



Eastern Georgian Bay Stewardship Council

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2010 Moon River Walleye Culture, Index Spawners and Rehabilitative Planting Summary Report

July 28, 2010

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Bill McRobb with a million walleye eggs incubating at the Moon River hatchery, 2010

1.1 Introduction

In 2010, the Eastern Georgian Bay Stewardship Council (EGBSC) in partnership with the Moon River Walleye Association, Upper Great Lakes Management Unit (UGLMU) and Parry Sound District of the Ministry of Natural Resources, conducted a walleye culture and index netting survey on the Moon River of eastern Georgian Bay.

This represents the fifth consecutive year of this partnership project. (In 2008 however, the project was cancelled due to high flow volumes on the Moon River and related safety issues.) This project was conducted under the auspices of the Ministry's "Community Fisheries / Wildlife Involvement Program" (CF/WIP).

The purpose for the project was:

1. Collect walleye eggs to culture for rehabilitative planting purposes,
2. Continue regular index assessment of walleye spawning population abundance, and
3. Aid with assessment of walleye spawning bed enhancement work conducted in 2008.

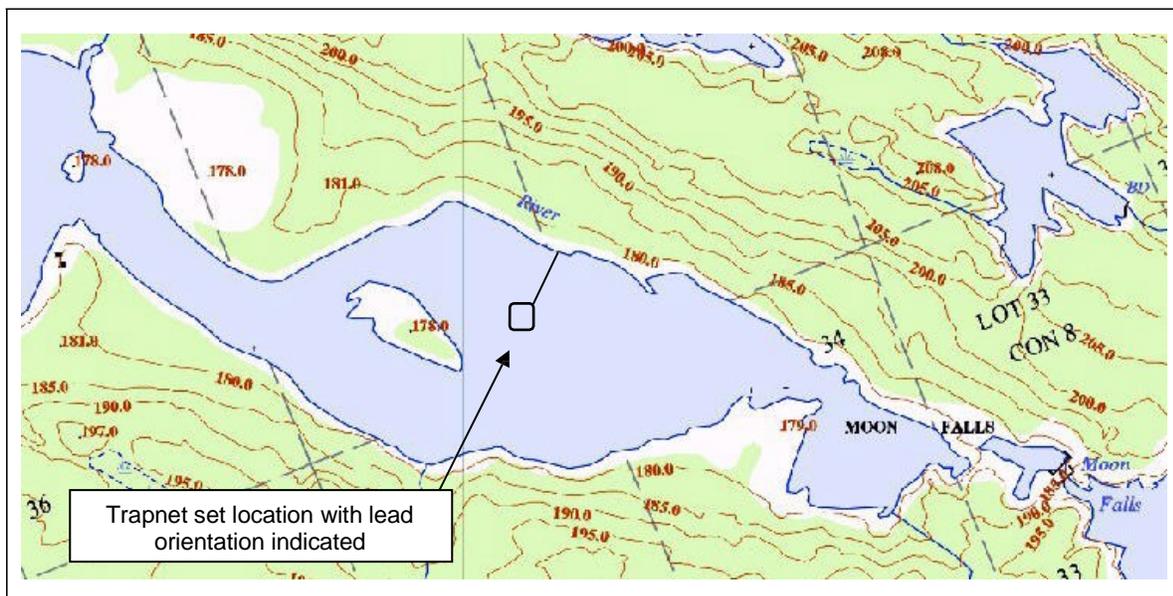
2.0 Methods

2.1 Index Walleye Spawners Survey

Trapnet operations comprising 13 net-nights of fishing effort commenced March 31 and terminated April 15. Unseasonably warm temperatures throughout March, but particularly in the later portion prompted the exceptionally early start of the project. In fact, we terminated the project on April 15, which under normal circumstances we just are beginning. Water temperatures ranged from a low of 7 deg. C on April 1 to a high of 11 deg. C observed on April 4 and 8.

One 8-trapnet was set at the regular north shore netting site as per Figure 1.

Figure 1. Trapnet Set Location for the 2009 walleye spawners index netting survey at the Moon River of eastern Georgian Bay



The net were generally lifted daily, but on one occasion was fished for two net-nights (Table 1). On April 5 we arrived to discover our net pulled the shore and no fish present. The net was reset on April 6.

The total catch for each set was completely enumerated (Table 1).

Size sampling (total length) was conducted on a random sample of male and female walleye captured (Appendix A).

2.2 Walleye Culture and Rehabilitative Plantings

Walleye eggs were collected and cultured in accordance with procedures specified in the Ministry's Walleye Culture Manual.

A total of approximately 1 million walleye eggs were collected. Eggs were incubated at the Moon River Walleye Association hatchery located at Moon River Cottages on Arnold's Bay. Walleye reared at this location were stocked into the Moon River as emergent fry and into the Moon River Cottages' pond for advanced rearing to the summer fingerling stage and subsequent stocking in the Moon River.

In addition to the above walleye culture activities taking place at Moon River cottages, approximately 40,000 emergent fry were transported to Cedar Brook Farms hatchery near Victoria Harbour for advanced rearing. These fish were also subsequently planted as summer fingerlings in the Moon River.

3.0 Results

3.1 Walleye Index Spawners Survey Results

3.1.1 Catch Data

From 13 trapnet nights of fishing effort, we captured 361 walleye, 62 northern pike, 38 brown bullhead; 14 common white suckers, 7 channel catfish; 6 largemouth bass; 3 smallmouth bass, 2 red horse sucker, 1 carp and 1 rock bass (Table 1). Walleye Catch-Per-Unit-Effort (CPUE) was 27.8 walleye per net night.

Table 1. Catch summary from an 8'-trapnet fished at the Moon River during the walleye spawning run of 2010.

Date Set	Date Lifted	Effort (Net-Nights)	Water temp. (deg. C.)	Catch (no.)						
				Walleye	N.Pike	B.Billhead	C.W. Skr.	C.Catfish	I.M Bass	Other*
31-May	Apr. 1	1	7	16	25	0	5	0	0	0
Apr. 1	Apr. 2	1	8	17	7	0	0	0	0	0
Apr.2	Apr. 3	1	9	12	11	2	2	0	0	0
Apr.3	Apr.4	1	11	28	9	1	2	0	1	1
Apr.4	Apr.5	0	12	Net pulled to shore; no fish present						
Apr.5	Apr.6	did not fish								
Apr.6	Apr.7	1	nr	50	2	13	0	1	1	0
Apr.7	Apr.8	1	11	36	3	12	1	1	1	0
Apr.8	Apr.9	1	10	27	1	3	0	2	0	1
Apr.9	Apr.10	1	9	22	2	0	0	0	3	1
Apr.10	Apr.11	1	8	44	1	1	0	0	0	1
Apr.11	Apr.12	1	8	14	1	0	1	2	0	0
Apr.12	Apr.14	2	9	58	0	3	2	0	0	0
Apr.14	Apr.15	1	10	37	0	3	1	1	0	3
Totals:		13		361	62	38	14	7	6	7
CPUE (No. / net night)				27.8	4.8	2.9	1	0.5	0.5	0.3

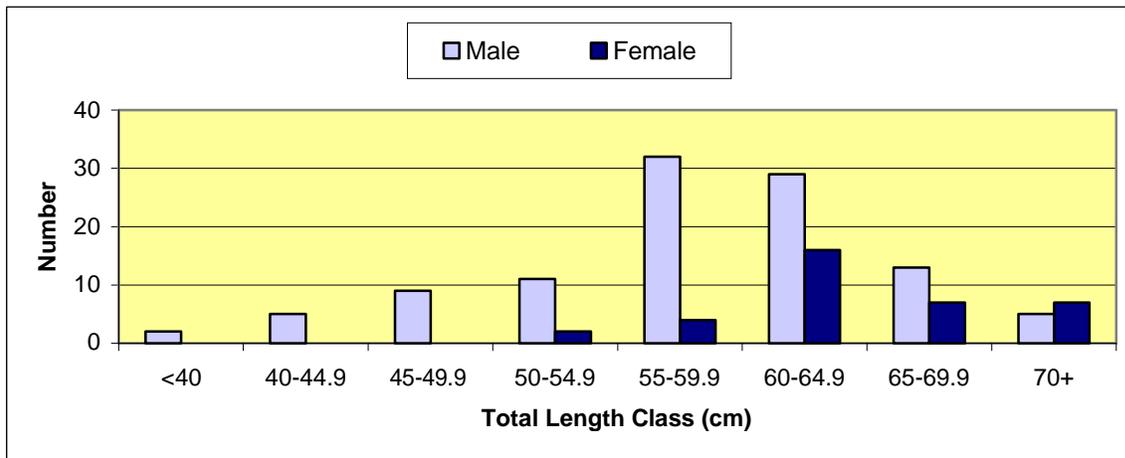
* Other fish consisted of: 1 carp; 1 rock bass; 2 redhorse sucker; 3 smallmouth bass

Incidentally, one stinkpot (musk) turtle and four map turtles were captured. All the map turtles were caught in a single net lift – on April 4.

3.1.2 Walleye Spawning Population Size Class Analysis:

Mean total length of 106 male walleye sampled was 58.4 cm, and 64.0 cm for 36 female walleye sampled (Appendix A). Length class distribution is shown in Figure 2.

Figure 2. Length class distribution of male and female walleye sampled during the 2010 Moon River walleye egg collection and index spawners survey.



3.1.3 Fish Tags

During the 2005 walleye index spawners survey conducted by the Upper Great Lakes Management Unit (UGLMU), spaghetti tags were affixed to all walleye sampled.

During this survey, 14 walleye were observed with spaghetti tags.

3.1.4 Peak Spawning Activity

We have a keen interest in knowing when peak spawning activity occurs. This information can be useful in formulating an upstream water management strategy to regulate flows during the spawning and incubation periods in a manner that contributes to walleye reproductive success.

Dates in which a high proportion of female walleye are caught in ripe spawning condition can be used as an indicator of peak spawning activity. In 2010, the data was highly variable and inconclusive at indicating a clear, peak spawning period throughout the course of the survey (Table 3).

Table 3. Schedule of female ripeness observed during the 2010 walleye egg collection and index spawners survey at the Moon River.

Date of Lift	No. of Females Caught	No. of Females Ripe	% of Females Ripe	Water Temp. deg. C.
Apr.1	11	0	0.0	7
Apr.2	10	1	10.0	8
Apr.3	6	0	0.0	9
Apr.4	8	0	0.0	11
Apr.5		Net pulled to shore; no fish present		
Apr.6		Did not fish		
Apr.7	8	0	0.0	not recorded
Apr.8	5	2	40.0	11
Apr.9	8	1	12.5	10
Apr.10	3	0	0.0	9
Apr.11	12	0	0.0	8
Apr.12	5	2	40.0	8
Apr.13		Did not lift		
Apr.14	19	2	9.5	9
Apr.15	6	2	33.0	10

3.1.5 Lymphocystis:

The presence of obvious lymphocystis was noted for 14 walleye captured during the survey. (Note: This is not a definitive indication of the degree of lymphocystis infection as only obvious cases were recorded.)

3.2 Egg Collection, Incubation and Stocking Results

Approximately 1 million walleye eggs were collected (five jars of 200,000 each – see cover photo). Incubation success was estimated at 75%. Approximately 60,000 were transported to Cedar Brook Farms hatchery for advanced rearing to the summer fingerling stage. Likewise, approximately 10,000 fry were placed in the Moon River culture pond. The remaining successfully hatched fry – approximately 700,000 were planted into Arnold’s Bay of the Moon River.

On July 10, 4576 summer fingerlings were harvested from the Cedar Brook Farm ponds and stocked in Arnold’s Bay. Mean weight was approximately 0.90 grams per fish.

On July 21 and 22, 350 summer fingerlings were harvested from the Moon River pond and planted into Arnold’s Bay. Mean weight was approximately 1.1 grams per fish.

Table 4. 2010 Moon River walleye stocking summary

# and stage	Incubation site	Stocking Location
350 summer fgls	Moon River Pond	Arnold’s Bay
4576 summer fgls	Cedar Brook Farms	Arnold’s Bay
700,000 fry	Moon River Hatchery	Arnold’s Bay

4.0 Acknowledgements

The partners in this project would like to acknowledge and express deep appreciation to the volunteers who participate in field activities for this project. Volunteers included: Bill McRobb Sr., Bill McRobb Jr., Brian Forbes, Dave Walden, Rick Sant, Anne McRobb, Rob Emslie, Brian Bosanac, Dave Sarrasin and Brian Goltz. Special thanks to Bill McRobb Sr. who was the crew leader for the project. Shawn Payerl (Parry Sound High school co-op student), Zing Yang (DFO) and Eric McIntyre of the EGBSC also provided netting assistance.

Bill McRobb Sr. also conducted incubation operations at the Moon River Cottages hatchery as well as pond culture and summer fingerling harvesting operations.

Appendix A. Size sampling summary for male and female walleye captured at the Moon River during the 2010 walleye egg collection and index spawning project.

	Males: Total Lg. (cm)		Females: Total Lg. (cm)
77.4	65.9	52.1	64.5
67.1	51.3	56.5	64.5
69.5	56.8	64.3	67.6
59.6	71.2	58.1	63.0
66.9	61.0	74.6	70.0
56.0	61.5	59.6	71.1
60.8	58.0	61.2	71.8
65.1	51.4	58.3	62.8
55.0	57.3	57.9	63.4
53.2	60.2	59.4	61.6
60.0	43.1	53.3	60.3
67.5	59.0	51.7	63.3
62.5	59.1	40.0	72.4
64.2	57.8	60.2	71.4
46.5	59.2	39.6	62.9
61.1	47.0	45.5	62.1
59.4	44.6	43.0	61.2
57.5	59.9	59.0	72.6
57.8	64.7	60.8	72.4
61.3	55.8	62.5	63.5
62.0	69.5	45.1	61.4
68.9	65.3	42.0	66.9
46.4	64.7	54.0	62.6
55.5	59.4	65.5	51.5
51.2	62.2	45.9	55.6
60.7	64.1	76.0	69.2
57.8	62.3	66.0	56.3
55.7	61.5	58.5	65.4
62.8	57.4	61.8	65.5
63.1	59.2	56.2	59.5
64.6	39.1	49.4	58.6
67.0	48.7	53.5	65.2
74.2	53.4	67.8	51.5
60.6	57.2	63.0	60.0
57.2	51.6		69.5
62.7	45.6		62.5
	58.4	Mean	64.0
	1.520	Confidence Level(95.0%)	1.859
	0.767	Standard Error	0.916
	7.894	Standard Deviation	5.494
	39.1	Minimum	51.5
	77.4	Maximum	72.6
	106	Count	36