



**Fish Population Assessments of Ceded Territory Lakes in  
Wisconsin, Michigan and Minnesota During 2019**

by

**Mark Luehring  
Inland Fisheries Biologist**

**Adam Ray, Ph.D  
Inland Fisheries Biologist**

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

**Administrative Report 21-03  
May 2021**

**Great Lakes Indian Fish and Wildlife Commission  
P. O. Box 9  
Odanah, WI 54861  
(715) 682 - 6619  
[www.glifwc.org](http://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, Fond du Lac, 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 15 Wisconsin lakes and 2 lakes in Michigan. A total of 10,948 walleye were sampled from 10,188 acres of water during these surveys. Twelve of the 17 lakes surveyed had naturally reproducing walleye populations, and density of adult walleye averaged 4.21 (SD = 2.62, range: 2.00 to 9.97) fish per acre. Adult walleye population densities were at least 3.0 fish per acre in seven of the 17 lakes; continuing the overall trend of declining walleye populations observed over the past few years.

During the fall, electrofishing surveys were conducted on 84 lakes in Wisconsin and 7 lakes in Michigan to determine year class strength of age 0 (young of the year) and age 1 (yearling) walleye. In Wisconsin, a total of 10,113 age 0 and 9,178 age 1 walleye were sampled. In addition, 2,348 gamefish including muskellunge (*Esox masquinongy*), northern pike (*Esox lucius*), largemouth bass and smallmouth bass (*M. dolomieu*) were sampled. In Michigan, a total of 1,275 age 0 and 696 age 1 walleye were sampled during the fall.

## 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.....	6
Fall Recruitment Surveys.....	7
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 aides John Cameron, Shane Cramb, Andre Gilles, Caine Heffner, Justin Miller, Jake Parisien, Louis Plucinski, Jerome Powless, and Sam Quagon are thanked for operating shocking equipment, sampling fish, and maintaining boats and equipment under demanding conditions. Kia Hmielewski, Database Manager, is thanked for entering fall survey data. Thanks also to Bad River, Sokaogon (Mole Lake), and St. Croix personnel for their efforts, and to Dr. Jonathan Gilbert, Biological Services Director, for editing the manuscript.

## **Introduction**

Fishery assessment surveys were conducted during spring and fall of 2019, 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 2019 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 15 lakes in the ceded territory of Wisconsin, two lakes from the ceded territory of Michigan (Figure A1). All but six of the Wisconsin lakes (Minocqua, Kawaguesaga, Sherman, Annabelle, Kentuck, and Siskiwit lakes) and both Michigan lakes experienced tribal harvest during the previous year.

Nine lakes in Wisconsin are GLIFWC long-term study lakes. Large (greater than 500 acres in area) long-term study lakes surveyed in 2019 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 2019 included Siskiwit Lake (Bayfield Co.), Bearskin (Oneida 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.

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 Roberts Lake (Forest Co.). In Enterprise Lake (Langlade Co.), Kentuck Lake (Vilas Co.), and Minocqua Lake (Oneida Co.) walleye were captured by fyke netting and electrofishing. In Roberts Lake (Forest Co.) walleye were captured only by fyke netting. 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 2018 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 seven 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 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.

### Fall Recruitment Surveys

Fall electrofishing surveys were conducted in 91 ceded territory waters including 84 lakes in Wisconsin, seven lakes in Michigan. 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 generally sampled lakes four nights per week from September 9 through October 16. Seven assessment crews were used during the season, including four from GLIFWC 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 18 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 these 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.

Surveys on the following 13 Wisconsin lakes were conducted jointly by GLIFWC and WDNR, and the results summarized and reported by GLIFWC: Red Cedar Lake (Barron Co.), Turtle-Flambeau Flowage (Iron Co.), Minocqua Lake (Oneida Co.), Pelican Lake (Oneida Co.), Tomahawk Lake (Oneida Co.), Balsam Lake (Polk Co.), Wapogasset Lake (Polk Co.), Lac Courte Oreilles (Sawyer Co.), Lake Chetac (Sawyer Co.), Trout Lake (Vilas Co.), Lake Owen (Washburn Co.), Long Lake (Washburn Co.), and Shell 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 10,948 walleye were sampled from 10,188 acres of water in Michigan and Wisconsin during the spawning adult walleye population estimate period. Adult walleye population estimates for the 17 stocks ranged from 310 to 7,210 fish (Table A1). Estimated population densities ranged from 1.76 per acre for Sissabagama Lake Sawyer Co., to 9.97 walleye per acre for Bearskin Lake, Oneida Co. (mean = 4.21, SD = 2.62) (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 a recruitment code of C-ST, indicating that some natural reproduction occurred even though the population was sustained by stocking. Seven 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, except for Annabelle Lake (Vilas Co.) and Lindsley Lake (Gogebic Co.). 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 3,330 female, 10,185 male, and 895 unknown sex walleye were measured (Figure A3, Table A2) and a subsample aged (Figure A4). Female lengths ranged from 10.0 to 29.0 inches, male lengths ranged from 9.5 to 25.0 inches, and lengths for walleye of unknown sex ranged from 8.0 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, all of the Wisconsin lakes, except Kentuck Lake (Vilas Co.), Sherman Lake (Vilas Co.), and Bass-Patterson (Washburn Co.) had populations with at least five year classes of females in the aging sample.

### Fall Recruitment Surveys

Fall recruitment surveys were conducted on 91 lakes in the ceded territories of Wisconsin and Michigan (Figure B1, Table B2). Survey effort included 328.4 hours of electrofishing along 784.5 miles of shoreline resulting in the collection of 25,307 walleye.



From surveys conducted on 84 lakes in Wisconsin, 316.2 hours of electrofishing along 751.7 miles of shoreline resulted in a collection of 22,988 walleye. In Michigan, seven lakes were surveyed in 12.21 hours along 32.8 miles of shoreline, resulting in the collection of 2,319 walleye (Table B2).

A total of 10,113 age 0 walleye were caught in Wisconsin. Age 0 walleye were caught in 63 of the 84 lakes surveyed. Over all 84 surveys, catch per effort (CPE) for age 0 walleye ranged from 0.0 to 86.6 (mean = 11.5, median = 2.1, SD = 19.7) per mile. A total of 9,178 age 1 (yearling) walleye were caught in 65 of the 84 lakes surveyed. Over all surveys, age 1 CPE ranged from 0.0 to 86.5 (mean = 12.8, median = 3.5, SD = 20.0) yearlings per mile.

In order to gauge the relative strength of the 2019 and 2018 walleye year classes monitored in the 2019 fall surveys as age 0 and age 1 fish, plots of mean and median CPE values were generated for each year from 1986 through 2019 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 2019, the averages of the yearly mean and median age 0 CPEs are 28.1 and 14.5 per mile, respectively, and the averages of the yearly mean and median age 1 CPEs are 10.0 and 5.1 per mile, respectively. For 2019, the mean and median age 0 CPEs were 12.9 and 5.1, respectively, and the mean and median age 1 CPEs were 18 and 3.9, respectively.

In Michigan, 1,275 age 0 walleye were caught. Age 0 walleye were caught in all, but Lindsley Lake (Gogebic Co.) and Emily Lake (Iron Co.) of the seven lakes surveyed. Age 0 CPE ranged from 0.0 to 76.3 (mean = 24.3, median = 7.3, SD = 34.5) per mile. A total of 696 age 1 walleye were caught in all lakes except Emily Lake (Iron Co.) and Perch Lake (Iron Co.). Age 1 CPE ranged from 0.0 to 110.0 (mean = 23.8, median = 0.7, SD = 41.8) yearlings per mile.

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 and Michigan 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 B4 and B5.

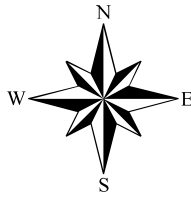
## References

- 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

<b>Figure</b>	<b>Page</b>
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 2019	12
A2. Estimated Adult Walleye Densities by Recruitment Code, Spring 2019	13
A3. Length Frequency of Adult Walleye Marked, Adult Walleye Population Estimates, Spring 2019	14
A4. Age Frequency of Adult Walleye Aged, Adult Walleye Population Estimates, Spring 2019	15
<b>Table</b>	<b>Page</b>
A1. Spring 2019 Adult Population Estimates Conducted by GLIFWC	16
A2. Lengths of Walleye Collected During Spring 2019 Adult Population Estimates	16
A3. Number of Walleye Aged by Sex and Length From Spring 2019 Adult Population Estimate: Lindsley Lake, Gogebic County, Michigan	17
A4. Number of Walleye Aged by Sex and Length From Spring 2019 Adult Population Estimate: Pomeroy Lake, Gogebic County, Michigan	17
A5. Number of Walleye Aged by Sex and Length From Spring 2019 Adult Population Estimate: Siskiwit Lake, Bayfield County, Wisconsin	18
A6. Number of Walleye Aged by Sex and Length From Spring 2019 Adult Population Estimate: Butternut Lake, Forest County, Wisconsin	18
A7. Number of Walleye Aged by Sex and Length From Spring 2019 Adult Population Estimate: Enterprise Lake, Langlade County, Wisconsin	19
A8. Number of Walleye Aged by Sex and Length From Spring 2019 Adult Population Estimate: Bearsking lake, Oneida County, Wisconsin	19
A9. Number of Walleye Aged by Sex and Length From Spring 2019 Adult Population Estimate: Kawauesaga Lake, Oneida County, Wisconsin	20
A10. Number of Walleye Aged by Sex and Length From Spring 2019 Adult Population Estimate: Minocqua Lake, Oneida County, Wisconsin	20

A11.	Number of Walleye Aged by Sex and Length From Spring 2019 Adult Population Estimate: Squirrel Lake, Onedia County, Wisconsin	21
A12.	Number of Walleye Aged by Sex and Length From Spring 2019 Adult Population Estimate: Sissabagama Lake, Sawyer County, Wisconsin	21
A13.	Number of Walleye Aged by Sex and Length From Spring 2019 Adult Population Estimate: Annabelle Lake, Vilas County, Wisconsin	22
A14.	Number of Walleye Aged by Sex and Length From Spring 2019 Adult Population Estimate: Forest Lake, Vilas County, Wisconsin	22
A15.	Number of Walleye Aged by Sex and Length From Spring 2019 Adult Population Estimate: Kentuck Lake, Vilas County, Wisconsin	23
A16.	Number of Walleye Aged by Sex and Length From Spring 2019 Adult Population Estimate: Sherman Lake, Vilas County, Wisconsin	23
A17.	Number of Walleye Aged by Sex and Length From Spring 2019 Adult Population Estimate: Squaw Lake, Vilas County, Wisconsin	24
A18.	Number of Walleye Aged by Sex and Length From Spring 2019 Adult Population Estimate: Bass-Patterson, 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

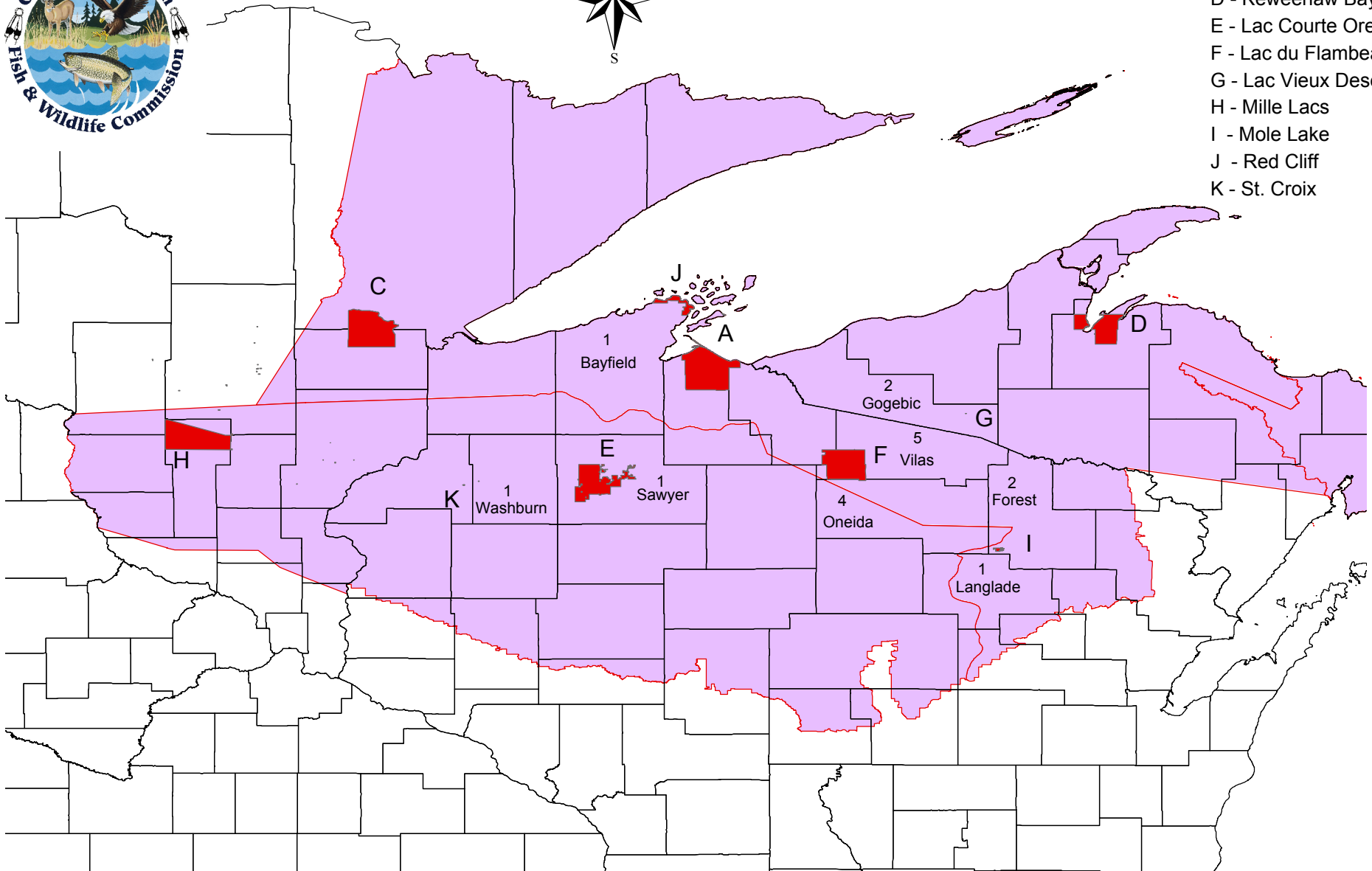
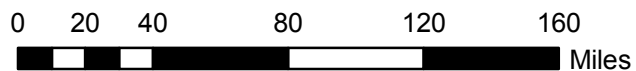


Figure A1. Ceded Territory in Wisconsin, Michigan, and Minnesota with the number of lakes per county where spring adult walleye surveys were conducted by GLIFWC during 2019



12 \*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 2019

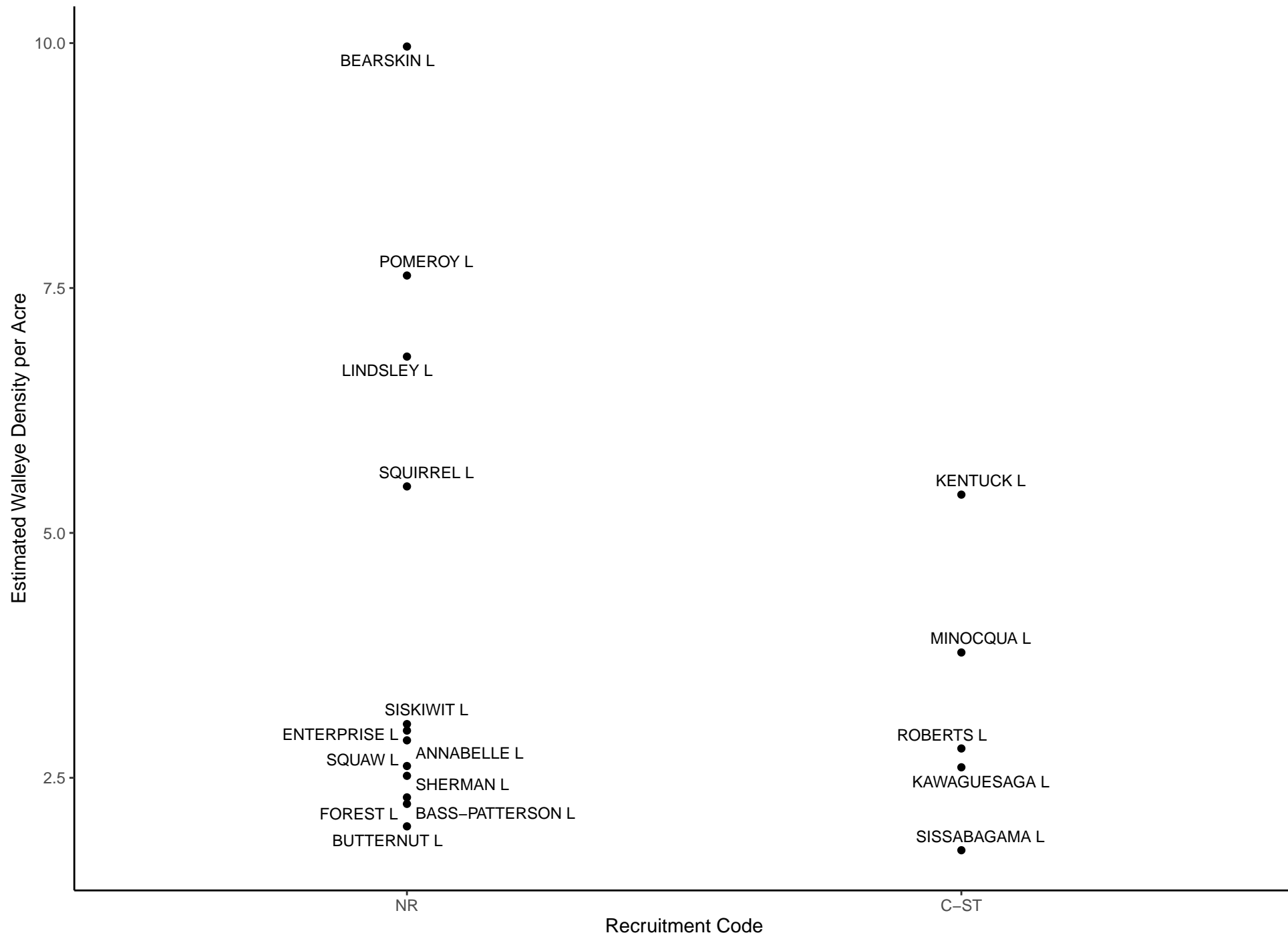


Figure A3: Length Frequency of Adult Walleye Marked, Spring 2019

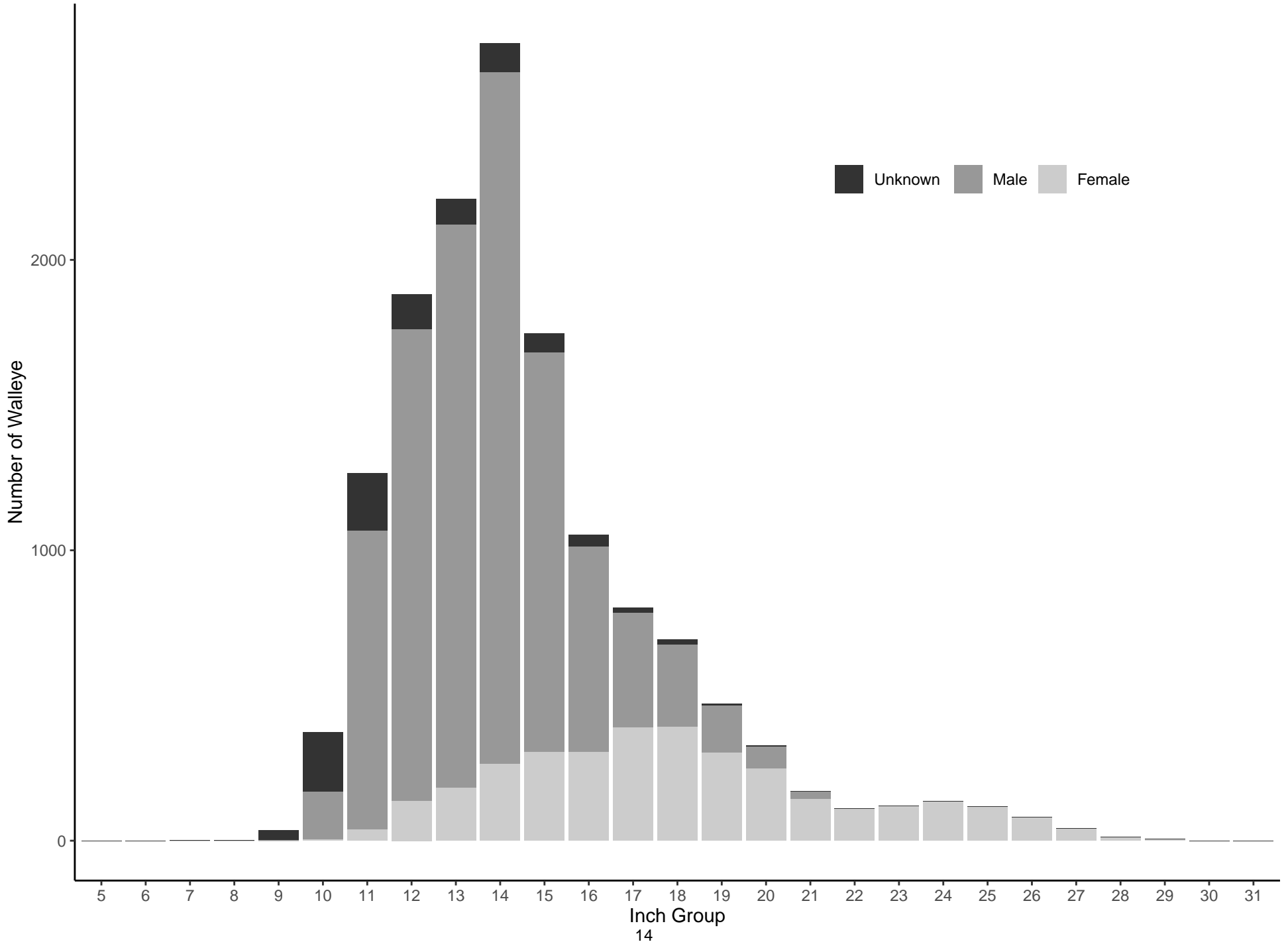


Figure A4: Age Frequency of Adult Walleye Age, Spring 2019

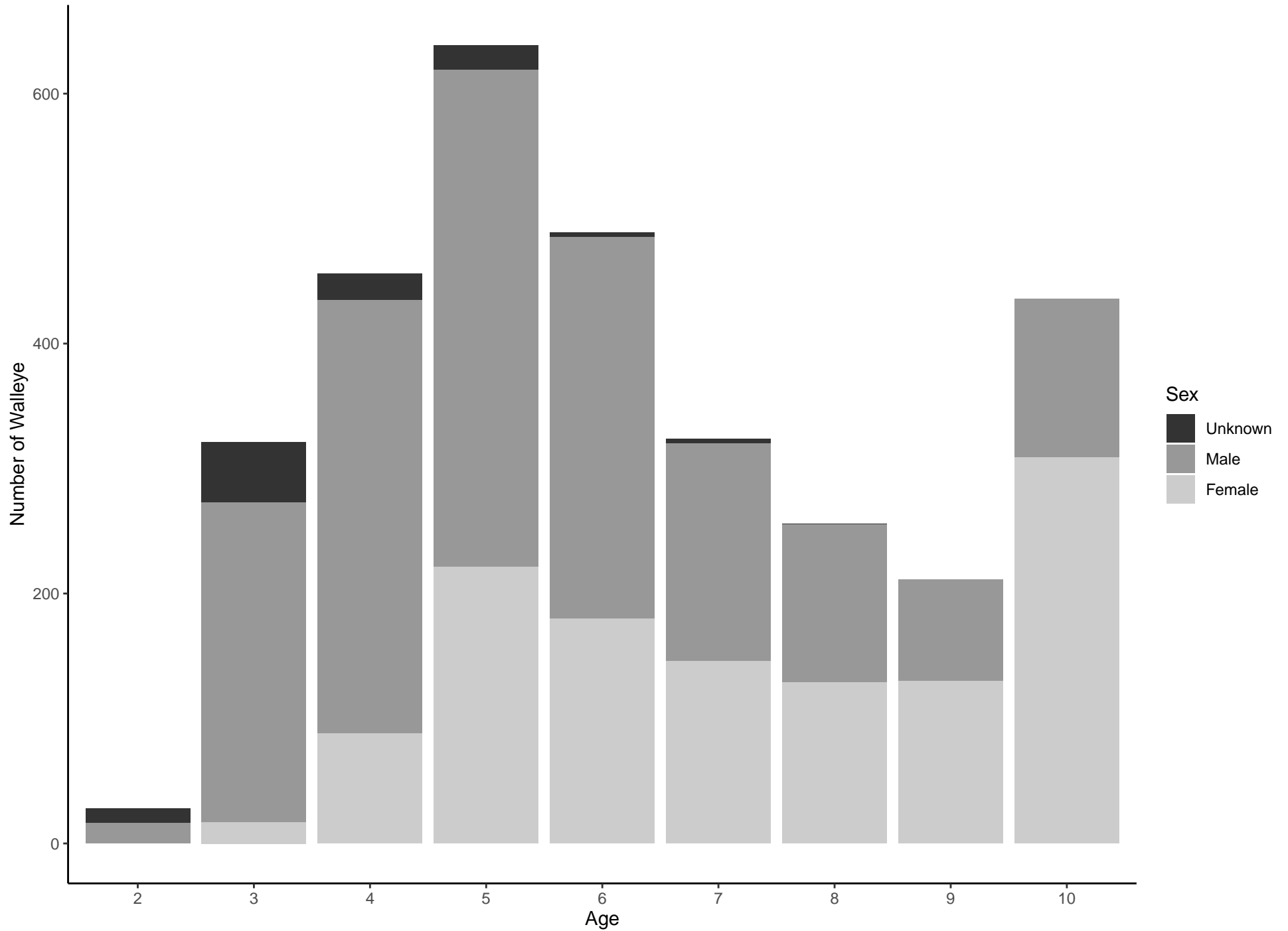




Table A1. Spring 2019 Adult Population Estimates Conducted by GLIFWC

State	County	Lake	Surface Area (Acres)	2019 Walleye Code	Population Estimate	Density	Coefficient of Variation (%)	Marking Gear*	Recapture Gear*	Fin Clip Applied**	Male: Female Sex Ratio***
MI	GOGEBIC	LINDSLEY L	135	NR	918	6.8	11.69	E	E	BCN	0.8
MI	GOGEBIC	POMEROY L	314	NR	2,395	7.63	6.18	E	E	BCN	4
WI	BAYFIELD	SISKIWI L	330	NR	1,006	3.05	8.43	E	E	LP	2.8
WI	FOREST	BUTTERNUT L	1,292	NR	2,590	2	10.42	E	E		11.3
WI	FOREST	ROBERTS L	414	C-ST	1,159	2.8	15.3	F	E	TCN	1.2
WI	LANGLADE	ENTERPRISE L	505	NR	1,506	2.98	7.99	E/F	E	TCN	10.7
WI	ONEIDA	BEARSKIN L	400	NR	3,986	9.97	20.76	E	E		3.9
WI	ONEIDA	KAWAGUESAGA L	670	C-ST	1,747	2.61	6.17	E	E	BC	1.1
WI	ONEIDA	MINOCQUA L	1,360	C-ST	5,140	3.78	7.89	E/F	E	TC	1.3
WI	ONEIDA	SQUIRREL L	1,317	NR	7,210	5.47	13.06	E	E		7.2
WI	SAWYER	SISSABAGAMA L	719	C-ST	1,266	1.76	17.42	E	E	TCN	3.9
WI	VILAS	ANNABELLE L	213	NR	614	2.88	17.15	E	E	HLV	0.9
WI	VILAS	FOREST L	466	NR	1,072	2.3	11.25	E	E	TCN	5.7
WI	VILAS	KENTUCK L	957	C-ST	5,159	5.39	14.56	E/F	E		4.2
WI	VILAS	SHERMAN L	123	NR	310	2.52	6.79	E	E		10.7
WI	VILAS	SQUAW L	785	NR	2,057	2.62	14.09	E	E		5.8
WI	WASHBURN	BASS-PATTERSON L	188	NR	420	2.23	10.42	E	E		11.8

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

\*\* BCN = bottom caudal notch, TCN = top caudal notch, LP = left pectoral, HLV = half left ventral

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

Table A2. Length of Walleye Collected During Spring 2019 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	LINDSLEY L	222	168	10	400	10.0	28.0	9.5	21.5	10.5	12.5
MI	GOGEBIC	POMEROY L	208	827	53	1,088	12.0	27.5	10.0	18.0	11.0	15.5
WI	BAYFIELD	SISKIWI L	150	414	95	659	10.0	27.0	9.5	16.0	9.0	14.0
WI	FOREST	BUTTERNUT L	70	794	6	870	17.5	26.0	10.5	21.5	12.0	14.5
WI	FOREST	ROBERTS L	213	265	49	527	15.0	28.0	13.5	22.0	7.5	17.5
WI	LANGLADE	ENTERPRISE L	59	633	5	697	15.0	23.0	10.0	19.5		
WI	ONEIDA	BEARSKIN L	233	906	60	1,199	11.5	26.5	10.5	20.0	13.0	17.5
WI	ONEIDA	KAWAGUESAGA L	451	483	71	1,005	14.5	29.0	12.5	21.0	10.0	19.0
WI	ONEIDA	MINOCQUA L	767	977	157	1,901	13.5	29.0	11.5	21.0	9.0	18.5
WI	ONEIDA	SQUIRREL L	211	1,514	35	1,760	14.0	24.0	9.0	18.5	12.0	14.5
WI	SAWYER	SISSABAGAMA L	101	394	3	498	13.5	27.0	11.0	21.0	10.0	16.0
WI	VILAS	ANNABELLE L	133	121	10	264	10.5	28.0	10.0	16.0	11.0	13.0
WI	VILAS	FOREST L	84	479	11	574	14.5	25.0	11.5	21.0	15.5	18.0
WI	VILAS	KENTUCK L	296	1,243	293	1,832	14.5	27.5	10.0	19.5	10.0	16.5
WI	VILAS	SHERMAN L	21	224	1	246	15.0	24.5	10.0	17.5	11.5	11.5
WI	VILAS	SQUAW L	95	555	20	670	12.5	18.5	10.0	16.5	12.5	14.0
WI	WASHBURN	BASS-PATTERSON L	16	188	16	220	16.0	23.5	10.5	19.5	12.0	12.5
OVERALL			3,330	10,185	895	14,410	13.5	26	10.6	19.4	11	15.3

Table A3

Number of Walleye Aged by Sex and Length From Spring 2019 Adult Population Estimate  
Lindsley 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
3																																				
4																																				
5																																				
6																																				
7																																				
8																																				
9																																				
10							2	6	2			1	1																2	7	3	12				
11							7	1			2	15	1		4														9	20	1	30				
12							1		1		6	6	4		3	12		1											10	19	5	34				
13											3				6	11		4			1			1					9	17		26				
14										1				4	3		5	12		2			1						10	18		28				
15											1			6	1		2	4		1	6		1	5					10	17		27				
16														4			2	2		3	2		2	3		1			11	8		19				
17														2			3			2		1	3		4				6	9		15				
18													1			2			2		1		1	1		1	1		7	2		9				
19																2			3		2		2	1		1	2		10	3		13				
20																			1			5				2	2		8	2		10				
21																								4		1	2		5	2		7				
22																									6	1		6	1			7				
23																								2		3			5			5				
24																								2		8			10			10				
25																									7	1		7	1			8				
26																									7			7				7				
27																									2			2				2				
28																									1			1				1				
29																																				
30																																				
TOTALS							10	7	3	12	23	6	26	31		16	23		10	13		12	13		11	7		38	9		135	126	9	270		
Number of female year classes:			8			Number of male year classes:			8																											

Table A4

Number of Walleye Aged by Sex and Length From Spring 2019 Adult Population Estimate  
Pomeroy 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	ALL
3																																		
4																																		
5																																		
6																																		
7																																		
8																																		
9																																		
10										4		1	1																1	5		6		
11										13		2	5																2	18		20		
12										1		10	16	1		2													10	19	1	30		
13												11	4		1	15		1											12	20		32		
14												6	4		8	13	1		3										14	20	1	35		
15												1			6	6				1									13	22		35		
16																	10	5		3	10		1	3					14	18		32		
17														2			5			3		2	3		1	2			13	2		15		
18																	4			5		4			1				13	1		14		
19																				2		5		2					9			9		
20																				2		1		1			1		3			3		
21																										3			3			3		
22																																		
23																											1			1			1	
24																																		
25																																		
26																																		
27																																		
28																																		
29																												1		1			1	
30																																		
TOTALS							18			31	30	1	17	36	1	25	24		13	11		13	3		4	3		6			109	125	2	236
Number of female year classes:			7			Number of male year classes:			7																									

Table A5

Number of Walleye Aged by Sex and Length From Spring 2019 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	ALL
3																																					
4																																					
5																																					
6																																					
7																																					
8																																					
9						1				2	7																						2	8	10		
10							1	8	9			2																					1	10	9	20	
11							1	10	4		6	9	3				1																7	19	8	34	
12								1	1	1		7	15	3		2	5	2																9	21	6	36
13							1					4			7	13	5		2	2	2			1										10	20	7	37
14														3	5		8	10						1										11	16	27	
15										1				1			5				1	3												8	4	12	
16																	1				1				1	1								3	1	4	
17																							1			1								2		2	
18																																					
19																																					
20																																					
21																																					
22																																					
23																																					
24																																					
25																																					
26																																					
27																																					
28																																					
29																																					
30																																					
TOTALS						1	3	21	21	14	30	6	13	23	8	16	12	2	2	4	2	3	1									51	93	38	182		
						Number of female year classes: 7						Number of male year classes: 6																									

Table A6

Number of Walleye Aged by Sex and Length From Spring 2019 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								4																										4	4		
12								9				13					6																	22	22		
13												14																							20	20	
14												1				17		1																	19	19	
15												1				10		9																	20	20	
16												1				6		8			4														19	19	
17															5		5		7																18	18	
18												1				3	3		3			5			3		1						3	16	19		
19																2	3				4			4		1							4	2	16	18	
20													1						1	1	1													11	4	18	22
21														1						4			3	1										9	9	10	19
22																																			1	9	15
23																										2										3	3
24																										4									2	6	6
25																										1									5	6	6
26																																			3	3	3
27																																			3	3	3
28																																					
29																																					
30																																					
TOTALS								13			31			2	47		8	29		7	21		6	11		7	6		15	33		45	191		236		
						Number of female year classes: 6						Number of male year classes: 8																									

Table A7

Number of Walleye Aged by Sex and Length From Spring 2019 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
3																																				
4																																				
5																																				
6																																				
7																																				
8																																				
9																																				
10								2																						2	2					
11								7																						7	7					
12								7			4																			11	11					
13								6			5						1		1											12	1	13				
14								1			8																			11	11					
15											3	2					5												3	8	11					
16											1	1				1	4												2	10	12					
17											1					3	1										1		8	9	17					
18															3														7	7	14					
19																													6	5	11					
20																														9	9					
21																														5	5					
22																														5	5					
23																														2	2					
24																														1	1					
25																																				
26																																				
27																																				
28																																				
29																																				
30																																				
TOTALS									23	4	20			7	9	1	8	5			11	11			12	6		5	6		1	2	48	82	1	131
								Number of female year classes: 7								Number of male year classes: 8																				

Table A8

Number of Walleye Aged by Sex and Length From Spring 2019 Adult Population Estimate  
Bearskin 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
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									11	4	34			5	21		14	21			16	11			17	6		14	6		7	1	77	111		188
								Number of female year classes: 7								Number of male year classes: 8																				

Table A9

Number of Walleye Aged by Sex and Length From Spring 2019 Adult Population Estimate  
Kawaguesaga 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
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: 6

Table A10

Number of Walleye Aged by Sex and Length From Spring 2019 Adult Population Estimate  
Minocqua 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																																		
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 A11

Number of Walleye Aged by Sex and Length From Spring 2019 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
3																																				
4																																				
5																																				
6																																				
7																																				
8																																				
9								1																							1	1				
10								10		1																					11	11				
11								12		8		1																			21	21				
12								3		15		2																			20	20				
13										5		13		2																	20	20				
14									1		2	9		11																3	20	23				
15											5	3		3	9				9											8	22	30				
16											5	1		4	2			1	9			9								10	21	31				
17											3			6			2				2				5			2		11	9	20				
18														1			6			6			1	2			4		14	6	20					
19																1				8						2				19	19					
20																				2						8				21	21					
21																										11				8	8	8				
22																														4	4	4				
23																														4	4	4				
24																														1	1	1				
25																														1	1	1				
26																														1	1	1				
27																																				
28																																				
29																																				
30																																				
TOTALS								26	1	29	15	29	14	24	10	18	16	12	23	7	26	6	105	151	256											

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

Table A12

Number of Walleye Aged by Sex and Length From Spring 2019 Adult Population Estimate  
Sissabagama Lake, Sawyer 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										1																					1	1		
11								3		1																				4	4			
12										9		4																		13	13			
13										6		13	1	2	2														2	21	1	24		
14												3		1	14			3											1	20	21			
15															4															1	20	21		
16														1																2	3	20	23	
17																														5	1	10	11	
18																														1	9	7	9	16
19																														7	2	7	9	
20																														7	1	8		
21																														4	1	1	6	
22																														2	6	8	8	
23																														4	4	4	4	
24																														2	2	2	2	
25																																		
26																																		
27																																		
28																																		
29																																		
30																																		
TOTALS								3	1	16	20	1	4	20	6	14	4	17	15	11	15	25	44	126	2	172								

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

Table A13

Number of Walleye Aged by Sex and Length From Spring 2019 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																																				
4																																				
5																																				
6																																				
7																																				
8																																				
9																																				
10								1	3																					1	3		4			
11									1	1		1	12	2	3															4	13	3	20			
12								1			5	11	2	3	9	4		1											9	21	6	36				
13											6	6	1	5	9		4												11	19	1	31				
14										1				5	3		1	6		1	4		1	1				9	14		23					
15														5			1	1		3	1		1	1				10	3		13					
16														2			1			2			2	2		3		10	2		12					
17																			1			1			2		2		6			6				
18																				1			1				1		3			3				
19																				2			1					3				3				
20																							1			1			2				2			
21																																				
22																																				
23																																				
24																												1		1			1			
25																											1		1				1			
26																																				
27																																				
28																												1		1			1			
29																																				
30																																				
TOTALS							2	4	1	13	29	5	23	21	4	3	12	10	5	8	4	6			6			71	75	10	156					
Number of female year classes:									8									Number of male year classes:									6									

Table A14

Number of Walleye Aged by Sex and Length From Spring 2019 Adult Population Estimate  
Forest 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																																			
11													1																	1			1		
12												5			2															7			7		
13												4			16															20			20		
14										1	1				13		5		1										1	20			21		
15													1			14		7											1	21			22		
16													3			3		6			10							3	19			22			
17													2			2			1	1				1	7		2	6	10			16			
18																6			2		1				1	10		10	10			20			
19																			4		1	1		3		4	6	11	7			18			
20																							5		1	5		6	5			11			
21																						1		1		4		6				6			
22																									4		4						4		
23																									4		4						4		
24																										2		2					2		
25																										2		2					2		
26																																			
27																																			
28																																			
29																																			
30																																			
TOTALS										1	11	6	31	8	22	7	15	2	11	10	7	18	23	52	120	172									
Number of female year classes:									7									Number of male year classes:									7								

Table A15

Number of Walleye Aged by Sex and Length From Spring 2019 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
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				15	11	2	37	14				52	18																54			108	70	25	203	
Number of female year classes:			3			Number of male year classes:			3																											

Table A16

Number of Walleye Aged by Sex and Length From Spring 2019 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	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							40			2	32		4	17		5	6		1	1					2			1			15	96		111
Number of female year classes:			6			Number of male year classes:			5																									



Table A17

Number of Walleye Aged by Sex and Length From Spring 2019 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
3																																				
4																																				
5																																				
6																																				
7																																				
8																																				
9																																				
10								10																						10	10					
11								7			13																				20	20				
12								2		4	10		3	8																7	20	27				
13										1	2		8	10		2	3			4										11	19	30				
14												4			7	13			4											11	18	29				
15														4				1			3				2					5	5	10				
16												1			2			1			5			1	1		1		10	2	12					
17															1			1			1			1	1					4		4				
18																				1			1							2		2				
19																																				
20																																				
21																																				
22																																				
23																																				
24																											1			1		1				
25																																				
26																																				
27																																				
28																																				
29																																				
30																																				
TOTALS								19		5	25		16	18		16	16		3	8		7	4		3	3		1	1		51	94	145			
	Number of female year classes: 7							Number of male year classes: 8																												

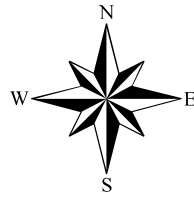
Table A18

Number of Walleye Aged by Sex and Length From Spring 2019 Adult Population Estimate  
Bass-Patterson, 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	ALL
3																																		
4																																		
5																																		
6																																		
7																																		
8																																		
9																																		
10								1																						1	1			
11								1		9		3		2																15	15			
12										20		6		6	1		1													33	1	34		
13										3		3		3																9	9			
14												3		4		1														8	8			
15												1		1						1									3	3	3			
16												1		9		1	1		1		1							1	13	14				
17														1	1		1			1				2			3	1	8	9				
18														2			1						2					3	2	5				
19																							2				1	2	1	3	3			
20																							1						1		1			
21																							1						1		1			
22																																		
23																																		
24																																		
25																																		
26																																		
27																																		
28																																		
29																																		
30																																		
TOTALS								33		1	17		3	26	1	2	4		2		1	2		3	4		4		9	93	1	103		
	Number of female year classes: 4							Number of male year classes: 9																										

## **Appendix B: Fall Recruitment Survey Data**

<b>Figure</b>	<b>Page</b>
B1. Ceded territory in Wisconsin, Michigan, and Minnesota with number of lakes per county where fall electrofishing surveys were conducted by GLIFWC during 2019	26
B2. Means of Age 0 and Age 1 Walleye CPEs, Wisconsin Fall Surveys 1986–2019	27
B3. Medians of Age 0 and Age 1 Walleye CPEs, Wisconsin Fall Surveys 1986–2019	27
B4. Age 0 CPE by Code for GLIFWC 2019 Recruitment Surveys	28
B5. Age 1 CPE by Code for GLIFWC 2019 Recruitment Surveys	29
<b>Table</b>	<b>Page</b>
B1. Description of Walleye Recruitment Source Codes	30
B2. Fall 2019 Recruitment Surveys Conducted by GLIFWC	31
B3. Summary of Age 0 and Age 1 Catch per Effort Rates During Fall 2019 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

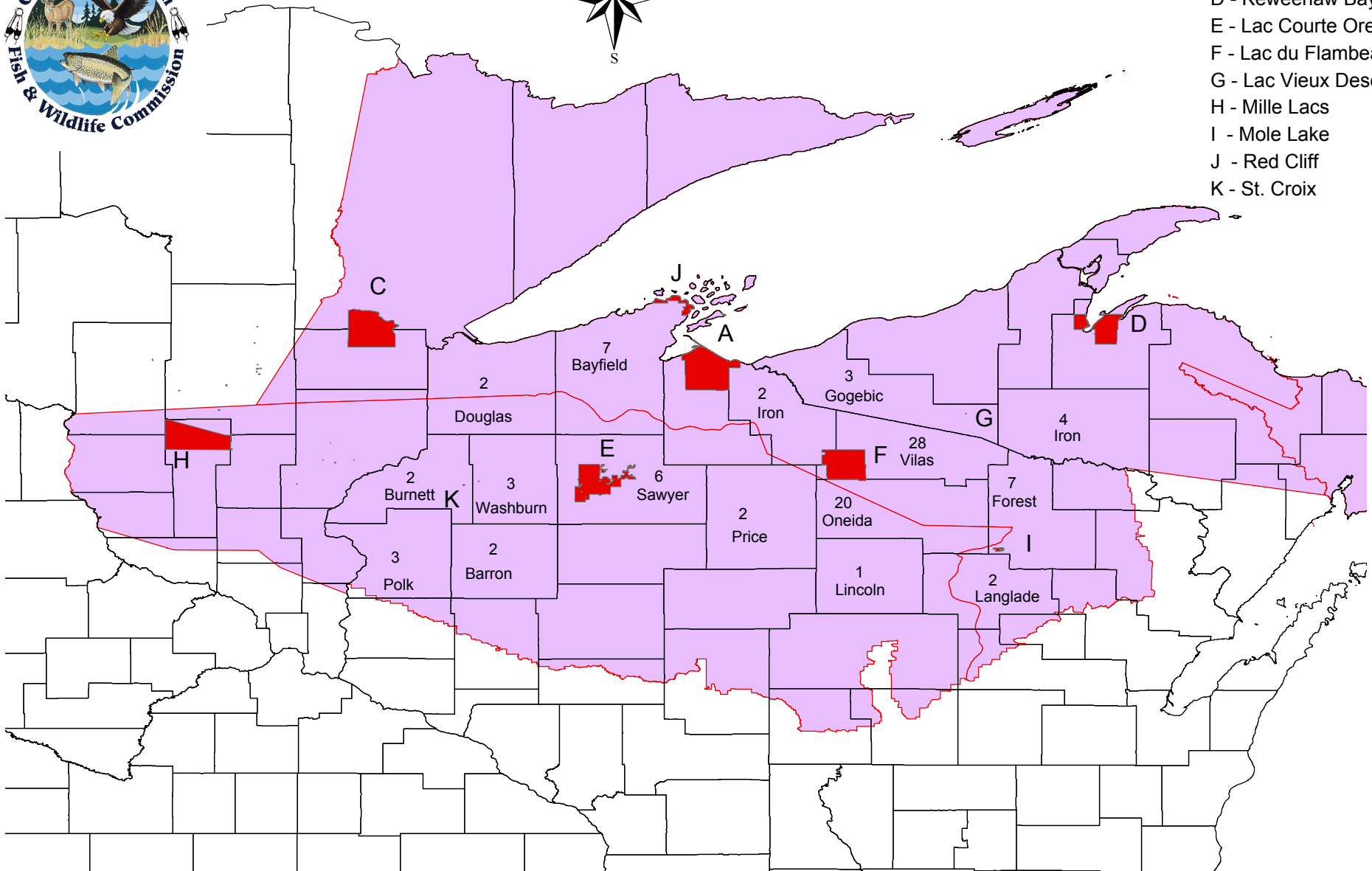
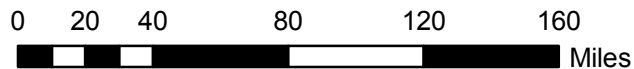


Figure B1. Ceded Territory in Wisconsin, Michigan, and Minnesota with the number of lakes per county where fall juvenile walleye surveys were conducted by GLIFWC during 2019.



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

Figure B2

Means of Age 0 and Age 1 Walleye CPEs in Wisconsin

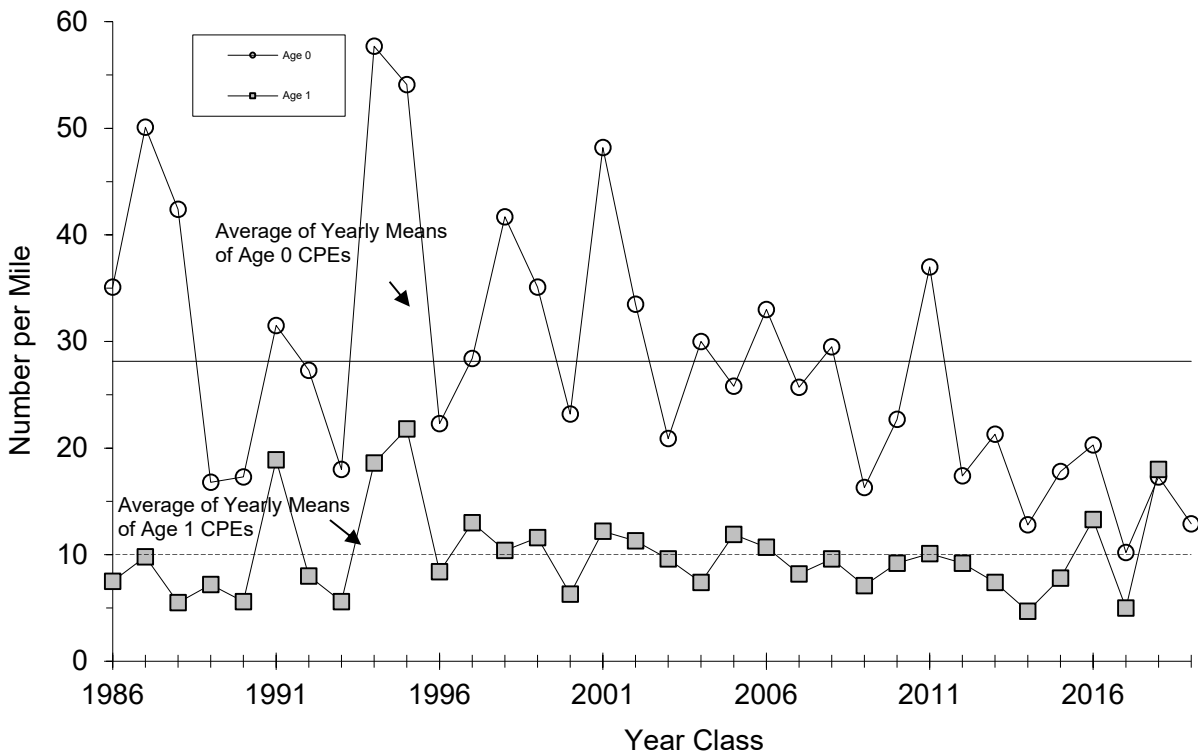
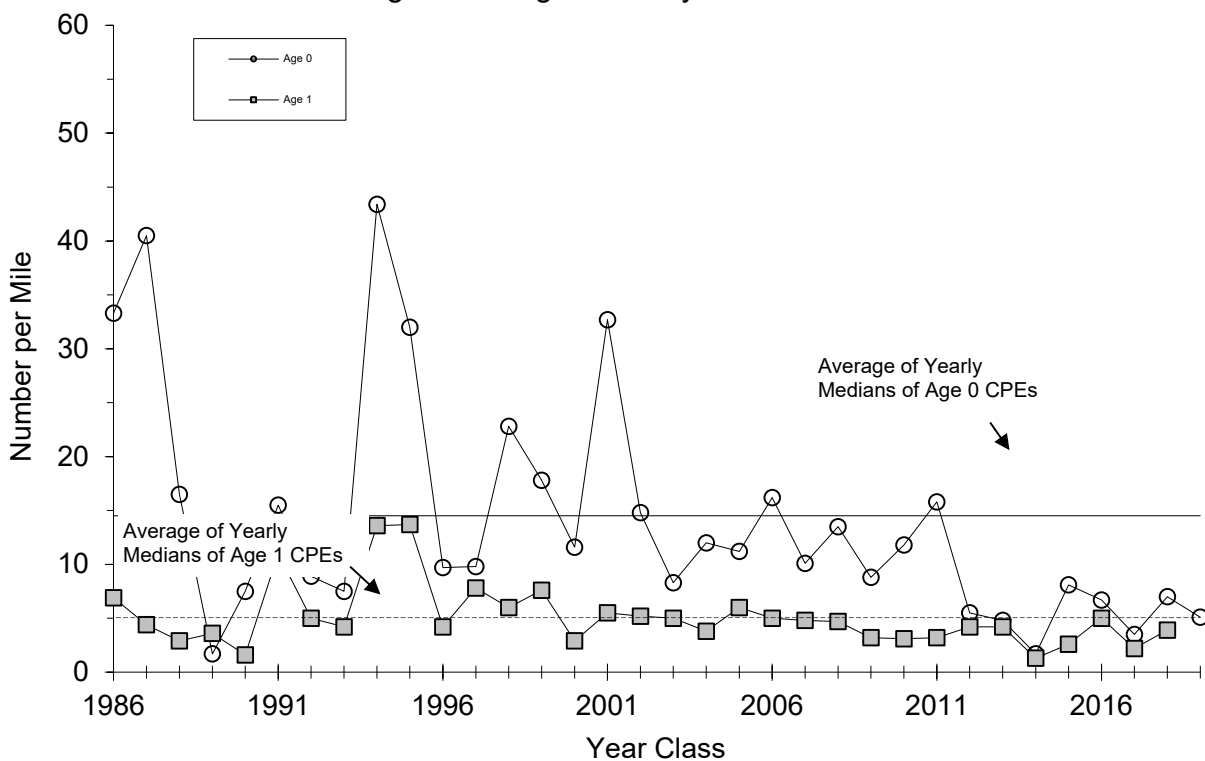


Figure B3

Medians of Age 0 and Age 1 Walleye CPEs in Wisconsin



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: Age 0 CPE by Code for GLIFWC 2019 Recruitment Surveys

(X is the mean and + is the median for each code)

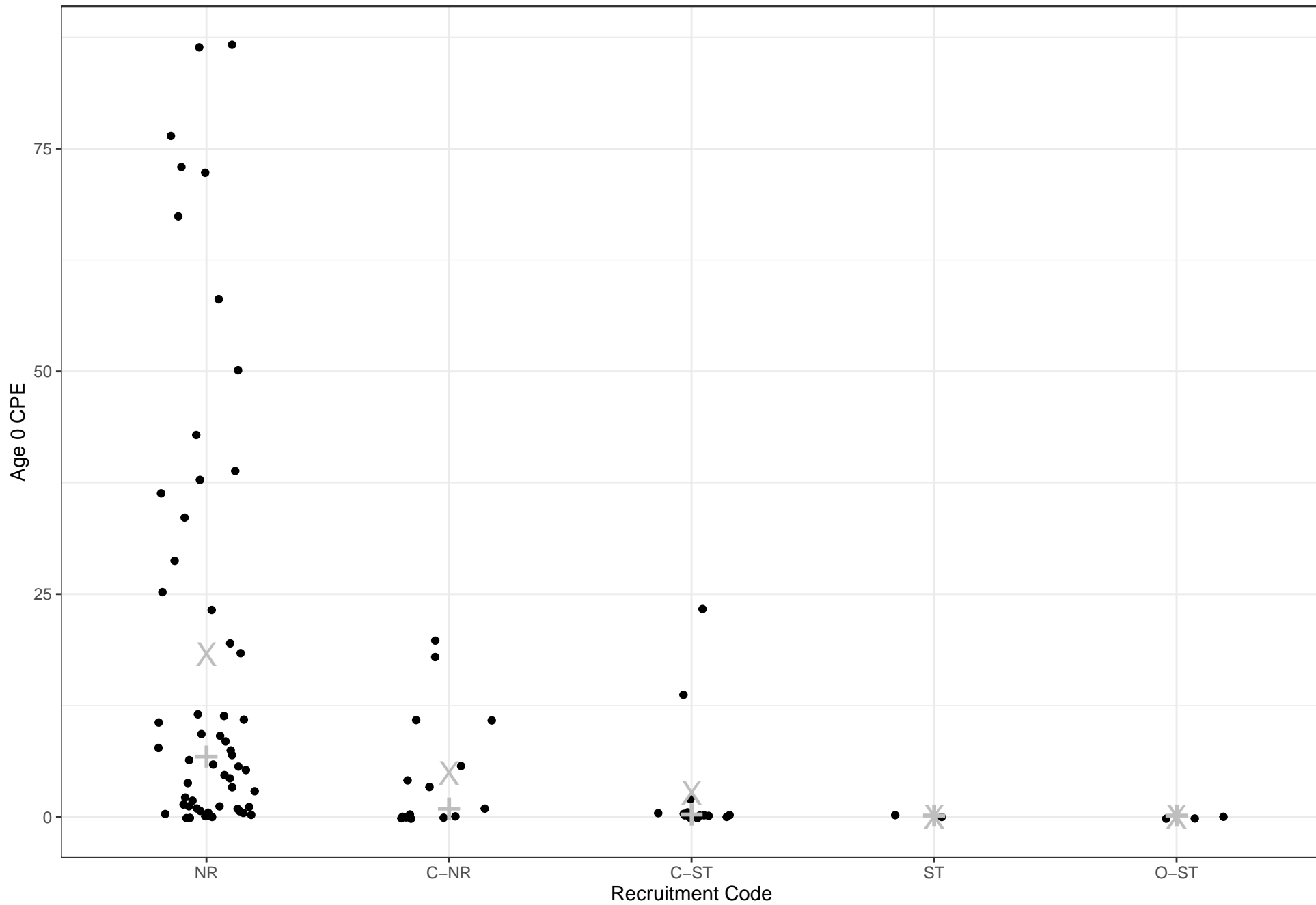
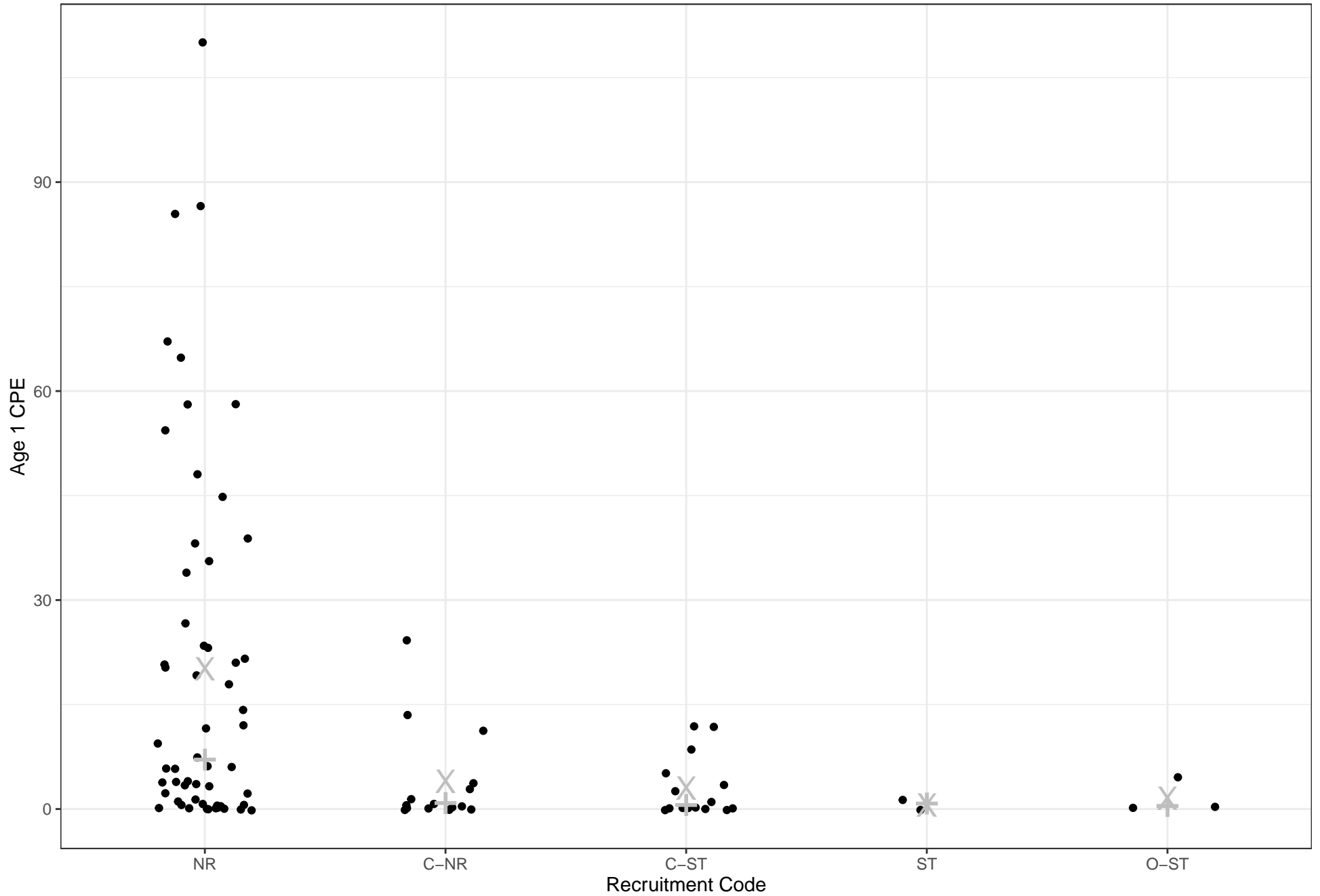


Figure B5: Age 1 CPE by Code for GLIFWC 2019 Recruitment Surveys

(X is the mean and + is the median for each code)



**Table B1. Description of Walleye Recruitment Source Codes.**

<b>Code</b>	<b>Recruitment Code Description</b>
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 2019 Walleye Recruitment Surveys Conducted by GLIFWC**

WISCONSIN		Surface Area (Acres)	2019 Walleye Code	Date Surveyed	Age 0 CPE	Age 0 Walleye	Age 0 Min Length	Age 0 Max Length	Age 0 Mean Length	Age 1 CPE	Age 1 Walleye	Age 1 Min Length	Age 1 Max Length	Age 1 Mean Length	Total Walleye	Miles Surveyed	Shore Miles	Hours Surveyed	Temperature	Other Species			
County	Lake																			MUE	NOP	LMB	SMB
BARRON	RED CEDAR L	1,841	C-NR	10/7	18.0	220	3.4	8.0	5.4	1.4	17	8.2	10.4	9.5	262	12.2	15.9	5.50	58	0	0	0	0
BAYFIELD	BUSKEY BAY	100	C-NR	9/18	0.0	0				0.4	1	11.2	11.2	11.2	2	2.4	2.4	0.98	70	0	0	16	3
BAYFIELD	HART L	259	C-NR	9/19	0.0	0				0.0	0				6	3.5	3.5	1.49	71	0	1	16	16
BAYFIELD	L MILLICENT	183	C-NR	9/18	0.0	0				0.0	0				1	3.8	3.8	1.57	70	0	0	25	8
BAYFIELD	L OWEN	1,323	C-NR	9/19	5.6	135	4.4	7.2	6.0	0.7	17	8.0	10.0	8.9	158	24.0	24.0	9.80	66	0	0	35	362
BAYFIELD	NAMEKAGON L	3,227	C-NR	9/16	0.8	18	4.0	7.2	5.7	11.2	257	7.3	9.8	8.5	382	23.0	43.6	8.54	65	0	0	0	0
BAYFIELD	SISKIWIT L	330	NR	9/9	3.3	13	5.6	7.0	6.2	4.0	16	7.8	10.4	9.5	62	4.0	4.0	2.02	62	0	0	0	1
BAYFIELD	TWIN BEAR L	172	C-NR	9/19	0.0	0				0.0	0				2	3.9	3.9	1.09	71	0	1	11	13
BURNETT	ROONEY L	322	ST	10/2	0.0	0				0.0	0				0	4.1	4.1	1.31	58	0	0	0	0
BURNETT	YELLOW L	2,287	NR	10/16	0.0	0				0.0	0				1	5.6	7.9	1.31	49	0	4	4	0
DOUGLAS	UPPER ST CROIX L	855	C-ST	10/1	0.0	0				0.0	0				11	10.0	10.0	4.17	57	0	2	2	0
DOUGLAS	WHITEFISH L	832	NR	9/23	3.0	21	2.1	6.6	5.7	2.3	16	6.8	9.6	8.1	46	6.9	6.9	2.71	65	0	0	3	1
FOREST	ARBUTUS L	158	ST	9/16	0.0	0				1.2	3	9.2	10.7	9.9	3	2.5	2.5	1.10	68.9	0	21	97	1
FOREST	FRANKLIN L	892	C-NR	9/17	19.7	130	4.6	7.1	6.0	0.3	2	8.3	8.5	8.4	137	6.6	6.6	2.56	63.9	0	20	3	78
FOREST	JUNGLE L	177	C-NR	9/23	0.0	0				2.7	6	10.3	11.1	10.6	12	2.2	2.2	1.28	67	0	13	39	0
FOREST	L LUCERNE	1,026	C-ST	9/10	0.1	1	6.7	6.7	6.7	0.0	0				1	8.3	10.5	2.60	63.9	0	0	0	0
FOREST	LILY L	213	NR	9/25	1.4	7	5.4	7.2	6.1	21.2	108	7.9	10.4	9.5	140	5.1	5.1	1.45	66	0	0	0	0
FOREST	LITTLE SAND L	237	O-ST	9/16	0.0	0				0.0	0				30	2.8	2.8	1.14	68	0	0	18	0
FOREST	MOLE L	73	O-ST	9/13	0.0	0				4.5	9	8.4	10.3	9.4	24	2.0	2.0	1.03	61	0	14	20	0
IRON	TRUDE L	781	NR	9/25	0.0	0				0.0	0				14	9.7	14.1	2.42	64	0	0	1	4
IRON	TURTLE-FLAMBEAU FL	13,545	NR	9/30	42.9	879	3.9	7.0	5.5	18.0	370	7.1	9.3	8.1	1,416	20.5	211.0	7.50	57	0	0	0	0
LANGLADE	ENTERPRISE L	505	NR	9/18	23.3	140	4.7	6.8	5.7	58.2	349	6.9	8.8	7.8	561	6.0	6.0	2.26	64.6	0	0	0	0
LANGLADE	PICKEREL L	1,256	O-ST	9/11	0.0	0				0.3	2	8.9	9.7	9.3	12	7.9	10.3	2.97	63.8	0	0	0	0
LINCOLN	L NOKOMIS	2,433	NR	10/1	86.6	1,351	3.2	7.1	4.4	23.3	363	7.2	10.9	9.2	1,816	15.6	38.5	8.23	60	0	1	0	0
ONEIDA	BEARSKIN L	400	NR	9/24	11.6	65	3.7	6.5	5.5	38.9	218	7.1	9.7	8.3	405	5.6	5.6	2.76	66	0	0	0	1
ONEIDA	BIG FORK L	690	NR	9/27	33.7	182	4.7	6.7	5.7	67.0	362	6.8	8.7	8.1	800	5.4	5.4	2.39	62.1	0	0	0	0
ONEIDA	BIG L	865	NR	9/15	2.1	14	4.4	6.1	5.3	64.7	427	6.6	8.8	7.8	531	6.6	6.6	2.39	61.3	0	0	0	0
ONEIDA	BIG STONE L	548	NR	10/8	5.8	28	4.9	6.8	5.7	44.8	215	7.3	9.7	8.5	312	4.8	4.8	2.34	55	0	0	0	0
ONEIDA	BOLGER L	119	C-ST	9/26	0.3	1	7.8	7.8	7.8	0.0	0				5	3.1	3.1	1.09	NA	0	0	0	0
ONEIDA	CRESCENT L	612	NR	9/19	1.8	13	6.1	7.2	6.7	0.4	3	10.5	10.8	10.6	26	7.4	7.4	2.56	68.1	0	0	0	0
ONEIDA	DAM L	744	NR	9/22	1.0	8	4.5	6.3	5.5	21.7	167	7.6	10.6	9.1	189	7.7	7.7	2.97	67	0	0	1	2
ONEIDA	HASBROOK L	302	NR	9/19	36.1	159	4.6	7.2	5.8	0.2	1	10.7	10.7	10.7	162	4.4	4.4	2.33	68	0	0	0	0
ONEIDA	LITTLE FORK L	354	NR	10/10	7.7	40	4.3	6.7	5.8	33.8	176	6.8	10.3	8.5	269	5.2	5.2	1.95	57	0	0	0	0
ONEIDA	LONG L	620	NR	10/7	19.5	146	4.7	6.5	5.5	86.5	649	6.6	9.4	7.9	882	7.5	7.5	3.44	56	0	0	0	0
ONEIDA	MANSON L	236	C-NR	9/25	0.3	1	7.5	7.5	7.5	0.0	0				6	3.6	3.6	2.03	67	0	0	0	0
ONEIDA	MEDICINE L	372	NR	10/10	11.5	55	4.2	7.0	6.2	20.4	98	7.2	9.7	8.3	221	4.8	4.8	1.87	57	0	0	0	0
ONEIDA	MINOCQUA L	1,360	C-ST	9/16	0.0	0				0.0	0				83	19.1	19.1	8.50	66	4	15	149	7
ONEIDA	PELICAN L	3,585	NR	10/7	67.2	874	3.9	7.2	5.8	26.6	346	7.0	10.3	8.6	1,440	13.0	13.0	8.30	63	6	60	42	21
ONEIDA	PLANTING GROUND L	1,012	NR	10/10	11.0	116	4.5	6.9	5.7	35.7	375	7.0	9.8	7.8	551	10.5	10.5	4.41	54	0	0	0	0
ONEIDA	RAINBOW FL	2,035	NR	10/9	86.3	846	3.1	7.3	5.0	11.6	114	7.7	11.1	9.3	988	9.8	22.3	5.88	52	0	0	0	0
ONEIDA	SAND L	540	NR	9/22	0.2	1	7.5	7.5	7.5	3.3	16	9.1	10.7	10.1	24	4.8	4.8	2.05	69	0	0	0	0
ONEIDA	SQUIRREL L	1,317	NR	9/23	50.3	699	3.7	7.0	5.7	20.9	290	7.1	10.5	8.7	1,096	13.9	13.9	6.62	68	0	0	0	1
ONEIDA	TOMAHAWK L	3,392	C-ST	9/10	0.4	11	5.0	7.2	5.7	5.0	150	7.6	10.0	8.8	199	30.2	30.2	11.60	64	4	11	86	160
ONEIDA	WILLOW FL	5,135	NR	10/3	10.6	171	3.6	7.2	4.9	6.1	99	7.4	9.4	8.4	290	16.2	98.5	3.65	56	0	0	0	0
POLK	BALSAM L	2,054	C-ST	10/3	0.3	7	6.8	7.8	7.3	1.0	23	8.0	10.2	9.0	61	22.7	22.7	6.70	58	0	5	334	2
POLK	BIG BUTTERNUT L	378	C-ST	9/23	0.0	0				0.0	0				14	3.4	3.4	1.11	68	0	0	0	0
POLK	WAPOGASSET L	1,186	C-ST	10/8	0.2	2	4.7	6.6	5.7	3.4	31	8.8	10.9	9.9	37	9.1	9.9	3.50	57	0	0	0	0
SAWYER	EVERGREEN L	200	NR	10/9	0.0	0				0.0	0				6	2.2	2.2	1.04	55	0	0	0	0
SAWYER	L CHETAC	1,920	C-ST	9/19	0.0	0				12.0	164	7.4	11.3	9.3	260	13.7	17.5	5.80	69	0	0	299	20
SAWYER	LAC COURTE OREILLES	5,039	C-NR	9/18	3.5	88	4.6	7.2	6.2	0.4	10	7.9	10.8	9.4	113	24.9	25.4	7.30	66	1	22	55	41
SAWYER	MASON L	190	NR	10/9	0.0	0				0.0	0				20	3.5	3.5	1.51	56	0	0	0	0
SAWYER	ROUND L	3,054	NR	9/17	6.4	129	4.4	6.8	5.7	0.6	12	7.5	9.0	8.2	154	20.1	20.2	8.12	65	0	1	5	10
SAWYER	SAND L	928	NR	10/10	9.2	47	4.2	7.4	5.8	19.0	97	7.6	10.6	9.5	213	5.1	5.1	2.10	55	0	0	0	0
VILAS	AMBER L	785	NR	9/25	0.9	8	6.3	6.9	6.6	3.7	33	8.4	10.2	9.6	74	9.0	9.0	4.41	65	0	0	0	0
VILAS	ANNABELLE L	213	NR	9/9	0.5	2	6.1	6.1	6.1	0.7	3	7.0	8.8	7.6	35	4.2	4.2	1.96	61	0	0	0	0
VILAS	BIG L (BOULDER JCT)	835	NR	10/1	0.6	6	6.4	7.3	6.7	3.8	36	7.9	10.5	9.4	74	9.6	9.6	3.18	58	0	0	0	0
VILAS	BIG L (MI BORDER)	771	NR	9/9	1.3	18	4.1	6.3	5.3	5.9	82	7.0	9.9	8.5	191	13.8	13.8	4.76	63	1	1	2	17





Table B3

## Summary of Age 0 and Age 1 Catch per Effort Rates During Fall 2019 Recruitment Surveys Conducted by GLIFWC

## Including Lakes Where No Year Class Was Detected

AGE	STATE	NR and C-NR					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	14.3	21.4	65	0.0	86.6	2.5	6.5	16	0.0	23.4	0.0	0.0	3	0.0	0.0
	MICHIGAN	28.3	35.9	6	0.0	76.3	0.0		1	0.0	0.0					
	MINNESOTA															
	POOLED	15.5	23.0	71	0.0	86.6	2.4	6.3	17	0.0	23.4	0.0	0.0	3	0.0	0.0
1	WISCONSIN	15.7	22.7	65	0.0	86.5	2.9	4.3	16	0.0	12.0	1.6	2.5	3	0.0	4.5
	MICHIGAN	27.8	47.2	6	0.0	110.0	0.0		1	0.0	0.0					
	MINNESOTA															
	POOLED	16.7	25.3	71	0.0	110.0	2.7	4.2	17	0.0	12.0	1.6	2.5	3	0.0	4.5

## Excluding Lakes Where No Year Class Was Detected

AGE	STATE	NR and C-NR					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	16.9	22.3	55	0.2	86.6	5.0	8.7	8	0.1	23.4	0.0	0.0	0	0.0	0.0
	MICHIGAN	34.0	37.0	5	5.4	76.3										
	MINNESOTA															
	POOLED	18.3	23.9	60	0.2	86.6	5.0	8.7	8	0.1	23.4	0.0	0.0	0	0.0	0.0
1	WISCONSIN	18.9	22.7	54	0.1	86.5	5.1	4.6	9	0.4	12.0	2.4	3.0	2	0.3	4.5
	MICHIGAN	33.4	47.2	5	0.6	110.0										
	MINNESOTA															
	POOLED	20.1	25.3	59	0.1	110.0	5.1	4.6	9	0.4	12.0	2.4	3.0	2	0.3	4.5