

Summary of Activities

Date: November, 2017

To: Ian Kitch
MB Sustainable Development

From: Holly Urban & Brock Koutecky
& Megan Paterson, Swan Valley Sport
Fishing Enhancement
Contact: swanvalleysportfish@gmail.com

Subject: Wellman Lake Walleye Recruitment Surveys 2017

Location: Wellman Lake, Duck Mountain Provincial Park, 14U 369224 5741842

Wellman Lake is one of the area's most popular local angling destinations, and one that SVSFE has been invested in since induction. As the number of recreational users grow and angling pressure increases it becomes imperative that walleye stock, natural recruitment, and harvest continue to be monitored.

Understanding natural recruitment becomes imperative when managing walleye fisheries. Stocking programs are expensive and unsuccessful stocking programs can be a drain on already limited resources in government departments. For this reason, understanding stocking success and natural recruitment success provides lake managers with appropriate stocking guidelines. With more knowledge comes management which can offer anglers angling experiences that will continue to bring them back to the fishery. Understanding walleye stocking success and natural recruitment have been a topic of interest for SVSFE and lake managers for decades; and to be honest, it is still unknown if the lake is dependent on supplemental fry stocking or not.

Reef Enhancement: In the early 1990's it was determined that Wellman Lake exhibited a lack of ideal walleye spawning habitat. For this reason, the spawning reef was enhanced by adding clean substrate to the structure. The work was completed in March of 1993.

Following a comprehensive spawn assessment in Wellman Lake in 2014, SVSFE determined the spawning reef enhanced in 1993 had two issues limiting walleye usage and egg survival. (1) the rock used was too large and consisted of more boulder-cobble than clean gravel, and (2) the substrate over the last 20+ years had silted over. Therefore it was recommended that a "light enhancement" be completed with the use of small diameter clean gravel.

In April of 2016, SVSFE applied for funding to "lightly enhance" the reef through the Recreational Fisheries Conservation Partnerships Program fund (RFCPP). Proposal was to add a thin layer (2-4") of smaller diameter clean gravel to the 1.3m contour or less in order to provide walleye with a substrate hypothesised to promote further egg adhesion, aeration and essentially; higher survival rates. The project was approved and the reef was re-enhanced on March 3rd and 4th, 2017.



Summary of Activities

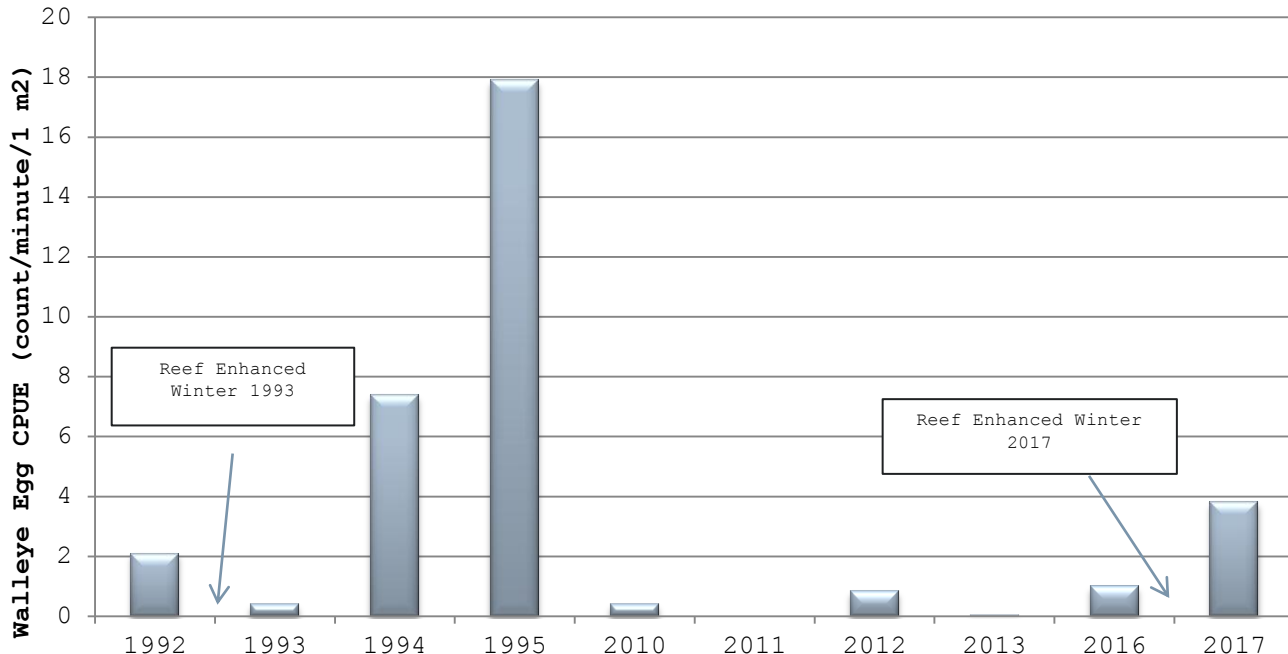
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Telemetry Studies: In 1998, Fisheries Branch initiated a walleye telemetry study on Wellman Lake to determine if walleye were utilizing anywhere other than the reef for spawning. Of ten tagged walleye, it was concluded that 8/10 fish spawned on the reef in 1998. A similar study, conducted by SVSFE in 2011 and 2012 found that 2/3 (2011), and 7/10 (2012) walleye utilized the reef during critical periods in these two years.

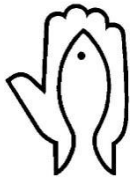
Beach Seining: From the years 2013-2015 SVSFE technicians replicated an after dark 100 meter beach seine on Wellman Lake main beach for comparative measures. Essentially, because fry are stocked on some years and not in others, evaluation on success of stocking versus natural recruitment could be concluded, and only success in general was monitored.

Reef Guzzling: In terms of quantifying reef utilization, guzzling has been the primary methods over the years. Methods include guzzling one square meter for 60 seconds with a 30 second flush in random locations. Results from 1992-2017 can be viewed below.

**WELLMAN LAKE REEF
GUZZLING RESULT COMPARISON BY YEAR**



Harvest: Since 2011, harvests via barrel counts have been monitored. With Park staff participation, this is basically counting and documenting the fish harvested in the fillet shacks over each summer. Obviously, this is not a true figure of harvest, as anglers use various places to clean and prepare their table fare. The barrel counts from 2011-2017 can be viewed on page 3.



Summary of Activities

Wellman Lake Barrel Counts





Summary of Activities

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Electrofishing and OTC Surveys:

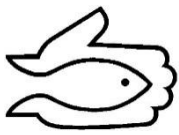
In the fall of 2015, it was decided to conduct a 3-year OTC analysis survey on Wellman Lake beginning in fall of 2016. Therefore, managers could develop an effective walleye stocking rate for Wellman Lake once and for all. Unfortunately, the Whiteshell Fish Hatchery was unable to supply OTC fry in the spring of 2016. From there, it was agreed to not stock Wellman with walleye fry, conduct the electrofishing survey regardless, and begin the OTC study in 2017. Unfortunately, once again, the OTC marked fry were unavailable in the spring of 2017. Therefore, the same order of operations occurred in 2017. SVSFE has re-scheduled the OTC study for the fall of 2018.

Table 1: 2016/17 Electrofishing Results

Wellman Lake E-Fishing Walleye Summary					
		2016		2017	
Site	Site #	0+	1+	0+	1+
East Shore	1	0	0	0	0
Nudest Beach	2	1	1	1	0
Thompson Bay	3	0	2	4	1
Pickrel Bay (S)	4	0	0	1	1
Main Beach	5	0	0		
Narrows	6	1	0	0	0
Regatta Beach	7	1	0	7	0
Regatta Camp	8	0	1	0	0
Bass Point	9	0	0	0	0
Teal Beach	10	0	0	0	0
Baptist Camp	11	0	0	0	0
Reef	12	0	0	0	0
Main Beach	13	0	2	1	0
Totals:		3	6	14	2
2016 Effort - 3,852 seconds			2017 Effort - 4,509 seconds		
Note: 1+ includes all age walleye >1+					

Discussion: First of all, evidence of recruitment has increased from 2016 with regards to both guzzling and electrofishing surveys. Guzzling results were the highest seen since 1995, therefore we can consider the reef enhancement in 2017 a success. Regardless, we still cannot suggest any changes in management or fry stocking. In order to do so; the recommended OTC study is necessary. Suggested future assessments and monitoring are as follows;

- 1) Barrel Counts: Continue with this initiative as long as support from Parks Branch staff exists. Although harvest documented from barrels does not necessarily show true harvest; it is still representative data.
- 2) Reef Guzzling: In order to show trend analysis along with documenting the success of the enhancement, it is recommended that this study continue into the future. If OTC study concludes insufficient natural reproduction, this assessment may not be a priority.
- 3) OTC Study: Arguably, this is the only way to accurately understand natural recruitment success and therefore be able to recommend a fry stocking program that managers could be confident with. Therefore, SVSFE suggests the minimum 3-year study be conducted as long as understanding recruitment in Wellman Lake remains priority. In order to achieve the target sample size (n=100 annually), it may require significantly more electrofishing effort than in 2016 and 2017 (one night). This is noted simply because this study may end up requiring more effort and funds than other OTC studies conducted by SVSFE, simply because YOY walleye catchments are low and walleye are quite difficult to locate in Wellman Lake. SVSFE will review the study objectives with Fisheries Branch over the winter of 2017/18. Beautiful lake walleye stocking should cease during the OTC study and stocking be limited to fry stocking.



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2016 & 2017 Electrofishing Locations

