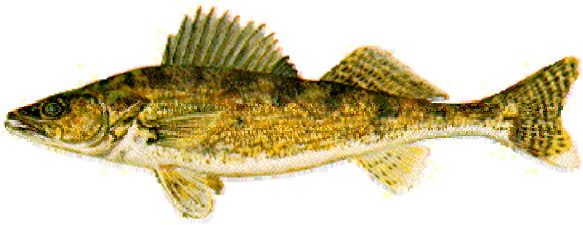
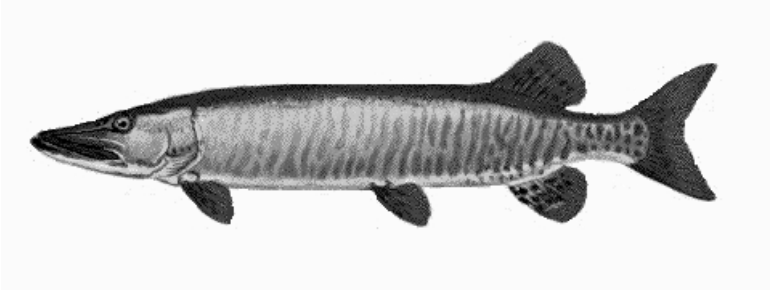


Wisconsin Department of Natural Resources

2003-2004 Ceded Territory

Fishery Assessment Report



Scott P. Hansen and Joseph M. Hennessy

Administrative Report # 61

Treaty Fisheries Assessment Unit
Bureau of Fisheries Management and Habitat Protection
Madison, Wisconsin
August, 2006

Walleye illustration Virgil Beck

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

This page intentionally blank

INTRODUCTION

In 1983, the United States Court of Appeals for the Seventh Circuit affirmed the rights of six Wisconsin Chippewa Bands (Bad River, Lac Courte Oreilles, Lac du Flambeau, Sokaogon, Red Cliff, and St. Croix) to fish off-reservation waters in the Ceded Territory (Figure 1) of Wisconsin using traditional methods (e.g. spearing and netting) as determined by Treaties of 1837 and 1842 between the Bands and the United States government. Since then, the Wisconsin Department of Natural Resources (WDNR) has worked to integrate tribal harvest opportunities with sport fisheries in the Ceded Territory. In addition, WDNR works with the Great Lakes Indian Fish and Wildlife Commission (GLIFWC) to establish safe harvest quotas for walleye and muskellunge in the Ceded Territory and to monitor the shared fisheries.

To facilitate and manage shared tribal and recreational angler harvest, an intensive data collection and analysis effort began in 1987, and developed into the current program in 1990. This effort has evolved as knowledge in fisheries science has advanced and as unique aspects of the Ceded Territory fisheries have been addressed. The primary goal is to collect information essential to protecting Ceded Territory fish populations from over-exploitation by the combined tribal and recreational fisheries.

Figure 1: The Wisconsin Ceded Territory (shaded).

Walleye *Sander vitreus* and muskellunge *Esox masquinongy* are tremendously popular with Wisconsin anglers and are important economically. Chippewa tribal members rely on these fisheries for preservation of their cultural heritage and as a food source. The majority of tribal harvest occurs during spring while walleye and muskellunge are congregated in shallow water to spawn and are readily taken by spear. A smaller number are harvested throughout the remainder of the year with

a variety of capture methods including spearing, gill netting, fyke netting, set-lining, and angling. Netting and spearing are highly efficient methods and, unlike low efficiency methods such as angling, are not self-regulating (Beard et al. 1997, Hansen et al. 2000). Therefore, over-exploitation is a strong possibility in the absence of intensive management of these fisheries, and could result in long lasting and potentially irreversible damage.

WDNR evaluates walleye populations using three primary methods: spring adult and total population estimates, fall age-0 relative abundance estimates, and creel surveys of angler catch and harvest. GLIFWC and the United States Fish and Wildlife Service conduct spring adult population estimates and fall age-0 surveys on additional lakes each year, and GLIFWC censuses open-water tribal harvest of all species. Harvest of muskellunge through ice is currently assessed by periodic creel surveys conducted by GLIFWC. These methods provide information on the current harvestable population, an indication of the future harvestable population, and the degree of exploitation in the walleye fishery. WDNR also conducts muskellunge and black bass *Micropterus* spp. population estimates each year, but does not quantify muskellunge or black bass recruitment.

Population estimates are critical to the management of Ceded Territory fisheries. Precise population estimates allow biologists to calculate the number of fish that may safely be harvested from a population based on knowledge of the fishery and the biology of the species in question. Fish populations in general and walleye populations in particular are extremely variable and can change dramatically from year to year. This allows utilization of the resource while minimizing the potential of jeopardizing future abundance or presence of a species. However, the 919 walleye lakes and 623 muskellunge lakes in the Wisconsin Ceded Territory for 2003 make it logistically impossible to obtain precise population estimates from all lakes in the Ceded Territory in one year. Therefore, WDNR selects 15-20 lakes each year for adult walleye population estimates and nine-month creel surveys, using a stratified random sampling method. The data collected are incorporated into a database that can be used to examine temporal, within- and between-region trends in walleye populations and angler effort. A continuing randomized survey of lakes provides information on trends in these populations.

The Wisconsin joint fishery is managed by calculating total allowable catch for walleye and muskellunge on a lake-by-lake basis. “Safe harvest” is set at a level such that the risk of exceeding 35%

exploitation for walleye and 27% for muskellunge is less than 1-in-40 (Hansen, 1989; Hansen et al. 1991). A sliding bag limit system is employed to manage angler harvest. Daily angler bag limits are reduced based on the level of spring tribal harvest (Appendix A1). This risk-management system differs from a quota system, which would potentially close fisheries once a harvest cap was reached.

Safe harvest levels are set on all Ceded Territory walleye and muskellunge lakes using the most accurate population estimates available. The most reliable estimates are clearly taken from mark-recapture estimates performed in the same year for which safe harvest is calculated. However, because the temporal overlap of the spearing season and spring population estimate sampling make this logistically impossible, these population estimates are used to estimate abundance for the following two years. In addition, given the year-to-year variability associated with fish populations, safety factors are incorporated to account for the largest potential decrease between years (Hansen et al. 1991). Population estimates older than two years are not considered to accurately represent a lake's current population and are not directly used to set safe harvest. In this case, an estimate is calculated from a regression model based on lake acreage as a predictor of population abundance (Hansen 1989). Each year, new population estimates are incorporated into the regression model, but no estimates are removed. Lakes with multiple population estimates are averaged before being entered into the regression model. Three regression models (Figures 2-4) are used depending on the primary source of walleye recruitment in the lake (Nate et al. 2000). Separate models are used for: 1) lakes sustained primarily by natural reproduction (NR), 2) lakes sustained primarily through stocking efforts (ST), and 3) lakes with low density populations maintained through intermittent natural reproduction (REM) (US Department of the Interior 1991; Appendix A2). These models are used to set safe harvest yearly for the majority of the walleye lakes in the Ceded Territory.

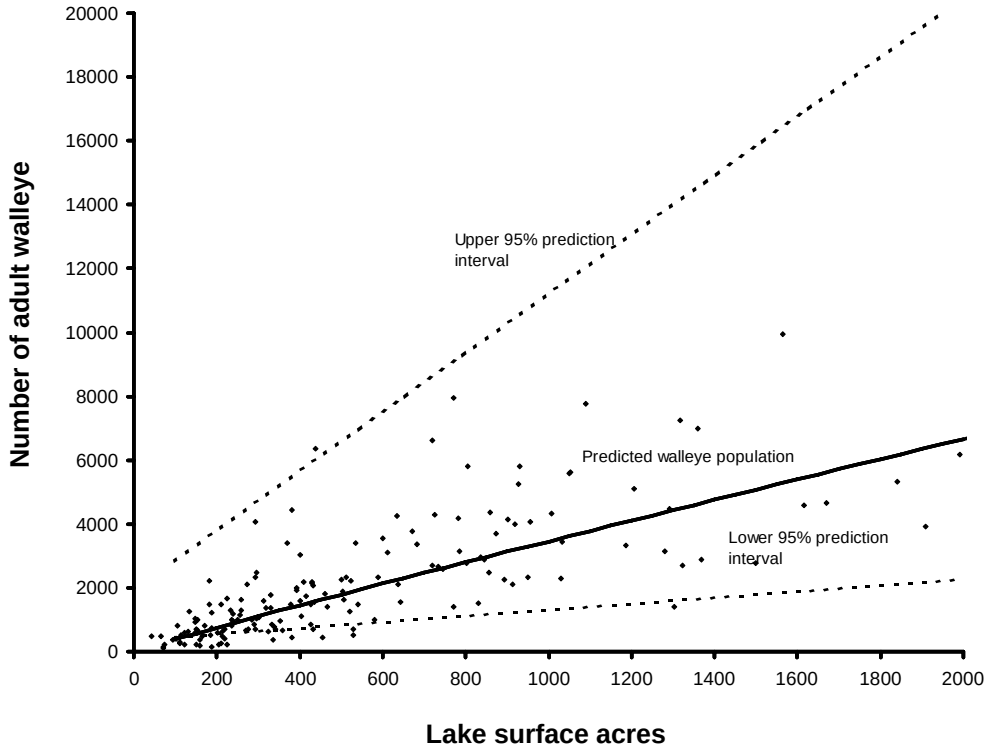


Figure 2: Regression model for lakes sustained primarily by natural reproduction (lakes <2000 acres).

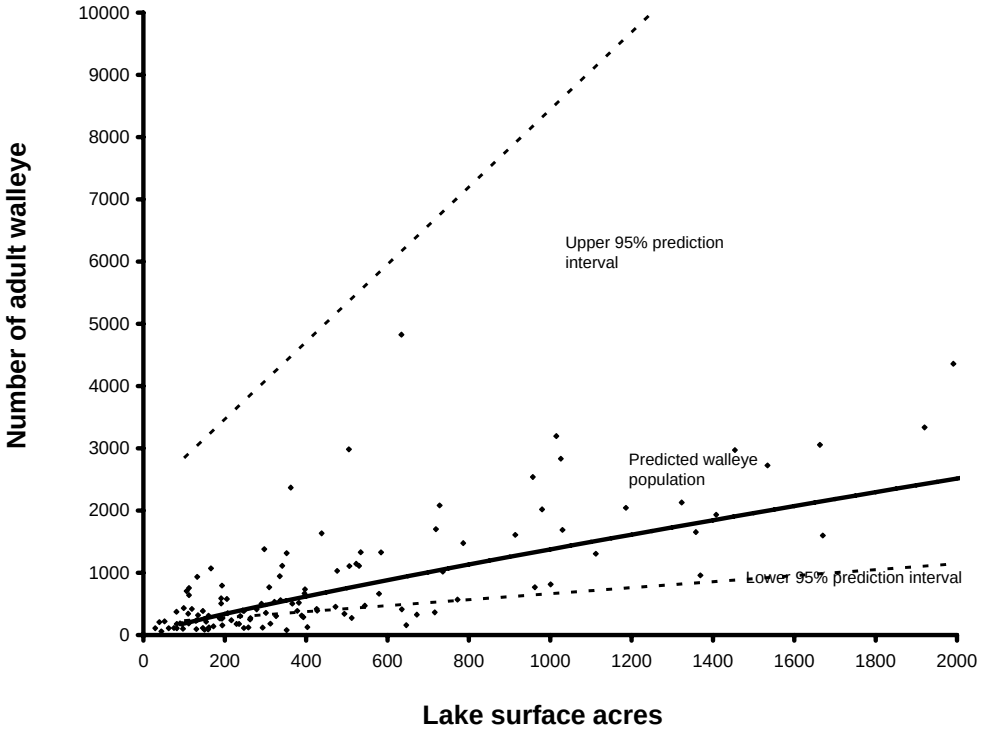


Figure 3: Regression model for lakes sustained primarily by stocking (lakes <2000 acres).

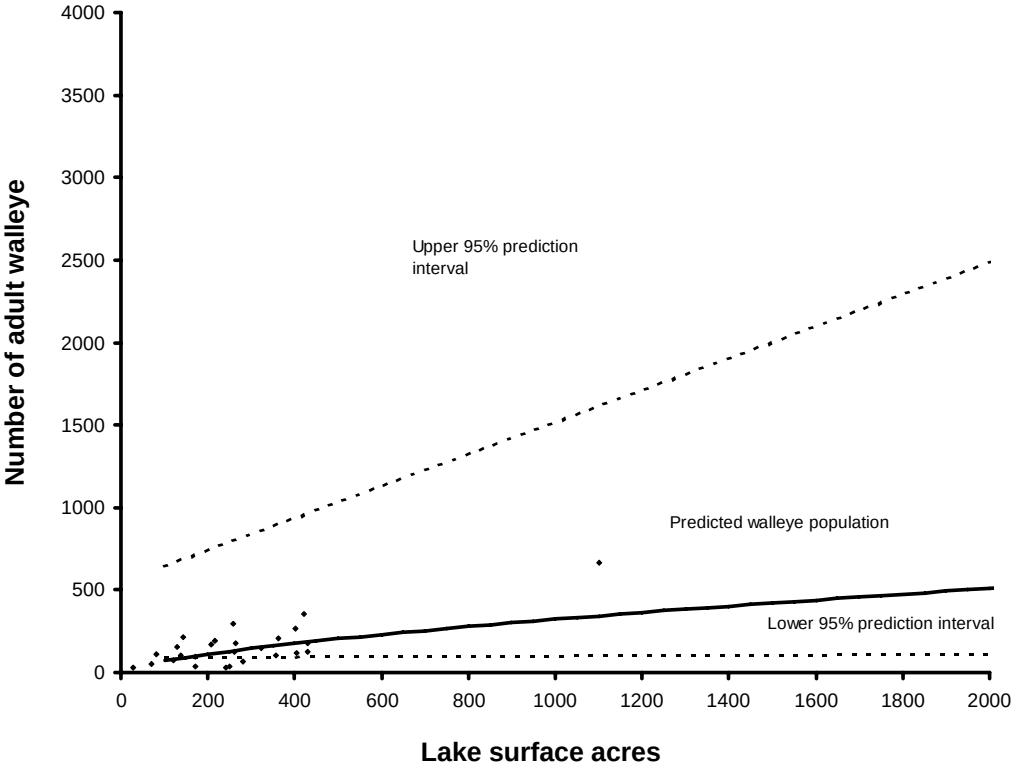


Figure 4: Regression model for lakes with remnant walleye populations (lakes <2000 acres).

A similar method is employed to set safe harvest for muskellunge. A population estimate for a given lake is employed to directly set safe harvest if it is less than 2 years old. In the absence of a recent population estimate, a regression model is used to make an estimate of muskellunge abundance. As with walleye, population predictions in this model are based on lake acreage, but a single model is used for all muskellunge waters in the Ceded Territory (Figure 5).

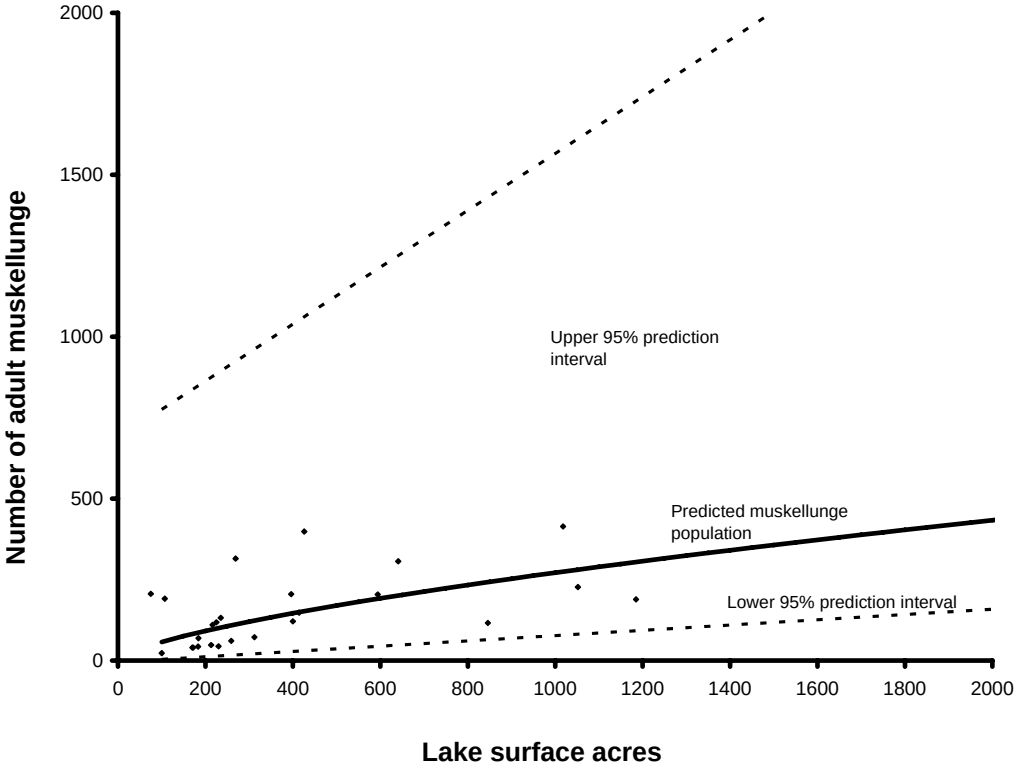


Figure 5: Regression model for muskellunge populations (lakes <2000 acres).

WALLEYE POPULATION ESTIMATES

Methods

The lakes sampled by the WDNR in 2003-04 were chosen using a stratified random design. Lakes in the Ceded Territory were stratified by size, historic level of tribal harvest, and primary walleye recruitment source (Appendix B). In addition, one large lake or lake chain was chosen to be surveyed each year. The calculation of population estimates on these lakes allowed WDNR to update the population status of each lake. In 2003, adult walleye populations were estimated in 27 lakes, ranging in size from 29 to 6,830 acres. These 27 lakes comprised a range of walleye recruitment categorizations and angler regulations (Table 1).

Walleyes were captured for marking in the spring shortly after ice out with fyke nets. Each fish was measured (total length; inches and tenths) and fin-clipped. Adult (mature) walleyes were defined as all fish for which sex could be determined and all fish 15 in or longer. Adult walleyes were given a lake-specific mark. Walleyes of unknown sex less than 15 in long were classified as juveniles (immature) and were marked with a different lake-specific fin clip. Marking effort was based on a goal for total marks of 10% of the anticipated spawning population estimate. Marking continued until the target number was reached or spent females began appearing in the fyke nets.

Table 1: Lakes surveyed by WDNR sampling crews in spring 2003. Each lake is designated with a unique Water Body Identification Code (WBIC). Size limits reflect 2003-2004 minimum and slot length harvest regulations for each lake. Recruitment codes NR, C-NR, and C- are in the natural recruitment model. Recruitment codes C-ST and ST are in the stocked model and codes NR-2, 0-ST, and REM are in the remnant model (Appendix A-2).

WBIC	County	Lake	Acres	Size Limit (in)	Recruitment code
2706500	Washburn	Middle McKenzie	530	15	C-NR
2271600	Vilas	Squaw	785	no min, 1>14	NR
1592400	Vilas	Plum	1,033	no min, 14-18 slot, 1 >18	C-NR
2338800	Vilas	Big Crooked	682	none	NR
2391200	Sawyer	Grindstone	3,111	no min, 14-18 slot, 1>18	C-NR
2242500	Price	Solberg	859	none	NR
2283300	Price	Butternut	1,006	none	C-NR
1427400	Marathon	Big Eau Pleine	6,830	15	NR
1555900	Lincoln	Alice	1,369	15	C-NR
2942300	Iron	Gile	3,384	no min, 1>14	NR
406900	Forest	Pine	1,670	15	ST
1020300	Vilas	Stormy	522	15	NONE
2336100	Vilas	Wolf	393	15	NR
1018500	Vilas	Snipe	239	15	NR
2339900	Vilas	Escanaba	293	28	NR
1469100	Taylor	Rib	320	no min, 14-18 slot, 1>18	C-NR
973000	Oneida	Bolger	119	15	C-NR
1523600	Oneida	Bearskin	400	no min, 1>14	NR
2897100	Bayfield	Diamond	341	15 min, 20-28 slot, 1>28	C-NR
2897300	Bayfield	Crystal	111	15	C-NR
1623400	Vilas	Pioneer	427	15	0-ST
2489400	Bayfield	Pigeon	213	15	0-ST
2917200	Ashland	Potter	29	15	0-ST
2359700	Rusk	Amacoy	278	15	ST
2641000	Polk	Big Butternut	378	15	ST
1564400	Lincoln	Squaw	82	15	ST
1481600	Lincoln	Pesabic	146	no min, 1>14	ST

To estimate adult abundance, walleyes were recaptured with AC electrofishing gear 1-2 days after netting. The entire shoreline (including islands) was sampled to ensure equal vulnerability of marked and unmarked walleyes to capture. All walleyes in the recapture run were measured and examined for marks. All unmarked walleyes were marked with a fin clip so that total population abundance could be estimated. To estimate total walleye abundance, a second electrofishing recapture run was conducted 7-34 days after the first recapture run. Again the entire shoreline (including islands) of

the lake was sampled. Population estimates were calculated with the Chapman modification of the Petersen Estimator using the equation:

$$N = \frac{(M+1)(C+1)}{(R+1)}$$

where N was the population estimate, M was the total number of marked fish in the lake, C was the total number of fish captured in the recapture sample, and R was the total number of marked fish captured. The Chapman Modification method was used because simple Petersen Estimates tend to overestimate population sizes when R is relatively small (Ricker 1975). Abundance and variance were estimated by length-class (≤ 11.9 in, 12- 14.9 in, 15- 19.9 in, and ≥ 20.0 in) and summed to estimate adult and total abundance and variance for each lake. If spearing occurred after the start of the marking period, the number of marked walleyes speared were subtracted from the number of marked fish at large during the recapture period. These fish were added back to the estimated number of fish present at the time of marking for the populations of interest (adult or total populations). If marked fish did not appear to be recorded consistently in the spear harvest, no spearing correction was made. Two population estimates were made for Big Crooked lake using different recapture methods. One method combines electrofishing and angling recapture while the other uses only the electrofishing recapture sample. The following calculations and figures utilize the combined electrofishing and angling recapture population estimate however population estimates from both recapture methods are reported individually in Appendix C.

Results

Adult walleye abundance

Adult walleye population densities (number/acre) ranged from 0.0 to 6.6 with a mean of 2.8 (Appendix C). Adult densities were generally greater in lakes classified as NR, compared to lakes classified as ST (Table 2, Figures 6-8). This has been the case historically (Hewett and Simonson 1998), and the difference was significant in 2003 (t-test (unequal variances) $t = 5.89$, $df = 20$, $P < 0.01$). Lakes classified as “other”, which included lakes with unknown walleye populations, lakes where stocking had

been discontinued and the walleye population was expected to disappear, and stocked waters where the population had not been established to a reasonable density (remnant, REM), had average adult walleye densities slightly greater than lakes in the stocked model in 2003, but the difference was not significant (Table 2) (t-test (unequal variances) t = 0.10, df = 3, P = 0.46). There were no statistically significant differences in walleye densities between any other category examined (lake size or regulation) within or between the natural and stocked models. There have been no statistically detectable trends in adult walleye density in natural (F= 0.18, df= 1,285, P= 0.67) or stocked-model (F= 0.16, df= 1,106, P= 0.69) walleye waters since 1990 (Figures 9 and 10). Adult population estimates with a coefficient of variation greater than 40% were not included in these analyses.

Table 2: Summary of mean (±1 SE), minimum, and maximum walleye population estimates (PE) per acre in 27 lakes in the Wisconsin portion of the Ceded Territory in 2003. Adult PEs include all sexable fish and unknowns >15 in. Total PEs include all sampled walleyes. Summary statistics are grouped for comparisons by recruitment source, lake size (acres), and lake harvest length regulations. "Model" refers to the primary recruitment source in each lake. Lakes with no minimum size limit or a 1 fish >14 in were classified as “exempt”. Lakes with a 14-18 in or 20-28 in slot size limit were classified as “slot”.

Model	Regulation	Lake Size	N	Mean Adult PE/ Acre	SEM	Adults/ acre min	max	N	Mean Total PE/ Acre	SEM
Natural	all	all	18	3.61	0.40	1.11	6.64	14	14.1	2.87
Stocked	all	all	5	1.12	0.13	0..76	1.49	5	2.9	1.78
Remnant	all	all	3	1.61	1.09	0.17	3.76	3	1.7	1.27
None	all	all	1	0.02		0.02	0.02			
Natural	all	>500	10	3.45	0.51	1.11	6.40	9	15.4	3.52
		<500	8	3.81	0.68	1.74	6.64	5	11.8	5.34
Stocked	all	>500	1	0.76		0.76	0.76	1	0.7	
		<500	4	1.22	0.11	1.03	1.49	4	3.4	2.19
Natural	15 in min.	all	7	3.83	0.78	1.11	6.40	5	14.1	5.32
	exempt	all	6	3.98	0.58	2.60	6.64	5	20.5	4.73
	slot	all	4	2.84	0.89	1.74	5.49	4	6.2	1.79

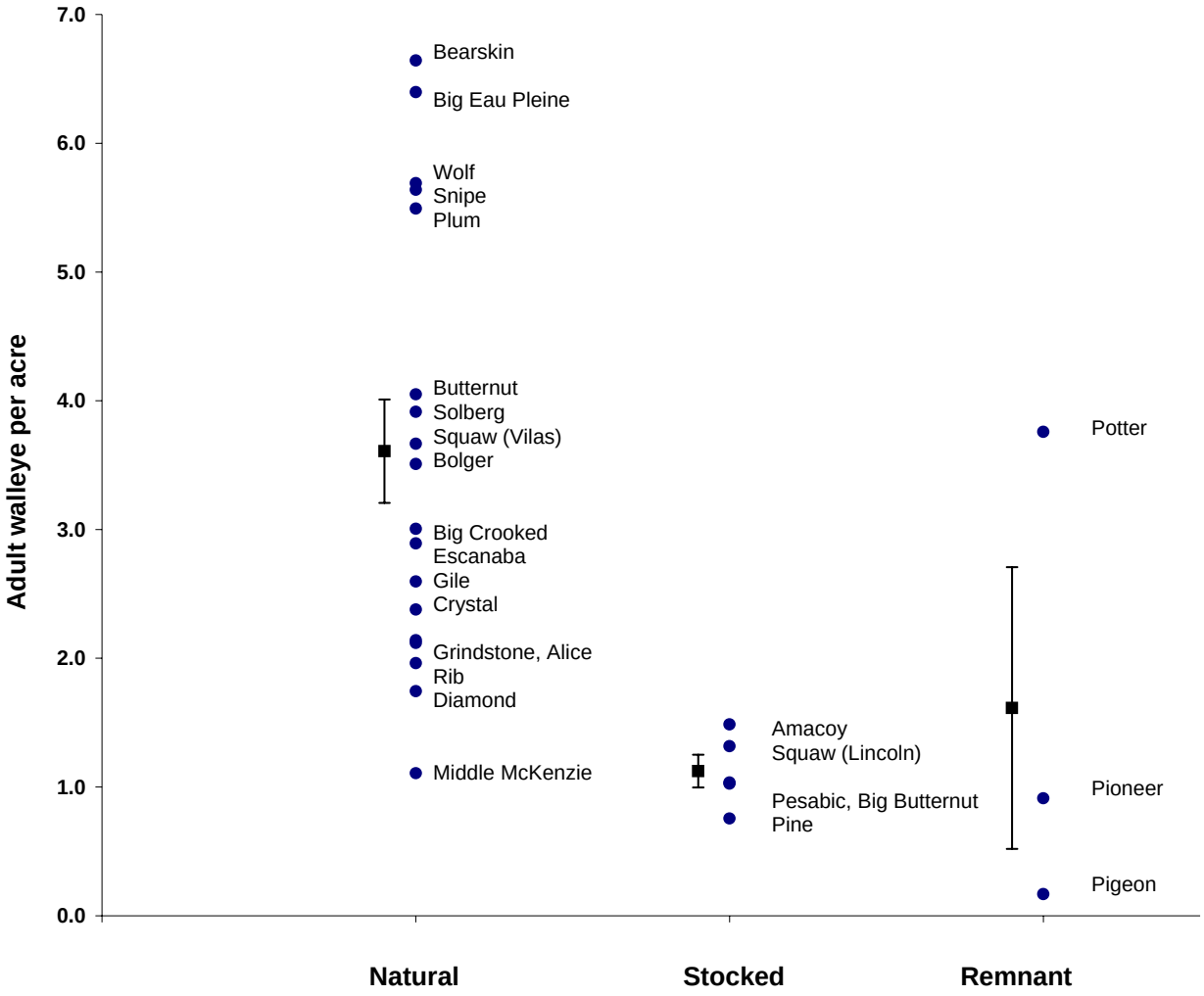


Figure 6: Adult walleye population density estimates for lakes sampled by WDNR in spring 2003, separated by primary walleye recruitment source for the population. Solid squares represent mean (± SEM) adult walleye densities within each recruitment source. Solid circles represent lake-specific adult walleye densities with each lake name labeled.

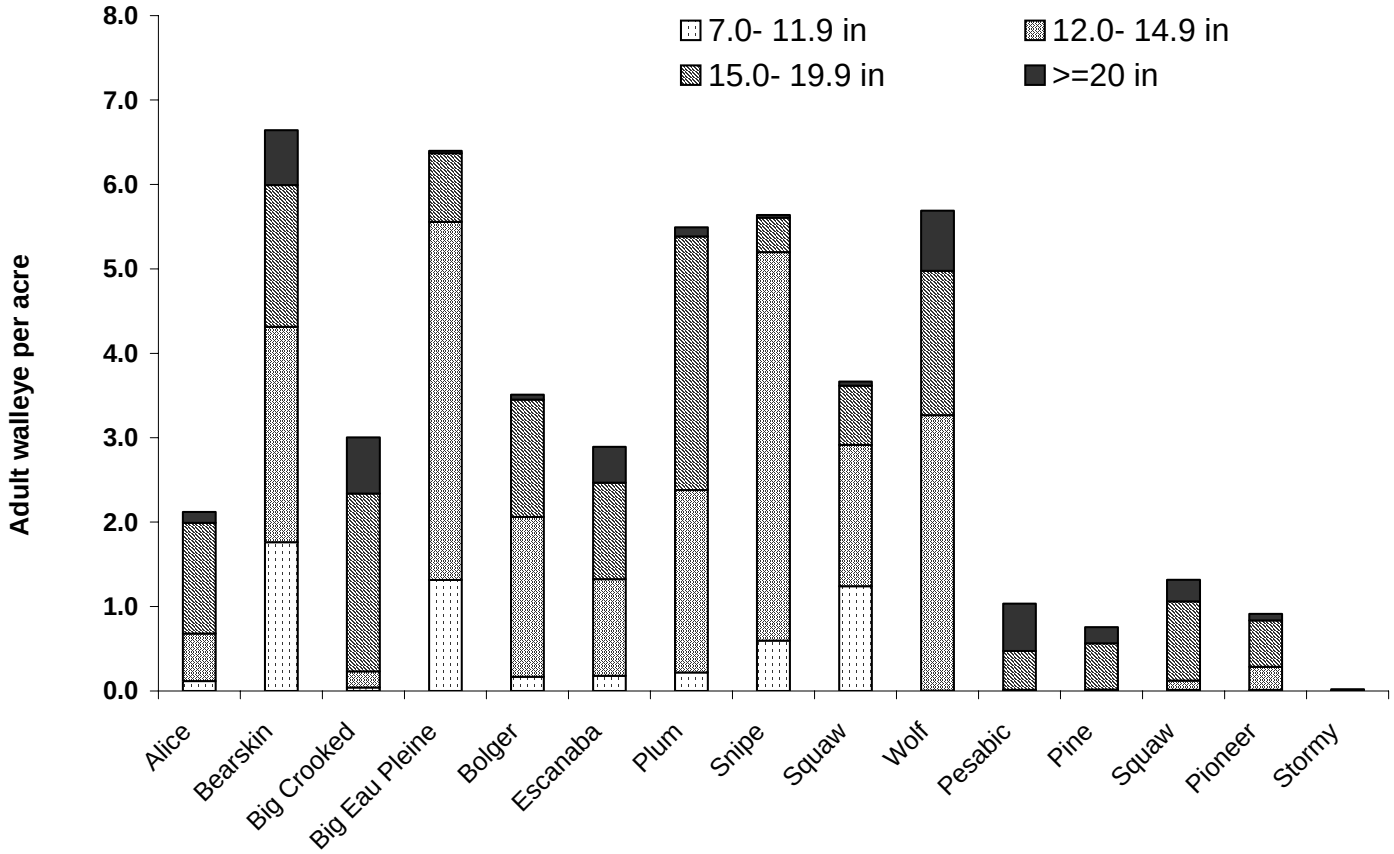


Figure 7: Size composition of adult walleye populations in 15 lakes sampled in the eastern portion of the Wisconsin Ceded Territory in spring 2003.

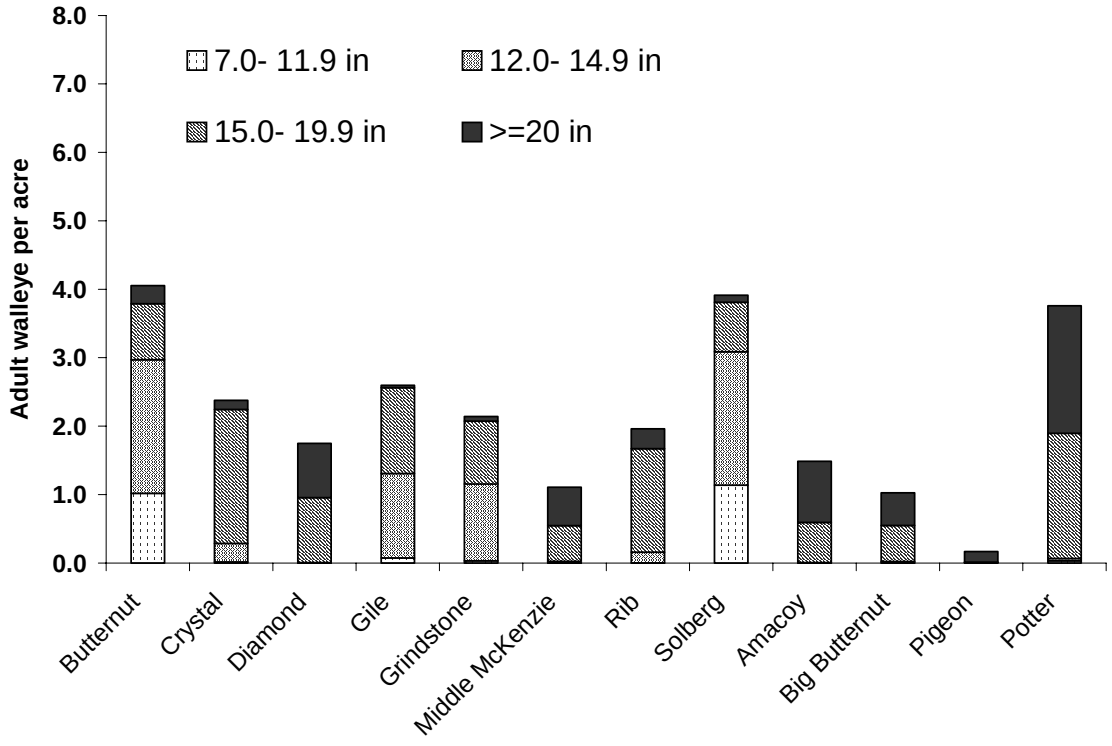


Figure 8: Size composition of adult walleye populations in 12 lakes sampled in the western portion of the Wisconsin Ceded Territory in spring 2003.

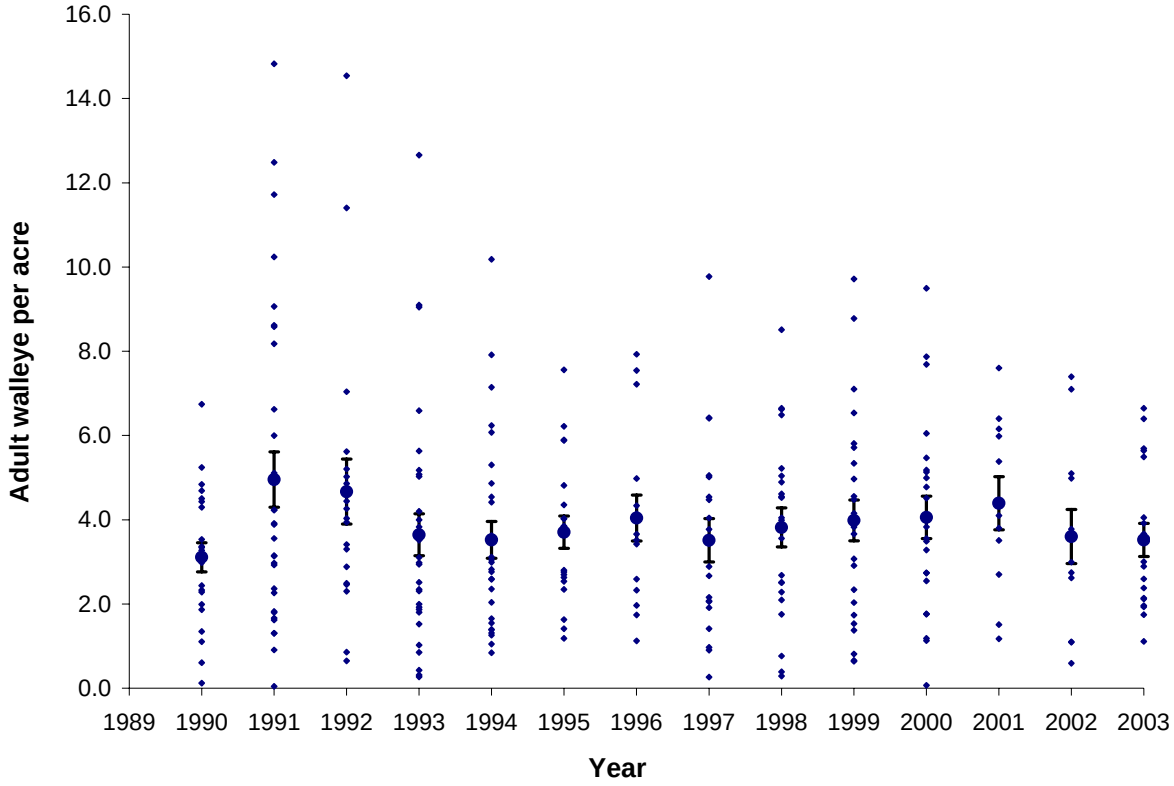


Figure 9: Adult walleye population density estimates recorded in Wisconsin Ceded Territory Lakes with populations sustained primarily by natural reproduction, 1990-2003. Large circles represent yearly means (± SEM). Small circles represent individual lake density estimates.

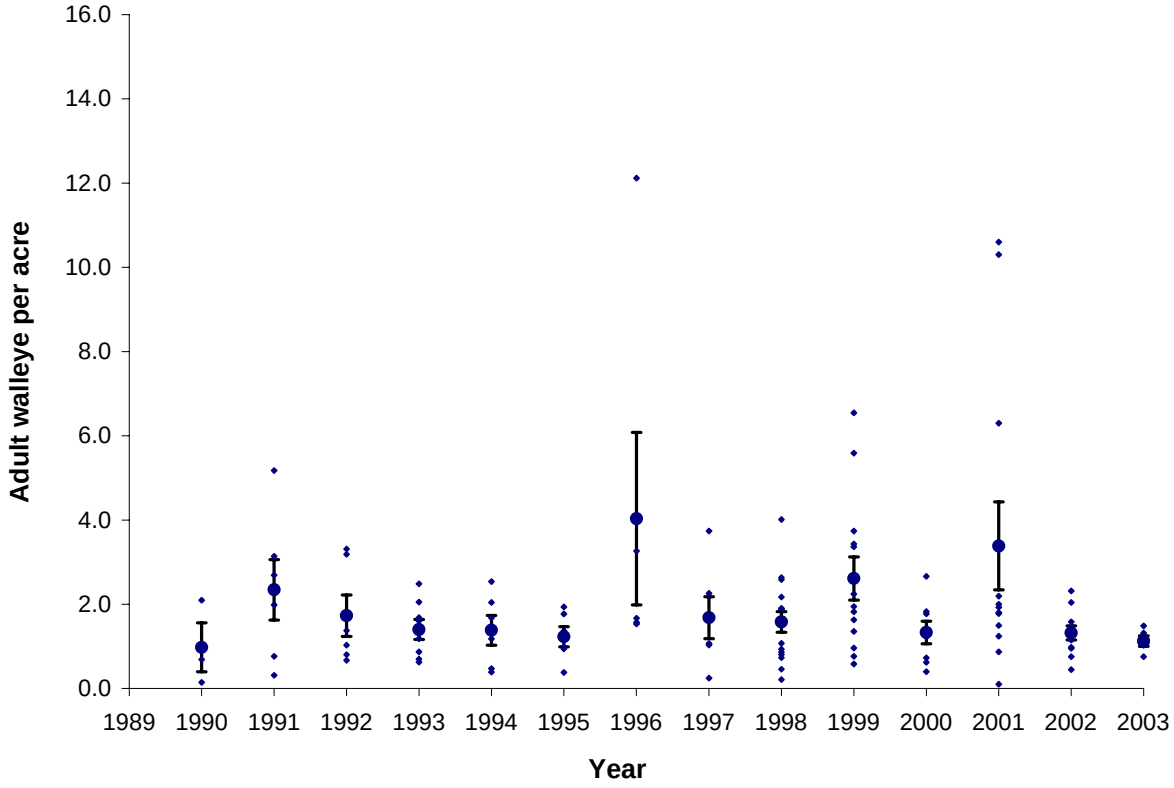


Figure 10: Adult walleye population density estimates recorded in Wisconsin Ceded Territory Lakes with populations sustained primarily by stocking, 1990-2003. Large circles represent yearly means (± SEM). Small circles represent individual lake density estimates.

Total walleye abundance

Total walleye abundance was estimated in 22 lakes in the Wisconsin Ceded Territory in spring 2003 (Appendix C). Total walleye densities varied widely in 2003, and total population estimates are generally marked by wider variation than adult PEs within each estimate (Table 2). Mean total walleye density ranged from 0.7 to 31.1 fish per acre with a means of 13.2, 2.9, and 2.2 fish/acre in natural, stocked, and remnant populations, respectively. There was no statistical difference in total walleye density between natural and stocked model lakes in 2003 (t-test (equal variance), t= 2.09, df = 16, P = 0.05). There have been no statistically detectable trends in total walleye abundance in natural- (F = 0.68, df = 1,163, P = 0.41) or stocked-model lakes (F = 0.93, df = 1, 75, P = 0.33) since 1990 (Figures 11 and 12).

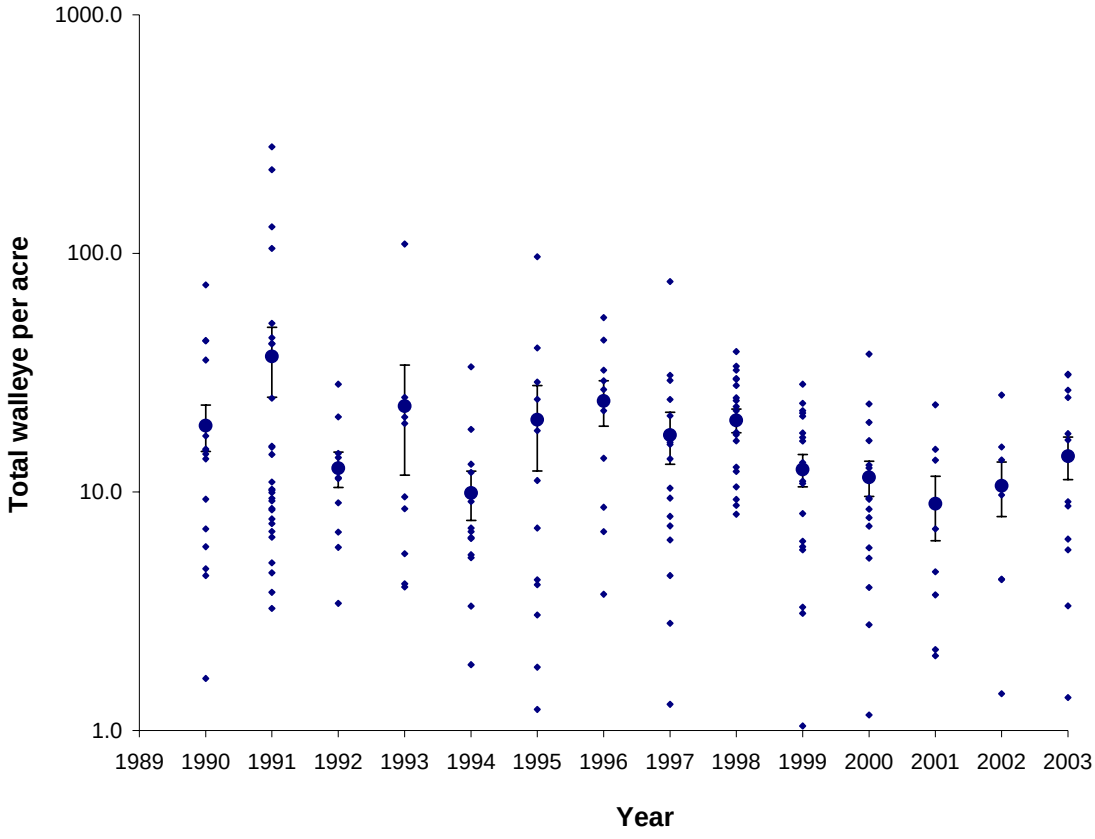


Figure 11: Total walleye population density estimates recorded in Wisconsin Ceded Territory Lakes with populations sustained primarily by natural reproduction, 1990-2003. Note log-scale on y-axis. Large circles represent yearly means (± SEM). Small circles represent individual lake density estimates.

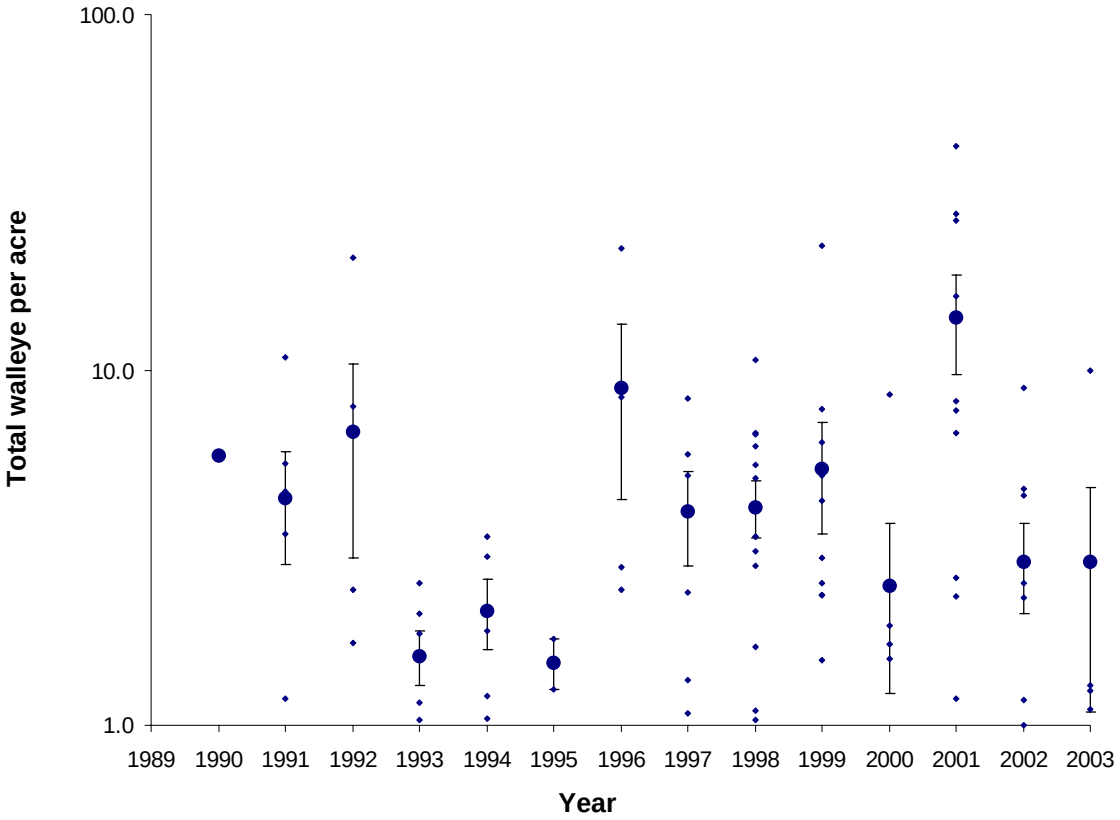


Figure 12: Total walleye population density estimates recorded in Wisconsin Ceded Territory Lakes with populations sustained primarily by stocking, 1990-2003. Note log-scale on y-axis. Large circles represent yearly means (± SEM). Small circles represent individual lake density estimates.

OTHER POPULATION ESTIMATES

Methods

Largemouth and smallmouth bass

Largemouth *Micropterus salmoides* and smallmouth *Micropterus dolomieu* bass encountered during fyke netting and subsequent electrofishing runs (adult and total walleye recapture runs) were marked by fin clips. Bass larger than 12.0 in were given the same primary (adult) fin-clip as was given to walleye for the lake in which they were encountered. Bass 8.0-11.9 in were given the secondary (juvenile) fin-clip for the lake. Recaptures were made during electrofishing runs made during mid-late May. The entire shoreline of the lake (including islands) was sampled. Recapture efforts for bass population estimates were made in lakes designated as "comprehensive survey" lakes. In these lakes, fyke nets were set for just after ice-out in the spring and again after the first electrofishing recapture run. Four electrofishing surveys were conducted. The first electrofishing run was conducted within a week of pulling the early fyke nets. The second run was conducted approximately two weeks after the first electrofishing run. Third and fourth electrofishing runs were conducted at approximately weekly intervals thereafter. Bass populations were estimated after both the third and fourth runs. Population estimates were calculated using the Chapman modification of the Petersen estimator, as described in the methods section for walleye population estimates. Estimates were made for each species in three length classes: 8.0- 13.9 in, 14.0- 17.9 in, and 18.0 in and larger. The recapture run yielding the lowest coefficient of variation is the population estimate reported.

Muskellunge

Muskellunge population estimates were conducted over a two-year period, with marking in year-1 and recapture in year-2. In year-1, muskellunge were marked during fyke netting and electrofishing efforts throughout the sampling season. All muskellunge 20 in and larger were

given the adult clip for that lake (the same adult clip given to walleye and bass). Unknown sex fish less than 20 in long were given an alternate fin-clip (generally top caudal). In year-2, muskellunge were recaptured using fyke nets in mid-May, to coincide with the muskellunge spawning season. Adult muskellunge populations were estimated by summing Chapman-Petersen estimates of male, female, and unknown sex fish in each population, with the following adjustment:

In the equation:

$$N = \frac{M(C+1)}{(R+1)}$$

N is the estimated adult population size; M is the total number of all sexable muskellunge marked in the lake in year-1 plus fish of undetermined sex larger than the smallest sexable fish; C is the number of muskellunge captured during the recapture netting in year-2 excluding fish smaller than the minimum length counted in year-1 marking plus 2 inches; and R is the number of marked fish recaptured (Wisconsin Technical Working Group 1999; Margenau and AveLallemant 2000).

Results

Largemouth and smallmouth bass

Population estimates were calculated for smallmouth bass in six lakes and largemouth bass in nine lakes in 2003 (Tables 3 and 4). Adult smallmouth bass population density ranged from 0.3 – 1.4 fish per acre. Adult largemouth bass density ranged from 0.0 – 9.2 fish per acre. The size structure of both largemouth and smallmouth bass was dominated by 8.0 - 14 in fish in both the eastern and western portions of the Ceded Territory (Figures 13 and 14). Few individuals of either species larger than 18 in were measured during fyke netting or electrofishing, and the coefficients of variation for population estimates of these fish are typically larger than for smaller fish (Tables 3 and 4).

Tables 3 and 4: Bass population estimates for lakes sampled in the Wisconsin Ceded Territory in spring 2003.

Smallmouth bass

County	Lake	Acres	Angler Regulation (minimum, in)	Total PE	Recapture sample size	Total per acre	CV	8.0-13.9 in per acre (CV)	14.0-17.9 in per acre (CV)	18.0 in+ per acre (CV)
Bayfield	Diamond	341	14	133	29	0.4	0.21	0.3 (0.23)	0.1 (0.47)	0.0 (0.50)
Oneida	Bearskin	400	18	576	87	1.4	0.11	0.3 (0.20)	1.1 (0.13)	0.1 (0.25)
Sawyer	Grindstone	3111	14	1169	123	0.4	0.29	0.3 (0.32)	0.0 (0.54)	0.0 (0.50)
Vilas	Plum	1033	18	639	42	0.6	0.16	0.1 (0.39)	0.3 (0.21)	0.2 (0.29)
Vilas	Snipe	239	14	267	24	1.1	0.30	0.9 (0.36)	0.2 (0.35)	0.0 (na)
Vilas	Squaw	785	14	194	18	0.3	0.32	0.1 (0.50)	0.2 (0.42)	0.0 (na)

Largemouth bass

County	Lake	Acres	Angler Regulation (minimum)	Total PE	Recapture sample size	Total per acre	CV	8.0-13.9 in per acre (CV)	14.0-17.9 in per acre (CV)	18.0 in+ per acre (CV)
Bayfield	Diamond*	341	14	429	57	1.3	0.19	0.8 (0.27)	0.5 (0.27)	0.0 (na)
Forest	Pine	1670	14	1691	107	1.0	0.23	0.6 (0.28)	0.4 (0.41)	0.1 (0.65)
Lincoln	Pesabic	146	14	759	58	5.2	0.24	5.0 (0.25)	0.2 (na)	0.0 (na)
Lincoln	Squaw	82	14	147	15	1.8	0.23	1.4 (0.26)	0.4 (0.50)	0.0 (na)
Oneida	Killarney	421	14	900	40	2.1	0.35	1.8 (0.41)	0.3 (0.38)	0.0 (0.5)
Rusk	Amacoy	278	14	2375	151	8.5	0.29	6.4 (0.37)	2.1 (0.35)	0.1 (0.41)
Sawyer	Grindstone*	3111	14	67	10	0.0	0.37	0.0 (0.49)	0.0 (0.41)	0.0 (0.50)
Vilas	Pioneer*	427	14	1405	48	3.3	0.35	2.7 (0.42)	0.5 (0.30)	0.0 (na)
Washburn	Middle McKenzie	530	14	4877	104	9.2	0.45	8.4 (0.49)	0.8 (0.55)	0.0 (0.50)

* Third recapture sample used to calculate population estimate.

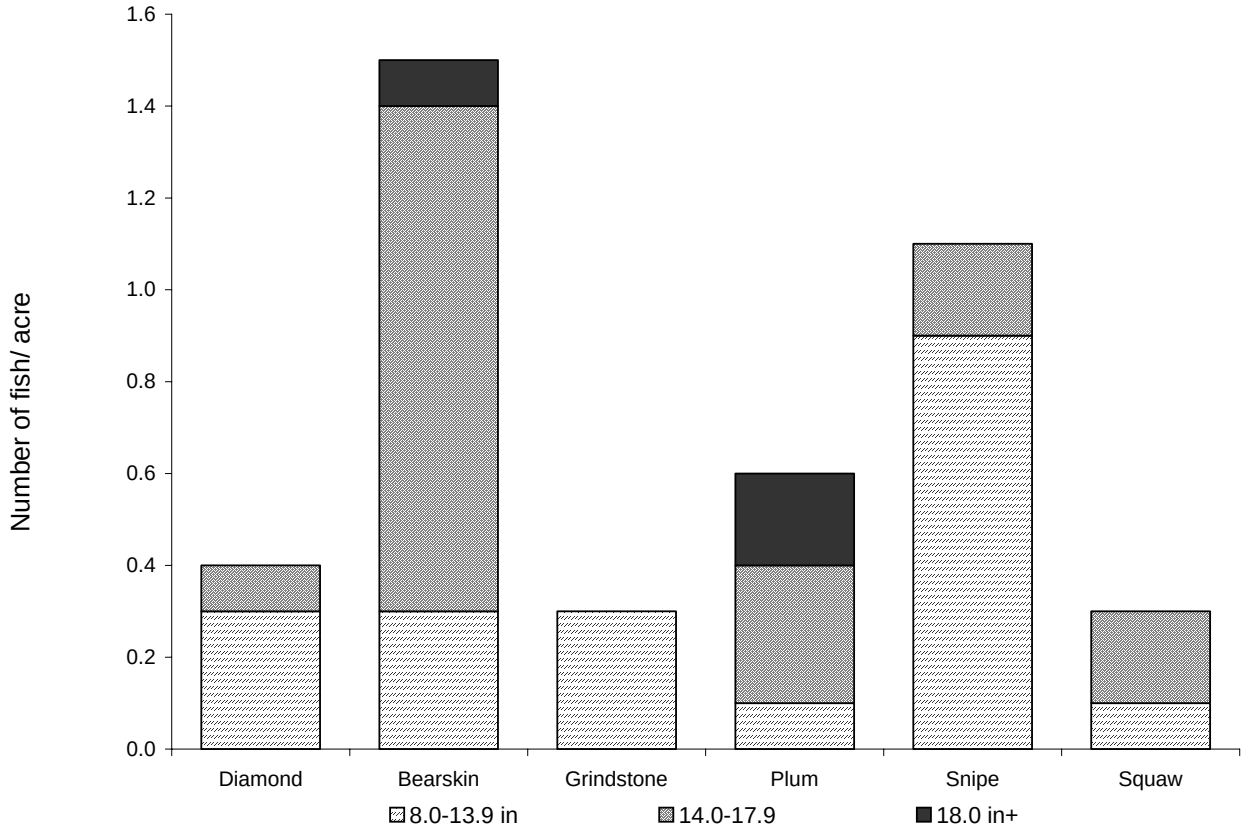


Figure 13: Smallmouth bass population densities (fish ≥ 8.0 in) by size range for lakes sampled in the Wisconsin Ceded Territory in spring 2003.

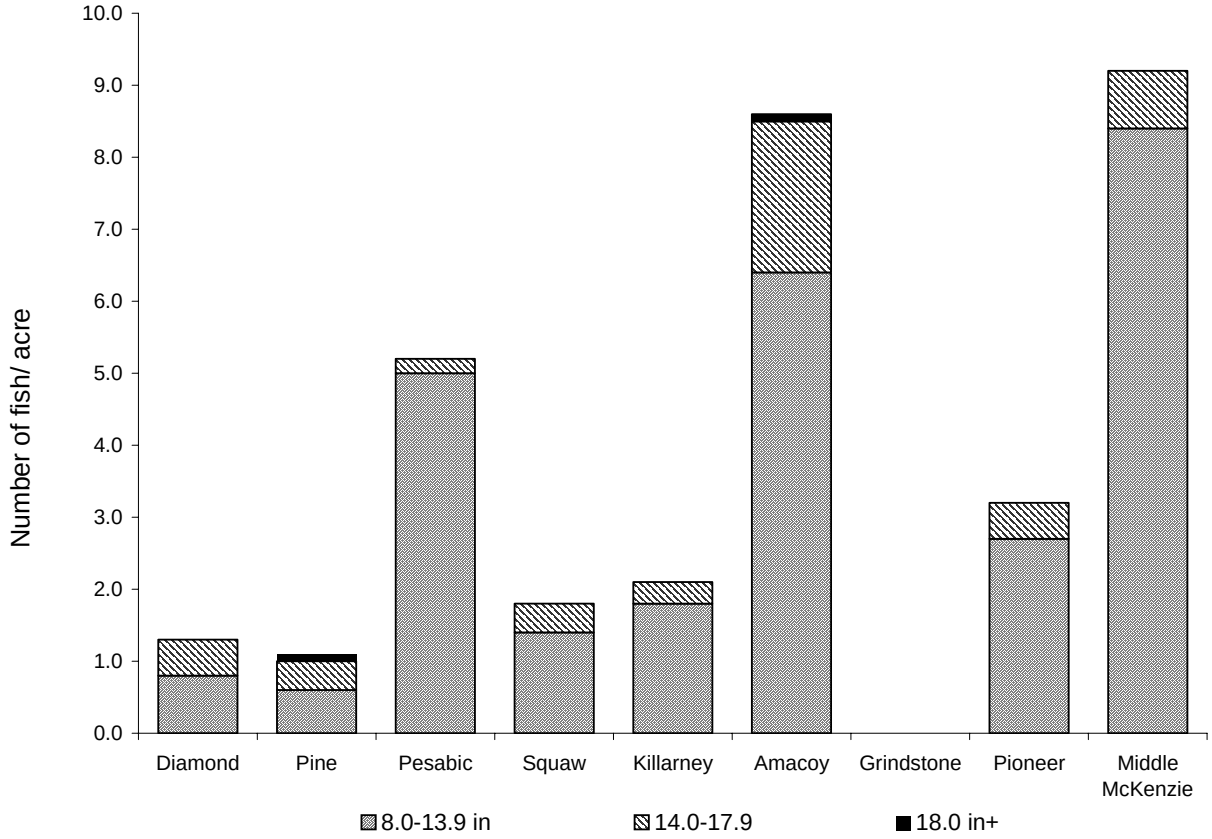


Figure 14: Largemouth bass population densities (fish ≥ 8.0 in) by size range for lakes sampled in the Wisconsin Ceded Territory in spring 2003.

Muskellunge

Estimates of muskellunge population density were completed in seven Ceded Territory lakes in spring 2003 (Table 5, Appendix D). Densities ranged between 0.1 adult fish/ acre and 1.6/ acre. Coefficients of variation were in general greater for muskellunge population estimates than for walleye population estimates.

Table 5: Adult muskellunge population estimates completed in 2003 in the Wisconsin Ceded Territory.

County	Lake	Angler Regulation (minimum, in)	Acres	Minimum length in PE (inches)	Total PE	Total per acre	CV(%)
Bayfield	Namekagon	50	3227	17.0	489	0.2	0.23
Burnett	Big McKenzie	40	1185	22.5	180	0.2	0.36
Price	Butternut	34	1006	24.0	1596	1.6	0.44
Rusk	Sand	34	262	25.5	114	0.4	0.22
Washburn	Shell	40	2580	24.5	215	0.1	0.37
Oneida	Two Sisters	40	719	24.0	136	0.2	0.19
Vilas	Crab	40	949	21.5	192	0.2	0.14

YOUNG-OF-THE-YEAR SURVEYS

Introduction

Young of the year (YOY) surveys provide an index of the abundance and survival of the current year class of walleyes from hatching or stocking to their first fall. These surveys provide fisheries managers with insight into potential adult population changes in the near future. Early indication of these potential changes allows fisheries managers to develop management strategies to accommodate expected changes in adult populations. Although YOY relative abundance gives some indication of possible future adult abundance it does not necessarily correspond directly, as survival to adulthood varies (Hansen et al. 1998).

Methods

WDNR completed 166 fall surveys in 2003 (Appendix E) in the Wisconsin Ceded Territory. Of the lakes sampled, 66 had walleye populations classified as sustained by naturally reproduction (recruitment codes NR, C-NR, or C-), 50 as sustained by stocking (ST or C-ST), 23 as remnant or newly established populations (REM, O-ST, NR-2) (Appendix A2). Eleven lakes did not have an assigned walleye recruitment code (code column blank in Appendix E). Sixteen lakes were classified as having no known walleye population. Electrofishing for YOY walleyes was done after sunset in early autumn, generally when the water temperature had fallen below 70° F. In most cases, the entire shoreline of a lake was electrofished and all sub-adult walleyes were examined and measured. Two-sample t-tests were used to test the assumption that mean YOY walleye / mile in 2003 was the same as the 1990-2002 mean (α = 0.05) for each recruitment model.

Serns (1982) established a relationship between the number of YOY walleyes collected per mile of shoreline electrofished and the density of YOY walleyes/acre. This in turn can be used to estimate YOY walleye abundance. Serns' relationship between the number of YOY walleyes caught per mile and the density of YOY walleye is:

$$\textit{Density} = 0.234 * \textit{Catch per mile}$$

where density is estimated as number of YOY walleyes per acre. Abundance is estimated by multiplying the estimated density by the number of acres in a given lake.

Results

Water temperatures during 2003 YOY walleye surveys ranged from 42 - 75° F with a median of 57.0° F and mean of 58.2° F. The median and modal length of YOY walleye was 6.0 in. Lakes sustained primarily by natural reproduction (NR) on average had higher walleye YOY per mile (mean = 18.6, median = 9.7, range = 0.0 – 133.3) than lakes sustained by stocking (mean = 5.0, median = 0.4, range = 0.0 – 96.0; t-test (unequal variance) $t = 3.68$, $df = 108$, $P < 0.01$; Figure 15). In 2003, mean YOY walleye/mile was less than the 2002 means for both naturally-sustained and stocked populations, and was significantly lower than the 1990-2002 means for both natural model (t-test (unequal variances) $t = -4.54$, $df = 130$, $P < 0.01$) and stocked-model lakes (t-test (unequal variances) $t = 2.39$, $df = 240$, $P = 0.02$).

Sporadic recruitment is common for walleye populations both within and among individual lakes. It is common to have almost complete lack of recruitment in 25% or more of lakes with natural reproduction, and year class failures are even more common in lakes with populations maintained by stocking. Generally, successful recruitment occurs in a given lake every 3-4 years. This type of sporadic recruitment appears to reduce competition between year classes of walleye (Li et al. 1996). Therefore, lack of recruitment in a given lake for one or more years is natural and not necessarily alarming. It also appears that there may be region-wide annual effects on walleye recruitment as well (Figure 15). One might expect annual percentages to be similar across years if there was no year effect. Overall, YOY abundance in 2003 was below average but within the normal range recorded in 13 years of comprehensive, region-wide data.

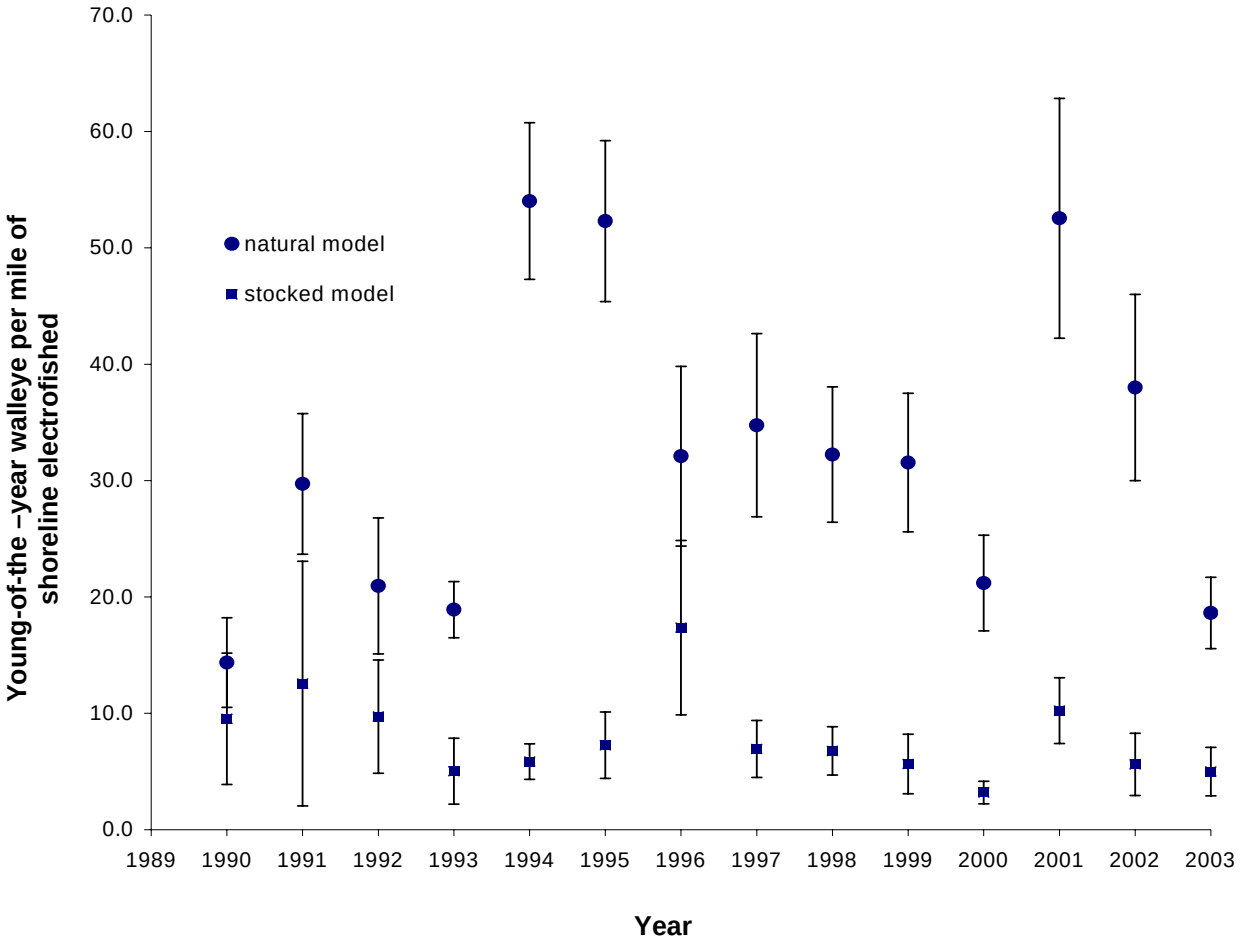


Figure 15: Mean number of young-of-the-year walleye caught per mile of shoreline electrofished in Wisconsin Ceded Territory walleye lakes during fall, 1990-2003. Error bars represent standard error of the mean.

The percentages of lakes with greater than 25 YOY walleye per mile and greater than 100 YOY walleye per mile are also used to indicate strong annual year classes in the Wisconsin Ceded Territory. These values are less affected by large values for individual lakes than are the mean or median number of YOY walleye caught per mile. In 2003, 17/66 NR lakes (26%) had YOY indices > 25 per mile, and two NR lakes (3%) had YOY walleye indices > 100 per mile (Appendix E). The proportion of lakes with YOY catch rates greater than 25 and 100 fish per mile was lower than the mean proportion of lakes observed with similar catch rates between 1990-2002 (mean percentage > 25 YOY/mi = 37.1%; >100/mi = 6.1%). Mean percentages were calculated using arcsin-transformed data, but these percentages were not statistically evaluated.

The mean number of YOY walleye captured per mile in lakes that were stocked (7.8 YOY/ mile) with fry or small fingerlings in 2003 was significantly greater than in lakes that were not stocked (0.5 YOY/ mile) in 2003 (t -test (unequal variances) t = -2.22, df = 28, P = 0.03). Lakes that were not stocked had YOY indices of 0 more frequently than lakes that were stocked, and were less likely to have a YOY index >10 fish per mile (Table 6).

Table 6: Young-of-the-year indices in lakes categorized as being sustained primarily by stocking (ST or C-ST), separated by whether the lake was stocked in 2003 or not.

	Stocked in 2003	**Not Stocked in 2003**
No. Lakes	28	21
Mean YOY walleye/ mile	7.8	0.5
Median	1.3	0.0
Variance	357.5	1.2
Lakes with 0 YOY/ mile	7 (25%)	15 (66.6%)
Lakes with <5 YOY/ mile	21 (75%)	21 (100%)
Lakes with <10 YOY/ mile	23 (82.1%)	21 (100%)

Sern's indices for NR lakes ranged from 0.0 – 15.3 YOY walleye per acre with a mean of 3.8 / acre and median of 2.1. In ST lakes, Sern's indices ranged from 0.0 – 1.8 YOY walleye per acre with a mean of 0.3 and median of 0. Gross estimates of fingerling survival in stocked lakes were calculated by multiplying Serns' index by lake acreage and dividing the product by the number of fingerlings stocked. Mean fingerling survival by this method in ST lakes was less than 1% (n = 12, range 0.0% - 6.8%).

CREEL SURVEYS

Introduction

Creel surveys provide vital information about the use of fisheries by recreational anglers, including angling effort, catch, harvest, and exploitation rates on surveyed waters. Further, estimates on surveyed lakes can be used to estimate effort, catch and harvest at a larger scale (e.g. Ceded Territory) for all species of interest in that lake. The WDNR treaty fisheries program focuses primarily on game species (walleye, muskellunge, largemouth and smallmouth bass, and northern pike *Esox lucius*), but information on all species targeted, caught and harvested is recorded. Creel surveys are generally conducted in each lake in the same year in which a walleye population estimate is made. Marking of fish during spring population estimates and recovery of marked fish in subsequent creel surveys allows for the estimation of walleye exploitation rates.

Methods

Creel surveys were conducted on 14 lakes in which walleye population estimates were made during spring 2003. WDNR creel surveys use a random stratified roving access design (Beard et al. 1997; Rasmussen et al. 1998). The surveys were stratified by month and day-type (weekend / holiday or weekday), and creel clerks conducted their interviews at random within these strata. Surveys were conducted on all weekends and holidays, and a randomly chosen two or three weekdays. Only completed-trip interview information was used for analyses. Clerks counted the number of anglers and recorded effort, catch, harvest, and targeted species from anglers completing their fishing trip. Clerks also measured harvested fish and examined them for fin-clips, recording any seen.

Two methods were used to evaluate angler effort and catch on the Big Eau Pleine Reservoir. A bus-route creel was employed during the open-water fishing season (May-October), and a standard access-point creel survey was used during the ice-fishing season (December-March). These data could not be combined to generate full-year estimates of fishery statistics directly comparable to those

calculated for other lakes. For this reason, Big Eau Pleine data were excluded from all analyses of creel data, but are provided in Appendix F.

Creel surveys began May 3, 2003 and were completed March 1, 2004. The month of November was excluded due to poor ice conditions and low angler effort. Information from interviews was expanded over the appropriate stratum to provide an estimate of total effort, catch, and harvest of each species in each lake for the year.

Angler exploitation rates for adult walleye were calculated by dividing the estimated number of marked adult walleye harvested by the total number of marked adult walleye present in the lake (R/M; Ricker 1975). Although anglers are able to harvest immature walleye in some waters, adult walleye exploitation rates were calculated so an estimate of total adult walleye exploitation could be made in waters where both angling and spearing were conducted. Tribal exploitation rates were calculated in lakes where adult population estimates were conducted. Tribal exploitation was calculated as the total number of adult walleyes harvested divided by the adult population estimate (C/N; Ricker 1975). Total adult walleye exploitation rates were calculated by summing angling and tribal exploitation.

Results

Effort

Creel data (Appendix F) were summarized for all lakes, lakes less than 500 acres ("small lakes"), and lakes 500 acres and larger ("large lakes"). In addition, walleye creel data were grouped based on population recruitment source and length regulation. The five current regulations include 15 in and 18 in minimum size limits; one fish larger than 14 in allowed; a 14-18 in no-harvest slot with one fish larger than 18 in allowed; and no size restriction. Angler bag limits in the Ceded Territory are set on an annual basis using a "sliding bag-limit" system based upon tribal declarations and range between 2 and 5 fish (Appendix A1).

Catch and harvest (hours/fish) rates were calculated for all gamefish species. The number of hours required to catch and harvest a fish gives an indication of success of an average angler and

provides an index of relative abundance of that species. Specific catch and harvest rates were calculated using only fishing effort targeted at given species. General catch and harvest rates were calculated using total angler effort, regardless of species targeted.

The mean total angler effort per acre in lakes 500 acres and larger (22.0 hours/acre) did not statistically differ from the effort recorded on lakes smaller than 500 acres (39.1 hours/acre) in 2003-2004 (t-test (unequal variances) $t = -1.51$, $df = 6.4$, $P = 0.18$). Since 1990, mean total angler effort has been lower in large lakes (29.1 hours/ acre) than in small lakes (39.3 hours/ acre; t-test (unequal variances) $t = -4.08$, $df = 218$, $P < 0.01$). Total angler effort has declined since 1990 across all lakes ($F = 4.26$, $df = 1,320$, $P = 0.04$). However, a process of random lake selection did not begin until 1995. There was no statistically detectable trend in total angler effort during 1995-2003 ($F = 0.45$, $df = 1,166$, $P = 0.5$) (Figure 16).

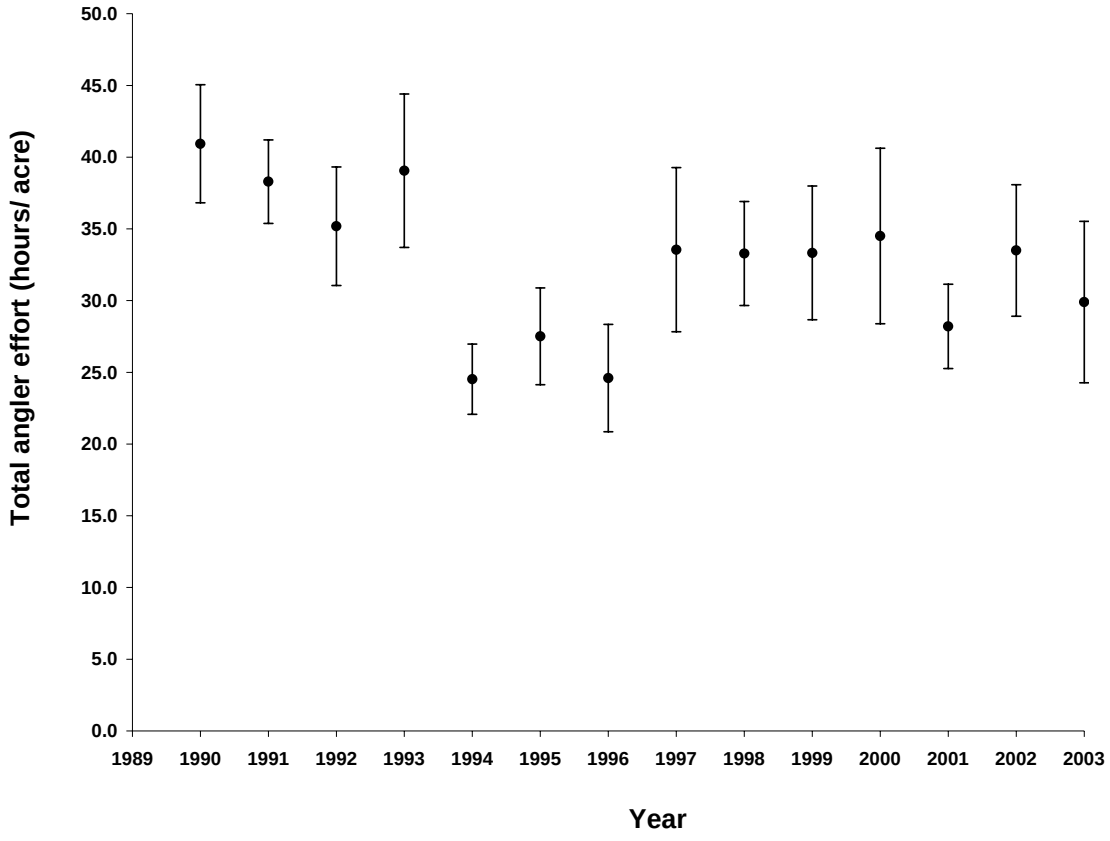


Figure 16: Total angler effort per acre in Wisconsin Ceded Territory lakes where WDNR conducted creel surveys, 1990-2003. Error bars represent standard error of the mean.

Walleye

Catch and effort

Directed effort for walleye averaged 9.8 hours per acre during the 2003-04 angling season. Walleye anglers exerted greater pressure walleye fishing in lakes sustained by natural reproduction (10.9 hours/ acre) than they did in lakes sustained by stocking (3.9 hours/ acre), though the differences were not significant (t-test (equal variances) t = 1.16, df = 11, P = 0.27). Directed effort was also similar in large (10.0 hours/ acre) and small lakes (9.6 hours/ acre; t-test (equal variances) t = 0.09, df = 11, P = 0.93). Overall directed angler effort (hours/acre) for walleye has remained stable since 1995 (F = 1.34, df = 1,166, P = 0.24). Prior to 1995, selection of lakes was based on the intensity of tribal harvest, and thus focused on lakes with large walleye populations. In 1995-96, a randomized selection process was adopted.

In 2003-04, mean specific catch rates (SCR) were 0.34 walleye per hour (2.9 hours fishing/ walleye caught) of directed effort in lakes with naturally sustained populations and 0.04 walleye/ hour in lakes with populations sustained by stocking (1 fish caught per 25.0 hours of directed effort). In all lakes combined, mean SCR was 0.30 walleye/hour of directed effort (1 fish per 3.3 hours directed effort). Specific harvest rates ranged between 0.0 and 0.21 fish per hour. Anglers harvested approximately 30% of all walleye caught. There have been no statistically detectable trends in SCR (F = 0.78, df = 1,166, P = 0.38) or specific harvest rate (SHR) for walleye in the Wisconsin Ceded Territory since 1995 (F = 0.17, df = 1,166, P = 0.68) (Figure 17).

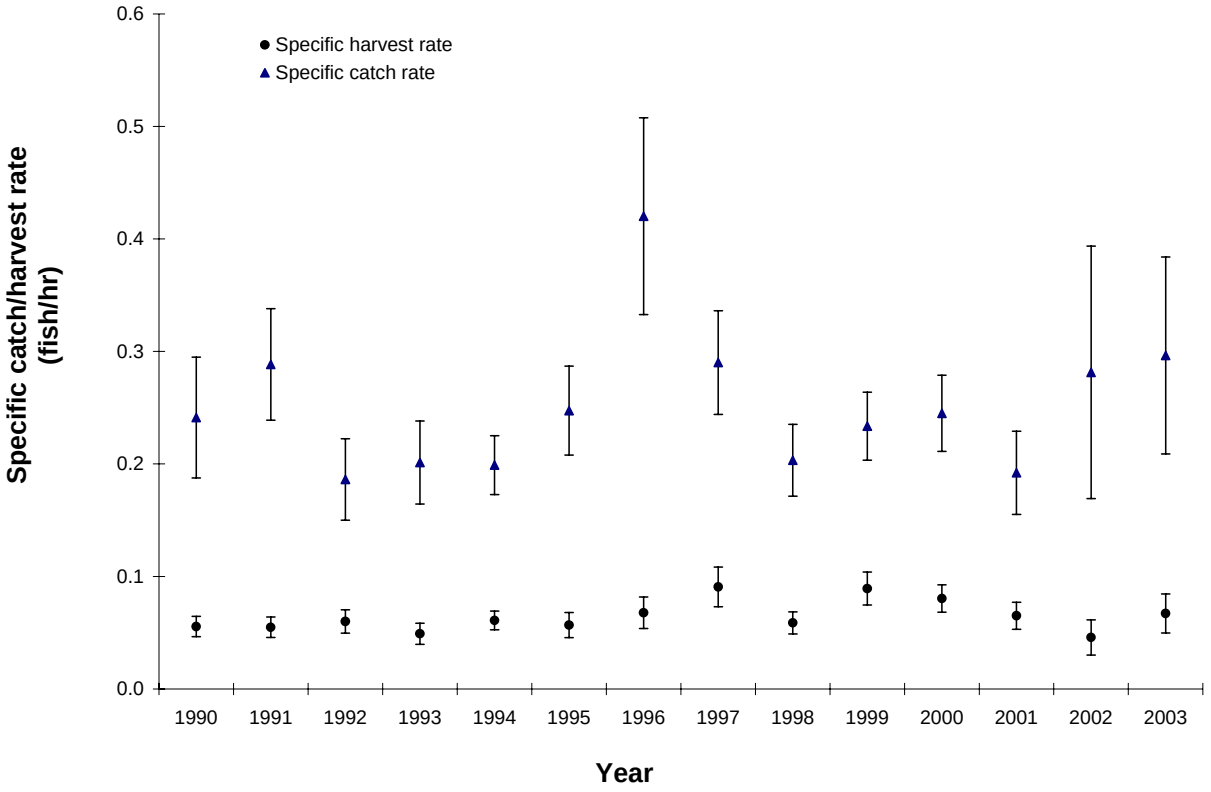


Figure 17: Specific catch rates and harvest rates for walleye in surveyed lakes in the Wisconsin Ceded Territory, 1990-2003. Specific catch or harvest rate is number of walleye caught or harvested divided by time spent fishing specifically for walleye. Error bars represent standard error of the mean.

Exploitation

Walleye exploitation rates were estimated for 13 lakes during 2003-04 (Table 7; Appendix G). Total adult walleye exploitation ranged from 0.4% to 36.4%. Angler exploitation of adult walleyes ranged from 0% to 21.9%. Angler exploitation of walleyes 14 in or longer ranged from 0% to 20.2%. Angler exploitation of adult walleyes 20 in and longer ranged from 0.0% to 72.6%. Tribal exploitation of adult walleyes ranged from 0.0% to 20.3%. The total exploitation rate of walleye in Middle McKenzie Lake, Washburn Co., exceeded 35%.

Table 7: 2003 adult walleye exploitation rates and 1995-2002 mean exploitation rates. Tribal harvest data used to calculate tribal exploitation provided by the Great Lakes Indian Fish and Wildlife Commission (Ngu 1995, Ngu 1996, Krueger 1997, 1998, 1999, 2000, 2001, 2002, 2003).

Lake	County	Acres	Angler exploitation	Angler expl. >14 in	Angler expl. >20 in	Tribal expl.	Total adult exploitation
Diamond	Bayfield	341	0.0000	0.0000	0.0000	0.1445	0.1445
Gile	Iron	3384	0.0979	0.0746	0.0000	0.0331	0.1310
Big Eau Pleine[1]	Marathon	6830	0.0409	0.1143	0.0000	0.0000	0.0409
Big Eau Pleine[2]	Marathon	6830	0.0041	0.0114	0.0696	0.0000	0.0041
Bearskin	Oneida	400	0.2179	0.2020	0.1145	0.0534	0.2714
Bolger	Oneida	119	0.0531	0.0829	0.0000	0.0000	0.0531
Big Butternut	Polk	378	0.0310	0.0315	0.0600	0.0670	0.0980
Butternut	Price	1006	0.2193	0.1827	0.2099	0.0515	0.2709
Solberg	Price	859	0.1177	0.1093	0.2162	0.0000	0.1177
Amacoy	Rusk	278	0.0447	0.0447	0.0391	0.0000	0.0447
Grindstone	Sawyer	3111	0.0442	0.0325	0.2159	0.0710	0.1153
Plum	Vilas	1108	0.0781	0.0682	0.1026	0.0395	0.1175
Snipe	Vilas	239	0.0145	0.0451	0.1429	0.0415	0.0560
Squaw	Vilas	785	0.1980	0.1714	0.7262	0.0351	0.2331
Middle McKenzie	Washburn	530	0.1615	0.1656	0.3305	0.2027	0.3642
2003 mean*			0.088	0.089	0.148	0.049	0.137
1995-2002 mean			0.076	0.100	0.134	0.041	0.116

[1] Open-water creel
[2] Ice-fishing creel
* - does not include Big Eau Pleine data

Muskellunge

Of the 14 lakes surveyed in 2003, 12 were classified as musky waters. Creel clerks recorded at least one musky caught from 11 of the 14 lakes surveyed. For the purpose of statistical analyses of catch and effort, lakes not classified or having a remnant population were excluded. In general, the "action classification" assigned to lakes (Simonson and Hewett 1999) is a better predictor of musky catch and effort than recruitment source or lake size to describe variability in catch and effort (Table 8). Overall specific catch rate in 2003 (0.034 fish/ hour, or 1 fish caught per 29.4 hours of directed effort) was slightly lower than the 1990-2002 average (0.0366 fish/ hour), but there has been no observed trend in muskellunge catch rates in the Ceded Territory since 1990 ($F = 1.63$, $df = 1,252$, $p = 0.20$), despite year-to-year fluctuations in effort (Figures 18-19).

Table 8: Muskellunge catch and effort rates in the Wisconsin Ceded Territory, 1990-2003, by musky lake classification. Population estimates include only those approved for use by Wisconsin Technical Working Group in setting safe harvest levels.

Class	Description	Lakes sampled	Angler catch/ acre	Specific catch rate (fish/ hour)	Directed effort (hours/ acre)	Mean density (PEs in sample)
A1	Trophy waters	90	0.24	0.0273	6.7	0.31 (15)
A2	Action waters	133	0.72	0.0448	14.1	0.44 (11)
B	Intermediate action/ size	29	0.24	0.0342	5.7	0.32 (3)
C	Low importance	10	0.03	0.0066	2.1	
Total		262	0.48	0.0366	10.3	0.36 (29)

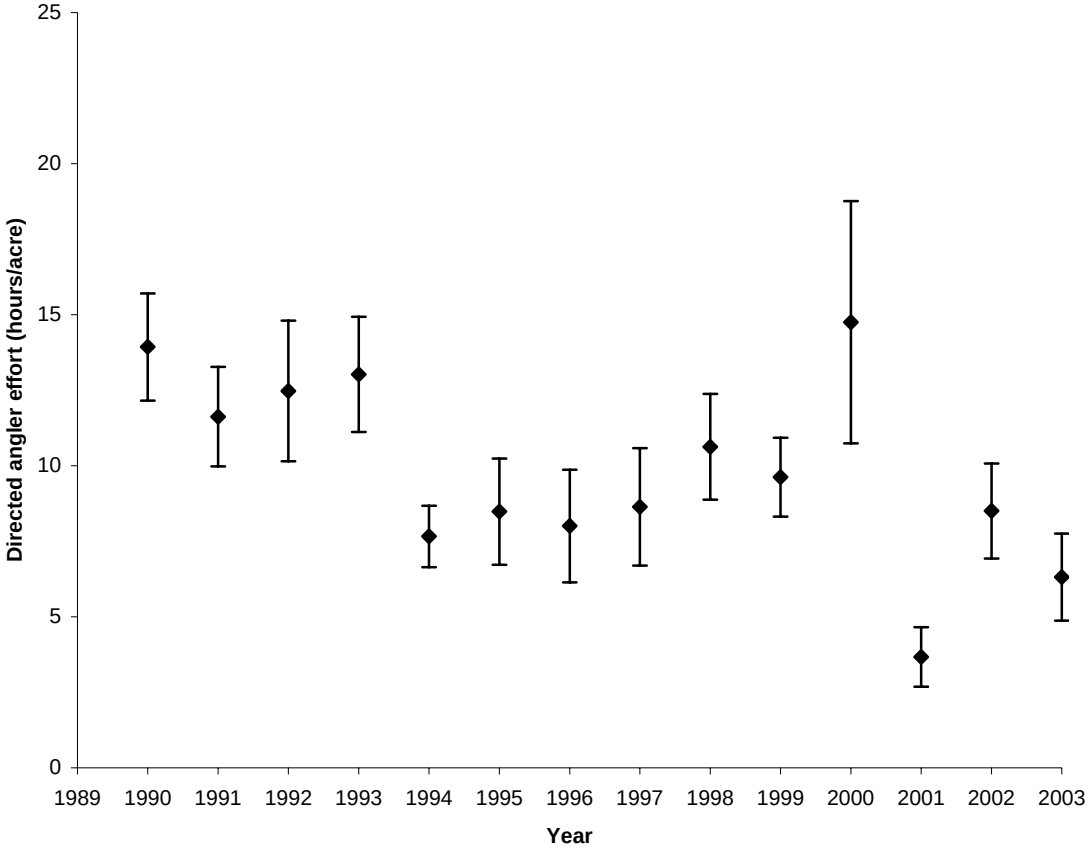


Figure 18: Directed angler effort per lake surface acre for muskellunge in surveyed lakes in the Wisconsin Ceded Territory, 1990-2003. Directed effort is defined as hours reported by anglers fishing for a specific species. Error bars represent the standard error of the mean.

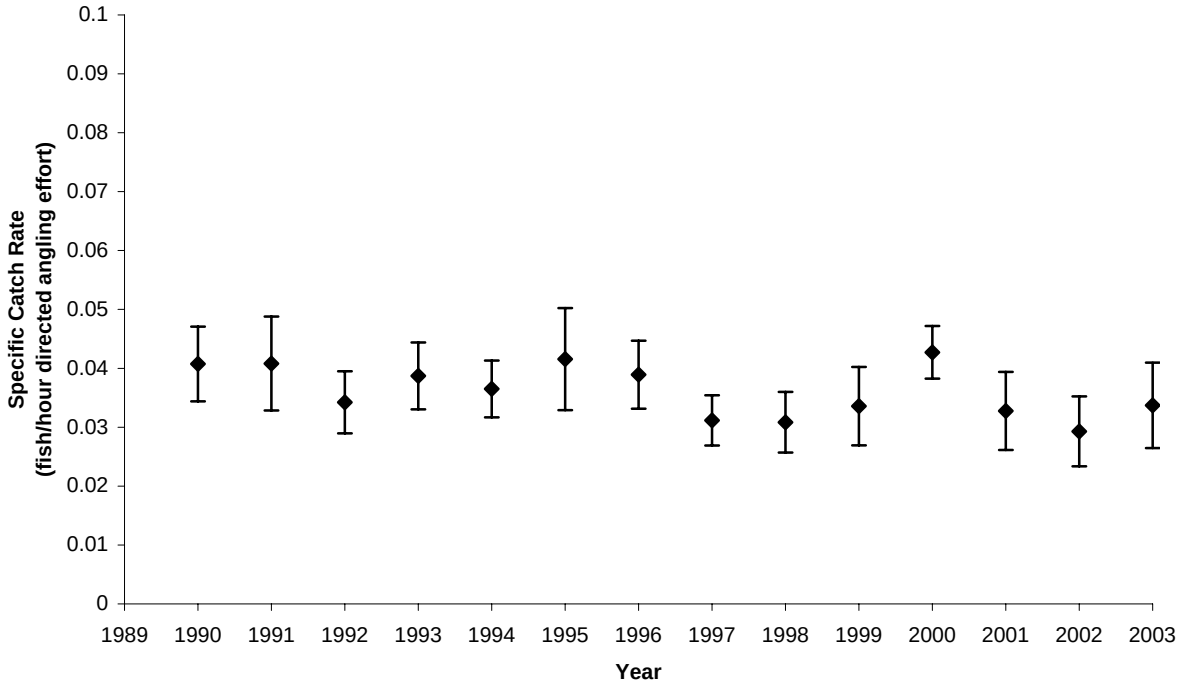


Figure 19: Specific catch rate for muskellunge in surveyed lakes in the Wisconsin Ceded Territory, 1990-2003. Specific catch rate is number of muskellunge caught divided by time spent fishing for muskellunge. Error bars represent standard error of the mean.

Northern Pike

Catches of northern pike were recorded for 13 of the 14 lakes surveyed in 2003. Five of the lakes surveyed were smaller than 500 acres and eight were 500 acres or larger. In 2003, there were no significant differences in directed angler effort per acre, specific catch rate, angler catch per acre, or specific harvest rate in lakes smaller than 500 acres compared to lakes 500 acres and larger (Table 9).

Table 9: Creel statistics for northern pike in 12 surveyed lakes in the Wisconsin Ceded Territory in 2003. These results do not include Big Eau Pleine Lake data. No northern pike were harvested from Snipe Lake.

	Mean				
	Large	**Small**	**df**	**T-value**	**P-value**
Directed Angler Effort	3.14	4.26	10	-0.50	0.63
Specific Catch Rate	0.16	0.20	10	-0.45	0.66
Angler Catch/Acre	1.41	1.74	10	-0.26	0.80
Specific Harvest Rate	0.04	0.06	10	-0.43	0.67

Historically (1990-2003), directed angler effort/ acre has been higher in lakes smaller than 500 acres (6.6 hours/ acre) than in larger lakes (3.9 hours/ acre; t (unequal variances) = -2.37, df = 151, p = 0.02). That higher effort has not been accompanied by concurrent increases in angler catch (small = 0.18 fish/ hour; large 0.18 fish/hour; t (unequal variances) = -0.36, df = 207, p = 0.72) or harvest rates (small = 0.05 fish/ hour; large 0.05 fish/hour; t (unequal variances) = -0.55, df = 143, p = 0.58).

Smallmouth Bass

Catches of smallmouth bass were reported for 12 of the 14 lakes surveyed (Appendix F). There were no significant differences in directed angler effort (t = -0.96, df = 9, P = 0.36) or specific catch rate (t = -1.60, df = 9, P = 0.14) between lakes smaller or larger than 500 acres in 2003 (Table 10). Since 1994, there have been statistically detectable trends of increasing angler effort (directed effort per acre: F = 10.54, df = 1, 180, P = 0.001) and success (specific catch rate: F = 10.48, df = 1, 179, P = 0.001; catch

per acre: F = 12.76, df = 1, 185, P = 0.0005) in smallmouth bass fishing in Wisconsin Ceded Territory lakes (Figure 20).

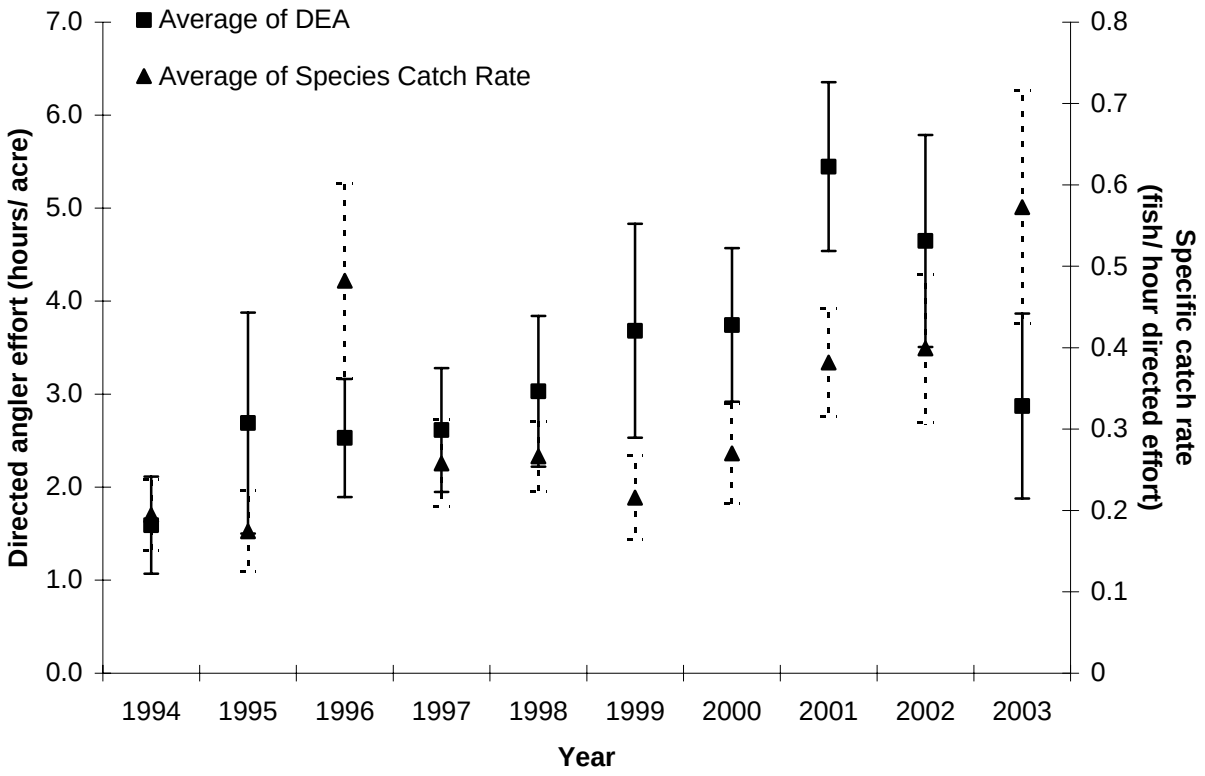


Figure 20: Directed angler effort per lake surface acre and specific catch rate for smallmouth bass in Wisconsin Ceded Territory lakes where WDNR conducted creel surveys, 1994-2003. Specific catch rate is the number of smallmouth bass caught divided by time spent fishing specifically for the species. Directed effort is hours reported by anglers specifically targeting smallmouth bass.

Table 10: Mean values calculated from 2003 and 1994-2002 smallmouth bass creel survey data. Specific and general catch and harvest rates are reported as number of fish caught or harvested per angling hour.

Year	Lake Size	N	Catch/ Acre	Angler Harvest/ Acre	Specific Catch Rate	Specific Harvest Rate	Directed Effort/ Acre
2003	All lakes	11	2.7	0.02	0.57	0.007	2.9
	< 500 acres	5	4.0	.02	0.80	.002	3.9
	> 500 acres	6	1.6	.03	0.38	0.011	2.0
1994-2002	All lakes	171	1.7	0.08	0.28	0.027	3.2
	< 500 acres	77	1.9	0.09	0.25	0.020	4.0
	> 500 acres	94	1.5	0.08	0.30	0.033	2.6

Largemouth Bass

Catches of largemouth bass were reported for 11 of the 14 lakes surveyed in 2003. Butternut Lake (Price Co.) reported directed effort although no largemouth bass were caught. Since this lake is classified as a largemouth bass lake, results from this lake are included in the following analyses. Five of the lakes were smaller than 500 acres and seven were 500 acres or larger (Table 11). In 2003, there were no significant differences in angler effort ($t = -1.23$, $df = 10$, $P = 0.25$) success (specific catch ($t = -0.46$, $df = 10$, $P = 0.66$), or harvest rates ($t = -0.59$, $df = 10$, $P = 0.57$) between lake size classes. There has been a general pattern of increasing effort directed towards largemouth bass observed in the Wisconsin Ceded Territory since 1994, but the trend is not statistically significant ($F = 1.45$, $df = 1, 183$, $P = 0.23$). However, there have been statistically significant increasing trends in specific catch rate ($F = 15.47$, $df = 1,183$, $P < 0.01$) and angler catch per acre ($F = 4.97$, $df = 1, 193$, $P = 0.03$) observed since 1994 (Figure 21).

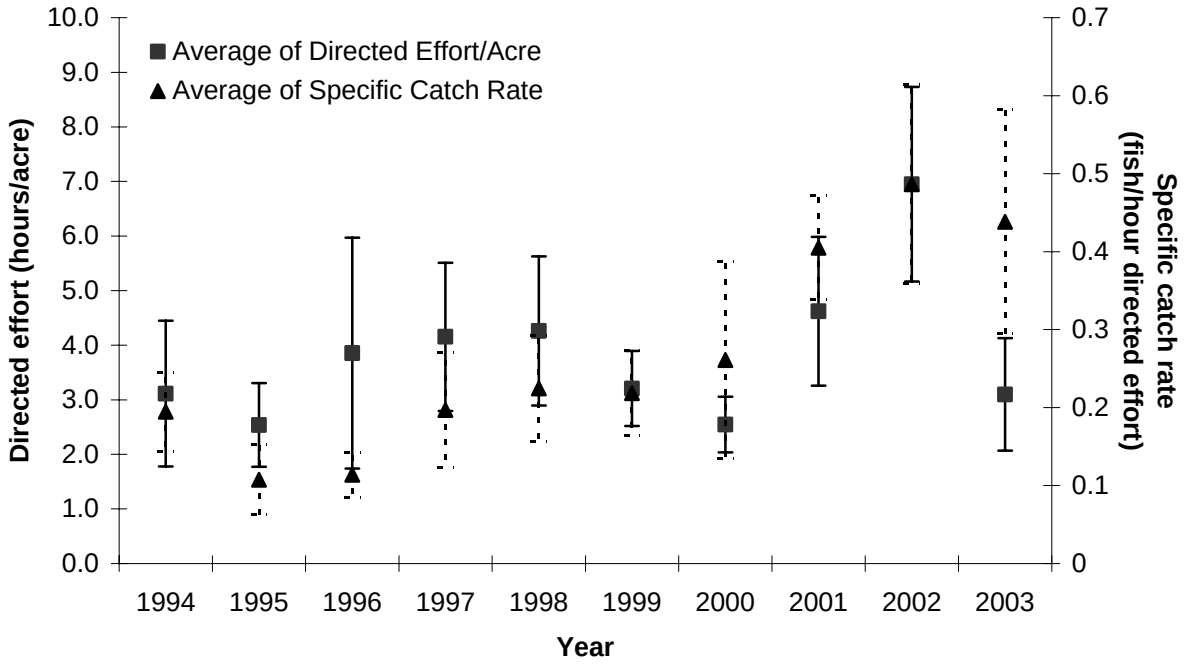


Figure 21: Directed angler effort per lake surface acre and specific catch rate for largemouth bass in surveyed lakes in the Wisconsin Ceded Territory, 1994-2003. Directed effort is defined as hours reported by anglers fishing for a specific species. Specific catch rate is number of largemouth bass caught divided by time spent fishing for largemouth bass. Error bars represent SEM.

Table 11: Mean estimates calculated from 2003 and 1994-2002 largemouth bass creel survey data. Specific and general catch and harvest rates are reported as number of fish caught or harvested per angling hour.

Year	Lake Size	N	Catch/ Acre	Angler Harvest/ Acre	Specific Catch Rate	Specific Harvest Rate	Directed Effort/ Acre
2003	All lakes	12	3.7	0.17	0.44	0.018	3.1
	< 500 acres	5	4.4	0.20	0.52	0.024	4.6
	> 500 acres	7	3.18	0.15	0.38	0.015	2.0
1994-2002	All lakes	173	2.8	0.14	0.24	0.016	3.8
	< 500 acres	82	2.4	0.12	0.23	0.013	4.3
	> 500 acres	91	3.1	0.17	0.26	0.018	3.3

REFERENCES

Beard, T. D., Jr., S. W. Hewett, Q. Yang, R. M. King, and S. J. Gilbert. 1997. Prediction of angler catch rates based on walleye population density. North American Journal of Fisheries Management 17 (4): 621-627.

Hansen, M. J. 1989. A walleye population model for setting harvest quotas. Wisconsin Department of Natural Resources Bureau of Fisheries Management, Fish Management Report 143, Madison, Wisconsin.

Hansen, M. J., M.D. Staggs, and M. H. Hoff. 1991. Derivation of safety factors for setting harvest quotas on adult walleyes from past estimates of abundance. Transactions of the American Fisheries Society 120: 620-628.

Hansen, M. J., M.A. Bozek, J. R. Newby, S. P. Newman and M. D. Staggs. 1998. Factors affecting recruitment of walleyes in Escanaba Lake, Wisconsin, 1958-1996. North American Journal of Fisheries Management 18(4): 764-774.

Hansen, M. J., T. D. Beard Jr., S. W. Hewett. 2000. Catch rates and catchability of walleyes in angling and spearing fisheries in Northern Wisconsin lakes. North American Journal of Fisheries Management 20(1): 109-118.

Hewett, S. W. and T. D. Simonson. 1998. Wisconsin's walleye management plan: moving management into the 21st century. Wisconsin Department of Natural Resources, Administrative Report #43, Bureau of Fisheries Management and Habitat Protection, Madison, Wisconsin.

Krueger, J. 2003. Open water spearing in northern Wisconsin by Chippewa Indians during 2002. Great Lakes Indian Fish and Wildlife Commission, Administrative Report 2002-01, Odanah, Wisconsin.

Krueger, J. 2002. Open water spearing in northern Wisconsin by Chippewa Indians during 2001. Great Lakes Indian Fish and Wildlife Commission, Administrative Report 2002-01, Odanah, Wisconsin.

Krueger, J. 2001. Open water spearing in northern Wisconsin by Chippewa Indians during 2000. Great Lakes Indian Fish and Wildlife Commission, Administrative Report 2001-01, Odanah, Wisconsin.

Krueger, J. 2000. Open water spearing in northern Wisconsin by Chippewa Indians during 1999. Great Lakes Indian Fish and Wildlife Commission, Administrative Report 2000-05, Odanah, Wisconsin.

Krueger, J. 1999. Open water spearing in northern Wisconsin by Chippewa Indians during 1998. Great Lakes Indian Fish and Wildlife Commission, Administrative Report 99-4, Odanah, Wisconsin.

Krueger, J. 1998. Open water spearing in northern Wisconsin by Chippewa Indians during 1997. Great Lakes Indian Fish and Wildlife Commission, Administrative Report 98-01, Odanah, Wisconsin.

Krueger, J. 1997. Open water spearing in northern Wisconsin by Chippewa Indians during 1996. Great Lakes Indian Fish and Wildlife Commission, Administrative Report 97-02, Odanah, Wisconsin.

Li, J., Y. Cohen, D. H. Schupp, and I. R. Adelman. 1996. Effects of walleye stocking on year-class strength. North American Journal of Fisheries Management 16(4): 840-850.

Margenau, T. L. and S. P. AveLallemant. 2000. Effects of a 40-inch minimum length limit on muskellunge in Wisconsin. North American Journal of Fisheries Management 20: 986-993.

Nate, N. A., M. A. Bozek, M. J. Hansen, and S. W. Hewett. 2000. Variation in walleye abundance with lake size and recruitment source. North American Journal of Fisheries Management. 20: 119-126.

Ngu, H. H. 1996. Open water spearing in northern Wisconsin by Chippewa Indians during 1995. Great Lakes Indian Fish and Wildlife Commission, Administrative Report 96-01, Odanah, Wisconsin.

Ngu, H. H. 1995. Open water spearing in northern Wisconsin by Chippewa Indians during 1994. Great Lakes Indian Fish and Wildlife Commission, Administrative Report 95-03, Odanah, Wisconsin.

Ngu, H. H. 1994. Open water spearing in northern Wisconsin by Chippewa Indians during 1993. Great Lakes Indian Fish and Wildlife Commission, Administrative Report 94-1, Odanah, Wisconsin.

Rasmussen, P. W., M. D. Staggs, T. D. Beard, Jr., and S. P. Newman. 1998. Bias and confidence interval coverage of creel survey estimators evaluated by simulation. Transactions of the American Fisheries Society 127: 460-480.

Ricker, W. E. 1975. Computation and Interpretation of Biological Statistics of Fish Populations. Bulletin of the Fisheries Research Board of Canada 191. Department of the Environment, Fisheries, and Marine Science, Ottawa. 382 p.

Serns, S. L. 1982. Relationship of walleye fingerling density and electrofishing catch per effort in northern Wisconsin lakes. North American Journal of Fisheries Management 2 (1): 38-44.

Simonson, T.D. and S.W. Hewett. 1999. Trends in Wisconsin's Muskellunge Fishery. North American Journal of Fisheries Management 19:291-299.

United States Department of the Interior, Bureau of Indian Affairs. 1991. Casting Light Upon the Waters. Minneapolis.

Wisconsin Department of Natural Resources. 1996. Wisconsin Muskellunge Waters. Publication RS-919-96.

Wisconsin Technical Working Group. 1999. December meeting minutes.

APPENDIX A

A1. Reduced daily bag limits for walleye angling, based on Tribal Declarations as percentage of safe harvest. Reprinted from Wisconsin Administrative Code (NR 20.36).

Daily bag limit	Current population estimate	Population estimate made 1-2 years ago	Population estimate made 3 years ago or more or regression model
4	1-7	1-14	1-20
3	8-18	15-39	21-54
2	19-36	40-76	55-84
1	37-68	77-94	85-94
0	69 or more	95 or more	95 or more

A2. Walleye recruitment code descriptions (primary source of walleye recruitment; U. S. Department of the Interior, 1991).

Code	Model	Description
blank	None	unknown
NONE/ O	None	No walleye are present
REM	Remnant	Stocking provides the only source of recruitment but was discontinued. The stock is expected to disappear at some time in the future.
0-ST	Remnant	Stocking provides the only source of recruitment but was initiated only recently and has not yet resulted in a harvestable population of adults.
ST	Stocked	Stocking provides the only source of recruitment and is consistent enough to result in a multi-year class adult population.
C-ST	Stocked	Stocking provides the primary source of recruitment but some natural reproduction occurs and may augment the adult population.
C-	Natural	Natural reproduction and stocking provide more or less equal recruitment to the adult population.
C-NR	Natural	Natural reproduction is adequate to sustain the population even though the lake is being stocked.
NR	Natural	Natural reproduction only; consistent enough to result in multi-year class adult populations.
NR-2	Remnant	Natural reproduction only; inconsistent, results in missing year classes.

APPENDIX B

B. WDNR Lake sampling rotation, revised January 6, 2005. (Temporal trend lakes are in capital letters.)

Year	Treaty Unit	MWBIC	County	Lake	Area	Model
2002	Spooner	2949200	IRON	PINE (C)	312	N
2002	Spooner	2620600	POLK	BALSAM (C)	2054	S
2002	Spooner		Bayfield	Namekagon/Jackson	3,369	N
2002	Spooner	2353600	Rusk	Sand (C)	262	S
2002	Spooner	2392000	Sawyer	Whitefish (C)	786	S
2002	Spooner	2236800	Price	Lac Sault Dore	561	N
2002	Spooner	2726100	Sawyer	Smith	323	S
TOTAL	Spooner				7,667	
2002	Woodruff	1588200	ONEIDA	TWO SISTERS (C)	719	N
2002	Woodruff	2953500	VILAS	CRAB (C)	949	N
2002	Woodruff	1517900	Oneida	Hancock	259	S
2002	Woodruff	378400	Forest	Roberts	414	N
2002	Woodruff	417900	Oconto	Bass	149	N
2002	Woodruff	692900	Forest	Franklin (C)	892	N
2002	Woodruff		Oneida	Shishebogama/Gunlock (C)	966	S
TOTAL	Woodruff				4,348	
2002	TOTAL				12,015	
2003	Spooner	2897100	BAYFIELD	DIAMOND (C)	341	S
2003	Spooner	2391200	SAWYER	GRINDSTONE (C)	3,111	N
2003	Spooner	2942300	Iron	Gile Fl	3,384	N
2003	Spooner	2283300	Price	Butternut	1,006	N
2003	Spooner	2706500	Washburn	Middle McKenzie (C)	530	N
2003	Spooner	2641000	Polk	Big Butternut	378	S
2003	Spooner	2359700	Rusk	Amacoy (C)	278	S
2003	Spooner	2242500	Price	Solberg	859	N
TOTAL	Spooner				9,887	
2003	Woodruff	1018500	VILAS	SNIPE (C)	239	N
2003	Woodruff	1592400	VILAS	PLUM (C)	1,033	N
2003	Woodruff	1427400	Marathon	Big Eau Pleine Reservoir	6,830	N
2003	Woodruff	973000	Oneida	Bolger	119	N
2003	Woodruff	1523600	Oneida	Bearskin (C)	400	N
2003	Woodruff	2271600	Vilas	Squaw (C)	785	N
TOTAL	Woodruff				9,406	
2003	TOTAL				19,293	

Year	Treaty Unit	MWBIC	County	Lake	Area	Model
2004	Spooner	2678100	BURNETT	LIPSETT	393	S
2004	Spooner	2742100	BAYFIELD	MIDDLE EAU CLAIRE	902	N
2004	Spooner		Sawyer	Lost Land/Teal	2,353	N
2004	Spooner	2742700	Bayfield	Upper Eau Claire	1,030	S
2004	Spooner	2490500	Polk	Pipe	270	N
2004	Spooner	2615100	St. Croix	Cedar	1,100	N
2004	Spooner	2435000	Sawyer	Tiger Cat Fl	819	0-ST
2004	Spooner	2079700	Barron	Lower Turtle	276	N
TOTAL	Spooner				7,143	
2004	Woodruff	394400	FOREST	L METONGA	1,991	S
2004	Woodruff	2331600	VILAS	TROUT	3,816	S
2004	Woodruff		Vilas	Manitowish Chain	4,074	N
2004	Woodruff	692400	Forest	Butternut	1,292	N
2004	Woodruff	1537800	Oneida	Booth	207	S
2004	Woodruff	653700	Florence	Patten	255	N
TOTAL	Woodruff				11,635	
2004	TOTAL				18,778	
2005	Spooner	2949200	IRON	PINE	312	N
2005	Spooner	2620600	POLK	BALSAM	2054	S
2005	Spooner		Barron	Red Cedar/Hemlock/Balsam	2,493	N
2005	Spooner	2381100	Sawyer	L Winter	676	0-ST
2005	Spooner	2865000	Douglas	L Nebagamon	914	N
2005	Spooner		Price	Pike Chain	1,905	N
2005	Spooner	2695800	Washburn	Gilmore	389	S
TOTAL	Spooner				8,743	
2005	Woodruff	1588200	ONEIDA	TWO SISTERS	719	N
2005	Woodruff	1545600	VILAS	BIG ARBOR VITAE	1,090	N
2005	Woodruff		VILAS	Manitowish Chain	4,074	N
2005	Woodruff	2316600	Vilas	Dead Pike	297	N
2005	Woodruff	977500	Oneida	Clear	846	N
2005	Woodruff	1569900	Oneida	L Thompson	382	S
2005	Woodruff		Oneida	Carrol/Madeline Chain	494	S
2005	Woodruff	1593100	Vilas	Star	1,206	N
2005	Woodruff	387200	Langlade	Otter	90	S
TOTAL	Woodruff				9,198	
2005	TOTAL				17,941	

Year	Treaty Unit	MWBIC	County	Lake	Area	Model
2006	Spooner	2897100	BAYFIELD	DIAMOND	341	S
2006	Spooner	2391200	SAWYER	GRINDSTONE	3,111	N
2006	Spooner	2152800	Chippewa	L Wissota	6,300	N
2006	Spooner	2495100	Burnett	Sand	962	S
2006	Spooner	2081200	Barron	Beaver Dam	1,112	S
2006	Spooner	2621100	Polk	Half Moon	579	S
2006	Spooner	2858100	Douglas	Amnicon	426	N
TOTAL	Spooner				12,831	
2006	Woodruff	1018500	VILAS	SNIPE	239	N
2006	Woodruff	1592400	VILAS	PLUM	1,033	N
2006	Woodruff	1631900	Vilas	Lac Vieux Desert	4,300	N
2006	Woodruff	1595800	Oneida	N Nokomis	476	S
2006	Woodruff	1881900	Vilas	Sparkling	154	S
2006	Woodruff	1517200	Oneida	Manson	236	N
2006	Woodruff	1629500	Vilas	Big Portage	638	N
2006	Woodruff	2272600	Oneida	Buckskin	634	N
2006	Woodruff	396500	Forest	L Lucerne	1,026	S
TOTAL	Woodruff				8,736	
2006	TOTAL				21,567	
2007	Spooner	2678100	BURNETT	LIPSETT	393	S
2007	Spooner	2742100	BAYFIELD	MIDDLE EAU CLAIRE	902	N
2007	Spooner	2704200	Sawyer	Nelson	2,503	N
2007	Spooner		Douglas	Lower Eau Claire/Cranberry	860	N
2007	Spooner	2393200	Sawyer	Sand	928	N
2007	Spooner	2747300	Douglas	Upper St. Croix	855	N
2007	Spooner	2706800	Burnett	Big McKenzie	1,185	S
2007	Spooner	2624600	Polk	Magnor	224	S
2007	Spooner	2618000	Polk	Wapogasset	1,186	S
TOTAL	Spooner				9,036	
2007	Woodruff	394400	FOREST	L METONGA	1,991	S
2007	Woodruff	2331600	VILAS	TROUT	3,816	S
2007	Woodruff		Vilas	Twin L Chain	3,430	N
2007	Woodruff	1567325	Oneida	Hat Rapids Fl	650	N
2007	Woodruff	1545300	Vilas	Little Arbor Vitae	534	N
2007	Woodruff		Oneida	Moen Chain	1,172	N
2007	Woodruff	677100	Florence	Fay	247	S
TOTAL	Woodruff				11,840	
2007	TOTAL				20,876	

Year	Treaty Unit	MWBIC	County	Lake	Area	Model
2008	Spooner	2949200	IRON	PINE	312	N
2008	Spooner	2620600	POLK	BALSAM	2,054	S
2008	Spooner		Burnett	Yellow/Little Yellow	2,635	S
2008	Spooner	2676800	Burnett	Big Sand	1,400	0-ST
2008	Spooner	2105100	Barron	Bear	1,358	S
2008	Spooner	2882300	Bayfield	Siskiwit	330	N
2008	Spooner	2693700	Douglas	Bond	292	N
2008	Spooner		Rusk	Chain/Clear/Island/McCann	1,222	N
TOTAL	Spooner				9,603	
2008	Woodruff	1588200	ONEIDA	TWO SISTERS	719	N
2008	Woodruff	1545600	VILAS	BIG ARBOR VITAE	1,090	N
2008	Woodruff	1595300	Oneida	Rainbow Fl	2,035	N
2008	Woodruff	1605800	Oneida	Sevenmile	503	N
2008	Woodruff	2954800	Vilas	Oxbow	511	N
2008	Woodruff		Vilas	Cisco Chain	1,539	N
2008	Woodruff	683000	Forest	Stevens	297	S
2008	Woodruff	439800	Oconto	Wheeler	293	N
TOTAL	Woodruff				6,987	
2008	TOTAL				16,590	
2009	Spooner	2897100	BAYFIELD	DIAMOND	341	S
2009	Spooner	2391200	SAWYER	GRINDSTONE	3,111	N
2009	Spooner	2294900	Iron	Turtle-Flambeau	13,545	N
2009	Spooner	2295200	Iron	Trude	781	N
2009	Spooner	1881100	Barron	Silver	337	N
2009	Spooner	2306300	Iron	Spider	352	N
2009	Spooner	2435700	Sawyer	Spider	1,454	S
TOTAL	Spooner				19,921	
2009	Woodruff	1018500	VILAS	SNIPE	239	N
2009	Woodruff	1592400	VILAS	PLUM	1,033	N
2009	Woodruff		Oneida	Tomahawk/Minocqua Chain	3,552	S
2009	Woodruff	1574300	Oneida	Jennie Webber	226	S
2009	Woodruff		Vilas	Palmer/Tenderfoot	1,072	S
2009	Woodruff	1515400	Lincoln	L Mohawksin	1,910	N
TOTAL	Woodruff				8,032	
2009	TOTAL				27,953	

Year	Treaty Unit	MWBIC	County	Lake	Area	Model
2010	Spooner	2678100	BURNETT	LIPSETT	393	S
2010	Spooner	2742100	BAYFIELD	MIDDLE EAU CLAIRE	902	N
2010	Spooner		Sawyer	Round/Little Round	3,283	N
2010	Spooner	2900200	Bayfield	L Owen	1,323	S
2010	Spooner	2492100	Douglas	Red	258	S
2010	Spooner	2382300	Sawyer	Barber	238	S
2010	Spooner	2393500	Sawyer	Sissabagama	719	N
2010	Spooner	2046500	Sawyer	Windfall	102	N
2010	Spooner	1884100	Washburn	Stone	523	S
TOTAL	Spooner				7,741	
2010	Woodruff	394400	FOREST	L METONGA	1,991	S
2010	Woodruff	2331600	VILAS	TROUT	3,816	S
2010	Woodruff	1528300	Oneida	Willow Fl	5,135	N
2010	Woodruff	390600	Forest	Mole	73	0-ST
2010	Woodruff		Vilas	Turtle Chain	945	N
2010	Woodruff	1855900	Vilas	Jag	158	N
2010	Woodruff	1569600	Oneida	George	435	N
2010	Woodruff	1564200	Oneida	Crescent	612	N
TOTAL	Woodruff				13,165	
2010	TOTAL				20,906	
2011	Spooner	2949200	IRON	PINE	312	N
2011	Spooner	2620600	POLK	BALSAM	2,054	S
2011	Spooner	2399700	Sawyer	L Chippewa	15,300	N
2011	Spooner	1841300	Sawyer	Clear	77	0-ST
2011	Spooner	2303500	Iron	Long	396	S
2011	Spooner	2767100	Bayfield	Long	263	S
2011	Spooner	2914800	Ashland	English	244	S
TOTAL	Spooner				18,646	
2011	Woodruff	1588200	ONEIDA	TWO SISTERS	719	N
2011	Woodruff	1545600	VILAS	BIG ARBOR VITAE	1,090	N
2011	Woodruff	1579900	Oneida	Pelican	3,585	S
2011	Woodruff	1591100	Vilas	Big St. Germain	1,617	N
2011	Woodruff	1613500	Oneida	Whitefish	205	NR-2
2011	Woodruff		Vilas	Ballard Chain	1,025	S
2011	Woodruff	417400	Oconto	Archibald	430	0-ST
2011	Woodruff	1595600	Oneida	Muskellunge	284	N
2011	Woodruff	1630100	Vilas	Black Oak	584	S
TOTAL	Woodruff				9,539	
2011	TOTAL				28,185	

Year	Treaty Unit	MWBIC	County	Lake	Area	Model
2012	Spooner	2897100	BAYFIELD	DIAMOND	341	S
2012	Spooner	2391200	SAWYER	GRINDSTONE	3,111	N
2012	Spooner		Barron	L Chetek Chain	3,763	S
2012	Spooner		Bayfield	Pike Lake Chain	714	N
2012	Spooner	2627400	Polk	Big Round	1,015	S
2012	Spooner	2691500	Washburn	L Nancy	772	N
2012	Spooner	2351400	Chippewa	Long	1,052	N
2012	Spooner	2856400	Douglas	Lyman	403	N
2012	Spooner	2661100	Barron	Sand	322	S
TOTAL	Spooner				11,493	
2012	Woodruff	1018500	VILAS	SNIPE	239	N
2012	Woodruff	1592400	VILAS	PLUM	1,033	N
2012	Woodruff		Lincoln/Oneida	Nokomis/Rice Chain	3,916	N
2012	Woodruff	1623400	Vilas	Pioneer	427	0-ST
2012	Woodruff		Vilas	Presque Isle Chain	1,571	N
2012	Woodruff		Vilas	Upper/Lower Buckatabon	846	S
2012	Woodruff	2328700	Vilas	Papoose	428	N
TOTAL	Woodruff				8,460	
2012	TOTAL				19,953	
2013	Spooner	2678100	BURNETT	LIPSETT	393	S
2013	Spooner	2742100	BAYFIELD	MIDDLE EAU CLAIRE	902	N
2013	Spooner	2496300	Washburn	Shell	2,580	N
2013	Spooner	1764500	Taylor	Sackett	63	S
2013	Spooner	2461100	Burnett	Devils	1,001	S
2013	Spooner	2133200	Eau Claire	L Eau Claire	860	N
2013	Spooner		Sawyer	Connors/L of the Pines	702	N
2013	Spooner	2469800	Barron	Horseshoe	115	N
2013	Spooner	1875900	Rusk	Pulaski	126	N
TOTAL	Spooner				6,742	
2013	Woodruff	394400	FOREST	L METONGA	1,991	S
2013	Woodruff	2331600	VILAS	TROUT	3,816	S
2013	Woodruff		Vilas	Eagle Chain	4,174	N
2013	Woodruff	1482400	Lincoln	Tug	151	N
2013	Woodruff	2953800	Vilas	Annabelle	213	N
TOTAL	Woodruff				10,345	
2013	TOTAL				17,087	

APPENDIX C

C. Walleye population estimates in Wisconsin Ceded Territory lakes surveyed by WDNR in Spring 2003.

MWBC	County	Lake	Acres	Angler Regulation	Recruit Code	PE-Male	CV Male PE	PE-Female	CV Female PE	Adult M:F Ratio	Adult PE
2917200	Ashland	Potter	29	15	0-ST	36	0.222	91	0.393	0.4	109
2897300	Bayfield	Crystal	111	15	C-NR	201	0.084	64	0.340	3.1	264
2897100	Bayfield	Diamond	341	15, slot, 1>28	C-NR	290	0.174	299	0.245	1.0	595
2489400	Bayfield	Pigeon	213	15	0-ST	15	0.462	20	0.000	0.8	36
406900	Forest	Pine	1670	15	ST	452	0.124	1169	0.383	0.4	1261
2942300	Iron	Gile Flowage	3384	1>14	NR	6180	0.020	5288	0.163	1.2	8787
1555900	Lincoln	Alice	1369	15	C-NR	739	0.262	1853	0.306	0.4	2902
1481600	Lincoln	Pesabic	146	1>14	ST	91	0.104	71	0.281	1.3	151
1564400	Lincoln	Squaw	82	15	ST	48	0.260	68	0.456	0.7	108
1427400	Marathon	Big Eau Pleine	6830	15	NR	40,826	0.041	7585	0.424	5.4	43,695
1523600	Oneida	Bearskin	400	1>14	NR	2043	0.038	852	0.236	2.4	2658
973000	Oneida	Bolger	119	15	C-NR	365	0.069	44	0.266	8.4	418
2641000	Polk	Big Butternut	378	15	ST	169	0.079	276	0.272	0.6	388
2283300	Price	Butternut	1006	None	C-NR	2586	0.071	2188	0.340	1.2	4075
2242500	Price	Solberg	859	None	NR	2906	0.042	894	0.260	3.3	3363
2359700	Rusk	Amacoy	278	15	ST	182	0.064	308	0.225	0.6	413
2391200	Sawyer	Grindstone	3111	Slot,1 >18	C-NR	6209	0.084	753	0.427	8.2	6658
1469100	Taylor	Rib	320	Slot,1 >18	C-NR	435	0.062	263	0.404	1.7	628
2338800	Vilas	Big Crooked	682	None	NR	673	0.223	817	0.204	0.8	2049
2338800	Vilas	Big Crooked	682	None	NR	635	0.235	564	0.351	1.1	1318
2339900	Vilas	Escanaba	293	28	NR	518	0.200	271	0.222	1.9	847
1623400	Vilas	Pioneer	427	15	0-ST	324	0.140	38	0	8.5	390
1592400	Vilas	Plum	1033	Slot, 1>18	C-NR	3781	0.073	2527	0.35	1.5	5674
1018500	Vilas	Snipe	239	15	NR	896	0.099	659	0.342	1.4	1348
2271600	Vilas	Squaw	785	1>14	NR	1877	0.107	1125	0.284	1.7	2878
1020300	Vilas	Stormy	522	15	NONE	7	0.000	6	0	1.2	10
2336100	Vilas	Wolf	393	15	NR	1556	0.092	589	0.292	2.6	2236
2706500	Washburn	Middle Mckenzie	530	15	C-NR	361	0.176	106	0.324	3.4	587

County	Lake	CV Adult PE	Lower 95 CI, Adult PE	Adult PE/Acre	PE Adult 0-12 in	PE Adult 12-15 in	PE Adult 15-20 in	PE Adult 20+ in	Total PE	CV Total PE	Total PE/Acre
Ashland	Potter	0.210	64	3.76	1	1	53	54	122	0.231	4.21
Bayfield	Crystal	0.096	214	2.38	2	30	217	15			
Bayfield	Diamond	0.141	431	1.74	1	2	323	270	468	0.321	1.37
Bayfield	Pigeon	0.290	16	0.17	1	1	1	33	25	0.000	0.12
Forest	Pine	0.121	961	0.76	8	21	914	319	1206	0.381	0.72
Iron	Gile Flowage	0.025	8363	2.60	252	4176	4238	121	21,449	0.099	6.34
Lincoln	Alice	0.24	1539	2.12	159	773	1794	176	36,548	0.467	26.70
Lincoln	Pesabic	0.11	119	1.03	1	1	67	82	182	0.066	1.25
Lincoln	Squaw	0.274	50	1.32	1	9	77	21	818	0.254	9.98
Marathon	Big Eau Pleine	0.04	40266	6.40	8978	28,982	5537	198	169,675	0.186	24.84
Oneida	Bearskin	0.045	2423	6.64	705	1021	672	260	12,449	0.276	31.12
Oneida	Bolger	0.073	358	3.51	20	225	165	7	396	0.051	3.33
Polk	Big Butternut	0.105	308	1.03	1	8	199	180	419	0.370	1.11
Price	Butternut	0.080	3436	4.05	1026	1963	824	263	31,129	0.188	30.94
Price	Solberg	0.040	3099	3.92	978	1676	620	88	14,166	0.216	16.49
Rusk	Amacoy	0.079	349	1.49	1	1	163	248	361	0.068	1.30
Sawyer	Grindstone	0.080	5612	2.14	105	3487	2859	207	17,771	0.203	5.71
Taylor	Rib	0.064	550	1.96	1	50	484	93	2795	0.329	8.73
Vilas	Big Crooked	0.178	1336	3.01	28	132	1435	455			
Vilas	Big Crooked	0.216	761	1.93	28	197	729	364			
Vilas	Escanaba	0.142	611	2.89	53	336	335	124			
Vilas	Pioneer	0.141	282	0.91	6	116	235	33	336	0.149	0.79
Vilas	Plum	0.086	4721	5.49	226	2233	3104	111	9388	0.171	9.09
Vilas	Snipe	0.1	1085	5.64	143	1100	97	8	3489	0.104	14.60
Vilas	Squaw	0.107	2276	3.67	975	1313	550	40	13,778	0.206	17.55
Vilas	Stormy	0	10	0.02	1	1	1	7			
Vilas	Wolf	0.099	1801	5.69	1	1283	673	280			
Washburn	Middle Mckenzie	0.255	294	1.11	1	13	276	297	469	0.192	0.88

APPENDIX D

D. Muskellunge population estimates completed in spring 2003 and prepared for Wisconsin Technical Working Group. Summary provided courtesy of GLIFWC. Methods Used: In year one, all sexable fish plus unknowns 30" and over are counted. In year two, all sexable fish plus unknowns 32" and over are counted, except take the lesser of 30" or the smallest half-inch group observed for each sex in the first year; for the second year, do not count sexable fish less than this minimum length plus 2", or plus a different growth correction derived from the data for the lake. No stratification by length or sex is used, and the Chapman correction of the Petersen estimator is used, (M+1)(C+1)/(R+1).

COUNTY: BAYFIELD LAKE: NAMEKAGON L YEAR COMPLETED: 2003

MARKING PERIOD			RECAPTURE PERIOD UNMARKED			RECAPTURE PERIOD MARKED		
MALE	FEMALE	UNKNOWN	MALE	FEMALE	UNKNOWN	MALE	FEMALE	UNKNOWN
47	32	14	27	34	2	6	8	0

TOTAL MARKED (M):	93	CHAPMAN PE:	489	PE CV:	22.47%
TOTAL CAPTURED (C):	77	PE VARIANCE:	12,061	AREA:	3227
TOTAL RECAPTURED (R):	14	PE ST. DEV:	110	DENSITY:	0.15

COUNTY: BURNETT LAKE: BIG MCKENZIE L YEAR COMPLETED: 2003

MARKING PERIOD			RECAPTURE PERIOD UNMARKED			RECAPTURE PERIOD MARKED		
MALE	FEMALE	UNKNOWN	MALE	FEMALE	UNKNOWN	MALE	FEMALE	UNKNOWN
21	18	0	12	4	0	3	1	0

TOTAL MARKED (M):	39	CHAPMAN PE:	180	PE CV:	35.63%
TOTAL CAPTURED (C):	20	PE VARIANCE:	4,114	AREA:	1185
TOTAL RECAPTURED (R):	4	PE ST. DEV:	64	DENSITY:	0.15

This estimate incorporates a spearing correction. There were 11 unmarked muskies and 1 marked female musky harvested between the start of the first marking date and the end of the last recapture date. The 1 marked musky was deducted from the number marked, and all 12 fish were added to the estimate at the conclusion of the calculations.

COUNTY: PRICE LAKE: BUTTERNUT L YEAR COMPLETED: 2003

MARKING PERIOD			RECAPTURE PERIOD UNMARKED			RECAPTURE PERIOD MARKED		
MALE	FEMALE	UNKNOWN	MALE	FEMALE	UNKNOWN	MALE	FEMALE	UNKNOWN
35	12	0	83	41	5	3	0	0

TOTAL MARKED (M):	47	CHAPMAN PE:	1,596	PE CV:	44.04%
TOTAL CAPTURED (C):	132	PE VARIANCE:	494,122	AREA:	1006
TOTAL RECAPTURED (R):	3	PE ST. DEV:	703	DENSITY:	1.59

COUNTY: RUSK LAKE: SAND L YEAR COMPLETED: 2003

MARKING PERIOD			RECAPTURE PERIOD UNMARKED			RECAPTURE PERIOD MARKED		
MALE	FEMALE	UNKNOWN	MALE	FEMALE	UNKNOWN	MALE	FEMALE	UNKNOWN
22	13	14	5	9	0	6	4	0

TOTAL MARKED (M):	49	CHAPMAN PE:	114	PE CV:	21.60%
TOTAL CAPTURED (C):	24	PE VARIANCE:	603	AREA:	262
TOTAL RECAPTURED (R):	10	PE ST. DEV:	25	DENSITY:	0.43

COUNTY: WASHBURN LAKE: SHELL L YEAR COMPLETED: 2003

MARKING PERIOD			RECAPTURE PERIOD UNMARKED			RECAPTURE PERIOD MARKED		
MALE	FEMALE	UNKNOWN	MALE	FEMALE	UNKNOWN	MALE	FEMALE	UNKNOWN
28	1	4	13	1	9	3	0	1

TOTAL MARKED (M):	33	CHAPMAN PE:	215	PE CV:	37.00%
TOTAL CAPTURED (C):	27	PE VARIANCE:	6,352	AREA:	2580
TOTAL RECAPTURED (R):	4	PE ST. DEV:	80	DENSITY:	0.08

This estimate incorporates a spearing correction. There were 20 unmarked muskies, 2 marked male muskies, and 3 marked female musky harvested between the start of the first marking date and the end of the last recapture date. The 5 marked muskies were deducted from the number marked, and all 25 fish were added to the estimate at the conclusion of the calculations.

COUNTY: ONEIDA LAKE: TWO SISTERS L YEAR COMPLETED: 2003

MARKING PERIOD			RECAPTURE PERIOD UNMARKED			RECAPTURE PERIOD MARKED		
MALE	FEMALE	UNKNOWN	MALE	FEMALE	UNKNOWN	MALE	FEMALE	UNKNOWN
29	14	9	18	7	0	13	2	0

TOTAL MARKED (M):	52	CHAPMAN PE:	136	PE CV:	18.94%
TOTAL CAPTURED (C):	40	PE VARIANCE:	662	AREA:	719
TOTAL RECAPTURED (R):	15	PE ST. DEV:	26	DENSITY:	0.19

COUNTY: VILAS LAKE: CRAB L YEAR COMPLETED: 2003

MARKING PERIOD			RECAPTURE PERIOD UNMARKED			RECAPTURE PERIOD MARKED		
MALE	FEMALE	UNKNOWN	MALE	FEMALE	UNKNOWN	MALE	FEMALE	UNKNOWN
57	34	4	16	7	0	16	6	0

TOTAL MARKED (M):	95	CHAPMAN PE:	192	PE CV:	14.43%
TOTAL CAPTURED (C):	45	PE VARIANCE:	768	AREA:	949
TOTAL RECAPTURED (R):	22	PE ST. DEV:	28	DENSITY:	0.20

APPENDIX E

E. Summary of young-of-the-year walleye surveys conducted by WDNR in fall 2003.

County	Lake	WBIC	Acres	WRC	Model	Date	Temp	Total Shoreline	Miles Shocked	Percent Shocked	Hours Shocked	Age0 Caught	Age0 MinL	Age0 MaxL	Age0 Mod
Ashland	Bear	2403200	204	NR	natural	09/17/2003	65	6.0	2.9	48.3	1.4	10	5.2	6.3	5.9
Ashland	Spillerberg	2936200	75	C-NR	natural	10/07/2003	54	1.5	1.5	100.0	0.6	54	5.8	7.6	6.8
Ashland	Potter	2917200	29	0-ST	remnant	10/07/2003	52	0.9	0.9	100.0	0.7	0			
Ashland	Mineral	2916900	225	C-ST	stocked	09/23/2003	58	5.3	4.0	75.5	1.7	107	4.7	7.2	5.7
Barron	Horseshoe	2630100	377	0-ST	remnant	09/30/2003	53	8.6	4.4	51.2	1.5	0			
Barron	Big Moon	2079000	191	C-ST	stocked	10/06/2003	54	3.2	3.2	100.0	1.3	4	6.9	8.1	None
Barron	L Chetek	2094000	770	C-ST	stocked	10/16/2003	54	7.7	4.0	51.9	1.3	4	6.6	7.6	None
Barron	Prairie	2094100	1534	C-ST	stocked	10/13/2003	46-57	25.4	8.0	31.5	2.7	10	5.5	7.9	6.5-6.9
Bayfield	Crystal	2897300	111	C-NR	natural	09/22/2003	62-63	2.5	2.5	100.0	1.0	21	4.7	7.7	7.0
Bayfield	Diamond	2897100	341	C-NR	natural	09/23/2003	61-62	5.0	5.0	100.0	1.8	0			
Bayfield	Middle Eau Claire	2742100	902	C-NR	natural	09/25/2003	55-60	11.0	7.7	70.0	3.1	83	4.4	7.1	7.0
Bayfield	Middle Eau Claire	2742100	902	C-NR	natural	09/30/2003	52-56	11.0	4.2	38.2	1.7	54	4.2	7.2	7.1
Bayfield	L Tahkodah	2473500	152	0-ST	remnant	09/22/2003	62-63	2.6	2.6	100.0	1.0	0			
Bayfield	Pigeon	2489400	213	0-ST	remnant	09/22/2003	62	6.4	5.6	87.5	2.4	0			
Bayfield	L Owen	2900200	1323	C-ST	stocked	10/01/2003	53-57	25.0	6.0	24.0	2.3	13	5.0	7.3	None
Bayfield	Basswood	2904900	119			09/25/2003	51-55	5.1	2.3	45.1	1.1	0			
Bayfield	Moon	2768900	34			09/25/2003	58	0.9	0.9	100.0	0.4	0			
Burnett	Birch Island	2453500	838	NONE	none	09/15/2003	70	12.5	4.0	32.0	1.5	0			
Burnett	Green	2467200	274	NONE	none	09/22/2003	63	5.3	4.0	75.5	1.6	0			
Burnett	Mud Hen	2649500	563	NONE	none	09/16/2003	70	4.2	4.0	95.2	1.6	0			
Burnett	Upper Clam	2656200	1207	NONE	none	10/01/2003	50	12.5	4.0	32.0	1.5	2	6.7	7.9	None
Burnett	Viola	2598600	285	0-ST	remnant	09/30/2003	55	4.4	4.4	100.0	1.3	0			
Burnett	Lipsett	2678100	393	ST	stocked	09/22/2003	61-64	3.5	3.5	100.0	1.2	0			
Burnett	Round	2640100	204	ST	stocked	10/08/2003	59	3.2	3.2	100.0	1.3	15	6.7	8.0	7.5
Burnett	Bashaw	2662400	171			09/17/2003	68	3.2	3.2	100.0	1.3	0			
Chippewa	Long	2351400	1052	NR	natural	09/25/2003	61	14.0	4.0	28.6	2.5	158	3.4	6.9	4.8
Chippewa	Old Abe	2174700	995	NR	natural	)9/29-30/200	56-57	28.9	8.0	27.7	4.8	384	4.1	7.7	6.4-6.5
Chippewa	Marsh-Miller	2171200	436	NONE	none	09/22/2003	62	7.9	4.0	50.6	2.8	0			
Chippewa	Axhandle	2092500	84	0-ST	remnant	09/24/2003	62	3.0	3.0	100.0	2.0	0			
Chippewa	Popple	2173900	90	C-ST	stocked	09/23/2003	64	2.1	2.1	100.0	1.5	0			
Clark	Mead	2143900	320	C-ST	stocked	09/30/2003	48	8.2	4.0	48.8	3.7	384	5.0	7.9	6.0-6.4
Douglas	St Croix Flowage	2740300	1913	NONE	none	10/06-07/200	51-55	29.1	8.0	27.5	3.6	0			
Douglas	Loon	2479000	109			10/02/2003	47-49	2.1	2.1	100.0	0.9	0			
Douglas	Sauntry's Pocket	2495600	110			10/08/2003	60-61	1.6	1.6	100.0	0.8	0			
Florence	Long	677400	340	NONE	none	10/02/2003	47	4.8	3.3	67.7	1.3	0			
Forest	Roberts	378400	414	C-NR	natural	10/01/2003	50	4.5	4.5	100.0	1.8	8	4.7	6.7	
Forest	Otter	549400	81	NONE	none	09/18/2003	68	1.7	1.7	100.0	0.6	0			
Forest	Scattered Rice	555200	486	NONE	none	09/22/2003	54	5.3	4.0	75.5	1.9	0			
Forest	Wolf	1179100	33	NONE	none	09/24/2003	60	0.8	0.8	100.0	0.5	0			
Forest	Pine	406900	1670	ST	stocked	09/24/2003	58	7.6	7.6	100.0	2.8	0			
Forest	Range Line	478200	82	ST	stocked	09/18/2003	67	1.3	1.2	92.3	0.8	5	6.8	7.7	
Iron	Gile Flowage	2942300	3384	NR	natural	09/18/2003	65-68	27.2	27.2	100.0	10.9	438	3.1	5.1	4.0
Iron	Lake Of The Falls	2298300	338	C-	natural	09/10/2003	70	6.7	4.0	59.7	1.4	0			

APPENDIX E

E. Summary of young-of-the-year walleye surveys conducted by WDNR in fall 2003.

County	Lake	Age0Hr	Age0Mi	Serns	Age1	Age1 MinL	Age1 MaxL	Age1 Mod	Age1Hr	Age1Mi	OtherWE	TotalWE	MUE	NP	LMB	SMB
Ashland	Bear	7.1	3.4	NA	8	7.8	9.5	None	5.7	2.8	11	29	3	33	0	5
Ashland	Spillerberg	90.0	36.0	8	23	7.7	10.0	8.8	38.3	15.3	27	104	5	0	0	0
Ashland	Potter	0.0	0.0	0	0				0.0	0.0	17	17	27	0	0	0
Ashland	Mineral	62.9	26.8	NA	73	7.5	9.6	9.2	42.9	18.3	143	323	11	0	3	27
Barron	Horseshoe	0.0	0.0	NA	0				0.0	0.0	1	1	0	62	179	0
Barron	Big Moon	3.1	1.3	NA					0.0	0.0		4				
Barron	L Chetek	3.1	1.0	NA	1	10.4	10.4	None	0.8	0.3	28	33	0	25	63	0
Barron	Prairie	3.7	1.3	NA	-->						16	26	0	13	101	2
Bayfield	Crystal	21.0	8.4	2	-->						6	27	0	5	9	18
Bayfield	Diamond	0.0	0.0	0	-->						2	2	0	25	21	7
Bayfield	Middle Eau Claire	26.8	10.8	NA	440	7.2	10.2	8	141.9	57.1	34	557				
Bayfield	Middle Eau Claire	31.8	12.9	NA	212	7.3	10.1	8	124.7	50.5	54	320	1	9	2	12
Bayfield	L Tahkodah	0.0	0.0	NA	0				0.0	0.0	1	1	0	11	19	0
Bayfield	Pigeon	0.0	0.0	NA	0				0.0	0.0	0	0	0	43	61	0
Bayfield	L Owen	5.7	2.2	NA	1	9.2	9.2	None	0.4	0.2	0	14	0	40	26	67
Bayfield	Basswood	0.0	0.0	NA	0				0.0	0.0	0	0	0	40	15	0
Bayfield	Moon	0.0	0.0	0	0				0.0	0.0	0	0	0	0	67	0
Burnett	Birch Island	0.0	0.0	NA	0				0.0	0.0	0	0	0	35	57	0
Burnett	Green	0.0	0.0	NA	0				0.0	0.0	0	0	0	2	55	0
Burnett	Mud Hen	0.0	0.0	NA	0				0.0	0.0	0	0	0	17	104	0
Burnett	Upper Clam	1.3	0.5	NA	0				0.0	0.0	3	5	0	146	69	1
Burnett	Viola	0.0	0.0	0								0				
Burnett	Lipsett	0.0	0.0	0	3	10.6	11.5	None	2.5	0.9	0	3				
Burnett	Round	11.5	4.7	1	0				0.0	0.0	5	20	0	35	199	0
Burnett	Bashaw	0.0	0.0	NA	0				0.0	0.0	0	0	0	16	42	0
Chippewa	Long	63.2	39.5	NA	-->						452	610	14	12	31	49
Chippewa	Old Abe	80.0	48.0	NA	-->						400	784	30	85	35	117
Chippewa	Marsh-Miller	0.0	0.0	NA	0				0.0	0.0	0	0	0	31	237	0
Chippewa	Axhandle	0.0	0.0	NA	-->						2	2	0	1	43	0
Chippewa	Popple	0.0	0.0	NA	0				0.0	0.0	5	5	0	2	258	0
Clark	Mead	103.8	96.0	NA	0				0.0	0.0	6	390	30	0	178	3
Douglas	St Croix Flowage	0.0	0.0	NA	0				0.0	0.0	0	0	0	55	84	1
Douglas	Loon	0.0	0.0	NA	0				0.0	0.0	0	0	0	37	5	0
Douglas	Sauntry's Pocket	0.0	0.0	0	0				0.0	0.0	0	0	0	11	29	0
Florence	Long	0.0	0.0	NA	0				0.0	0.0	0	0	31		8	
Forest	Roberts	4.6	1.8	0	2	8.4	10.2		1.1	0.4	5	15	14	0	7	4
Forest	Otter	0.0	0.0	NA	0				0.0	0.0	0	0	1		28	
Forest	Scattered Rice	0.0	0.0	NA	0				0.0	0.0	0	0	40		34	
Forest	Wolf	0.0	0.0	0	0				0.0	0.0	0	0			13	
Forest	Pine	0.0	0.0	0	0				0.0	0.0	14	14	21		13	0
Forest	Range Line	6.3	4.2	1	24	9.8	11.0	10.5	30.0	20.0	35	64	6		25	
Iron	Gile Flowage	40.2	16.1	NA	-->						677	1115	8	46	0	170
Iron	Lake Of The Falls	0.0	0.0	NA	14	7.7	9.5	9	10.0	3.5	17	31	2	5	6	4

APPENDIX E

E. Summary of young-of-the-year walleye surveys conducted by WDNR in fall 2003.

County	Lake	Clarity	Adverse Conditions	Reliability	Comments	No. Stocked	Size	Survival
Ashland	Bear	NA	Y	L	N	0		
Ashland	Spillerberg	2-3	Y	M	N	0		
Ashland	Potter	3.0	Y	M	N	0		
Ashland	Mineral	NA	N	M	N	9383	SMALL FINGERLING	
Barron	Horseshoe	NA	Y	M	N	0		
Barron	Big Moon	NA	Y	M	Y	9537	SMALL FINGERLING	
Barron	L Chetek	NA	Y	M	N	26945	SMALL FINGERLING	
Barron	Prairie	NA	Y	M	Y	40263	SMALL FINGERLING	
Bayfield	Crystal	NA	Y	M	Y	5550	SMALL FINGERLING	0.04
Bayfield	Diamond	NA	Y	M	Y	0		
Bayfield	Middle Eau Claire	4.0	Y	L	Y	0		
Bayfield	Middle Eau Claire	NA	Y	M	N	0		
Bayfield	L Tahkodah	NA	Y	M	Y	0		
Bayfield	Pigeon	NA	Y	H	N	0		
Bayfield	L Owen	NA	N	M	N	0		
Bayfield	Basswood	NA	Y	M	N	0		
Bayfield	Moon	NA	N	H	N	0		
Burnett	Birch Island	NA	Y	M	N	0		
Burnett	Green	NA	Y	L	N	0		
Burnett	Mud Hen	NA	Y	M	N	0		
Burnett	Upper Clam	NA	Y	M	N	0		
Burnett	Viola	NA	N	H	Y	14269	SMALL FINGERLING	0.00
Burnett	Lipsett	NA	N	H	Y	0		
Burnett	Round	NA	Y	M	N	10194	SMALL FINGERLING	0.02
Burnett	Bashaw	2.0	Y	L	N	0		
Chippewa	Long	NA	NA	M	Y	0		
Chippewa	Old Abe	NA	NA	M	Y	0		
Chippewa	Marsh-Miller	NA	NA	M	N	0		
Chippewa	Axhandle	NA	NA	M	Y	0		
Chippewa	Popple	NA	NA	M	N	3056	SMALL FINGERLING	
Clark	Mead	NA	Y	M	N	31965	SMALL FINGERLING	
Douglas	St Croix Flowage	NA	Y	M	N	0		
Douglas	Loon	NA	Y	M	N	0		
Douglas	Sauntry's Pocket	NA	Y	M	N	0		
Florence	Long	3 feet	None	High	Baseline Monitoring / No	0		
Forest	Roberts	4 feet	None	High	Juv. Walleye & Baseline / Yes	0		
Forest	Otter	N/A	2-3" of rain previous weekend	High	Gamefish & Panfish / No	0		
Forest	Scattered Rice	3 feet	None	High	Baseline Monitoring / No	0		
Forest	Wolf	N/A	Windy, low conductivity, deep bog edges	High	Gamefish & Panfish / Yes	0		
Forest	Pine	3 feet	None	High	Juv. Walleye & Baseline / Yes	0		
Forest	Range Line	N/A	Problem with shocker lights, algae bloom	High	Gamefish & Panfish / ?	0		
Iron	Gile Flowage	2.0	Y	L	Y	0		
Iron	Lake Of The Falls	NA	Y	L	N	0		

APPENDIX E

E. Summary of young-of-the-year walleye surveys conducted by WDNR in fall 2003.

County	Lake	WBIC	Acres	WRC	Model	Date	Temp	Total Shoreline	Miles Shocked	Percent Shocked	Hours Shocked	Age0 Caught	Age0 MinL	Age0 MaxL	Age0 Mod
Iron	Pine	2949200	312	NR	natural	09/25/2003	57-60	6.0	6.0	100.0	2.6	56	4.4	6.0	5.5
Iron	Sandy Beach	2316100	111	C-	natural	09/29/2003	47	2.1	2.1	100.0	0.7	22	3.7	7.2	5.7
Iron	Trude	2295200	792	NR	natural	09/16/2003	65-67	15.1	4.2	27.8	1.6	437	3.6	7.0	5.7
Iron	Turtle Flambeau Flowage	2294900	13122	C-NR	natural	)9/15-17/200	63-64	206.3	8.4	4.1	3.4	650	3.4	7.5	5.2
Iron	Wilson	2297000	162	REM	remnant	10/28/2003	43	2.9	2.9	100.0	1.2	0			
Iron	Owl	2307600	129	ST	stocked	09/22/2003	59	4.2	3.5	83.3	1.3	40	5.1	6.5	5.5
Iron	Deertail	1844300	10			10/07/2003	50	0.6	0.6	100.0	0.2	0			
Langlade	Lower Post	397100	377	REM	remnant	10/01/2003	48	8.4	6.8	80.4	3.1	0			
Langlade	Moccasin	1005600	110	C-ST	stocked	10/09/2003	57	3.0	3.0	100.0	1.4	0			
Langlade	Rolling Stone	389300	672	ST	stocked	10/08/2003	56	4.8	4.8	100.0	1.8	0			
Langlade	Upper Post	399200	757	C-ST	stocked	10/07/2003	49	7.6	7.3	96.1	2.7	0			
Lincoln	Alice	1555900	1369	C-NR	natural	10/06/2003	52	23.2	19.9	85.8	8.3	652	5.2	8.0	6.7
Lincoln	Jersey City Flowage	1516000	433	NR	natural	09/30/2003	48	17.2	6.0	34.9	3.0	53	4.0	6.3	4.6
Lincoln	Spirit River Reservoir	1506800	1663	C-NR	natural	10/02/2003	48	50.3	2.2	4.4	1.0	86	3.9	6.2	5.2
Lincoln	Tug	1482400	151	C-	natural	10/14/2003	54	2.3	2.3	100.0	1.5	12	5.0	7.2	6.3
Lincoln	Grandfather Flowage	1502400	223	NR-2	remnant	09/29/2003	52	5.5	4.0	72.7	2.3	63	4.9	6.8	5.8
Lincoln	Grandmother Flowage	1503000	119	NR-2	remnant	09/23/2003	62	6.4	6.4	100.0	2.8	68	4.6	7.5	6.0
Lincoln	Pesabic	1481600	146	ST	stocked	09/22/2003	61	2.3	2.3	100.0	1.2	0			
Lincoln	Seven Island	1490300	132	C-ST	stocked	10/15/2003	53	4.0	4.0	100.0	2.0	0			
Lincoln	Somo	1547700	472	C-ST	stocked	10/13/2003	54	11.9	5.0	42.0	2.2	0			
Lincoln	Squaw	1564400	82	ST	stocked	09/24/2003	60	2.3	2.3	100.0	1.3	0			
Marathon	Big Eau Pleine	1427400	6830	NR	natural	09/25/2003	55 - 59	66.3	23.5	35.4	10.5	558	4.7	8.2	6.2
Oneida	Bearskin	1523600	400	NR	natural	10/15/2003	53	5.6	5.6	100.0	2.1	63	4.6	7.5	6.2
Oneida	Big Carr	971600	213	C-NR	natural	09/29/2003	55	3.9	3.9	100.0	2.0	0			
Oneida	Bolger	973000	119	C-NR	natural	09/16/2003	69	3.1	3.1	100.0	1.3	0			
Oneida	Diamond	1537100	124	C-NR	natural	10/09/2003	56	2.3	2.3	100.0	1.0	4	6.0	7.8	
Oneida	Kawaguesaga	1542300	670	NR	natural	)9/24-25/200	60	11.1	11.1	100.0	5.5	48	4.6	6.8	5.7
Oneida	Minocqua	1542400	1360	C-NR	natural	)9/22-23/200	60	19.1	6.0	31.4	3.7	25	5.5	6.6	5.7
Oneida	Muskellunge	1595600	288	NR	natural	10/08/2003	53	4.1	4.1	100.0	2.2	14	5.5	7.0	
Oneida	Oneida	1518200	255	NR	natural	10/15/2003	52	4.2	4.2	100.0	2.6	107	5.4	7.6	6.5
Oneida	Pelican	1579900	3585	C-NR	natural	09/30/2003	49	13.0	7.5	57.7	3.5	133	3.6	6.9	5.5
Oneida	Two Sisters	1588200	719	C-NR	natural	09/17/2003	65	9.3	9.3	100.0	3.2	0			
Oneida	Hancock	1517900	259	NR-2	remnant	10/14/2003	48	5.7	4.0	70.2	2.6	0			
Oneida	Killarney	1520900	421	0-ST	remnant	09/18/2003	64	9.4	9.4	100.0	4.9	0			
Oneida	Lone Stone	1605600	172	0-ST	remnant	10/13/2003	55	2.2	2.2	100.0	1.1	6	6.5	7.5	6.5
Oneida	Mid	1542600	215	NR-2	remnant	09/23/2003	60	3.1	3.1	100.0	1.8	0			
Oneida	Stella	1575700	405	0-ST	remnant	09/15/2003	69	4.4	4.4	100.0	1.8	0			
Oneida	Bear	1527800	312	ST	stocked	09/09/2003	74	4.3	4.3	100.0	1.8	0			
Oneida	Gilmore	1589300	301	ST	stocked	)9/08-09/200	70	4.4	4.4	100.0	1.8	2	6.7	6.7	
Oneida	Hodstradt	990700	126	ST	stocked	09/08/2003	72	2.6	2.6	100.0	1.2	5	4.8	5.4	
Oneida	Long	1001300	113	ST	stocked	10/13/2003	55	2.9	2.8	96.6	1.6	22	6.2	7.4	6.8
Oneida	Swamp	1522400	296	ST	stocked	09/16/2003	67	3.5	3.5	100.0	1.9	0			
Oneida	Thunder	1618100	1768	C-ST	stocked	10/01/2003	42	10.6	10.6	100.0	4.6	0			

APPENDIX E

E. Summary of young-of-the-year walleye surveys conducted by WDNR in fall 2003.

County	Lake	Age0Hr	Age0Mi	Serns	Age1	Age1 MinL	Age1 MaxL	Age1 Mod	Age1Hr	Age1Mi	OtherWE	TotalWE	MUE	NP	LMB	SMB
Iron	Pine	21.5	9.3	2	-->						545	601				
Iron	Sandy Beach	31.4	10.5	NA	0				0.0	0.0	12	34	0	15	5	0
Iron	Trude	273.1	104.0	NA	107	7.2	9.7	8.7	66.9	25.5	88	632	7	43	15	15
Iron	Turtle Flambeau Flowage	191.2	77.4	NA	118	7.7	9.8	8.7	34.7	14.0	79	847	6	55	0	8
Iron	Wilson	0.0	0.0	NA	0				0.0	0.0	0	0	1	26	14	3
Iron	Owl	30.8	11.4	NA	0				0.0	0.0	13	53	3	0	16	0
Iron	Deertail	0.0	0.0	NA	0				0.0	0.0	0	0	0	0	9	0
Langlade	Lower Post	0.0	0.0	0	0				0.0	0.0	1	1	33	0	20	
Langlade	Moccasin	0.0	0.0	0	0				0.0	0.0	5	5	10	4	20	
Langlade	Rolling Stone	0.0	0.0	0	0				0.0	0.0	1	1	45	0	60	
Langlade	Upper Post	0.0	0.0	0	2	9.2	9.4		0.7	0.3	44	46	23	1	44	14
Lincoln	Alice	78.2	32.8	8	188	8.2	10.6	9.2	22.5	9.4	235	1075	120	20	28	48
Lincoln	Jersey City Flowage	17.7	8.8	NA	23	7.2	10.5	7.7	7.7	3.8	61	137	79	0	13	10
Lincoln	Spirit River Reservoir	86.0	39.1	NA	2	6.8	10.1		2.0	0.9	0	88	28	0	12	0
Lincoln	Tug	8.0	5.2	1	11	9.9	10.6	10.4	7.3	4.8	56	79	52		22	
Lincoln	Grandfather Flowage	27.4	15.8	NA	32	7.8	9.6	9.4	13.9	8.0	50	145	38	0	1	33
Lincoln	Grandmother Flowage	24.3	10.6	2	21	7.7	9.5	9.3	7.5	3.3	69	158	67	3	4	25
Lincoln	Pesabic	0.0	0.0	0	0				0.0	0.0	3	3	9		46	
Lincoln	Seven Island	0.0	0.0	0	0				0.0	0.0	12	12	0	1	22	
Lincoln	Somo	0.0	0.0	NA	0				0.0	0.0	72	72	8	35	17	11
Lincoln	Squaw	0.0	0.0	0	1	9.0	9.4		0.8	0.4	23	24	5	2	8	
Marathon	Big Eau Pleine	53.2	23.7	6	327	8.5	11.3	9.7	31.2	13.9	59	944	2	1	72	67
Oneida	Bearskin	30.3	11.3	3	37	7.7	8.9	8.7	17.8	6.6	168	268	10	4	4	17
Oneida	Big Carr	0.0	0.0	0	0				0.0	0.0	0	0		0	9	90
Oneida	Bolger	0.0	0.0	NA	4	7.8	10.5		3.2	1.3	1	5	1	0	1	39
Oneida	Diamond	4.0	1.7	0	4	8.5	9.8		4.0	1.7	7	15	9	9	5	0
Oneida	Kawaguesaga	8.7	4.3	1	71	6.9	9.3	8.3	12.9	6.4	87	206	4	1	24	5
Oneida	Minocqua	6.7	4.2	NA	12	7.5	9.5	8.8	3.2	2.0	33	70	18	1	35	2
Oneida	Muskellunge	6.5	3.4	1	126	7.2	9.3	8.2	58.1	30.7	83	223	47	5	15	8
Oneida	Oneida	40.7	25.5	6	65	7.9	10.1	9.2	24.7	15.5	176	348	8	20	9	53
Oneida	Pelican	38.6	17.7	NA	71	7.3	10.3	9.6	20.6	9.5	57	261				
Oneida	Two Sisters	0.0	0.0	0	6	9.2	10.0	9.3	1.9	0.6	0	6				
Oneida	Hancock	0.0	0.0	NA	0				0.0	0.0	2	2	18	3	40	
Oneida	Killarney	0.0	0.0	0	2	9.7	9.7		0.4	0.2	33	35	0		41	
Oneida	Lone Stone	5.5	2.7	1	0				0.0	0.0	3	9	6	0	4	3
Oneida	Mid	0.0	0.0	0	0				0.0	0.0	3	3	11	0	13	
Oneida	Stella	0.0	0.0	NA	0				0.0	0.0	0	0				
Oneida	Bear	0.0	0.0	NA	2	8.6	9.0		1.1	0.5	3	5	6		32	1
Oneida	Gilmore	1.1	0.5	NA	1	8.8	8.8		0.5	0.2	10	13	2	1	27	
Oneida	Hodstradt	4.2	1.9	NA	0				0.0	0.0	1	6			0	41
Oneida	Long	14.2	7.9	2	0				0.0	0.0	39	61	0	0	13	
Oneida	Swamp	0.0	0.0	NA	0				0.0	0.0	0	0	16		13	
Oneida	Thunder	0.0	0.0	NA	3	8.7	9.7		0.7	0.3	31	34			16	

APPENDIX E

E. Summary of young-of-the-year walleye surveys conducted by WDNR in fall 2003.

County	Lake	Clarity	Adverse Conditions	Reliability	Comments	No. Stocked	Size	Survival
Iron	Pine	NA	Y	M	Y	0		
Iron	Sandy Beach	NA	Y	M	N	5610	SMALL FINGERLING	
Iron	Trude	NA	Y	M	N	0		
Iron	Turtle Flambeau Flowage	NA	Y	M	N	0		
Iron	Wilson	NA	Y	M	N	0		
Iron	Owl	NA	Y	M	N	6433	SMALL FINGERLING	
Iron	Deertail	NA	Y	M	N	0		
Langlade	Lower Post	10 feet	Dense aquatic vegetation, numerous piers	High	Baseline Monitoring / Yes	0		
Langlade	Moccasin	6 feet	Dense aquatic vegetation, floating bog	High	Gamefish Survey/Yes	0		
Langlade	Rolling Stone	8 feet	Dense aquatic macrophytes	High	Juv. Walleye & Gamefish / Yes	67200	SMALL FINGERLING	0.00
Langlade	Upper Post	4 feet	Numerous piers, Algae bloom	High	Baseline Monitoring / Yes	1570	LARGE FINGERLING	0.00
Lincoln	Alice	6 feet	Numerous piers, overhanging trees	High	Juv. Walleye & Baseline / Yes	0		
Lincoln	Jersey City Flowage	3 feet	Dense aquatic vegetation	High	Baseline Monitoring / No	0		
Lincoln	Spirit River Reservoir	4 feet	Low water level	High	Walleye Recruitment / No	0		
Lincoln	Tug	3.5 feet	Darkly stained water	High	Walleye Recruitment / Yes	0		
Lincoln	Grandfather Flowage	4 feet	None	High	Baseline Monitoring / No	0		
Lincoln	Grandmother Flowage	4 feet	Darkly stained water, overhanging branches, stumps	High	Baseline Monitoring / Yes	0		
Lincoln	Pesabic	N/A	Numerous piers	High	Comp Survey / Yes	0		
Lincoln	Seven Island	10 feet	Low air temperature	High	Walleye Recruitment / Yes	0		
Lincoln	Somo	3 feet	None	High	Walleye Recruitment / No	0		
Lincoln	Squaw	N/A	Numerous piers, mucky bays, floating vegetation	High	Comp Survey / Yes	1580	LARGE FINGERLING	0.00
Marathon	Big Eau Pleine	< 1 foot	Low water level	Medium	Walleye Recruitment / Yes	0		
Oneida	Bearskin	6 feet	None	High	Juv. Walleye & Baseline / Yes	0		
Oneida	Big Carr	8 feet	None	High	Baseline Monitoring / Yes	0		
Oneida	Bolger	6 feet	None	High	Juv. Walleye & Baseline / No	0		
Oneida	Diamond	4 feet	Moderate algae bloom	High	Juv. Walleye & Gamefish / Yes	0		
Oneida	Kawaguesaga	3 feet	Wind, piers	High	Baseline Monitoring / Yes	0		
Oneida	Minocqua	7 Feet	Piers	High	Baseline Monitoring / No	0		
Oneida	Muskellunge	4 feet	None	High	Baseline Monitoring / Yes	0		
Oneida	Oneida	4 feet	None	High	Baseline Monitoring / Yes	0		
Oneida	Pelican	4 feet	Cold	High	Walleye Recruitment / No	0		
Oneida	Two Sisters	10 feet	Wind	High	Walleye Recruitment / Yes	55350	SMALL FINGERLING	0.00
Oneida	Hancock	4 feet	Dense vegetation	High	Baseline Monitoring / No	0		
Oneida	Killarney	1.5 feet	Dense vegetation	High	Baseline Monitoring / Yes	0		
Oneida	Lone Stone	8 feet	None	High	Walleye Stocking Eval. / Yes	17200	SMALL FINGERLING	0.01
Oneida	Mid	6 feet	Dense vegetation, Piers	High	Baseline Monitoring / Yes	0		
Oneida	Stella	4 feet	Dense Vegetation	High	Walleye Stocking Eval. / No	40500	SMALL FINGERLING	
Oneida	Bear	6 feet	Dense vegetation, Piers	High	Walleye Stocking Eval. / No	31200	SMALL FINGERLING	
Oneida	Gilmore	2 feet	None	High	Walleye Stocking Eval. / No	30100	SMALL FINGERLING	
Oneida	Hodstradt	10 feet	Piers	High	Walleye Stocking Eval. / No	12716	SMALL FINGERLING	
Oneida	Long	8 feet	Low conductivity, Dense vegetation	High	Walleye Stocking Eval. / Yes	11295	SMALL FINGERLING	0.02
Oneida	Swamp	5 feet	Dense Vegetation	High	Baseline Monitoring / ?	0		
Oneida	Thunder	1 foot	Cold, Dense vegetation	High	Walleye Stocking Eval. / ?	183500	SMALL FINGERLING	

APPENDIX E

E. Summary of young-of-the-year walleye surveys conducted by WDNR in fall 2003.

County	Lake	WBIC	Acres	WRC	Model	Date	Temp	Total Shoreline	Miles Shocked	Percent Shocked	Hours Shocked	Age0 Caught	Age0 MinL	Age0 MaxL	Age0 Mod
Oneida	Tomahawk	1542700	3392	C-ST	stocked	)9/10-11/200	70	30.2	4.0	13.2	3.0	10	5.6	7.3	
Oneida	Tomahawk	1542700	3392	C-ST	stocked	)9/11-12/200	70	30.2	4.0	13.2	2.4	3	6.4	6.8	
Polk	Ward	2599400	91	NR	natural	10/15/2003	61	2.3	2.3	100.0	1.2	0			
Polk	Apple River Flowage	2624200	639	NONE	none	10/16/2003	52	19.8	6.0	30.3	2.1	0			
Polk	Long Trade	2640500	153	NONE	none	10/06/2003	50	4.0	3.1	77.5	1.0	0			
Polk	Antler	2449400	101	0-ST	remnant	10/08/2003	58	3.0	3.0	100.0	0.8	0			
Polk	Poplar	2491000	125	0-ST	remnant	10/09/2003	62	2.1	2.1	100.0	0.8	0			
Polk	Balsam	2620600	2054	C-ST	stocked	10/02/2003	51-56	22.7	22.7	100.0	8.0	1	8.1	8.1	None
Polk	Big Butternut	2641000	378	ST	stocked	10/01/2003	53-54	3.4	3.4	100.0	1.3	1	7.4	7.4	None
Polk	Little Butternut	2640700	189	C-ST	stocked	09/24/2003	58	2.4	2.4	100.0	0.8	0			
Polk	Long	2478200	272			10/07/2003	54	4.4	4.0	90.9	1.3	0			
Polk	Swede	2500500	68			09/22/2003	63	1.7	1.4	82.4	0.6	0			
Price	Big Dardis	2244200	144	C-NR	natural	10/07/2003	59	2.8	2.8	100.0	1.2	0			
Price	Butternut	2283300	1006	C-NR	natural	09/23/2003	61-63	11.2	11.2	100.0	5.2	153	3.6	7.0	6.8
Price	Solberg	2242500	859	NR	natural	09/24/2003	58-59	12.4	10.6	85.5	4.1	167	4.8	6.9	5.6
Price	Turner	2268500	149	C-	natural	09/30/2003	46	2.6	2.6	100.0	1.2	20	5.0	6.8	None
Price	Sailor	2254800	170	NONE	none	09/25/2003	55	2.9	2.9	100.0	1.1	0			
Price	North Spirit	1515200	213	0-ST	remnant	09/30/2003	55	5.5	5.4	98.2	2.1	0			
Price	Thompson	2265900	111	NR-2	remnant	10/01/2003	48	1.9	1.9	100.0	0.8	0			
Price	Twin	2264200	19			10/25/2003	58	0.4	0.4	100.0	0.4	0			
Rusk	Big Falls Flowage	2230100	369	NR	natural	09/15/2003	67	10.4	4.6	44.2	NA	17	4.0	6.4	5.0-5.4
Rusk	Amacoy	2359700	278	ST	stocked	10/09/2003	57	3.7	3.7	100.0	1.1	1	8.1	8.1	None
Rusk	Potato	2355300	534	ST	stocked	10/21/2003	52	9.2	4.0	43.5	1.8	0			
Sawyer	Barker	2400000	238	NR	natural	09/25/2003	57	6.3	3.8	60.3	1.4	3	5.0	5.9	None
Sawyer	Blaisdell	2402200	356	NR	natural	09/09/2003	70	7.6	4.6	60.5	NA	2	6.5	6.9	None
Sawyer	Durphee	2396800	193	C-NR	natural	09/08/2003	74	2.7	2.7	100.0	1.8	79	4.0	7.4	5.5-5.9
Sawyer	Grindstone	2391200	3111	C-NR	natural	09/30/2003	49-56	10.5	10.5	100.0	4.0	570	4.0	7.7	5.0,6.5
Sawyer	Hayward	2725500	247	C-NR	natural	10/01/2003	50	8.6	4.4	51.2	1.9	29	6.0	9.4	7.0-7.4
Sawyer	L Chetac	2113300	1920	C-NR	natural	10/02/2003	53	17.5	4.7	26.9	2.3	26	5.5	6.9	6.0-6.9
Sawyer	L Chippewa	2399700	15300	C-NR	natural	09/22-23/03	60	232.9	7.5	3.2	NA	300	3.5	6.9	5.5-5.9
Sawyer	Lost Land	2418600	1304	C-NR	natural	10/08/2003	51-60	11.3	11.3	100.0	3.4	51	6.0	9.9	8.7
Sawyer	Radisson Flowage	2397400	255	NR	natural	09/11/2003	69	7.9	5.5	69.6	NA	6	4.0	5.9	None
Sawyer	Windfall	2046500	102	NR	natural	09/15/2003	68	1.6	3.2	200.0	1.1	66	4.5	6.9	5.0-5.4
Sawyer	Black Dan	2381900	128	0-ST	remnant	09/29/2003	58	3.0	3.0	100.0	1.3	40	6.0	8.9	None
Sawyer	Fishtrap	2401100	216	REM	remnant	09/29/2003	48	6.8	4.3	63.2	1.8	0			
Sawyer	Island	2381800	67	0-ST	remnant	09/29/2003	57	1.5	1.5	100.0	NA	17	5.0	8.9	6.5-6.9
Sawyer	Ghost	2423000	372	C-ST	stocked	10/06/2003	51	7.3	2.6	35.6	1.5	37	4.5	7.0	5.9
Sawyer	Lower Clam	2429300	203	C-ST	stocked	10/08/2003	57	4.2	4.2	100.0	1.9	41	5.5	8.1	6.6
Sawyer	Sand	2393200	928	C-ST	stocked	09/10/2003	68-70	5.1	5.1	100.0	2.4	114	5.0	6.9	6.0-6.4
St. Croix	Cedar	2615100	1100	NR	natural	09/30/2003	56	6.3	4.0	63.5	2.9	533	4.0	8.4	6.0-6.4
Taylor	Diamond	1757200	49	NR	natural	09/25/2003	58	1.3	1.3	100.0	0.4	0			
Taylor	Rib	1469100	320	C-NR	natural	09/22/2003	60	3.3	3.3	100.0	1.3	60	5.0	7.5	6.4
Taylor	Sackett	1764500	63	ST	stocked	09/25/2003	57	1.9	1.9	100.0	0.8	2	6.2	6.6	None

APPENDIX E

E. Summary of young-of-the-year walleye surveys conducted by WDNR in fall 2003.

County	Lake	Age0Hr	Age0Mi	Serns	Age1	Age1 MinL	Age1 MaxL	Age1 Mod	Age1Hr	Age1Mi	OtherWE	TotalWE	MUE	NP	LMB	SMB
Oneida	Tomahawk	3.4	2.5	NA	0				0.0	0.0	14	24	2	1	17	55
Oneida	Tomahawk	1.3	0.8	NA	0				0.0	0.0	10	13	0	0	36	35
Polk	Ward	0.0	0.0	NA	0				0.0	0.0	1	1	0	25	58	0
Polk	Apple River Flowage	0.0	0.0	NA	0				0.0	0.0	0	0	4	14	107	0
Polk	Long Trade	0.0	0.0	0	0				0.0	0.0	0	0	0	12	107	0
Polk	Antler	0.0	0.0	0								0				
Polk	Poplar	0.0	0.0	0								0				
Polk	Balsam	0.1	0.0	NA	14	7.5	11.4	10.8	1.8	0.6	8	23				
Polk	Big Butternut	0.8	0.3	0	0				0.0	0.0	0	1	0	60	203	0
Polk	Little Butternut	0.0	0.0	NA	1	10.0	10.4	None	1.3	0.4	2	3	0	20	33	0
Polk	Long	0.0	0.0	NA	0				0.0	0.0	0	0	0	14	348	0
Polk	Swede	0.0	0.0	NA	0				0.0	0.0	0	0	0	10	53	0
Price	Big Dardis	0.0	0.0	0	0				0.0	0.0	2	2	7	6	37	1
Price	Butternut	29.4	13.7	3	-->						1333	1486	48	23	4	7
Price	Solberg	40.7	15.8	NA	146	7.0	10.2	7.9	35.6	13.8	123	436	5	24	27	1
Price	Turner	16.7	7.7	2	16	8.0	9.4	None	13.3	6.2	63	99	8	25	71	1
Price	Sailor	0.0	0.0	NA	0				0.0	0.0	0	0	0	35	32	0
Price	North Spirit	0.0	0.0	NA	14	10.2	11.9	11	6.7	2.6	20	34	8	2	69	0
Price	Thompson	0.0	0.0	NA	0				0.0	0.0	0	0	4	17	0	0
Price	Twin	0.0	0.0	0	0				0.0	0.0	0	0	0	0	93	0
Rusk	Big Falls Flowage	NA	3.7	NA	-->						50	67	4	11	7	52
Rusk	Amacoy	0.9	0.3	NA	0				0.0	0.0	6	7	4	5	97	0
Rusk	Potato	0.0	0.0	NA	9	10.0	11.9	None	5.0	2.3	20	29	13	2	54	0
Sawyer	Barker	2.1	0.8	NA	-->						31	34	7	21	10	14
Sawyer	Blaisdell	NA	0.4	NA	-->						27	29	5	1	1	14
Sawyer	Durphee	43.9	29.3	NA	73	8.5	11.9	9.5-9.9	40.6	27.0	15	167	0	1	9	43
Sawyer	Grindstone	142.5	54.3	13	69	8.0	11.0	9.1-9.2	17.3	6.6	35	674	5	0	3	51
Sawyer	Hayward	15.3	6.6	NA	1	10.5	10.9	None	0.5	0.2	6	36	7	20	7	0
Sawyer	L Chetac	11.3	5.5	NA	55	8.0	10.9	9.5-9.9	23.9	11.7	209	290	0	44	110	0
Sawyer	L Chippewa	NA	40.0	NA	-->						317	617	22	30	33	1
Sawyer	Lost Land	15.0	4.5	1	-->						16	67	5			
Sawyer	Radisson Flowage	NA	1.1	NA	-->						36	42	1	23	1	7
Sawyer	Windfall	60.0	20.6	NA	-->						113	179	0	3	18	0
Sawyer	Black Dan	30.8	13.3	3	-->						9	49	9	1	12	0
Sawyer	Fishtrap	0.0	0.0	NA	0				0.0	0.0	1	1	3	12	57	0
Sawyer	Island	NA	11.3	3	0				NA	0.0	0	17	3	0	3	0
Sawyer	Ghost	24.7	14.2	NA	28	9.3	11.9	None	18.7	10.8	8	73	12	0	15	0
Sawyer	Lower Clam	21.6	9.8	NA	-->						63	104	35	1	57	3
Sawyer	Sand	47.5	22.4	NA	92	7.5	9.4	8.5-8.9	38.3	18.0	144	350	2	3	3	2
St. Croix	Cedar	183.8	133.3	NA	-->						211	744	24	11	75	7
Taylor	Diamond	0.0	0.0	NA	0				0.0	0.0	2	2	0	1	48	0
Taylor	Rib	46.2	18.2	NA	5	10.8	11.8	None	3.8	1.5	21	86	1	2	13	0
Taylor	Sackett	2.5	1.1	0	0				0.0	0.0	2	4	0	0	80	0

APPENDIX E

E. Summary of young-of-the-year walleye surveys conducted by WDNR in fall 2003.

County	Lake	Clarity	Adverse Conditions	Reliability	Comments	No. Stocked	Size	Survival
Oneida	Tomahawk	10 feet	Wind	High	Baseline Monitoring / No	0		
Oneida	Tomahawk	10 feet	Windy	High	Baseline Monitoring / No	0		
Polk	Ward	NA	Y	M	N	0		
Polk	Apple River Flowage	NA	N	H	N	0		
Polk	Long Trade	NA	N	H	N	0		
Polk	Antler	NA	N	H	Y	2523	SMALL FINGERLING	0.00
Polk	Poplar	NA	Y	M	Y	3125	SMALL FINGERLING	0.00
Polk	Balsam	3-4	Y	M	Y	0		
Polk	Big Butternut	NA	N	M	N	18900	SMALL FINGERLING	0.00
Polk	Little Butternut	NA	Y	M	N	0		
Polk	Long	NA	Y	M	N	0		
Polk	Swede	NA	N	H	N	0		
Price	Big Dardis	2.0	N	H	N	0		
Price	Butternut	NA	N	H	Y	0		
Price	Solberg	NA	Y	L	Y	0		
Price	Turner	NA	Y	M	N	0		
Price	Sailor	NA	Y	M	N	0		
Price	North Spirit	NA	Y	M	N	0		
Price	Thompson	NA	Y	L	N	0		
Price	Twin	NA	Y	M	N	0		
Rusk	Big Falls Flowage	NA	Y	M	Y	0		
Rusk	Amacoy	NA	Y	M	N	13890	SMALL FINGERLING	
Rusk	Potato	NA	Y	M	N	0		
Sawyer	Barker	NA	NA	L	Y	0		
Sawyer	Blaisdell	NA	Y	M	Y	0		
Sawyer	Durphee	2.0	Y	L	N	0		
Sawyer	Grindstone	NA	Y	M	Y	0		
Sawyer	Hayward	NA	NA	M	N	2470	LARGE FINGERLING	
Sawyer	L Chetac	NA	NA	M	N	0		
Sawyer	L Chippewa	NA	Y	M	Y	0		
Sawyer	Lost Land	NA	N	H	Y	2600	LARGE FINGERLING	0.53
Sawyer	Radisson Flowage	NA	Y	M	Y	0		
Sawyer	Windfall	NA	Y	M	Y	0		
Sawyer	Black Dan	NA	NA	M	Y	1279	LARGE FINGERLING	0.31
Sawyer	Fishtrap	NA	Y	L	N	0		
Sawyer	Island	NA	Y	M	N	670	LARGE FINGERLING	0.27
Sawyer	Ghost	2.0	Y	M	N	18595	SMALL FINGERLING	
Sawyer	Lower Clam	2.0	Y	M	Y	11450	SMALL FINGERLING	
Sawyer	Sand	5.0	Y	L	Y	0		
St. Croix	Cedar	NA	Y	M	Y	0		
Taylor	Diamond	1.0	Y	M	N	0		
Taylor	Rib	<1	Y	M	N	1936	LARGE FINGERLING	
Taylor	Sackett	2.0	N	H	N	3150	SMALL FINGERLING	0.00

APPENDIX E

E. Summary of young-of-the-year walleye surveys conducted by WDNR in fall 2003.

County	Lake	WBIC	Acres	WRC	Model	Date	Temp	Total Shoreline	Miles Shocked	Percent Shocked	Hours Shocked	Age0 Caught	Age0 MinL	Age0 MaxL	Age0 Mod
Vilas	Big	2334700	835	NR	natural	10/13/2003	54	9.5	8.9	93.7	3.7	376	4.5	7.3	5.8
Vilas	Big Crooked	2338800	682	NR	natural	09/15/2003	67	5.0	5.0	100.0	2.1	216	4.4	7.8	6.8
Vilas	Birch	2311100	528	NR	natural	10/01/2003	52	6.3	6.3	100.0	2.8	139	4.2	6.2	5.4
Vilas	Boulder	2338300	524	NR	natural	10/07/2003	55	7.7	7.6	98.7	3.0	499	3.3	7.4	6.2
Vilas	Crab - Joint	2953500	949	NR	natural	09/30/2003	55	17.3	16.4	94.8	7.5	73	4.3	7.2	6.6
Vilas	Crab - Wdnr Only	2953500	949	NR	natural	09/30/2003	55	17.3	8.0	46.2	4.0	21	4.5	7.2	6.6
Vilas	Escanaba	2339900	293	NR	natural	09/16/2003	67	5.2	5.2	100.0	2.9	184	4.2	6.8	5.9
Vilas	Harris	2958500	507	NR	natural	09-24,25/03	59	6.0	5.2	86.7	2.6	39	5.2	6.8	5.8
Vilas	Lac Vieux Desert	1631900	4300	C-NR	natural	09/30/2003	44	16.5	7.0	42.4	2.9	72	5.2	7.5	6.0
Vilas	Little Crooked	2335500	153	C-NR	natural	09/10/2003	72	2.8	2.8	100.0	1.2	0			
Vilas	Long	1602300	862	C-NR	natural	10/08/2003	57	8.2	8.2	100.0	2.5	36	5.2	7.3	6.2
Vilas	Papoose	2328700	428	C-NR	natural	10/02,03/200	54	6.6	6.6	100.0	3.5	154	3.6	6.8	4.5
Vilas	Plum	1592400	1033	C-NR	natural	10/07/2003	55	14.5	4.0	27.6	2.1	108	3.9	6.8	4.7
Vilas	Snipe	1018500	239	NR	natural	09/23/2003	61	3.5	3.5	100.0	1.8	35	4.2	6.7	5.2
Vilas	Squaw	2271600	785	NR	natural	09/18/2003	68	9.0	4.0	44.4	1.6	19	4.7	6.8	4.7
Vilas	Wolf	2336100	393	NR	natural	09/16/2003	68	4.4	4.4	100.0	1.4	67	5.6	7.0	7.0
Vilas	Robinson	591300	37	None	none	09/24/2003	58	1.1	1.1	100.0	0.7	0			
Vilas	Sugar Maple	1632200	137	NONE	none	09/16/2003	67	3.0	3.0	100.0	1.4	0			
Vilas	Round	2334900	116	NR-2	remnant	09/09/2003	73	2.1	2.1	100.0	1.0	7	5.3	8.0	
Vilas	Ballard	2340700	505	C-ST	stocked	10/15/2003	49	5.1	5.1	100.0	2.3	21	4.8	6.8	5.9
Vilas	Circle Lily	2326700	245	ST	stocked	09/08/2003	75	3.7	3.3	89.2	1.4	0			
Vilas	Dead Pike	2316600	297	ST	stocked	10/06/2003	52	3.8	3.1	81.6	1.3	0			
Vilas	Little St. Germain	1596300	980	ST	stocked	09/22/2003	62	14.7	3.0	20.4	1.5	0			
Vilas	Sparkling	1881900	154	ST	stocked	09/17/2003	65	2.3	2.3	100.0	0.9	1	7.0	7.4	
Vilas	Trout	2331600	3816	C-ST	stocked	10/02/2003	52	16.5	7.0	42.4	2.0	205	4.5	7.3	5.8
Washburn	Middle Mckenzie	2706500	530	C-NR	natural	09/29/2003	57-59	4.1	4.1	100.0	1.5	1	8.1	8.1	None
Washburn	Spooner	2685200	1092	NONE	none	09/23/2003	59	11.2	4.0	35.7	1.8	0			
Washburn	Bass	2451300	144	C-ST	stocked	10/02/2003	57	2.7	2.7	100.0	1.1	0			
Washburn	Cable	2456100	185	ST	stocked	09/30/2003	55	2.8	2.8	100.0	1.0	4	5.2	5.6	None
Washburn	Dunn	2709800	193	C-ST	stocked	09/23/2003	61	3.6	3.6	100.0	1.4	0			
Washburn	Horseshoe	2470000	194	ST	stocked	09/16/2003	68	3.8	3.8	100.0	1.8	3	5.3	6.1	None
Washburn	Island	2470600	276	ST	stocked	09/29/2003	55	3.6	3.6	100.0	1.5	0			
Washburn	Ripley	2492600	190	ST	stocked	10/01/2003	54	2.5	2.5	100.0	1.5	0			
Washburn	Silver	2496900	188	ST	stocked	10/07/2003	55	3.2	3.2	100.0	1.4	5	5.4	7.1	None
Washburn	Trego	2712000	451	C-ST	stocked	10/07/2003	53	16.9	4.0	23.7	1.9	7	5.6	7.6	None
Washburn	Potato	2714500	222			09/24/2003	59	2.7	2.5	92.6	1.0	0			
Washburn	Wolf	2046900	29			10/06/2003	59	2.0	1.9	95.0	0.9	0			

APPENDIX E

E. Summary of young-of-the-year walleye surveys conducted by WDNR in fall 2003.

County	Lake	Age0Hr	Age0Mi	Serns	Age1	Age1 MinL	Age1 MaxL	Age1 Mod	Age1Hr	Age1Mi	OtherWE	TotalWE	MUE	NP	LMB	SMB
Vilas	Big	101.9	42.2	10	125	7.5	10.0	8.8	33.9	14.0	67	568	2	3	7	6
Vilas	Big Crooked	102.9	43.2	10	8	10.9	12.4		3.8	1.6	0	224				
Vilas	Birch	50.2	22.1	5	141	6.4	9.0	8	50.9	22.4	97	377	11	15	3	13
Vilas	Boulder	165.2	65.7	15	96	7.9	10.4	8.8	31.8	12.6	47	642	6	9	0	15
Vilas	Crab - Joint	9.7	4.5	1	65	7.6	9.8	9	8.7	4.0	115	253	0	0	0	12
Vilas	Crab - Wdnr Only	5.3	2.6	NA	19	7.8	9.8	9.1	4.8	2.4	9	49	0	0	0	12
Vilas	Escanaba	63.4	35.4	8	215	7.8	9.4	8.3	74.1	41.3	0	399				
Vilas	Harris	15.0	7.5	2	22	8.2	9.7	8.8	8.5	4.2	121	182	4	2		31
Vilas	Lac Vieux Desert	25.3	10.3	NA	137	7.6	9.6	8.3	48.1	19.6	47	256	2	6	1	2
Vilas	Little Crooked	0.0	0.0	NA	0				0.0	0.0	3	3	0	1	16	
Vilas	Long	14.6	4.4	1	0				0.0	0.0	18	54				
Vilas	Papoose	44.5	23.3	5	32	7.1	9.3	8.4	9.2	4.8	64	250	8	11	0	32
Vilas	Plum	52.4	27.0	NA	29	7.1	8.4	7.7	14.1	7.3	55	192	7	1	0	8
Vilas	Snipe	19.7	10.0	2	12	8.4	9.8	8.7	6.7	3.4	56	103	0	6		58
Vilas	Squaw	11.8	4.8	NA	41	7.2	8.9	8.2	25.5	10.3	44	104	0	7	1	1
Vilas	Wolf	47.2	15.2	4	39	9.0	11.3	10.3	27.5	8.9	0	106				
Vilas	Robinson	0.0	0.0	0	0				0.0	0.0	0	0			33	
Vilas	Sugar Maple	0.0	0.0	0	0				0.0	0.0	0	0	17		23	57
Vilas	Round	7.1	3.3	1	7	8.3	9.8		7.1	3.3	7	21		1	5	1
Vilas	Ballard	9.3	4.1	1	4	9.7	10.0		1.8	0.8	31	56	0	0	2	1
Vilas	Circle Lily	0.0	0.0	NA	2	9.2	10.1		1.4	0.6	47	49	1	2	0	18
Vilas	Dead Pike	0.0	0.0	0	0				0.0	0.0	14	14	7	5	7	14
Vilas	Little St. Germain	0.0	0.0	NA	0				0.0	0.0	13	13	4	1	4	0
Vilas	Sparkling	1.1	0.4	0	8	8.5	9.7	9.2	8.6	3.5	8	17	0	0	0	11
Vilas	Trout	102.5	29.3	NA	3	8.7	9.1	9.1	1.5	0.4	18	226	0	0	0	1
Washburn	Middle Mckenzie	0.7	0.2	0	8	9.9	11.3	10.9	5.3	2.0	13	22	0	33	81	0
Washburn	Spooner	0.0	0.0	NA	0				0.0	0.0	0	0	0	66	88	0
Washburn	Bass	0.0	0.0	0								0				
Washburn	Cable	4.0	1.4	0	0				0.0	0.0	1	5	0	6	15	0
Washburn	Dunn	0.0	0.0	0	-->						8	8	0	32	22	1
Washburn	Horseshoe	1.7	0.8	NA								3				
Washburn	Island	0.0	0.0	0								0				
Washburn	Ripley	0.0	0.0	0								0				
Washburn	Silver	3.6	1.6	0								5				
Washburn	Trego	3.7	1.8	NA	7	9.2	10.9	None	3.7	1.8	19	33	1	33	9	38
Washburn	Potato	0.0	0.0	NA	0				0.0	0.0	0	0	0	14	48	0
Washburn	Wolf	0.0	0.0	NA	0				0.0	0.0	0	0	0	8	91	0

APPENDIX E

E. Summary of young-of-the-year walleye surveys conducted by WDNR in fall 2003.

County	Lake	Clarity	Adverse Conditions	Reliability	Comments	No. Stocked	Size	Survival
Vilas	Big	6 feet	None	High	Juv. Walleye & Baseline / Yes	0		
Vilas	Big Crooked	N/A	None	High	Walleye Recruitment / ?	0		
Vilas	Birch	4 feet	None	High	Juv. Walleye & Baseline / Yes	0		
Vilas	Boulder	2 feet	Algae Bloom	High	Juv. Walleye & Baseline / Yes	0		
Vilas	Crab - Joint	3 feet	Low water, Snow	High	Walleye Recruitment / Yes	0		
Vilas	Crab - Wdnr Only	3 feet	Low water, Snow	High	Walleye Recruitment / No	0		
Vilas	Escanaba	N/A	None	High	Walleye Recruitment / ?	0		
Vilas	Harris	5 feet	None	High	Baseline Monitoring / Yes	0		
Vilas	Lac Vieux Desert	3 feet	Cold, wind, snow	High	Walleye Recruitment / No	0		
Vilas	Little Crooked	6 feet	Wind, dense aquatic vegetation	High	Baseline Monitoring / No	0		
Vilas	Long	8 feet	None	High	Walleye Stocking Eval. / Yes	42636	SMALL FINGERLING	0.02
Vilas	Papoose	8 feet	None	High	Baseline Monitoring / Yes	21692	SMALL FINGERLING	0.11
Vilas	Plum	10 feet	None	High	Baseline Monitoring / No	0		
Vilas	Snipe	6 feet	None	High	Juv. Walleye & Baseline / Yes	0		
Vilas	Squaw	2 feet	Poor water clarity	High	Baseline Monitoring / No	0		
Vilas	Wolf	N/A	None	High	Walleye Recruitment / ?	0		
Vilas	Robinson	N/A	Wind, low conductivity	High	Gamefish & Panfish / Yes	0		
Vilas	Sugar Maple	N/A	None	High	Gamefish & Panfish / ?	0		
Vilas	Round	4 feet	None	High	Baseline Monitoring / No	0		
Vilas	Ballard	8 feet	None	High	Walleye Stocking Eval. / Yes	45628	SMALL FINGERLING	0.01
Vilas	Circle Lily	3 feet	None	High	Baseline Monitoring / No	0		
Vilas	Dead Pike	4 feet	None	High	Baseline Monitoring / Yes	0		
Vilas	Little St. Germain	3 feet	None	High	Walleye Recruitment / No	2500	LARGE FINGERLING	
Vilas	Sparkling	8 feet	Wind	High	Walleye Recruitment / Yes	2000	LARGE FINGERLING	0.01
Vilas	Trout	10 feet	Wind	High	Walleye Recruitment / No	130000	SMALL FINGERLING	
Washburn	Middle Mckenzie	NA	N	H	N	0		
Washburn	Spooner	NA	Y	M	N	0		
Washburn	Bass	NA	N	H	Y	7187	SMALL FINGERLING	0.00
Washburn	Cable	NA	N	H	N	3315	SMALL FINGERLING	0.02
Washburn	Dunn	NA	N	H	Y	0		
Washburn	Horseshoe	NA	Y	M	Y	9836	SMALL FINGERLING	
Washburn	Island	NA	Y	H	Y	13760	SMALL FINGERLING	0.00
Washburn	Ripley	NA	N	H	Y	9485	SMALL FINGERLING	0.00
Washburn	Silver	NA	N	H	Y	9393	SMALL FINGERLING	0.01
Washburn	Trego	NA	N	M	N	22548	SMALL FINGERLING	
Washburn	Potato	NA	N	H	N	0		
Washburn	Wolf	NA	Y	M	N	0		

2003 WDNR Annual Creel Survey Summary Table - Walleye
Catch and effort rates are per hour of angling

County	Lake Name	MWBC	Acres	2003 WAE Recruit Code	Bag Limit	Size Limit	Adult PE	Adult PE per Acre	Angler Catch	Angler Catch per Acre	Angler Harvest	Angler Harvest per Acre	Specific Catch Rate	Specific Harvest Rate	No. of Fish Measured	Mean Length	General Catch Rate	Gener Harvest I
Bayfield	Diamond	2897100	341	C-NR	2	15, 20-28 slot	595	1.74	28	0.08	0	0.00	0.0497	0.0000			0.0177	0.000
Iron	Gile	2942300	3,384	NR	3	1>14	8,787	2.60	4,157	1.23	2,253	0.67	0.2283	0.1257	274	14.0	0.1165	0.063
Marathon	Big Eau Pleine[2]	1427400	6,830	NR	3	15	43,695	6.40	59,194	8.67	3,829	0.56	0.8584	0.0556	106	16.0	0.7804	0.050
Marathon	Big Eau Pleine[3]	1427400	6,830	NR	3	15	43,695	6.40	6,195	0.91	701	0.10	0.2172	0.0248	129	16.4	0.2050	0.023
Oneida	Bearskin	1523600	400	NR	3	1>14	2,658	6.65	5,281	13.20	1,535	3.84	0.4641	0.1370	266	12.4	0.2626	0.076
Oneida	Bolger	973000	119	C-NR	5	15	418	3.51	196	1.65	65	0.55	0.0682	0.0159	7	17.2	0.0469	0.015
Polk	Big Butternut	2641000	378	ST	3	15	388	1.03	128	0.34	10	0.03	0.0248	0.0041	2	19.4	0.0059	0.000
Price	Butternut	2283300	1,006	C-NR	3	none	4,075	4.05	6,804	6.76	2,125	2.11	0.3433	0.1118	353	12.0	0.1796	0.056
Price	Solberg	2242500	859	NR	2/3[1]	none	3,363	3.92	5,000	5.82	1,061	1.24	0.3071	0.0620	110	13.6	0.1834	0.038
Rusk	Amacoy	2359700	278	ST	5	15	413	1.49	57	0.21	16	0.06	0.0478	0.0184	5	20.8	0.0038	0.001
Sawyer	Grindstone	2391200	3,111	C-NR	2	14-18 slot	6,658	2.14	2,150	0.69	779	0.25	0.1586	0.0573	156	18.3	0.0752	0.027
Vilas	Plum	1592400	1,108	C-NR	3	14-18 slot	5,674	5.12	2,717	2.45	799	0.72	0.2295	0.0673	144	13.7	0.1113	0.032
Vilas	Snipe	1018500	239	NR	3	15	1,348	5.64	1,213	5.08	38	0.16	0.8397	0.0373	12	16.0	0.4250	0.013
Vilas	Squaw	2271600	785	NR	3	1>14	2,878	3.67	5,901	7.52	1,180	1.50	1.0299	0.2098	119	12.1	0.3820	0.076
Washburn	Middle McKenzie	2706500	530	C-NR	3	15	587	1.11	236	0.45	93	0.18	0.0623	0.0254	15	19.4	0.0195	0.007

[1]- Initial/Final
[2]- Summer bus route
[3]- Ice fishing only (standard)

2003 WDNR Annual Creel Survey Summary Table - Muskellunge
Catch and effort rates are per hour of angling

County	Lake Name	MWBC	Acres	2003 Musky Recruit Code	Size Limit	Population Estimate	Angler Catch	Angler Catch per Acre	Angler Harvest	Angler Harvest per Acre	Specific Catch Rate	Specific Harvest Rate	No. of Fish Measured	Mean Length	General Catch Rate	General Harvest Rate	Directed Angler Effort	Directed Effort per Acre	Total Angler Effort	Total Effort per Acre
Bayfield	Diamond	2897100	341	O	34														1,635	4.79
Iron	Gile	2942300	3,384	C-ST	40		81	0.02	0	0.00	0.0080	0.0000			0.0026	0.0000	3,915	1.16	35,670	10.54
Marathon	Big Eau Pleine[1]	1427400	6,830	ST	34		108	0.02	0	0.00	0.0408	0.0000			0.0025	0.0000	1,372	0.20	75,846	11.10
Marathon	Big Eau Pleine[2]	1427400	6,830	ST	34														30,278	4.43
Oneida	Bearskin	1523600	400	ST	34		189	0.47	0	0.00	0.0265	0.0000			0.0103	0.0000	5,783	14.46	20,156	50.39
Oneida	Bolger	973000	119	ST	34		25	0.21	0	0.00	0.0357	0.0000			0.0098	0.0000	705	5.92	4,454	37.43
Polk	Big Butternut	2641000	378	O	34														22,800	60.32
Price	Butternut	2283300	1,006	C-ST	34	1,596[3]	696	0.69	23	0.02	0.0359	0.0009	3	36.3	0.0207	0.0007	15,618	15.52	37,880	37.65
Price	Solberg	2242500	859	C-	34		487	0.57	46	0.05	0.0896	0.0091	1	36.0	0.0229	0.0022	5,021	5.85	27,516	32.03
Rusk	Amacoy	2359700	278	ST	34		77	0.28	6	0.02	0.0319	0.0026	2	39.2	0.0056	0.0004	2,221	7.99	19,166	68.94
Sawyer	Grindstone	2391200	3,111	ST	50		314	0.10	0	0.00	0.0371	0.0000			0.0139	0.0000	6,617	2.13	28,596	9.19
Vilas	Plum	1592400	1,108	C-	34		81	0.07	0	0.00	0.0113	0.0000			0.0038	0.0000	6,496	5.86	24,435	22.05
Vilas	Snipe	1018500	239	NR	34		35	0.15	0	0.00	0.0195	0.0000			0.0124	0.0000	1,642	6.87	3,003	12.56
Vilas	Squaw	2271600	785	C-	34		551	0.70	0	0.00	0.0682	0.0000			0.0364	0.0000	7,069	9.01	15,451	19.68
Washburn	Middle McKenzie	2706500	530	ST	34		0	0.00	0	0.00	0.0000	0.0000			0.0000	0.0000	418	0.79	12,222	23.06

[1]- Summer bus route
[2]- Ice fishing only (standard)
[3]- 2002-03 PE

APPENDIX F

2003 WDNR Annual Creel Survey Summary Table - Northern Pike
Catch and effort rates are per hour of angling

County	Lake Name	MWBC	Acres	Bag Limit	Size Limit	Angler Catch	Angler Catch per Acre	Angler Harvest	Angler Harvest per Acre	Specific Catch Rate	Specific Harvest Rate	No. Fish Measured	Mean Length	General Catch Rate	General Harvest Rate	Directed Angler Effort	Effort per Acre	Total Angler Effort	Total Effort per Acre
Bayfield	Diamond	2897100	341	1	32	232	0.68	2	0.01	0.4583	0.0045	1	34.7	0.1425	0.0009	342	1.00	1,635	4.79
Iron	Gile	2942300	3,384	5	none	2,101	0.62	542	0.16	0.1874	0.0910	87	18.6	0.0607	0.0156	5,404	1.60	35,670	10.54
Marathon	Big Eau Pleine[1]	1427400	6,830	1	32	1,627	0.24	39	0.01	0.0223	0.0000	1	35.2	0.0232	0.0006	12,506	1.83	75,846	11.10
Marathon	Big Eau Pleine[2]	1427400	6,830	1	32	1,086	0.16	12	0.00	0.1035	0.0008			0.0359	0.0004	5,043	0.74	30,278	4.43
Oneida	Bearskin	1523600	400	5	none	446	1.12	61	0.15	0.0893	0.0664	12	22.9	0.0253	0.0035	559	1.40	20,156	50.39
Oneida	Bolger	973000	119	5	none	51	0.43	32	0.27	0.1356	0.1356	8	21.8	0.0373	0.0232	53	0.45	4,454	37.43
Polk	Big Butternut	2641000	378	5	none	2,259	5.98	456	1.21	0.2589	0.0622	147	23.3	0.0991	0.0200	5,000	13.23	22,800	60.32
Price	Butternut	2283300	1,006	5	none	338	0.34	155	0.15	0.0286	0.0136	25	25.1	0.0099	0.0045	1,628	1.62	37,880	37.65
Price	Solberg	2242500	859	5	none	724	0.84	203	0.24	0.1039	0.0433	54	21.8	0.0328	0.0092	4,038	4.70	27,516	32.03
Rusk	Amacoy	2359700	278	5	none	139	0.50	23	0.08	0.0487	0.0071	9	26.0	0.0077	0.0013	1,448	5.21	19,166	68.94
Sawyer	Grindstone	2391200	3,111	5	none	283	0.09	71	0.02	0.0212	0.0025	16	28.4	0.0103	0.0026	1,470	0.47	28,596	9.19
Vilas	Plum	1592400	1,108	5	none	1,889	1.70	655	0.59	0.1712	0.0875			0.0774	0.0268	6,797	6.13	24,435	22.05
Vilas	Snipe	1018500	239	5	none													3,003	12.56
Vilas	Squaw	2271600	785	5	none	334	0.43	11	0.01	0.1175	0.0000			0.0101	0.0007	1,109	1.41	15,451	19.68
Washburn	Middle McKenzie	2706500	530	5	none	3,095	5.84	226	0.43	0.4674	0.0673	60	21.6	0.2557	0.0186	3,192	6.02	12,222	23.06

[1]- Summer bus route
[2]- Ice fishing only (standard)

APPENDIX F

2003 WDNR Annual Creel Survey Summary Table - Smallmouth Bass
Catch and effort rates are per hour of angling

County	Lake Name	MWBC	Acres	Bag Limit	Size Limit	2003 PE (>14)	Angler Catch	Angler Catch per Acre	Angler Harvest	Angler Harvest per Acre	Specific Catch Rate	Specific Harvest Rate	No. Fish Measured	Mean Length	General Catch Rate	General Harvest Rate	Directed Angler Effort	Directed Effort per Acre	Total Angler Effort	Total Effort per Acre
Bayfield	Diamond	2897100	341	5	14	44	182	0.53	0	0.00	0.4569	0.0000			0.1338	0.0000	293	0.86	1,635	4.79
Iron	Gile	2942300	3,384	2	15		22,643	6.69	173	0.05	1.1256	0.0091	15	15.5	0.6706	0.0051	17,548	5.19	35,670	10.54
Marathon	Big Eau Pleine[1]	1427400	6,830	5	14		3,494	0.51	267	0.04	0.2170	0.0291	4	15.7	0.0552	0.0042	9,191	1.35	75,846	11.10
Marathon	Big Eau Pleine[2]	1427400	6,830	5	14		34	0.00	0	0.00					0.0026	0.0000	0	0.00	30,278	4.43
Oneida	Bearskin	1523600	400	1	18	476	2,446	6.12	0	0.00	0.5989	0.0000			0.1799	0.0000	3,003	7.51	20,156	50.39
Oneida	Bolger	973000	119	5	14		1,416	11.90	13	0.11	0.7915	0.0116	7	15.1	0.3772	0.0036	1,162	9.76	4,454	37.43
Polk	Big Butternut	2641000	378	5	14														22,800	60.32
Price	Butternut	2283300	1,006	5	14		165	0.16	9	0.01	0.0605	0.0170	1	14.7	0.0065	0.0003	502	0.50	37,880	37.65
Price	Solberg	2242500	859	5	14														27,516	32.03
Rusk	Amacoy	2359700	278	5	14		124	0.45	0	0.00	0.5672	0.0000			0.0238	0.0000	44	0.16	19,166	68.94
Sawyer	Grindstone	2391200	3,111	5	14	116	4,804	1.54	305	0.10	0.5793	0.0388	44	15.5	0.1791	0.0114	7,133	2.29	28,596	9.19
Vilas	Plum	1592400	1,108	1	18	532	978	0.88	10	0.01	0.2285	0.0022	3	20.1	0.0455	0.0005	3,938	3.55	24,435	22.05
Vilas	Snipe	1018500	239	5	14	43	302	1.26	0	0.00	1.6142	0.0000			0.1173	0.0000	312	1.31	3,003	12.56
Vilas	Squaw	2271600	785	5	14	135	203	0.26	0	0.00	0.2778	0.0000			0.0159	0.0000	188	0.24	15,451	19.68
Washburn	Middle McKenzie	2706500	530	5	14		22	0.04	0	0.00	0.0000	0.0000			0.0073	0.0000	120	0.23	12,222	23.06

[1]- Summer bus route
[2]- Ice fishing only (standard)

APPENDIX F

2003 WDNR Annual Creel Survey Summary Table - Largemouth Bass
Catch and effort rates are per hour of angling

County	Lake Name	MWBC	Acres	Bag Limit	Size Limit	2003 PE (>14)	Angler Catch	Angler Catch per Acre	Angler Harvest	Angler Harvest per Acre	Specific Catch Rate	Specific Harvest Rate	No. Fish Measured	Mean Length	General Catch Rate	General Harvest Rate	Directed Angler Effort	Directed Effort per Acre	Total Angler Effort	Total Effort per Acre
Bayfield	Diamond	2897100	341	5	14	323	485	1.42	9	0.03	0.9168	0.0187	3	17.7	0.3563	0.0060	485	1.42	1,635	4.79
Iron	Gile	2942300	3,384	2	15		225	0.07	0	0.00	0.8209	0.0000			0.0108	0.0000	119	0.04	35,670	10.54
Marathon	Big Eau Pleine[1]	1427400	6,830	5	14		671	0.10	0	0.00	0.0440	0.0000			0.0097	0.0000	8,121	1.19	75,846	11.10
Marathon	Big Eau Pleine[2]	1427400	6,830	5	14		57	0.01	0	0.00	0.0000	0.0000			0.0032	0.0000	29	0.00	30,278	4.43
Oneida	Bearskin	1523600	400	1	18		229	0.57	0	0.00	0.0465	0.0000			0.0152	0.0000	885	2.21	20,156	50.39
Oneida	Bolger	973000	119	5	14		121	1.02	2	0.02	0.1048	0.0053	1	19.3	0.0472	0.0007	354	2.97	4,454	37.43
Polk	Big Butternut	2641000	378	5	14		4,806	12.71	181	0.48	1.0057	0.0460	51	15.3	0.2109	0.0079	3,084	8.16	22,800	60.32
Price	Butternut	2283300	1,006	5	14		0	0.00	0	0.00	0.0000	0.0000			0.0000	0.0000	541	0.54	37,880	37.65
Price	Solberg	2242500	859	5	14		190	0.22	0	0.00	0.0000	0.0000			0.0106	0.0000	801	0.93	27,516	32.03
Rusk	Amacoy	2359700	278	5	14	590	1,708	6.14	129	0.46	0.5197	0.0486	49	15.9	0.0915	0.0069	2,236	8.04	19,166	68.94
Sawyer	Grindstone	2391200	3,111	5	14	32	329	0.11	26	0.01	0.2936	0.0252			0.0162	0.0013	1,045	0.34	28,596	9.19
Vilas	Plum	1592400	1,108	1	18		221	0.20	7	0.01	0.0543	0.0031	1	19.2	0.0113	0.0004	2,384	2.15	24,435	22.05
Vilas	Snipe	1018500	239	5	14														3,003	12.56
Vilas	Squaw	2271600	785	5	14		81	0.10	9	0.01	0.0382	0.0000	1	16.6	0.0079	0.0009	200	0.25	15,451	19.68
Washburn	Middle McKenzie	2706500	530	5	14	447	11,409	21.53	543	1.02	1.4598	0.0748	118	14.8	0.9554	0.0455	5,367	10.13	12,222	23.06

[1]- Summer bus route
[2]- Ice fishing only (standard)

APPENDIX G

G. Walleye exploitation rates 2003-2004.

Year	WBIC	COUNTY	LAKE	ACRES	Size Limit	Clip Given	Total # Clips	# Clips >=14"	# Clips >=20"	# Clips Obs.	# Clips Proj.	# Obs. >=14"	# Proj. >=14"	# Obs. >=20"	# Proj. >=20"
2003	2897100	Bayfield	Diamond	341	15, 20-28 slot	RV, TC	309	309	159	0	0	0	0	0	0
2003	2942300	Iron	Gile	3384	1>14	LP, TC	5,761	3,982	92	70	564	42	297	0	0
2003	1427400	Marathon	Big Eau Pleine[1]	6830	15	LP, TC	13,247	4,742	158	20	542	20	542	0	0
2003	1427400	Marathon	Big Eau Pleine[2]	6830	15	LP, TC	13,247	4,742	158	10	54	10	54	2	11
2003	1523600	Oneida	Bearskin	400	1>14	LV, TC	1,661	737	143	54	362	20	149	3	16
2003	973000	Oneida	Bolger	119	15	LV, TC	320	205	6	2	17	2	17	0	0
2003	2641000	Polk	Big Butternut	378	15	LV, TC	258	254	100	9	8	2	8	1	6
2003	2283300	Price	Butternut	1006	none	RV, TC	1,468	394	89	52	322	13	72	4	19
2003	2242500	Price	Solberg	859	none	LV, TC	2,022	732	37	27	238	14	80	2	8
2003	2359700	Rusk	Amacoy	278	15	LV, TC	313	313	179	4	14	4	14	2	7
2003	2391200	Sawyer	Grindstone	3111	14-18 slot	LP, TC	1,764	1,251	88	12	78	9	41	3	19
2003	1592400	Vilas	Plum	1108	14-18 slot	LV, TC	2,088	1,398	65	26	163	14	95	1	7
2003	1018500	Vilas	Snipe	239	15	LP, TC	759	244	7	4	11	4	11	1	1
2003	2271600	Vilas	Squaw	785	1>14	RV, FLOY,TC	1,086	323	24	18	215	5	55	2	17
2003	2706500	Washburn	Middle McKenzie	530	15	LP, FLOY, TC	161	157	59	4	26	4	26	3	20

WBIC	COUNTY	LAKE	Adult PE (Unk. >15")	Total PE	Proj. Angler Harvest	Tribal Harvest	Angler Exploit	# Proj >=14/ #Clips >=14	# Proj >=20/ #Clips >=20	Tribal Exploit	Angler Harvest/ Adult PE	Angler Harvest/ Total PE	Total Exploit.
2897100	Bayfield	Diamond	595	468	0	86	0.0000	0.0000	0.0000	0.1445	0.0000	0.0000	0.1445
2942300	Iron	Gile	8,787	21,449	2,253	291	0.0979	0.0746	0.0000	0.0331	0.2564	0.1050	0.1310
1427400	Marathon	Big Eau Pleine	43,695	169,675	3,829	0	0.0409	0.1143	0.0000	0.0000	0.0876	0.0226	0.0409
1427400	Marathon	Big Eau Pleine	43,695	169,675	701	0	0.0041	0.0114	0.0696	0.0000	0.0160	0.0041	0.0041
1523600	Oneida	Bearskin	2,658	12,449	1,535	142	0.2179	0.2020	0.1145	0.0534	0.5775	0.1233	0.2714
973000	Oneida	Bolger	418	396	65	0	0.0531	0.0829	0.0000	0.0000	0.1555	0.1641	0.0531
2641000	Polk	Big Butternut	388	419	10	26	0.0310	0.0315	0.0600	0.0670	0.0258	0.0239	0.0980
2283300	Price	Butternut	4,075	31,129	2,125	210	0.2193	0.1827	0.2099	0.0515	0.5215	0.0683	0.2709
2242500	Price	Solberg	3,363	14,166	1,061	0	0.1177	0.1093	0.2162	0.0000	0.3155	0.0749	0.1177
2359700	Rusk	Amacoy	413	361	16	0	0.0447	0.0447	0.0391	0.0000	0.0387	0.0443	0.0447
2391200	Sawyer	Grindstone	6,658	17,771	779	473	0.0442	0.0325	0.2159	0.0710	0.1170	0.0438	0.1153
1592400	Vilas	Plum	5,674	9,388	799	224	0.0781	0.0682	0.1026	0.0395	0.1408	0.0851	0.1175
1018500	Vilas	Snipe	1,348	3,489	38	56	0.0145	0.0451	0.1429	0.0415	0.0282	0.0109	0.0560
2271600	Vilas	Squaw	2,878	13,778	1,180	101	0.1980	0.1714	0.7262	0.0351	0.4100	0.0856	0.2331
2706500	Washburn	Middle McKenzie	587	469	93	119	0.1615	0.1656	0.3305	0.2027	0.1584	0.1983	0.3642

[1] Open water bus route

[2] Ice Fishing only (standard)