	55	51	48	36	16	15	6	4	1	3	1								348	5331.4	15.3	309	37	2				
	IRON PINE L	312		3	1	6	3	7	5	7	6	2	2	1													43	571.3	13.3	22	1	20				
	IRON TRUDE L	* 781		6	8	12	11	25	31	27	37	15	9	5	2	3	1										192	3067.2	16.0	85	4	103				
	IRON TURTLE-FLAMBEAU FL	* 13545		1	5	5	18	24	29	20	14	13	6	5	4	1											145	2169.4	15.0	117	10	18				
	PRICE PIKE L	* 806		6	9	16	27	26	11	1	2	2															101	1382.1	13.7	89	10	2				
	PRICE ROUND L	* 726		17	16	16	16	18	8	1	1																78	977.1	12.5	77	1					
	SAWYER LOST LAND L	1304			2	3	8	4	6	3	4		2	1	1	1											34	517.2	15.2	32		2				
	SAWYER NELSON L	2503		2	16	56	42	55	66	40	19	9	4	1	1	1				2	1					315	4662.4	14.8	308	6	1					
	SAWYER TEAL L	1049		3	14	26	29	21	19	10	3	9	3	1	2												142	2056.3	14.5	107	20	15				
	VILLAS CRAB L	949		2	3	12	25	18	15	10	4	1	1	1													93	1261.3	13.6	64	6	23				
	VILLAS HARRIS L	507		6	5	10	15	15	22	9	9	5	2	4	2	1											107	1645.9	15.4	75	12	20				
	TOTAL:		27759	3	4	59	113	241	257	285	258	174	148	109	73	50	15	6	12	3	6	1	0	1	0		1818	27472.0	15.1	1477	122	219				
	LAC COURTE OREILLES (LCO)	GRINDSTONE L	3111				4	23	37	50	57	49	47	26	10	9	7	4	2	1	1							327	5575.0	17.0	192	126	9			
L CHIPPWA		15300	6	12	30	55	62	53	67	65	64	34	16	12	5	4	4	3	3	1						496	8177.0	16.5	337	12	147					
LAC COURTE OREILLES		5039			2	27	42	52	112	72	100	44	6	5	5	7	1	3								478	8683.5	18.2	278	181	19					
ROUND L		3054		5	22	82	130	86	49	32	18	12	8	5	5	5	4	6	7	1	1					478	7561.3	15.8	407	60	11					
WHITEFISH L		786				3	6	8	7	4	6	5	5	4	1	1											52	928.5	17.9	34	13	5				
TOTAL:			27290	6	17	56	165	262	239	232	262	207	177	83	36	23	19	17	11	10	7	1	1			1831	30925.3	16.9	1248	392	191					
LAC DU FLAMBEAU (LDF)	TRUDE L	* 781				2	1	7	8	14	14	9	10	3	1													69	1112.2	16.1	64	1	4			
	TURTLE-FLAMBEAU FL	* 13545	1	8	52	82	122	104	97	76	40	25	7	2													616	9546.8	15.5	547	61	8				
	GILE FL	3384		6	34	29	21	28	25	17	4	6	1														172	2552.7	14.8	146	6	20				
	BIG EAU PLEINE RES	6830			3	3	3	3	23	50	38	19	13	5	5	4	1										162	2783.2	17.2	146	15	1				
	BEARSKIN L	400			2	13	20	31	16	9	5	1	3	3													103	1617.0	15.7	100	1	2				
	CLEAR L	846		1	1	6	5	23	25	29	16	5	5	3	1	2	2	1	1								126	2048.1	16.3	68	45	13				
	CRESCENT L	612		1	7	29	39	33	31	13	11	9	7	4	3												192	3109.8	16.2	145	36	11				
	DAM L	744			11	24	39	28	11	3	3	1															120	1764.1	14.7	110	9	1				
	INDIAN L	397																									2	44.7	22.4	1	1					
	KATHERINE L	590		3	4	4	4	13	4	6	5	3	1	1													47	744.4	15.8	31	15	1				

APPENDIX C (CONCLUDED)

Total number of walleye per inch group that were speared during spring 1990. Data arranged by tribe and alphabetically by County and Lake.

TRIBE, COUNTY	LAKE	AREA IN ACRES	INCH GROUP																												TOTAL NUMBE	TOTAL LENGTH	MEAN LENGTH	NUMBER PER SEX							
			8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	MALE	FEM UNK													
BAYFIELD	L OMEN	* 1323										3	11	8	12	13	16	7	8	2	2	1	1												84	1480.2	17.6	68	15	1	
BAYFIELD	NAMEKAGON L	* 3227										46	60	60	58	33	24	10	5	7	4	5	2	2	2										358	5669.6	15.8	309	43	6	
BAYFIELD	MIDDLE EAU CLAIRE L	926										36	29	24	16	14	3	2	1	1	1	1													252	3705.0	14.7	226	13	13	
BAYFIELD	PIKE L CHAIN	945										61	26	18	14	12	4	10	2	3	2	1	1	1	2	1									226	3328.1	14.7	199	16	11	
BAYFIELD	UPPER EAU CLAIRE L	1030										5	17	46	44	30	30	30	16	10	8	1	1	1											242	4245.2	17.5	226	15	1	
DOUGLAS	LOWER EAU CLAIRE L	802										3	31	28	22	19	20	32	24	14	11	8	2	3	2										222	3641.4	16.4	175	35	12	
DOUGLAS	UPPER ST CROIX L	855										2	23	42	34	44	43	21	3	1																214	3425.8	16.0	197	7	10
TOTAL:		9591										1	52	152	230	214	218	220	181	138	80	46	31	21	10	8	5	6	4	1			1623	25929.5	16.0	1423	145	55			
ST CROIX (STC)																																									
BURNETT	BIG MCKENZIE L	1185										3	14	20	18	9	6	6	5	1	2	1	1	2											88	1500.1	17.0	76	6	6	
BURNETT	CLAM R FL	473																																		14	301.8	21.6		9	5
BURNETT	LIPSETT L	393																																		28	519.6	18.6	25	2	1
BURNETT	ROONEY L	322																																		10	211.2	21.1	9	1	
BURNETT	SAND L (NORTH)	962																																		52	1020.9	19.6	35	13	4
BURNETT	YELLOW L	2287																																		156	2763.6	17.7	46	17	93
DOUGLAS	RED L	258																																		18	344.2	19.1	13	3	2
DOUGLAS	WHITEFISH L	832																																		51	874.7	17.2	42	9	
POLK	BALSAM L	2054																																		315	5368.0	17.0	268	19	28
POLK	BIG BUTTERNUT L	378																																		48	836.3	17.4	44	2	2
POLK	BIG ROUND L	1015																																		109	2311.7	21.2	67	21	21
POLK	HALF MOON L	579																																		13	256.4	19.7	3	3	7
ST CROIX	CEDAR L	1107																																		149	2258.0	15.2	133	6	10
WASHBURN	GILMORE L	389																																		23	413.3	18.0	21	2	
WASHBURN	L NANCY	772																																		157	2816.2	17.9	136	17	4
WASHBURN	LONG L	3290																																		24	438.0	18.3	22	2	
WASHBURN	MATTHEWS L	263																																		31	591.8	19.1	26	1	4
WASHBURN	MIDDLE MCKENZIE L	530																																		2	34.3	17.1	1	1	
TOTAL:		17089																																		1288	22860.1	17.7	967	134	187
GRAND TOTAL:																																									
PERCENT OF TOTAL:				4	14	183	649	1513	2370	2917	2856	2295	1862	1288	932	556	307	202	160	100	107	71	63	30	15	5	1								18500	295047.1	15.9	14693	2342	1465	
			0%	0%	1%	4%	8%	13%	16%	15%	12%	10%	7%	5%	3%	2%	1%	1%	1%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	79%	13%	8%				

* = WALLEYE HARVESTED FROM LAKE BY TWO TRIBES.

APPENDIX D

Number of walleye per inch group taken during spring spearing seasons from 1985-1990.

INCH GROUP	NUMBER OF WALLEYE IN:						6 YEAR TOTAL	PERCENT OF TOTAL
	1985	1986	1987	1988	1989	1990		
5								
6		1					1	0.0%
7							0	0.0%
8				3	1	4	8	0.0%
9	2	3	17	10	4	14	50	0.1%
10	5	49	123	121	60	183	541	0.7%
11	31	358	558	678	306	649	2580	3.5%
12	140	680	1282	1688	925	1513	6228	8.4%
13	265	928	1892	2755	1684	2370	9894	13.4%
14	286	1068	2133	3289	2222	2917	11915	16.1%
15	293	985	1895	2951	2154	2856	11134	15.0%
16	247	939	1666	2311	1919	2295	9377	12.7%
17	172	801	1374	1658	1390	1862	7257	9.8%
18	145	458	1113	1297	1010	1288	5311	7.2%
19	118	255	811	932	634	932	3682	5.0%
20	33	149	513	596	328	556	2175	2.9%
21	25	72	259	316	210	307	1189	1.6%
22	18	50	148	214	109	202	741	1.0%
23	18	23	116	134	76	160	527	0.7%
24	11	9	86	124	67	100	397	0.5%
25	7	10	76	89	48	107	337	0.5%
26	9		57	75	45	71	257	0.3%
27	10	3	42	56	31	63	205	0.3%
28	5	1	28	32	18	30	114	0.2%
29	8		25	30	8	15	86	0.1%
30	11		8	9	3	5	36	0.0%
31	6		2		2	1	11	0.0%
32	2						2	0.0%
33	1						1	0.0%
TOTAL NO. MEASURED:	1,868	6,842	14,224	19,368	13,254	18,500	74,056	
TOTAL LENGTH:	30,382	106,051	226,789	306,926	211,645	295,047	1,176,840	
AVERAGE LENGTH:	16.3	15.5	15.9	15.8	16.0	15.9	15.9	
TOTAL NO. SPEARED:	2,761	6,940	21,321	25,969	16,054	25,348	98,393	
PERCENT MEASURED:	67.7%	98.6%	66.7%	74.6%	82.6%	73.0%	75.3%	

APPENDIX E

Number, average length, and harvest per acre of bass (largemouth and smallmouth) muskellunge, and northern pike from various lakes during spring spearing in 1990.

LAKE COUNT	SPECIES AND LAKE	COUNTY	AREA QUOTA	NUMBER HARVESTED	TOTAL LENGTH	AVERAGE LENGTH	NUMBER PER ACRE
BASS SP.							
1	LOST LAND	SAWYER	1304	1	N/A	N/A	0.0008
2	TEAL	SAWYER	1049	1	N/A	N/A	0.0010
3	SQUAW	VILAS	785	1	16.6	16.6	0.0013
			TOTAL:	3		16.6	0.0010
LARGEMOUTH BASS							
1	CLAM RIVER FL.	BURNETT	473	1	17.1	17.1	0.0021
2	ROONEY	BURNETT	322	1	14.1	14.1	0.0031
3	YELLOW	BURNETT	2287	19	309.8	16.3	0.0083
4	RED	DOUGLAS	258	7	109.5	15.6	0.0271
5	WHITEFISH (BARDON)	DOUGLAS	832	1	14.9	14.9	0.0012
6	CLEAR	ONEIDA	846	1	15.4	15.4	0.0012
7	BALSAM	POLK	2054	33	516.2	15.6	0.0161
8	BIG ROUND	POLK	1015	81	1170.7	14.5	0.0798
9	DEER	POLK	807	5	92.5	18.5	0.0062
10	HALFMOON	POLK	579	9	133.7	14.9	0.0155
11	L CHIPPEWA	SAWYER	15300	1	14.2	14.2	0.0001
12	ROUND	SAWYER	3054	1	14.6	14.6	0.0003
13	WHITEFISH	SAWYER	786	1	14.1	14.1	0.0013
14	CEDAR	ST CROIX	1107	2	29.7	14.9	0.0018
15	LAC VIEUX DESERT	VILAS	4300	1	N/A	N/A	0.0002
16	L NANCY	WASHBURN	772	1	12.0	12.0	0.0013
17	MIDDLE MCKENZIE	WASHBURN	530	2	27.2	13.6	0.0038
			TOTAL:	167	2505.7	15.1	0.0047
SMALLMOUTH BASS							
1	CLAM RIVER FL.	BURNETT	473	1	12.7	12.7	0.0021
2	YELLOW	BURNETT	2287	2	27.3	13.7	0.0009
3	WHITEFISH (BARDON)	DOUGLAS	832	6	80.6	13.4	0.0072
4	BUTTERNUT	FOREST	1292	3	47.1	15.7	0.0023
5	FRANKLIN	FOREST	892	1	15.3	15.3	0.0011
6	CLEAR	ONEIDA	846	2	29.4	14.7	0.0024
7	PELICAN	ONEIDA	3585	2	35.4	17.7	0.0006
8	SEVENMILE	ONEIDA	503	1	13.5	13.5	0.0020
9	DEER	POLK	807	1	16.3	16.3	0.0012
10	BIG ROUND	POLK	1015	7	96.8	13.8	0.0069
11	LAC COURTE OREILLES	SAWYER	5039	5	83.7	16.7	0.0010
12	LOST LAND	SAWYER	1304	1	N/A	N/A	0.0008
13	ROUND	SAWYER	3054	17	265.2	15.6	0.0056
			TOTAL:	49	723.3	15.1	0.0022

APPENDIX E (CONTINUED)

Number, average length, and harvest per acre of bass (largemouth and smallmouth) muskellunge, and northern pike from various lakes during spring spearing in 1990.

LAKE COUNT	SPECIES AND LAKE	COUNTY	AREA	QUOTA	NUMBER HARVESTED	TOTAL LENGTH	AVERAGE LENGTH	NUMBER PER ACRE
	MUSKELLUNGE							

1	SAND	BARRON	322	4	2	67.6	33.8	0.0062
2	HART L (PIKE L CHAIN)	BAYFIELD	259	4	2	72.0	36.0	0.0077
3	BIG MCKENZIE	BURNETT	1185	11	3	94.2	31.4	0.0025
4	YELLOW	BURNETT	2287	17	11	411.4	37.4	0.0048
5	LOWER EAU CLAIRE	DOUGLAS	802	8	1	34.2	34.2	0.0012
6	GILE FL	IRON	3384	22	3	122.0	40.7	0.0009
7	PINE	IRON	312	4	1	30.5	30.5	0.0032
8	TRUDE	IRON	781	8	3	98.8	32.9	0.0038
9	CLEAR	ONEIDA	846	8	1	31.3	31.3	0.0012
10	CRESCENT	ONEIDA	612	7	3	108.6	36.2	0.0049
11	KAWAGUESAGA	ONEIDA	670	7	6	226.7	37.8	0.0090
12	MINOCQUA	ONEIDA	1360	12	13	417.3	32.1	0.0096
13	PELICAN	ONEIDA	3585	22	22	762.0	34.6	0.0061
14	SQUIRREL	ONEIDA	1317	11	1	32.3	32.3	0.0008
15	TOMAHAWK	ONEIDA	3392	22	13	475.8	36.6	0.0038
16	TWO SISTERS	ONEIDA	705	7	1	40.5	40.5	0.0014
17	DEER	POLK	807	55	49	1742.6	35.6	0.0607
18	BUTTERNUT	PRICE	1006	10	1	31.4	31.4	0.0010
19	GRINDSTONE	SAWYER	3111	9	5	193.7	38.7	0.0016
20	L CHIPPEWA	SAWYER	15300	15	10	380.7	38.1	0.0007
21	LAC COURTE OREILLES	SAWYER	5039	16	8	296.3	37.0	0.0016
22	LOST LAND	SAWYER	1304	11	9	270.1	30.0	0.0069
23	ROUND	SAWYER	3054	10	4	162.3	40.6	0.0013
24	TEAL	SAWYER	1049	10	3	93.6	31.2	0.0029
25	BALLARD	VILAS	505	6	1	32.8	32.8	0.0020
26	BIG ARBOR VITAE	VILAS	1090	10	5	168.1	33.6	0.0046
27	BIG MUSKELLUNGE	VILAS	930	9	6	233.5	38.9	0.0065
28	BIG SAND	VILAS	1408	12	6	210.3	35.1	0.0043
29	BIG ST GERMAINE	VILAS	1617	13	9	345.1	38.3	0.0056
30	BOULDER	VILAS	524	6	1	28.1	28.1	0.0019
31	CATFISH	VILAS	1012	10	4	133.1	33.3	0.0040
32	CLEAR	VILAS	555	6	5	187.8	37.6	0.0090
33	CRAB	VILAS	949	8	3	103.8	34.6	0.0032
34	EAGLE	VILAS	572	7	1	33.1	33.1	0.0017
35	FISHTRAP	VILAS	329	4	1	38.0	38.0	0.0030
36	HIGH	VILAS	734	8	2	77.0	38.5	0.0027
37	ISLAND	VILAS	1023	10	2	78.5	39.3	0.0020
38	KENTUCK	VILAS	957	9	5	196.6	39.3	0.0052
39	L LAURA	VILAS	599	7	4	152.4	38.1	0.0067
40	LAC VIEUX DESERT	VILAS	4300	16	3	113.7	37.9	0.0007
41	LITTLE ARBOR VITAE	VILAS	534	6	5	169.4	33.9	0.0094
42	LITTLE JOHN	VILAS	166	2	2	67.5	33.8	0.0120
43	LITTLE ST GERMAINE	VILAS	980	10	5	177.8	35.6	0.0051
44	LYNX	VILAS	339	4	3	110.8	36.9	0.0088
45	NORTH TURTLE	VILAS	369	4	2	N/A	N/A	0.0054
46	NORTH TWIN	VILAS	2788	19	18	696.5	38.7	0.0065
47	OXBOW	VILAS	511	6	1	25.0	25.0	0.0020
48	PAPOOSE	VILAS	428	5	3	116.4	38.8	0.0070
49	PICKEREL	VILAS	293	4	3	102.4	34.1	0.0102
50	PLUM	VILAS	1108	10	3	103.5	34.5	0.0027
51	PRESQUE ISLE	VILAS	1280	11	4	167.7	41.9	0.0031
52	SOUTH TURTLE	VILAS	454	5	2	N/A	N/A	0.0044
53	SOUTH TWIN	VILAS	642	7	7	243.3	34.8	0.0109
54	SPARKLING	VILAS	127	2	2	78.6	39.3	0.0157
55	TROUT	VILAS	3816	23	5	190.5	38.1	0.0013
56	WHITE SAND	VILAS	728	8	3	107.0	35.7	0.0041
57	MIDDLE MCKENZIE	WASHBURN	530	6	2	76.8	38.4	0.0038
		TOTAL:	84686	583	303	10761	36.1	0.0036

APPENDIX E (CONCLUDED)

Number, average length, and harvest per acre of bass (largemouth and smallmouth) muskellunge, and northern pike from various lakes during spring spearing in 1990.

LAKE COUNT	SPECIES AND LAKE	COUNTY	AREA	QUOTA	NUMBER HARVESTED	TOTAL LENGTH	AVERAGE LENGTH	NUMBER PER ACRE
	NORTHERN PIKE -----							
1	BIG MCKENZIE	BURNETT	1185		2	43.1	21.6	0.0017
2	CLAM RIVER FL.	BURNETT	473		1	22.7	22.7	0.0021
3	ROONEY	BURNETT	322		1	15.7	15.7	0.0031
4	SAND (NORTH)	BURNETT	962		3	67.7	22.6	0.0031
5	YELLOW	BURNETT	2287		3	82.0	27.3	0.0013
6	RED	DOUGLAS	258		1	21.8	21.8	0.0039
7	UPPER ST CROIX	DOUGLAS	855		1	18.0	18.0	0.0012
8	WHITEFISH (BARDON)	DOUGLAS	832		1	16.0	16.0	0.0012
9	BUTTERNUT	FOREST	1292		1	29.0	29.0	0.0008
10	METONGA	FOREST	2157		1	27.9	27.9	0.0005
11	PELICAN	ONEIDA	3585		4	121.7	30.4	0.0011
12	RICE R FL-NOKOMIS	ONEIDA	3916		1	22.3	22.3	0.0003
13	BALSAM	POLK	2054		2	51.0	25.5	0.0010
14	LOST LAND	SAWYER	1304		1	N/A	N/A	0.0008
15	WHITEFISH	SAWYER	786		1	18.7	18.7	0.0013
16	BIG MUSKELLUNGE	VILAS	930		1	24.0	24.0	0.0011
17	CRAB	VILAS	949		1	N/A	N/A	0.0011
18	FISHTRAP	VILAS	329		1	29.7	29.7	0.0030
19	TROUT	VILAS	3816		1	38.0	38.0	0.0003
20	L NANCY	WASHBURN	772		2	41.6	20.8	0.0026
21	MATTHEWS	WASHBURN	263		3	62.1	20.7	0.0114
22	MIDDLE MCKENZIE	WASHBURN	530		1	22.9	22.9	0.0019
	----- TOTAL:				34	775.9	24.2	0.0011

APPENDIX F

Number of muskellunge per inch group taken during spring spearing seasons from 1985-1990

INCH GROUP	NUMBER OF MUSKELLUNGE IN:						6 YEAR TOTAL	PERCENT OF TOTAL
	1985	1986	1987	1988	1989	1990		
13						1	1	0.1%
14							0	0.0%
15							0	0.0%
16			1				1	0.1%
17				3			3	0.3%
18							0	0.0%
19				1			1	0.1%
20			2				2	0.2%
21							0	0.0%
22						1	1	0.1%
23		1					1	0.1%
24		1					1	0.1%
25	1		1		1	1	4	0.5%
26				1	2	3	6	0.7%
27			3	3	2	2	10	1.1%
28	2		3	1	5	4	15	1.7%
29	2	2	7	5	3	6	25	2.9%
30	8	3	4	6	6	15	42	4.8%
31	6	3	14	9	9	24	65	7.4%
32	7	2	15	13	11	18	66	7.5%
33	3	6	12	10	8	25	64	7.3%
34	8	1	16	10	8	20	63	7.2%
35	7	7	12	10	10	26	72	8.2%
36	2	4	12	7	6	20	51	5.8%
37	8	8	17	11	10	29	83	9.5%
38		6	12	9	7	27	61	7.0%
39	2	1	10	10	6	16	45	5.1%
40	1	2	8	6	5	19	41	4.7%
41	1	2	5	9	3	12	32	3.7%
42	1	1	4	6	5	6	23	2.6%
43	2	2	3	6	3	6	22	2.5%
44	2		3	7		5	17	1.9%
45			4	8	2	1	15	1.7%
46		1	4	3		2	10	1.1%
47	3		2	1	2	3	11	1.3%
48		1	4	1	1	2	9	1.0%
49	1		2	1	1	3	8	0.9%
50	1				1		2	0.2%
51				1		1	2	0.2%
52							0	0.0%
53		1					1	0.1%
TOTAL NO. MEASURED:	68	55	180	158	117	298	876	
TOTAL LENGTH:	2,407	1,994	6,507	5,805	4,175	10,761	31,649	
AVERAGE LENGTH:	35.4	36.2	36.2	36.7	35.7	36.1	36.1	
TOTAL NO. SPEARED:	86	55	196	158	118	303	916	
PERCENT MEASURED:	79.1%	100.0%	91.8%	100.0%	99.2%	98.3%	95.6%	

APPENDIX G

Number of bass (largemouth and smallmouth combined) taken during spring spearing seasons from 1985-1990.

INCH GROUP	NUMBER OF BASS IN:						6 YEAR TOTAL	PERCENT OF TOTAL
	1985	1986	1987	1988	1989	1990		
5								
6							0	0.0%
7					1		1	0.1%
8			1				1	0.1%
9	1	1	2			1	5	0.7%
10			2	4	1	1	8	1.1%
11	1	1	8		7	3	20	2.7%
12	2	2	16	7	10	30	67	9.1%
13	3	6	43	21	14	35	122	16.6%
14		2	33	27	17	47	126	17.1%
15	7	8	25	21	17	26	104	14.1%
16		12	30	19	19	25	105	14.3%
17		3	20	15	11	19	68	9.2%
18	1	2	15	9	4	16	47	6.4%
19	1		7	11	8	9	36	4.9%
20		1	5	7	1	2	16	2.2%
21	1	1	2	1		1	6	0.8%
22			1	1	1		3	0.4%
23							0	0.0%
24							0	0.0%
25				1			1	0.1%
TOTAL NO. MEASURED:	17	39	210	144	111	215	736	
TOTAL LENGTH:	255	602	3,199	2,275	1,694	3,246	11,272	
AVERAGE LENGTH:	15.0	15.4	15.2	15.8	15.3	15.1	15.3	
TOTAL NO. SPEARED:	21	39	275	167	113	219	834	
PERCENT MEASURED:	81.0%	100.0%	76.4%	86.2%	98.2%	98.2%	88.2%	

APPENDIX H

Number of northern pike per inch group taken during spring spearing seasons from 1985-1990

INCH GROUP	NUMBER OF NORTHERN PIKE IN:						6 YEAR TOTAL	PERCENT OF TOTAL
	1985	1986	1987	1988	1989	1990		
10							0	0.0%
11							0	0.0%
12		1					1	0.8%
13				1			1	0.8%
14							0	0.0%
15			1			1	2	1.5%
16						2	2	1.5%
17		1	1	2	1		5	3.8%
18			1	1	1	4	7	5.3%
19				2	1	1	4	3.1%
20		2		2	5	1	10	7.6%
21			2	10	1	3	16	12.2%
22		2	3	2		4	11	8.4%
23		1	2	2		2	7	5.3%
24		1	3	2		3	9	6.9%
25			1	1			2	1.5%
26				5		1	6	4.6%
27			1	1	1	2	5	3.8%
28			7	2	1	1	11	8.4%
29				1	1	2	4	3.1%
30			1	1			2	1.5%
31			2	3		1	6	4.6%
32			3	2		1	6	4.6%
33		1			1	1	3	2.3%
34							0	0.0%
35							0	0.0%
36		1		2		1	4	3.1%
37				1	1		2	1.5%
38						1	1	0.8%
39		1		1			2	1.5%
40		1					1	0.8%
41				1			1	0.8%
TOTAL NO. MEASURED:	0	12	28	45	14	32	131	
TOTAL LENGTH:	0	312	724	1,152	334	776	3,298	
AVERAGE LENGTH:	N/A	26.0	25.9	25.6	23.9	24.2	25.2	
TOTAL NO. SPEARED:	2	13	41	59	14	34	163	
PERCENT MEASURED:	0.0%	92.3%	68.3%	76.3%	100.0%	94.1%	80.4%	