Bolger and Kashegaba Lakes
(Burton Geo. Twp.)

1999 Synoptic Trapnet Survey Report

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Executive Summary:

A synoptic trapnet survey using 8' trapnets was conducted on Bolger and Kashegaba Lakes during the summer of 1999. The purpose of the project was to more conclusively assess the status of game fish populations – particularly walleye and smallmouth bass, in light of concerns related to poor angling quality from members of the Magnetawan Pioneers Association. The project was a joint partnership effort between the Association and the Ministry of Natural Resources under the auspices of the Ministry's *Community Fisheries Involvement Program*.

Fish productivity was higher in Bolger Lake – averaging 16.99 kilograms of fish per net set. In Kashegaba Lake – 9.24 kilograms of fish per net set. In both lakes the catch (by weight) was dominated by top predator game fish. In Bolger Lake, walleye comprised 63.7% of the catch, smallmouth bass 24.9% and northern pike 7.6%. In Kashegaba Lake, smallmouth bass comprised 52.9% of the catch, northern pike 14.6% and walleye 11.5%. We acknowledge that due to 'species selectivity' of the gear – the catch is not representative of fish community composition.

Relative to similar surveys previously conducted in the Parry Sound Area, the abundance of walleye as measured by catch-per-unit-effort (CUE) (number caught per net set), is among the highest for Bolger Lake and among the lowest for Kashegaba Lake. We are unable to speculate on the vast difference in walleye abundance between these two contiguous lakes. For smallmouth bass, abundance indices (CUE) for both lakes are among the highest relative to previous synoptic surveys conducted on Parry Sound Area lakes.

Mean size and mean age of walleye and smallmouth bass suggest that highly successful reproduction and recruitment are offsetting high rates of mortality (including angling mortality). Although these populations are currently healthy, 'balanced' and perhaps producing near maximum yield, we caution that poor year class production for purely natural reasons could result in an over-harvest scenario for these populations.

Catch and sampling data for largemouth bass and northern pike was inadequate to draw any firm conclusions about the status of these populations. However, some 'positive indicators' (size class distribution) were noted for the northern pike population; none for the largemouth bass population.

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1.0 Introduction:

Bolger and Kashegaba Lakes are adjacent and contiguous waterbodies located in Burton Township in the Parry Sound Area (Figure 1a). Bolger drains into Kashegaba Lake by means of Bolger Creek, a narrow waterway about 2 kilometers in length. The CNR rail line spans Bolger Creek. This is significant in that from 1908 to 1978, the railway was the primary route of access for recreation and development on these lakes (North Star, 1978). The northeast extremity of Bolger Creek opens into Portage Bay that subsequently connects to Kashegaba Lake to the north. For purposes of this report we consider Portage Bay to be a part of Kashegaba Lake. Kashegaba Lake drains to the north into White's Lake that subsequently drains into the Magnetawan River system. A dam located on the outlet of Kashegaba Lake was originally built in 1924 for logging purposes (OMNR, undated). Today it is a concrete weir structure that elevates Kashegaba Lake by about 3 meters.

The first comprehensive look at the fisheries on these lakes occurred with the completion of Aquatic Habitat Inventory Surveys (commonly known as '*Lake Surveys'*) during the summer of 1975. Bolger Lake has a surface area of 340 hectares (840 acres), maximum depth of 19.8 meters (65'), mean depth 5.3 meters (17.4'), water colour – *blue green* and secchi readings (water clarity) of 3.0 – 4.0 meters (10 – 13') (OMNR, 1975a). (Secchi readings between 1 and 2 meters are considered optimal for walleye (Kerr et. al. 1997)). During this survey, a secchi reading of 4.0 meters was recorded. When the 1975 survey was conducted, the fish community consisted of cisco, northern pike, rock bass, pumpkinseed, smallmouth bass, largemouth bass and yellow perch. Local residents reported that a cottage owner introduced northern pike in the early 1970s. Smallmouth bass also appear to be an introduced species, possibly originating from a 1942 and / or 1952 planting of 1,000 and 300 fingerlings respectively, by the then Department of Lands and Forests. The origin of walleye into Bolger Lake is uncertain. None were observed during the 1975 lake survey yet they are abundant today. No Ministry plantings of walleye into Bolger Lake have ever taken place, however walleye fingerlings and eggs were stocked in Kashegaba Lake in 1948 and 1950 respectively. It is doubtful that these plantings were responsible for walleye being introduced into Bolger Lake however, as the population should have been well established by 1975 and would have shown up in the lake survey. It is possible that the introduction of walleye was an unauthorized planting by a 'well-intending' member of the public and likely occurred after 1975. Interestingly, during this survey – a single common white sucker was captured for the first record of this species being present in Bolger Lake. Also, we failed to capture any yellow perch that were present during the 1975 survey.

Kashegaba Lake also had an Aquatic Habitat Inventory Survey (Lake Survey) conducted during the summer of 1975. The lake is large with a surface area is 417 hectares (1,030 acres), maximum depth of 25.9 meters (85') and mean depth of 8.0 meters (26') (OMNR, 1975b). Unlike Bolger Lake, the water colour is *yellow brown* with a surprisingly deep secchi reading of 5.5 meters (18'). (*Yellow brown* water is high in dissolved organic carbon and tannin content with resulting lower clarity and usually shallower secchi readings.) The fish community is the same as Bolger Lake with similar scenarios for the introduction of smallmouth bass, northern pike and walleye. It is speculated that Lands and Forest plantings of 200,000 walleye fry in 1948 and 200,000-eyed eggs in 1950 were probably failures – as no walleye were observed in the *1975 lake survey*. The first mention of walleye being present in the lake is in a 1991 internal Ministry of Natural Resources memo. Three hundred fingerling smallmouth bass were planted in 1952. It is assumed this was a highly successful *introductory* planting.

During the months of July and August of 1996, the Magnetawan Pioneers Association (cottage association) conducted a creel survey on these lakes. Although not statistically sound estimates, 'ball park' estimates of fishing effort for Bolger Lake was 975 angler hours and 2,950 for Kashegaba Lake (including Portage Bay) (OMNR, 1997). Seventy percent (70%) of the observed fishing effort were clients of the lodge located on Kashegaba Lake. 'Ball Park' harvest estimates for Bolger Lake was 117 smallmouth bass, 110 walleye, 0 largemouth bass and 36 northern pike. For Kashegaba Lake: 382 smallmouth bass, 83 largemouth bass, 40 northern pike and no walleye. Observed release rates were 44% for smallmouth bass, 11% for largemouth bass, 65% for northern pike and 17% for walleye.

Figure 1 on this page

In 1998, members of the Magnetawan Pioneers Association brought to the attention of the Ministry of Natural Resources concerns related to declining fishing quality on these lakes. In response the Ministry made several suggestions regarding voluntary catch restrictions that could be immediately applied to assist in the rehabilitation of game fish populations on these lakes. In partnership, the Ministry and the Association further agreed to conduct a synoptic trap survey under the auspices of the Ministry's *Community Fisheries Involvement Program* (CFIP). The survey was intended to more conclusively assess the status of game fish populations in these lakes. Furthermore, this is a necessary prerequisite for any regulation changes that might subsequently be applied.

2.0 Methods:

"Synoptic surveys" are intended to provide a 'snapshot in time' of the status of the fish community and individual populations that comprise it. We selected 8' trapnets as the gear of choice due to the non-lethal nature of the gear and its proven effectiveness at capturing walleye and smallmouth bass – which were the particular species of interest in this survey. Results must be viewed in light of 'species selectivity' of the gear. This is further discussed in the *Results and Discussion* section of the report.

Due to financial constraints, the number of trapnet sets was limited to 32 sets. Due to severe limitations that the gear imposes on net set location, netting sites were not pre-determined. Site selection was at the discretion of the contractor conducting field operations. Site selection was based on the following guidelines:

- The site had to be suitable for the net to fish effectively. (Consequently – factors such as: contours of the lake bottom, absence of obstructions, depth, sufficient lead length, etc. had to be considered.)
- Nets were to fish all habitat types in proportion to their abundance on the lake in order that the catch would reflect the 'whole lake' as accurately as possible.
- Nets were to be set far enough apart such that they were not competing with each other.
- Nets were to be approximately randomly distributed throughout the study area.

Net locations are indicated in Figures 1b (Bolger Lake) and 1c (Kashegaba Lake).

Field operations were conducted from June 21st to 30th, 1999. In this report the unit of effort is recorded as a "net set" – and approximates a set of 24 hours duration. Nets were relocated daily.

Complete catch enumeration was conducted for all sets (Appendix A). Only fish captured in the "house" of the net were included in the catch. Fish caught in the wings or gilled in the lead were not considered part of the catch.

Complete biosampling (total length, fork length, round weight, scale sample extraction) was conducted for a random sample of game fish caught (Appendix C, D, E, F). For non-game fish, round weights were randomly recorded in order that a mean weight could be determined for these species (Appendix G).

Age determination was by the scale reading method. As there were no *known-age* fish in these populations – we had no method of validating the accuracy of our scale aging. Ease of age determination was quite high up to age 5. Beyond this age, difficulty increased dramatically with age and we assume that accuracy decreased proportionately. Campbell and Babaluk (1979) concluded that scale aging consistently underestimate walleye older than 8 years. The reader should bear in mind, that our mean age determinations underestimate the true mean age of fish that we sampled.

Secchi readings were taken mid-day at locations indicated on Figures 1b and 1c.

Catch results between Kashegaba Lake and Portage Bay were not significantly different (F-test at 99% confidence level). Consequently, the fish community for these two areas could be considered homogeneous

Figure 1b on this page

Figure 1c on this page

and catch data was combined. Hence reference to "Kashegaba Lake" in the report includes "Portage Bay". The walleye catches between Bolger and Kashegaba Lake were significantly different (F-test at 99% confidence level). Hence, catch data for these two lakes was separated.

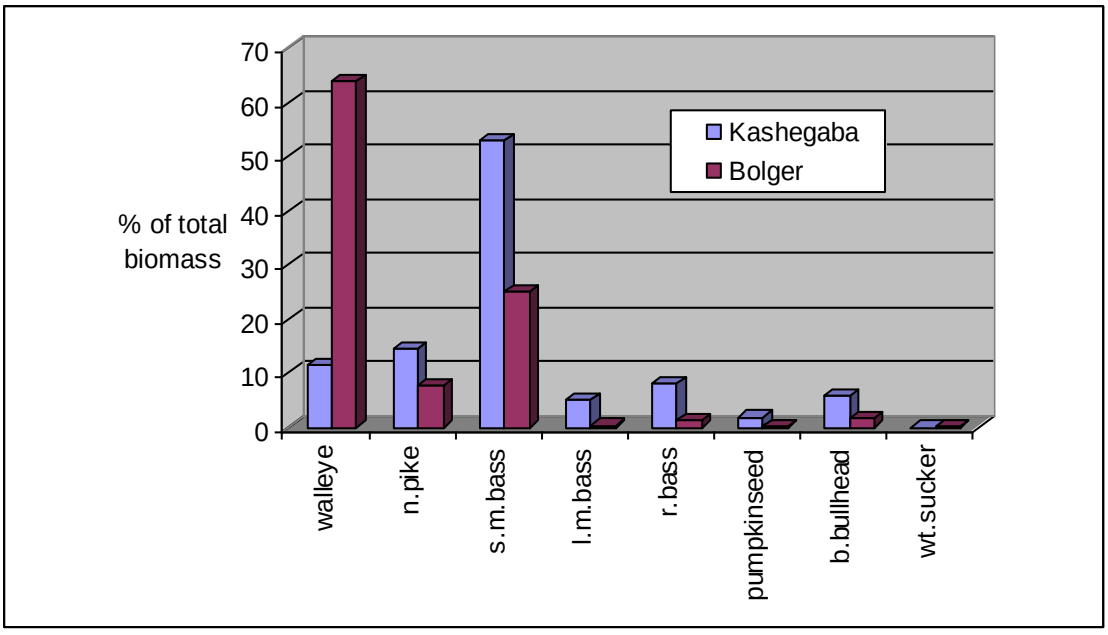
3.0 Results and Discussion

3.1 Catch Composition:

Fisheries managers use various types of surveys and fishing gear to evaluate the status of fish communities and individual species populations that comprise them. There is no one survey design or type of sampling gear that gives a true and unbiased reflection of a fish community. Consequently, sampling results need to be carefully interpreted in light of sampling biases. The 8-foot, trapnetting gear used in this survey only samples the near-shore component of the fish community. These nets are particularly effective at capturing walleye and smallmouth bass that have large home ranges and actively seek prey in near-shore areas. They are much less effective at capturing northern pike that are "ambush feeders" and wait for prey to come to them. Similarly, largemouth bass catches are usually low as this species inhabit shallow waters with heavy aquatic vegetation where the gear is often unsuitable or ineffective. Catches of rock bass, pumpkinseed, brown bullhead are often disproportionately low, as these species are more common in waters shallower than where the house of the net is located. Catches of common white suckers are highly variable and often dependent on the specific type of habitat and depth that a particular net is set at. For these reasons, the catch should not be considered an accurate reflection of fish community composition.

For Bolger Lake, the catch (weight) was comprised of: walleye 63.7%, smallmouth bass 24.9%, northern pike 7.6% and all 'other' species (largemouth bass, rock bass, pumpkinseed, brown bullhead and white sucker) 3.7% (Figure 2 and Appendix B). For Kashegaba Lake, biomass caught was comprised of: smallmouth bass 52.9%, northern pike 14.6%, walleye 11.5%, rock bass 8%, largemouth bass 5.2%, brown bullhead 5.8% and pumpkinseed 1.9%.

Figure 2. Species composition of the catch (by weight) for Bolger and Kashegaba Lakes from a synoptic trapnet survey conducted during the summer of 1999.



Notwithstanding 'species selectivity' of the gear, the dominance of walleye in Bolger Lake (63.7% of biomass caught) and smallmouth bass in Kashegaba Lake (52.9%) is unusually high. Conversely, forage and coarse fish (rock bass, pumpkinseed, brown bullhead, yellow perch and white sucker) comprise a surprisingly small portion of the Bolger catch (3.7% by weight) and the Kashegaba catch (15.7%). The near-total absence of common white sucker is unusual as this species is readily captured by 8' trapnets. The significance of the low biomass of forage and coarse fish in the catch is unclear. It could be that the abundance of these species is being depressed through heavy predation by abundant game fish; or it could be a result of sampling biases in which these species are under-represented in the catch relative to their actual abundance in the fish community.

3.2 Catch-Per-Unit-Effort (CUE), Fish Productivity and Relative Abundance:

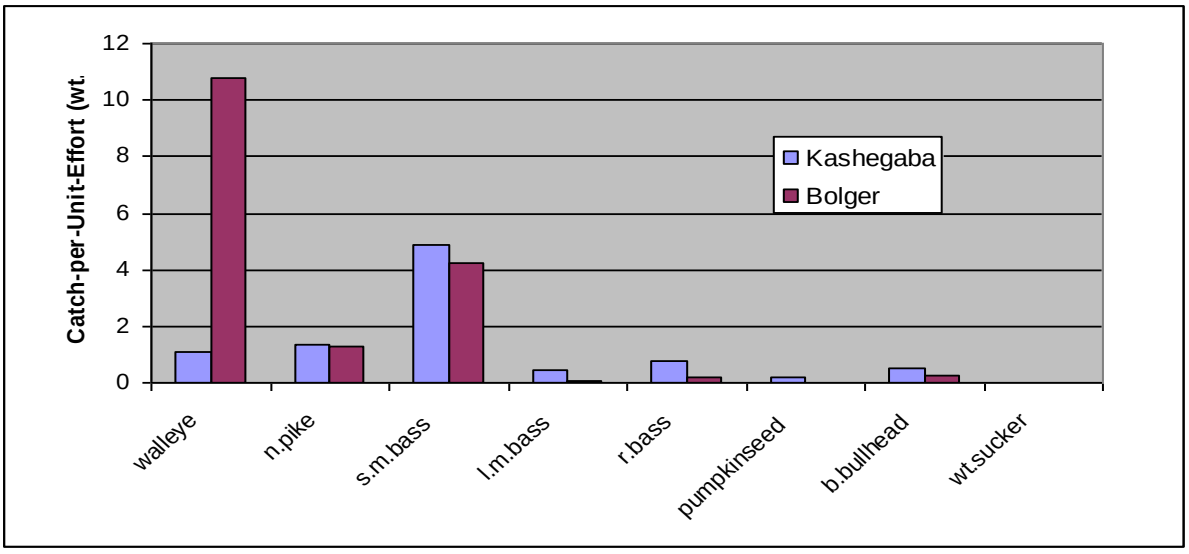
Catch results from Bolger and Kashegaba Lakes were very similar with one glaring exception. Walleye catch-per-unit-effort by number (C.U.E. no.) on Bolger Lake was 9.5 ± 8.57 (P >.05) walleye per trap net set (Appendix A). On Kashegaba Lake it was a mere 0.9 ± 0.6 (P>.05). We used an "F test" at a 99% level of confidence to determine that walleye C.U.E.no. was significantly different between the two lakes. On this basis we concluded that the fish communities of the two lakes was not homogenous and separate analysis was required. For all other species there was no significant difference in the catch rate.

There was also no significant difference in species catch rates between Portage Bay and Kashegaba Lake (Appendix A). Consequently these two waterbodies could be considered to have homogenous fish communities. Catch data was therefore combined (Appendix A) for these two areas and reference to Kashegaba Lake in the report includes Portage Bay.

Fish Productivity

Fish productivity in the near-shore waters of Bolger Lake as measured by catch-per-unit effort (weight) (C.U.E. wt.) was 16.99 kilograms of fish per net set for a total catch of 288.8 kilograms (Appendix B). Fish productivity was lower in Kashegaba Lake with the *C.U.E. wt*. being 9.24 kilograms of fish per net set for a total catch of 138.54 kilograms. This difference is seemingly wholly attributable to much greater walleye production on Bolger Lake relative to Kashegaba (Figure 3). Catch rates by weight (CUE wt) were very similar for all other species between the two lakes.

Figure 3. A comparison of catch-per-unit effort (weight) (C.U.E. wt.) for individual fish species between Bolger and Kashegaba Lakes from the 1999 synoptic trapnet survey.



It is difficult to comment on the significance of the productivity levels on Bolger and Kashegaba Lakes as measured by kilograms of fish caught per 8' trapnet set. We graphed "kg. caught per net set" versus Morpho-edaphic Index (MEI) (lake specific index of productivity based on total dissolved solids and mean depth) for 10 synoptic trapnet surveys for which suitable data was available. We anticipated a strong correlation between the two parameters – but none was evident. **With the data available, the best we can say is that the fish productivity level (biomass of fish caught per net set) on Bolger Lake (16.99 kg. /set) and Kashegaba Lake (9.24) is 'average' relative to similar surveys conducted in the Parry Sound Area.**

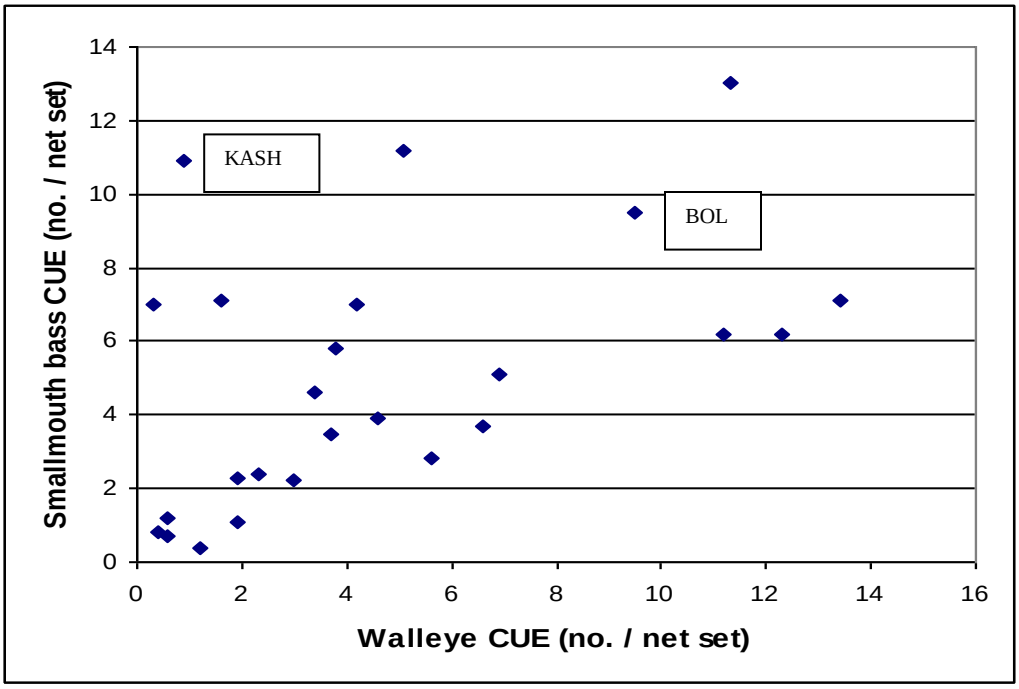
Relative Abundance

Anglers and lake residents alike have a keen interest in the abundance of game fish species inhabiting a lake. Ideally, monitoring changes in the abundance of fish species in a particular lake is best achieved by multiple years, indexing surveys. Such surveys use the same gear fished at the same location and similar times such that changes in species abundance become evident when catch results are compared between surveys. Such data comparisons are made within the individual lake but between years.

Unfortunately, the Ministry does not have the capability to conduct such regular 'indexing surveys' on the multitude of inland lakes that it manages. As a practical alternative, it conducts 'synoptic surveys' on a variety of lakes that provide a 'snapshot in time' of the status of the fish community and the individual fish populations that comprise it. Catch data can be compared between lakes (and between years) to accord the abundance of fish species relative to other lakes. Comparison of relative abundance between lakes is much less desirable than comparisons within a lake but between years. This is because each lake is unique in its productivity characteristics (size, volume, littoral area, total dissolved solids, mean depth, shoreline length, physical habitat features, etc.) as well as the compliment of species in the fish community. Also for numerous reasons, it is often difficult to precisely standardize netting methodology used on different lakes without introducing biases. Consequently, direct *between lake* comparisons are seldom statistically valid. Nevertheless, with these shortcomings in mind, between lake comparisons can provide a gross measure of species abundance in any one particular lake relative to a host of others for which similar synoptic surveys have been completed. This measure can convey to anglers and residents alike, as well as fish managers, if particular fish populations are doing well or poorly.

Synoptic surveys such as this one conducted for Bolger and Kashegaba Lakes have routinely been conducted in the Parry Sound Area since the early 1980s. **Relative to 25 similar synoptic surveys, Bolger Lake with a walleye CUE (number) of 9.5 ± 8.6 (P>.05) per net set, ranked fifth (Figure 4). This is indicative of a high abundance of walleye relative to these other 25 surveys**. **Exceptionally high variability in the confidence limits should be noted however.** The high mean value of 9.5 was greatly influenced by a single catch of 70 walleye in set #B9 (Appendix A). Hence, the abundance of walleye may artificially be inflated by this single result**. Conversely, Kashegaba Lake with a CUE of 0.9 ± 0.6 (P>.05) walleye per net set ranked 21st. This is more conclusively indicative of a low abundance of walleye (Figure 4).** From the above mentioned 25 surveys, the average walleye CUE (no.) was 4.5 walleye per net set. We are unable to speculate why walleye abundance appears high in Bolger Lake but low in immediately adjacent and contiguous Kashegaba Lake. Furthermore, it is quite surprising that walleye are doing so well in Bolger Lake, which has a secchi reading of 4.0 meters. These are very clear waters far in excess of walleye preferences of 1 – 2 meters (Kerr, et. al. 1997).

Figure 4. Walleye and smallmouth bass catch-per-unit-effort (number caught per net set) from numerous synoptic trapnet surveys conducted in the Parry Sound Area, 1982 – present. (Data is for 8' trapnet sets only.) Each data point represents CUE results from a separate synoptic survey.



Data point for Bolger denoted as "BOL", for Kashegaba – denoted as "KASH"

With respect to smallmouth bass abundance on Bolger and Kashegaba Lakes, CUE no. were 9.5 ± 4.4 (P>.05) and 10.9 ± 3.2 (P>.05) smallmouth bass caught per trapnet set respectively (Figure 4 and Appendix A). Relative to 25 other synoptic surveys that contained smallmouth bass in the catch, Kashegaba Lake ranks third and Bolger Lake ranks fourth (Figure 5). **Clearly, both these lakes have a high abundance of smallmouth bass relative to other Parry Sound Area lakes that have been similarly surveyed**.

Similar comparisons are omitted for northern pike and largemouth bass. Sampling biases in the gear as well as the biology of these species result in them being poorly represented in the catch. Consequently catch data is not indicative of their actual abundance in the fish community. Catch rates are typically so low that comparisons are of a very dubious nature.

3.3 Biosampling Results For Individual Fish Species – Size Distribution and Age Class

Walleye

Complete biosampling data (total and fork length, round weight, age determination) was collected from 104 walleye sampled from Bolger Lake (Appendix C). Total length and round weight data was collected from 12 of the 14 walleye caught in Kashegaba Lake. We used a "F-test" to determine that neither the *statistical variance* of the total length or round weight were significantly different at the 99% confidence level between these two walleye populations. Similarly, we used a "t-test" to determine that the means of the

total lengths and round weights were also not significantly different at the 99% confidence level. Consequently the two walleye samples (populations) are homogeneous and summary statistics presented in Appendix C for Bolger Lake are equally representative of the Kashegaba Lake walleye population.

Our walleye sample of 104 fish averaged 47.0 cm. total length and 1.136 kilograms round weight (Figure 5 and Appendix C). Mean age was 4.47 years (Figure 6 and Appendix C).

Figure 5. Total Length vs. round weight of walleye sampled from Bolger and Kashegaba Lakes during a synoptic trapnet survey conducted during the summer of 1999.

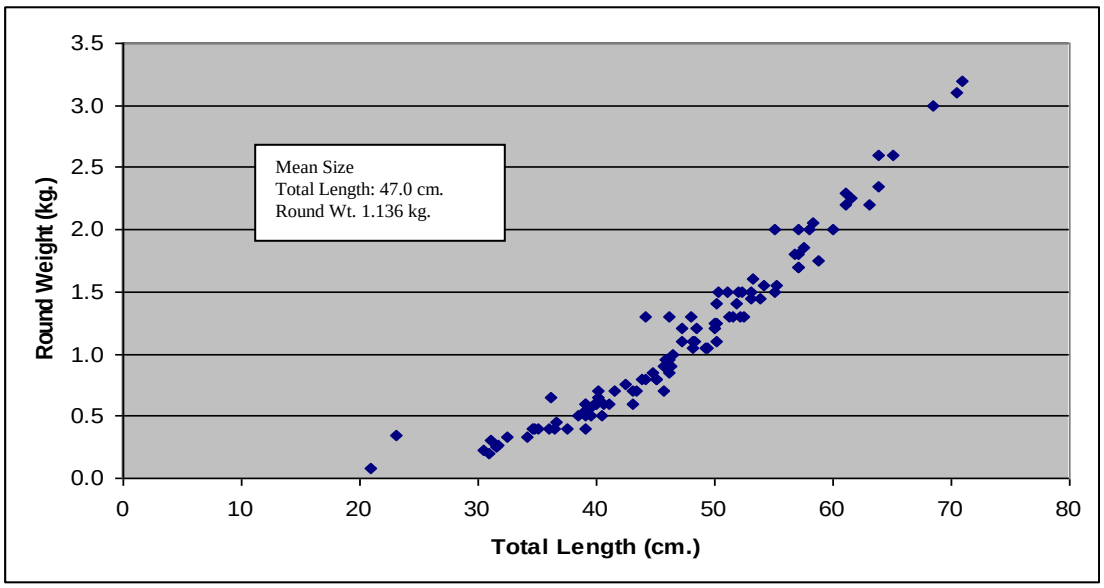
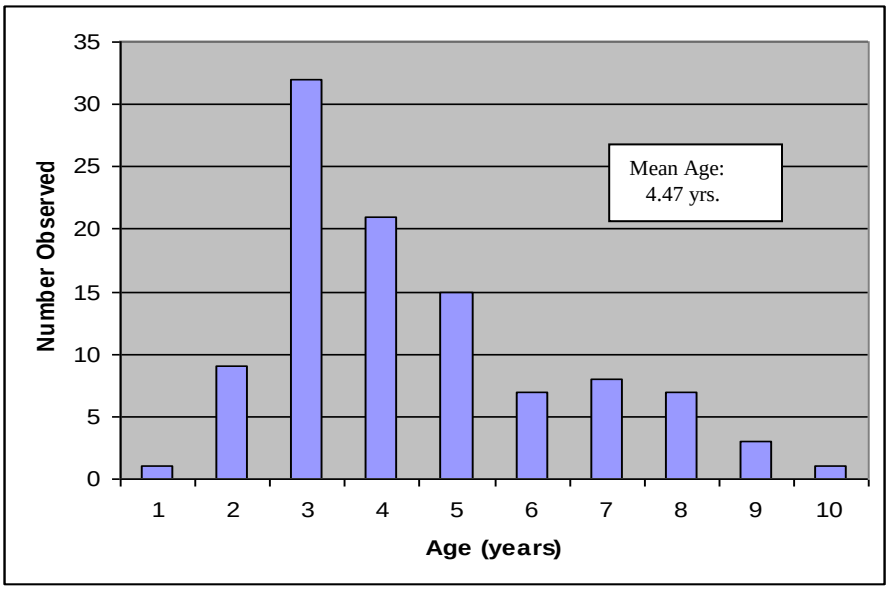


Figure 6. Age class distribution of walleye sampled from Bolger and Kashegaba Lakes during a synoptic trapnet survey conducted during the summer of 1999.



The steep reduction in year class abundance once a year class is fully recruited to the fishery (age 4) is possibly indicative of high angling mortality (Figure 6). The appearance of a strong 1996-year class (3-year-olds) is indicative of highly successful reproduction and recruitment for this year class. This comment is most applicable to Bolger Lake where walleye abundance is 10 times greater than Kashegaba Lake.

Also of interest, is the fact that trapnet set B2 (Bolger Lake - #2 set; see Figure 1b) gilled 32 walleye in the lead. These fish were excluded from the catch count as they were not 'caught' in the house in the manner intended. The data sheet for this set records that they were all approximately 22 cm. in length. These fish were most likely a school of yearling walleye (1998-year class). This may be a positive indication of a strong year class that will be fully recruited to the fishery in 2001. Environmental conditions in 1998 and '99 have been excellent for strong year classes of game fish (early and warm spring water temperatures; long, hot summers with extended growing season).

Smallmouth Bass

Mean size of smallmouth bass sampled was 29.5 cm. total length and 0.447 kg. round weight (Figure 7 and Appendix D). Mean age was 3.9 years (Figure 8).

Figure 7. Total length vs. round weight for smallmouth bass sampled from Bolger and Kashegaba Lakes from a synoptic trapnet survey conducted during the summer of 1999.

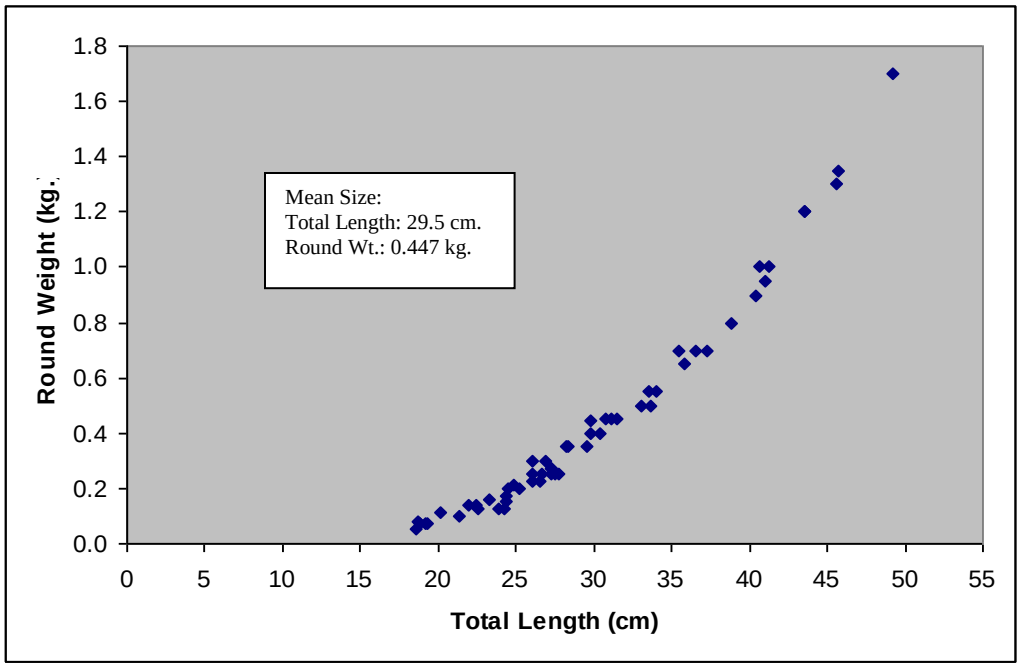
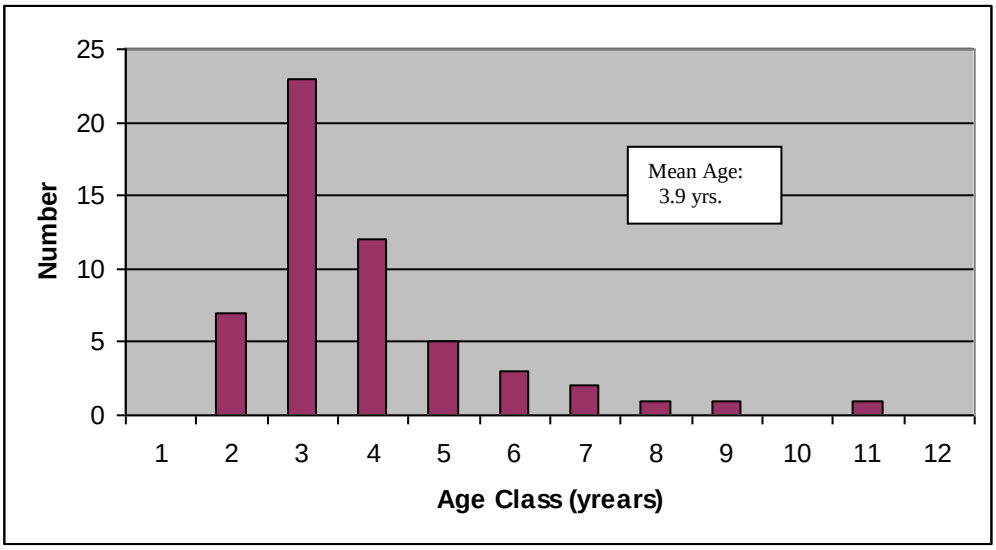


Figure 8. Smallmouth bass age class structure for Bolger and Kashegaba Lakes from a synoptic trapnet survey conducted during the summer of 1999.



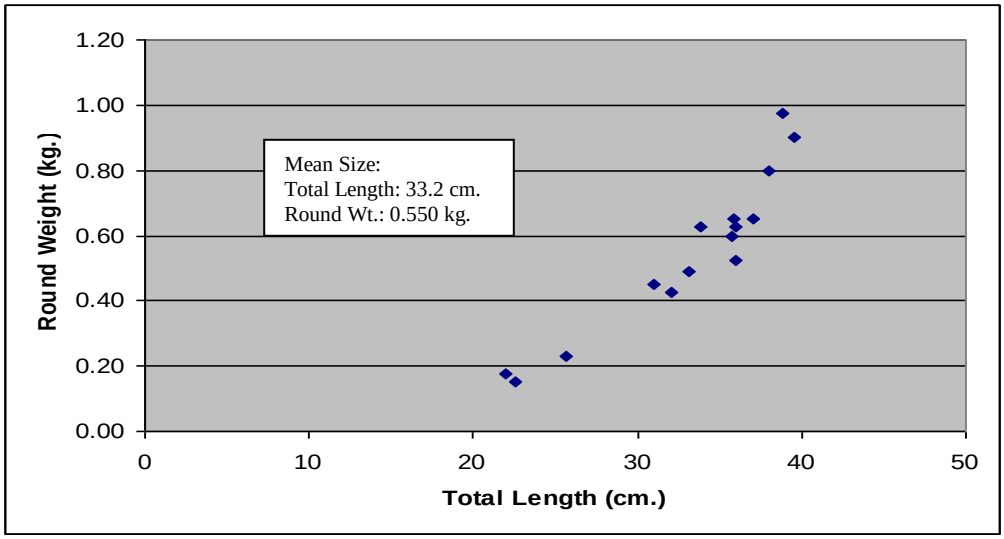
As we observed with the walleye age class structure, the steep reduction in year class abundance once fish become vulnerable to angling (age 4) is possibly indicative of high angling mortality. Again, the appearance of a strong age 3 (1996) year class is indicative of highly successful reproduction and recruitment.

Increased rates of fecundity (egg production), growth and reproduction are compensatory responses of fish populations to increased mortality, including angling mortality. The previously discussed catch-per-unit-effort data and biosampling data for walleye and smallmouth bass; are highly suggestive that these populations may be 'running flat out' in productivity to keep up with mortality. The benefit of this scenario is that these populations are producing at near maximum capacity, maximizing yield while adequately compensating for mortality and maintaining high abundance. Although this is presently a 'balanced' arrangement between high reproduction and growth countered by high harvest and natural mortality – it is a potentially risky balance. Should a year class have poor survival for purely natural reasons – angling mortality is not lowered correspondingly. Such a scenario could very easily result in an over-harvest situation with a dramatic decrease in either the walleye or smallmouth bass population.

Largemouth Bass

Our sample of largemouth bass was pretty meagre – consisting of only 15 fish that included all the largemouth captured. Mean total length was 33.2 cm. and mean round weight 0.55 kilograms (Figure 9 and Appendix E). Mean assessed age was 5.0 years (Appendix E). The number of fish in our size distribution makes any inferences tenuous at best. The mean size is somewhat small and the absence of any trophy size largemouth (Figure 9) may be related to high angling mortality. There is no evidence of strong year classes or highly successful reproduction and recruitment. The data is too 'sparse' to draw any conclusions, but we note that there are no 'positive indicators' that the largemouth bass population is doing particularly well in either Bolger or Kashegaba Lake.

Figure 9. Total length vs. round weight for largemouth bass sampled from Bolger and Kashegaba Lakes from a synoptic trapnet survey conducted during the summer of 1999.

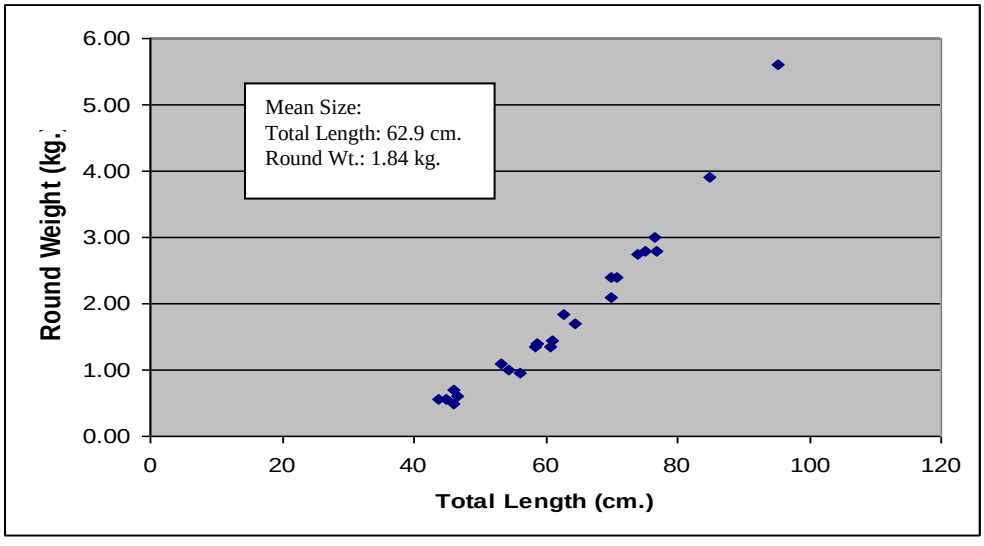


Northern Pike

From all 23 northern pike caught during the survey, mean size was 62.9 cm. total length and 1.84 kilograms (Figure 10 and Appendix F). Age determination for northern pike was not conducted due to the unreliability of the scale aging technique for this species.

As with largemouth bass, our limited sample size for size distribution makes any inferences rather tenuous. Mean size of pike sampled was 'good' – with small young fish being present as well as larger and older fish. This suggests moderate levels of mortality as well as successful reproduction and recruitment to the population.

Figure 10. Total Length vs. round weight for northern pike sampled from Bolger and Kashegaba Lakes, Synoptic trapnet survey, summer 1999.



4.0 'Synopsis' and Recommendations:

Our 'synopsis' is that the walleye population on Bolger Lake, and the smallmouth bass population on both Bolger and Kashegaba Lakes are 'in good shape'. Although inconclusive, we also think that pike may be doing 'well' in both lakes. There was too little data to make conclusions for largemouth bass, but the abundance of this species is often confined by the availability of suitable habitat that is usually limiting in Canadian Shield lakes.

A complete assessment of fish populations should consider both the stresses that are being applied to those populations and how they are responding. This survey indicates how they are responding. We assume that they are responding primarily to angling mortality – but we don't know how much angling pressure and mortality is actually associated with the sport fishery. The 1996 Magnetawan Pioneer's creel is somewhat helpful – indicating that summer (July and August) angling effort is light: 2.86 rod hors per hectare for Bolger Lake and 7.07 for Kashegaba Lake (OMNR, 1997). Harvest levels were 'in line' with what one would expect based on productivity yields derived from the lakes' Morpho-Edaphic Index (MEI) (index of fish productivity) (OMNR, 1985). The accuracy of both the creel and the yield estimates are highly suspect however. Based on the results of this survey, we speculate that angling pressure and mortality are more significant than is indicated by the 1996 creel. Furthermore, there may be considerable additional angling mortality outside the time frame sampled by this creel (July and August).

We have expressed concerns in this report that the game fish populations – in particular walleye and smallmouth bass, appear to be producing at or near peek capacity. Maximum (or near maximum) production in the form of growth and recruitment are being offset by angling harvest and natural morality. This is a potentially unstable situation – because should recruitment fail as happens periodically for natural reasons, there is no compensatory mechanism to reduce angling or natural mortality. Eventually, the compensatory mechanism becomes decreasing game fish populations resulting in poor angling quality.

A more desirable scenario is to have harvest rates well below what could be produced. Under this scenario, as year class failures or poor year class production afflict the population from time to time, the 'drain' on the population from angling mortality is much reduced. Although the productivity of such a system is much lower, the stability is much higher.

For the above reason, the Ministry continues to recommend voluntary harvest restrictions as outlined in a memo sent to the Magnetawan Pioneers Association in 1998 (OMNR, 1998). Some minor amendments may be in order in light of the results of this study. It is doubtful that the results of this study present sufficiently compelling evidence that regulation changes should be made for these lakes. (*Author's note: Admittedly, this may be a biologically unwise choice on the Ministry's part, but it does reflect the political and social realities of the day*.)

Regrettably, it is not likely that the Ministry will be back to monitor the status of these populations in the foreseeable future. We strongly recommend to the Magnetawan Pioneers Association and the Lodge operator on Kashegaba Lake, that they take a lead role in a voluntary creel program to monitor the sport fishery on an on-going basis. Ministry staff would be happy to assist in the design of such a program.

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