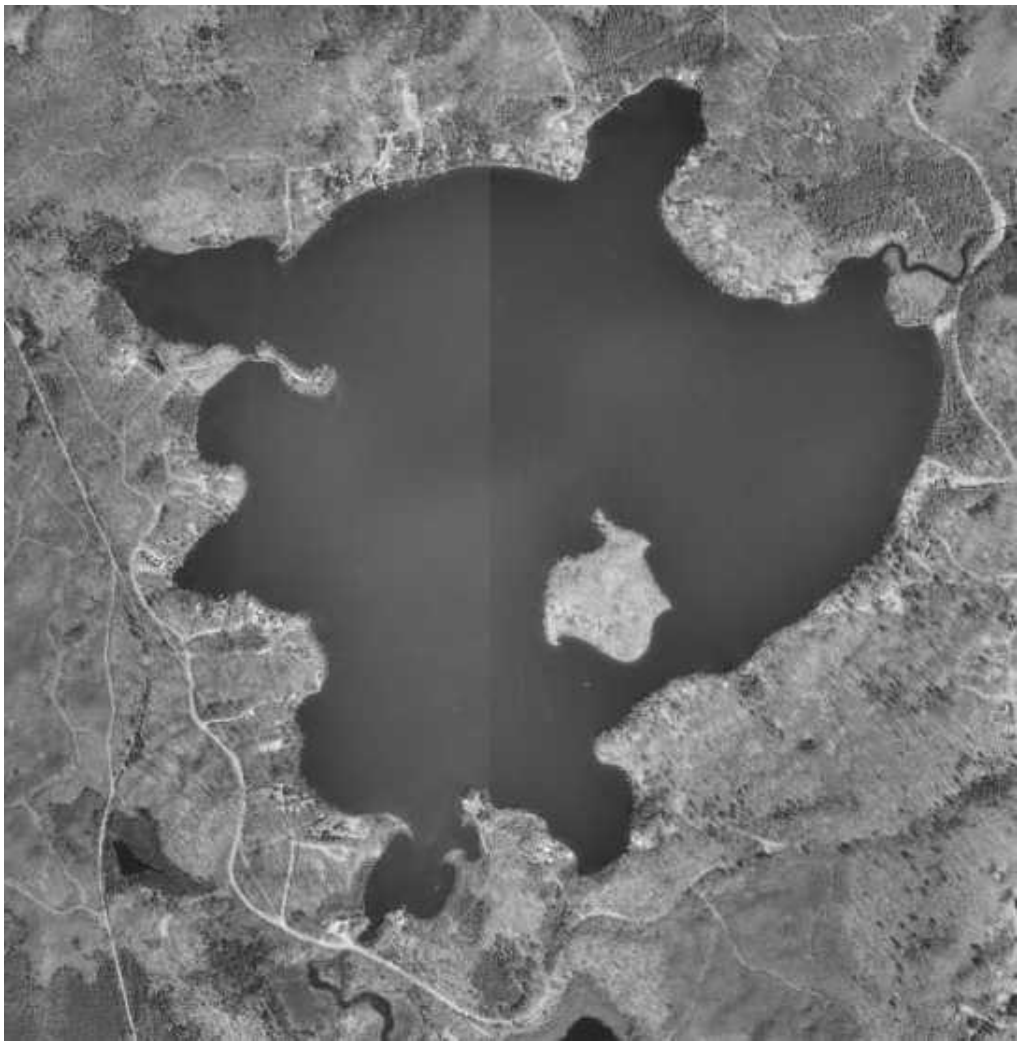
Comprehensive Fisheries Survey of Bearskin Lake, Oneida County Wisconsin during 2003.

Waterbody Identification Code 1523600



John Kubisiak
Senior Fisheries Biologist
Rhinelander
August, 2004

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EXECUTIVE SUMMARY

A comprehensive fisheries survey of Bearskin Lake was conducted during spring, 2003. Walleye (population estimate, PE = 6.6 adults and 31.1 total walleyes per acre), smallmouth bass (PE = 1.44 per acre), muskellunge (PE = 0.4 muskellunge 30 inches and larger per acre) and northern pike (PE = 1.0 per acre) were the dominant gamefish, with largemouth bass also present. Evaluation of the 18-inch minimum size limit indicates little change in the relative abundance of 18+ inch smallmouth bass, which were already abundant when the regulation was imposed in 1996. Panfish species include black crappie, bluegill, pumpkinseed, bluegillxpumpkinseed hybrids, yellow perch and rock bass. Panfish abundance was low, but growth rates were above average.

I recommend continuing to manage Bearskin Lake for walleye, smallmouth bass and muskellunge. Fish populations show excellent natural reproduction, and no stocking is needed. Panfish show strong reproduction, but survival to catchable size is low, due to abundant gamefish populations and low amounts of vegetated escape cover. Suppression of rusty crayfish may not be feasible, but it would allow recovery of aquatic vegetation to benefit panfish. Increased cover in the form of woody brush (e.g., tree drops) may replace the function of some of the vegetation that has been lost.

Lake and location:
Bearskin Lake, Oneida County, T38N R6E Sec36
Located in west-central Oneida County, about 6 miles south of Hazelhurst. It is part of the Upper Wisconsin River watershed and is drained by Bearskin Creek.

Physical/Chemical attributes (Andrews and Threinen 1966):
Morphometry: 400 acres (previously listed as 383.7 and 472 acres), maximum depth 26 feet.
Watershed: 7 square miles, including 612 acres of adjoining wetlands.
Lake type: Drainage (inlet is Muskie Creek. Outlet is Bearskin Creek).
Basic water chemistry: Soft – alkalinity 48 mg/l, conductance 102 µmhos.
Water clarity: Clear water of moderate transparency.
Littoral substrate: 40% gravel and rubble, 35% muck, 20% sand and limited boulders.
Aquatic vegetation: Sparse due to rusty crayfish grazing. Moderate late-summer plankton blooms.
Winterkill: None.
Boat landing: Concrete-plank ramp with parking for ten vehicles with trailers.
Other features: Shoreline 95% upland with some limited bog-meadow wetland.

Purpose of Survey: Assess status of gamefish, panfish and non-game species. Evaluate special fishing regulations. Develop management recommendations.

Dates of fieldwork: Walleye netting, April 21-27 2003.
Musky netting April 30 – May 5, 2003.
Panfish netting June 9-13 2003.
Mini-fyke netting August 18-19 2003.
Electroshocking (entire shoreline) April 28, May 12, May 27, June 4 and October 15 2003.

BACKGROUND

Walleyes (465 males and 39 females) were netted on Bearskin May 4-6, 1956 (five nets for two nights) and scale-ages were taken. The report noted "Nets were set to obtain data on walleye evaluation, however many very large muskies, bass, and crappies were also netted." Based on a good walleye catch and moderate contribution of one stocked year (1951), it was recommended that Bearskin be dropped from walleye stocking quotas.

A single electroshocking run on July 6, 1961 (Morehouse 1961) contained observations about panfish abundance, rusty crayfish and vegetation. "… an exceptionally high population of bluegills. Most of the bluegills run in size from 4 to 8" and were not too heavy for their size. The perch population while available throughout the lake, seems to be in better condition generally. The crappie population … was in excellent condition and seems to be in proportionate size and number…" "Crayfish were noted throughout the lake but, with the exception of one or two small areas, did not seem to be too abundant, nothing in comparison to some of the other lakes where we have had complaints on crayfish." "The back bays are heavily weeded but the lake in general is fairly free from large weedbeds."

Bearskin was electroshocked in 1962 (referenced in Theis and McNight 1968), but no report was found.

A more thorough survey was performed in 1967 (Theis and McNight 1968). Walleyes were netted (12 net lifts from July 5-7) and an electroshocking survey was performed on the night of July 21. On July 25, six hauls were made with a 50-foot minnow seine. The report also contains a page of limnology data, a list of aquatic vegetation species and estimates of 2% aerial coverage by emergent and 30% submerged vegetation. The authors noted abundant small (6-10 inch) walleyes and recommended no further walleye stocking. A "fair" muskellunge population was found and periodic stocking of muskellunge was recommended. From the description, it appears that largemouth bass were prevalent while smallmouth and northern pike are described as secondary species. A moderately stunted bluegill and pumpkinseed population was indicated (although panfish growth rates were not determined), and musky stocking was proposed as a solution.

Comprehensive fisheries surveys were conducted by DNR in 1990, 1996 and 2000. Great Lakes Indian Fish and Wildlife Commission (GLIFWC) conducted mark-recapture adult walleye population estimates in 1998 and 2002. These data are compared to the current study in the results section.

Creel surveys were conducted in 1938, 1990-91, 1996-97, 2000-01, and 2003-04 (reported separately).

Fall young-of-year surveys were conducted in 1975, 76, 77, 78 (DNR) and 1988 through 2003 (1988, 1990, 1996, 2000 and 2003 by DNR; remainder by GLIFWC).

METHODS

Sampling was initiated on April 21, 2003 when ice was gone from most of the lake. Five standard fyke nets (3/4" stretch mesh) were set April 21, and three additional nets were set on April 22, after a large ice flow moved off the east side of the island. These nets targeted walleye and were fished through April 27. Eight standard fyke nets were fished May 1-5 (targeting muskellunge) and June 10-13 (targeting panfish). Eight mini-fyke nets (3/16" bar mesh with 1" bar mesh exclusion netting

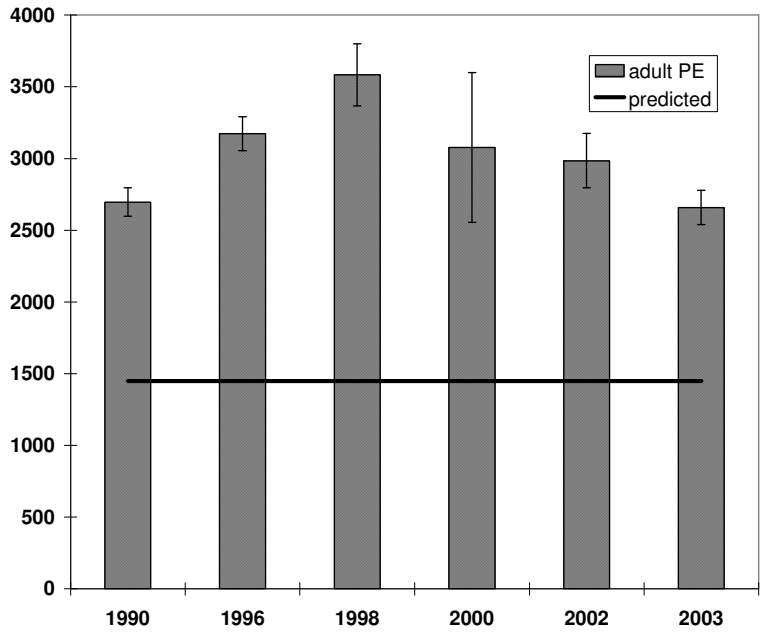
across the mouth) were fished one night on August 18-19 (targeting juvenile and non-game fish). A WDNR-standard alternating current electrofishing boat was used to collect fish on April 28, May 15, May 27, June 4 and October 15, 2003. Length or length category (nearest half-inch) was recorded for all gamefish and on panfish during June. Adult game fish were given a left-ventral fin clip and juveniles were given a top-tail clip for use in mark-recapture population estimates. Age structures (scales or spines) were removed from five gamefish and ten panfish per species, per half-inch group.

RESULTS AND DISCUSSION

Walleye

During walleye netting, 1,579 walleyes were captured in 6 nights (including 203 juveniles and 24 recaptures), at a rate of 32.9 walleyes per net day (Table 1). Another 290 and 64 walleyes were captured during muskellunge and panfish netting, respectively. The first electrofishing sample on April 28 yielded 680 walleyes (121 fish per mile), and subsequent electrofishing runs produced 262 walleyes, 678 walleyes and 1,083 walleyes. The mark-recapture population estimate of 2,658 adult walleyes (± 119.7 SD), or 6.6 per acre is somewhat below five previous population estimates since 1990 (Figure 1). However, it is 83% higher than the predicted population of 1,448 (from a regression model of naturally reproducing northern Wisconsin walleye populations).

Figure 1. Adult walleye population estimates in Bearskin Lake, Oneida County Wisconsin.



The total walleye population (all fish 7 inches and larger) is estimated at 12,449 (± 3,437 SD). Fish less than 15 inches comprised 65% of adult walleyes and 73% of total walleyes estimated in Bearskin Lake (Figure 2), indicating strong recruitment. Fall surveys show strong recruitment with sporadic extremely high catch rates well over 100 yoy per mile, as is typical of naturally-reproducing populations (Figure 3). Growth increments were slightly below estimates from 2000, but higher than regional averages (Appendix A).

Figure 2. Length-frequency of adult walleyes during 2003 in Bearskin Lake, Oneida County Wisconsin.

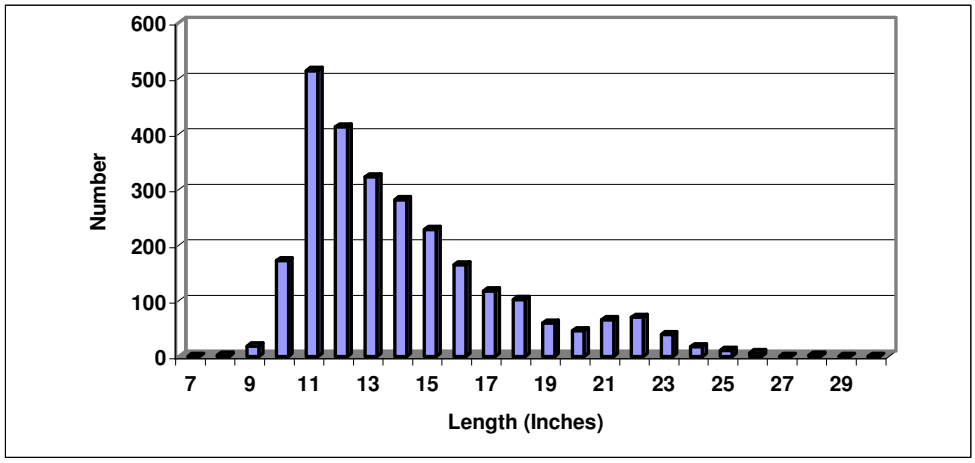


Figure 3. Fall walleye recruitment surveys during 1975 through 2003 in Bearskin Lake, Oneida County Wisconsin.

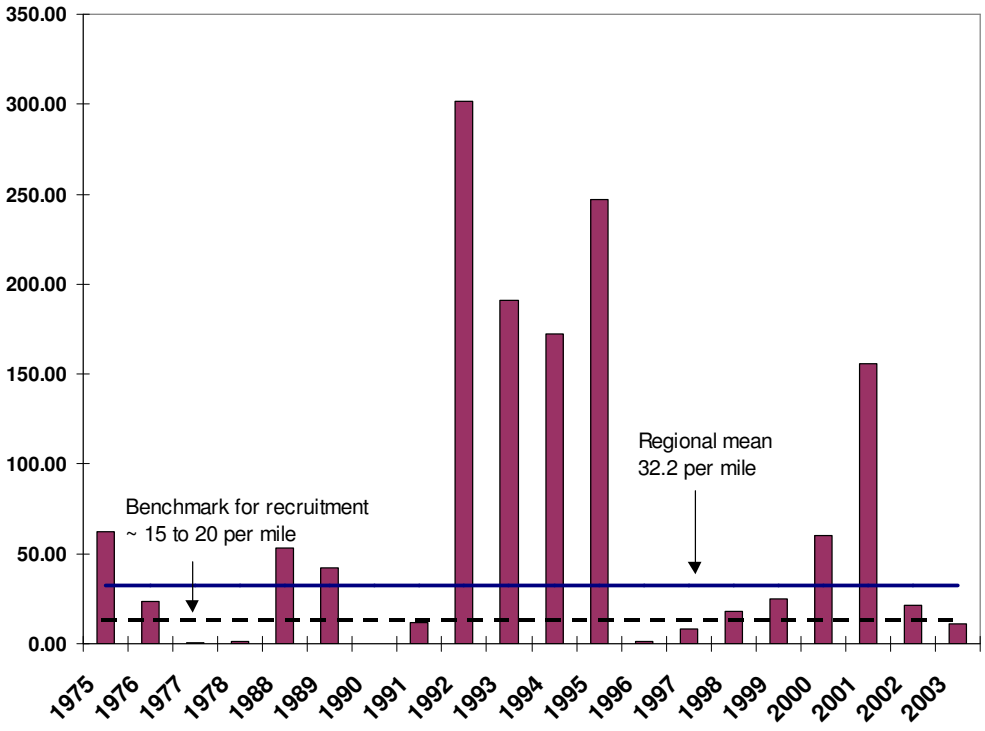


Table 1. Catch per unit effort of gamefish and panfish species during spring, 2003 comprehensive survey of Bearskin Lake, Oneida County Wisconsin. Netting catch rates are reported as number of fish per net night, while electrofishing catch rates are number of fish per mile of shoreline. Panfish data were not collected during all sampling events.

species	walleye netting	April 28 shocking	musky netting	May 12 shocking	May 27 shocking	June 4 shocking	panfish netting
walleye	32.9	121.4	7.3	46.8	121.1	193.4	2.0
largemouth bass	0.08	0.9	0.5	0.5	0.7	0.7	1.0
smallmouth bass	1.4	9.1	1.4	8.0	19.5	15.5	0.6
muskellunge	0.8	3.0	2.3	1.4	0.7	0.7	0.2
hybrid muskellunge	0.02	0	0	0	0	0	0.03
northern pike	1.3	0.5	1.3	0.7	0.2	0.7	1.0
black crappie	1.1						0.4
bluegill	1.9						31.4
pumpkinseed	0						7.3
rock bass	2.8						13.5
yellow bullhead	0						0.03
yellow perch	8.4						3.5

Smallmouth and Largemouth Bass

Four hundred thirty-six smallmouth bass and 73 largemouth bass were captured (including recaptures and juvenile fish) during spring netting and shocking. The adult (greater than 12 inches) smallmouth bass population was estimated at 576 (± 61 SD), compared to an estimated 661 (± 119 SD) in 2000. Too few largemouth recaptures occurred for a population estimate. Smallmouth bass length-frequency (Figure 4) indicates adult size centered on 15 inches, but few fish reach the 18 inch minimum size limit. Largemouth (Figure 5) show good numbers of fish smaller than 11 inches and a low number of larger 14 to 18 inch fish.

Figure 4. Length-frequency of smallmouth bass during 2003 in Bearskin Lake, Oneida County Wisconsin.

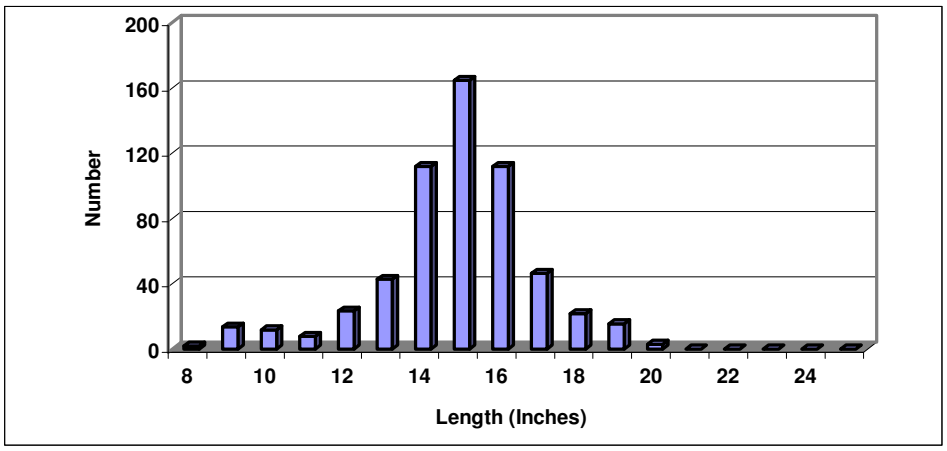
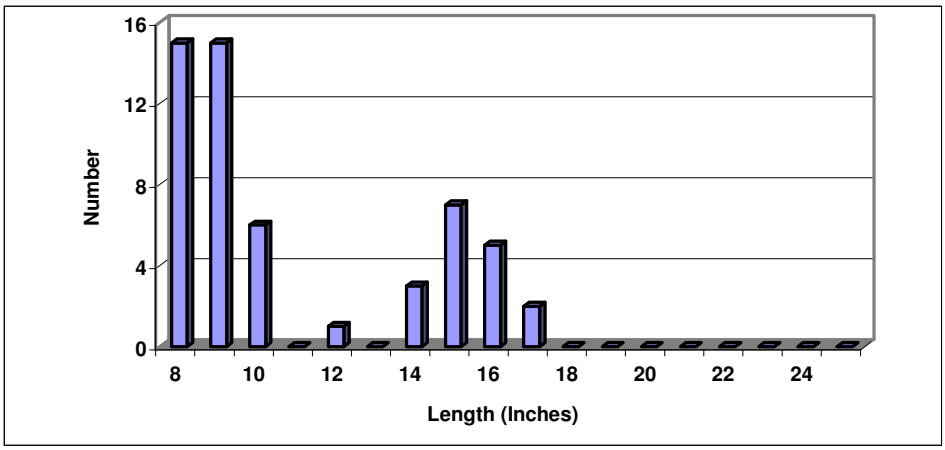


Figure 5. Length-frequency of largemouth bass during 2003 in Bearskin Lake, Oneida County Wisconsin.



Bass size limit evaluation

A 12-inch minimum size limit for bass (general northern Wisconsin Regulation) was in place during 1989 through 1995 (prior to 1989 there was no minimum size). In 1996, the size limit was increased to 18 inches, with a bag limit of 1. In spring of 1996, immediately prior to implementation of the regulation, 40% of sampled smallmouth were from 8 to 13.9 inches; 65% were from 14 to 17.9 inches and 9% were 18 inches and larger. After four years with the 18 inch minimum length limit, in 2000 the smallmouth population was estimated at (661 $\pm$ 119 SD). Size structure had shifted to the low range (77% were smaller than 14 inches) from the middle range (15% 14 to 17.9 inches), with little change in the contribution by fish 18 inches and larger (9%). The 2003 size distribution was very similar to 1996, with 25% of sampled smallmouth 8 to 13.9 inches; 73% 14 to 17.9 inches and 9% 18 inches and larger. Trends in Bearskin Lake smallmouth size structure appear to be driven more by recruitment than the 18-inch minimum length (Figure 6).

Although some limited stocking of smallmouth bass occurred in 1989, 1990 and 1994 (Table 2), it is likely that the bass population was primarily supported by natural reproduction. Projected

smallmouth catch from creel surveys was 979 during 1990, 859 during 1996, 2,708 during 2000 and 2,446 during 2003. Estimated harvest was 158 during 1990 (average length = 13.3 inches), 0 during 1996, 25 during 2000 (two fish were measured between 18 and 20 inches) and 0 during 2003.

Figure 6. Length-frequency of three size classes of smallmouth bass in Bearskin Lake, Oneida County Wisconsin in 1996, 2000 and 2003.

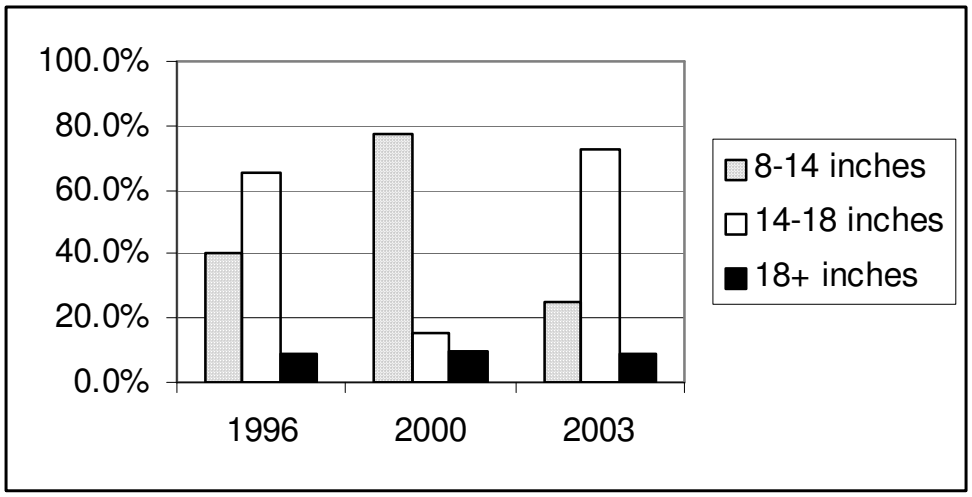


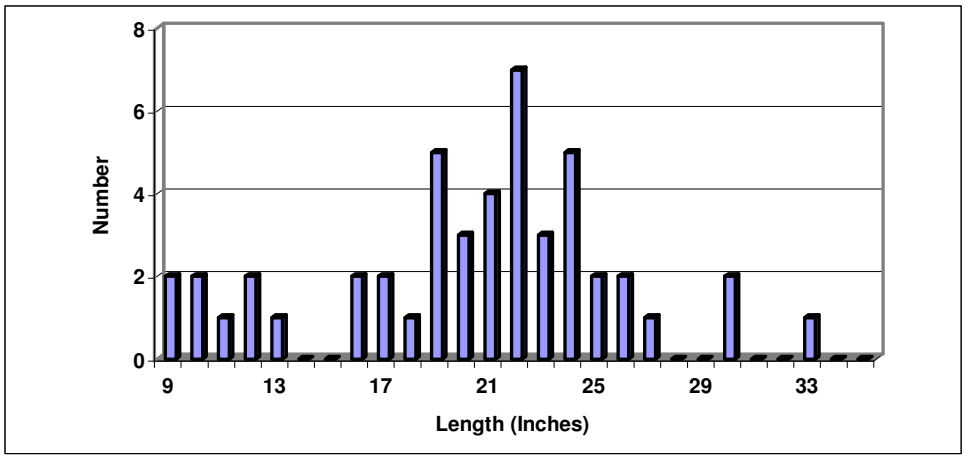
Table 2. Fish stocking during 1979 through 2003 in Bearskin Lake, Oneida County Wisconsin.

Year	Species	Size	Number
1979	muskellunge	large fingerling (8-9”)	800
1980	muskellunge	large fingerling (12”)	500
1981	muskellunge	large fingerling (12”)	309
1984	muskellunge	large fingerling	500
1985	muskellunge	large fingerling (10”)	500
1987	muskellunge	large fingerling (12”)	810
1989	crappie	adult (5-10”)	1,000 (field transfer)
1989	bluegill	adult (4-6”)	1,000 (field transfer)
1989	smallmouth bass	large fingerling (4-6”)	300 (privately funded)
1990	smallmouth bass	large fingerling (4-6”)	500 (privately funded)
1990	muskellunge	large fingerling (8-9”)	307
1990	muskellunge	large fingerling (11”)	493
1991	muskellunge	large fingerling (11.6”)	400
1993	muskellunge	large fingerling	400
1994	smallmouth bass	fingerling	1,196 (privately funded)
1995	muskellunge	large fingerling	400
2003	bluegill	large fingerling (4.7”)	2,000 (privately funded)
2003	yellow perch	large fingerling (4-10”)	1,880 (privately funded)

Northern Pike

One hundred sixty northern pike were captured (including 19 recaptures), all gears combined. The northern pike population (including adult fish and all fish over 12 inches) was estimated at 383 (± 85.3 SD), or 0.96 per acre using the Schnabel multiple-capture method (Ricker 1975). Average size of adult northern pike was 20 inches, and good numbers of fish less than 30 inches in length were observed (Figure 3). The northern pike population is considered low-density (less than two fish per acre), but should be monitored due to the potential for suppression of muskellunge by northern pike.

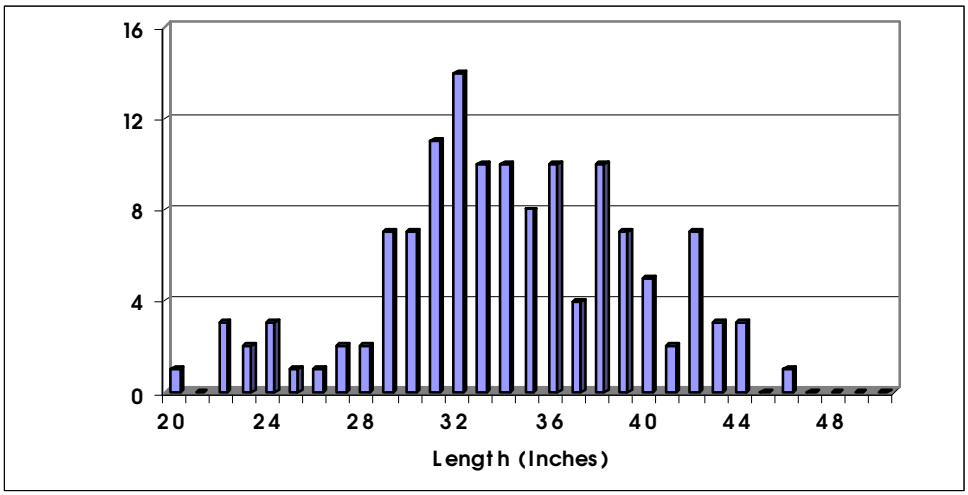
Figure 7. Length-frequency of adult northern pike during 2003 in Bearskin Lake, Oneida County Wisconsin.



Muskellunge

A total of 172 muskellunge were captured during all netting and shocking periods (including 33 recaptures), at a catch rate of 2.3 per net night during the musky netting period (Table 1). The estimated population from a mark-recapture population estimate (fish were marked in 2003 and recaptured in 2004) is 146 muskellunge 30 inches and larger (± 21 SD), or 0.4 per acre. The Shnabel multiple-capture method (Ricker 1975) yields a slightly higher estimate of 258 (± 48 SD), or 0.6 per acre using only the 2003 data. However, on the short term, muskies are known to avoid recapture in nets, which would cause an overestimate by the Schnabel method. These estimates compare to a mark-recapture estimate of 95 in 2000-2001. Sizes were scattered between low-20 and mid-40 inch ranges (Figure 4). Size structure appears to have been fairly consistent in recent years, with 9% of captured muskies over 40 inches during 1990, 12% during 1996, 8% during 2000 and 16% during 2003. The capability to produce large fish is evidenced by one fish over 50 inches in 1967, one 50.5 inches in 1990 and one 50.5 inches in 2000. Muskellunge have not been stocked in Bearskin Lake since 1995. Presence of a variety of sizes and several small muskies collected during fall shocking surveys (e.g., four muskies from 11 to 24 inches on October 15, 2003, and six muskies under 12 inches on October 4, 2000) and summer mini-fyke nets (two fish between 5 and 6.5 inches in 1996) show that natural reproduction is occurring. Two tiger muskies (northern pike x muskellunge hybrids) were encountered, indicating that a small amount of hybridization is occurring with northern pike.

Figure 8. Length-frequency of muskellunge during 2003 in Bearskin Lake, Oneida County Wisconsin.



Panfish

Early netting and electrofishing showed good catches of yellow perch, while bluegill, rock bass and pumpkinseed dominated June panfish netting (Table 1). Large numbers (several hundred per net) of 5 to 6 inch yellow perch were captured in spring, 2004 muskellunge nets, suggesting a strong 2002 yearclass. Only 92 black crappies were netted, indicating low abundance, and most were in the 11-inch size range. Panfish size structure was excellent, but catch rates were low compared to lakes with more vegetation. Natural reproduction appears to be adequate, but loss of aquatic vegetation to rusty crayfish and high abundance of predator fish keep panfish populations suppressed. A somewhat stunted panfish population reported from a 1967 survey was associated with aquatic vegetation across 32% of the lake surface (Theis and McNight 1968). Four recent aquatic plant surveys between 1996 and 2003 found vegetation covering 5 to 12% of the lake's surface area (McComas 2003). Big Bearskin Lake Association replaced some lost habitat by installing cribs and brush, and stocked bluegills and perch in 2003 (Table 2). However, with current predator populations it is unlikely that panfish survival and adult abundance will improve unless escape cover for juvenile panfish is restored.

Figure 9. Length-frequency of bluegill during 2003 in Bearskin Lake, Oneida County Wisconsin.

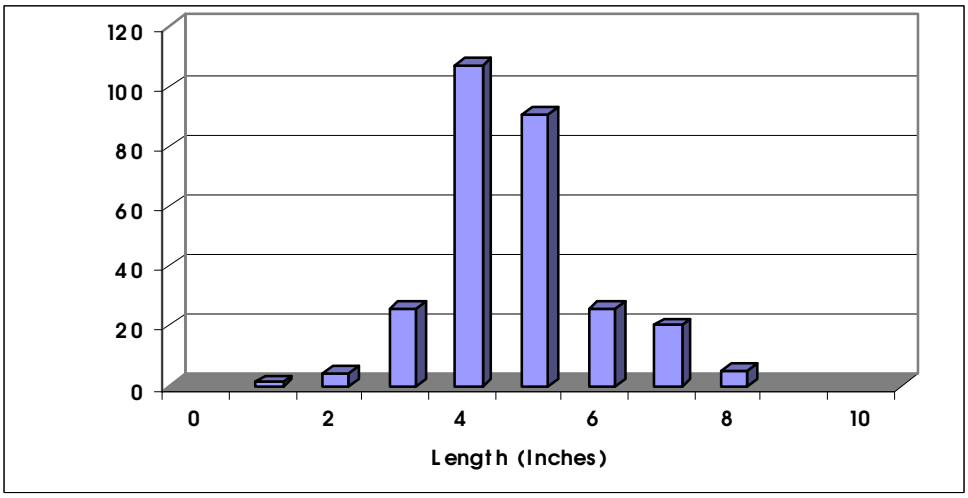


Figure 10. Length-frequency of pumpkinseed during 2003 in Bearskin Lake, Oneida County WI.

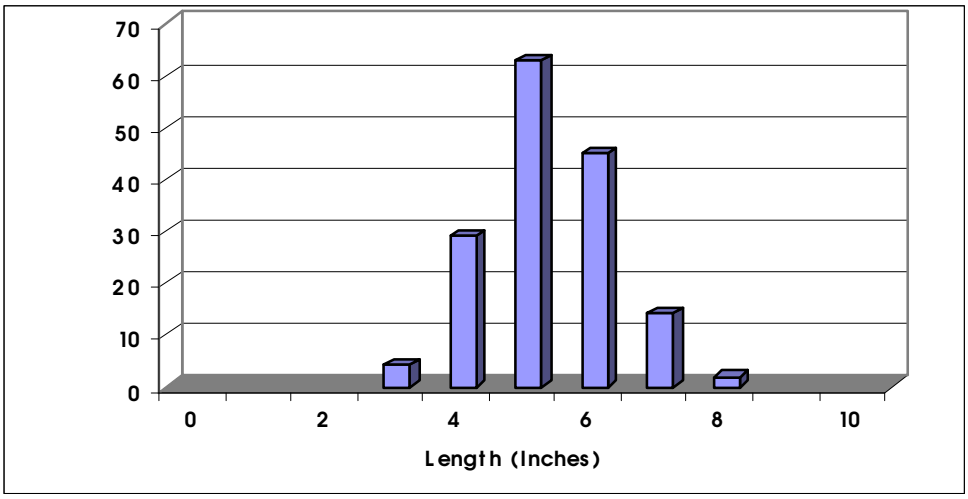


Figure 11. Length-frequency of yellow perch during 2003 in Bearskin Lake, Oneida County WI.

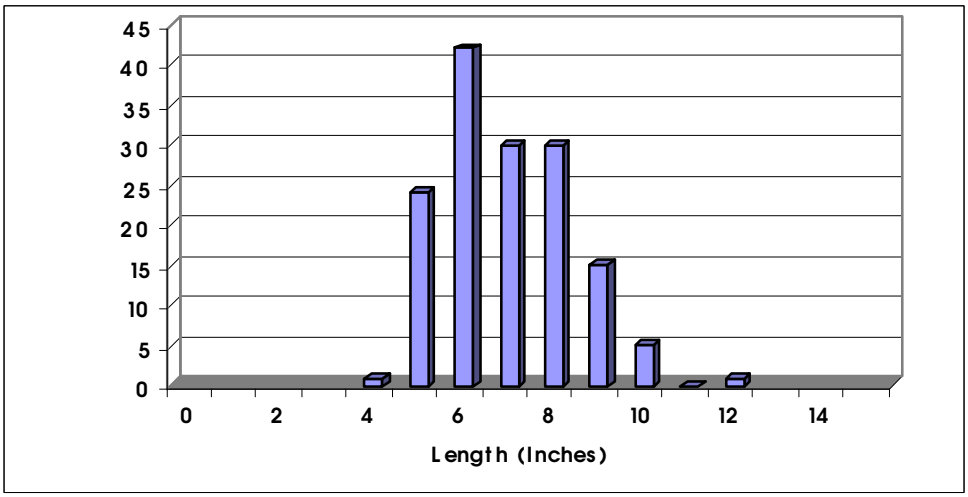
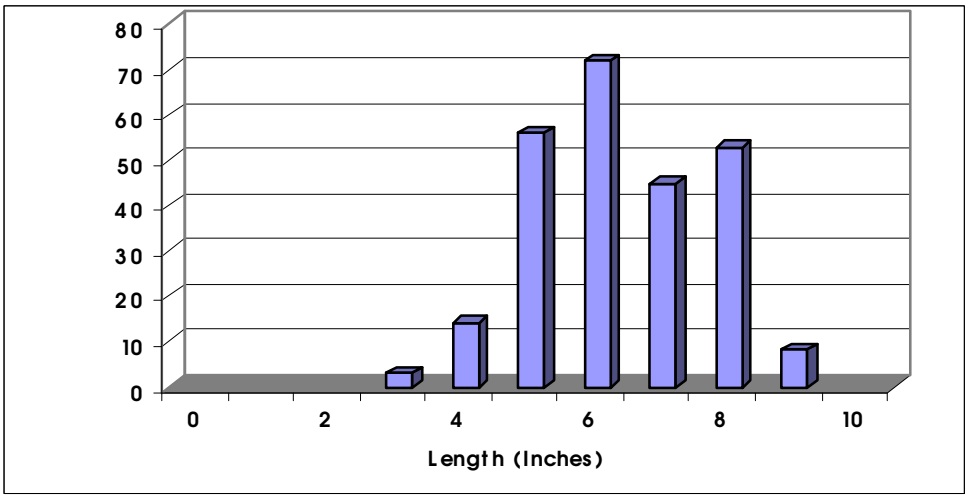


Figure 12. Length-frequency of rock bass during 2003 in Bearskin Lake, Oneida County Wisconsin.



MANAGEMENT RECOMMENDATIONS

Bearskin Lake supports a high-density walleye population. The current walleye regulation (no minimum size, but only one fish over 14 inches) is appropriate given the high density of juvenile fish. Bass numbers are currently dominated by smallmouth bass, which show very good size structure. Abundant largemouth found in the 1967 survey were likely replaced by smallmouth as crayfish increased and vegetation declined. Implementation of an 18-inch minimum length limit for bass in 1996 did not result in an increased proportion of bass larger than 18 inches. However, excellent bass size structure observed in 1996 has been maintained. Muskellunge abundance is moderately high for a typically low-density species, with good growth and numbers of fish up to 44 inches. The muskellunge population has been supported by natural reproduction since 1995. Northern pike were similar in abundance to muskellunge, but typically show much higher abundance and are considered low-density in Bearskin Lake. Northern pike compete with muskellunge and should be discouraged from increasing further. Panfish exhibited moderate abundance, but growth rates and size structure were above average. The strong predator populations and low amount of submerged vegetation for cover suppress panfish numbers.

Rusty crayfish have had strong effects on Bearskin Lake and the fishery. Bearskin currently experiences annual midsummer blooms of blue-green algae (McComas 2003). The alga blooms are most likely a by-product of grazing by rusty crayfish. The algae are responding to increased availability of dissolved nutrients (phosphorous) that were previously utilized by rooted aquatic vegetation. Low panfish abundance and a shift from largemouth to smallmouth bass are fisheries changes attributable to crayfish. Suppression of rusty crayfish has proven difficult, although intensive trapping has worked in small-lake experiments. Predation by fishes, especially smallmouth bass, may help regulate crayfish abundance. There is some indication from other lakes that extremely high crayfish populations are unsustainable and the population may crash and remain at a lower abundance. This may have occurred: anecdotal reports from lake residents indicate that the abundance of larger-size crayfish in their traps was lower during 2003 compared to previous years and a commercial trapper left the lake due to declining catch. Management recommendations include suppression of rusty crayfish to allow recovery of aquatic vegetation. Increased cover in the form of woody brush (e.g., tree drops) may replace some of the vegetation that has been lost.

ACKNOWLEDGEMENTS

Matt Andre, Kevin Gauthier, Jason Halverson, Marty Kipke, Steve Kramer, Rebecca Papke, Steve Timler, Joelle Underwood and Jordan Weeks assisted in the field. Steve Kramer assigned gamefish age from scales and spines. John (Ned) Thabes entered and summarized data. Mike Coshun calculated walleye and bass population estimates. The Big Bearskin Lake Association was very interested and supportive in survey and management efforts on the lake.

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Cover image courtesy of TerraServer-USA website and the United States Geological Survey.
http://terraserver-usa.com

APPENDIX A
FISH AGE RESULTS

Table A.1. Female walleye length-at-age in Bearskin Lake, Oneida County Wisconsin during 2000 and 2003.

Age	2003 Number of fish	2003 Bearskin avg length	2000 Bearskin avg length	Northern WI avg
2			12.6	
3			15.1	13.0
4	14	14.5	16.5	14.7
5	10	16.4	17.4	16.1
6	23	18.7	19.5	17.6
7	22	20.0	20.2	19.5
8	18	21.5		21.2
9	9	22.6		22.6
10	8	22.7		23.8
11	1	26.5		24.9
12	2	26.2		25.8
13				26.9
14				27.5
15				28.0
16				27.7

Table A.2. Male walleye length-at-age in Bearskin Lake, Oneida County Wisconsin during 2000 and 2003.

Age	2003 Number of fish	2003 Bearskin avg length	2000 Bearskin avg length	Northern WI avg
2	6	9.5	10.44	10.6
3	20	11.1	12.42	11.6
4	19	13.0	14.1	13.0
5	9	14.0	14.7	14.5
6	23	15.4	17.0	15.8
7	12	17.0		16.9
8	11	18.1		18.1
9	2	18.5		18.9
10	1	18.5		19.7
11	1	16.6		20.4
12				20.6
13				21.3
14				22.0

Table A.3. Smallmouth bass length-at-age in Bearskin Lake, Oneida County Wisconsin during 2003.

Age	Number of fish	Bearskin avg length	Northern WI avg
2	4	7.3	7.2
3	2	9.5	9.5
4	6	12.6	11.4
5	12	14.0	13.8
6	11	15.0	15.4
7	14	16.3	16.5
8	8	17.0	17.5
9	7	17.6	18.3
10	9	18.6	18.4
11	5	18.4	17.8
12	1	19.8	18.8
13	2	20.0	

Table A.4. Largemouth bass length-at-age in Bearskin Lake, Oneida County Wisconsin during 2003.

Age	Number of fish	Bearskin avg length	Northern WI avg
2	4	7.7	
3	4	9.6	9.7
4	8	9.8	11.5
5	2	13.5	12.9
6	6	15.7	14.4
7			15.3
8	1	15.9	17.1
9	1	16.3	17.5
10	2	17.0	18.9

Table A.5. Female northern pike length-at-age in Bearskin Lake, Oneida County Wisconsin during 2003.

Age	Number of fish	Bearskin avg length	Northern WI avg
1			13.1
2			14.4
3	4	17.5	16.9
4	5	18.5	20.4
5	2	21.7	23.1
6	2	23.9	24.4
7	1	30.1	27.3
8			28.8
9			32.1
10			33.8

Table A.6. Male northern pike length-at-age in Bearskin Lake, Oneida County Wisconsin during 2003.

Age	Number of fish	Bearskin avg length	Northern WI avg
1	1	9.9	10.7
2	12	11.9	13.4
3	6	17.1	16.2
4	9	19.6	18.9
5	7	20.9	20.6
6	10	22.4	22.3
7	4	24.8	23.4
8	2	22.8	24.8
9	2	27.5	23.9
10			21.5

Table A.7. Female muskellunge length-at-age in Bearskin Lake, Oneida County Wisconsin during 2003.

Age	Number of fish	Bearskin avg length	Northern WI avg
1			
2			24.2
3			24.0
4			27.7
5	5	32.3	31.9
6	11	33.5	33.7
7	8	35.2	35.8
8	3	39.2	38.1
9	1	39.0	39.5
10	5	41.2	41.0
11	5	42.1	43.2
12	7	42.3	43.7
13	1	44.5	44.3
14			47.5
15	1	46.0	43.5

Table A.8. Male muskellunge length-at-age in Bearskin Lake, Oneida County Wisconsin during 2003.

Age	Number of fish	Bearskin avg length	Northern WI avg
1			13.2
2			
3			23.5
4	1	25.5	27.3
5	9	29.9	29.2
6	13	31.0	31.5
7	11	32.5	33.3
8	7	34.6	34.4
9	5	36.5	35.8
10	6	36.5	37.3
11	5	38.2	37.9
12			39.0
13	3	39.4	38.9
14			43.5
15	1	38.0	39.0

Table A.9. Bluegill length-at-age in Bearskin Lake, Oneida County Wisconsin during 2003.

Age	Number of fish	Bearskin avg length	Northern WI avg
1	19	3.4	3.0
2	29	4.7	3.9
3	32	6.5	5.0
4	10	7.2	6.3
5	3	8.0	7.0
6	3	8.3	7.7
7	5	8.2	8.1

Table A.10. Pumpkinseed length-at-age in Bearskin Lake, Oneida County Wisconsin during 2003.

Age	Number of fish	Bearskin avg length	Northern WI avg
1			3.7
2	30	4.6	4.4
3	14	5.8	5.2
4	17	6.5	5.9
5	5	7.0	6.9
6	3	7.5	7.4
7	2	7.2	7.6

Table A.11. Yellow perch length-at-age in Bearskin Lake, Oneida County Wisconsin during 2003.

Age	Number of fish	Bearskin avg length	Northern WI avg
1			3.8
2	9	5.7	5.1
3	40	7.0	6.2
4	26	8.3	7.2
5	11	9.5	8.2
6	4	9.8	9.2
7	3	10.9	10.3

Table A.12. Rock bass length-at-age in Bearskin Lake, Oneida County Wisconsin during 2003.

Age	Number of fish	Bearskin avg length	Northern WI avg
1			
2	22	4.6	3.8
3	31	6.0	5.2
4	16	7.2	6.4
5	11	8.1	7.1
6	2	7.5	7.9
7	5	9.0	8.5
8	1	9.5	9.0
9	1	10.2	

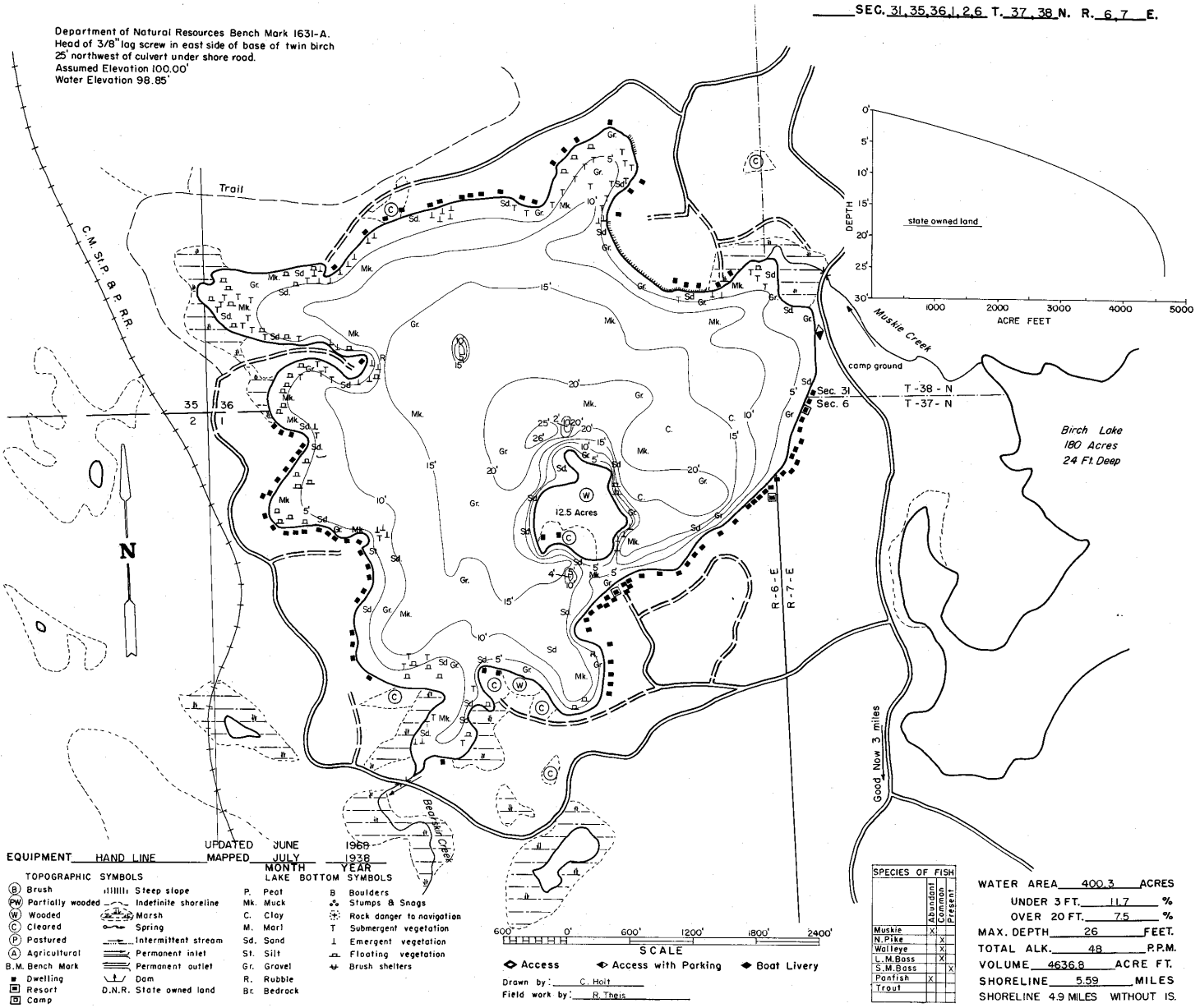
STATE OF WISCONSIN
DEPARTMENT OF NATURAL RESOURCES

LAKE SURVEY MAP

BEARSKIN LAKE — ONEIDA COUNTY

SEC. 31, 35, 36, 1, 2, 6 T. 37, 38 N. R. 6, 7 E.

Department of Natural Resources Bench Mark 1631-A.
Head of 3/8" lag screw in east side of base of twin birch
25' northwest of culvert under shore road.
Assumed Elevation 100.00'
Water Elevation 98.85'



EQUIPMENT HAND LINE

UPDATED MAPPED — MONTH: JUNE JULY — YEAR: 1969 1938

TOPOGRAPHIC SYMBOLS

(B) Brush	Steep slope	
(PW) Partially wooded	Indefinite shoreline	
(W) Wooded	Marsh	
(C) Cleared	Spring	
(P) Pastured	Intermittent stream	
(A) Agricultural	Permanent inlet	
B.M. Bench Mark	Permanent outlet	
Dwelling	Dam	
Resort	D.N.R. State owned land	
Camp		

LAKE BOTTOM SYMBOLS

P.	Peat	B	Boulders
Mk.	Muck		Stumps & Snags
C.	Clay		Rock danger to navigation
M.	Marl	T	Submergent vegetation
Sd.	Sand		Emergent vegetation
St.	Silt		Floating vegetation
Gr.	Gravel		Brush shelters
R.	Rubble		
Bc.	Bedrock		

◆ Access ◆ Access with Parking ◆ Boat Livery

Drawn by: C. Holt

Field work by: R. Theis

SPECIES OF FISH	Abundant	Common	Present
Muskie	X		
N. Pike		X	
Walleye		X	
L.M.Bass		X	
S.M.Bass			X
Panfish	X		
Trout			

WATER AREA 400.3 ACRES
UNDER 3 FT. 11.7 %
OVER 20 FT. 7.5 %
MAX. DEPTH 26 FEET.
TOTAL ALK. 48 P.P.M.
VOLUME 4636.8 ACRE FT.
SHORELINE 5.59 MILES
SHORELINE 4.9 MILES WITHOUT IS.