



**Fish Population Assessments of Ceded Territory Lakes in
Wisconsin, Michigan and Minnesota During 2011**

by

**Mark Luehring
Inland Fisheries Biologist**

**Joseph D. Rose
Inland Fisheries Section Leader**

**Administrative Report 12-05
June 2012**

**Great Lakes Indian Fish and Wildlife Commission
P. O. Box 9
Odanah, WI 54861
(715) 682 - 6619
www.glifwc.org**

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, Sokaogon (Mole Lake), and St. Croix Bands assisted with spring and fall surveys. An assessment crew from the Bad River Band assisted with fall surveys.

In the spring, adult walleye (*Sander vitreus*) population estimates were conducted on 17 lakes. A total of 20,840 walleye were sampled from 15,605 acres of water during these surveys. All but three of the lakes surveyed had naturally reproducing walleye populations, and density of adult walleye averaged 3.13 (SD = 1.89, range: 0.63 to 8.85) fish per acre. In 8 of these 17 lakes, adult walleye population densities were at least 3.0 fish per acre, indicating that walleye populations were healthy.

During the fall, electrofishing surveys were conducted on 97 lakes in Wisconsin, 9 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 34,905 age 0 and 6,697 age 1 walleye were sampled. In addition, 840 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 5,554 age 0 and 102 age 1 walleye were sampled during the fall. In Minnesota on Mille Lacs Lake, a total of 5,436 age 0 and 485 age 1 walleye were sampled.

Contents

	Page
Acknowledgments.....	3
Introduction.....	4
Methods	
Spring Adult Walleye Population Estimates.....	4
Fall Recruitment Surveys.....	5
Results and Discussion	
Spring Adult Walleye Population Estimates.....	7
Fall Recruitment Surveys.....	8
References.....	9
Appendices	
A. Spring Survey Data.....	10
B. Fall Recruitment Survey Data.....	25

Acknowledgments

The authors thank fisheries technicians Butch Mieloszyk and Ed White for their assistance in selecting lakes, conducting field work, providing boat maintenance, supervising crews during spring and fall survey seasons, and aging walleye structures (spines, scales, and otoliths). Fisheries biologist Ben Michaels is thanked for providing assistance in supervising crews and conducting field work during the fall electrofishing season. Fisheries aides Kris Arbuckle, Noah Arbuckle, Dale Corbine, Caine Heffner, Joshua Johnson, David Moore, Billy Jo Nelis, Rick Nelis, David Parisien, Ron Parisien Jr., Louis Plucinski, Sam Plucinski, Sam Quagon, Greg Smart, Bill Soulier, Dennis Soulier, and Joe Wilmer are thanked for operating shocking equipment, sampling fish, and maintaining boats and equipment under demanding conditions. Kia White, Database Manager, is thanked for entering fall survey data. Thanks also to Bad River, Sokaogon (Mole Lake), St. Croix, and U.S. Fish and Wildlife Service personnel for their efforts, and to Neil Kmiecik, Biological Services Director, for editing the manuscript.

Introduction

Fishery assessment surveys of ceded territory lakes were conducted during spring and fall of 2011 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 2011 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 assisted with the spring and fall surveys through a subcontract with GLIFWC. The Bad River Band assisted with the fall surveys through a subcontract with GLIFWC.

Methods

Spring Adult Walleye Population Estimates

Current information on adult walleye populations was collected from 16 lakes in the ceded territory of Wisconsin and one lake in the ceded territory of Michigan (Figure A1). Of these, 13 lakes in Wisconsin and one in Michigan had experienced tribal spearing harvest during the previous year. The surveys conducted on Big Butternut Lake (Polk Co., Wisconsin), and Sherman Lake (Vilas Co., Wisconsin) were cooperative efforts coordinated between GLIFWC and the Wisconsin Department of Natural Resources (WDNR). All data from these two surveys are reflected in this report regardless of which agency did the actual collection of fish. GLIFWC also assisted WDNR in completing population estimates on Upper Eau Claire Lake (Bayfield Co., Wisconsin), Balsam Lake (Polk Co., Wisconsin), and the Chippewa Flowage (Sawyer Co., Wisconsin). Data from these surveys are not included in this report.

Nine lakes in Wisconsin are GLIFWC long-term study lakes. Large (greater than 500 acres in area) long-term study lakes surveyed in 2011 included Butternut Lake (Forest Co.), Kentuck Lake (Vilas Co.), Squirrel Lake (Oneida Co.) and Squaw Lake (Vilas Co.). Small (less than 500 acres in area) long-term study lakes surveyed in 2011 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 Butternut Lake (Polk Co., WI), where walleye were captured by fyke netting by a WDNR assessment crew. In Lake Lucerne (Forest Co.) walleye were captured by fyke netting and electrofishing by the Sokaogon (Mole Lake) assessment crew. 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 2011 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 two to nine 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 to three 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.

Fall Recruitment Surveys

Fall electrofishing surveys were conducted in 107 ceded territory waters including 97 lakes in Wisconsin, 9 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 12 through October 20. Eight assessment crews were used during the season, including four from GLIFWC, one from USFWS, and crews from the Bad River, 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 15 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. Cases of severe weather were the only exceptions that prevented survey completion. All fish collected were identified to species and 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 bleached, 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 seven Wisconsin lakes were conducted jointly by GLIFWC and WDNR, and the results summarized and reported by GLIFWC: Red Cedar Lake (Barron Co.), Lake Wissota (Chippewa Co.), Long Lake (Chippewa Co.), Lac Vieux Desert (Vilas Co.), Trout Lake (Vilas Co.), Minong Flowage (Washburn Co.), and Shell Lake (Washburn Co.). Surveys on the following six Wisconsin lakes were conducted jointly by GLIFWC and WDNR, and the results were summarized and reported by WDNR: Middle Eau Claire Lake (Bayfield Co.), Yellow Lake (Burnett Co.), Pelican Lake (Oneida Co.), Balsam Lake (Polk Co.), Lake Chippewa (Sawyer Co.), and Long Lake (Washburn Co.). All data from these 13 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 20,840 walleye were sampled from 15,605 acres of water in Wisconsin and Michigan during the spawning adult walleye population estimate period. Adult walleye population estimates for 17 stocks in Wisconsin and Michigan (Table A1) ranged from 515 to 12,902 fish. Estimated population densities ranged from 0.64 per acre for Lake Lucerne, Sawyer Co., to 8.85 walleye per acre for Big Muskellunge Lake, Vilas Co. (mean = 3.13, SD = 1.89) (Figure A2).

The Report on Biological Issues (1988) listed several indicators of healthy naturally 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.

Twelve of the 17 lakes surveyed had recruitment codes of NR (Table A1), indicating that natural reproduction was the only source of recruitment. Two lakes had recruitment codes of C-NR, indicating that some stocking occurred even though the population was sustained by natural reproduction. Three of the lakes had a recruitment code of C-ST, indicating that some natural reproduction occurred even though the population was sustained by stocking. Eight of these 17 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 1,693 female, 18,575 male, and 572 unknown sex walleye were measured (Figure A3, Table A2) and a subsample aged (Figure A4). Female lengths ranged from 10.5 to 28.5 inches, male lengths ranged from 9.5 to 22.5 inches, and lengths for walleye of unknown sex ranged from 8.5 to 21.0 inches. Age-length tables were developed for subsets of female, male, and unknown sex walleye in each of the lakes sampled (Tables A3 – A19). Aging structures for Big Butternut Lake (Polk Co.) were collected and read by WDNR. 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, 17 of the 17 lakes had populations with at least five year classes of females in the aging sample.

Fall Recruitment Surveys

Fall recruitment surveys were conducted on 107 lakes in the ceded territories of Wisconsin, Michigan and Minnesota (Figure B1, Table B2). Survey effort included 468.8 hours of electrofishing along 1176.5 miles of shoreline resulting in the collection of 58,373 walleye.

From 97 surveys conducted on 97 lakes in Wisconsin, 398.7 hours of electrofishing along 1,013.9 miles of shoreline resulted in a collection of 34,905 walleye. In Michigan, 9 lakes were surveyed in 40.2 hours along 84.6 miles of shoreline, resulting in the collection of 5,791 walleye. In Mille Lacs Lake, 6,032 walleye were collected in 29.9 hours along 78.0 miles of shoreline (Table B2).

A total of 34,905 age 0 walleye were caught in Wisconsin. Age 0 walleye were caught in 89 of the 97 lakes surveyed. Over all 97 surveys, catch per effort (CPE) for age 0 walleye ranged from 0.0 to 337.0 (mean = 36.1, median = 17.5, SD = 50.8) per mile. A total of 6,697 age 1 (yearling) walleye were caught in 79 of the lakes surveyed. Over all surveys, age 1 CPE ranged from 0.0 to 57.1 (mean = 8.6, median = 3.5, SD = 11.9) yearlings per mile.

In order to gauge the relative strength of the 2011 and 2010 walleye year classes monitored in the 2011 fall surveys as age 0 and age 1 fish, plots of mean and median CPE values were generated for each year from 1986 through 2011 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 B2 and B3). For 1986 through 2011, the averages of the yearly mean and median age 0 CPEs are 31.7 and 17.2 per mile, respectively, and the averages of the yearly mean and median age 1 CPEs are 10.2 and 5.6 per mile, respectively. For 2011, the mean and median age 0 CPEs were 37.0 and 15.8, respectively, and the mean and median age 1 CPEs were 9.2 and 3.1, respectively.

In Michigan, 5,554 age 0 walleye were caught. Age 0 walleye were caught in 8 of the 9 lakes surveyed. Age 0 CPE ranged from 0.0 to 195.0 (mean = 36.1, median = 0.87, SD = 67.3) per mile. A total of 102 age 1 walleye were caught in 7 lakes. Age 1 CPE ranged from 0.0 to 5.5 (mean = 1.8, median = 1.7, SD = 1.8) yearlings per mile.

In Minnesota, 5,436 age 0 and 485 age 1 walleye were caught in Mille Lacs Lake, yielding CPEs of 69.7 and 6.2 per mile, respectively. Length frequencies from the survey on Mille Lacs Lake are shown in Figure B4, and results from all fall recruitment surveys conducted by GLIFWC on Mille Lacs Lake are shown in Figure B5.

Table B2 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 O-ST lakes in Wisconsin, Michigan and Minnesota are given in Table B3. 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 B6 and B7.

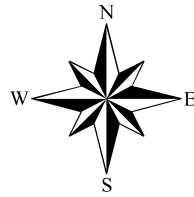
References

- Colby, P. J., R. E. McNicol, and R. A. Ryer. 1979. Synopsis of biological data on walleye (*Stizostedion v. vitreum*, Mitchell 1818). Food and Agricultural Organization of the United Nations, Rome.
- Drake, M. T. 2009. Mille Lacs Safe Harvest Estimation for the 2008 Fishing Season. 1837 Ceded Territory Fisheries Committee Meeting. January, 2009.
- Report on Biological Issues. 1988. LCO et al. V. State of Wisc. August, 1988.
- Ricker, W.E. 1975. Computation and interpretation of biological statistics of fish populations. Bulletin of the Fisheries Research Board of Canada. 382 pp.
- Robson, D.S. and H.A. Regier. 1964. Sample size in Peterson mark-recapture experiments. Transactions of the American Fisheries Society 93: 215-226.
- Shively, J.D. and N. Kmiecik. 1991. Fish population assessment of ceded territory lakes in Wisconsin during 1990. Great Lakes Indian Fish and Wildlife Commission Administrative Report 91-2. Odanah, WI.

Appendix A: Spring Survey Data

Figure	Page
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 2011	12
A2. Estimated Adult Walleye Densities by Recruitment Code, Spring 2011	13
A3. Length Frequency of Adult Walleye Marked, Adult Walleye Population Estimates, Spring 2011	14
A4. Age Frequency of Adult Walleye Aged, Adult Walleye Population Estimates, Spring 2011	14
Table	Page
A1. Spring 2011 Adult Population Estimates Conducted by GLIFWC	15
A2. Lengths of Walleye Collected During Spring 2011 Adult Population Estimates	15
A3. Number of Walleye Aged by Sex and Length From Spring 2011 Adult Population Estimate: Tamarack Lake, Gogebic County, Michigan	16
A4. Number of Walleye Aged by Sex and Length From Spring 2011 Adult Population Estimate: Namekagon Lake, Bayfield County, Wisconsin	16
A5. Number of Walleye Aged by Sex and Length From Spring 2011 Adult Population Estimate: Siskiwit Lake, Bayfield County, Wisconsin	17
A6. Number of Walleye Aged by Sex and Length From Spring 2011 Adult Population Estimate: Lower Eau Claire Lake, Douglas County, Wisconsin	17
A7. Number of Walleye Aged by Sex and Length From Spring 2011 Adult Population Estimate: Butternut Lake, Forest County, Wisconsin	18
A8. Number of Walleye Aged by Sex and Length From Spring 2011 Adult Population Estimate: Lake Lucerne, Forest County, Wisconsin	18
A9. Number of Walleye Aged by Sex and Length From Spring 2011 Adult Population Estimate: Lake Metonga, Forest County, Wisconsin	19
A10. Number of Walleye Aged by Sex and Length From Spring 2011 Adult Population Estimate: Enterprise Lake, Langlade County, Wisconsin	19

A11.	Number of Walleye Aged by Sex and Length From Spring 2011 Adult Population Estimate: Squirrel Lake, Oneida County, Wisconsin	20
A12.	Number of Walleye Aged by Sex and Length From Spring 2011 Adult Population Estimate: Big Butternut Lake, Polk County, Wisconsin	20
A13.	Number of Walleye Aged by Sex and Length From Spring 2011 Adult Population Estimate: Annabelle Lake, Vilas County, Wisconsin	21
A14.	Number of Walleye Aged by Sex and Length From Spring 2011 Adult Population Estimate: Big Muskellunge Lake, Vilas County, Wisconsin	21
A15.	Number of Walleye Aged by Sex and Length From Spring 2011 Adult Population Estimate: Kentuck Lake, Vilas County, Wisconsin	22
A16.	Number of Walleye Aged by Sex and Length From Spring 2011 Adult Population Estimate: Sherman Lake, Vilas County, Wisconsin	22
A17.	Number of Walleye Aged by Sex and Length From Spring 2011 Adult Population Estimate: Squaw Lake, Vilas County, Wisconsin	23
A18.	Number of Walleye Aged by Sex and Length From Spring 2011 Adult Population Estimate: Star Lake, Vilas County, Wisconsin	23
A19.	Number of Walleye Aged by Sex and Length From Spring 2011 Adult Population Estimate: Bass-Patterson Lake, Washburn County, Wisconsin	24



- A - Bad River
- B - Bay Mills (not depicted)
- C - Fond du Lac
- D - Keweenaw Bay
- E - Lac Courte Oreilles
- F - Lac du Flambeau
- G - Lac Vieux Desert
- H - Mille Lacs
- I - Mole Lake
- J - Red Cliff
- K - St. Croix

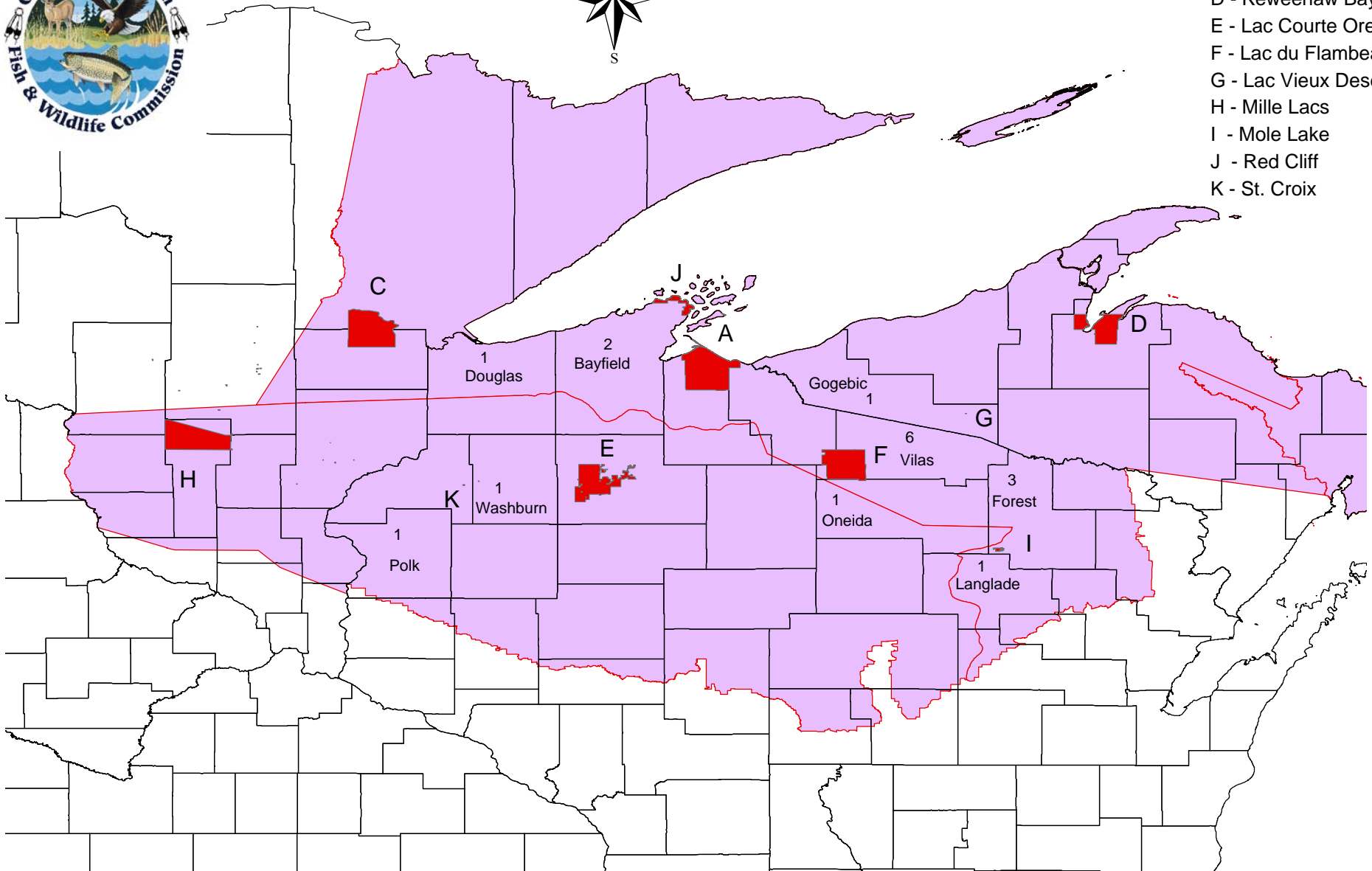


Figure A1. Ceded Territory in Wisconsin, Michigan, and Minnesota with the number of lakes per county where spring adult walleye surveys were conducted by GLIFWC during 2011.

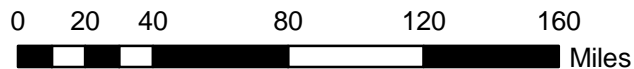


Figure A2. Estimated Adult Walleye Densities by Recruitment Code, Spring 2011

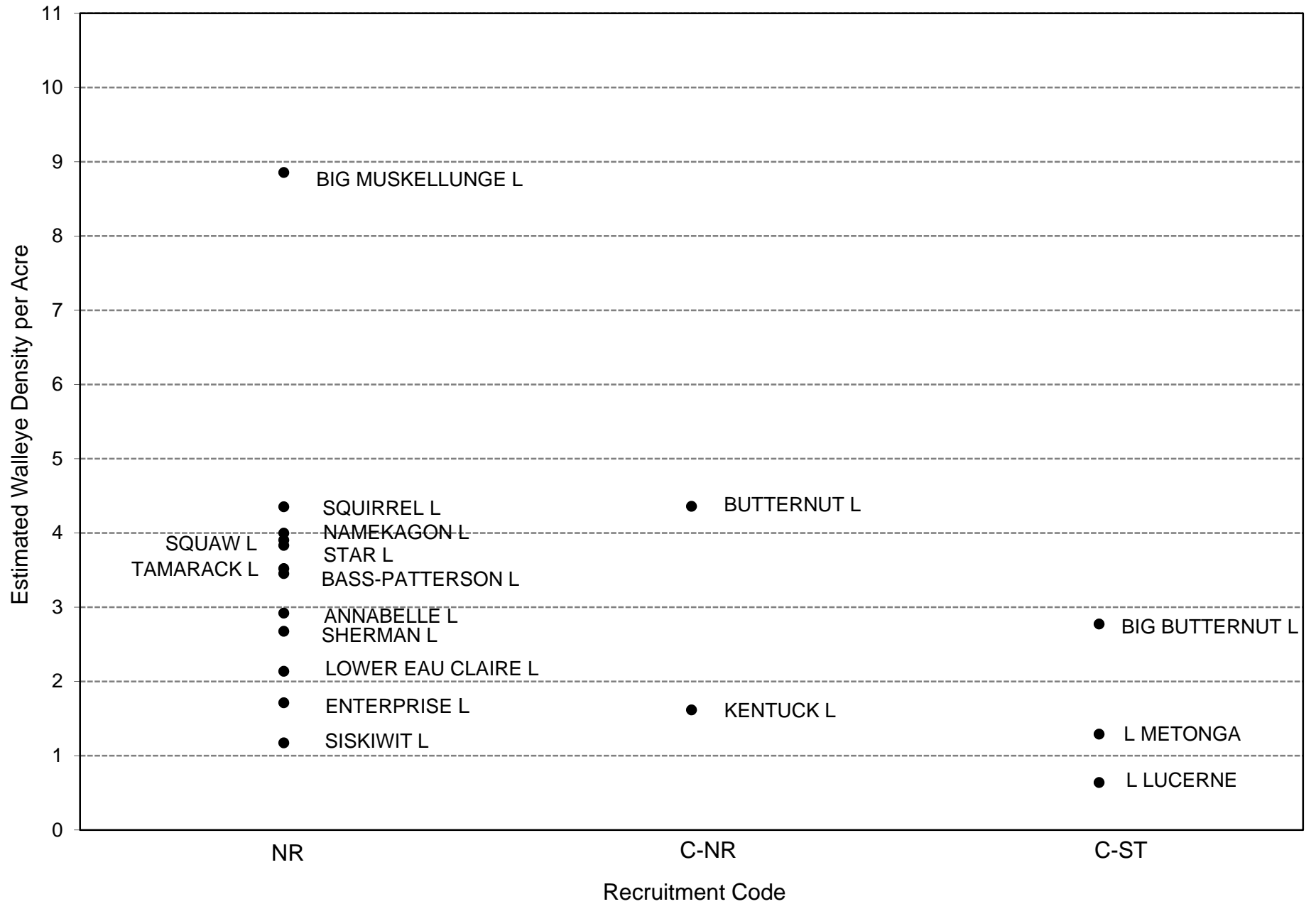


Figure A3

Length Frequency of Adult Walleye Marked
 Adult Walleye Population Estimates, Spring 2011

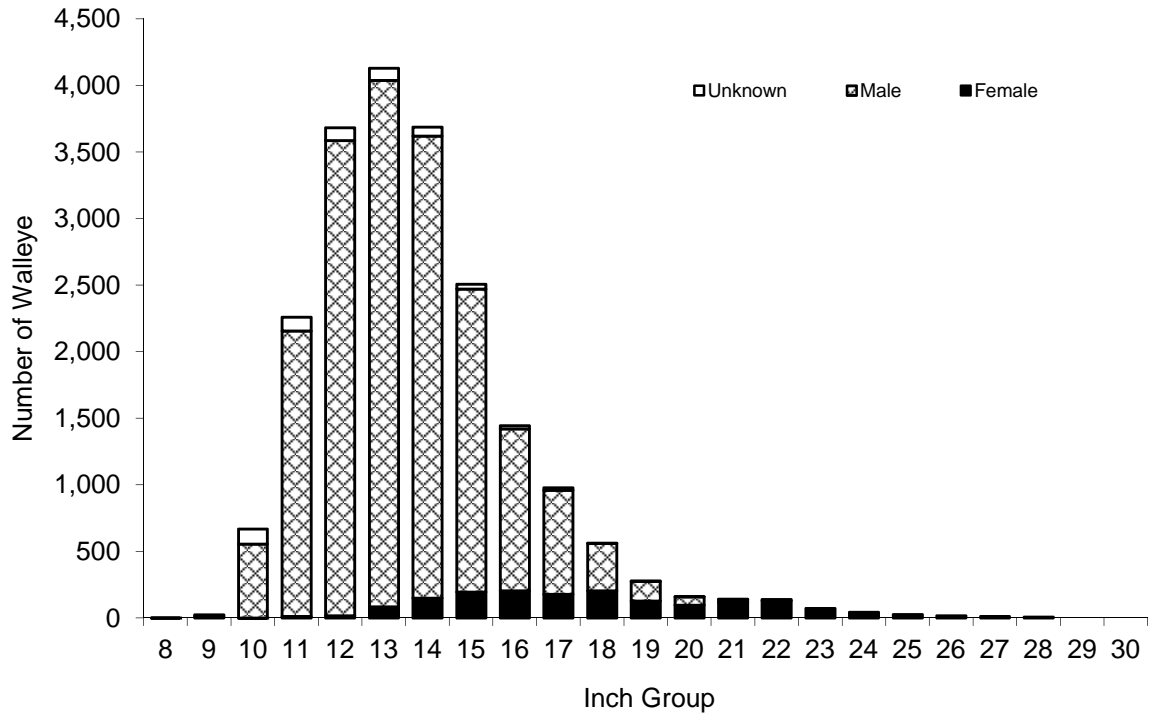


Figure A4

Age Frequency of Adult Walleye Aged
 Adult Walleye Population Estimates, Spring 2011

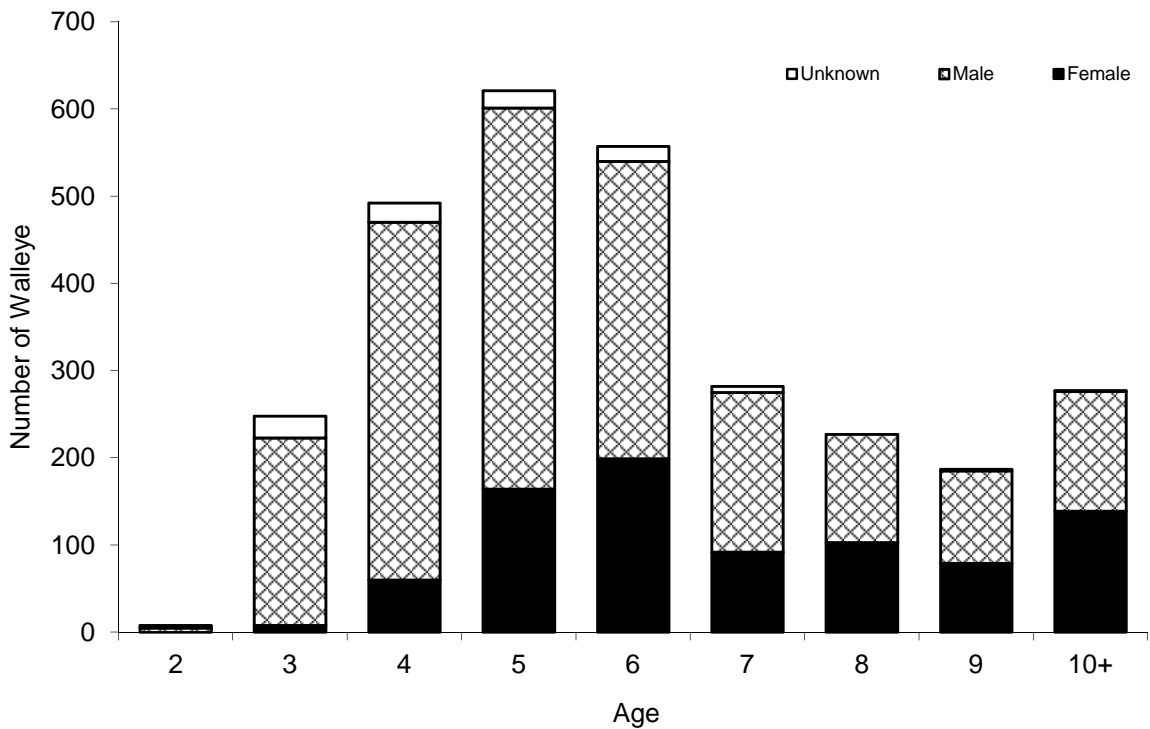


Table A1. Spring 2011 Adult Population Estimates Conducted by GLIFWC

State	County	Lake	Surface Area (Acres)	2011 Walleye Code	Population Estimate	Density	Coefficient of Variation (%)	Marking Gear*	Recapture Gear*	Fin clip applied**	Male: female sex ratio***
MI	GOGEBIC	TAMARACK L	335	NR	1179	3.52	5.97	E	E	TCN	24:1
WI	BAYFIELD	NAMEKAGON L	3,227	NR	12,902	4.00	4.17	E	E	TCN	12:1
WI	BAYFIELD	SISKIWIT L	330	NR	387	1.17	12.00	E	E	YF	4:1
WI	DOUGLAS	LOWER EAU CLAIRE L	802	NR	1,714	2.14	16.66	E	E	TCN	3:1
WI	FOREST	BUTTERNUT L	1,292	C-NR	5,631	4.36	6.20	E	E	YF	27:1
WI	FOREST	L LUCERNE	1,026	C-ST	655	0.64	8.86	E/F	E	TCN	5:1
WI	FOREST	L METONGA	1,991	C-ST	2,569	1.29	15.50	E	E	TCN	19:1
WI	LANGLADE	ENTERPRISE L	505	NR	865	1.71	12.38	E	E	TCN	17:1
WI	ONEIDA	SQUIRREL L	1,317	NR	5,732	4.35	7.84	E	E	YF	21:1
WI	POLK	BIG BUTTERNUT L	378	C-ST	1,048	2.77	8.47	F	E	LV	1:1
WI	VILAS	ANNABELLE L	213	NR	622	2.92	10.44	E	E	YF	10:1
WI	VILAS	BIG MUSKELLUNGE L	930	NR	8,235	8.85	9.55	E	E	TCN	41:1
WI	VILAS	KENTUCK L	957	C-NR	1,546	1.62	13.83	E	E	YF	5:1
WI	VILAS	SHERMAN L	123	NR	329	2.67	4.80	E/F	E	BC/YF	3:1
WI	VILAS	SQUAW L	785	NR	3,065	3.90	10.69	E	E	YF	8:1
WI	VILAS	STAR L	1,206	NR	4,622	3.83	4.81	E	E	TCN	17:1
WI	WASHBURN	BASS-PATTERSON L	188	NR	649	3.45	6.63	E	E	YF	23:1

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

** BC = bottom caudal, TCN = top caudal notch, YF = numbered yellow floy tag, HLV = left ventral

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

Table A2. Lengths of Walleye Collected During Spring 2011 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
MI	GOGEBIC	TAMARACK L	29	685	2	716	14.0	28.5	9.5	20.5	11.5	14.5
WI	BAYFIELD	NAMEKAGON L	379	4,479	36	4,894	12.5	28.0	9.5	20.0	9.0	18.0
WI	BAYFIELD	SISKIWIT L	44	173	21	238	14.0	18.0	10.5	17.5	10.0	16.5
WI	DOUGLAS	LOWER EAU CLAIRE L	143	415	3	561	15.5	26.5	11.5	21.0	8.5	19.0
WI	FOREST	BUTTERNUT L	83	2,213	12	2,308	14.0	22.5	11.0	19.5	13.0	17.5
WI	FOREST	L LUCERNE	61	296	0	357	15.5	26.5	12.0	22.0		
WI	FOREST	L METONGA	50	951	0	1,001	14.0	28.5	10.0	22.5		
WI	LANGLADE	ENTERPRISE L	29	495	0	524	15.0	26.0	10.0	18.5		
WI	ONEIDA	SQUIRREL L	111	2,377	34	2,522	12.0	24.5	9.5	21.0	11.0	21.0
WI	POLK	BIG BUTTERNUT L	282	299	1	582	17.0	28.5	14.5	22.5	16.5	16.5
WI	VILAS	ANNABELLE L	32	308	85	425	11.0	24.5	9.5	15.5	9.5	18.5
WI	VILAS	BIG MUSKELLUNGE L	46	1,888	11	1,945	13.5	28.0	10.0	18.5	10.0	19.0
WI	VILAS	KENTUCK L	128	632	122	882	11.0	28.5	10.0	18.0	10.0	20.5
WI	VILAS	SHERMAN L	36	104	56	196	10.5	24.5	9.5	14.0	9.0	15.5
WI	VILAS	SQUAW L	101	825	144	1,070	13.0	26.5	10.0	21.0	10.0	19.5
WI	VILAS	STAR L	121	2,020	7	2,148	11.5	27.0	9.5	19.5	10.5	17.5
WI	WASHBURN	BASS-PATTERSON L	18	415	38	471	14.5	27.0	10.0	21.0	10.5	20.0
OVERALL			1,693	18,575	572	20,840	10.5	28.5	9.5	22.5	8.5	21.0

Table A3

Number of Walleye Aged by Sex and Length From Spring 2011 Adult Population Estimate
Tamarack Lake, Gogebic 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	ALL		
3																																							
4																																							
5																																							
6																																							
7																																							
8																																							
9																																							
10																																							
11																																							
12																																							
13																																							
14																																							
15																																							
16																																							
17																																							
18																																							
19																																							
20																																							
21																																							
22																																							
23																																							
24																																							
25																																							
26																																							
27																																							
28																																							
29																																							
30																																							
TOTALS																																							

Number of female year classes: 7

Number of male year classes: 8

Table A4

Number of Walleye Aged by Sex and Length From Spring 2011 Adult Population Estimate
Namekagon 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	F	M	U	ALL		
3																																							
4																																							
5																																							
6																																							
7																																							
8																																							
9																																							
10																																							
11																																							
12																																							
13																																							
14																																							
15																																							
16																																							
17																																							
18																																							
19																																							
20																																							
21																																							
22																																							
23																																							
24																																							
25																																							
26																																							
27																																							
28																																							
29																																							
30																																							
TOTALS																																							

Number of female year classes: 7

Number of male year classes: 9

Table A5

Number of Walleye Aged by Sex and Length From Spring 2011 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	F	M	U
3																																				
4																																				
5																																				
6																																				
7																																				
8																																				
9																																				
10								1	6																						1	6	7			
11								2	1		2	1																			4	2	6			
12										3				1																	5		5			
13										1			4	2		6	1														14	3	17			
14												5	2			7														5	19	24				
15															3	3		2	5											6	20	26				
16															2															12	18	1	31			
17																																				
18																																				
19																																				
20																																				
21																																				
22																																				
23																																				
24																																				
25																																				
26																																				
27																																				
28																																				
29																																				
30																																				
TOTALS										3	7		6	1	5	7	2	5	17	1	7	13		7	16		7	12	1	3	14	34	88	12	134	

Number of female year classes: 6

Number of male year classes: 8

Table A6

Number of Walleye Aged by Sex and Length From Spring 2011 Adult Population Estimate
Lower Eau Claire Lake, Douglas 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																																		
11																																		
12																																		
13																																		
14																																		
15																																		
16																																		
17																																		
18																																		
19																																		
20																																		
21																																		
22																																		
23																																		
24																																		
25																																		
26																																		
27																																		
28																																		
29																																		
30																																		
TOTALS										1			10	1	8	27	14	30	6	5	17	12		20	7		16	23	81	115	1	197		

Number of female year classes: 6

Number of male year classes: 8

Table A7

Number of Walleye Aged by Sex and Length From Spring 2011 Adult Population Estimate
Butternut 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	ALL		
3																																							
4																																							
5																																							
6																																							
7																																							
8																																							
9																																							
10																																							
11																																							
12																																							
13																																							
14																																							
15																																							
16																																							
17																																							
18																																							
19																																							
20																																							
21																																							
22																																							
23																																							
24																																							
25																																							
26																																							
27																																							
28																																							
29																																							
30																																							
TOTALS																																							

Number of female year classes: 6

Number of male year classes: 8

Table A8

Number of Walleye Aged by Sex and Length From Spring 2011 Adult Population Estimate
Lake Lucerne, 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	ALL		
3																																							
4																																							
5																																							
6																																							
7																																							
8																																							
9																																							
10																																							
11																																							
12																																							
13																																							
14																																							
15																																							
16																																							
17																																							
18																																							
19																																							
20																																							
21																																							
22																																							
23																																							
24																																							
25																																							
26																																							
27																																							
28																																							
29																																							
30																																							
TOTALS																																							

Number of female year classes: 6

Number of male year classes: 7

Table A9

Number of Walleye Aged by Sex and Length From Spring 2011 Adult Population Estimate
Lake Metonga, 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	ALL			
3																																								
4																																								
5																																								
6																																								
7																																								
8																																								
9																																								
10								4																						4		4								
11								8		7																				15		15								
12								1		17																				18		18								
13										15					3															18		18								
14										7				2	12														2	19		21								
15															15															20		20								
16													1	5															1	20		21								
17																	1	4											1	11		12								
18																														2		10	10							
19																															4		19	19						
20																															3	9	4	12	16					
21																															1	4	1	5						
22																																1	4	6	6					
23																																1	5	5	5					
24																																1	8	8	8					
25																																3	5	5	5					
26																																5	2	2	2					
27																																2	2	2	2					
28																																2	2	2	2					
29																																								
30																																								
TOTALS										13						46			3	35		5	20		6	16		1	3		6	15		21	19		42	167		209

Number of female year classes: 6

Number of male year classes: 8

Table A10

Number of Walleye Aged by Sex and Length From Spring 2011 Adult Population Estimate
Enterprise Lake, Langlade 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																																								
12																																								
13																																								
14																																								
15																																								
16																																								
17																																								
18																																								
19																																								
20																																								
21																																								
22																																								
23																																								
24																																								
25																																								
26																																								
27																																								
28																																								
29																																								
30																																								
TOTALS										8						30			1	28		2	26		2	12		5	8		8	15		11			29	127		156

Number of female year classes: 5

Number of male year classes: 7

Table A11

Number of Walleye Aged by Sex and Length From Spring 2011 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																																																								
4																																																								
5																																																								
6																																																								
7																																																								
8																																																								
9					2					2																					4		4																							
10										6			4																		10		10																							
11										3			17			1															21		21																							
12										1	1			6	1	2	12			1										3	20	1	24																							
13													3	3		5	15			2	2									10	20		30																							
14														2		8	10			2	8									10	20		30																							
15																6	1			4	1									10	3		13																							
16																	1		3	1			1	2					5	4	1	10																								
17																		1	1			1	1	1					2	4	1	7																								
18																						1				1				3	1		4																							
19																						1								3			3																							
20																						1								3	1		4																							
21																															1		1																							
22																							1							3			3																							
23																																																								
24																															1		1																							
25																																																								
26																																																								
27																																																								
28																																																								
29																																																								
30																																																								
TOTALS					2				1	12				3	32	1			21	39	1				13	14				5	2	1				4	3					4	2					2	3				53	109	3	165

Number of female year classes: 8

Number of male year classes: 9

Table A12

Number of Walleye Aged by Sex and Length From Spring 2011 Adult Population Estimate
Big Butternut 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	ALL			
3																																					
4																																					
5																																					
6																																					
7																																					
8																																					
9																																					
10																																					
11																																					
12																																2	2				
13																																					
14																																					
15																																8	8				
16																															10	1	11				
17																															7	9		16			
18																															10	6		16			
19																															9			9			
20																															4	1		9			
21																															9			12			
22																															9	2		11			
23																															10			10			
24																															3			5			
25																															1			2			
26																																		3			
27																																		2			
28																																		2			
29																																		1			
30																																					
TOTALS					2					30	33	1																						76	38	3	117

Number of female year classes: 5

Number of male year classes: 3

Table A13

Number of Walleye Aged by Sex and Length From Spring 2011 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	ALL			
3																																								
4																																								
5																																								
6																																								
7																																								
8																																								
9																																								
10							8	3			1	2			1															9	6	15								
11											13	3			9			1	1											23	4	27								
12											4	2			15	2			6											25	4	29								
13									1						3	1			2	7	3		6	1			1			3	17	5	25							
14													1		1				2	2			5	1	1	4		1		4	12	2	18							
15																	1		1									1		1	1	1	3							
16																	1												1		2	1	3							
17																																								
18																																								
19																																								
20																																								
21																																								
22																																								
23																																								
24																																								
25																																								
26																																								
27																																								
28																																								
29																																								
30																																								
TOTALS								8	3		1	18	7		1	27	5		6	16	5		1	11	2		2	5			1	1		3	1		14	87	23	124

Number of female year classes: 6

Number of male year classes: 8

Table A14

Number of Walleye Aged by Sex and Length From Spring 2011 Adult Population Estimate
Big Muskellunge 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	ALL						
3																																								
4																																								
5																																								
6																																								
7																																								
8																																								
9																																								
10								8				2																			10		10							
11								6				12				2															20		20							
12												5				13															20		20							
13															1	11			1	8										2	20		22							
14											1				7	3			3	14										11	21		32							
15															2	1			7	7			1	7				3		11	20		31							
16															2				5				6						1	10		4	29							
17																							1							7		2	11							
18																							1								6		2	8						
19																															2			2						
20																																								
21																																								
22																																								
23																																								
24																																								
25																																								
26																																								
27																																								
28																																								
29																																								
30																																								
TOTALS								14			1	19			12	30			16	31			3	18			2	4			2	13		6	18		42	147		189

Number of female year classes: 7

Number of male year classes: 8

Table A15

Number of Walleye Aged by Sex and Length From Spring 2011 Adult Population Estimate
Kentuck 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						1					13																					14	2	16									
11											2	10	3																			3	21	5	29								
12											1	1	1																			3	19	4	26								
13																																	1	10	11								
14																																	1	15	16								
15																																	1	3	13								
16																																	1	10	16								
17																																	2	4	13								
18																																	1	4	15								
19																																	1	2	15								
20																																	1	1	15								
21																																	1	10	16								
22																																	2	4	13								
23																																	1	4	15								
24																																	1	2	15								
25																																	1	10	16								
26																																	1	4	15								
27																																	1	2	15								
28																																	1	1	15								
29																																	1	1	15								
30																																	1	1	15								
TOTALS																																								86	105	12	203

Number of female year classes: 8

Number of male year classes: 7

Table A16

Number of Walleye Aged by Sex and Length From Spring 2011 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	ALL						
3																																											
4																																											
5																																											
6																																											
7																																											
8																																											
9																																											
10																																		7	1	8							
11																																		2	18	20							
12																																		2	16	18							
13																																		1	6	12							
14																																		1	6	7							
15																																		2	3	3							
16																																											
17																																		1	1	1							
18																																		1	1	2							
19																																		1	1	1							
20																																											
21																																		1	1	1							
22																																		1	1	1							
23																																											
24																																											
25																																											
26																																											
27																																											
28																																											
29																																											
30																																											
TOTALS																																								24	48	2	74

Number of female year classes: 5

Number of male year classes: 3

Table A17

Number of Walleye Aged by Sex and Length From Spring 2011 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																																								
10								1	8				1																		1	9	10							
11								3	2			8	3		5	2															16	7	23							
12										2				11	2		5	3		3											21	5	26							
13								1		1	1	3		4	7	3		4	8	4		7	1		1	2				10	26	11	47							
14													1	1	1	1		1	6	1		4	6	1		1	3			4		7	20	3	30					
15																	3	1			3	1	2		3	5		2	4		1	11	12	2	25					
16																	1		1		4			4			2	2		1	2	12	4	1	17					
17																	1				3			2			2	1		1		9	1		10					
18																					2						1			2		5			5					
19																					1											1	1		1	2				
20																															1		1		1					
21																																1		1		1				
22																																	1		1		1			
23																																								
24																																								
25																																								
26																																2		2		2				
27																																								
28																																								
29																																								
30																																								
TOTALS										5	10	1	11	7	5	24	8	10	20	9	17	17	4	11	10				7	11				8	4	1	59	102	39	200

Number of female year classes: 7

Number of male year classes: 8

Table A18

Number of Walleye Aged by Sex and Length From Spring 2011 Adult Population Estimate
Star 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																																					
11																																					
12																																					
13																																					
14																																					
15																																					
16																																					
17																																					
18																																					
19																																					
20																																					
21																																					
22																																					
23																																					
24																																					
25																																					
26																																					
27																																					
28																																					
29																																					
30																																					
TOTALS										9	6	29	19	34	12	26	5	15	3	16				2	6				9	7				56	142		198

Number of female year classes: 7

Number of male year classes: 8

Table A19

Number of Walleye Aged by Sex and Length From Spring 2011 Adult Population Estimate
 Bass-Patterson Lake, Washburn County, Wisconsin

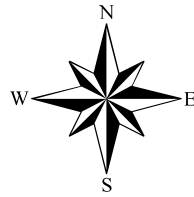
INCH GROUP	AGE 1			AGE 2			AGE 3			AGE 4			AGE 5			AGE 6			AGE 7			AGE 8			AGE 9			AGE 10+			TOTAL						
	F	M	U	F	M	U	F	M	U	F	M	U	F	M	U	F	M	U	F	M	U	F	M	U	F	M	U	F	M	U	F	M	U	F	M	U	ALL
3																																					
4																																					
5																																					
6																																					
7																																					
8																																					
9																																					
10								6			1																				7		7				
11								18			1																				19		19				
12								18			2																				20		20				
13								14			6																				20		20				
14								6			1	9			6															1	21		22				
15								1			1	10			8			2												2	20		22				
16											2	1			3	8		4			3									5	16		21				
17														2	1		1													3	1		4				
18																																					
19																															1		1				
20																																					
21																																					
22																																					
23																																					
24																																					
25																																					
26																																					
27																																					
28																																					
29																																					
30																																					
TOTALS							1	62		4	30		5	23		1	6			3					1						1			12	125		137

Number of female year classes: 5

Number of male year classes: 6

Appendix B: Fall Recruitment Survey Data

Figure		Page
B1.	Ceded territory in Wisconsin, Michigan, and Minnesota with number of lakes per county where fall electrofishing surveys were conducted by GLIFWC during 2011	26
B2.	Means of Age 0 and Age 1 Walleye CPEs, Wisconsin Fall Surveys 1986–2011	27
B3.	Medians of Age 0 and Age 1 Walleye CPEs, Wisconsin Fall Surveys 1986–2011	27
B4.	Length Frequency of Walleye Captured, Fall 2011 Walleye Recruitment Survey, Mille Lacs Lake	28
B5.	Mille Lacs Lake Walleye CPEs GLIFWC Surveys, 1993 - 2011	28
B6.	Age 0 CPE by Code for GLIFWC 2011 Recruitment Surveys	29
B7.	Age 1 CPE by Code for GLIFWC 2011 Recruitment Surveys	29
Table		Page
B1.	Description of Walleye Recruitment Source Codes	30
B2.	Fall 2011 Recruitment Surveys Conducted by GLIFWC	31
B3.	Summary of Age 0 and Age 1 Catch per Effort Rates During Fall 2011 Recruitment Surveys Conducted by GLIFWC	33



- A - Bad River
- B - Bay Mills (not depicted)
- C - Fond du Lac
- D - Keweenaw Bay
- E - Lac Courte Oreilles
- F - Lac du Flambeau
- G - Lac Vieux Desert
- H - Mille Lacs
- I - Mole Lake
- J - Red Cliff
- K - St. Croix

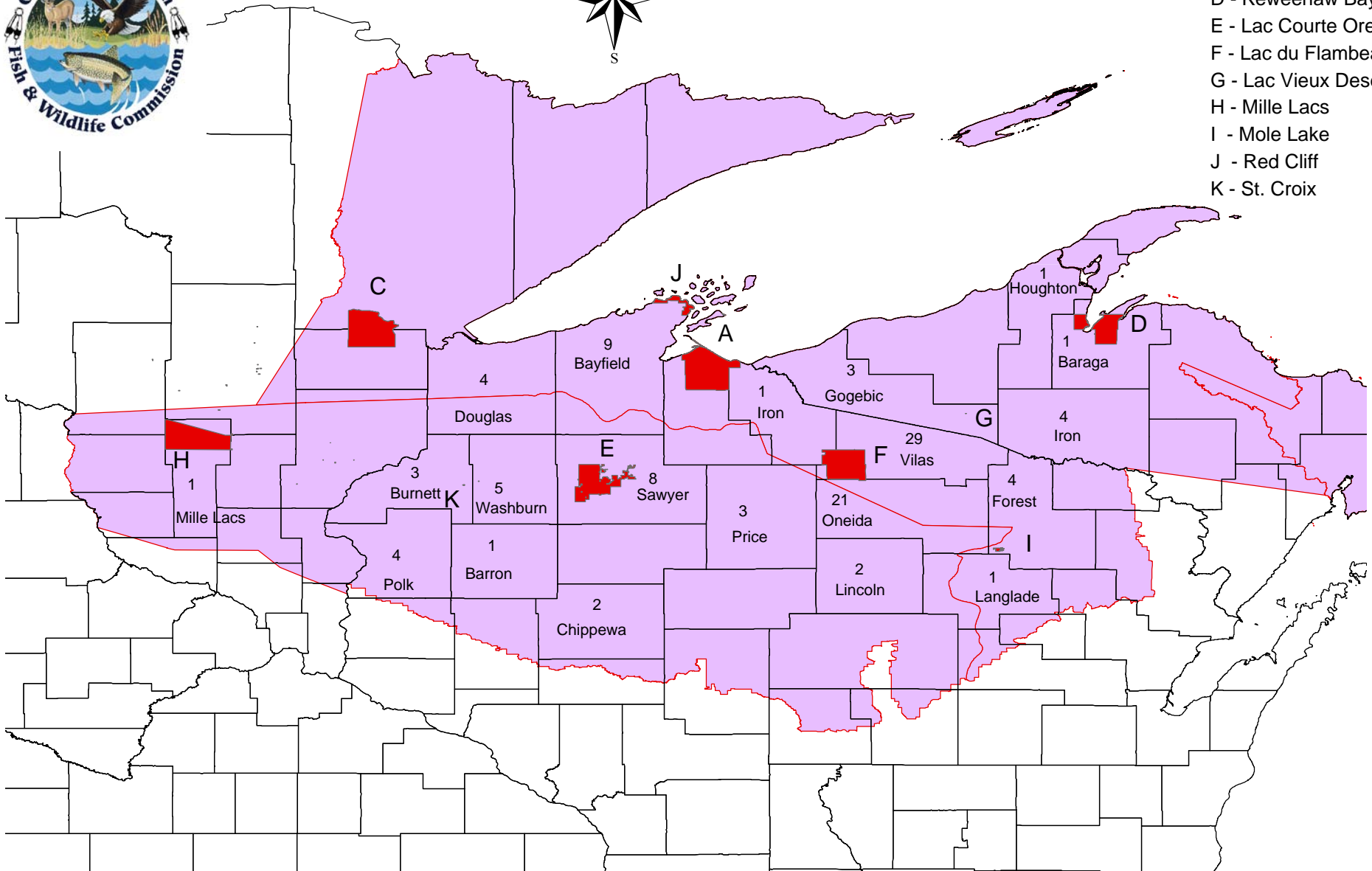
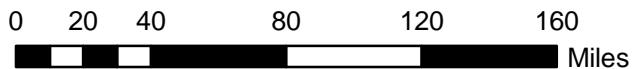
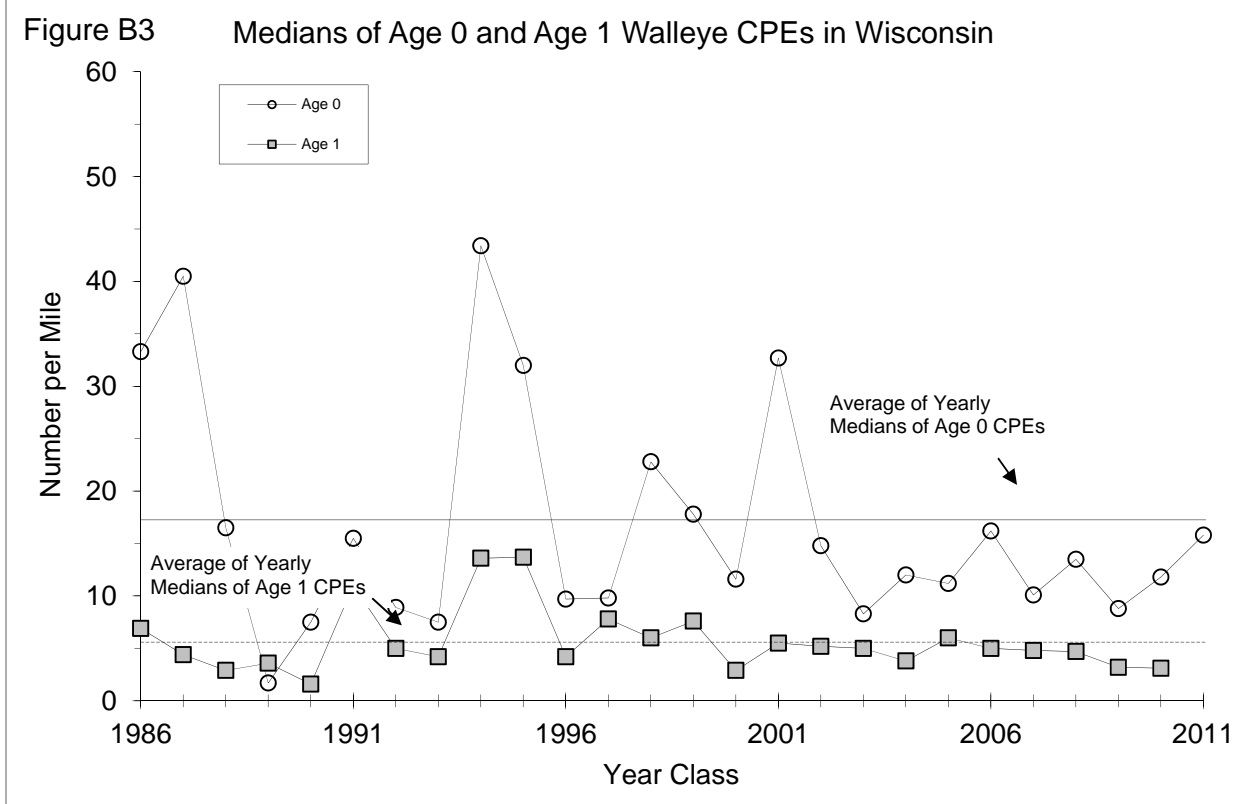
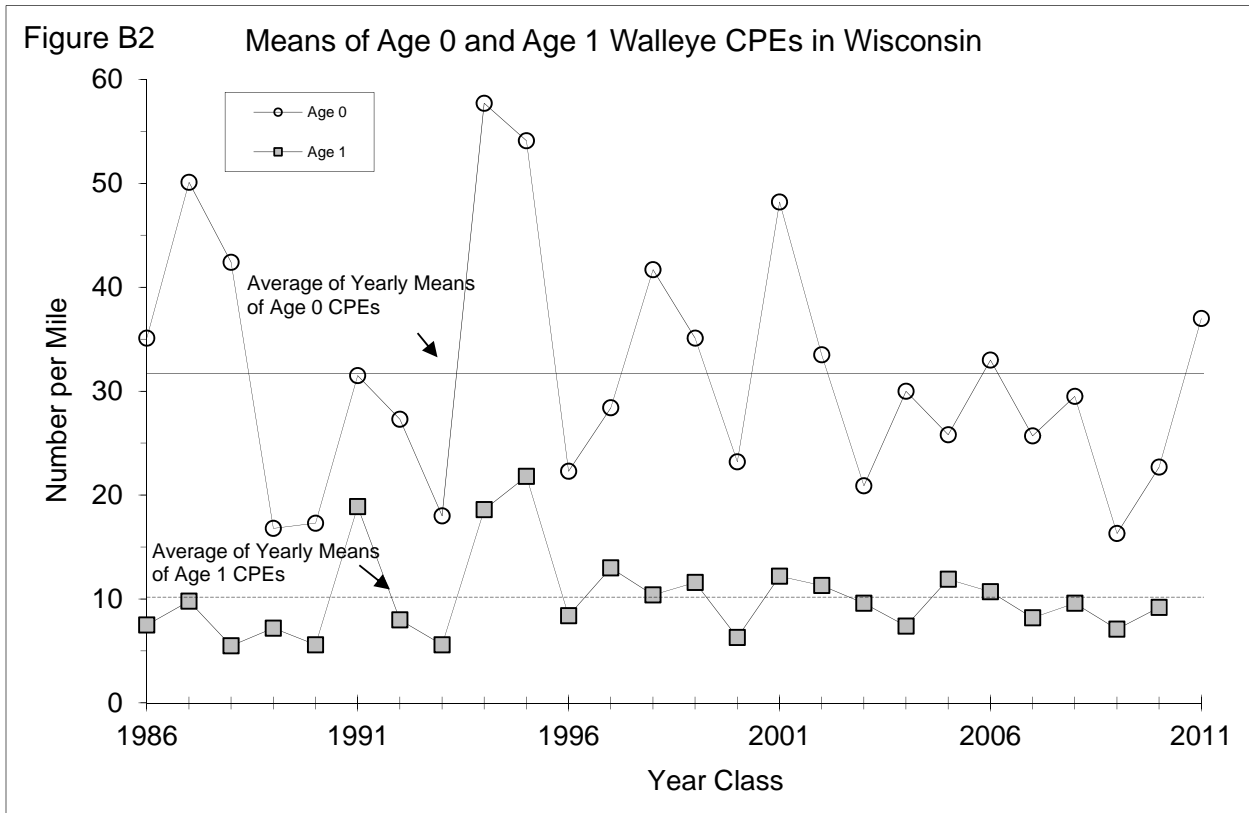


Figure B1. Ceded Territory in Wisconsin, Michigan, and Minnesota with the number of lakes per county where fall juvenile walleye surveys were conducted by GLIFWC during 2011.





Data represents NR and C-NR lakes in Wisconsin with at least 75% of the shoreline surveyed, and includes Wisconsin DNR data and all cases with CPEs of 0.

Figure B4

Length Frequency of Walleye Captured
Fall 2011 Walleye Recruitment Survey, Mille Lacs Lake

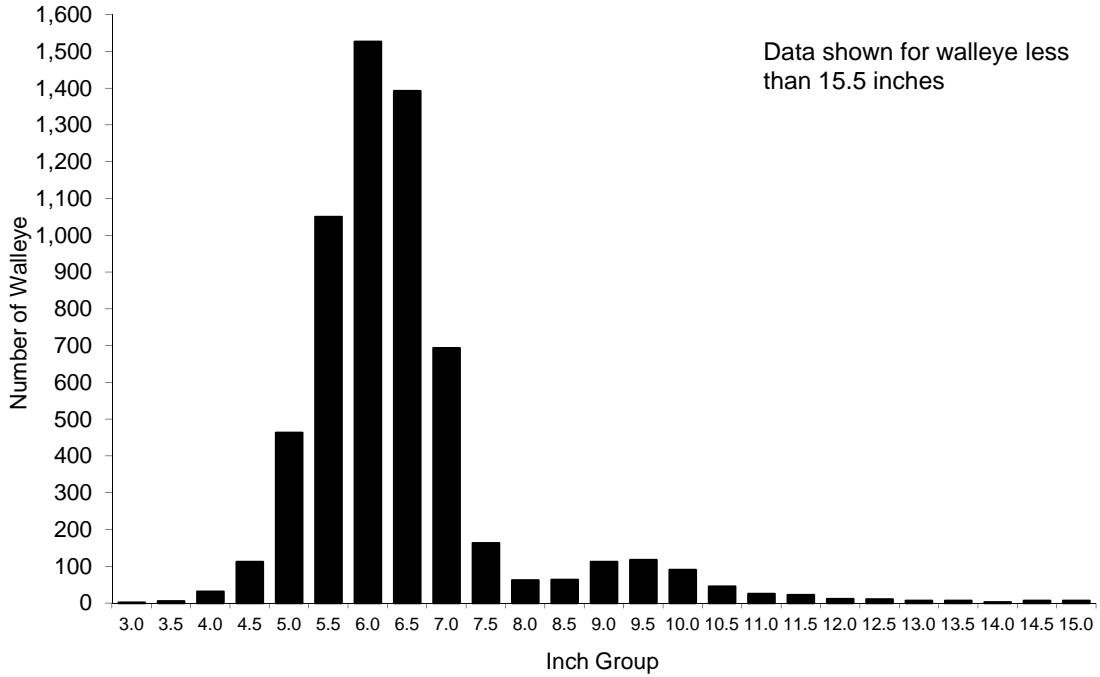


Figure B5

Mille Lacs Lake Fall Walleye CPEs from GLIFWC Surveys

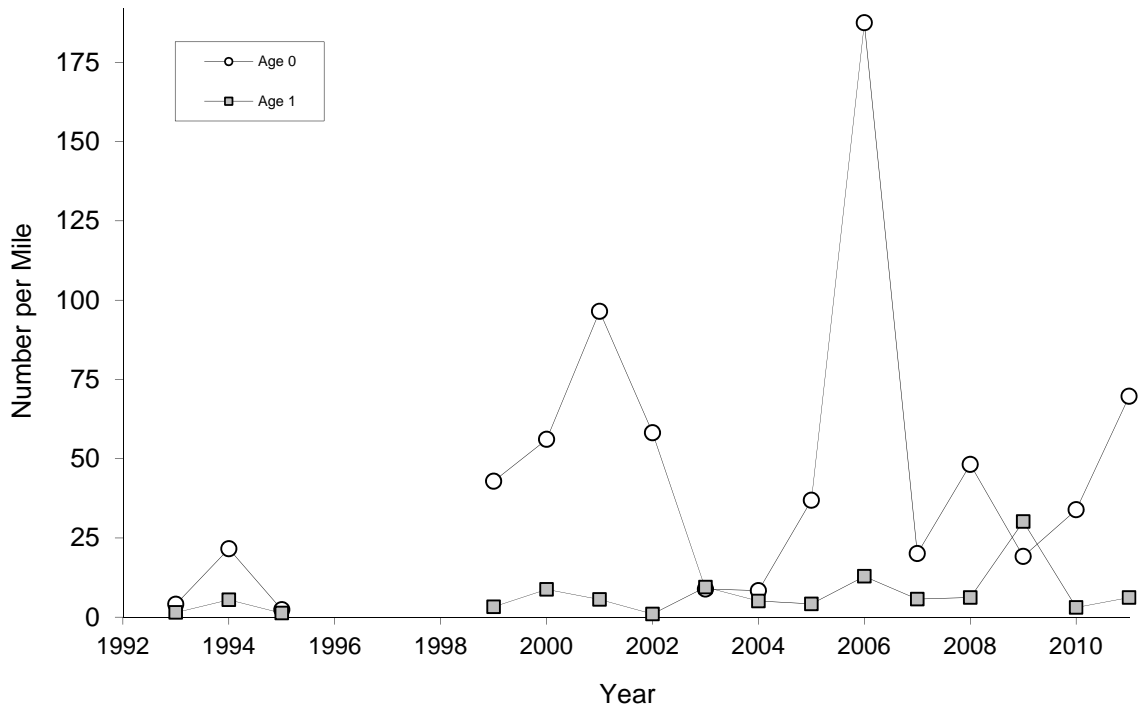


Figure B6. Age 0 CPE By Code for GLIFWC 2011 Recruitment Surveys

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

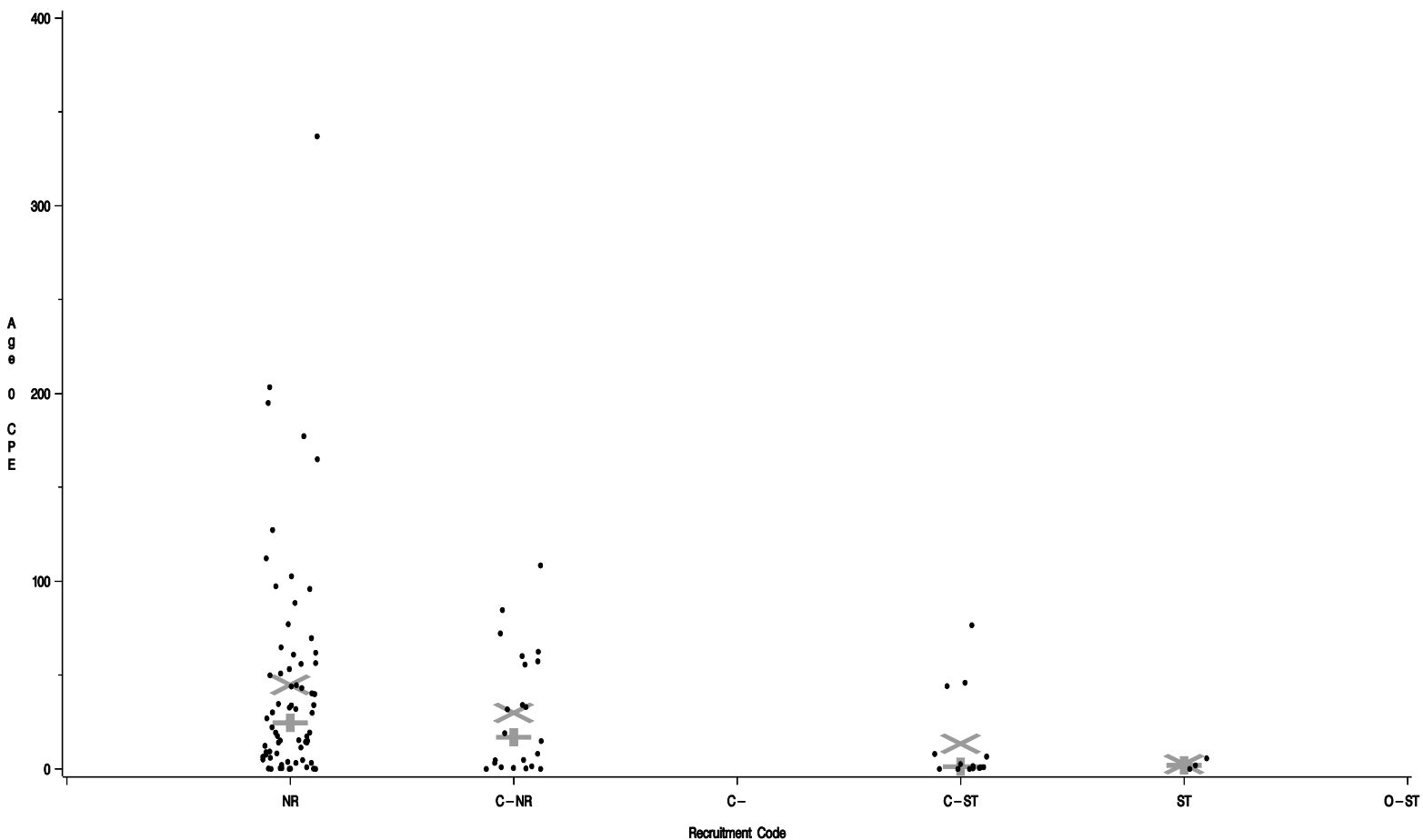


Figure B7. Age 1 CPE By Code for GLIFWC 2011 Recruitment Surveys

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

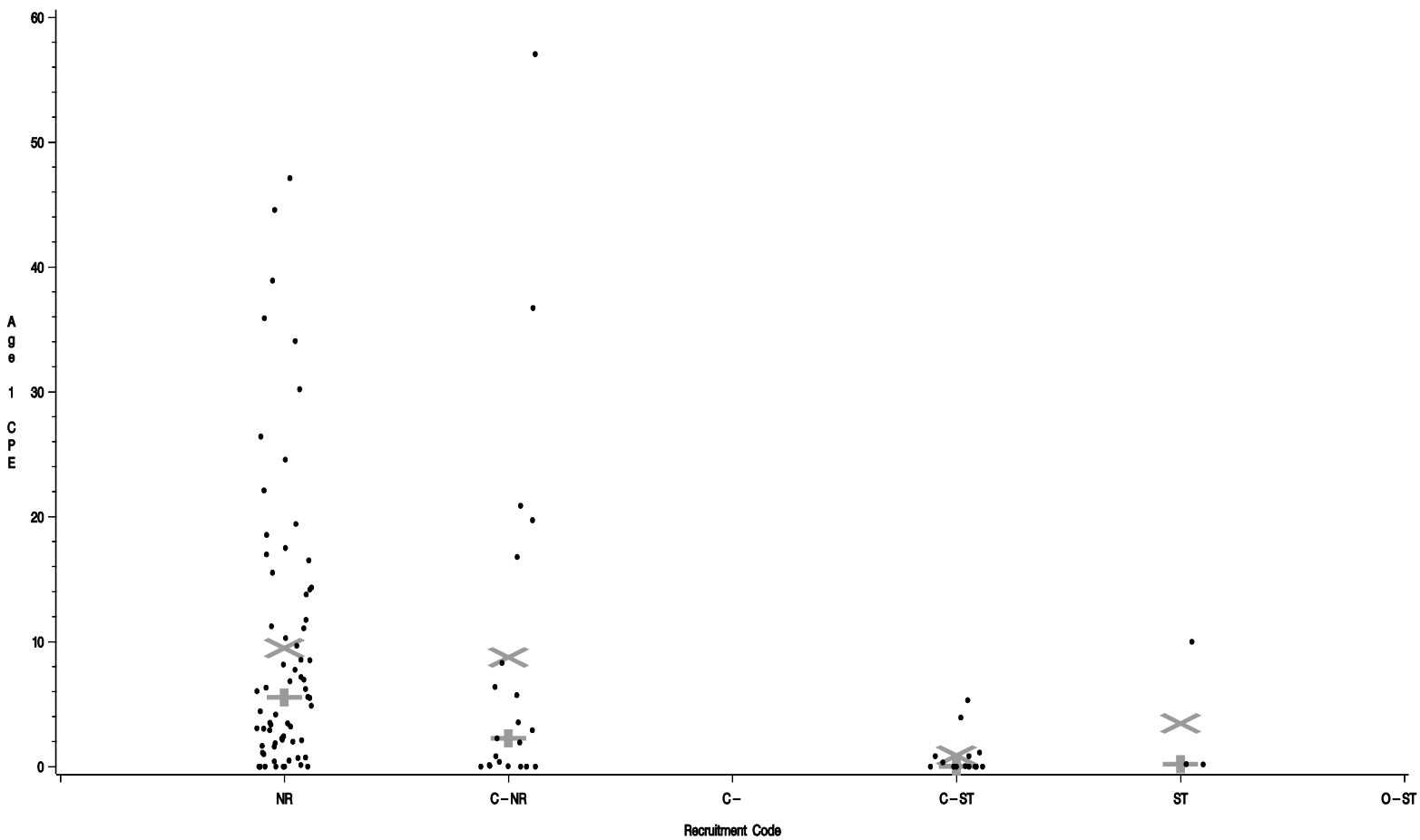


Table B1. Description of Walleye Recruitment Source Codes.

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.

Table B2. Fall 2011 Walleye Recruitment Surveys Conducted by GLIFWC

WISCONSIN		Surface Area (Acres)	2011 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			
County	Lake																			MUE	NOP	LMB	SMB
BARRON	RED CEDAR L	1,841	C-NR	10/3	84.7	1,346	3.7	7.5	5.3	2.3	36	7.6	9.8	8.6	1,508	15.9	15.9	5.60	61				
BAYFIELD	BUSKEY BAY	100	NR	9/12	0.4	1	6.3	6.3	6.3	0.4	1	7.2	7.2	7.2	3	2.4	2.4	0.90	69		2	20	6
BAYFIELD	HART L	259	NR	9/13	8.9	31	5.1	6.6	5.8	0.0	0				32	3.5	3.5	1.40	68		6	10	24
BAYFIELD	L MILLICENT	183	NR	9/12	7.6	29	5.4	6.8	6.0	0.0	0				30	3.8	3.8	1.61	69			3	12
BAYFIELD	L OWEN	1,323	C-ST	9/14	1.5	37	4.5	7.0	6.0	0.8	20	8.8	11.3	9.9	66	24.0	24.0	8.97	65				
BAYFIELD	MIDDLE EAU CLAIRE L	902	C-NR	10/3	60.1	463	3.3	6.7		5.7	44	7.0	10.6		509	7.7	11.0	3.60	61				
BAYFIELD	NAMEKAGON L	3,227	NR	9/21	3.2	138	4.0	7.2	5.8	6.8	298	7.3	10.8	9.5	663	43.6	43.6	13.27	64	1			1
BAYFIELD	SISKIWI L	330	NR	9/20	40.3	161	3.7	8.1	5.9	11.8	47	8.2	10.7	9.7	217	4.0	4.0	1.67	66				
BAYFIELD	TWIN BEAR L	172	NR	9/13	0.0	0				0.0	0				3	3.9	3.9	0.99	68			4	21
BAYFIELD	UPPER EAU CLAIRE L	996	C-NR	10/6	1.4	16	6.0	7.1	6.7	0.0	0				18	11.1	11.1	4.38	62				
BURNETT	BIG MCKENZIE L	1,185	C-ST	9/15	1.0	7	6.7	7.4	7.1	1.1	8	9.5	11.7	10.4	15	7.1	7.1	2.55	66	1	4	10	
BURNETT	DEVILS L	1,001	ST	9/13	0.0	0				0.2	1	10.7	10.7	10.7	3	5.2	5.2	1.70	70			10	
BURNETT	YELLOW L	2,287	C-NR	10/6	4.8	38	5.0	8.8		3.5	28	9.5	11.8		78	7.9	7.9	3.20	64			11	2
CHIPPEWA	L WISSOTA	6,300	NR	10/4	165.0	2,013	3.4	7.4	5.5	14.3	175	8.5	10.7	9.7	2,263	12.2	56.3	3.33	62	5			
CHIPPEWA	LONG L	1,052	NR	10/3	8.3	116	4.8	7.3	6.3	3.4	47	7.6	10.0	9.3	199	14.0	14.0	6.08	62				
DOUGLAS	L NEBAGAMON	914	C-NR	9/13	0.9	10	4.6	8.7	6.4	0.8	9	9.3	11.9	11.0	35	10.8	10.8	5.52	67			4	
DOUGLAS	LOWER EAU CLAIRE L	802	NR	9/20	0.9	7	5.0	6.2	5.6	0.1	1	7.3	7.3	7.3	13	7.8	7.8	2.09	60				
DOUGLAS	UPPER ST CROIX L	855	C-ST	10/17	6.6	66	5.3	8.1	6.7	0.0	0				66	10.0	10.0	4.51	52				
DOUGLAS	WHITEFISH L	832	NR	9/19	102.6	708	3.4	6.0	4.6	10.3	71	6.9	10.1	8.4	780	6.9	6.9	3.33	65				
FOREST	JUNGLE L	182	NR	9/20	12.3	27	5.3	7.2	6.5	0.0	0				40	2.2	2.2	1.24	62				
FOREST	L LUCERNE	1,026	C-ST	10/12	2.5	21	4.9	7.6	6.2	0.0	0				21	8.3	10.5	3.39	60				
FOREST	L METONGA	1,991	C-ST	9/28	45.9	363	4.7	7.3	5.9	3.9	31	8.2	10.1	9.1	506	7.9	7.9	3.88	62				
FOREST	LILY L	211	NR	9/19	77.1	393	5.4	8.4	7.1	2.2	11	10.6	11.7	11.2	409	5.1	5.1	2.43	63				
IRON	TURTLE-FLAMBEAU FL	13,545	NR	9/19	127.3	3,259	3.5	7.3	5.4	18.6	475	7.4	10.6	9.3	3,993	25.6	211.0	11.30	62	5			
LANGLADE	ENTERPRISE L	505	NR	9/27	53.2	319	4.6	7.2	6.1	8.2	49	8.6	10.2	9.4	410	6.0	6.0	2.88	58				
LINCOLN	L MOHAWKSIN	1,910	NR	10/12	56.4	581	3.7	7.3	5.7	14.2	146	7.7	10.1	9.1	828	10.3	35.2	3.43	61				
LINCOLN	L NOKOMIS	2,433	NR	10/18	60.9	950	4.1	7.7	5.3	3.5	54	7.8	10.4	9.8	1,083	15.6	38.5	6.33	46				
ONEIDA	BEARSKIN L	400	NR	9/27	203.4	1,139	4.3	7.6	6.2	3.0	17	8.1	9.4	9.0	1,304	5.6	5.6	2.60	55				
ONEIDA	BIG FORK L	690	NR	10/5	55.9	302	3.7	6.2	4.8	34.1	184	6.5	8.4	7.6	543	5.4	5.4	2.63	58				
ONEIDA	BIG L	865	NR	10/4	29.8	197	3.9	6.2	4.7	13.8	91	6.6	8.3	7.8	497	6.6	6.6	2.74	58				
ONEIDA	BIG STONE L	548	NR	10/6	44.0	211	3.6	5.8	4.8	24.6	118	6.4	8.9	8.1	435	4.8	4.8	2.26	58				
ONEIDA	CLEAR L	846	NR	10/13	3.2	44	4.3	6.9	5.8	0.7	10	8.4	10.4	9.5	56	13.8	13.8	3.42	59				
ONEIDA	CRESCENT L	612	NR	10/13	61.9	458	4.0	7.7	6.1	8.5	63	8.2	10.8	9.8	571	7.4	7.4	3.40	60				
ONEIDA	DAM L	744	NR	10/20	39.9	307	4.0	6.7	5.3	16.5	127	6.9	9.9	8.3	439	7.7	7.7	2.63	49				
ONEIDA	FOURMILE L	218	NR	10/11	14.1	52	3.6	5.4	4.5	38.9	144	6.2	8.4	7.4	212	3.7	3.7	1.71	60				
ONEIDA	GEORGE L	435	C-NR	10/2	62.4	343	4.4	6.9	5.6	36.7	202	7.0	8.7	8.0	650	5.5	5.5	2.80	57				
ONEIDA	KATHERINE L	590	NR	10/10	3.7	40	5.7	7.3	6.7	2.2	24	9.2	10.7	9.9	106	10.7	10.7	4.25	59				
ONEIDA	KAWAGUESAGA L	670	NR	9/20	0.1	1	6.5	6.5	6.5	0.0	0				2	11.1	11.1	3.82	63				
ONEIDA	LITTLE FORK L	354	NR	10/3	31.9	166	3.8	5.7	4.9	47.1	245	6.8	9.1	7.9	480	5.2	5.2	2.20	60				
ONEIDA	MANSON L	236	C-NR	9/19	0.0	0				0.0	0				1	3.6	3.6	2.03	62				
ONEIDA	MEDICINE L	372	NR	10/10	50.8	244	3.2	6.0	4.8	44.6	214	6.9	8.7	8.0	533	4.8	4.8	2.15	59				
ONEIDA	MINOCQUA L	1,360	NR	9/22	0.0	0				0.0	0				0	8.0	19.1	2.54	59				
ONEIDA	PELICAN L	3,585	NR	9/22	19.4	252	4.4	7.4		11.1	144	8.2	11.2		609	13.0	13.0	8.70	56	3	108	80	16
ONEIDA	PLANTING GROUND L	1,012	NR	10/6	43.1	453	3.6	6.8	4.8	19.4	204	7.1	9.4	8.4	773	10.5	10.5	4.30	57				
ONEIDA	SAND L	540	NR	10/19	19.4	93	4.4	6.8	5.6	2.9	14	7.9	9.0	8.5	112	4.8	4.8	1.85	49				
ONEIDA	SQUIRREL L	1,317	NR	10/5	44.6	597	3.9	8.4	5.7	3.2	43	8.9	11.6	10.5	668	13.4	13.9	5.28	52				
ONEIDA	TOMAHAWK L	3,392	C-ST	10/17	0.0	0				0.0	0				6	16.9	30.2	6.43	52		2		
ONEIDA	WILLOW FL	5,135	NR	10/20	15.1	245	4.2	8.0	5.1	1.6	26	8.7	11.3	10.1	281	16.2	98.5	3.59	48				
POLK	BALSAM L	2,054	C-ST	10/5	0.0	0				0.0	1	11.7	11.7		1	22.7	22.7	7.10	61				
POLK	BIG ROUND L	1,015	ST	10/19	5.6	32	5.2	8.0	6.3	0.2	1	8.3	8.3	8.3	39	5.7	5.7	2.18	50				
POLK	MAGNOR L	231	ST	9/12	1.9	5	7.7	8.3	8.1	10.0	26	8.5	11.7	9.9	39	2.6	2.6	0.91	72				
POLK	WAGOASSET L	1,186	C-ST	10/17	0.5	3	7.5	8.5	8.1	0.0	0				3	5.6	9.9	2.30	54	7	5	16	1
PRICE	BUTTERNUT L	1,006	C-NR	9/19	57.3	642	4.4	7.8	6.6	19.7	221	8.1	10.0	9.3	1,265	11.2	11.2	5.30	62				
PRICE	PIKE L	806	C-NR	10/11	34.1	372	4.6	7.4	5.8	16.8	183	7.7	10.9	9.6	602	10.9	10.9	2.61	61				
PRICE	ROUND L	726	C-NR	10/11	108.4	553	4.4	6.7	5.4	57.1	291	7.3	10.6	8.7	875	5.1	5.1	2.50	61				
SAWYER	L CHETAC	1,920	C-NR	10/13	4.6	81	5.0	8.3	6.6	0.1	1	8.5	8.5	8.5	85	17.5	17.5	6.11	60		3	16	1
SAWYER	L CHIPPEWA	15,300	C-NR	9/26	14.8	1,413	4.1	7.9							1,750	95.7	232.9	35.80	59	6			
SAWYER	LAC COURTE OREILLES	5,039	C-NR	10/5	55.6	1,412	5.1	8.2	6.6	1.9	49	8.6	10.9	9.8	1,473	25.4	25.4	10.04	62				
SAWYER	NELSON L	2,503	C-ST	10/11	0.0	0				0.8	15	7.5	10.1	9.2	67	18.0	31.4	6.84	61				
SAWYER	ROUND L	3,054	C-NR	10/10	72.2	1,460	3.4	7.4	6.0	6.4	129	7.5	10.7	8.8	1,609	20.2	20.2	7.69	62	10			
SAWYER	SAND L	928	C-ST	10/3	76.6	389	4.9	8.0	7.0	5.3	27	8.7	11.0	10.3	545	5.1	5.1	2.57	61				
SAWYER	SISSABAGAMA L	719	C-NR	10/6	0.2	2	7.1	8.4	7.8	0.0	0				2	8.2	8.2	3.29	62				
SAWYER	TEAL L	1,049	NR	10/6	34.0	177	5.2	8.8	7.2	5.6	29	9.6	11.1	10.4	217	5.2	11.8	2.47	59				
VILAS	ANNABELLE L	213	NR	9/20	26.9	113	5.0	7.6	6.1	26.4	111	7.9	10.1	9.1	250	4.2	4.2	1.98	59				
VILAS	BIG L (BOULDER JCT)	835	NR	9/21	6.5	62	4.5	7.0	5.8	6.0	58	7.9	9.9	9.0	147	9.6	9.6	3.59	61				
VILAS	BIG L (MI BORDER)	771	NR	9/12	11.4	157	2.9	7.3	5.2	7.8	107	7.6	10.7	9.3	383	13.8	13.8	4.13	65				2
VILAS	BIG MUSKELLUNGE L	930	NR	9/28	95.9	978	3.8	8.4	5.8	7.0	71	8.5											

WISCONSIN		Surface Area (Acres)	2011 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			
County	Lake																			MUE	NOP	LMB	SMB
VILAS	BOULDER L	524	NR	10/18	33.8	203	4.0	7.8	6.0	17.5	105	7.9	9.8	8.7	326	6.0	7.7	2.43	50				
VILAS	CATFISH L	1,012	NR	10/13	17.5	198	5.0	7.3	6.1	11.2	127	8.2	10.0	9.3	359	11.3	11.3	4.48	56				
VILAS	CLEAR L	555	C-NR	9/22	19.0	99	4.6	7.0	6.3	0.4	2	10.8	10.9	10.9	120	5.2	7.1	1.55	59				1
VILAS	CRAB L	949	NR	10/19	14.1	222	3.4	7.3	5.3	7.2	113	7.4	10.6	8.9	363	15.8	15.8	5.71	50				
VILAS	CRANBERRY L	956	NR	10/12	34.6	395	5.0	6.9	5.9	15.5	177	7.4	10.0	8.8	658	11.4	11.4	3.94	60				
VILAS	EAGLE L	572	NR	10/10	64.8	311	5.0	6.9	6.0	1.9	9	8.7	9.9	9.3	350	4.8	4.8	2.19	58				
VILAS	FOREST L	466	NR	9/19	9.3	65	4.0	7.1	5.0	1.0	7	9.4	10.5	9.9	76	7.0	7.0	1.88	65				
VILAS	HARRIS L	507	NR	9/14	2.2	13	5.8	6.4	6.1	4.2	25	7.2	9.8	9.1	85	6.0	6.0	1.74	68				
VILAS	HIGH L	734	NR	9/15	0.1	1	6.9	6.9	6.9	0.0	0				2	7.4	7.4	3.06	60				
VILAS	HORSEHEAD L	234	NR	10/18	49.9	203	4.5	7.1	6.1	22.1	90	7.9	10.8	9.5	339	4.1	4.1	1.67	50				
VILAS	ISLAND L	1,023	C-NR	9/22	33.0	297	3.9	7.2	5.6	20.9	188	7.6	9.6	8.8	621	9.0	16.8	4.03	59				
VILAS	KENTUCK L	957	C-NR	9/27	0.0	0				0.0	0				6	6.0	6.0	2.58	57				
VILAS	LAC VIEUX DESERT	4,300	C-NR	10/3	3.3	53	5.7	8.4	7.0	0.1	2	10.7	11.0	10.9	82	16.3	16.3	7.48	56	2	15	26	15
VILAS	LITTLE ARBOR VITAE L	534	NR	10/18	0.4	3	7.7	7.9	7.8	0.0	0				6	7.1	7.1	2.57	49			5	
VILAS	MAMIE L	400	NR	9/13	4.8	28	4.1	6.5	5.3	9.7	57	8.6	10.9	9.7	104	5.9	5.9	1.87	65				
VILAS	N TWIN L	2,788	NR	10/11	112.2	1,167	4.5	7.8	6.6	4.4	46	8.1	10.7	9.5	1,254	10.4	10.4	5.07	56				
VILAS	OXBOW L	511	NR	10/20	14.4	194	5.0	7.0	6.2	30.2	408	7.2	9.6	8.5	772	13.5	13.5	5.61	47				
VILAS	PRESQUE ISLE L	1,280	NR	9/12	5.0	44	4.9	6.5	5.8	3.1	27	8.7	11.2	9.6	105	8.8	8.8	3.87	67				
VILAS	REST L	608	C-NR	9/22	31.7	256	3.4	7.3	5.8	8.3	67	8.4	11.0	9.6	347	8.1	8.1	3.16	58				
VILAS	S TWIN L	642	NR	10/11	32.7	121	5.0	7.7	6.7	2.4	9	8.2	10.3	9.4	132	3.7	3.7	1.31	54				
VILAS	SHERMAN L	123	NR	9/20	5.9	13	5.1	6.9	5.9	35.9	79	7.2	10.1	8.7	102	2.2	2.2	0.90	60				
VILAS	SQUAW L	785	NR	9/28	17.3	156	5.3	7.1	6.4	8.6	77	8.3	10.3	9.5	268	9.0	9.0	3.67	55				
VILAS	STAR L	1,206	NR	10/4	337.0	3,943	3.3	7.7	4.8	4.9	57	8.0	11.3	9.4	4,062	11.7	11.7	6.36	58				
VILAS	TROUT L	3,816	C-ST	10/4	44.1	789	3.7	8.8	5.8	0.3	6	10.6	11.2	11.0	808	17.9	17.9	8.53	58	1		1	2
WASHBURN	BASS-PATTERSON L	188	NR	9/20	177.2	514	4.5	7.6	6.4	0.7	2	11.1	11.1	11.1	549	2.9	2.9	1.22	63				
WASHBURN	LONG L	3,290	C-NR	10/4	8.1	97	5.1	8.7		2.9	35	9.6	11.8		155	12.0	38.0	5.60	62			36	34
WASHBURN	MINONG FL	1,564	NR	9/22	30.1	340	5.3	7.7	6.6	17.0	192	7.9	10.8	9.8	743	11.3	24.8	4.97	56				
WASHBURN	SHELL L	2,580	NR	9/19	88.4	902	3.2	7.1	4.5	0.5	5	10.3	11.0	10.7	982	10.2	10.2	4.76	65	15	34	131	84
WASHBURN	STONE L	523	C-ST	10/20	8.0	32	5.7	7.6	6.6	0.0	0				36	4.0	4.0	1.41	52				

COUNT: 97 SURVEYS ON 97 LAKES	TOTALS:	34,905			6,697									46,550	1,013.9		398.67		56	179	383	222	
	AVERAGES:	36.1	360		6.0	8.6	70			9.3				480									
NUMBER OF SURVEYS WITH FISH CAUGHT:		89				79								96					11	9	16	15	

MICHIGAN		Surface Area (Acres)	2011 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			
County	Lake																			MUE	NOP	LMB	SMB
BARAGA	PARENT L	182	C-ST	10/10	0.9	2	8.2	9.1	8.7	0.0	0				24	2.3	2.3	1.05	57				
GOGEBIC	L GOGEBIC	13,380	NR	9/14	195.0	5,050	4.7	8.1	6.3	1.7	43	8.9	11.9	10.2	5,104	25.9	35.0	10.38	57				
GOGEBIC	POMEROY L	314	NR	9/15	97.3	360	4.6	7.7	6.5	3.5	13	8.9	10.9	10.3	397	3.7	3.7	2.05	65				
GOGEBIC	TAMARACK L	335	NR	9/13	0.0	0				5.5	22	8.8	11.8	10.3	89	4.0	4.0	1.82	66				
HOUGHTON	PORTAGE L	10,808	C-NR	9/26	0.5	16	5.8	8.1	7.1	0.0	1	10.8	10.8	10.8	18	31.9	67.4	16.03	62				
IRON	EMILY L	320	C-ST	9/12	0.3	1	7.3	7.3	7.3	0.0	0				4	3.2	3.2	1.38	71				
IRON	HAGERMAN L	584	NR	9/13	15.0	78	5.1	6.5	5.9	2.1	11	8.5	9.8	8.9	91	5.2	7.0	2.89	68				
IRON	STANLEY L	310	NR	9/15	15.3	46	4.8	6.8	5.7	2.0	6	10.0	10.7	10.3	56	3.0	3.5	1.89	62				
IRON	SUNSET L	545	NR	9/14	0.2	1	5.8	5.8	5.8	1.1	6	7.9	9.5	8.9	8	5.4	5.4	2.74	62				

COUNT: 9 SURVEYS ON 9 LAKES	TOTALS:	5,554			102									5,791	84.6		40.23		0	0	0	0	
	AVERAGES:	36.1	617		6.7	1.8	11			10.0				643									
NUMBER OF SURVEYS WITH FISH CAUGHT:		8				7								9					0	0	0	0	

MINNESOTA		Surface Area (Acres)	2011 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			
County	Lake																			MUE	NOP	LMB	SMB
MILLE LACS	MILLE LACS L	132,516	NR	9/19	69.7	5,436	3.4	7.9	6.3	6.2	485	8.0	10.8	9.4	6,032	78.0	78.0	29.89	58				

OVERALL: 107 SURVEYS ON 107 LAKES	TOTALS (OVERALL):	45,895			7,284									58,373	1,176.5		468.79		56	179	383	222	
	AVERAGES (OVERALL):	36.4	429		6.1	8.0	69			9.4				546									
NUMBER OF SURVEYS WITH FISH CAUGHT (OVERALL):		98				87								106					11	9	16	15	

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 B3

Summary of Age 0 and Age 1 Catch per Effort Rates During Fall 2011 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 O-ST				
		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	40.4	53.4	82	0.0	337.0	13.0	23.2	15	0.0	76.6			0		
	MICHIGAN	46.2	74.2	7	0.0	195.0	0.6	0.4	2	0.3	0.9			0		
	MINNESOTA	69.7		1	69.7	69.7			0					0		
	POOLED	41.1	54.5	90	0.0	337.0	11.5	22.1	17	0.0	76.6			0		
1	WISCONSIN	10.0	12.5	81	0.0	57.1	1.5	2.8	15	0.0	10.0			0		
	MICHIGAN	2.3	1.8	7	0.0	5.5	0.0	0.0	2	0.0	0.0			0		
	MINNESOTA	6.2		1	6.2	6.2			0					0		
	POOLED	9.3	12.1	89	0.0	57.1	1.3	2.7	17	0.0	10.0			0		

Excluding Lakes Where No Year Class Was Detected

AGE	STATE	NR and C-NR					ST and C-ST					NR-2 and O-ST				
		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	42.4	53.9	78	0.1	337.0	17.7	25.8	11	0.5	76.6			0		
	MICHIGAN	53.9	78.1	6	0.2	195.0	0.6	0.4	2	0.3	0.9			0		
	MINNESOTA	69.7		1	69.7	69.7			0					0		
	POOLED	43.6	55.2	85	0.1	337.0	15.0	24.4	13	0.3	76.6			0		
1	WISCONSIN	11.7	12.7	69	0.1	57.1	2.3	3.2	10	0.0	10.0			0		
	MICHIGAN	2.3	1.8	7	0.0	5.5			0					0		
	MINNESOTA	6.2		1	6.2	6.2			0					0		
	POOLED	10.8	12.4	77	0.0	57.1	2.3	3.2	10	0.0	10.0			0		