



**Fish Population Assessments of Ceded Territory Lakes in
Wisconsin, Michigan and Minnesota During 2007**

by

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Abstract

The Inland Fisheries Section of the Great Lakes Indian Fish and Wildlife Commission (GLIFWC) conducted fishery assessment surveys of ceded territory lakes in northern Wisconsin, Minnesota, and the upper peninsula of Michigan. Assessment crews from the U.S. Fish and Wildlife Service and the Fond du Lac, Sokaogon (Mole Lake), and St. Croix Bands assisted with spring and fall surveys.

In the spring, adult walleye (*Sander vitreus*) population estimates were conducted on 14 lakes. A total of 17,983 walleye were sampled from 9,320 acres of water during these surveys. All but one of the lakes surveyed had naturally reproducing walleye populations, and density of adult walleye averaged 5.50 (SD = 3.71, range: 1.40 to 14.35) fish per acre. In 9 of these 14 lakes, adult walleye population densities were at least 3.0 fish per acre, indicating that walleye populations were healthy.

On Mille Lacs Lake, Minnesota, assessment crews conducted a spring juvenile walleye survey in which 1,144 walleye were caught, 1,069 of which were estimated to be between the ages of 1 and 4.

A summer fish community survey was conducted in Kentuck Lake, Vilas County, Wisconsin in a continuing effort to try to understand how fish community interactions may affect walleye reproduction and recruitment. A total of 3,344 fish were collected, identified to species, and catch per effort values determined.

During the fall, electrofishing surveys were conducted on 93 lakes in Wisconsin, 10 lakes in Michigan, and 1 lake in Minnesota to determine year class strength of age 0 (young of the year) and age 1 (yearling) walleye. In Wisconsin, a total of 14,956 age 0 and 8,138 age 1 walleye were sampled. In addition, 631 gamefish including muskellunge (*Esox masquinongy*), northern pike (*Esox lucius*), largemouth bass (*Micropterus salmoides*) and smallmouth bass (*M. dolomieu*) were sampled. In Michigan, a total of 2,070 age 0 and 136 age 1 walleye plus 27 gamefish were sampled during the fall. In Minnesota on Mille Lacs Lake, a total of 1,454 age 0 and 412 age 1 walleye were sampled.

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Introduction

Fishery assessment surveys of ceded territory lakes were conducted during spring, summer, and fall of 2007 by the Great Lakes Indian Fish and Wildlife Commission (GLIFWC) to improve understanding of spatial and temporal variability of walleye populations in ceded territory waters of northern Wisconsin, Michigan, and Minnesota. These studies add to an extensive body of information describing ceded territory walleye populations and associated biological parameters. They provide data needed to update recruitment codes, set harvest quotas, and monitor the impacts of a combined tribal and sport fishery on the walleye resource.

Since 1989, a Memorandum of Understanding has been in effect between the U.S. Fish and Wildlife Service (USFWS) and GLIFWC. Under the 2007 agreement, USFWS provided technical support and equipment during spring and fall surveys. The St. Croix Chippewa Assessment Unit was initially equipped and funded in 1990 to conduct surveys; assistance in subsequent years has continued through a subcontract with GLIFWC. The Sokaogon (Mole Lake) Band also provided assistance during the spring and fall through subcontracts with GLIFWC. The Fond du Lac Band assisted during the fall walleye recruitment survey on Mille Lacs Lake.

Methods

Spring Adult Walleye Population Estimates

Current information on adult walleye populations was collected from 13 lakes in the ceded territory of Wisconsin (Figure A1). Of these, 11 lakes had experienced tribal spearing harvest during the previous year. An adult walleye population estimate was planned for Birch Lake (Vilas County, Wisconsin). However, after one night of sampling, it was determined based on the condition of the walleye and water temperature that walleye spawning had already occurred, and survey efforts were discontinued. In Michigan, current information on the adult walleye population of Parent Lake (Baraga County) was collected.

Nine lakes in Wisconsin are GLIFWC long-term study lakes. Large (greater than 500 acres in area) long-term lakes surveyed in 2007 included Squirrel Lake (Oneida Co.) and Squaw Lake (Vilas Co.). In the other large study lakes, a walleye population estimate was conducted by the Wisconsin Department of Natural Resources (WDNR) in Kentuck Lake (Vilas Co.), and a planned population estimate by GLIFWC in Butternut Lake (Forest Co.) was not conducted because ice floes prevented survey crews from reaching the spawning grounds until after walleye spawning was completed. Small (less than 500 acres in area) long-term study lakes surveyed in 2007 included Siskiwit Lake (Bayfield Co.), Annabelle Lake (Vilas Co.), Sherman Lake (Vilas Co.), and Bass-Patterson Lake (Washburn Co.). Long-term study lakes are surveyed annually or biannually to collect trend and variability information on adult walleye populations. The continuing goal is to use adult estimates and fall recruitment data from long-term study lakes to develop and assess models for predicting population size. A joint study between GLIFWC and the Wisconsin Department of Natural Resources (WDNR) was initiated in 2006 on Sherman Lake to investigate the effects of a 50% exploitation rate on the walleye population.

Mark and recapture data were used to calculate the adult walleye population estimate for each lake according to the Peterson formula (Chapman's modification) described in Ricker (1975). A target number of adult walleye to be marked and recaptured was derived from curves that were developed by Robson and Regier (1964). These curves required an initial estimate of population size. This estimate was obtained either from a previous population estimate survey, or when none existed, from a regression formula estimate for a lake of similar size and recruitment code.

Per agreement between GLIFWC and WDNR biologists, all unknown sex fish less than 15 inches in total length were assumed to be immature fish and excluded from the calculation of adult population estimates. In lakes where spearing occurred prior to the recapture survey, an adjustment was made by reducing the marking sample by the number of marked fish speared. Also, the total number of fish speared before the first recapture run (except for walleye of unknown sex less than 15 inches) was added to the estimate.

Fish were captured for marking with electrofishing gear soon after ice out in all lakes except for Big Round Lake, where walleye were captured over four days of fyke netting by the St. Croix tribal assessment crew, as well as two nights of electrofishing. Seven electrofishing boats and crews were used during the season, including four from GLIFWC, one from USFWS, one from Mole Lake, and one from St. Croix. All boats in all spring electrofishing surveys conducted during 2007 had an arrangement of six umbrella dropper anodes and used pulsed DC at 60 pps. Electrofishing occurred after sunset.

During the marking period, effort was focused on finding and sampling walleye spawning areas. With this concentrated effort crews were able to mark the target number of walleye in one to four nights, depending upon lake size and the number of crews used.

Walleye were measured (total length in inches) and sexed (male, female, or unknown). Crews were instructed to collect a scale or spine sample from ten male fish per half-inch group between 11.0 inches and 16.9 inches, and from five fish per half-inch group for males of other sizes and females. Generally, spines were taken from fish 10 inches and larger, and scales were taken from smaller fish. Spines and scales were analyzed at a later date for age determination. On long-term study lakes, fish were tagged with yellow colored individually numbered Floy tags prior to release. Fish on all other lakes were given a single caudal fin notch. After being tagged or notched, fish were released away from the capture area, typically near the middle of the lake.

Recapture surveys with electrofishing equipment were conducted one or two nights after the marking period ended. Surveys covered the entire shoreline of each lake. For each fish captured, length, sex and mark, if any, were recorded.

Spring Juvenile Walleye Survey

A juvenile walleye survey was conducted in Mille Lacs Lake, Minnesota on May 21 through May 30. The survey began approximately three weeks after the adult spawning period. Electrofishing gear was used to capture fish at night.

Inclement weather prevented the entire lakeshore from being surveyed; 58.1 out of 78.0 shoremiles were covered. Total length was recorded for each walleye captured. No walleye were tagged or given fin clips. Scale samples for fish less than 10 inches in length and spine samples for fish 10 inches in length and larger were collected for aging from a maximum of ten fish per half-inch group. Age data was used to apportion the catch by age for ages 1 through 4.

Summer Fish Community Survey

A fish community assessment survey was conducted on Kentuck Lake (Vilas Co.) from June 26 through June 29. During the survey period, one fyke net with 1 inch mesh and seven fyke nets with 3/8 inch mesh were set for four nights in the same locations as in previous years. Nets were set at night and lifted each morning. Fish were identified to species and measured. Fish were released away from shore.

Fall Recruitment Surveys

Fall electrofishing surveys were conducted in 104 ceded territory waters including 93 lakes in Wisconsin, 10 lakes in Michigan, and Mille Lacs Lake in Minnesota. Fall surveys were conducted to evaluate recruitment of age 0 (young of the year) and age 1 (yearling) walleye, and to assess whether recruitment codes were appropriate.

Electrofishing boats sampled lakes four nights per week from September 10 through October 24. Eight assessment crews were used during the season, including four from GLIFWC, one from USFWS, and crews from the Fond du Lac, Mole Lake, and St. Croix tribes. The number of boats assigned to each lake was based upon the shoreline length to be surveyed, and whether the entire shoreline or index station segments would be surveyed. For planning purposes, it was assumed that one boat was needed for every 5-7 miles of shoreline. Index stations were sampled on 19 of the larger waters.

The primary objective of these surveys was to assess year class strength of stocked or naturally reproduced age 0 and age 1 walleye. Larger walleye and other game fish (e.g., bass, northern pike and muskellunge) were of secondary priority and collected if this effort did not detract from the collection of juvenile walleye. Panfish and other species were collected as a third priority. Results of surveys were used to determine whether lake recruitment code changes were needed. Other uses included trend analysis of important mixed fishery lakes maintained by natural reproduction, and the development of a regional perspective of annual walleye year class strength.

Electrofishing began at dusk and continued until the entire shoreline or set of index stations was sampled. Exceptions preventing the completion of a survey on a given lake included equipment problems, severe weather, and high waves. All fish collected were identified to species and length measured (total length in inches). For walleye only, a scale sample was collected from five fish per half-inch group between 5.5 and 12.0 inches to determine the length range and numbers of age 0 and age 1 walleye.

Protocols were adopted by GLIFWC in the fall of 2004 to reduce the likelihood of spreading aquatic invasive species. All equipment coming in contact with water was checked visually for aquatic invasive species each night before entering the water and again after leaving the water. Boats and trailers were pressure-washed or steam-cleaned daily. In addition, crew leaders documented any aquatic invasive species observed, and gathered information regarding signs posted at boat landings pertaining to these species.

Surveys on the following three Wisconsin lakes were conducted jointly by GLIFWC and WDNR, and the results summarized and reported by GLIFWC: Nelson Lake (Sawyer Co.), Lac Vieux Desert (Vilas Co.), and Long Lake (Washburn Co.). Surveys on the following five Wisconsin lakes were conducted jointly by GLIFWC and WDNR, and the results were summarized and reported by WDNR: Prairie Lake (Barron Co.) Red Cedar Lake (Barron Co.), Upper Post Lake (Langlade Co.), Pelican Lake (Oncida Co.), Balsam Lake (Polk Co.). All data from these eight surveys are reflected in this report, regardless of which agency did the actual collection of fish.

Results and Discussion

Spring Adult Walleye Population Estimates

A total of 17,983 walleye were sampled from 9,320 acres of water during the spawning adult walleye population estimate period. Adult walleye population estimates for 13 stocks in Wisconsin and one stock in Michigan (Table A1) ranged from 199 to 10,094 fish. Estimated population densities ranged from 1.40 per acre for Big Round Lake, Polk Co., to 14.35 walleye per acre for Little John Lake, Vilas Co. (mean = 4.86, SD = 3.00) (Figure A2).

The Report on Biological Issues (1988) listed several indicators of healthy reproducing walleye stocks agreed to by state and tribal biologists. Two indicators included: a) population density of three adult walleye per acre; and, b) the presence of five year classes of females in a sample, or three year classes in a sample of 100 females that each contribute at least 15 percent of the sample.

Nine of the 14 lakes surveyed had recruitment codes of NR (Table A1), indicating that natural reproduction was the only source of recruitment. Four lakes had recruitment codes of C-NR, indicating that some stocking occurred even though the population was sustained by natural reproduction. One of the lakes had a recruitment code of ST, indicating that stocking was the only source of recruitment. Nine of these 14 lakes had walleye densities of greater than 3.0 per acre.

Male-to-female sex ratios (Table A1) were skewed in favor of males in all lakes surveyed. The reliability of these values is questionable in some lakes, however. Electrofishing may bias sampling in favor of males (Shively and Kmiecik 1991) because males spend more time in shallow water than females during the spawning period (Colby et al. 1979), and many females are out of effective capture range except during or after spawning.

A total of 1,299 female, 16,108 male, and 576 unknown sex walleye were measured (Figure A3, Table A2) and a subsample aged (Figure A4). Female lengths ranged from 10.5 to 29.5 inches, male lengths ranged from 9.0 to 22.5 inches, and lengths for walleye of unknown sex ranged from 9.0 to 22.0 inches. Age-length tables were developed for subsets of female, male, and unknown sex walleye in each of the lakes sampled (Tables A3 - A18). These age-length tables by themselves are not necessarily representative of the size and age structure of the population, since spines for aging were collected according to a stratified sampling scheme. However, age-length tables reflective of the population can be developed when coupled with length-frequency data from the population estimates. Also, the age-length tables should be sufficient to detect the presence or absence of year classes. Regarding the second population health criterion, 13 of the 14 lakes had populations with at least five year classes of females in the aging sample.

Spring Juvenile Walleye Survey

During the juvenile walleye survey on Mille Lacs Lake, a total of 1,144 walleye were captured over 58.1 miles of shoreline (Table A17). Lengths of walleye captured ranged from 4.7 inches to 27.0 inches (Figure A5). An age-length table was developed using spines and scales collected from a subset of fish (Table A18), and used to apportion the catch by age. Catch per mile values for age 1 through 4 walleye were 7.8, 8.7, 0.7, and 1.3 per mile, respectively.

Summer Fish Community Survey

An effort to rehabilitate the walleye population of Kentuck Lake (Vilas Co.) began in 1998, and included stocking walleye in 1999 and 2000. GLIFWC has conducted annual monitoring of the fish community in this lake since 1997 (Table B1, Figure B1). These surveys may contribute to a better understanding of the reasons for the lack of natural reproduction of walleye during 13 consecutive years from 1988 through 2000. The fish community survey conducted in 2007 on Kentuck Lake caught 11 species and 3,344 fish (Table B2). The most abundant species captured was bluegill (70.6% of the fish), followed by rock bass (16.9%) and pumpkinseed (8.0%).

Fall Recruitment Surveys

Fall recruitment surveys were conducted on 104 lakes in the ceded territories of Wisconsin, Michigan and Minnesota (Figure C1, Table C2). Survey effort included 339.1 hours of electrofishing along 922.8 miles of shoreline resulting in the collection of 35,931 walleye.

From 93 surveys conducted on 93 lakes in Wisconsin, 284.3 hours of electrofishing along 778.9 miles of shoreline resulted in a collection of 31,263 walleye. In Michigan, 10 lakes were surveyed in 27.8 hours along 71.7 miles of shoreline, resulting in the collection of 2,680 walleye. In Mille Lacs Lake, 1,988 walleye were collected in 27.0 hours along 72.2 miles of shoreline (Table C2).

A total of 14,956 age 0 walleye were caught in Wisconsin. Age 0 walleye were caught in 80 of the 93 lakes surveyed. Over all 93 surveys, catch per effort (CPE) for age 0 walleye

ranged from 0.0 to 161.4 (mean = 20.6, median = 8.5, SD = 31.9) per mile. A total of 8,138 age 1 (yearling) walleye were caught in 78 of the lakes surveyed. Over all surveys, age 1 CPE ranged from 0.0 to 73.4 (mean = 10.5, median = 4.9, SD = 14.3) yearlings per mile.

In order to gauge the relative strength of the 2007 and 2006 walleye year classes monitored in the 2007 fall surveys as age 0 and age 1 fish, plots of mean and median CPE values were generated for each year from 1986 through 2007 for all Wisconsin lakes with recruitment codes of NR or C-NR with at least 75% of the shoreline surveyed, including lakes surveyed by WDNR and including CPEs of 0.0 (Figures C2 and C3). For 1986 through 2007, the averages of the yearly mean and median age 0 CPEs are 32.6 and 18.1 per mile, respectively, and the averages of the yearly mean and median age 1 CPEs are 10.7 and 6.3 per mile, respectively. For 2007, the mean and median age 0 CPEs were 26.0 and 10.2 respectively, and the mean and median age 1 CPEs were 10.7 and 5.4 respectively.

In Michigan, 2,070 age 0 walleye were caught. Age 0 walleye were caught in 6 of the 10 lakes surveyed. Age 0 CPE ranged from 0.0 to 76.3 (mean = 14.2, median = 1.3, SD = 27.4) per mile. A total of 136 age 1 walleye were caught in 6 lakes. Age 1 CPE ranged from 0.0 to 15.25 (mean = 2.9, median = 0.3, SD = 5.0) yearlings per mile.

In Minnesota, 1,454 age 0 and 412 age 1 walleye were caught in Mille Lacs Lake, yielding CPEs of 20.1 and 5.7 per mile, respectively. Length frequencies from the survey on Mille Lacs Lake are shown in Figure C4, and results from all fall recruitment surveys conducted by GLIFWC on Mille Lacs Lake are shown in Figure C5.

Table C2 includes summaries of gamefish including muskellunge, northern pike, largemouth bass, and smallmouth bass. Various panfish and rough fish species were also collected but their numbers are not reported here. Summary statistics for NR and C-NR lakes, C-ST lakes, and NR-2 lakes in Wisconsin, Michigan and Minnesota are given in Table C3. Statistics include the average CPE, the standard deviation, the number of lakes, and the range of CPE values for all lakes and for lakes where a year class was detected. Data were plotted for each recruitment code in Figures C6 and C7.

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A10.	Number of Walleye Aged by Sex and Length From Spring 2007 Adult Population Estimate: Annabelle Lake, Vilas County, Wisconsin	21
A11.	Number of Walleye Aged by Sex and Length From Spring 2007 Adult Population Estimate: Little John Lake, Vilas County, Wisconsin	22
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A17.	Spring 2007 Juvenile Walleye Survey Conducted by GLIFWC on Mille Lacs Lake, Minnesota	25
A18.	Number of Walleye Aged by Sex and Length From Spring 2007 Juvenile Walleye Survey: Mille Lacs Lake, Mille Lacs County, Minnesota	25

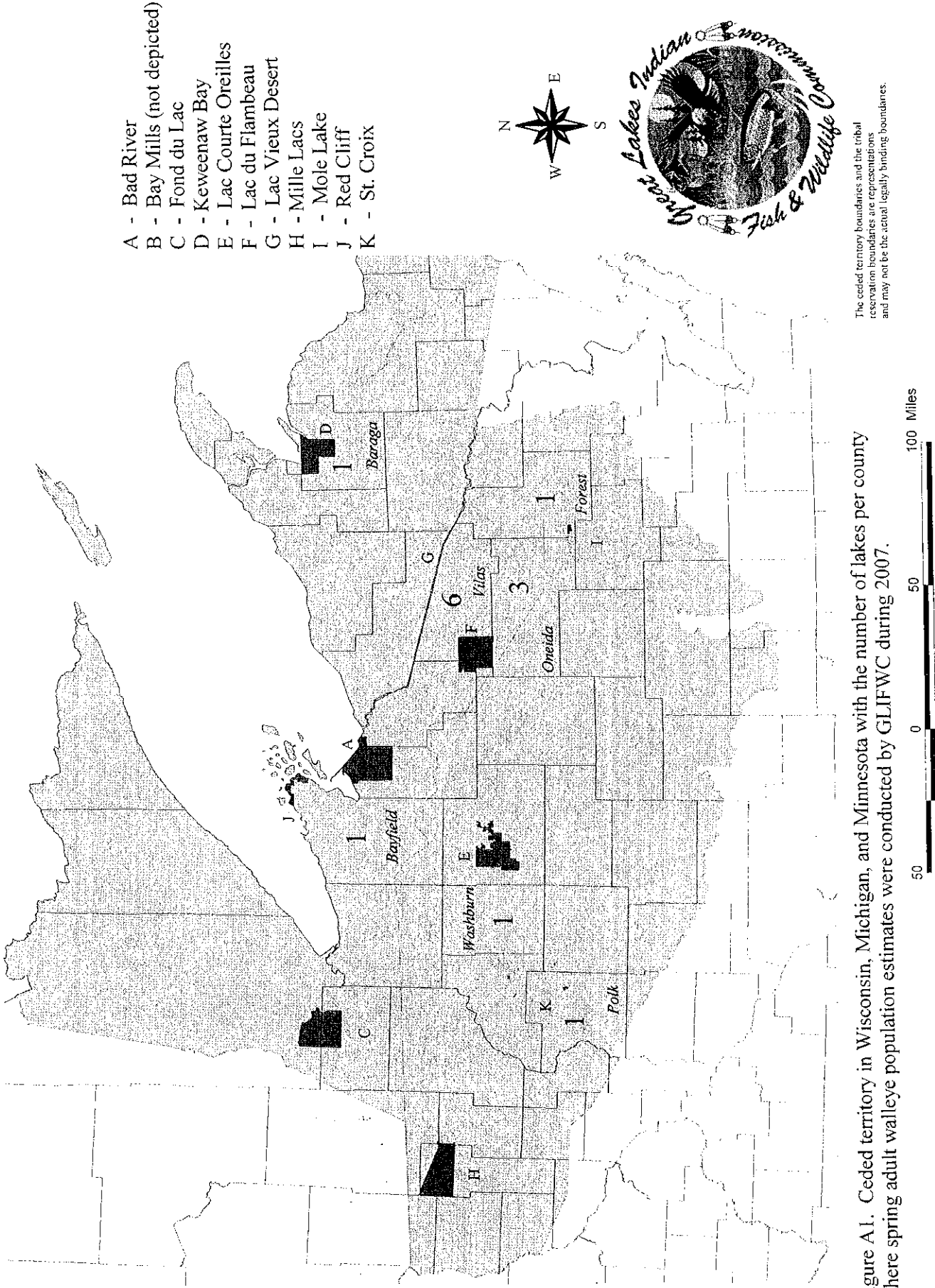


Figure A1. Ceded territory in Wisconsin, Michigan, and Minnesota with the number of lakes per county where spring adult walleye population estimates were conducted by GLIFWC during 2007.

The ceded territory boundaries and the tribal reservation boundaries are representations and may not be the actual legally binding boundaries.



Figure A2. Estimated Adult Walleye Densities by Recruitment Code, Spring 2007

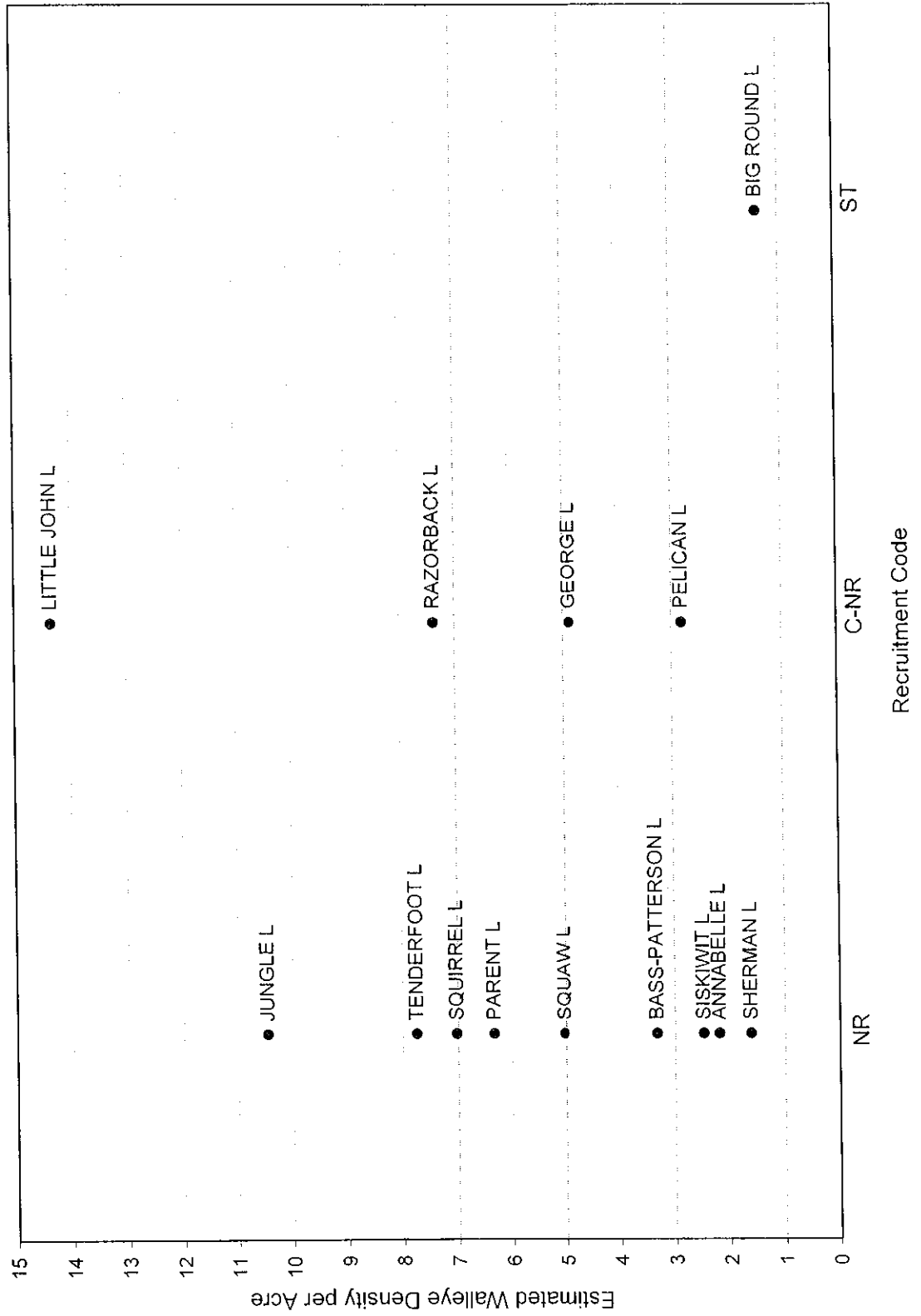


Figure A3

Length Frequency of Adult Walleye Marked
Adult Walleye Population Estimates, Spring 2007

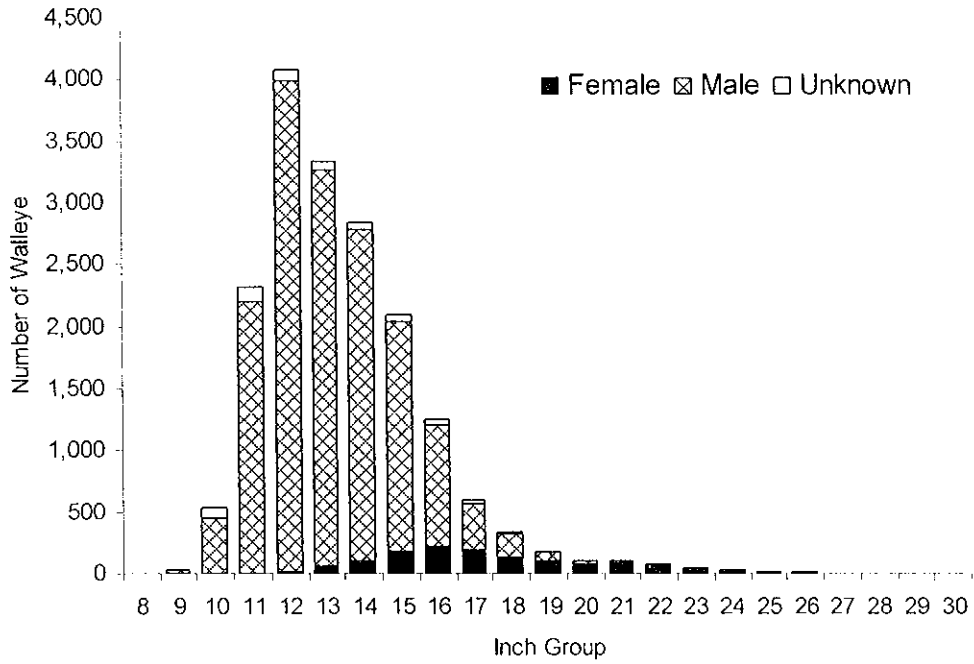


Figure A4

Age Frequency of Adult Walleye Aged
Adult Walleye Population Estimates, Spring 2007

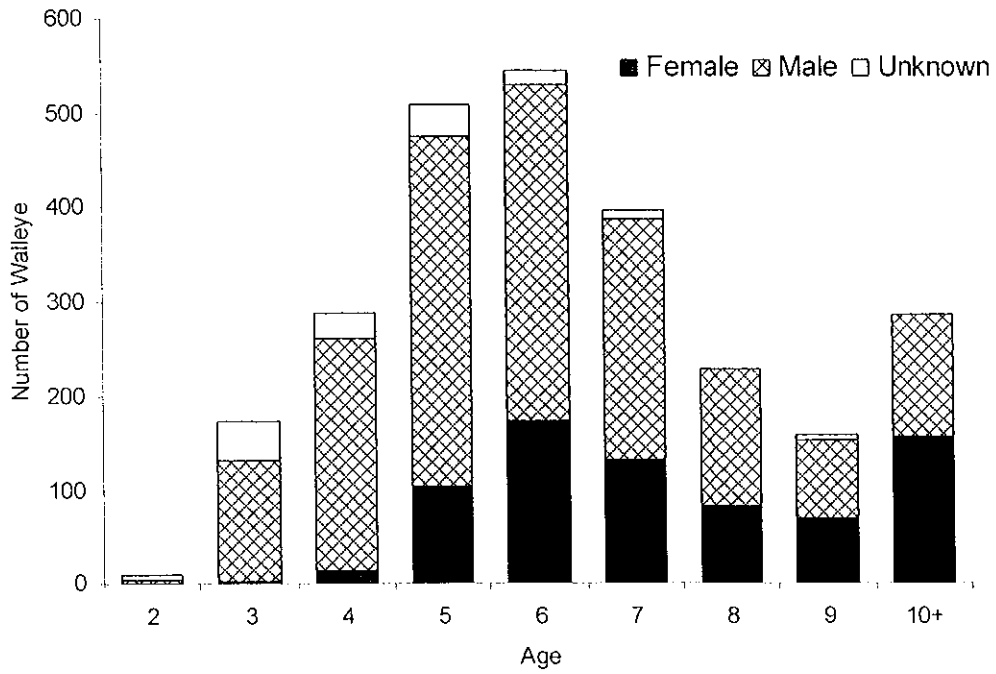


Table A1. Spring 2007 Adult Population Estimates Conducted by GLIFWC

State	County	Lake	Surface Area (Acres)	2007 Walleye Code	Population Estimate	Density	Coefficient of Variation (%)	Marking Gear*	Recapture Gear*	Fin clip applied**	Male: female sex ratio***
WI	BARAGA	PARENT L	182	NR	1,152	6.33	6.6	E	E	TCN	3:1
WI	BAYFIELD	SISKIWI L	330	NR	818	2.48	8.4	E	E	YF	8:1
WI	FOREST	JUNGLE L	182	NR	1,903	10.46	10.3	E	E	TCN	22:1
WI	ONEIDA	GEORGE L	435	C-NR	2,120	4.87	4.8	E	E	TCN	16:1
WI	ONEIDA	PELICAN L	3,585	C-NR	10,094	2.82	6.2	E	E	TCN	11:1
WI	ONEIDA	SQUIRREL L	1,317	NR	9,244	7.02	7.1	E	E	YF	32:1
WI	POLK	BIG ROUND L	1,015	ST	1,417	1.40	13.7	E/F	E	TCN	8:1
WI	VILAS	ANNABELLE L	213	NR	467	2.19	23.2	E	E	YF	5:1
WI	VILAS	LITTLE JOHN L	166	C-NR	2,382	14.35	5.9	E	E	TCN	17:1
WI	VILAS	RAZORBACK L	362	C-NR	2,671	7.38	7.3	E	E	TCN	44:1
WI	VILAS	SHERMAN L	123	NR	199	1.62	18.9	E	E	YF	5:1
WI	VILAS	SQUAW L	785	NR	3,947	5.03	8.2	E	E	YF	15:1
WI	VILAS	TENDERFOOT L	437	NR	3,385	7.75	4.7	E	E	TCN	9:1
WI	WASHBURN	BASS-PATTERSON L	188	NR	625	3.32	6.1	E	E	YF	10:1

*Gear used: E = electrofishing, F = fyke netting

** TCN = top caudal notch, YF = numbered yellow floy tag

***Sex ratio is calculated for walleye sampled during marking and recapture runs but excludes recaptured fish

Table A2. Lengths of Walleye Collected During Spring 2007 Adult Walleye Population Estimates

STATE	COUNTY	LAKE	NUMBER SAMPLED			FEMALE		MALE		UNKNOWN		
			FEMALE	MALE	UNKNOWN	TOTAL	MINIMUM LENGTH	MAXIMUM LENGTH	MINIMUM LENGTH	MAXIMUM LENGTH	MINIMUM LENGTH	MAXIMUM LENGTH
WI	BARAGA	PARENT L	199	537	15	751	10.5	24.0	11.0	20.0	9.0	14.5
WI	BAYFIELD	SISKIWI L	50	404	46	500	13.0	18.5	11.0	17.5	9.5	17.0
WI	FOREST	JUNGLE L	31	677	2	710	14.0	19.5	11.0	19.0	17.5	18.0
WI	ONEIDA	GEORGE L	71	1,149	11	1,231	11.5	28.5	9.0	18.5	9.0	15.5
WI	ONEIDA	PELICAN L	288	3,039	59	3,386	13.0	26.0	10.5	22.5	9.0	18.0
WI	ONEIDA	SQUIRREL L	116	3,683	104	3,903	12.5	26.5	10.0	20.0	11.0	18.5
WI	POLK	BIG ROUND L	78	632	7	717	15.0	26.5	10.5	22.5	10.0	18.5
WI	VILAS	ANNABELLE L	30	147	48	225	10.5	29.5	10.0	17.0	10.0	15.0
WI	VILAS	LITTLE JOHN L	70	1,175	79	1,324	13.5	28.5	10.5	22.0	10.5	18.5
WI	VILAS	RAZORBACK L	25	1,104	17	1,146	13.5	28.0	10.5	19.5	12.5	15.5
WI	VILAS	SHERMAN L	19	97	58	174	14.5	27.0	10.0	22.0	10.0	18.5
WI	VILAS	SQUAW L	87	1,280	29	1,396	12.0	24.0	10.0	18.0	10.5	16.0
WI	VILAS	TENDERFOOT L	194	1,760	43	1,997	12.5	26.5	10.0	21.0	10.5	22.0
WI	WASHBURN	BASS-PATTERSON L	41	424	58	523	16.0	26.5	10.5	21.0	10.0	20.0
		OVERALL	1,299	16,108	576	17,983	10.5	29.5	9.0	22.5	9.0	22.0

Table A3

Number of Walleye Aged by Sex and Length From Spring 2007 Adult Population Estimate
Parent Lake, Baraga County, Michigan

INCH GROUP	AGE 1			AGE 2			AGE 3			AGE 4			AGE 5			AGE 6			AGE 7			AGE 8			AGE 9			AGE 10+			TOTAL					
	F	M	U	F	M	U	F	M	U	F	M	U	F	M	U	F	M	U	F	M	U	F	M	U	F	M	U	F	M	U	F	M	U	F	M	U
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12							1	10	2			7			3														1	20	2	23				
13								2				10			7															19		19				
14									2	3			2	10		6													4	20		24				
15									2				6	3			1	11			5								9	19		28				
16																9	10			1	8			2					10	21		31				
17																			9	6			2						10	10		20				
18																				7			2	1					1	3		19				
19																				3			2						3	4		14				
20																										1			4	1		6				
21																														8		8				
22																														8		8				
23																														2		2				
24																														2		2				
25																																				
26																																				
27																																				
28																																				
29																																				
30																																				
TOTALS						2	1	19	8	5	21		8	23	10	27	20	20	4	5	6	6	26	10	80	131	10	221								

Number of female year classes: 8 Number of male year classes: 8

Table A4

Number of Walleye Aged by Sex and Length From Spring 2007 Adult Population Estimate
Siskiwit Lake, Bayfield County, Wisconsin

INCH GROUP	AGE 1			AGE 2			AGE 3			AGE 4			AGE 5			AGE 6			AGE 7			AGE 8			AGE 9			AGE 10+			TOTAL			
	F	M	U	F	M	U	F	M	U	F	M	U	F	M	U	F	M	U	F	M	U	F	M	U	F	M	U	F	M	U	F	M	U	ALL
3																																		
4																																		
5																																		
6																																		
7																																		
8																																		
9																																		
10											3			2																		5	5	
11										1	2		9	9																10	11	21		
12												7	2		15	5														22	7	29		
13														1	17	7													1	19	7	27		
14												1		4	3			19	2		1							4	24	2	30			
15														4	2		4	6		1	11	1						9	19	1	29			
16														2			3	1		3	2			6					8	9		17		
17														2			2						1	1					5	1		6		
18																							1							1		1		
19																																		
20																																		
21																																		
22																																		
23																																		
24																																		
25																																		
26																																		
27																																		
28																																		
29																																		
30																																		
TOTALS										1	5	17	13	13	37	12	9	28	2	4	14	1	2	7	28	104	33	165						

Number of female year classes: 4 Number of male year classes: 6

Table A5

Number of Walleye Aged by Sex and Length From Spring 2007 Adult Population Estimate
Jungle Lake, Forest County, Wisconsin

INCH GROUP	AGE 1			AGE 2			AGE 3			AGE 4			AGE 5			AGE 6			AGE 7			AGE 8			AGE 9			AGE 10+			TOTAL					
	F	M	U	F	M	U	F	M	U	F	M	U	F	M	U	F	M	U	F	M	U	F	M	U	F	M	U	F	M	U	F	M	U	F	M	U
3																																				
4																																				
5																																				
6																																				
7																																				
8																																				
9																																				
10																																				
11						1																									1	1				
12								1			1																			3	3					
13								2	1		5																			17	3	20				
14										2																				2	19	1	22			
15																														4	19	4	27			
16																														5	19	2	26			
17																														7	7	2	16			
18																														4			4			
19																														1	2		3			
20																																				
21																																				
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23																																				
24																																				
25																																				
26																																				
27																																				
28																																				
29																																				
30																																				
TOTALS						1		3	1		8		6	21	3	1	21	3	8	15	4	2	15	2	1	3	4		23	84	15	122				

Number of female year classes: 6 Number of male year classes: 6

Table A6

Number of Walleye Aged by Sex and Length From Spring 2007 Adult Population Estimate
George Lake, Oneida County, Wisconsin

INCH GROUP	AGE 1			AGE 2			AGE 3			AGE 4			AGE 5			AGE 6			AGE 7			AGE 8			AGE 9			AGE 10+			TOTAL			
	F	M	U	F	M	U	F	M	U	F	M	U	F	M	U	F	M	U	F	M	U	F	M	U	F	M	U	F	M	U	F	M	U	All
3																																		
4																																		
5																																		
6																																		
7																																		
8																																		
9																															7	7		
10																														10	2	12		
11																														1	20	3	24	
12																														1	20	1	22	
13																														5	22	3	30	
14																														3	20		23	
15																														7	20		27	
16																																		
17																														1	17		17	
18																														1	12		13	
19																														3	4		12	
20																														2			15	
21																														1			8	
22																														2			7	
23																														1			9	
24																														4			5	
25																														2			9	
26																														3			3	
27																														1			1	
28																																		
29																																		
30																																		
TOTALS																																		

Number of female year classes: 7 Number of male year classes: 8

Table A7

Number of Walleye Aged by Sex and Length From Spring 2007 Adult Population Estimate
Pelican Lake, Oneida County, Wisconsin

INCH GROUP	AGE 1			AGE 2			AGE 3			AGE 4			AGE 5			AGE 6			AGE 7			AGE 8			AGE 9			AGE 10+			TOTAL									
	F	M	U	F	M	U	F	M	U	F	M	U	F	M	U	F	M	U	F	M	U	F	M	U	F	M	U	F	M	U	F	M	U	F	M	U	ALL			
3																																								
4																																								
5																																								
6																																								
7																																								
8																																								
9																																								
10																																								
11								5				15																												
12												12		12																	20		20							
13												1		3	18																3	20		23						
14													5	8																	5	20		25						
15												4	2			7	13		1	5											12	20		32						
16												4				6	7		1	8											11	19		30						
17												4				7			1	3											13	10		23						
18																9			3													15	11		26					
19																1			5													11	12		24					
20																			5													5	7		13					
21																			6														13	7		20				
22																				6													7	1		16				
23																				1													2	1		12				
24																																	9			12				
25																																	3			5				
26																																	5			5				
27																																	2			2				
28																																	3			3				
29																																								
30																																								
TOTALS								5				28			20	40			30	33			12	16			21	10			13	5			29	29	125	166		291

Number of female year classes: 6 Number of male year classes: 8

Table A8

Number of Walleye Aged by Sex and Length From Spring 2007 Adult Population Estimate
Squirrel Lake, Oneida County, Wisconsin

INCH GROUP	AGE 1			AGE 2			AGE 3			AGE 4			AGE 5			AGE 6			AGE 7			AGE 8			AGE 9			AGE 10+			TOTAL										
	F	M	U	F	M	U	F	M	U	F	M	U	F	M	U	F	M	U	F	M	U	F	M	U	F	M	U	F	M	U	F	M	U	F	M	U	ALL				
3																																									
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8																																									
9																																									
10								8				1		1																											
11												13	1		6																										
12												4		1	10																										
13														1	4																										
14														1	9																										
15														1	3																										
16														1	1																										
17														1	1																										
18														2																											
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29																																									
30																																									
TOTALS								25	1			2	21			6	23			4	33			8	14			8	10			8	10			16	7	52	143	1	196

Number of female year classes: 7 Number of male year classes: 8

Table A9

Number of Walleye Aged by Sex and Length From Spring 2007 Adult Population Estimate
Big Round Lake, Polk County, Wisconsin

INCH GROUP	AGE 1			AGE 2			AGE 3			AGE 4			AGE 5			AGE 6			AGE 7			AGE 8			AGE 9			AGE 10+			TOTAL					
	F	M	U	F	M	U	F	M	U	F	M	U	F	M	U	F	M	U	F	M	U	F	M	U	F	M	U	F	M	U	F	M	U	F	M	U
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28																																				
29																																				
30																																				
TOTALS																																				

Number of female year classes: 6 Number of male year classes: 7

Table A10

Number of Walleye Aged by Sex and Length From Spring 2007 Adult Population Estimate
Annabelle Lake, Vilas County, Wisconsin

INCH GROUP	AGE 1			AGE 2			AGE 3			AGE 4			AGE 5			AGE 6			AGE 7			AGE 8			AGE 9			AGE 10+			TOTAL					
	F	M	U	F	M	U	F	M	U	F	M	U	F	M	U	F	M	U	F	M	U	F	M	U	F	M	U	F	M	U	F	M	U	F	M	U
3																																				
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28																																				
29																																				
30																																				
TOTALS																																				

Number of female year classes: 6 Number of male year classes: 8

Table A11

Number of Walleye Aged by Sex and Length From Spring 2007 Adult Population Estimate
Little John Lake, Vilas County, Wisconsin

INCH GROUP	AGE 1			AGE 2			AGE 3			AGE 4			AGE 5			AGE 6			AGE 7			AGE 8			AGE 9			AGE 10+			TOTAL					
	F	M	U	F	M	U	F	M	U	F	M	U	F	M	U	F	M	U	F	M	U	F	M	U	F	M	U	F	M	U	F	M	U	F	M	U
3																																				
4																																				
5																																				
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26																																				
27																																				
28																																				
29																																				
30																																				
TOTALS																																				

Number of female year classes: 5 Number of male year classes: 8

Table A12

Number of Walleye Aged by Sex and Length From Spring 2007 Adult Population Estimate
Razorback Lake, Vilas County, Wisconsin

INCH GROUP	AGE 1			AGE 2			AGE 3			AGE 4			AGE 5			AGE 6			AGE 7			AGE 8			AGE 9			AGE 10+			TOTAL					
	F	M	U	F	M	U	F	M	U	F	M	U	F	M	U	F	M	U	F	M	U	F	M	U	F	M	U	F	M	U	F	M	U	F	M	U
3																																				
4																																				
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26																																				
27																																				
28																																				
29																																				
30																																				
TOTALS																																				

Number of female year classes: 6 Number of male year classes: 7

Table A13

Number of Walleye Aged by Sex and Length From Spring 2007 Adult Population Estimate
Sherman Lake, Vilas County, Wisconsin

INCH GROUP	AGE 1			AGE 2			AGE 3			AGE 4			AGE 5			AGE 6			AGE 7			AGE 8			AGE 9			AGE 10+			TOTAL					
	F	M	U	F	M	U	F	M	U	F	M	U	F	M	U	F	M	U	F	M	U	F	M	U	F	M	U	F	M	U	F	M	U	F	M	U
3																																				
4																																				
5																																				
6																																				
7																																				
8																																				
9																																				
10				2	1			8	5																					10	6	16				
11								7	4																						13	7	20			
12										6	3					4	1															8	2	10		
13										4	1					1	1															12	2	14		
14										1	1					10	1																12	2	14	
15										1					1	3	1														2	10	3	15		
16															1																2	2	2	2		
17															1																3	1	4	4		
18															1	1															1	2	3	3		
19																1	1														1	2	3	3		
20																1															2	2	2	2		
21																															1	1	1	1		
22																															2	2	2	2		
23																																				
24																															1	1	1	1		
25																																				
26																																				
27																																				
28																																				
29																																				
30																																				
TOTALS				2	1		15	9		12	5		2	17	4	5	9	3	3	1	2	2			1						13	56	24	93		

Number of female year classes: 5 Number of male year classes: 6

Table A14

Number of Walleye Aged by Sex and Length From Spring 2007 Adult Population Estimate
Squaw Lake, Vilas County, Wisconsin

INCH GROUP	AGE 1			AGE 2			AGE 3			AGE 4			AGE 5			AGE 6			AGE 7			AGE 8			AGE 9			AGE 10+			TOTAL						
	F	M	U	F	M	U	F	M	U	F	M	U	F	M	U	F	M	U	F	M	U	F	M	U	F	M	U	F	M	U	F	M	U	F	M	U	ALL
3																																					
4																																					
5																																					
6																																					
7																																					
8																																					
9																																					
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27																																					
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29																																					
30																																					
TOTALS							1	18		4	22		14	36		13	18		5	10					1			1	1		5			43	106		149

Number of female year classes: 7 Number of male year classes: 7

Table A15

Number of Walleye Aged by Sex and Length From Spring 2007 Adult Population Estimate
Tenderfoot Lake, Vilas County, Wisconsin

INCH GROUP	AGE 1			AGE 2			AGE 3			AGE 4			AGE 5			AGE 6			AGE 7			AGE 8			AGE 9			AGE 10+			TOTAL															
	F	M	U	F	M	U	F	M	U	F	M	U	F	M	U	F	M	U	F	M	U	F	M	U	F	M	U	F	M	U	F	M	U	F	M	U	ALL									
3																																														
4																																														
5																																														
6																																														
7																																														
8																																														
9																																														
10								7		3																				10	10															
11							8		11		1																				20	20														
12									1	8		9			2		1													1	20	21														
13										1		4	6		1	10		3												5	20	25														
14										1		4	2		3	7		8			3									8	20	28														
15											1			6	4		3	6			7			3	1				10	20	1	31														
16														4	1	2	5		1	6		1	6			6			11	19	3	33														
17															2		5			1	2		1	4			3			9	9	18														
18															3		3						1	5			5			7	10	17														
19																1				3			1		1	1	10			6	10	1	17													
20														1						1			1			1	6			4	6	10														
21																				1			5			3	3			9	3	12														
22																							5			3				8		8														
23																									6				6		6															
24																									6				6		6															
25																									5				5		5															
26																									2				2		2															
27																																														
28																																														
29																																														
30																																														
TOTALS									15			2	23			9	18			20	24	2			17	18	1			7	18			15	18	2			27	33			97	167	5	269

Number of female year classes: 7 Number of male year classes: 8

Table A16

Number of Walleye Aged by Sex and Length From Spring 2007 Adult Population Estimate
Bass-Patterson Lake, Washburn County, Wisconsin

INCH GROUP	AGE 1			AGE 2			AGE 3			AGE 4			AGE 5			AGE 6			AGE 7			AGE 8			AGE 9			AGE 10+			TOTAL												
	F	M	U	F	M	U	F	M	U	F	M	U	F	M	U	F	M	U	F	M	U	F	M	U	F	M	U	F	M	U	F	M	U	F	M	U	ALL						
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7																																											
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9																																											
10										1																					1	1											
11										1		9		2																	12	12											
12												9		10																	19	19											
13												2		18																	20	20											
14														5	1	13															18	1	19										
15																14															20	20											
16														2		1	2													3	21	24											
17															4				3	3						2				7	8	15											
18															3					1			1			2				5	4	9											
19																				4										4	1	5											
20																							2							2		2											
21																							1		4		1			6		6											
22																																											
23																															1	1	1										
24																																											
25																																											
26																														2	2	2											
27																														1	1	1											
28																																											
29																																											
30																																											
TOTALS									2			20			2	35	1			8	29			9	20			7	11			1	4			4	3			31	124	1	156

Number of female year classes: 6 Number of male year classes: 8

Table A17 Spring 2007 Juvenile Walleye Survey Conducted by GLIFWC on Mille Lacs Lake, Minnesota

Miles Surveyed	Hours Surveyed	Total Walleye Caught	Estimated Number of Walleye Caught by Age					Catch per Mile by Age			
			Age 1	Age 2	Age 3	Age 4	Age 5+/Unaged	Age 1	Age 2	Age 3	Age 4
58.1	21.96	1144	452	504	38	75	75	7.8	8.7	0.7	1.3

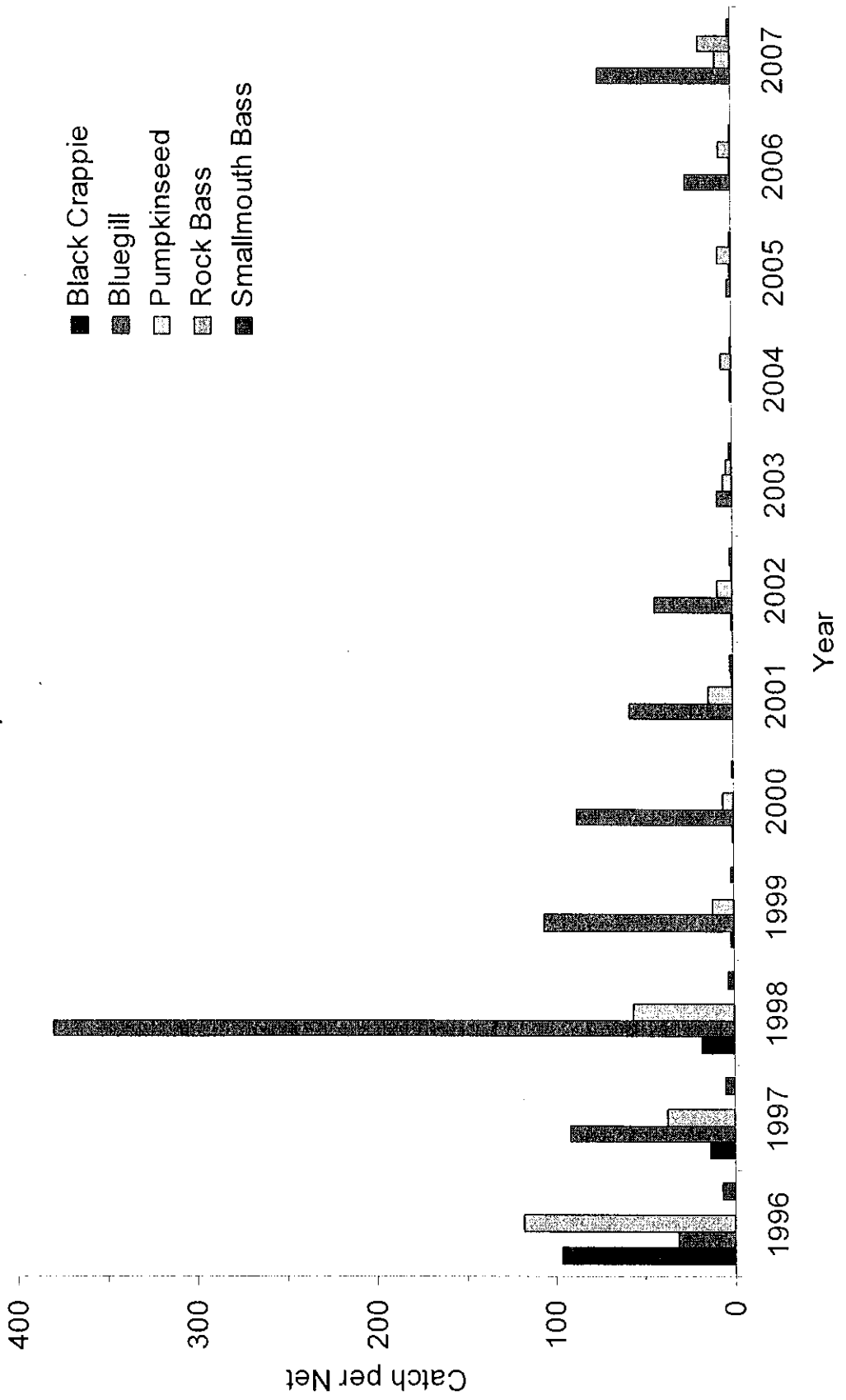
Table A18 Number of Walleye Aged by Sex and Length From Spring 2007 Juvenile Walleye Survey Mille Lacs Lake, Mille Lacs County, Minnesota

INCH GROUP	AGE 1			AGE 2			AGE 3			AGE 4			AGE 5			AGE 6			AGE 7			AGE 8			AGE 9			AGE 10+			TOTAL			
	F	M	U	F	M	U	F	M	U	F	M	U	F	M	U	F	M	U	F	M	U	F	M	U	F	M	U	F	M	U	ALL			
3																																		
4																																		
5																																		
6																																		
7			17			1																												
8			12			20																										18	18	
9																																	32	32
10																																		
11						11																											11	11
12						10			8																								18	18
13								10		1																							11	11
14								5		8					1																		14	14
15										7					1																		8	8
16										4					2																		6	6
17										3					1																		4	4
18															4																		4	4
19																																		
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28																																		
29																																		
30																																		
TOTALS			29			42			23			23			9																		126	126

Appendix B: Summer Survey Data

Figure		Page
B1.	Fish Community Surveys, Kentuck Lake, Vilas County, Wisconsin, Five Selected Species, 1996-2007	27
Table		Page
B1.	Fish Community Surveys, Kentuck Lake, Vilas County, Wisconsin, 1983-2007	28
B2.	Summer 2007 Fish Community Survey, Kentuck Lake, Vilas County, Wisconsin	29

Figure B1
 Fish Community Surveys, Kentucky Lake
 Five Selected Species, 1996–2007



Net Sets: 8 trap nets for 4 nights*

Table B1. Fish Community Surveys, Kentuck Lake, Vilas County, Wisconsin, 1983-2007

Year	Summary	Black Crappie	Bluegill	Golden Shiner	Largemouth Bass	Muskellunge	Pumpkin-seed	Rock Bass	Smallmouth Bass	Walleye	White Sucker	Yellow Perch
1983	Total	78	2			1	13		24	105		96
	Catch/Net	2.44	0.06			0.03	0.41		0.75	3.28		3.00
1984*	Total	75				3			77	86		8
	Catch/Net	3.12				0.12			3.12	3.50		0.33
1996	Total	3,080	1,014	156	282	5	3,768	2	215	3	60	90
	Catch/Net	96.25	31.69	4.88	8.81	0.16	117.75	0.06	6.72	0.09	1.88	2.81
1997	Total	440	2,936	8	0	0	1,198	1	161	0	16	56
	Catch/Net	13.75	91.75	0.25	0.00	0.00	37.44	0.03	5.03	0.00	0.50	1.75
1998	Total	556	12,142	40	5	1	1,778	6	101	1	9	32
	Catch/Net	17.38	379.44	1.25	0.16	0.03	55.56	0.19	3.16	0.03	0.28	1.00
1999	Total	59	3,379	29	2	0	385	12	49	0	7	28
	Catch/Net	1.84	105.59	0.91	0.06	0.00	12.03	0.38	1.53	0.00	0.22	0.88
2000	Total	36	2,782	33	0	1	186	8	23	6	16	6
	Catch/Net	1.13	86.94	1.03	0.00	0.03	5.81	0.25	0.72	0.19	0.50	0.19
2001	Total	4	1,857	12	0	0	432	22	60	5	22	6
	Catch/Net	0.13	58.03	0.38	0.00	0.00	13.50	0.69	1.88	0.16	0.69	0.19
2002	Total	17	1,348	7	0	0	250	29	60	6	36	2
	Catch/Net	0.55	43.48	0.23	0.00	0.00	8.06	0.94	1.94	0.19	1.16	0.06
2003	Total	10	273	5	1	1	150	106	50	7	76	3
	Catch/Net	0.31	8.59	0.16	0.03	0.00	4.69	3.31	1.56	0.22	2.38	0.09
2004	Total	5	33	6	2	1	25	190	24	5	18	2
	Catch/Net	0.16	1.03	0.19	0.06	0.03	0.78	5.94	0.75	0.16	0.56	0.06
2005	Total	3	85	15	3	0	21	234	14	31	9	5
	Catch/Net	0.09	2.66	0.47	0.09	0.00	0.66	7.31	0.44	0.97	0.28	0.16
2006	Total	1	805	2	0	3	39	221	23	4	1	3
	Catch/Net	0.03	25.16	0.06	0.00	0.09	1.22	6.91	0.72	0.13	0.03	0.09
2007	Total	9	2,362	21	0	1	266	566	61	8	3	46
	Catch/Net	0.30	73.80	0.70	0.00	0.03	8.30	17.70	1.90	0.30	0.10	1.40

* Incomplete data available from 1984 survey, which was conducted in June. It appears that 24 or 25 nets were set during this survey. One net did not fish properly during the 2002 survey, so catch/net data was based on 31 successful lifts. Surveys in 1997 and 1999 - 2002 were conducted by GLIFWC. Surveys in 1983, 1984, 1996 and 1998 were conducted by the Wisconsin Department of Natural Resources. Some species with minimal catch may not be reported in the summary above.

Table B2

Summer 2007 Fish Community Survey, Kentucky Lake, Vilas County, Wisconsin

Net Sets: 8 fyke nets and 4 nights

Area: 957 acres

Dates: June 26 – June 29, 2007

Inch Group	Bluegill	Black Crappie	Common Shiner	Golden Shiner	Muskellunge	Pumpkin-seed	Rock Bass	Smallmouth Bass	Walleye	White Sucker	Yellow Perch
2.0-2.4	4						4				
2.5-2.9	29					1	13				
3.0-3.4	73	1				2	3				1
3.5-3.9	146					8	15				3
4.0-4.4	244	2				21	39	2			2
4.5-4.9	199	1				40	71	2			9
5.0-5.4	104					46	84	2		1	8
5.5-5.9	50			2		39	90				3
6.0-6.4	27			3		51	60				6
6.5-6.9	14			6		36	48	2	3		8
7.0-7.4	18	2		6		9	37	3	1		2
7.5-7.9	9			3		6	12				
8.0-8.4	6	1		1		5	24	6			
8.5-8.9						2	26	5			
9.0-9.4							25	3			1
9.5-9.9							14	2			
10.0-10.4							1	2	1		2
10.5-10.9		1						1	1		
11.0-11.4								3			1
11.5-11.9								1			
12.0-12.4		1						2			
12.5-12.9								3		1	
13.0-13.4								3			
13.5-13.9								1			
14.0-14.4								3	1		
14.5-14.9								6			
15.0-15.4								5			
15.5-15.9								1			
16.0-16.4								2			
16.5-16.9											
17.0-17.4											
17.5-17.9										1	
18.0-18.4											
18.5-18.9											
19.0-19.4								1			
19.5-19.9											
20.0-20.4									1		
19.0-31.9											
41.0-41.9					1						
Unmeasured	1,439		1								
Total Catch	2,362	9	1	21	1	266	566	61	8	3	46
Catch/Net	73.81	0.28	0.03	0.66	0.03	8.31	17.69	1.91	0.25	0.09	1.44
Perc. of Total	70.6%	0.3%	0.0%	0.6%	0.0%	8.0%	16.9%	1.8%	0.2%	0.1%	1.4%
Mean Length	4.5	6.9	N/A	6.9	41.0	5.7	6.0	10.3	11.1	18.5	5.9

Appendix C: Fall Recruitment Survey Data

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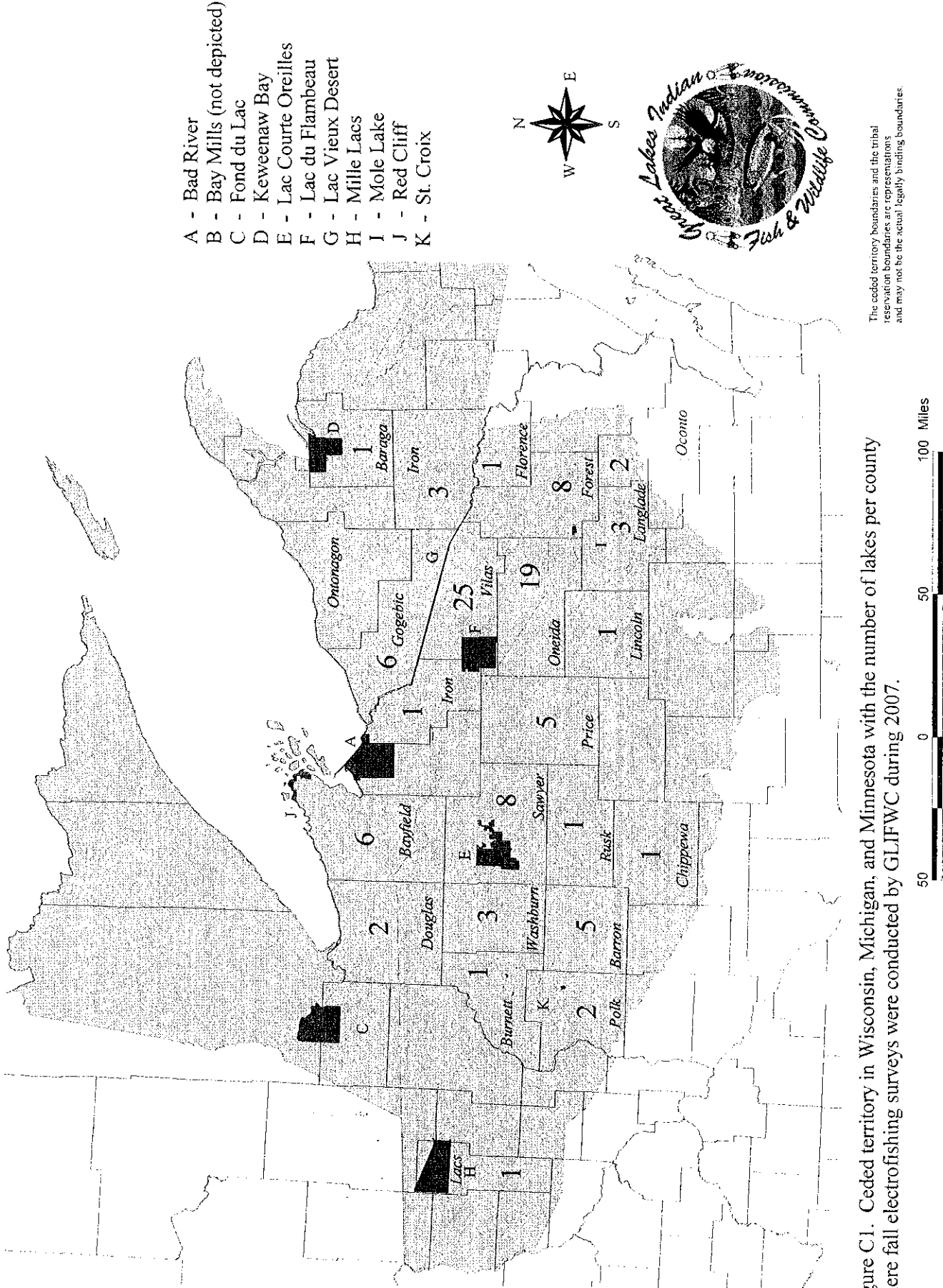


Figure C1. Ceded territory in Wisconsin, Michigan, and Minnesota with the number of lakes per county where fall electrofishing surveys were conducted by GLFWC during 2007.

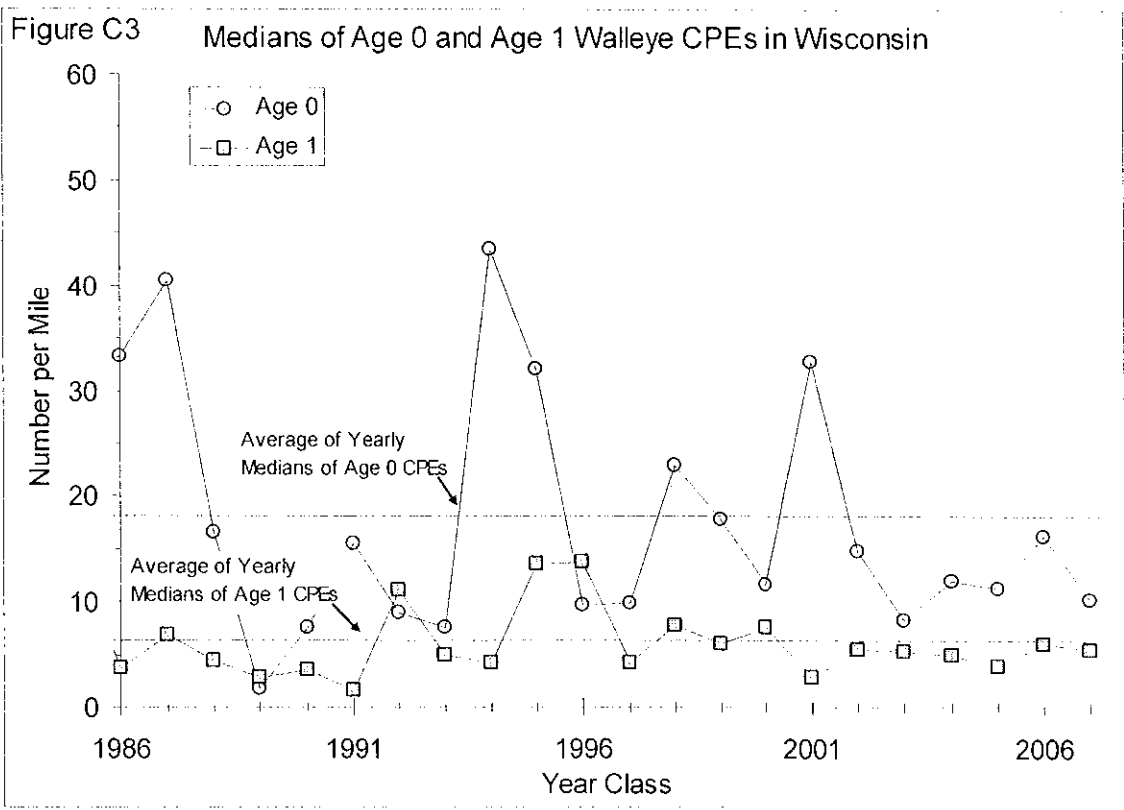
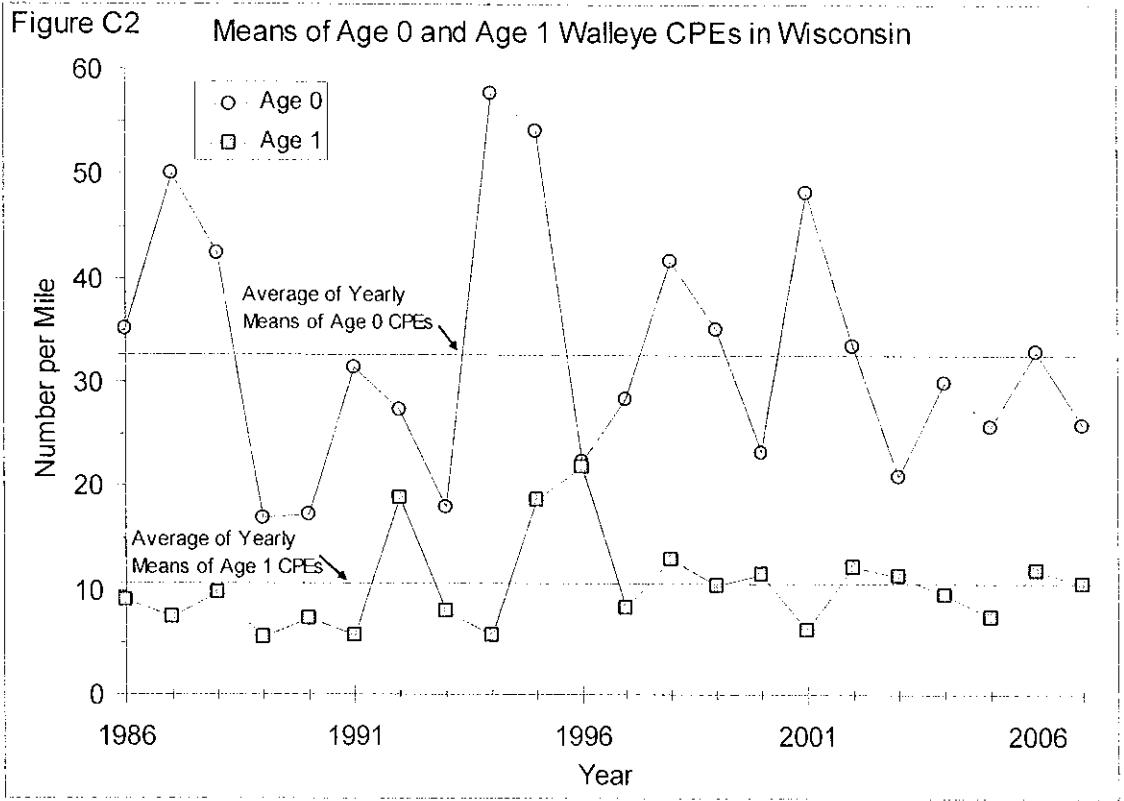


Figure C4

Length Frequency of Walleye Captured
Fall 2007 Walleye Recruitment Survey, Mille Lacs Lake

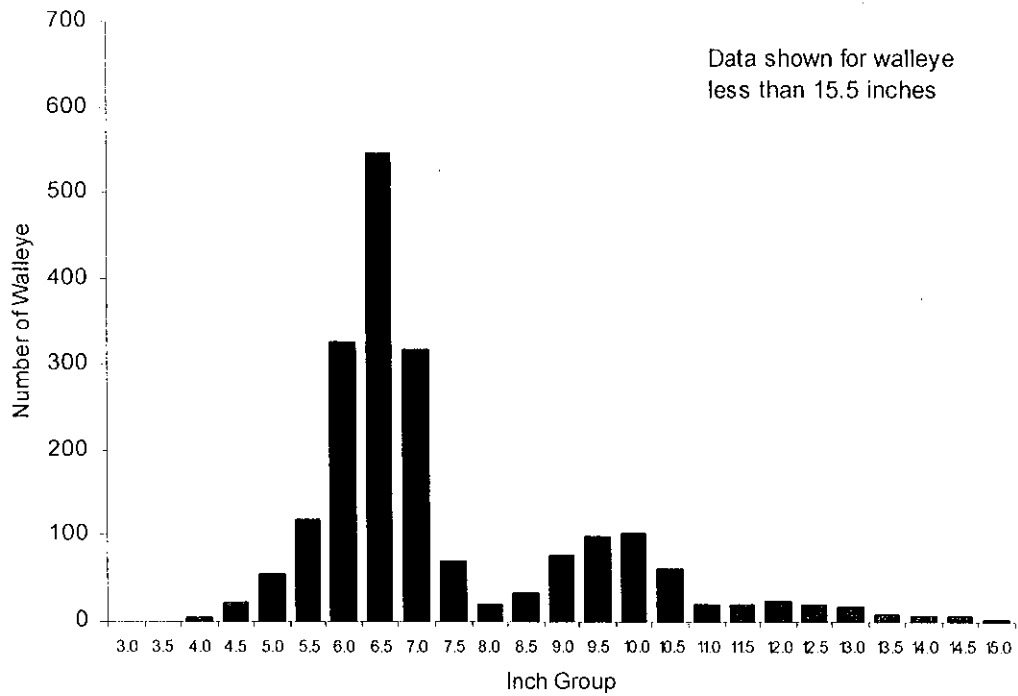


Figure C5

Mille Lacs Lake Fall Walleye CPEs from GLIFWC Surveys

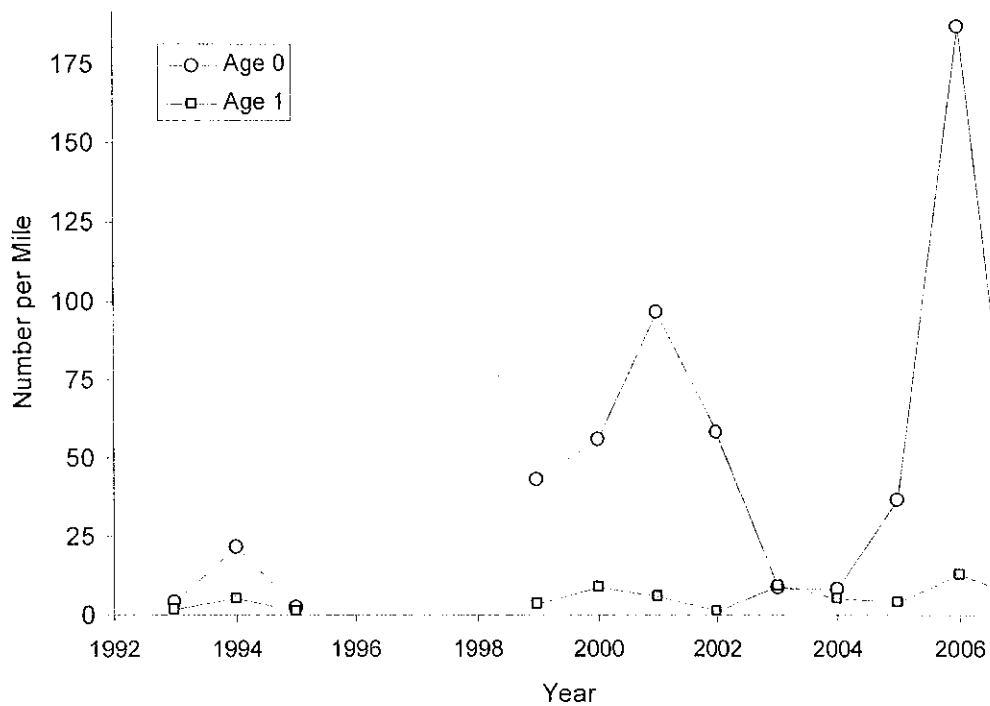


Figure C6

Age 0 CPE By Code for GLIFWC 2007 Recruitment Surveys

(X is the mean for each code, + is the median.)

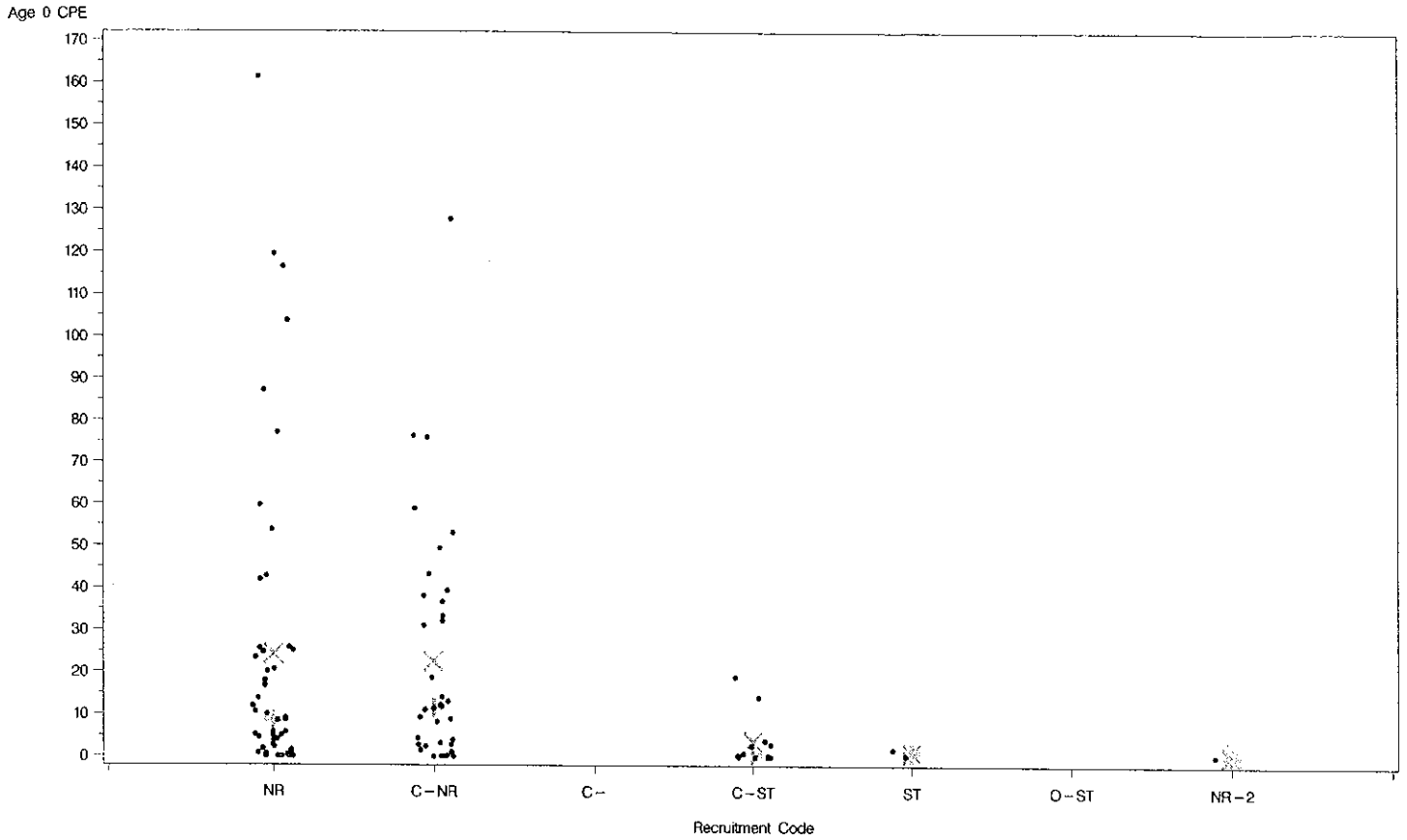


Figure C7

Age 1 CPE By Code for GLIFWC 2007 Recruitment Surveys

(X is the mean for each code, + is the median.)

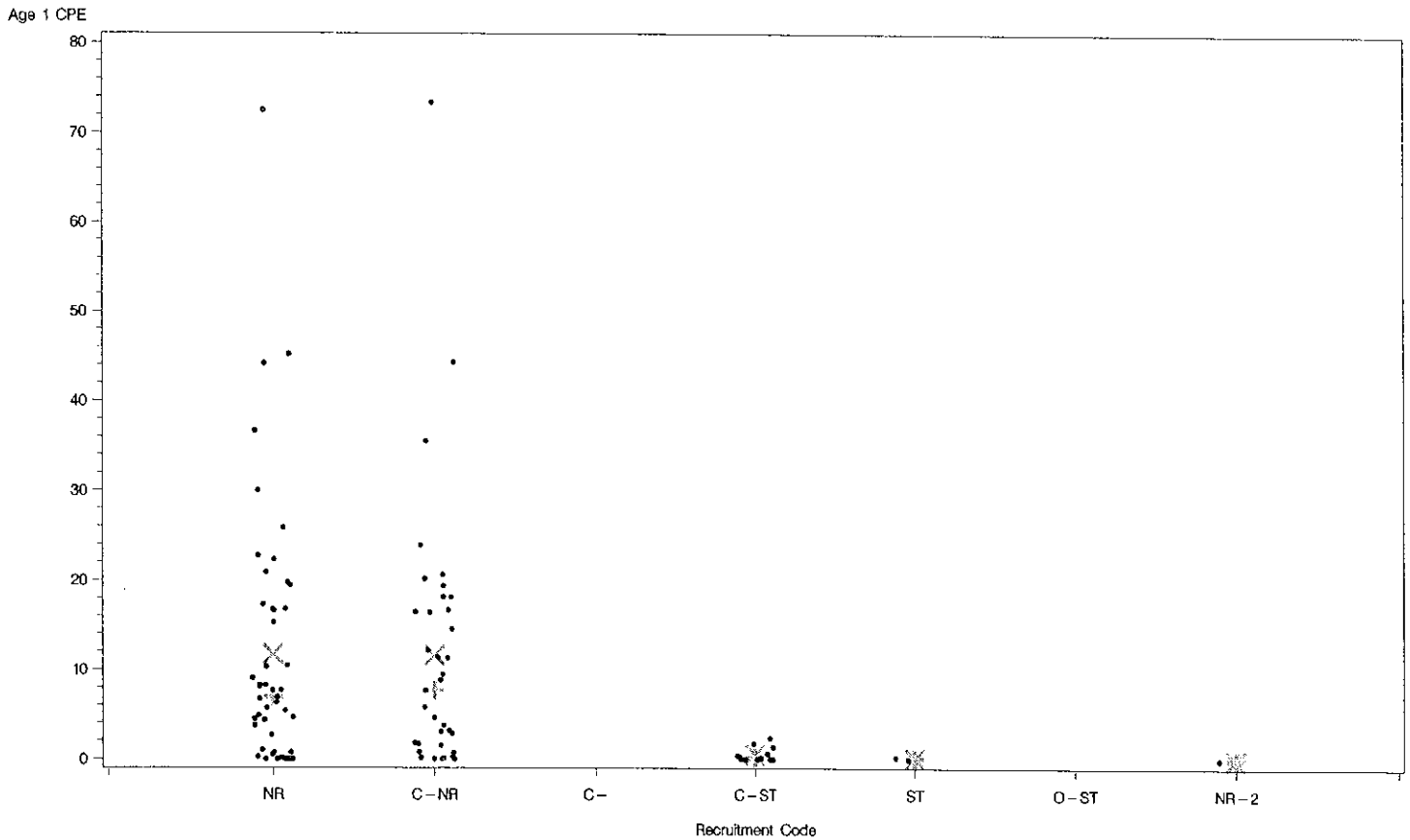


Table C1. Description of Walleye Recruitment Source Codes.

Code	Recruitment Code Description
NR =	Natural reproduction provides the only source of recruitment to the adult population and is consistent enough to result in an adult population with multiple year-classes present.
NR-2 =	Natural reproduction provides the only source of recruitment to the population, but adult density is low, presumably resulting from weak or inconsistent year-classes.
C-NR =	Natural reproduction is sufficient to sustain the adult population, but stocking occurs for non-biological reasons and may or may not augment the adult population (e.g., NR lakes stocked back with fry after spawn collection, NR lakes stocked by lake associations).
C- =	Natural reproduction and stocking provide more or less equal recruitment to the population, or the relative contributions of natural reproduction and stocking are not understood well enough to make an accurate judgement as to the dominant source.
C-ST =	Stocking provides the dominant source of recruitment to the adult population but natural reproduction occurs and may augment the adult population to a lesser extent (e.g., NR-2 lakes that are stocked to produce greater abundance).
ST =	Stocking provides the only source of recruitment to the adult population. If stocking is regular then the adult population may consist of multiple year-classes; if irregular, then the population may consist of one or two year-classes with perhaps only large fish.
REM =	Absence of recruitment to the adult population due to discontinued stocking or habitat changes has resulted in a remnant population of adults; the stock will disappear at some point in the future.
O-ST =	Stocking provides the only source of recruitment to the population in an attempt to establish an adult population, but survey data is either not available or indicates that adult density is less than 0.5 per acre.
O =	Walleye are not present.

SAWYER	ROUND L	3,054	C-NR	9/18	2.8	56	3.9	7.7	6.0	0.8	16	7.9	10.1	8.9	92	20.2	20.2	4.05	63
SAWYER	SISSABAGAMA L	719	C-NR	10/8	3.2	25	5.9	7.4	6.9	1.5	12	7.6	8.6	7.8	85	7.9	6.2	3.44	64
SAWYER	TEAL L	1,049	NR	10/11	0.4	2	5.9	7.1	6.5	19.4	101	8.3	10.0	9.4	170	5.2	11.8	1.87	53
VILAS	BIG L (BOULDER JCT)	835	NR	9/20	11.9	111	4.8	7.4	6.4	9.0	84	7.5	10.1	9.2	240	9.3	9.6	3.11	60
VILAS	BIG L (MIBORDER)	771	NR	9/10	13.8	190	4.5	7.1	5.6	30.0	414	7.2	9.5	8.3	732	13.8	13.8	4.00	65
VILAS	BIG MUSKELLUNGE L	930	NR	10/8	103.8	1,059	4.3	7.8	5.9	19.8	202	8.1	10.7	9.6	1,402	10.2	10.2	3.32	60
VILAS	BIG PORTAGE L	638	NR	9/24	25.6	174	4.7	7.4	6.2	8.1	55	7.6	9.4	8.7	351	6.8	6.8	2.58	60
VILAS	BIG ST GERMAIN L	1,617	C-ST	10/15	0.3	1	6.9	6.9	6.9	2.4	9	7.2	8.0	7.6	24	3.8	7.6	1.54	53
VILAS	BOULDER L	524	NR	9/25	119.5	920	3.8	7.2	5.5	16.6	128	7.4	9.5	8.6	1,139	7.7	2.67	60	60
VILAS	CATFISH L	1,012	NR	10/10	5.0	56	5.5	7.5	6.5	16.7	189	7.6	9.3	8.6	513	11.3	11.3	3.97	55
VILAS	CLEAR L	555	C-NR	9/19	38.1	198	4.7	6.9	5.9	5.8	30	8.2	10.1	9.1	252	5.2	7.1	2.03	60
VILAS	CRAB L	949	NR	10/17	4.5	35	3.8	7.1	5.1	4.9	38	7.2	10.4	8.8	101	7.8	15.8	3.07	49
VILAS	CRANBERRY L	956	NR	10/9	23.4	267	4.9	6.9	5.9	36.7	418	7.0	9.8	8.6	772	11.4	11.4	3.29	55
VILAS	EAGLE L	572	NR	10/11	25.8	124	5.5	7.3	6.4	45.2	217	7.4	9.2	8.5	482	4.8	4.8	1.79	55
VILAS	FOREST L	466	NR	9/20	41.9	283	3.9	5.9	4.6	6.7	47	7.1	9.9	8.6	344	7.0	7.0	3.05	62
VILAS	HARRIS L	507	NR	10/15	5.2	31	5.9	7.7	6.6	4.5	27	8.0	11.0	9.9	110	6.0	6.0	1.91	53
VILAS	HIGH L	734	NR	9/11	0.0	0	0.0	0	0	0.0	0	0	0	0	4	6.8	9.4	1.43	56
VILAS	ISLAND L	1,023	C-NR	10/4	39.3	460	3.9	7.6	5.6	16.7	195	7.9	10.4	9.2	820	11.7	16.8	3.34	60
VILAS	KENTUCK L	957	C-NR	9/19	2.3	14	5.2	7.5	6.9	35.5	213	7.9	10.8	9.6	291	6.0	6.0	2.77	62
VILAS	LAC VIEUX DESERT	4,300	C-NR	10/11	0.0	0	0.0	0	0	0.0	0	0	0	0	44	16.3	16.3	7.94	51
VILAS	LITTLE JOHN L	1,666	C-NR	10/9	11.8	39	5.6	7.7	7.2	20.6	68	7.8	10.3	8.4	331	3.3	3.3	1.08	59
VILAS	MAMIE L	400	NR	9/13	5.8	34	5.0	7.7	6.3	16.8	99	7.9	9.8	8.9	252	5.9	5.9	1.82	59
VILAS	PRESQUE ISLE L	1,280	NR	10/10	10.6	93	4.4	7.1	5.8	3.8	33	8.3	10.4	9.6	168	8.8	8.8	3.72	56
VILAS	REST L	608	C-NR	10/4	58.9	265	4.1	7.3	6.1	16.4	74	7.6	10.3	9.1	409	4.5	8.1	1.87	59
VILAS	SHERMAN L	123	NR	9/17	161.4	355	3.7	7.4	5.6	22.7	50	7.7	9.8	8.8	419	2.2	2.2	1.07	62
VILAS	SQUAW L	785	NR	9/25	25.1	226	5.1	7.6	6.6	4.7	42	8.6	10.5	9.5	414	9.0	9.0	3.81	61
VILAS	STAR L	1,206	C-NR	9/26	127.8	1,495	3.8	6.9	5.1	14.5	170	7.0	10.1	8.5	1,744	11.7	11.7	4.99	60
VILAS	TENDERFOOT L	437	NR	10/15	0.6	4	6.2	7.0	6.7	0.0	0	0	0	67	6.6	6.6	2.17	50	
WASHBURN	BASS-PATTERSON L	188	NR	10/1	116.6	338	4.7	8.0	6.6	25.9	75	8.5	10.4	9.6	507	2.9	2.9	1.24	60
WASHBURN	L NANCY	772	C-ST	10/18	0.0	0	0.0	0	0	0.0	0	0	0	4	6.1	10.9	1.85	54	
WASHBURN	LONG L	3,290	C-ST	10/8	2.6	31	4.8	8.5	7.1	1.7	21	8.2	10.6	9.6	86	12.0	38.0	5.19	62

COUNT: 93 SURVEYS ON 93 LAKES TOTALS 14,956 8,138 31,263 778.9 284.32 4 132 424 71
 AVERAGES 20.6 161 89 8.9 336 2 7 8 4
 NUMBER OF SURVEYS WITH FISH CAUGHT: 80 78 92

MICHIGAN	County	Lake	Surface Area (Acres)	2007 Walleye Code	Date Surveyed	Age 0 CPE	Age 0 Wall-eye	Age 0 Min Length	Age 0 Max Length	Age 0 Mean Length	Age 1 CPE	Age 1 Wall-eye	Age 1 Min Length	Age 1 Max Length	Age 1 Mean Length	Total Wall-eye	Miles Surveyed	Shore Miles	Hours Surveyed	Temperature	Other Species
	BARAGA	PARENT L	182	NR	10/15	0.0	0	0	0	0	8.3	19	8.4	9.9	9.5	21	2.3	2.3	0.97	48	
	GOGEBIC	CISCO L	506	C-NR	9/12	0.0	0	0	0	0	0.0	0	0	0	0	2	3.2	12.4	0.66	61	20
	GOGEBIC	DUCK L	616	C-ST	10/17	0.8	7	4.9	7.0	5.9	0.0	0	0	0	0	24	8.5	9.5	3.00	54	
	GOGEBIC	L GOGEBIC	13,360	C-NR	9/12	76.3	1,854	4.1	7.5	6.1	1.8	44	8.0	9.2	8.9	2,050	24.3	35.0	9.48	58	
	GOGEBIC	POMEROY L	314	NR	9/10	0.0	0	0	0	0	0.0	0	0	0	0	234	3.7	3.7	1.85	65	
	GOGEBIC	TAMARACK L	335	NR	10/18	3.8	15	5.5	6.9	6.5	15.3	61	7.0	8.5	7.6	108	4.0	4.0	1.58	55	
	GOGEBIC	THOUSAND ISLAND L	1,020	C-NR	9/11	0.0	0	0	0	0	0.0	0	0	0	0	0	10.7	10.7	4.32	62	7
	IRON	OTTAWA L	551	ST	10/17	1.8	8	4.0	6.7	5.6	0.2	1	7.7	7.7	7.7	17	4.4	4.4	1.85	58	
	IRON	PERCH L	984	NR	10/16	5.8	46	5.6	7.7	6.8	0.5	4	9.0	10.6	9.6	61	8.0	8.0	2.63	0	
	IRON	STANLEY L	310	NR	10/18	53.8	140	5.4	8.3	6.7	2.7	7	10.2	10.8	10.4	163	2.6	3.5	1.50	56	

COUNT: 12 SURVEYS ON 12 LAKES TOTALS 2,070 196 2,680 71.7 27.84 0 0 0 27 0
 AVERAGES 14.2 207 6.3 2.9 9.0 268 0 0 2 0
 NUMBER OF SURVEYS WITH FISH CAUGHT: 6 9

MINNESOTA	County	Lake	Surface Area (Acres)	2007 Walleye Code	Date Surveyed	Age 0 CPE	Age 0 Wall-eye	Age 0 Min Length	Age 0 Max Length	Age 0 Mean Length	Age 1 CPE	Age 1 Wall-eye	Age 1 Min Length	Age 1 Max Length	Age 1 Mean Length	Total Wall-eye	Miles Surveyed	Shore Miles	Hours Surveyed	Temperature	Other Species
	MILLE LACS	MILLE LACS L	132,516	NR	9/24-9/27	20.1	1,454	3.8	7.9	6.6	5.7	412	7.8	11.5	9.8	1,988	72.2	78.0	26.99	63	

OVERALL: 111 SURVEYS ON 108 LAKES TOTALS (OVERALL) 18,480 8,686 35,931 922.8 339.15 4 132 451 71
 AVERAGES (OVERALL) 20.0 178 6.2 9.7 8.9 345 2 7 10 4
 NUMBER OF SURVEYS WITH FISH CAUGHT (OVERALL) 87 85

CPE=catch per unit effort (number of fish divided by shore miles surveyed), MUE=muskellunge, NOP=northern pike, LMB=largemouth bass, SMB=smallmouth bass.

Table C3 Summary of Age 0 and Age 1 Catch per Effort Rates During Fall 2007 Recruitment Surveys Conducted by GLIFWC

Including Lakes Where No Year Class Was Detected

AGE STATE	NR and C-NR				ST and C-ST				NR-2 and REM							
	MEAN CPE	ST. DEV.	N	MIN. CPE	MAX. CPE	MEAN CPE	ST. DEV.	N	MIN. CPE	MAX. CPE	MEAN CPE	ST. DEV.	N	MIN. CPE	MAX. CPE	
0	WISCONSIN	24.2	33.6	78	0.0	161.4	1.9	3.9	13	0.0	14.1	0.2	0.3	2	0.0	0.4
	MICHIGAN	17.5	30.1	8	0.0	76.3	1.3	0.7	2	0.8	1.8			0		
	MINNESOTA	20.1		1	20.1	20.1			0					0		
1	POOLED	23.5	33.0	87	0.0	161.4	1.8	3.6	15	0.0	14.1	0.2	0.3	2	0.0	0.4
	WISCONSIN	12.4	14.9	78	0.0	73.4	0.8	0.9	13	0.0	2.4	0.0	0.0	2	0.0	0.0
	MICHIGAN	3.6	5.5	8	0.0	15.3	0.1	0.2	2	0.0	0.2			0		
	MINNESOTA	5.7		1	5.7	5.7			0					0		
POOLED	11.5	14.5	87	0.0	73.4	0.7	0.8	15	0.0	2.4	0.0	0.0	2	0.0	0.0	

Excluding Lakes Where No Year Class Was Detected

AGE STATE	NR and C-NR				ST and C-ST				NR-2							
	MEAN CPE	ST. DEV.	N	MIN. CPE	MAX. CPE	MEAN CPE	ST. DEV.	N	MIN. CPE	MAX. CPE	MEAN CPE	ST. DEV.	N	MIN. CPE	MAX. CPE	
0	WISCONSIN	26.6	34.4	71	0.1	161.4	3.0	4.7	8	0.1	14.1	0.4		1	0.4	0.4
	MICHIGAN	34.9	36.0	4	3.8	76.3	1.3	0.7	2	0.8	1.8			0		
	MINNESOTA	20.1		1	20.1	20.1			0					0		
1	POOLED	27.0	34.0	76	0.1	161.4	2.7	4.2	10	0.1	14.1	0.4		1	0.4	0.4
	WISCONSIN	14.0	15.1	69	0.1	73.4	1.1	0.8	9	0.1	2.4			0		
	MICHIGAN	5.7	6.1	5	0.5	15.3	0.2		1	0.2	0.2			0		
	MINNESOTA	5.7		1	5.7	5.7			0					0		
POOLED	13.4	14.8	75	0.1	73.4	1.0	0.8	10	0.1	2.4			0			

