



2009 Moon River Walleye Culture and Index Spawners Report

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1.1 Introduction

In 2009, 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 fourth consecutive year of this partnership project. However, in 2008 the project was not conducted 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
3. Aid with assessment of walleye spawning bed enhancement work conducted in 2008.

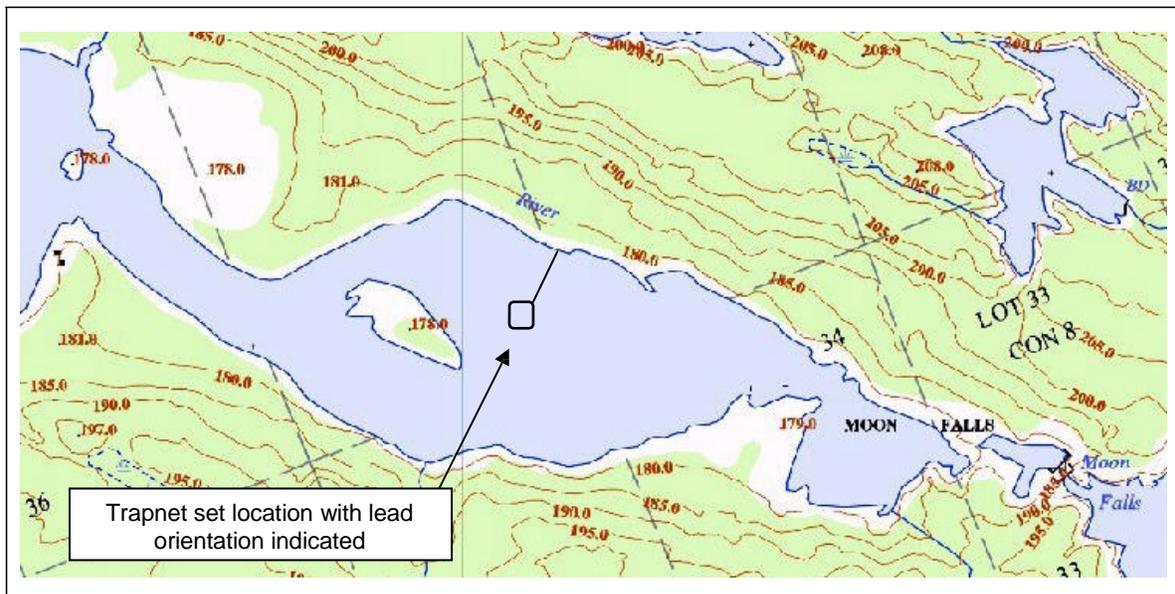
2.0 Methods

2.1 Index Walleye Spawners Survey

Trapnet operation comprising 11 net-nights of fishing effort commenced April 17 and terminated April 28. Water temperatures ranged from a low of 6 deg. C on April 20 to a high of 8 deg. C on April 28.

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



Nets were generally lifted daily, but on two occasions were fished for two net-nights (Table 1).

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

Size sampling (total and fork 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.

Eggs were incubated at two locations:

1. 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.
2. Approximately 180,000 eggs were incubated at a private hatchery near Midland. Upon hatching, approximately 10,000 were placed into ponds at the private hatchery for advanced rearing to the summer fingerling stage and subsequent stocking in the Moon River. The remaining 170,000 fry were placed in a cordoned-off embayment at Tadenac Bay of eastern Georgian Bay for advanced rearing and rehabilitative plantings in this portion of the Bay. (See Tadenac Bay walleye culture report; currently in preparation.)

3.0 Results

3.1 Walleye Index Spawners Survey Results

3.1.1 Catch Data

From 11 trapnet nights of fishing effort, we captured 124 walleye, 22 northern pike, 3 common white suckers, 2 rock bass and 1 brown bullhead (Table 1). Walleye Catch-Per-Unit-Effort (CPUE) was 11.3 walleye per net night.

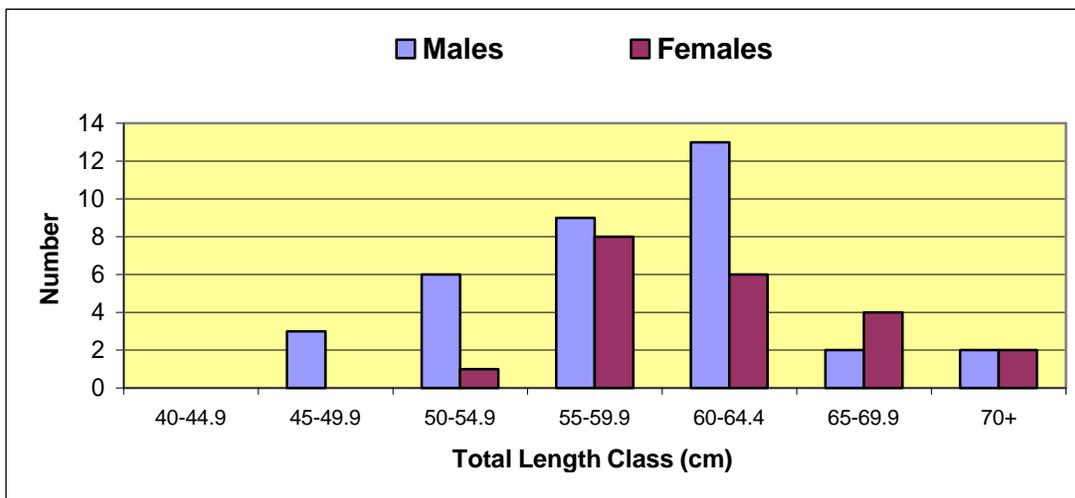
Table 1. Catch summary from an 8'-trapnet fished at the Moon River during the walleye spawning run of 2009.

Date Set	Date Lifted	Effort (Net-Nights)	Water Temp. (deg. C)	Catch (No.)				
				Walleye	N. Pike	Br. Bullhead	C.White Sucker	R.Bass
Apr.17	Apr.18	1	7.0	19	12		1	1
Apr.18	Apr.20	2	6.0	42	4	1	1	
Apr.20	Apr.22	2	6.0	48	2			
Apr.22	Apr.23	1	6.0	4				
Apr.23	Apr.24	1	6.5	5			1	
Apr.24	Apr.25	1	7.5	5	3			
Apr.25	Apr.26	1	6.0	0				1
Apr.26	Apr.27	1	8.0	1	1			
Apr.27	Apr.28	1	8.0	0				
Total		11		124	22	1	3	2
CUE (no. / net set)				11.3	2	0.1	0.3	0.2

3.1.2 Walleye Spawning Population Size Class Analysis:

Mean total length of 35 male walleye sampled was 58.9 cm, and 61.5 cm for 21 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 2009 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 the survey, six walleye were observed with spaghetti tags (Table 2):

Table 2. Spaghetti tags observed on walleye during the 2009 Moon River walleye culture and index spawners survey.

Tag Number	Sex & Condition	Total Length (cm)	Fork Length (cm)
1738	Female / ripe	Not sampled due to ripe condition	
19359	Male / ripe	60.5	58.0
17222	Male / ripe	72.6	70.0
17688	Male / ripe	63.0	59.8
17493	Not recorded	Not recorded	Not recorded
19572	Female / ripe	Not recorded	Not recorded

3.1.4 Peak Spawning Activity

We have a keen interest in knowing when the peak of 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 maximum number of female walleye are caught in ripe spawning condition is used as an indicator of peak activity. In 2009, that date was April 22 when eight of 15 female walleye captured were in a ripe condition (Table 3). Water temperature at the time was 6.0 deg. C.

Table 3. Schedule of female ripeness observed during the 2009 walleye egg collection and index spawners survey at the Moon River.

Date of net lift	No. Females caught	No. Females ripe	% of Females ripe	Water Temp. Deg. C
Apr. 18	10	1	10.0	7.0
Apr. 20	13	3	23.1	6.0
Apr. 22	15	8	53.3	6.0
Apr. 23	1	0	0	6.0
Apr. 24	2	2	100	6.5
Apr. 25	1	0	0	7.5

We caution our readers that there are poorly understood factors that influence walleye catch in surveys such as this one. For instance, we are unable to explain why our walleye catch peaked at 48 fish on April 23 but thereafter we were unable to capture more than 5 walleye in a net night. This unexplained variability also makes it very difficult to say with any certainty exactly when spawning activity reaches a peak.

3.1.5 Lymphocystis:

The presence of lymphocystis was noted for 8 walleye captured during the survey.

3.2 Egg Collection, Incubation and Stocking Results

Approximately 1 million walleye eggs were collected of which 820,000 were successfully incubated to the emergent fry stage (Table 4). Approximately 550,000 fry were stocked into the Moon River. An additional 90,000 were placed in the Moon River Cottages rearing. Four hundred and thirty-three (433) summer fingerlings were harvested from this pond and stocked into the Moon River.

Table 4. 2009 Moon River walleye fry stocking summary

Jar No.	Collection Date	# Fry	Stocking Location
1	Apr. 22	210,000	Arnold's Bay
2	Apr. 22	190,000	100,000 – Arnolds Bay (Moon River) 90,000 – Moon River Cottages rearing pond
3	Apr. 22	100,000	100,000 - Arnolds Bay (Moon River)
4	Apr.22	140,000	Wood's Bay (Moon River)
na	Apr. 24	180,000	170,000 – Tadenac Bay embayment / 10,000 private rearing pond
	Total	820,000	550,000 fry into Moon River 90,000 fry into Moon River Cottages rearing pond 180,000 fry to Tadenac Bay project

Approximately 180,000 eggs were successfully incubated at a private hatchery (V. Robitaille hatchery) in the vicinity of Port McNicholl. Of these 10,000 were placed into rearing ponds at the hatchery and cultured to the summer fingerling stage. Approximately 5,700 summer fingerlings 2 ½ to 3" in length were planted into the Moon River. The remaining 170,000 fry were stocked in a cordoned-off bay at Tadenac Bay as part of an experimental culture project. (See Tadenac Bay project report currently in preparation.)

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., Rachelle Green, Brian Bosanac, Bill Green and Reid Kilgour. Special thanks to Bill McRobb Sr. and Rachelle Green who were the backbone of the netting crew. Eric McIntyre of the EGBSC also provided netting assistance.

Again – special thanks to Bill McRobb Sr. who 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 2009 walleye egg collection and index spawning project.

	Total Lg. (cm)	Fork Lg. (cm)		Total Lg. (cm)	Fork Lg. (cm)
Males:	60.6	57	Females:	61.8	59
	61	57.9		50.6	48
	61.4	58		59.2	56
	56	53		73.1	68.5
	59.5	56		60.3	58
	63.2	60		57.8	55.2
	51.5	48.2		58.8	56.5
	53.9	50.8		67	64.5
	45	42.6		57.7	54.5
	60.5	58		63.2	61.1
	54.5	52.2		66	63
	63	60		60.5	57.2
	72.6	70		59	56
	64	61		57.5	55
	64.1	59		57	55
	57.9	55		69.5	66
	60	57.6		65	62.5
	64.1	61.2		56	53
	48	45.8		60.5	57
	62.5	59.9		60.3	57
	59	55.5		70.5	67
	54.2	51.4			
	49.4	48.5			
	51.6	49.1			
	55.2	52.2			
	55.8	52.5			
	54	51.2			
	55.2	52.5			
	58	55.2			
	61.7	58.4			
	67.4	63.9			
	73.4	69.9			
	65.9	62.9			
	60.5	57.6			
	55.3	52.1			
	58.9	55.9	Mean	61.5	58.6
	2.154	2.066	Confidence Level(95.0%)	2.456	2.327
	1.060	1.016	Standard Error	1.178	1.115
	6.270	6.014	Standard Deviation	5.396	5.111
	35	35	Sample Size	21	21