Assessment of the Summer Sport Fishery for Walleye (*Sander vitreus*) and Northern Pike (*Esox lucius*) at Gods Lake, Alberta, 2004.

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An essential contribution to this project were the creel clerks, who surveyed Gods Lake anglers. Thanks to all the volunteer test anglers for donating their time and personal expense to this project. Thanks are also extended to those involved in the reviewing of this report.

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EXECUTIVE SUMMARY

Improved access (upgraded and new roads) into lakes in the Red Earth area in recent years has raised concern about the potential for increased angling pressure. The purpose of this survey was to describe the current level of angler use and provide data to fisheries managers to evaluate the status of walleye and northern pike sport fisheries of priority lakes in this area. This report describes the results of the summer angler survey on Gods Lake.

Gods Lake is located in Alberta approximately 66 km Northeast of Red Earth, Alberta. It can be accessed by an unimproved earth and gravel road. Development at the lake consists of graveled area next to the water to facilitate the launching of boats, the gravel does not extend into the water.

An access point angler survey was completed at Gods Lake in 2004 to quantify angling effort, catch and harvest rates of walleye (*Sander vitreus*) and northern pike (*Esox lucius*). An estimated 990 (95% confidence limits (CL) 780-1240) anglers fished the lake from 21 May to 29 August 2004. The angling pressure exerted on Gods Lake was 2.31 angler hours per hectare (hours/ha) (95% CL 1.80-2.86 hrs/ha).

The overall catch rate of walleye (expressed as total catch per unit effort (TCUE)) was observed to be 0.32 fish/hr, while the total harvest per unit effort (THUE) was 0.07 fish/hr. The total walleye harvest was estimated at 0.33 kg/ha (95% CL 0.27-0.41 kg/ha). In contrast, the overall catch rate of northern pike TCUE was 0.91 fish/hr, while the estimated THUE was 0.003 harvested fish/hr. A total of two northern pike were observed in the creel, therefore no estimates were made for total harvest.

The von Bertalanffy growth function resulted in an estimated 7.4 years to produce a harvestable walleye (>50cm total length). A similar estimate to produce a legal-length northern pike was not made due to low sample size of legally harvested fish.

Although angling pressure at Gods Lake during the summer may be considered low at the time of this survey. Improved access and upgrading of facilities at this lake may result in an increase in pressure that can now be monitored and compared to previous levels.

1.0 INTRODUCTION

1.1 General Introduction

In recent years, improved access to lakes with populations of walleye (*Sander vitreus*) and northern pike (*Esox lucius*) has raised concern about increased pressure on relatively unexploited fish populations. Strategies to maintain or recover northern pike and walleye populations have been implemented by Alberta Sustainable Resource Development. These strategies prescribe regulatory measures that can be used to maintain or recover a fishery. Regular evaluation of the sport fishery and regulations are necessary to ensure fisheries management goals are being achieved.

Summer angling pressure and sport fish harvest is largely unknown for several lakes in northern Alberta. Gods Lake fish populations have been assessed using gill netting techniques in 2001 but the sport fishery has not been formally assessed in previous years. Gods Lake is managed as a "Trophy" northern pike fishery and a "Quality" walleye fishery. Regulations for 2004 stated that three walleye over 50 cm total length (TL), one northern pike over 100 cm TL, fifteen yellow perch (*Perca flavescens)*, ten lake whitefish (*Coregonus clupeaformis*) and ten burbot (*Lota lota*) could be harvested per day (Alberta Sustainable Resource Development 2004). It is also stated that closures are in effect for the whole lake from 1 April to 20 May and the tributaries and outlet are closed from 1 November to 31 May.

Improved access (upgraded and new roads) into lakes in the Red Earth area in recent years has raised concern about the potential for increased angling pressure. The purpose of this survey was to describe the current level of angler use and provide data to fisheries managers to evaluate the status of walleye and northern pike sport fisheries of priority lakes in this area. This report describes the results of the summer angler survey on Gods Lake.

2.0 STUDY AREA

Gods Lake is located in Alberta approximately 66 km Northeast of Red Earth (Figure 1). The Lake has a surface area of 680 hectares, an average depth of 13 m and a maximum depth of 25 m. A gravel/earth road is used to access the lake. Development at the lake consists of graveled area next to the water to facilitate the launching of boats, the gravel does not extend into the water. Camping space is limited, informal, and without amenities.

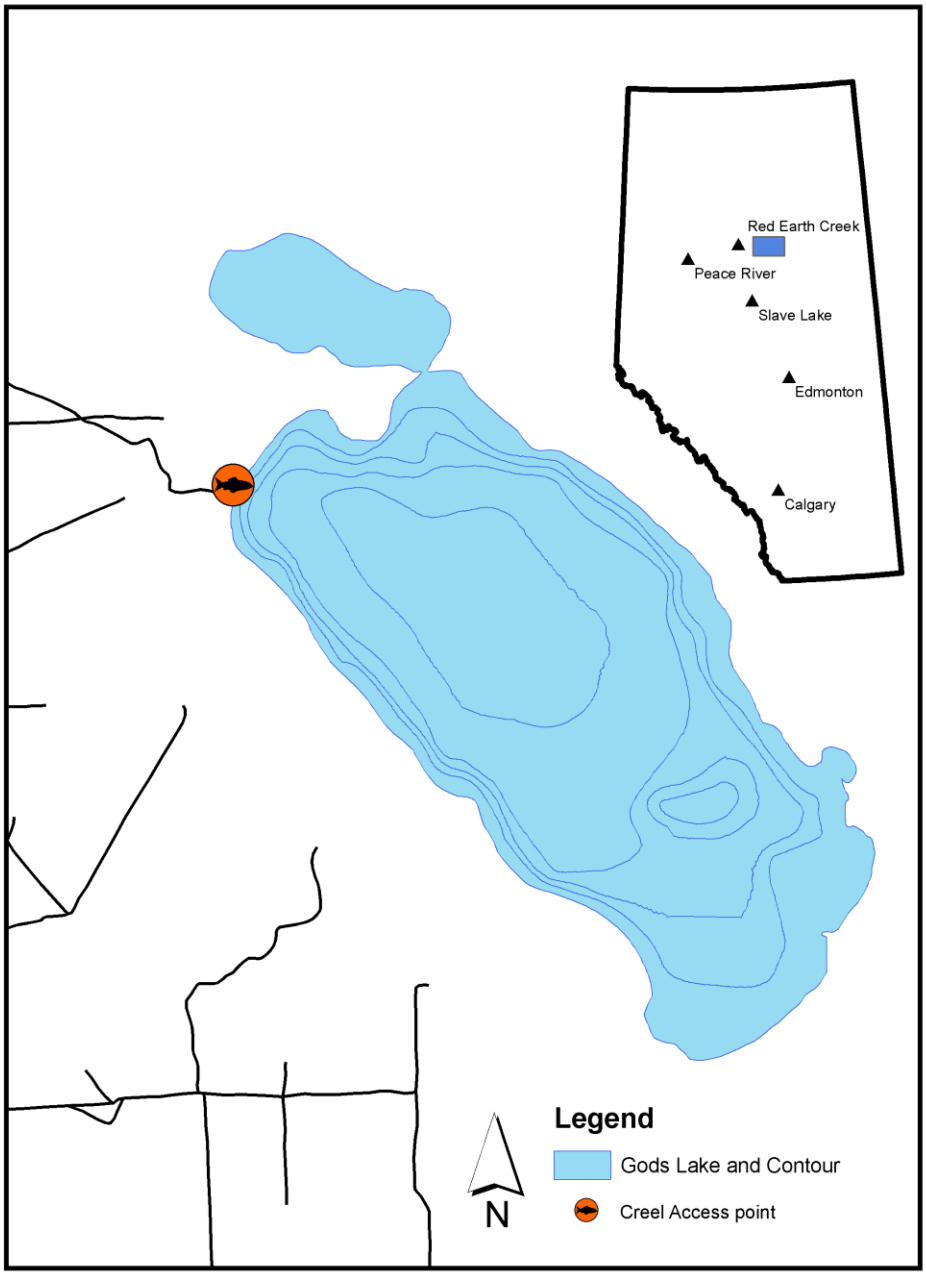

Figure 1. Location of Gods Lake and the 2004 creel survey site.

3.0 MATERIALS AND METHODS

3.1 Survey Design

A reduced effort creel survey (Pollock et al. 1994) was conducted from a single access point at Gods Lake from 21 May to 29 August 2004 to collect angler effort and sport fishery data. Two creel clerks interviewed anglers as they returned from a completed trip of angling between 08:00 and 23:00 on days surveyed. Sampling occurred on a schedule of 10 days on, four days off. Survey effort was split with Graham Lake, such that five consecutive days of each 10-day shift were spent at each lake. The lake surveyed first was switched each shift so that both lakes were sampled equally.

3.2 Angler Interviews

Upon returning to the survey access point, all angling parties were asked a series of questions regarding the number of hours fished, number of each species kept and released, the number of anglers, use of bait, use of barbless hooks, and their residence.

3.3 Test Angling

To collect data on size and age structure from fish that could not be legally harvested, test angling was conducted throughout the survey period. Test anglers were comprised of creel clerks, fisheries staff, and volunteers. Test anglers varied in skill level and attempted to catch walleye and northern pike using techniques that anglers would normally use. Test anglers recorded the number of hours fished and the fork and total length, to the nearest millimeter, of all fish caught. The ratio of legal-length fish to protected-length fish sampled during the test fishery was compared to the corresponding ratio from the sport fishery in order to assess the rate of angler exaggeration (Sullivan 2003).

3.4 Biological Fish Data

Creel clerks collected biological data from fish that were harvested by anglers, when permitted. Data collected included fork length to the nearest millimeter, total length, weight to the nearest 10 g, ageing structures, sex and state of maturity. Ageing structures collected included the left operculum and the first three rays of the left pelvic fin for walleye, the left cleithrum and the first three rays of the left pelvic fin for northern pike. Fish were aged according to Mackay et al. (1990).

3.5 Data Management and Analysis

To ensure accuracy, all data were verified prior to analysis using frequency distributions and plots of each angler survey parameter. Outliers were then compared to original data sheets, if a measurement or recording error was suspected it was omitted from

analysis. These data are stored in the provincial database, Fisheries Management Information System (FMIS).

Bootstrap methods (Haddon 2001) were used to calculate the standardized probability of means for the following parameters: number of anglers, angling effort, and the catch and harvest of walleye and northern pike. Calculation of creel survey estimates followed Sullivan (2004). Samples were stratified by day type into weekdays (Monday-Thursday) and weekend days (Friday-Sunday, including statutory holidays) a flow chart describing the steps is presented in Figure 2.

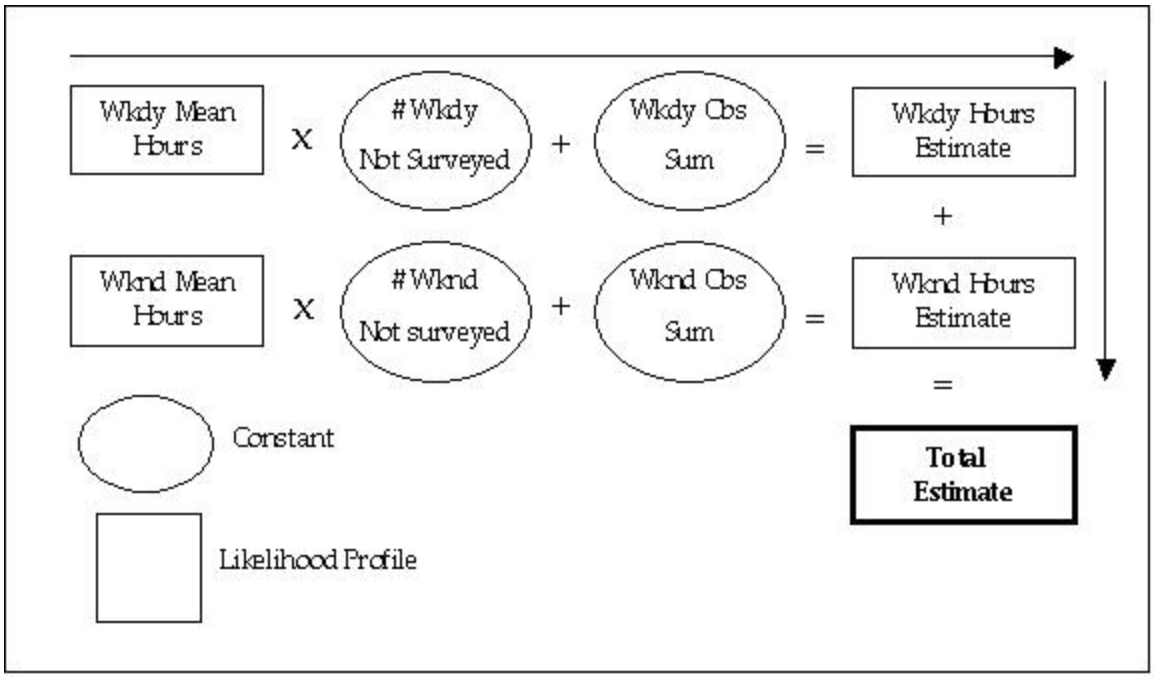

Figure 2. Flow chart outlining the process used for estimating parameters from the sport fishery at Gods Lake 2004. Circles represent values with no variance while rectangles represent values with probability density functions. Bold outline represents derived parameters used in the assessment of the sport fishery (e.g., number of anglers, total effort). Wkdy=weekday; Wknd=weekend. (adapted from Patterson 2004)

Total catch per unit effort (TCUE) and total harvest per unit effort (THUE) were calculated from the total number of fish caught/kept and the total number of hours observed during the survey. Daily totals for catch per unit effort (CPUE) and harvest per unit effort (HPUE) were bootstrapped to estimate monthly means and 95% confidence limits.

Data obtained from index netting (Fortier and Tchir 2005) in September 2004 were used to supplement length and age distributions. Length distributions for the angler survey, test fishery, and index netting were generated using 20 mm (TL) length classes.

Age and length data from the index netting, sport and test fishery were combined and fitted to the von Bertalanffy growth function to assess growth rate. It was assumed that there were no differences in growth rate between the fish captured by the different methods. The von Bertalanffy growth function is a non-linear equation that explains growth using three parameters (von Bertalanffy 1938).

$$L = L_{\infty}(1 - e^{-k(t-t_0)})$$

Length infinity (L_{∞}) represents the asymptotic or theoretical maximum length that can be achieved. This length is often lower than the true maximum size due to small sample sizes of very large fish. The parameter representing growth is k, which is defined as the rate at which the fish approaches L_{∞}. Higher values of k represent faster growth and are usually associated with a lower L_{∞}. The third parameter of the von Bertalanffy growth function is t_0, which is the theoretical age at length zero. As with L_{∞}, t_0 can be highly variable due to small sample sizes of small fish. In addition, application of age at length zero has very little practical application and was therefore fixed at zero. Fork length (FL) was used to calculate the growth curve. The estimates for L_{∞} and k were then used to calculate an estimate for the time for a fish to reach a harvestable length.

Relative weight (W_r) is a measure of condition calculated by applying the weight and TL of a fish to a species-specific equation. Total length measurements were not taken during all sampling in order to reduce handling time of live fish captured in the test fishery. Therefore total length was estimated from FL measurements for use in W_r analysis. Fork and total length measurements of fish that were sampled in the index netting, sport and test fisheries were fitted to a linear regression resulting in the following equations.

$$\text{Walleye}: TL(mm) = 1.038(FL(mm)) + 10.25;\ R^2 = 0.992;\ n = 111$$

$$\text{Northern pike}: TL(mm) = 1.048(FL(mm)) + 7.962;\ R^2 = 0.991;\ n = 143$$

This was then applied to all fish fork lengths to reduce the variability of the TL measurements. Wege and Anderson (1978) introduced the following formula to calculate W_r:

$$W_r = \left(\frac{W}{W_s}\right) * 100$$

Where W is the measured weight of the fish and W_s is the standard weight of a fish of the same length. Standard weight equations for northern pike and walleye were determined by Willis (1989) and Murphy et al. (1990), respectively.

W_r varies with such parameters as sex, length, time of year, and maturity. Using a total sample mean W_r is not appropriate without first checking for differences across length classes within that sample (Murphy et al. 1991). The five-cell length class model described by Gablehouse (1984) was used to stratify by total length. Samples were first checked for differences between males and females within each length class using a T-test (α=0.05). If a significant difference was found, the mean W_r and 95% confidence limits were presented separately for male and female data of that length class. Relative weight data from males and females were pooled if no significant differences were found.

4.0 RESULTS

4.1 Angler Survey

Between 21 May and 29 August 2004, 470 anglers were interviewed at Gods Lake. Although the access was surveyed on weekdays, no anglers were observed during these time periods in May. The estimated number, of anglers was 990 (with 95% confidence limits (CL) of 780 - 1240) (Figure 3) with an estimated effort of 1570 angler-hours (95% CL 1225 – 1945) (Figure 4) or 2.309 angler-hours/hectare (95% CL 1.801 – 2.860). Parameter observations and estimates from angler interviews are presented in Table 1.

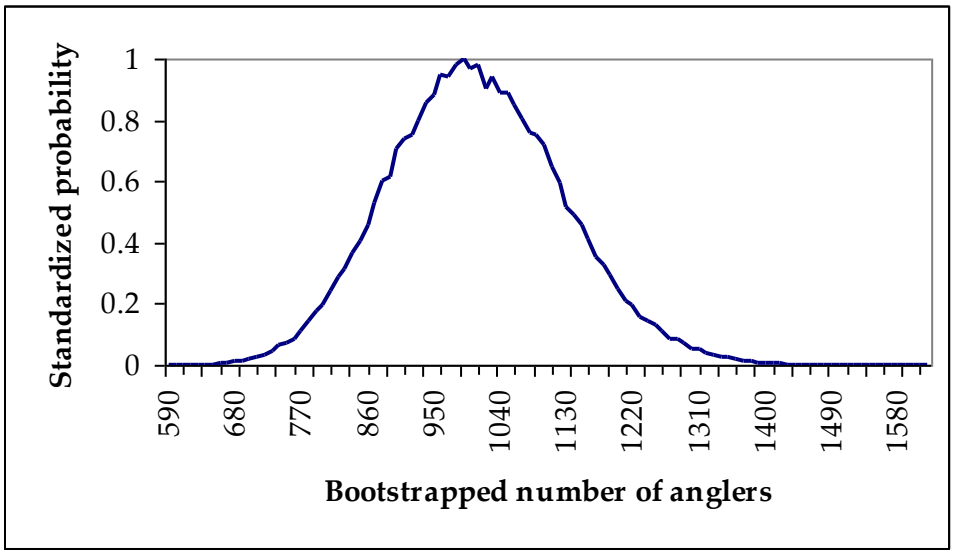

Figure 3. Standardized probability density function for number of anglers at Gods Lake in 2004 (990 anglers; 95% CL= 780 - 1240).

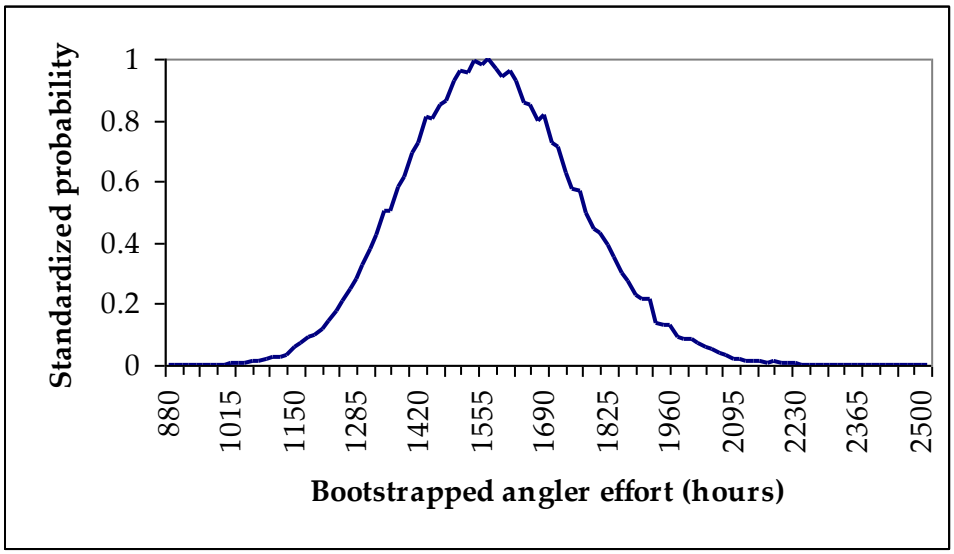

Figure 4. Standardized probability density function of angler-hours at Gods Lake in 2004 (1570 angler-hours; 95% CL= 1225 - 1945).

Table 1. Summary of observed and estimated parameters, with high and low confidence limits (HCL and LCL), from summer surveys conducted at Gods Lake in 2004. Parameters were calculated for each month as well as all months combined. Combined estimates were obtained by pooling observations from all months. As a result of low sample size estimates were not calculated for the month of May.

	Number of anglers	Effort (angler hours)	Effort (hours/ha)	WALL caught	WALL kept	WALL harvested (kg)	WALL harvested (kg/ha)	NRPK caught	NRPK kept
May									
Observed	244	338.00	0.497	74	24	35.54	0.052	266	2
Estimate	-	-	-	-	-	-	-	-	-
LCL	-	-	-	-	-	-	-	-	-
HCL	-	-	-	-	-	-	-	-	-
June									
Observed	64	186.50	0.274	79	15	22.22	0.033	154	0
Estimate	175	390	0.574	160	30	44.43	0.065	340	-
LCL	95	250	0.368	75	14	20.73	0.030	185	-
HCL	295	645	0.949	285	57	84.42	0.124	570	-
July									
Observed	98	165.00	0.243	73	10	14.81	0.022	181	0
Estimate	340	565	0.831	265	25	37.03	0.054	595	-
LCL	200	325	0.478	115	13	19.25	0.028	345	-
HCL	480	815	1.199	415	51	75.53	0.111	910	-
August									
Observed	35	40.00	0.059	10	2	2.96	0.004	64	0
Estimate	65	75	0.110	20	4	5.92	0.009	120	-
LCL	30	35	0.051	5	1	1.48	0.002	60	-
HCL	120	140	0.206	35	7	10.37	0.015	225	-
Combined									
Observed	470	728.75	1.072	236	51	75.53	0.111	665	2
Estimate	990	1570	2.309	530	152	225.11	0.331	1370	-
LCL	780	1225	1.801	340	124	183.64	0.270	1085	-
HCL	1240	1945	2.860	760	186	275.47	0.405	1775	-

Anglers that visited Gods Lake were primarily from Edmonton and area (44.0%) (Figure 5). Anglers reported a rate of 36.7% for the use of bait. Anglers also reported a compliance rate of 98.7% for mandatory barbless hook regulations.

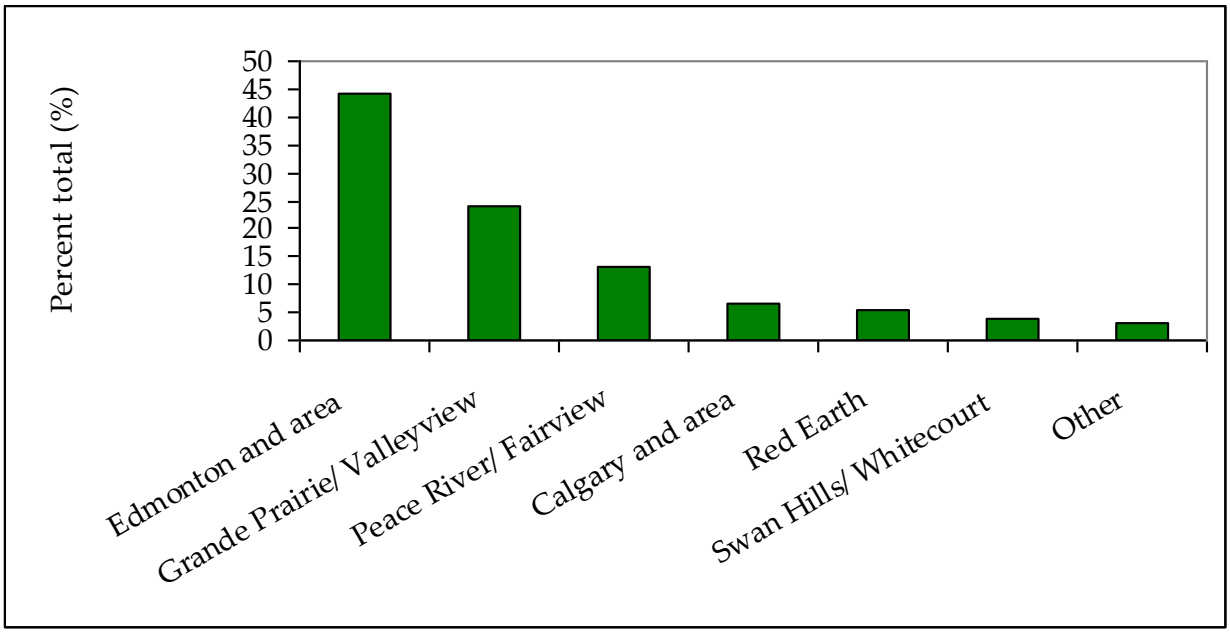

Figure 5.Residence of anglers interviewed during the angler survey at Gods Lake, Alberta 2004 (n = 180).

4.2 Walleye Catch and Harvest

The total walleye catch rate (TCUE) reported by sport anglers from Gods Lake in 2004 was 0.32 walleye/hour. The total reported harvest rate (THUE) of legal-length walleye was 0.07 kept/hour, while the TCUE for legal-length fish (>50 cm TL) was 0.12 walleye/hour. A TCUE of 0.18 walleye/hour was reported for the test fishery. July showed the highest CPUE for both the sport and test angling (Table 2) while June showed the highest harvest rate. Monthly observed and estimated catch and harvest data are shown in Table 1.

Table 2. Walleye catch per unit effort (CPUE) and harvest per unit effort (HPUE) values observed and estimated by bootstrapping, with high and low confidence limits (HCL and LCL), for each month at Gods Lake, Alberta, 2004. Sport fishery estimates for August could not be made due to low sample size.

Walleye	May	June	July	August
Sport fishery CPUE				
Observed	0.219	0.424	0.442	0.250
Estimate	0.150	0.160	0.410	-
LCL	0.040	0.000	0.120	-
HCL	0.320	0.350	0.700	-
Sport fishery HPUE				
Observed	0.071	0.080	0.061	0.050
Estimate	0.054	0.026	0.054	-
LCL	0.015	0.000	0.006	-
HCL	0.091	0.068	0.129	-
Test fishery CPUE				
Observed	0.212	0.151	0.412	0.045
Estimate	0.140	0.060	0.400	0.070
LCL	0.010	0.010	0.250	0.000
HCL	0.410	0.160	0.600	0.180

Total angler catch of walleye during the 2004 Gods Lake survey was estimated at 530 fish (95% CL 340 – 760) (Figure 6). Angler harvest of walleye during the survey was estimated at 152 fish (95% CL 124 – 186) (Figure 7). This results in a total estimated harvest of 225.11 kg of walleye (95% CL 183.64 – 275.47) or 0.33 kg/ha (95% CL 0.27 – 0.41).

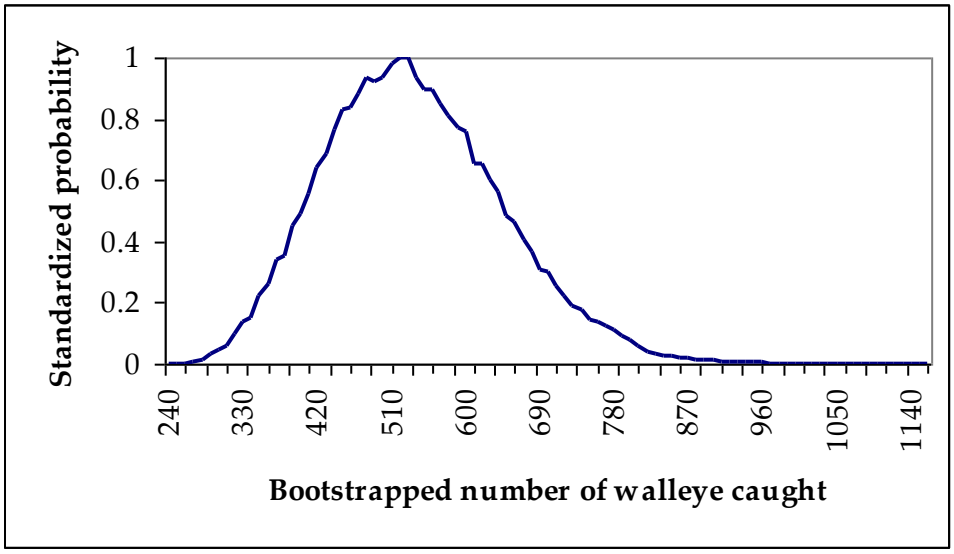

Figure 6. Standardized probability density function of the number of walleye caught during the summer angler survey at Gods Lake in 2004 (530 walleye; 95% CL= 340 - 760).

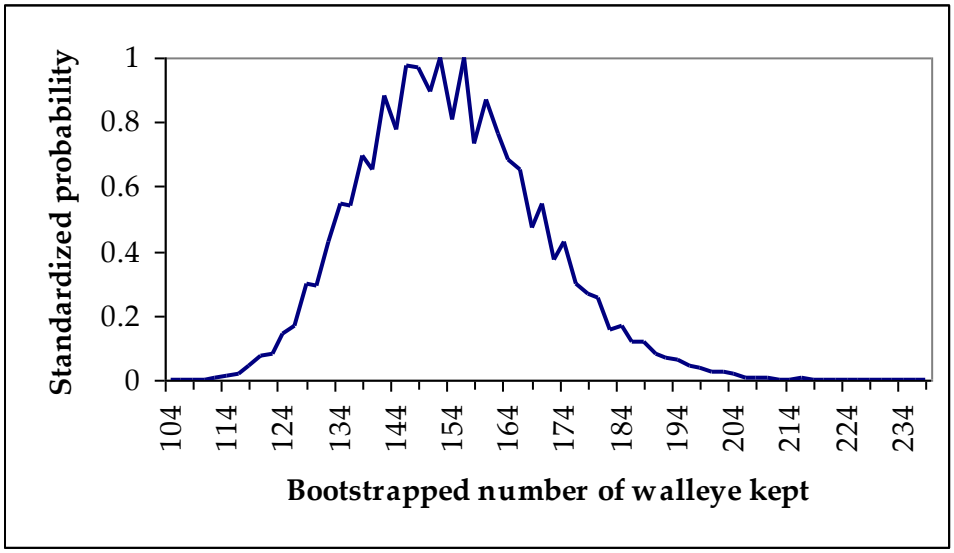

Figure 7. Standardized probability density function of the number of walleye harvested during the summer angler survey at Gods Lake in 2004 (152 walleye; 95% CL= 124 - 186).

Anglers reported a release rate of 0.25 walleye/hour, resulting in an estimated release of 378 walleye (i.e., total harvest estimate subtracted from total catch estimate). The estimated number of protected-length walleye released differed from the reported number by only 1.3% (149 estimated, 151 reported). This suggests that angler exaggeration was negligible.

4.3 Northern Pike Catch and Harvest

The total northern pike catch rate (TCUE) reported by sport anglers in Gods Lake in 2004 was 0.91 northern pike/hour. The total reported harvest rate (THUE) was 0.003 northern pike/hour, while the TCUE for legal-length fish (>100cm TL) was 0.007 northern pike/hour. TCUE of 0.37 northern pike/hour was observed from the test fishery. August showed the highest observed CPUE for the sport fishery (Table 3) while May was highest observed for the test fishery. Monthly observed and estimated catch and harvest data are shown in Table 3.

Table 3. Northern pike catch per unit effort (CPUE) values observed and estimated through bootstrapping, with high and low confidence limits (HCL and LCL), for each month at Gods Lake, Alberta, 2004. Sport fishery estimates for August could not be made as anglers were only observed on one day (one sampling unit).

Norhern Pike	May	June	July	August
Sport fishery CPUE				
Observed	0.787	0.826	1.097	1.600
Estimate	0.840	0.770	1.390	-
LCL	0.540	0.480	0.740	-
HCL	1.210	1.030	2.150	-
Test fishery CPUE				
Observed	0.538	0.268	0.495	0.225
Estimate	0.470	0.230	0.530	0.180
LCL	0.110	0.090	0.140	0.040
HCL	0.810	0.440	0.840	0.460

Total angler catch of northern pike during the 2004 Gods Lake survey was estimated at 1370 fish (95% CL 1085 – 1775) (Figure 8).

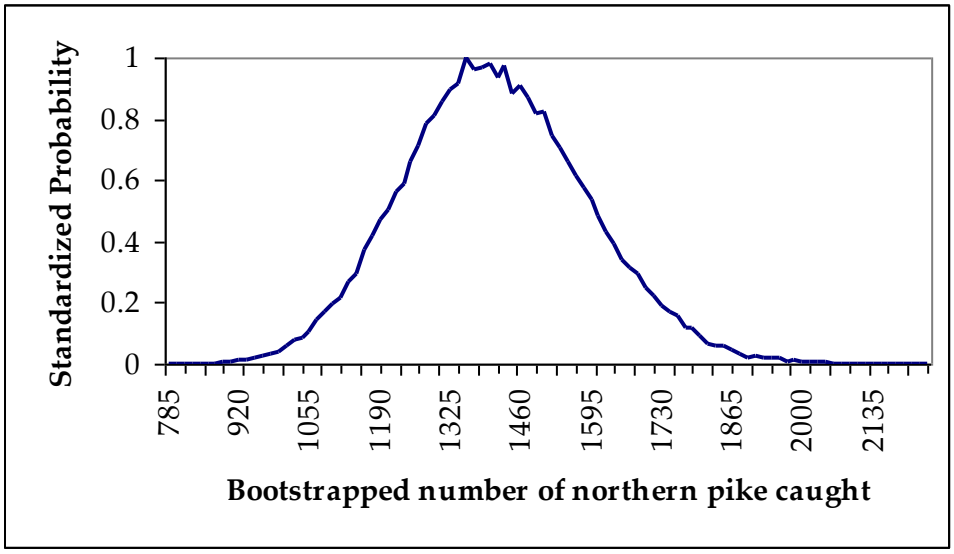

Figure 8. Standardized probability density function of the number of northern pike caught during the sport fishery at Gods Lake in 2004 (1370 walleye; 95% CL= 1085 - 1775).

Anglers reported releasing 663 northern pike for a release rate of 0.910 northern pike/hour. The rate of angler exaggeration could not be estimated, as there were no legal-length northern pike caught during the test fishery.

4.4 Walleye Sport Fishery Assessment

Length-Class Distribution

Harvested walleye ranged in size from 492 mm to 688 mm TL with a mean of 541.8 mm TL (n=41) (Figure 9). Walleye captured in the test fishery ranged from 413 mm to 650 mm TL with a mean of 491.9 mm (n=33) (Figure 9). Walleye captured during the September 2004 index netting ranged from 295 mm to 710 mm with a mean of 513.7 mm (n=37) (Figure 9).

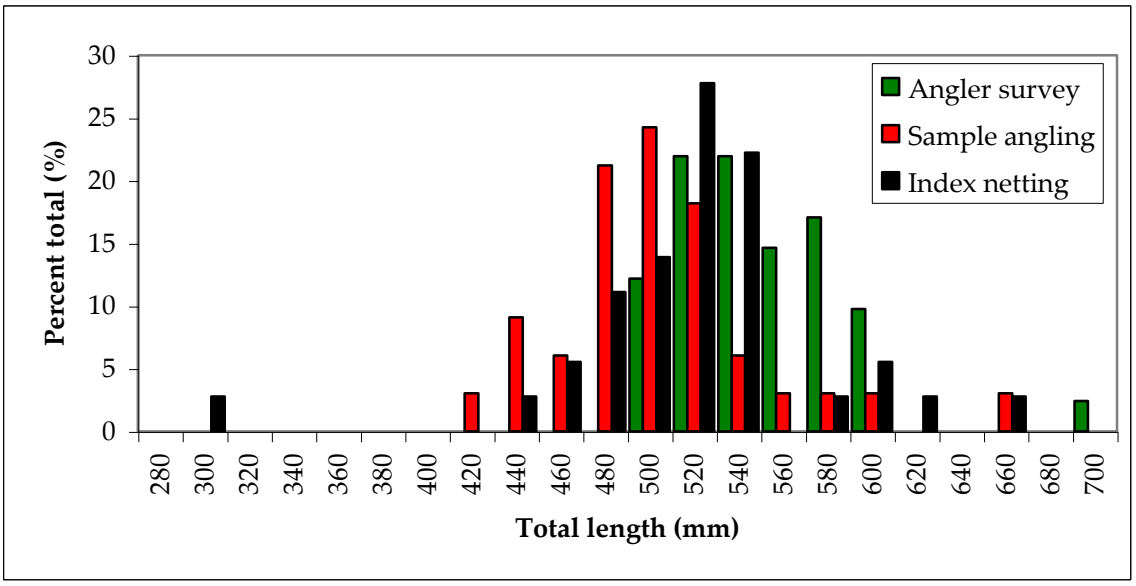

Figure 9. Length-class distributions of walleye captured during the summer creel survey, summer test fishery, and index netting at Gods Lake in 2004 (mean length: angler survey = 541.8 mm, n= 41; test fishery = 491.9 mm, n=33; index netting = 513.7 mm, n=37).

Age- Class Distribution

Harvested walleye ranged in age from 7 to 22 years with a mean of 10.1 years (n=41) (Figure 10). Walleye captured in the test fishery ranged in age from 5 to 21 years with a mean of 8.0 years (n=30) (Figure 10). Fish sampled from index netting ranged in age from 2 to 18 years with a mean of 8.4 years (n=37) (Figure 10).

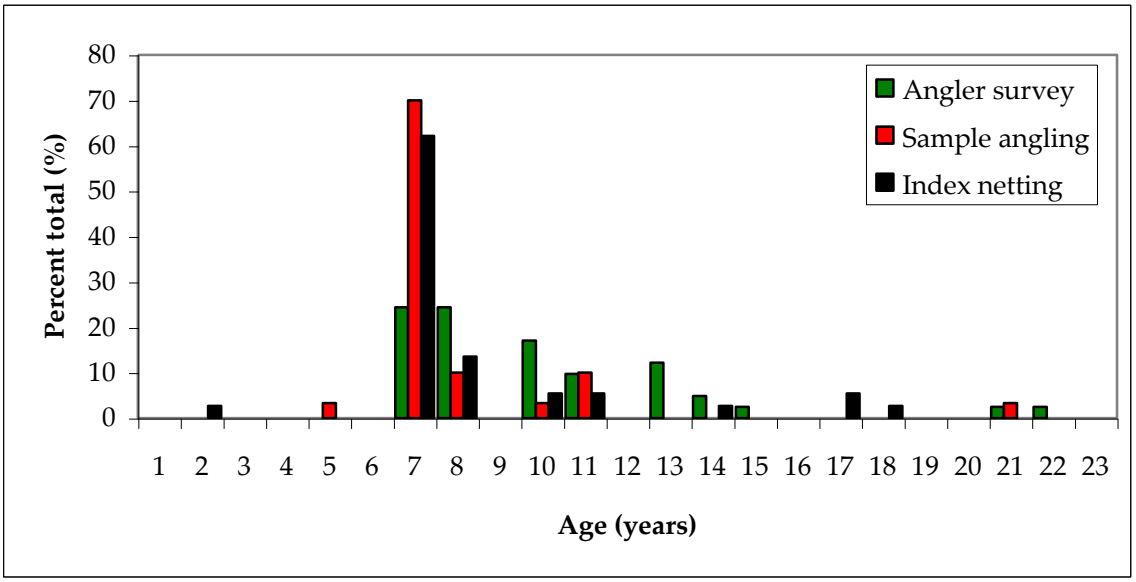

Figure 10. Age-class distributions of walleye observed in the angler survey, test fishery, and index netting at Gods Lake in 2004 (mean age: angler survey = 10.1, n= 41; test fishery = 8.0, n=30; index netting = 8.4, n=37).

Growth

Length and age data from fish sampled from the angler survey, test fishery, and index netting were combined to produce a von Bertalanffy growth curve (Figure 11). The theoretical maximum length (L_∞) of walleye was found to be 585.3 mm FL (617.8 mm TL) with a growth coefficient (K) of 0.223. With these growth characteristics it would take 7.4 years to produce a harvestable walleye (>50 cm).

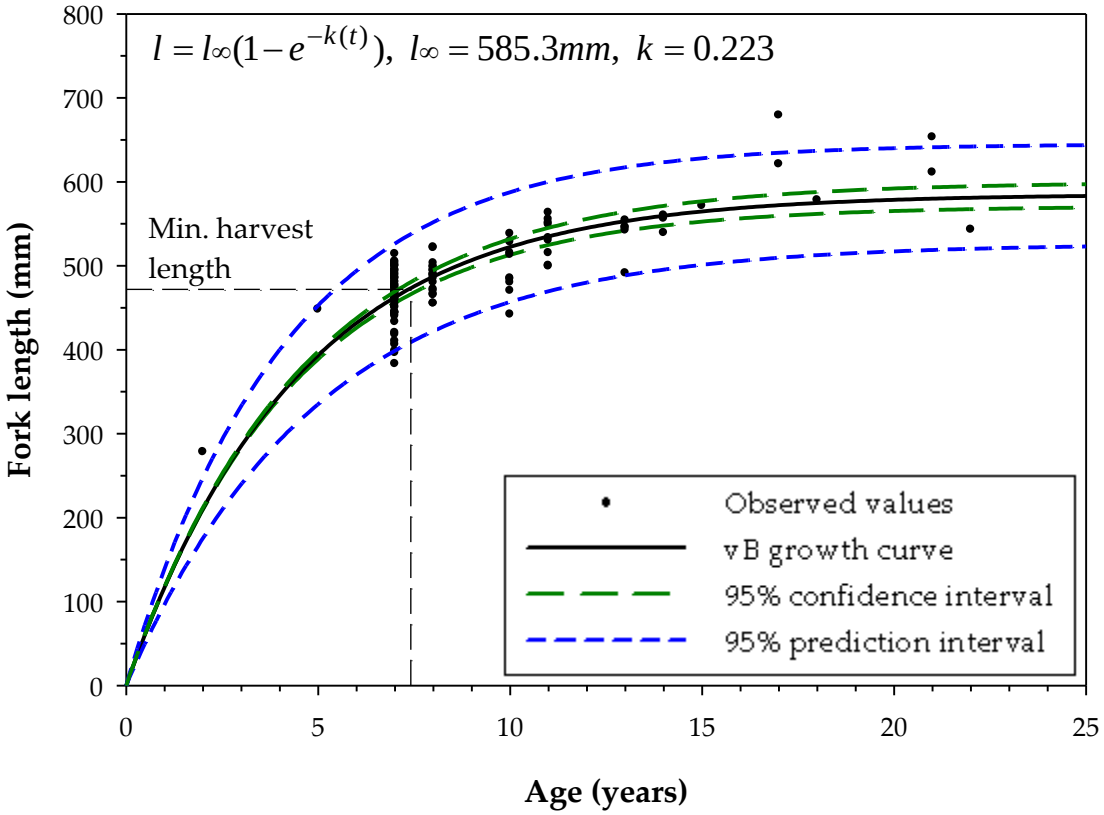

Figure 11. von Bertalanffy growth function, confidence, and prediction intervals (95%) of the regression for walleye observed in the angler survey, test fishery, and index netting at Gods Lake in 2004 (n=71). Confidence intervals describe the range where the regression line values will fall 95% of the time for repeated measurements. Prediction intervals describe the range where the data values will fall 95% of the time for repeated measurements.

Condition

No significant differences were found between male and female W_r in each of the length classes (stock, quality, preferred, and memorable) (T-test: $P>0.05$). Therefore, weight data from males and females were pooled. Mean W_r and 95% confidence limits of each length class are shown in Figure 12.

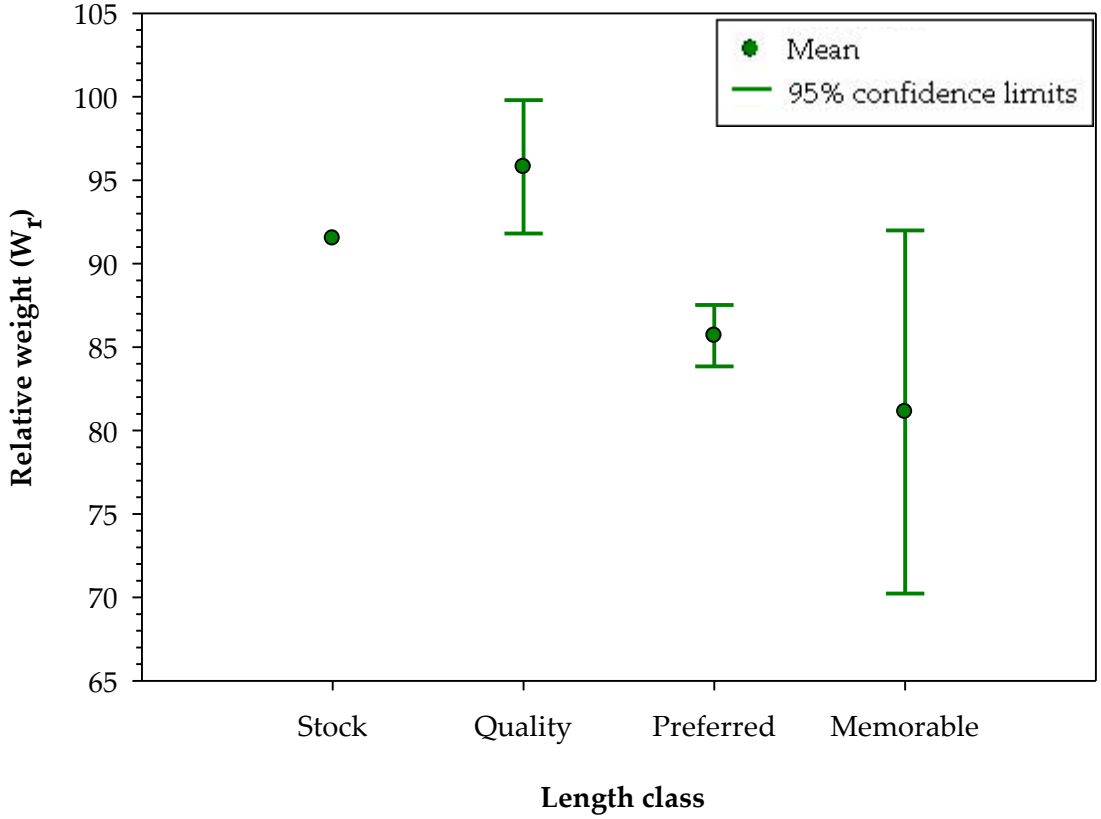

Figure 12. Walleye relative weight and 95% confidence limits for different length classes at Gods Lake 2004 (angler survey, test fishery, and index netting). Stock (250-379 mm total length), quality (380-509 mm total length), preferred (510-629 mm total length), and memorable (630-759 mm total length).

Summary of sport fishery parameters

A summary of several factors describing the walleye sport fishery is provided in Table 4.

Table 4. Summarized walleye sport fishery parameters.

Metric	Data value
Fish harvested/ hr (HPUE) (>50 cm TL)	0.07
Fish caught /hr (TCUE)	0.32
# Measurable Age-classes from index netting	8
Age at 50 cm TL	7.4
Mean Weight (kg) (> 50 cm TL)	1.68
PSD (% walleye >379 mm TL max) (Test-angling DATA)	100%
RSD (% walleye 250-379 mm TL stock) (Test-angling DATA)	0%
% Success (% anglers catching 1 or more legal-size walleye)	24%

4.5 Northern Pike Sport Fishery Assessment

Length-Class Distribution

Sample angled northern pike ranged from 312 mm to 912 mm TL with a mean length of 604.8 mm (n=77) (Figure 13). Fish captured by index netting ranged from 499 to 997 with a mean of 660.0 mm (n=65) (Figure 13). Length measurements were obtained for only one of two angler-harvested northern pike.

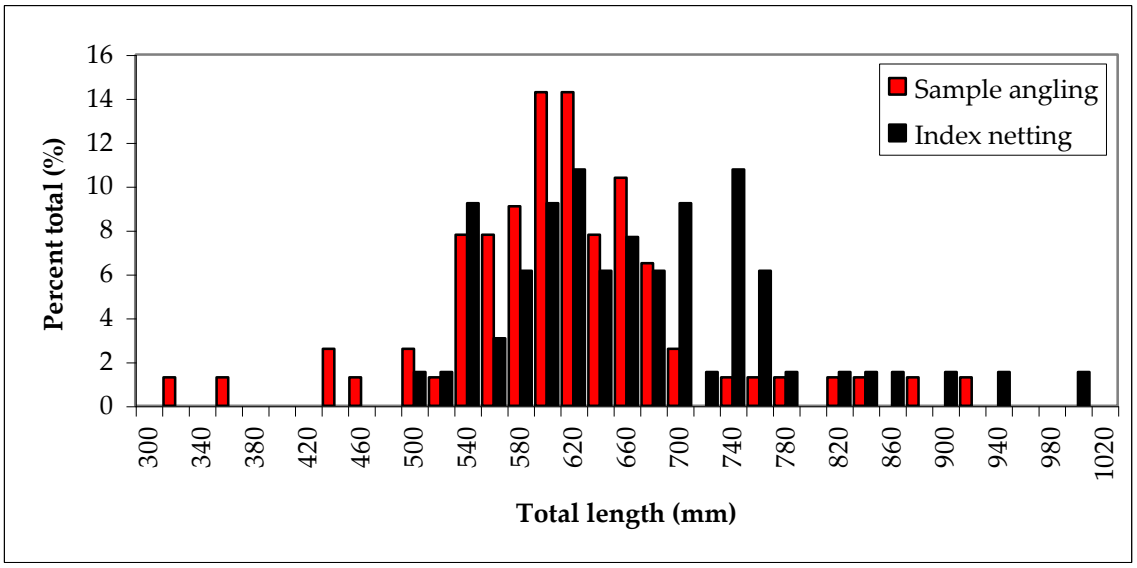

Figure 13. Length-class distributions of northern pike observed in the test fishery and index netting at Gods Lake in 2004 (mean length: test fishery = 604.8 mm, n=77; index netting =660.0 mm, n=65).

Age- Class Distribution

Northern pike sampled from the test fishery ranged in age from 2 to 12 years with a mean age of 5.9 years (n=80) (Figure 14). Northern pike sampled from index netting ranged in age from 4 to 13 years with a mean of 7.0 years (n=65) (Figure 14).

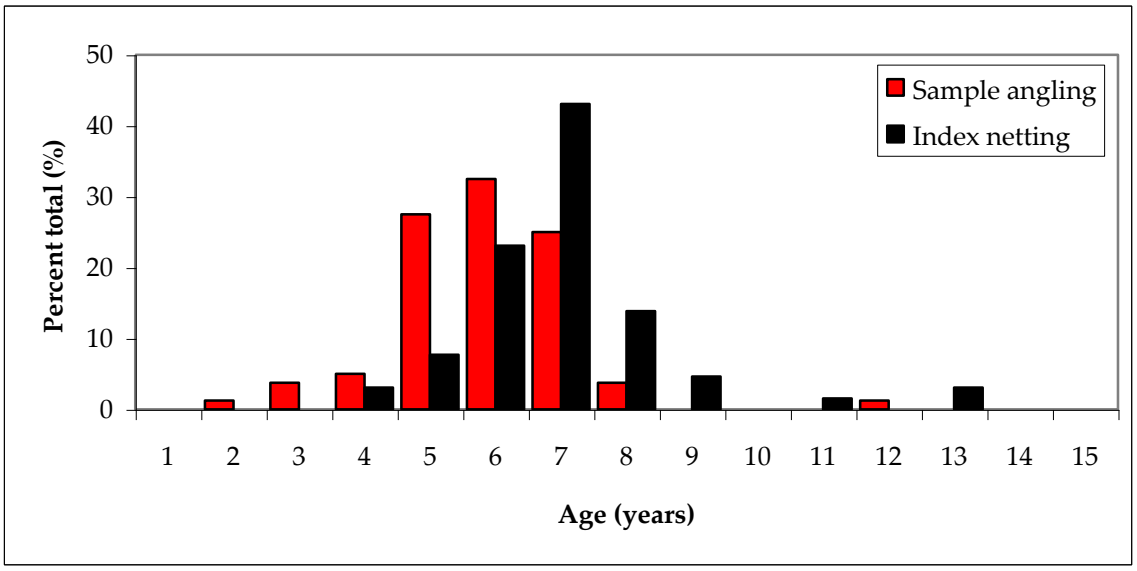

Figure 14. Age-class distribution of northern pike captured by sport anglers during the Gods Lake creel survey in 2004; mean age= 7.4, *n*= 10.

Growth

Length and age data of fish sampled from the angler survey, test fishery, and index netting were combined to produce a von Bertalanffy growth curve (Figure 15). The theoretical maximum length (L_∞) was found to be 947.5 mm FL (1001.2 mm TL) with a growth coefficient (K) of 0.158. With these growth characteristics it was not possible to estimate a realistic number of years it would take to produce a harvestable northern pike (>100cm TL). An estimate of 42.3 years is obtained due to the closeness of harvestable length to L_∞. A northern pike sampled from the creel was 100 cm and was aged at 10 years the sex was undetermined. While this fish was harvestable at 10 years there were two female northern pike captured during the index netting that measured 93.7 cm and 99.7 cm TL and were both aged at 13 years of age.

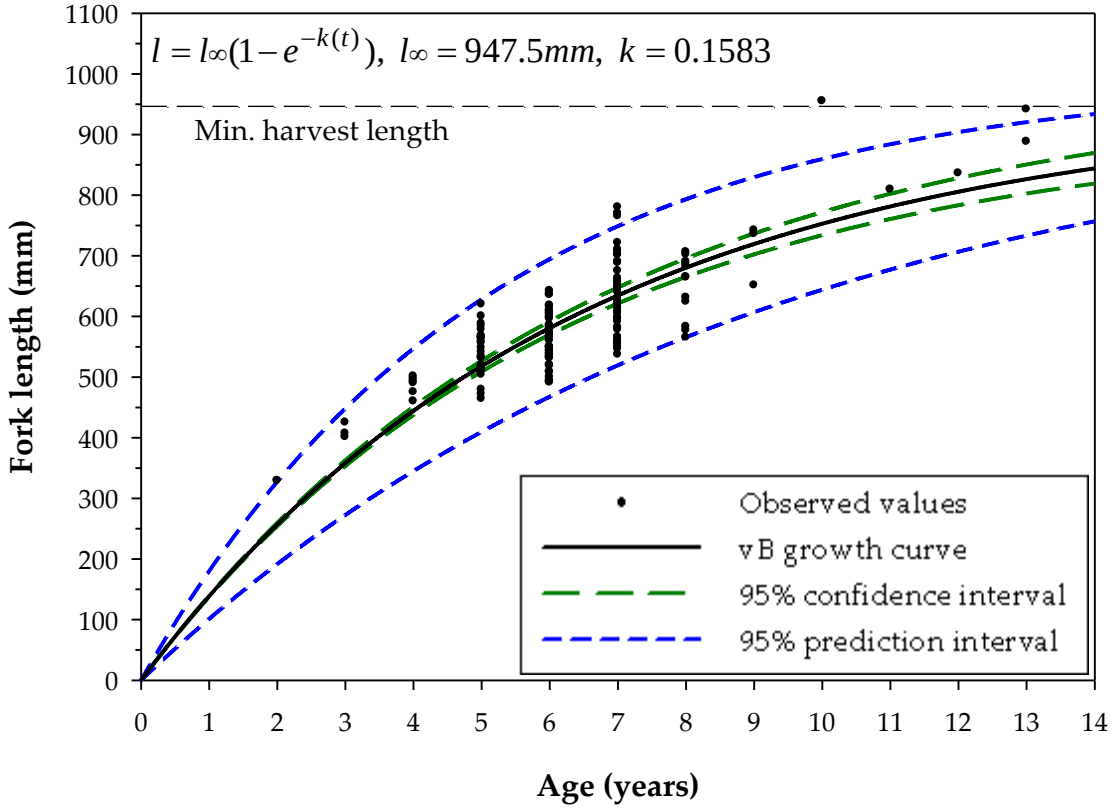

Figure 15. von Bertalanffy growth function, confidence, and prediction intervals (95%) of the regression for northern pike sampled from the test-fishery and index netting at Gods Lake in 2004 (n=145). Confidence intervals describe the range where the regression line values will fall 95% of the time for repeated measurements. Prediction intervals describe the range where the data values will fall 95% of the time for repeated measurements.

Condition

Data from the angler survey, test fishery, and index netting in 2004 were compiled to assess the relative weight (W_r) of northern pike. A significant difference in W_r between males (mean = 89.44; n = 24) and females (mean = 95.69; n = 17) was found for the quality length class of 2004 (T-test: $P = 0.0216$) but no differences were found between males and females for other length classes. Pooled (i.e., both sexes combined) mean W_r and 95% confidence limits of each length class are shown in Figure 16. While W_r means and confidence limits for the quality length class (530-709 mm TL) are shown separately for males and females in Figure 17.

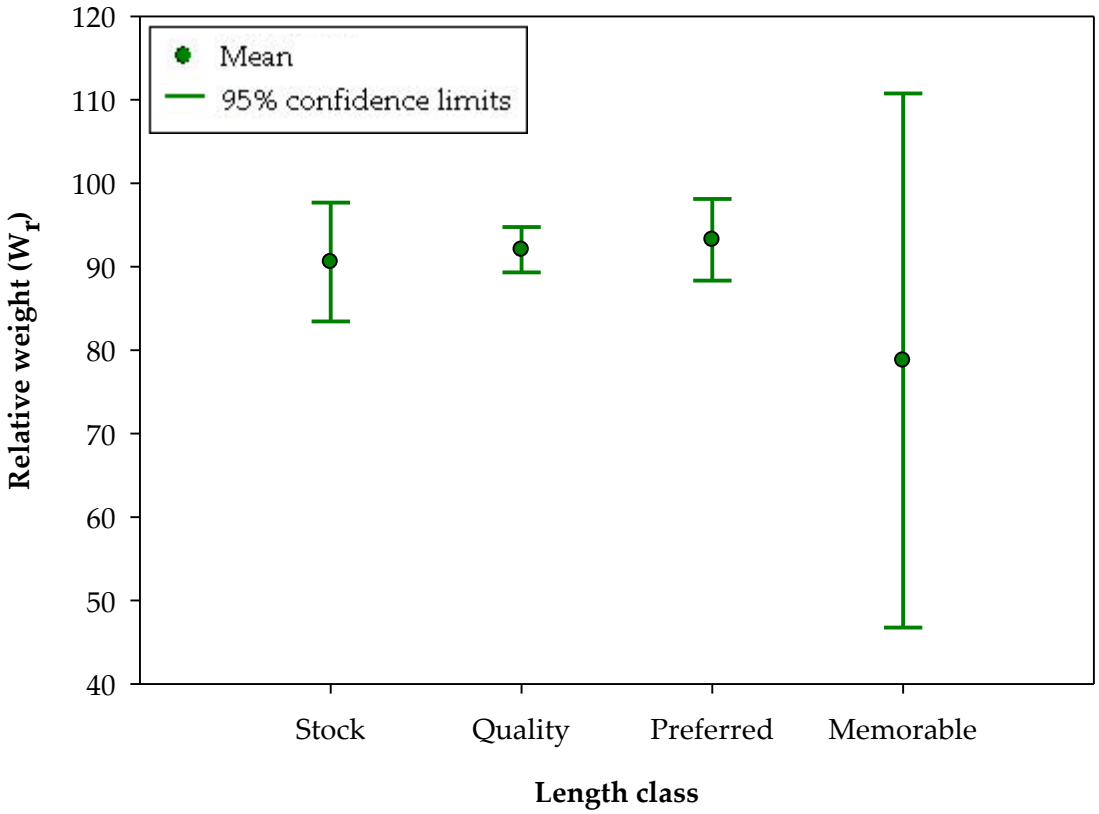

Figure 16. Northern pike relative weight and 95% confidence limits for different length classes from Gods Lake 2004 (angler survey, test fishery, and index netting). Stock (350-529 mm total length), quality (530-709 mm total length), preferred (710-859 mm total length), and memorable (860-1119 mm total length).

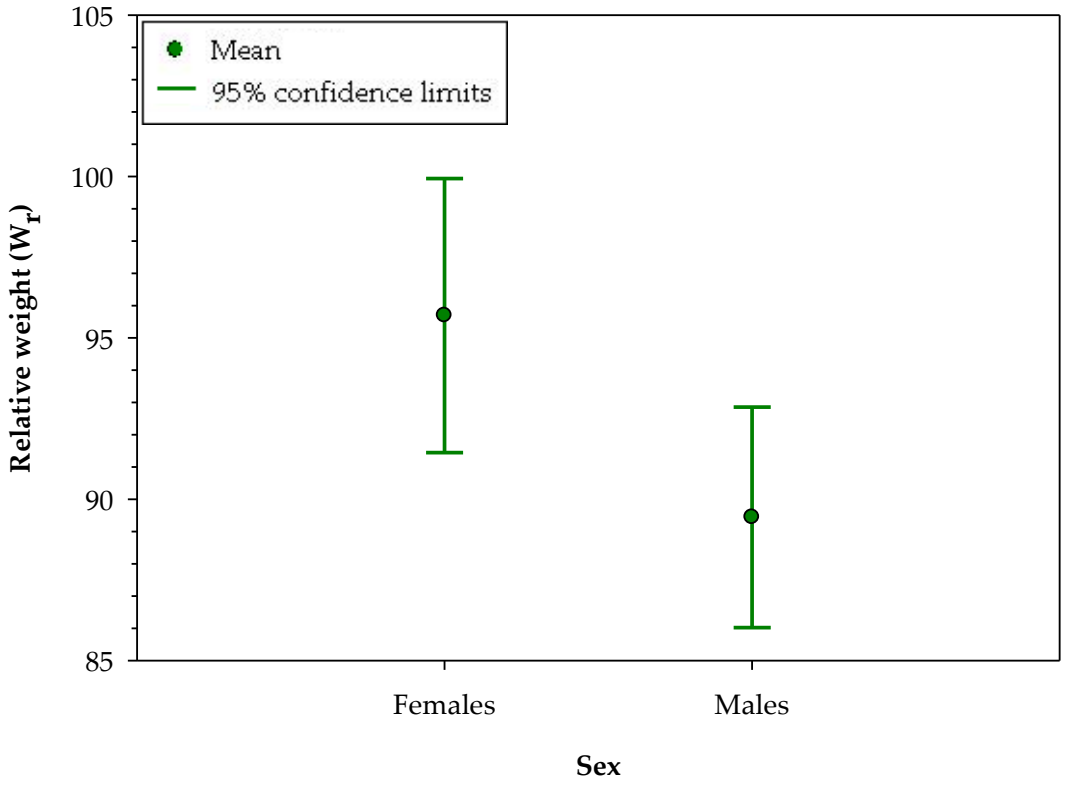

Figure 17. Male and female northern pike relative weight and 95% confidence limits for the quality length class (530-709 mm total length) from Gods Lake 2004 (angler survey, test fishery, and index netting).

Summary of sport fishery parameters

A summary of several factors describing the northern pike sport fishery is provided in Table 5.

Table 5. Summarized northern pike sport fishery parameters.

Metric	Data value
HPUE fish harvested/ hr (>100 cm TL)	0.003
TCUE fish caught /hr	0.91
# Measurable Age-classes from index netting data	8
Age at 100 cm TL	Insufficient data
Mean Weight (kg) (> 100 cm TL)	Insufficient data
PSD (% northern pike >529 mm TL max) (Test-angling DATA)	87%
RSD (% northern pike 350-529 mm TL stock) (Test-angling DATA)	12%
% Success (% anglers catching 1 or more legal-size pike)	0.03%

5.0 Summary

An estimated 990 (95% confidence limits (CL) 780-1240) anglers fished the lake from 21 May to 29 August 2004. The angling pressure exerted on Gods Lake was 2.31 angler hours per hectare (hours/ha) (95% CL 1.80-2.86 hrs/ha).

The overall catch rate of walleye (expressed as total catch per unit effort (TCUE)) was observed to be 0.32 fish/hr, while the total harvest per unit effort (THUE) was 0.07 fish/hr. The total walleye harvest was estimated at 0.33 kg/ha (95% CL 0.27-0.41 kg/ha). In contrast, the overall catch rate of northern pike TCUE was 0.91 fish/hr, while the estimated THUE was 0.003 harvested fish/hr. A total of two northern pike were observed in the creel, therefore no estimates were made for total harvest.

The von Bertalanffy growth function resulted in an estimated 7.4 years to produce a harvestable walleye (>50cm total length). A similar estimate to produce a legal-length northern pike was not made due to low sample size of legally harvested fish.

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