Shebeshekong Lake

2004 Nearshore Community Index Netting (NSCIN) Survey Report

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Executive Summary:

A *Nearshore Community Index Netting* (NSCIN) Survey was conducted on Shebeshekong Lake during the summer of 2004. The purpose was to assess the status of the nearshore fish community, and in particular the game fish, namely - walleye, smallmouth bass, largemouth bass, northern pike and black crappie.

We present a 'hypothetical report card' in which we accord Shebeshekong Lake an over-all grade of C+. Fish productivity as measured by *Catch-Per-Unit-Effort by weight* (CPUE-wt) was well above the Parry Sound average, but most productivity is directed toward brown bullhead and common white sucker. Of nine species caught, bullhead and sucker together accounted for 65% of the total catch weight of 340 kilograms. Notwithstanding this, game fish production was reasonably good with abundance indices for walleye, bass (large and smallmouth) and pike being 'average' relative to similarly surveyed Parry Sound Area lakes. Black crappie abundance was well 'above average'.

Biosampling data indicate that smallmouth bass and black crappie populations have a healthy size distribution with good reproduction and recruitment rates as well as acceptable levels of mortality. Walleye size distribution also looked 'good', however there was a scarcity of larger size fish, suggesting mortality and angling levels may be high. Sample sizes for largemouth bass and northern pike were too small to comment on.

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1.0 Introduction:

At 158 hectares, Shebeshekong Lake is considered a “medium size” lake in the Parry Sound Area. The lake is situated in the Municipal Township of Carling and is adjacent to the *Shebeshekong Road* that runs just east of the lake (Figure 1). Public access to the lake is provided by a municipal access point. With close to 100 cottages and/or residences, development density is high for the Parry Sound Area. There are also several commercial resorts on the lake. Approximately 80% of the shoreline is privately owned (OMNR, 1971). The easy access, high development and close proximity to Parry Sound, makes Shebeshekong Lake vulnerable to excessive angling pressure.

The lake is near the top of the very small Shebeshekong River watershed. Water enters from the surrounding landform as well as Cole Lake and then exits via the Shebeshekong River to Georgian Bay at Dillon.

The lake has a maximum depth of 13.1 meters (43’) and a mean depth of 4.6 meters (15.1’) (OMNR, 1971). Water transparency is low with a secchi reading of 2.5 meters. Shallow depths and low oxygen levels in deep water makes this lake unsuitable for cold-water fish species such as coregonids (lake whitefish and cisco). Typical of Canadian Shield lakes, the pH is mildly acidic, and total dissolved solids and alkalinity levels are low (OMNR, 1971).

Ministry records indicate the first fisheries work done of the lake was a “*Biological Survey Report*” conducted in 1957. At that time, inhabiting fish species included: walleye, smallmouth bass, northern pike, pumpkinseed, rock bass, common white sucker, yellow perch, brown bullhead and ‘minnows’ (OMNR, 1957). Ministry stocking records indicate the lake was heavily planted with smallmouth bass and walleye as early as 1939 and continuing through the 1950’s. It is unknown, but probably these were introductory plantings of these species. Several plantings of muskellunge during the 1950’s and ‘60’s appear to have failed at creating a self-sustaining population.

The first mention of largemouth bass in the lake is a 1964 “Fish Collection Report” on Ministry files. It is unknown if this species was stocked through an unauthorized planting by the public, or if it was a native species that simply wasn’t caught in the 1957 survey. The Ministry has never planted largemouth bass in the lake.

In 1971 a provincially standard “Aquatic Habitat Inventory Survey” (AHI) (commonly known as a “lake survey”) was conducted by the Ministry. At that time, no largemouth bass, rock bass or yellow perch were caught in four overnight gillnet sets. Walleye, smallmouth bass and northern pike were the only game fish caught.

Seemingly, several significant changes have occurred in the fish community between these early studies and present day. Black crappie and largemouth bass are now well established in the fish community. Although this report represents the first documentation of black crappie in the lake, their abundance suggests their introduction to the lake occurred some time ago. We suspect this was via an unauthorized introduction by some well-meaning member of the public. However, black crappie are direct competitors and predators upon early life stages of walleye and one can expect walleye production to diminish as crappie production increases .

Another change in the fish community is the seeming extirpation (extinction) of yellow perch. Although this species is listed in the 1971 AHI report, none were caught during the survey. The last Ministry documentation of this species being present in the lake is 1957.

The purpose of this *Nearshore Community Index Netting Survey* (NSCIN) was to assess the status of the nearshore fish community and in particular the game fish – walleye, smallmouth bass, largemouth bass, northern pike and black crappie.

2.0 Methods:

2.1 Field Operations:

Our survey followed field procedures as specified in the Ministry's *Manual of Instructions for Nearshore Community Index Netting* (NSCIN) projects (Stirling, 1999). Basically, this survey uses live capture, 6'-trapnets that are set overnight for approximately 24-hour duration. Net set locations were randomly selected. All fish captured were enumerated (Appendix A) and sampled for total and fork length as well as weight determination (Appendix E-1 to E-7). Scale samples were collected from walleye, largemouth bass and smallmouth bass for age assessment. All fish were live-released at the site of capture. Incidental mortality for this type of survey is generally negligible.

Our survey commenced on August 9th and terminated on August 13th. A total of 16 trapnet sets were made.

Set Locations:

As per the NSCIN manual, we segmented the shoreline of Shebeshekong Lake into 216 units of approximately equal length. These were then numbered and selection of which segment would be chosen for a net set was determined from a table of random numbers. The netting crew reported they were 'very hard pressed' to find suitable netting sites and were forced to seek alternate sites – also selected on a random basis. In addition to the foregoing random site selection, crews were advised to:

- Only fish sites suitable for the net to fish effectively. (Consequently – factors such as: contour of the lake bottom, absence of obstructions, depth, sufficient lead length, etc. were considered.)
- Nets were to be set far enough apart such that they were not competing with each other (i.e. greater than 500 meters apart).
- Avoid areas of potential conflict where there was human habitation.
- Avoid areas where nets could act as a navigational hazard.

Due to the shortage of suitable netting sites, we were forced to re-use two sites. Nets set locations are indicated in Figure 1.

2.2 Data Analysis:

Age determination for walleye, smallmouth bass and largemouth bass was by the scale reading method. As there are no known-age fish in Shebeshekong Lake, our age assessment is unvalidated. Campbell and Babaluk (1979) concluded that scale aging consistently underestimates the true age of fish, particularly in older age classes.

This year (2004), was the first year the Parry Sound Area has used the provincially standard *Nearshore Community Index Netting* (NSCIN) survey methodology. Consequently, there is an inadequate reference database within the Parry Sound Area with which to make valid comparisons. It will take several years of similar surveys on numerous other lakes before a comparable reference database will be established.

The intention of a provincial standard methodology, was that lakes surveyed in the Parry Sound Area - or any other part of the Province, could be compared with the reference database for the entire Province. We were very dismayed to learn that this reference database is a 'melting pot' of all NSCIN surveys, most of which are unsuitable for comparison to Parry Sound Area lakes. This unsuitability was due to:

- lake size (many are much greater than 1000 ha),
- high secchi readings (> 5 meters), and
- location in the province which makes their productivity in terms of growing degree days and nutrient levels dissimilar to Parry Sound Area lakes.

Based on the criteria of lake size between 100 and 1000 ha, TDS less than 50 and secchi reading less than 5 meters, only 8 lakes in the 48 lake dataset met the foregoing criteria (MNR, 2000). Consequently, we do not make any comparisons with the Provincial NSCIN database. Once additional surveys are added to this database and it can be 'filtered' for specific lake characteristics, its utility will become much more valuable than it currently is.

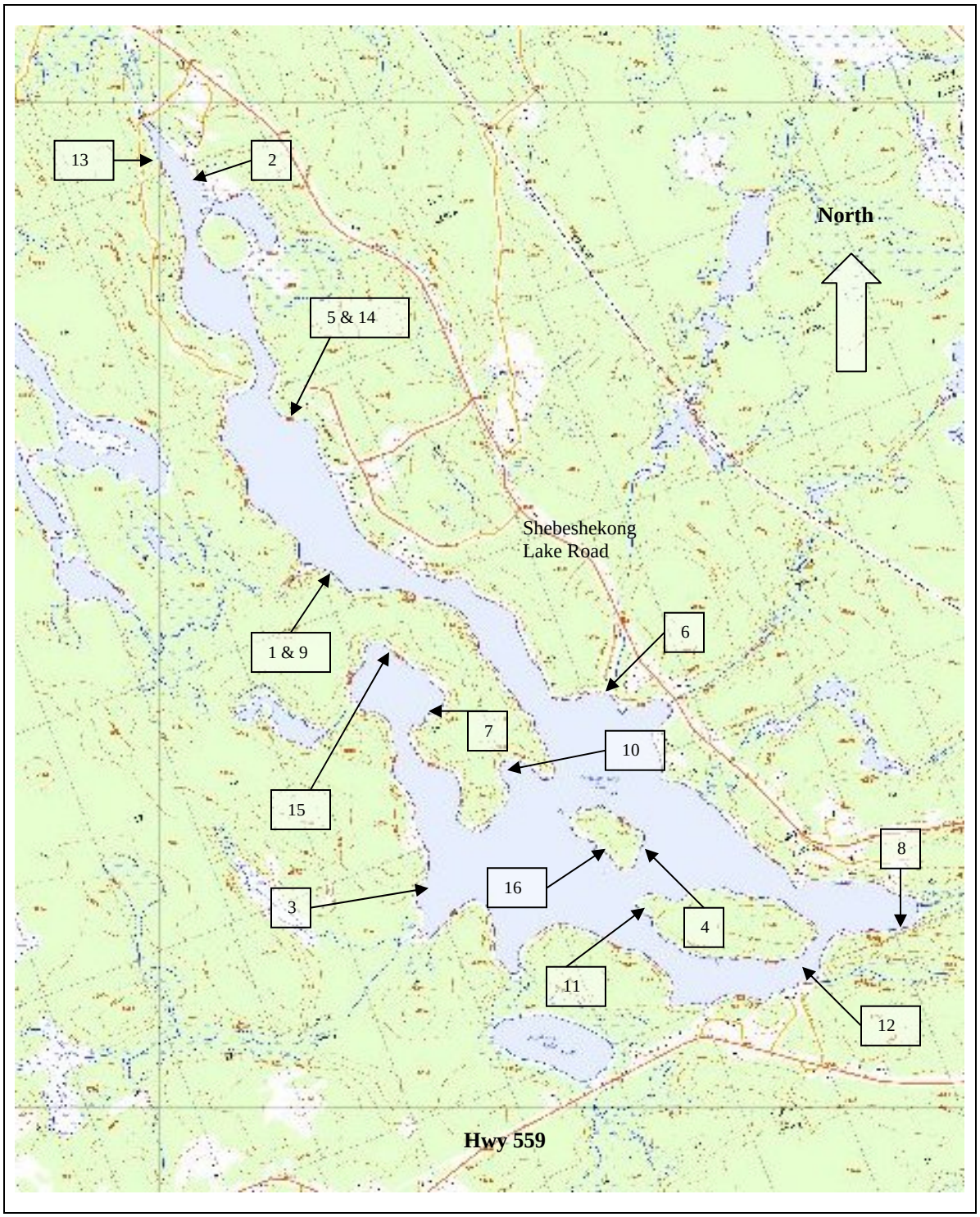
Because diagnostic parameters are largely evaluated on the basis of their position in a reference database, we were forced to reanalyze historic 6'-trapnet data from the Parry Sound Area in order to create one (Appendix B). This dataset is based on 19 surveys conducted between 1982 and 1994 that used 6'-trapnets as sampling gear. We have reanalyzed these surveys to isolate data from the 6'-trapnets only. We also add to this dataset the four NSCIN surveys using 6'-trapnets conducted in 2004. The reader should bear in mind this reference dataset is based largely on historic Parry Sound data more than a decade old.

Although we were extremely reluctant to do so, we also make comparisons with the Parry Sound Synoptic 8'-Trapnet Survey (PSSTNS) database. This database is generated from 8'-trapnet sampling gear and consequently is not directly comparable to our data, which was generated from 6'-trapnets. Nevertheless, this was the only database available for us to make comparisons for diagnostics such as:

- Probability Of Catch (POC),
- Catch-Per-Unit-Effort by weight (CPUE-wt) for game and non-game fish, and
- Species composition by catch weight.

Biases associated with such comparisons are discussed within the report.

Figure 1. Trapnet Set Location for the 2004 NSCIN Survey on Shebeshekong Lake



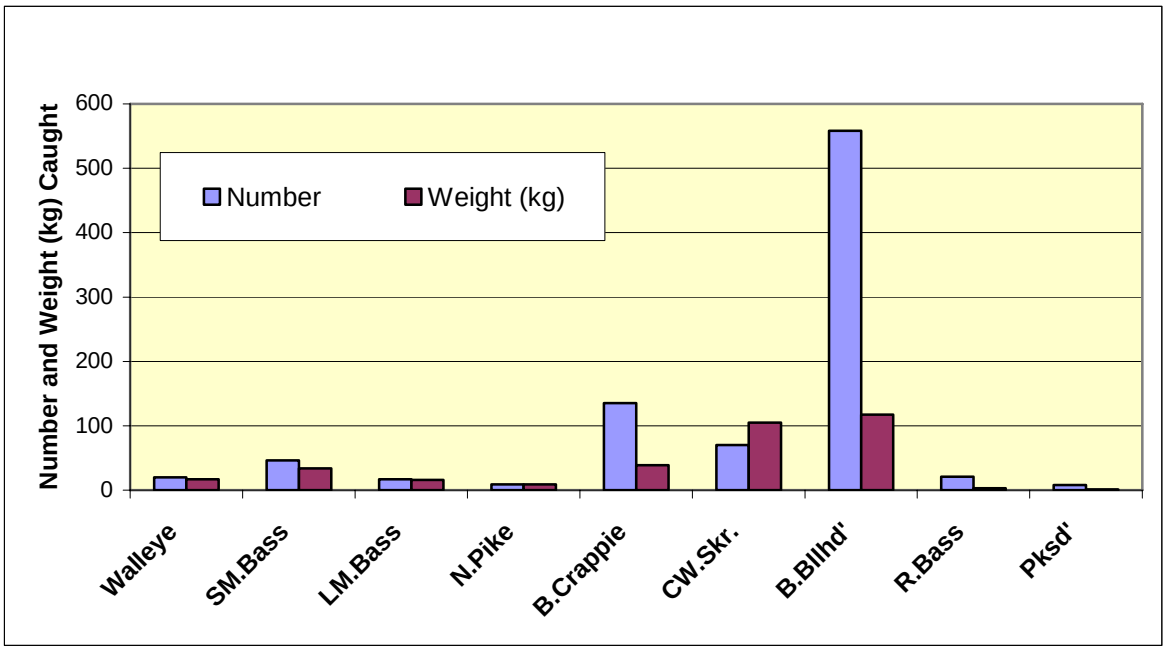
3.0 Results:

3.1 Catch and Community Composition Indices:

From 16 over-night trapnet sets we captured: 558 brown bullhead, 135 black crappie, 70 common white sucker, 47 smallmouth bass, 21 rock bass, 20 walleye, 17 largemouth bass, 9 northern pike and 8 pumpkinseed (Appendix A and Figure 2).

By weight, our catch was comprised of 117.5 kg of brown bullhead, 105.1 kg. common white sucker, 38.5 kg. black crappie, 33.9 kg. smallmouth bass, 16.9 kg. walleye, 15.7 kg. largemouth bass, 8.8 kg. northern pike, 2.9 kg. rock bass and 0.8 kg. pumpkinseed (Appendix A and Figure 2).

Figure 2. Catch Composition by Number (No.) and Weight (kg.) for the 2004 Shebeshekong Lake NSCIN survey.



Brown bullhead was the dominant species in our catch, comprising 63.1% of the catch by number and 34.5% by weight (Appendix A). Although common white sucker had a comparatively lower catch rate (CPUE-no was 4.4 per net set – Appendix A), they comprised 30.9% of the total catch weight; almost as much as brown bullhead.

We are unsure to what extent our catch is reflective of the resident fish community in Shebeshekong Lake. This is due to various fish species and size ranges of species having different degrees of vulnerability to the gear. In other words, the gear does not necessarily capture fish in direct proportion to their abundance in the fish community. We do know that our catch under-represents the forage base (small fish species) in the

fish community. Although we are unsure of the degree of this sampling bias, we use our catch composition as a surrogate of community composition with the acknowledgement that this bias exists.

Game fish comprised 33.48% of the total catch weight, being comprise of 4.98% walleye, 9.96% smallmouth bass, 4.63% largemouth bass, 11.33% black crappie and 2.58% northern pike (Appendix A). Non-game fish comprised 66.52% of the total catch weight, being comprised of 34.55% brown bullhead, 30.89% common white sucker, 0.85% rock bass and 0.23% pumpkinseed (Appendix A).

This is a high percentage of non-game fish in the catch composition, and by inference the community composition. From 23 synoptic trapnet surveys conducted in the Parry Sound Area since 1994, the average percentage of the catch comprised of non-game fish was 38.0%, compared to Shebeshekong Lake's 66.5% (Appendix D).

In terms of over-all productivity, we captured a total of 340.1 kg of fish for a *Catch-Per-Unit-Effort by weight* (CPUE-wt) of 21.3 kg. per net set (Appendix A). Unfortunately, we have no directly comparable database with CPUE-wt data from 6'-trapnets. However, the mean CPUE-wt for the *Parry Sound Area Synoptic 8'-Trapnet Survey* (PSSTNS) database is 16.404 kg. per net set (Appendix D). We say this dataset is not "directly comparable" because it is based on the use of 8'-trapnets, as opposed to 6' nets used in this survey.

We know 8'-trapnets are more effective than 6'-trapnets at capturing a larger biomass of fish. Considering our over-all CPUE-wt of 21.3 was generated from 6'-trapnet gear, and the PSSTN mean of 16.404 was generated from 8'-trapnet gear, we conclude productivity on Shebeshekong Lake is well above the Parry Sound Area average. Admittedly, most of this productivity is being directed towards brown bullhead and common white sucker.

We captured 7.112 kg. of game fish per net set (Appendix A). This is slightly below the mean of 9.810 kg. of game fish per net set for the Parry Sound Synoptic 8'-Trapnet Survey (PSSTNS) database (Appendix D). Considering differences in gear used, we consider these estimates of game fish productivity to be approximately equal.

3.2 Abundance and Biosampling Indices

3.2.1 Walleye:

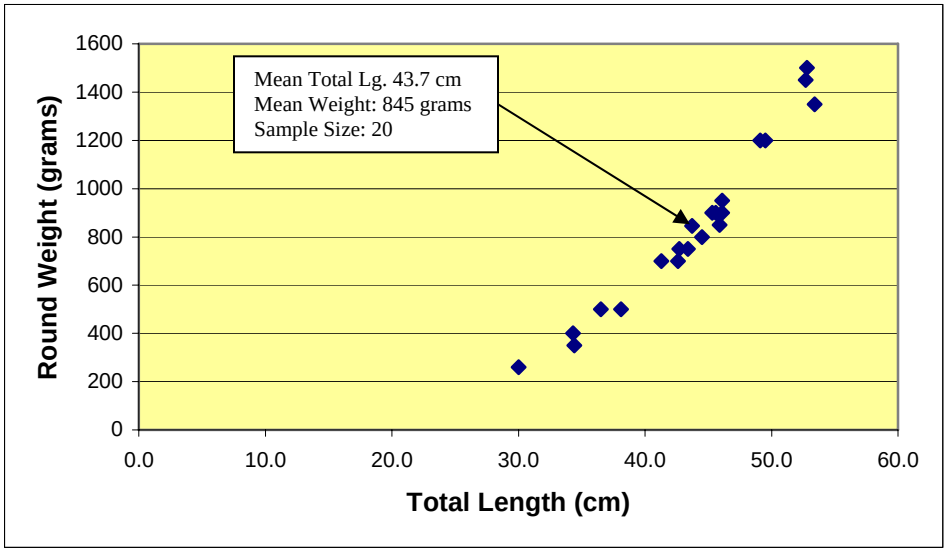
From 16 net sets, we captured 20 walleye for a *Catch-Per-Unit-Effort* (CPUE) of 1.3 walleye per net set (standard error S.E. 0.296; Appendix A). This is essentially equivalent to the average of 1.4, generated from 20 surveys conducted in the Parry Sound Area since 1982 (Appendix B).

Our walleye *Probability of Capture* (POC) was 0.687 (Appendix A). (That is, 68.7% of nets captured at least one walleye). This is almost identical to the mean value of 0.675 for the *Parry Sound Synoptic 8'-Trapnet Survey* (PSSTNS) database, generated by 23 surveys conducted between 1994 and 2003 (Appendix C).

Our interpretation of the foregoing is that walleye abundance on Shebeshkong Lake is "average", relative to other walleye lakes similarly surveyed in the Parry Sound Area.

We completely biosampled all 20 walleye captured (Appendix E-1). Mean total length was 43.7 cm (17.2") and mean weight 845 grams (1.9 lb) (Figure 3). Although our sample size was small (N=20), the size distribution was reasonably good, perhaps with the exception that there was an absence of large size walleye (none were > 55 cm in total length). The absence of larger walleye in the population may be symptomatic of high mortality related to angling. A good representation of small walleye (20% of catch < 40 cm total length) suggests reproduction and recruitment are occurring at reasonably good rates.

Figure 3. Walleye Size Distribution – Shebeshekong Lake 2004 NSCIN Survey



3.2.2 Smallmouth Bass

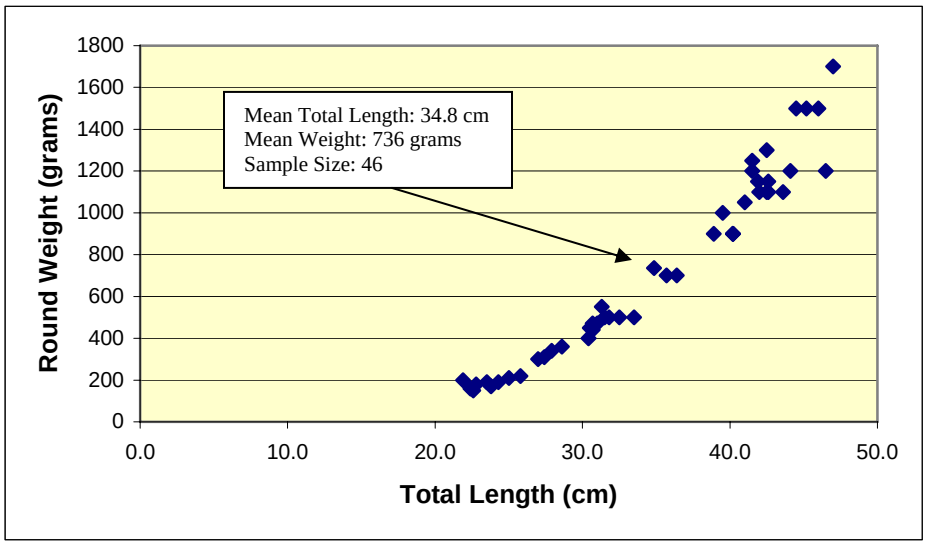
We captured 46 smallmouth bass for a CPUE of 2.9 smallmouth per net set (S.E. 0.676; Appendix A). This is very comparable to the Parry Sound Area average of 2.7 generated from 22 similar surveys conducted between 1982 and the present (Appendix B).

Our smallmouth bass POC (*Probability of Capture*) was quite high – 0.937 (Appendix A), indicating smallmouth are widespread through Shebeshekong Lake. Every net set except one captured at least one smallmouth bass. The observed POC for Shebeshekong Lake (0.937) is considerably higher than the mean of 0.663 from the *Parry Sound Synoptic 8'-Trapnet Survey* (PSSTNS) database.

We interpret the foregoing as indicating smallmouth bass abundance on Shebeshekong Lake is "average" or "slightly above average" relative to other Parry Sound Area lakes similarly surveyed.

We biosampled all 46 smallmouth bass captured and calculated a mean total length of 34.8 cm (13.7") and mean weight of 736 grams (1.6 lb) (Figure 4 and Appendix D). Our size distribution was very good with a wide range and all sizes being well represented in the catch. We interpret this as indicating the population is very healthy with good levels of reproduction and recruitment, and moderate levels of mortality.

Figure 4. Smallmouth Bass Size Distribution – Shebeshekong Lake 2004 NSCIN Survey



3.2.3 Largemouth Bass:

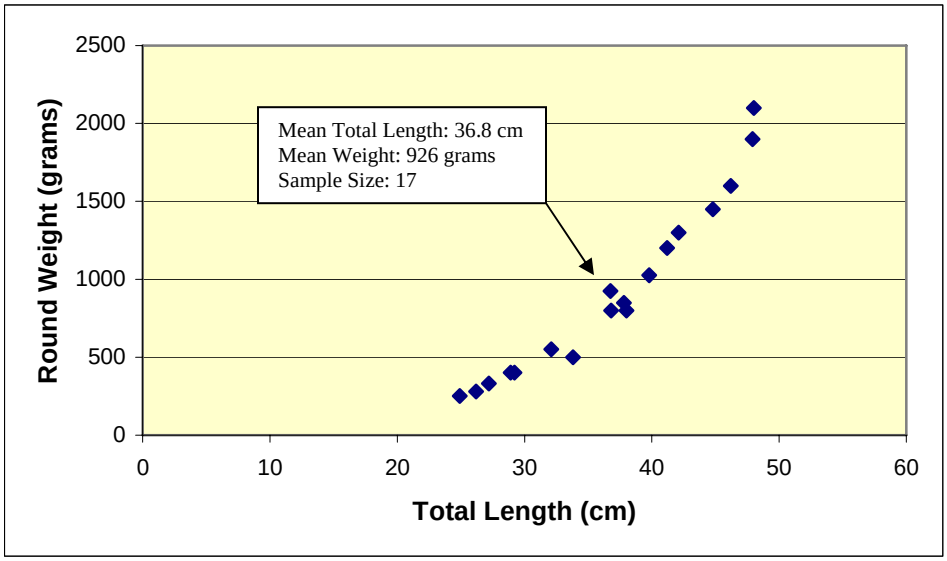
We captured 17 largemouth bass for a CPUE of 1.1 largemouth per net set (S.E. 0.309; Appendix A). This is slightly below the Parry Sound average of 1.8 for similar surveys conducted since 1982 (Appendix B).

Our largemouth POC was 0.562 (Appendix A); well above the PSSTNS mean of 0.352 (Appendix B-2)

We accord a higher degree of credibility to the CPUE index, and interpret the foregoing as suggesting that largemouth bass abundance on Shebeshekong Lake is “average” or “slightly below average”, relative to other Parry Sound Area lakes similarly surveyed.

Mean total length of smallmouth bass sampled was 36.8 cm (14.5”) and mean weight 926 grams (2.0 lb) (Appendix E). Despite a small sample size (N=17), our size distribution of largemouth bass (Figure 5) was wide ranging with all size classes present. We interpret this as being indicative of a healthy, although small population of largemouth bass. Reproduction and recruitment are evident and mortality does not appear to be unduly high.

Figure 5. Largemouth Bass Size Distribution – Shebeshekong Lake 2004 NSCIN Survey



3.2.4 Northern Pike:

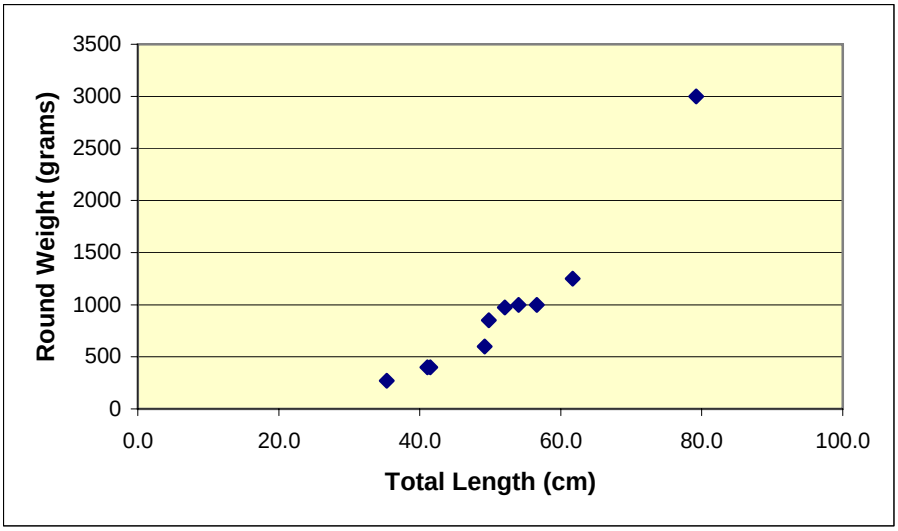
We captured nine northern pike for a CPUE of 0.6 pike per net set (S.E. 0.182; Appendix A). This is slightly below the average of 0.9 for similarly surveyed Parry Sound Area lakes (Appendix B).

Our pike POC was 0.437 (Appendix A), also slightly below the PSSTNS mean of 0.573 (Appendix C).

It would appear that northern pike abundance on Shebeshekong Lake is probably "average" or "slightly below average" for similarly survey Parry Sound Area lakes.

We sampled the complete catch of nine northern pike and computed a mean total length of 52.0 cm (20.5") and mean weight of 974 grams (2.1 lb) (Appendix E). Our sample size of northern pike (N=9) is probably too small to formulate any firm conclusions about population status. We do note however - a scarcity of larger pike, and wonder if this may be symptomatic of high mortality related to angling.

Figure 6. Northern Pike Size Distribution – Shebeshekong Lake 2004 NSCIN Survey



3.2.5 Black Crappie:

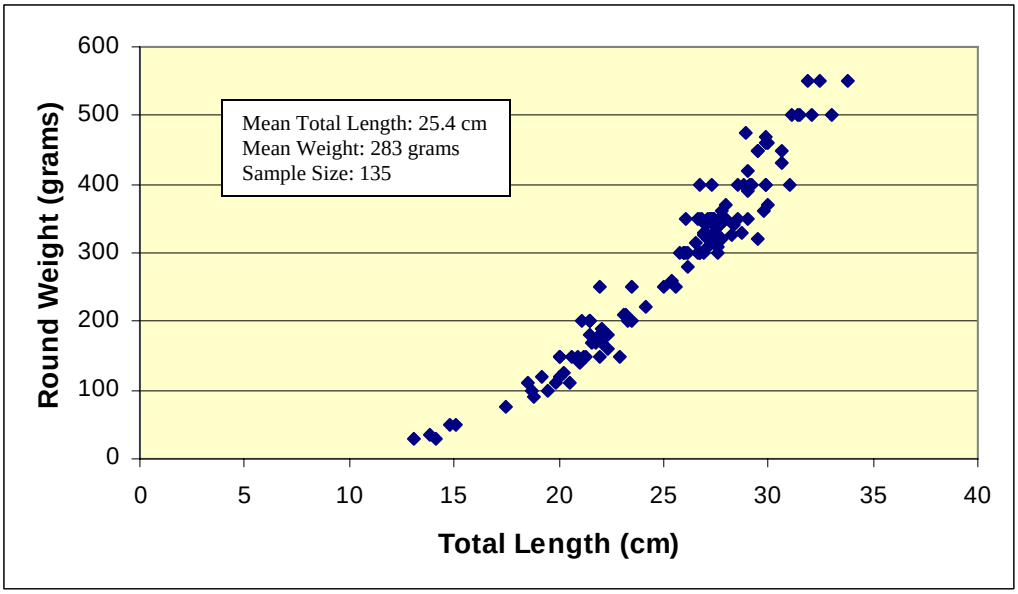
We captured 135 black crappie for a CPUE of 8.4 crappie per net set (S.E. 1.461; Appendix A). Black crappie is not a frequently caught species in the Parry Sound Area. Only three other surveys in the Parry Sound 6'-trapnet database (Appendix B) have caught them. Notwithstanding the absence of a reference dataset, we consider a CPUE of 8.4 to represent a very high abundance of black crappie. Although not directly comparable, the PSSTNS dataset has a mean crappie CPUE of 3.2 from a sample of 8 surveys.

Also, our black crappie POC was remarkably high at 1.000 or 100% (Appendix A). All 16 net sets captured at least one black crappie, indicating not only a high abundance index but also widespread distribution of this species throughout the lake. The mean black crappie POC from the PSSTNS database is only 0.525 (Appendix C).

We interpret the foregoing as a clear indicator of high crappie abundance on Shebeshekong Lake relative to similar survey conducted in the Parry Sound Area.

We sampled all 135 black crappie captured and computed a mean total length of 25.4 cm (10") and mean weight of 283 grams (0.6 lb) (Appendix E-5). The size distribution of our sample was excellent with all size classes well represented. A good abundance of small fish was indicative of successful reproduction and recruitment. As well, the high abundance of larger size crappie (>30 cm) suggests the mortality rate for this population is not excessive. This population appears to be healthy and quite abundant.

Figure 7. Black Crappie Size Distribution – Shebeshekong Lake 2004 NSCIN Survey



3.2.6 Non-Game Fish (Common White Sucker, Brown Bullhead, Rock Bass and Pumpkinseed:

We captured 70 common white sucker for a CPUE of 4.4 sucker per net set (S.E. 1.264; Appendix A). Notwithstanding the high degree of variability for this statistic (% relative standard error of 28.7%), it is considerably higher than the Parry Sound Area average of 1.9 (Appendix B). We consider the abundance of common white sucker to be "above average" relative to similarly surveyed lakes in the Parry Sound Area.

The mean size of common white sucker captured was rather large: mean total length 50.3 cm (19.8") and mean weight (3.3 lb) (Appendix E-6).

Brown bullhead was the most frequently caught species in this survey with a CPUE of 34.9 bullhead per set (S.E. 7.278; Appendix A). This is much higher than the Parry Sound average of 11.1 (Appendix B). All but one set captured at least one bullhead for a POC of 0.937; also much higher than the PSSTNS mean of 0.530 (Appendix C). Both indices are clearly indicative of a very high abundance of brown bullhead that is well above the average for similarly surveyed Parry Sound Area lakes.

The mean size for brown bullhead was a total length of 25.1 cm (9.9") and weight 210 grams (0.46 lb) (Appendix E-7).

The catch rate (CPUE) for rock bass and pumpkinseed was low; 1.3 (S.E. 0.624; Appendix A) and 0.5 (S.E. 0.224; Appendix A) respectively. These are well below the Parry Sound average of 4.0 and 3.5 for these species (Appendix B). Abundance for these species is "below average" relative to similarly surveyed Parry Sound Area lakes. Only mean weights were computed for these species, those being 140 grams for rock bass and 97.5 grams for pumpkinseed (Appendix A).

Table 1. Hypothetical 'Report Card' for Shebeshekong Lake base on a comparison of diagnostic indicators with other Parry Sound Area Databases.

	Diagnostic Indicator	Shebeshekong Lake 2004 Survey Value	Reference Value	Grade	Comment
Community Structure	Over-all Productivity CPUE-wt for all species	21.3 kg. / set	16.404 (Appendix D)	B	Above reference value - but largely directed at brown bullhead and c.w.sucker
	% catch wt. comprised of game fish	33.48%	61.98% (Appendix D)	D	Catch weight (community composition) comprised primarily of non-game fish
	Game Fish CUE-wt	7.112 kg. / set	9.810 (Appendix D)	C	Slightly below reference value, but expected considereing we used 6'-trapnets
Walleye	Walleye CPUE-no	1.3 fish / set	1.4 (Appendix B)	C	Average' walleye abundance
	Probability of Capture	0.687	0.675 (Appendix C)	C	Average' POC
	Size Distribution	As per figure 3		C	Good range and size distribution; scarcity of larger walleye may indicate high exploitation
Smallmouth Bass	Smallmouth CPUE-no	2.9 fish / set	2.7 (Appendix B)	C	Average' smallmouth abundance
	Probability of Capture	0.937	0.663 (Appendix C)	B	Above average' POC
	Size Distribution	As per Figure 4		B	Good range; all size classes well represented
Largemouth Bass	Largemouth CPUE-no	1.1 fish / set	1.8 (Appendix B)	C	Approx. 'average' abundance
	Probability of Capture	0.562	0.352 (Appendix C)	C+	Above average' POC; widely distributed throughout lake
	Size Distribution	As per Figure 5		B	Wide ranging with all size classes present.
N. Pike	Pike CPUE-no	0.6 fish / set	0.9 (Appendix B)	C-	Average' abundance
	Probability of Caputre	0.437	0.573 (Appendix C)	C	Approximately 'average'
	Size Distribution	As per Figure 6			Sample Size too small to comment
Black Crappie	Bl. Crappie CPUE-no	8.4 fish / set	4.5 (Appendix B)	B	High Crappie abundance
	Probability of Capture	1.000	0.525 (Appendix C)	A	Crappie widely distributed throughout lake
	Size Distribution	As per Figure 7		A	Wide range with all size classes well represented
Non-Game Fish	C.W.Sucker CPUE-no	4.4 fish / set	1.9 (Appendix B)	C-	Catch (Community) composition skewed towards brown bullhead and sucker. Low abundance of forage fish species.
	B.Bullhead CPUE-no	34.9 fish / set	11.1 (Appendix B)	D	
	Rock Bass CPUE-no	1.3 fish / set	4.0 (Appendix B)	D	
	Pumpkinseed CPUE-no	0.5 fish / set	3.5 (Appendix B)	D	
Overall Grade: C+					

We accord Shebeshekong Lake an over-all grade of C+. Fish productivity is quit high, although most production is being directed at non-game fish species (brown bullhead and common white sucker). Notwithstanding this, game fish production is still quite good with abundance of walleye, bass (large and smallmouth), and pike being 'average', and

black crappie ‘well above average’. Size distribution for all game species were generally “good”.

We consider the over-all fish community of Shebeshekong Lake, as well as the game fish populations contained therein to be in a healthy and self-sustaining condition. At this time we do not consider further management actions or the implementation of *exception fishing regulations* warranted.

4.0 Acknowledgements:

Field operations were supervised by Jim Palmer with assistance from Rose Thermer, Joe Simon and Eric McIntyre. We acknowledge and thank Cathy Harrison for providing us with a safe and convenient location to store our boat overnight.

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Appendix A.

Catch Summary – Shebeshekong Lake 2004 NSCIN Survey

Set No	Date Set	Date Lifted	Effort	Catch (number by species) Walleye	SM.Bass	LM.Bass	N.Pike	B.Crappie	CW.Skr.	B.Bllhd'	R.Bass	Pksd'
1	Aug-09	Aug-10	1	1	2	3	1	7	1	14	0	1
2	Aug-09	Aug-10	1	1	1	0	2	5	11	59	0	0
3	Aug-09	Aug-10	1	1	3	1	0	5	9	44	7	0
4	Aug-09	Aug-10	1	1	2	0	1	27	0	55	0	0
5	Aug-10	Aug-11	1	3	3	1	0	5	1	23	1	0
6	Aug-10	Aug-11	1	1	5	4	0	10	5	69	8	3
7	Aug-10	Aug-11	1	3	1	1	0	1	10	20	0	0
8	Aug-10	Aug-11	1	0	1	0	0	13	0	0	0	0
9	Aug-11	Aug-12	1	0	2	0	0	9	3	6	2	1
10	Aug-11	Aug-12	1	1	6	2	1	7	0	77	1	0
11	Aug-11	Aug-12	1	0	4	0	1	8	7	23	0	0
12	Aug-11	Aug-12	1	3	3	1	1	8	3	98	1	2
13	Aug-12	Aug-13	1	2	1	2	0	4	1	10	0	0
14	Aug-12	Aug-13	1	0	0	0	0	7	2	26	0	0
15	Aug-12	Aug-13	1	0	1	0	0	6	0	3	0	0
16	Aug-12	Aug-13	1	3	11	2	2	13	17	31	1	1
	Total			20	46	17	9	135	70	558	21	8
	CPUE-no			**1.3**	**2.9**	**1.1**	**0.6**	**8.4**	**4.4**	**34.9**	**1.3**	**0.5**
	Confidence Level(95.0%)			0.630	1.441	0.659	0.388	3.113	2.695	15.512	1.330	0.477
	Standard Error			0.296	0.676	0.309	0.182	1.461	1.264	7.278	0.624	0.224
	Standard Deviation			1.183	2.705	1.237	0.727	5.842	5.058	29.111	2.496	0.894
	Sample Variance			1.400	7.317	1.529	0.529	34.129	25.583	847.450	6.229	0.800
	Median			1	2	1	0	7	2.5	24.5	0	0
	Count			16	16	16	16	16	16	16	16	16
	Probability of Capture			**0.687**	**0.937**	**0.562**	**0.437**	**1.000**	**0.750**	**0.937**	**0.437**	**0.312**
	Mean Weight (g)			845.0	736.1	925.6	974.4	283.4	1500.8	210.6	140.0	97.5
	CPUE-wt			**1.057**	**2.116**	**0.983**	**0.548**	**2.408**	**6.566**	**7.344**	**0.183**	**0.049**
	Catch Weight (kg)			16.910	33.860	15.735	8.770	38.530	105.056	117.514	2.940	0.780
	% of total catch weight			4.98	9.96	4.63	2.58	11.33	30.89	34.55	0.85	0.23

Total Catch Weight: 340.1 kg.
Over-all CPUE(wt): 21.3 kg. / set

Appendix B

Catch-Per-Unit-Effort by number (CPUE-no) for the Parry Sound 6'-Trapnet Database

Survey	No. Sets	Area (ha)	MEI	Secchi (m)	MNR Dist	Catch-Per-Unit-Effort (CPUE) Wal	SMB	LMB	Bl.Cp.	NP	CWS	BBr	RB	Pksd	Y.Perch	Other
Ahmic Lk ('83)	17	1567	3.3	3.5	PSound	2.4	3.5			0.2	2.6	3.6		6.7	1.7	0.1
Ahmic Lk ('87)	18	1567	3.3	3.5	PSound	3.9	2.7			0.4	0.5	4.2		2.3	0.4	
Bear Lk ('86)	8	325	8.2	2.3	PSound	0.4				1.5	3.9	3.3	18.1	4.3	0.5	
Cecebe Lk ('83)	15	770	6.0	2.6	PSound	0.9	0.9			0.1	1.3	0.1		2.7	2.3	0.5
Cecebe Lk ('89)	16	770	6.0	2.6	PSound	2.4	5.2			0.4	1.8	2.9	2.1	13.1	1.1	
Doe Lk ('82)	11	1188	4.3	2.1	PSound	0.9	2.2			0.7	0.5	2.9	0.0	2.6	0.1	0.1
Doe Lk ('88)	12	1188	4.3	2.1	PSound	3.5	6.2			1.5	1.2	18.8	2.1	11.5	1.4	
Harris Lk ('94)	11	363			PSound	1.4	2.5	4.8		2.8	13.5	31.5	1.3	4.6	0.0	
Healey Lk ('83)	20	763	3.4	3.9	PSound		1.6	2.7		0.3	0.3	0.0	2.3	3.4	0.0	
Kapikog ('83)	5	317	3.1	5.4	PSound		1.0	4.6		0.0		0.0	4.2	5.4	4.4	0.2
Manitouwabing ('82)	9	1250	4.8	2.3	PSound	0.6	0.0	0.1		1.2	0.1	0.0	5.0	1.6	0.4	0.6
Manitouwabing ('88)	24	1250	4.8	2.3	PSound	1.8	2.7	0.3		1.7	0.3	49.9	5.2	1.8	0.5	
Mill Lk ('90)	8	619	1.4	2.0	PSound	0.1	2.4		0.2	0.4	0.4	0.7	1.0	0.1		
Portage Lk ('86)	3	59		1.8	PSound	0.0	0.0	2.0		1.5	3.9	3.3	18.1	4.3	0.5	
S. Magnetawan R ('94)	16				PSound	1.2	3.6	0.7		1.2	2.6	2.7	2.9	4.9		0.1
U. Moon R. ('85)	80				PSound	1.0	1.2	0.0	0.0	0.4	0.5	0.0	2.2	1.0	0.1	0.2
U. Pickerel R. ('89)	28				PSound	1.1	2.9	0.9		0.4	1.0	1.5	2.4	2.9		0.7
Whiteston Lk ('82)	12	698	6.0	2.4	PSound	0.9	0.6	0.0		1.8	0.3		0.8	0.5	0.2	
Wahwashkesh Lk ('87)	32	1721	2.2	3.7	PSound	0.2	4.4	0.0		0.6	0.2	0.7	3.9	0.8	0.0	
Manitouwabing ('04)*	30	1250	4.8	2.3	PSound	2.5	1.7	0.5		1.9	1.9	82.0	3.0	2.0	0.0	0.4
Salmon Lk ('04)	16	68	2.5	3.7	PSound		7.2	3.1		0.1	0.4	0.1	0.6	0.3		
Shebeshekong ('04)	16	158	4.9	2.5	PSound	1.3	2.9	1.1	8.4	0.6	4.4	34.9	1.3	0.5		
Whitestone Lk ('04)	30	698	6.0	2.4	PSound	1.3	4.0	5.6	9.4	1.4	0.9	1.3	2.8	2.8	0.3	0.4
	Parry Sound Mean					**1.4**	**2.7**	**1.8**	**4.5**	**0.9**	**1.9**	**11.1**	**4.0**	**3.5**	**0.8**	**0.3**
	Confidence Level(95.0%)					0.502	0.837	1.076	8.112	0.319	1.286	9.252	2.355	1.429	0.555	0.158
	Standard Error					0.240	0.402	0.502	2.549	0.154	0.618	4.449	1.125	0.689	0.263	0.070
	Standard Deviation					1.072	1.888	1.943	5.098	0.738	2.900	20.867	5.032	3.305	1.117	0.221
	Median					1.15	2.6	0.9	4.3	0.6	0.95	2.8	2.35	2.7	0.4	0.3
	Count					20	22	15	4	23	22	22	20	23	18	10

Appendix C

Probability of Capture (POC) for Parry Sound Area Synoptic 8'-Trapnet Surveys (PSSTNS) conducted between 1994 and 2003.

Survey & year	Walleye	SM Bass	LM Bass	Bl. Crappie	N. Pike	C.Wt. Sucker	Br Blhd.	Pump-kseed	Rock Bass	Yellow Perch	# sets
Bear Lake (2001)	0.765	0.470			0.705	0.529	0.647	0.059	0.529		17
Bolger Lake (1999)	0.823	0.882	0.588		0.470	0.059	0.294	0.294	0.588		17
Buck Lake (2002)	0.500	0.417	0.083	0.417	0.500						12
Cecebe Lake (2000)	1.000	0.909			0.818	0.818	0.636	0.818	0.636		11
Crane Lk. 1997)	0.611	0.888			0.111			0.111	0.500		18
Doe Lake (1998)	0.970	0.941			0.470	0.794	0.529	0.941	0.205		34
Dollar's Lake (2000)	0.666	0.833	0.625	0.500	0.583	0.708	0.458	0.375	0.416		24
Dollars Lake (2003)	0.727	0.909	0.454	0.636	0.454	0.636	0.727	0.454	0.636		11
Gibson Lake (2001)	0.666	0.866	0.400	0.933	0.733	0.800	0.733	0.067	0.400		15
Giroux Lake (2001)	1.000	0.333			0.666	0.750	0.333		0.166	0.083	12
Go Home Lake (2003)	0.625	0.583	0.391		0.458	0.583	0.458	0.208	0.541		23
Harris Lake (1994)	0.516	0.387	0.322		0.484	0.871	0.501	0.612	0.355		31
Isabella Lk. (1997)	0.333	0.800			0.600	0.900	0.400	0.200	0.900		10
Kashegaba Lk. (1999)	0.467	1.000	0.466		0.533		0.467	0.667	1.000		15
McDougall Lk. (2000)	0.846	0.538		0.461	0.692	0.615	0.307		0.154		13
McKellar Lk. (2003)	0.667	0.083	0.083		0.750	0.583	0.250		0.500		12
Moffat Lake (2020)	0.333	0.167			0.833	0.917	0.833		0.083	0.083	12
Pakeshkag Lk. (2001)	0.083				0.750	0.417	0.833	0.250	0.416	0.083	12
Poverty Bay (1999)	0.714	0.857			0.286	1.000	0.857	0.428	0.571		7
Rock Is / Bl Oak (2003)	1.000	0.583	0.083		0.667	0.583	0.333	0.083	0.333		12
Six Mile Lake (1999)	0.722	0.967	0.866	0.700	0.433	0.667	0.933	0.866	0.666		30
S. Magnetawan R (1994)	0.714	0.510	0.081		0.510	0.673	0.204	0.489	0.551	0.020	49
Wahwashkesh (2002)	0.788	0.667	0.151	0.030	0.670	0.121	0.394	0.121	0.575		33
Mean	0.675	0.663	0.353	0.525	0.573	0.651	0.530	0.391	0.487	0.067	
Standard Error	0.048	0.058	0.069	0.106	0.036	0.054	0.048	0.068	0.048	0.016	
Confidence Level(95.0%)	0.100	0.120	0.151	0.259	0.075	0.113	0.101	0.143	0.100	0.050	
Count	23	22	13	7	23	20	21	18	22	4	

Appendix D.

Diagnostic indicators of catch composition (CPUE-wt for all species and game fish; composition of catch weight by game fish, non-game fish and walleye), from the Parry Sound Synoptic 8'-Trapnet Survey (PSSTNS) database 1994 – 2003.

	Rank	CPUE-wt All Species	CPUE-wt Game Fish	N = (no. sets)	% of total catch weight Game fish	Non-Game fish	Walleye
Bear Lake (2001)	9	16.896	12.434	17	73.4	26.6	45.1
Bolger Lake (1999)	8	16.930	16.354	17	96.6	3.4	63.5
Buck Lake (2002)	23	5.535	5.535	12	100	0	30.6
Cecebe Lake (2000)	3	30.706	20.911	11	68.1	31.9	39.6
Crane Lk. 1997)	19	9.362	9.362	18	100	0	31.9
Doe Lake (1998)	1	35.756	24.815	33	69.4	30.6	35.6
Dollar's Lake (2000)	5	21.610	6.980	24	32.3	67.7	5.1
Dollars Lake (2003)	10	16.044	8.776	11	54.7	45.3	9.9
Gibson Lake (2001)	2	32.966	14.208	15	43.1	56.9	12.9
Giroux Lake (2001)	7	18.820	13.268	12	70.5	29.5	51.3
Go Home Lake (2003)	11	15.694	6.732	24	42.9	57.1	8.5
Harris Lake (1994)	15	13.460	4.859	31	36.1	63.9	21.6
Isabella Lk. (1997)	12	15.343	8.362	10	54.5	45.5	3.5
Kashegaba Lk. (1999)	20	9.210	7.755	15	84.2	15.8	11.5
McKellar Lk. (2003)	17	10.492	5.687	12	54.2	45.8	16.5
McDougall Lk. (2000)	18	10.061	5.644	13	56.1	43.9	24.4
Moffat Lake (2020)	13	14.183	4.666	12	32.9	67.1	3.3
Pakeshkag Lk. (2001)	22	7.025	3.674	12	52.3	47.7	2.4
Poverty Bay (1999)	14	14.049	9.764	7	69.5	30.5	20.7
Rock Is / Bl Oak (2003)	6	19.310	12.957	12	67.1	32.9	45.9
S. Magnetawan R (1994)	21	8.970	4.530	49	50.5	49.5	22.6
Six Mile Lake (1999)	4	23.227	9.453	29	40.7	59.3	4.9
Wahwashkesh (2002)	16	11.637	8.902	33	76.5	23.5	36.4
Mean		16.404	9.810	18.652	61.983	38.017	23.813
Standard Error		1.677	1.120	2.135	4.257	4.257	3.638
Confidence Level(95.0%)		3.478	2.322	4.428	8.829	8.829	7.545
Standard Deviation		8.043	5.370	10.241	20.418	20.418	17.449
Count		23	23	23	23	23	23

Appendix E-1

Walleye Biosampling Data

Set No.	Fish No.	Fk. Lg.	Tot. Lg.	Weight	Age
1	1	35.6	38.1	500	4
2	1	32.1	34.3	400	3
3	1	50.3	53.4	1350	7
4	1	40.6	43.4	750	4
5	1	34.7	36.5	500	4
5	2	43.0	45.6	900	5
5	3	32.0	34.4	350	2
6	1	50.1	52.7	1450	13
7	1	43.0	45.3	900	6
7	2	40.3	42.6	700	5
7	3	43.4	46.1	900	5
10	1	50.4	52.8	1500	10
12	1	46.5	49.1	1200	10
12	2	41.9	44.5	800	8
12	3	47.0	49.5	1200	9
13	1	40.3	42.7	750	6
13	2	43.6	45.9	850	7
16	1	39.2	41.3	700	5
16	2	43.5	46.1	950	8
16	3	28.5	30.0	260	3
Mean		41.3	43.7	845.5	6.2
Standard Error		1.395	1.449	79.599	0.627
Standard Deviation		6.238	6.479	355.979	2.802
Confidence Level(95.0%)		2.920	3.032	166.603	1.311
Median		42.45	44.9	825	5.5
Sum				16910	124
Sample Size		20	20	20	20

Appendix E-2
Smallmouth Bass Biosampling Data

Set No.	Fish No.	Fk. Lg. (cm)	Tot. Lg. (cm)	Weight (grams)	Age
1	1	40.1	42.5	1100	
1	2	39.4	42.0	1100	
2	1	40.8	43.6	1100	10
3	1	39.5	41.9	1150	8
3	2	39.9	42.6	1150	7
3	3	30.0	31.8	500	4
4	1	38.4	41.0	1050	6
4	2	20.8	21.9	200	2
5	1	35.8	36.4	700	6
5	2	42.0	44.5	1500	7
5	3	23.5	25.0	210	3
6	1	30.0	31.5	500	3
6	2	31.9	33.5	500	4
6	3	23.2	24.3	190	2
6	4	24.2	25.8	220	2
6	5	25.6	27.0	300	3
7	1	37.7	40.2	900	6
8	1	31.0	32.5	500	4
9	1	37.8	40.2	900	7
9	2	39.2	41.5	1250	6
10	1	37.6	40.2	900	6
10	2	41.7	44.1	1200	6
10	3	21.4	22.4	160	2
10	4	29.3	31.0	470	5
10	5	36.7	38.9	900	5
10	6	26.6	27.9	340	3
11	1	27.1	28.6	360	5
11	2	37.5	39.5	1000	10
11	3	43.1	46.0	1500	13
11	4	34.0	35.7	700	7
12	1	26.0	27.4	310	5
12	2	29.0	30.7	470	5
12	3	28.8	30.4	400	5
13	1	29.7	31.3	550	4
15	1	43.2	46.5	1200	8
16	1	40.3	42.6	1100	8
16	2	29.8	30.7	440	4
16	3	38.8	41.5	1200	10
16	4	40.4	42.5	1300	12
16	5	42.5	45.2	1500	12
16	6	21.4	22.6	150	2
16	7	44.4	47.0	1700	11
16	8	22.0	23.8	170	3
16	9	28.8	30.5	450	4
16	10	22.3	23.5	190	3
16	11	21.7	22.8	180	3
Mean		32.9	34.8	736.1	5.7
Standard Error		1.094	1.174	66.456	0.448
Standard Deviation		7.419	7.963	450.725	2.969
Confidence Level(95.0%)		2.203	2.365	133.849	0.903
Sum				33860	251
Count		46	46	46	44

Appendix E-3
Largemouth Bass Biosampling Data

Set No.	Fish No.	Fork. Lg. (cm)	Total Lg. (cm)	Weight (grams)	Age
1	1	35.2	36.8	800	
1	2	27.7	28.9	400	
1	3	24	24.9	250	
3	1	37.4	39.8	1025	12
5	1	46	48	2100	17
6	1	32.5	33.8	500	4
6	2	40.8	42.1	1300	7
6	3	44.8	46.2	1600	10
6	4	28.8	29.2	400	3
7	1	36.5	37.8	850	6
10	1	25.4	26.2	280	4
10	2	31	32.1	550	5
12	1	26.1	27.2	330	4
13	1	36.5	38	800	8
13	2	39.1	41.2	1200	11
16	1	45.6	47.9	1900	13
16	2	42.1	44.8	1450	11
Mean		35.3	36.8	925.6	8.2
Standard Error		1.763	1.876	141.211	1.125
Standard Deviation		7.270	7.735	582.226	4.209
Confidence Level (95.0%)		3.738	3.977	299.353	2.430
Sum				15735	115
Sample Size		17	17	17	14

Appendix E-4
Northern Pike Biosampling Data

Set No.	Fish No.	Fork Lg. (cm)	Total Lg. (cm)	Weight (grams)
1	1	38.5	41.1	400
2	1	46.0	49.2	600
2	2	58.2	61.7	1250
4	1	53.3	56.6	1000
10	1	32.9	35.3	270
11	1	51.0	54.0	1000
12	1	39.1	41.5	400
16	1	46.6	49.8	850
16	2	75.4	79.2	3000
Mean		49.0	52.0	974.4
Standard Error		4.227	4.378	276.185
Standard Deviation		12.680	13.133	828.555
Confidence Level (95.0%)		9.747	10.095	636.884
Sum				8770
Sample Size		9	9	9

Appendix E-5
Black Crappie Biosampling Data

Fork Lg. (cm)	Total Lg. (cm)	Weight (grams	Fork Lg. (cm)	Total Lg. (cm)	Weight (grams	Fork Lg. (cm)	Total Lg. (cm)	Weight (grams
27.5	29.0	390	28.4	30.0	370	21.0	21.9	180
26.0	27.5	330	17.8	18.8	90	25.2	26.2	250
26.5	27.7	340	28.0	29.5	320	20.5	21.4	170
24.9	26.1	300	26.9	27.6	310	21.6	22.2	160
27.8	28.7	330	26.5	27.8	320	25.8	26.9	280
28.3	29.2	400	17.9	18.7	100	28.5	29.4	360
20.5	21.5	200	26.0	27.3	400	27.7	28.6	320
19.0	20.0	120	20.7	21.5	200	21.1	21.9	150
22.5	23.5	200	28.0	29.1	400	19.9	21.0	140
26.0	26.7	300	20.5	21.0	140	25.9	27.3	320
25.0	26.0	300	26.0	26.5	315	13.6	14.2	35
25.0	26.0	300	26.5	27.2	350	26.0	27.0	325
27.8	28.9	475	19.5	20.2	125	20.1	21.2	150
26.2	27.3	350	22.0	22.9	150	25.4	26.2	280
26.0	27.2	350	20.6	21.3	150	29.4	30.6	450
25.0	26.1	350	25.0	25.8	300	26.0	27.1	310
21.2	22.0	250	19.0	19.5	100	13.0	13.8	35
20.6	21.5	200	14.2	14.8	50	12.6	13.1	30
22.5	23.5	250	26.9	28.0	370	16.6	17.5	75
20.0	20.6	150	21.5	22.3	160	13.5	14.1	30
26.2	27.3	350	22.5	23.1	210	27.3	28.4	340
26.0	27.4	350	26.0	26.9	325	30.0	31.4	500
27.1	28.5	400	24.3	25.6	250	23.0	24.2	220
26.6	28.0	350	28.5	29.8	360	22.3	23.3	200
27.3	28.3	325	28.4	29.9	460	27.9	29.9	400
26.0	26.9	300	24.4	25.4	260	29.0	30.6	430
24.0	25.0	250	25.6	26.9	330	21.3	22.3	180
25.7	26.7	400	21.0	21.5	180	21.1	22.0	180
31.4	32.5	550	26.0	27.1	320	25.6	26.7	300
29.8	31.1	500	21.0	22.1	190	21.3	22.1	170
30.1	31.9	550	22.6	23.2	210	26.6	27.6	300
31.8	33.0	500	14.5	15.1	50	26.5	27.3	320
24.2	26.6	350	17.8	18.5	110	26.6	27.4	330
25.7	26.8	350	28.5	29.9	470	30.5	32.1	500
26.5	27.4	350	32.6	33.8	550	26.6	27.7	340
26.5	27.7	350	29.8	31.5	500	26.3	27.1	350
25.5	26.6	300	20.8	21.8	170	28.9	30.0	460
28.4	29.5	450	26.7	27.8	360	20.6	21.6	170
20.2	21.1	200	26.4	27.5	340	18.5	19.2	120
20.0	20.9	150	28.4	29.9	400	28.0	29.0	420
19.1	20.0	150	27.5	28.5	350	21.0	22.0	150
28.3	29.5	450	25.8	26.2	300	27.5	28.8	400
19.1	20.0	150	25.9	27.0	340	28.0	29.0	350
25.7	26.7	350	26.3	27.4	340	29.7	31.0	400
19.0	19.9	110	19.7	20.5	110	26.2	27.1	325
			Mean			24.3	25.4	283.4
			Standard Error			0.359	0.374	10.567
			Standard Deviation			4.166	4.349	122.317
			Confidence Level(95.0%)			0.709	0.740	20.900
			Sum					38530
			Count			135	135	135

Appendix E-6

Common White Sucker Biosampling Data

Fork Lg. (cm)	Total Lg. (cm)	Weight (grams)	Fork Lg. (cm)	Total Lg. (cm)	Weight (grams)
41.5	45.2	1100	39.0	41.9	850
51.5	55.8	1800	39.9	42.0	900
43.2	46.8	1400	46.3	49.6	1400
45.6	50.0	1300	43.5	46.8	1100
46.6	50.0	1500	47.5	50.9	1500
44.5	48.2	1200	22.9	24.6	100
48.5	52.4	1700	46.4	49.6	1400
46.2	49.2	1500	42.3	45.7	1300
53.5	57.2	1900	49.5	52.9	1625
47.0	50.1	1500	53.6	57.5	2100
47.2	50.6	1500	48.6	52.6	1800
51.5	55.3	1800	49.4	53.5	1750
52.8	56.5	1900	53.0	57.3	2000
52.5	56.9	2250	48.0	52.4	1800
47.0	51.6	1550	49.4	53.0	1500
48.7	52.9	1650	50.0	53.7	1950
50.0	53.4	1475	47.9	51.4	1600
43.4	46.8	1175	50.4	53.9	1650
52.3	56.1	1975	52.5	56.5	1900
43.5	46.9	1250	53.3	57.4	1950
46.9	50.0	1250	45.5	49.6	1400
52.0	56.5	1800	49.2	52.8	1800
39.8	42.8	900	38.7	41.7	680
54.1	57.8	2200	44.3	48.1	1300
48.6	52.2	1650	51.0	54.4	1700
54.4	58.7	2200	39.5	42.3	900
28.7	31.0	320	48.1	51.9	1550
51.5	55.6	1800	44.3	48.0	1300
44.1	47.6	1400	42.1	55.9	2000
28.7	30.7	300	51.3	55.8	2000
48.3	52.2	1500			

Mean	46.5	50.3	1500.8
Standard Error	0.796	0.851	58.329
Standard Deviation	6.164	6.645	455.563
Confidence Level(95.0%)	1.592	1.702	116.675
Sum			91550
Count	61	61	61

Appendix E-7

Brown Bullhead Biosampling Data

Total Lg. (cm)	Weight (grams)	Total Lg. (cm)	Weight (grams)
21.3	170	27.3	250
25.2	250	29.4	300
24.2	210	25.6	200
23.0	200	23.0	150
23.3	200	27.5	180
21.3	150	23.3	140
19.8	120	22.8	100
26.5	250	28.4	200
19.9	120	26.0	150
25.1	280	23.6	200
25.2	230	22.5	100
24.6	210	26.4	200
26.4	250	25.2	150
22.6	170	24.0	100
25.1	200	21.2	120
22.1	120	23.3	150
25.3	200	30.1	300
27.4	250	22.8	140
27.2	250	22.0	100
28.3	300	21.5	100
24.5	200	23.9	150
25.2	250	31.5	400
29.0	300	27.4	200
24.4	200	27.1	250
23.0	200	25.1	150
24.5	250	24.3	150
25.4	200	34.0	600
20.2	150	28.2	300
18.5	150	30.5	400
28.5	300	22.1	200
27.4	250	30.5	400
27.1	250	25.5	250
22.0	120	24.4	170
Mean		25.1	210.6
Standard Error		0.373	10.659
Standard Deviation		3.030	86.592
Confidence Level (95.0%)		0.745	21.287
Sum		1653.9	13900
Sample Size		66	66