



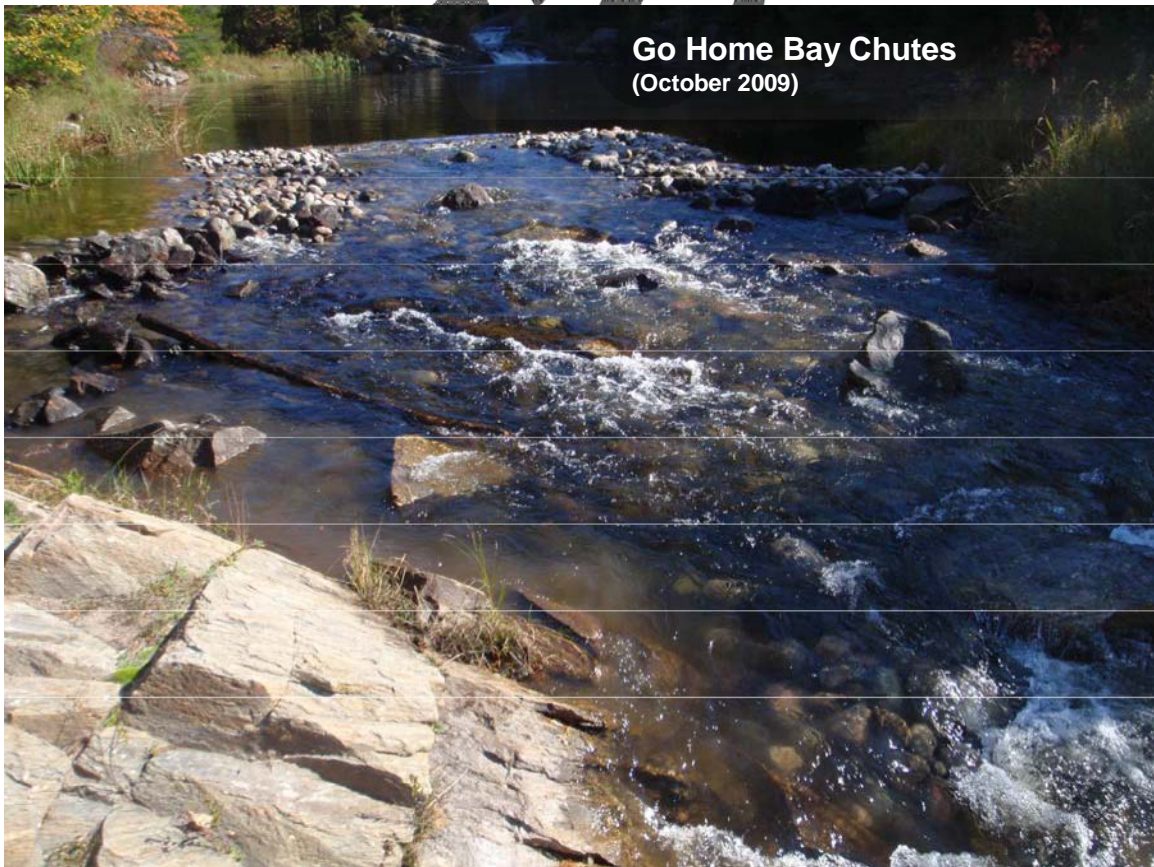
Eastern Georgian Bay Stewardship Council

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Project Completion Report

Go Home Bay (of Eastern Georgian Bay) Walleye Spawning Habitat Enhancement Project (2009-10 Canada-Ontario Agreement Project #3-06)

October 2009



Go Home Bay Walleye Spawning Habitat Enhancement Project

Executive Summary

The Eastern Georgian Bay Stewardship Council (EGBSC) in partnership with the Ministry of Natural Resources through the *Canada-Ontario Agreement (COA) Respecting the Great Lake Basin*, have embarked on a program to reintroduce walleye into the Go Home Bay area of Georgian Bay.

The successful completion of walleye spawning habitat enhancement work in October of 2009 represents completion of step #4 in a seven-step plan to re-introduce walleye into the Go Home Bay area of eastern Georgian Bay. The complete seven step process entails:

1. Pre-treatment assessment of the Go Home Bay walleye population.
2. Site characterization and evaluation of the Go Home Bay chutes walleye spawning site.
3. Design a site-specific, enhanced walleye spawning bed at Go Home Chutes
- 4. Enhance the Go Home Bay chutes spawning site**
5. Rehabilitative walleye plantings for three – four years.
6. Conduct post-treatment assessment after the four-year stocking period.
7. Based on post-treatment assessment, consider the need for walleye harvest and fishing regulation revisions.

This report relates specifically to walleye spawning bed enhancement work (Step 4) conducted at Go Home Chutes in October of 2009.

1.0 Project Goal:

The over-all goal of this enhancement project was to contribute to towards the successful reintroduction of walleye to Go Home Bay with the intention of creating a natural, self-sustaining population.

This goal is consistent with objectives identified by the Great Lakes Fishery Commission in the *Fish Community Objectives for Lake Huron* (Desjardine, et al. 1995):

“Over the next two decades, restore an ecologically balanced fish community dominated by top predators and consisting largely of self-sustaining indigenous and naturalized species ...”

The walleye objective is to: *“Re-establish and/or maintain walleye as the dominant cool-water predator over its traditional range... The walleye was the dominant nearshore predator in Lake Huron and it should resume this role. ... Stocks in ... Eastern Georgian Bay have suffered from environmental degradation or from over-fishing and require rehabilitation.”*

2.1 Project Background, Purpose and Rationale

Anecdotal and commercial fish records indicate walleye were once abundant in south-eastern Georgian Bay extending from Severn Sound northward along the eastern shore as far as Sandy Island near the Town of Parry Sound. Undoubtedly, a large portion of the walleye comprising the early commercial and sport fisheries in this area originated from the well-known and once thriving stocks that spawned at Moon River and Severn River (Port Severn). However, anecdotal accounts also suggest there were several additional walleye spawning stocks in this portion of Georgian Bay. These include walleye stocks that reportedly spawned at Go Home Bay, Musquash River, McCrae Lake outlet, Tadenac Lake outlet, and Baxter Lake outlet (South Bay of Geo. Bay).

At some unknown time in the past, walleye use of these spawning sites diminished to the point where it is currently uncertain if a remnant spawning population continue to use them today. We will probably never know the exact cause of the drastic decline of these stocks, but the possibility and opportunity still exists to rehabilitate or re-establish them.

The EGBSC in partnership with the MNR and community groups are attempting to re-introduce walleye to Go Home Bay. Pre-treatment assessment (McIntyre, 2009a) conducted in the spring of 2009 indicated a walleye spawning population no longer exists at Go Home Chutes. The area and quality of potential walleye spawning habitat at this site was deemed quite limited and hence the perceived need for improvement as a prerequisite for walleye re-introduction.

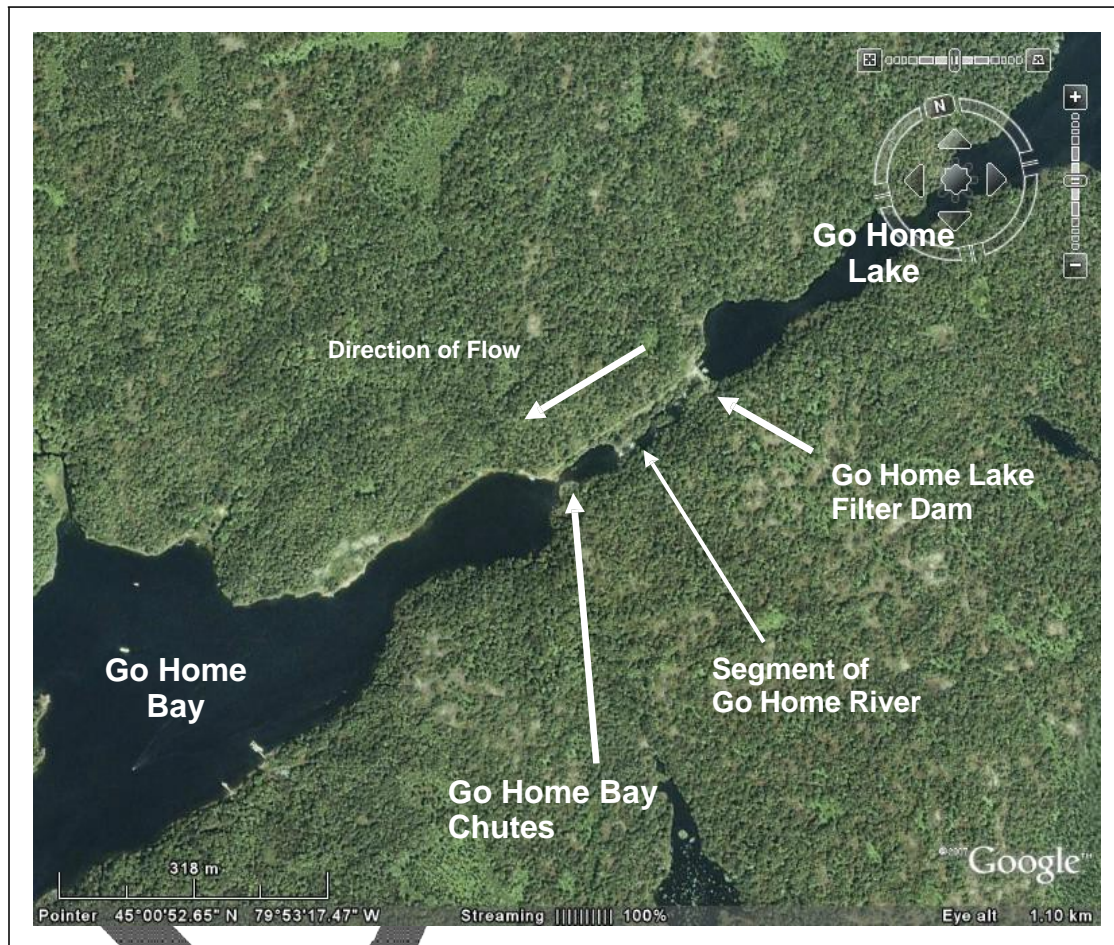
The re-establishment of a spawning population at Go Home chutes was considered a 'good bet' on the basis that:

1. Site characteristics are highly conducive to walleye spawning requirements
2. The site receives a consistent and optimal flow volume and velocity throughout the spawning and incubation period due to the presence of an up-stream filter dam that flows continuously
3. Shallow waters immediately up-stream of the chutes provide optimal depths for enhancement as walleye spawning habitat
4. The site can be greatly enhanced and enlarged simply through the strategic addition of spawning substrate.
5. Go Home Bay and the contiguous waters of Georgian Bay provide excellent nursery and feeding habitat for juvenile and adult walleye.

3.0 Project Location:

The spawning bed enhancement site is located at Lot 36, Con. XII of Gibson Ward in the Township of Georgian Bay (Figure 1).

Figure 1. Location of Go Home Bay Chutes Walleye Spawning Site



4.0 Project Description:

4.1 Pre-treatment site characterization of the Go Home Bay chutes walleye spawning site.

Site characterization and evaluation of walleye spawning potential was conducted during the spring freshet of 2009. A complete pre-treatment (i.e. before enhancement work conducted) description of the site is contained in the Project Description Report (McIntyre, 2009b). Figure 2 provides a photograph of the site prior to enhancement work being conducted.

Figure 2. Go Home Chutes, looking upstream at the Go Home River.
(Photo taken April 22, 2009).



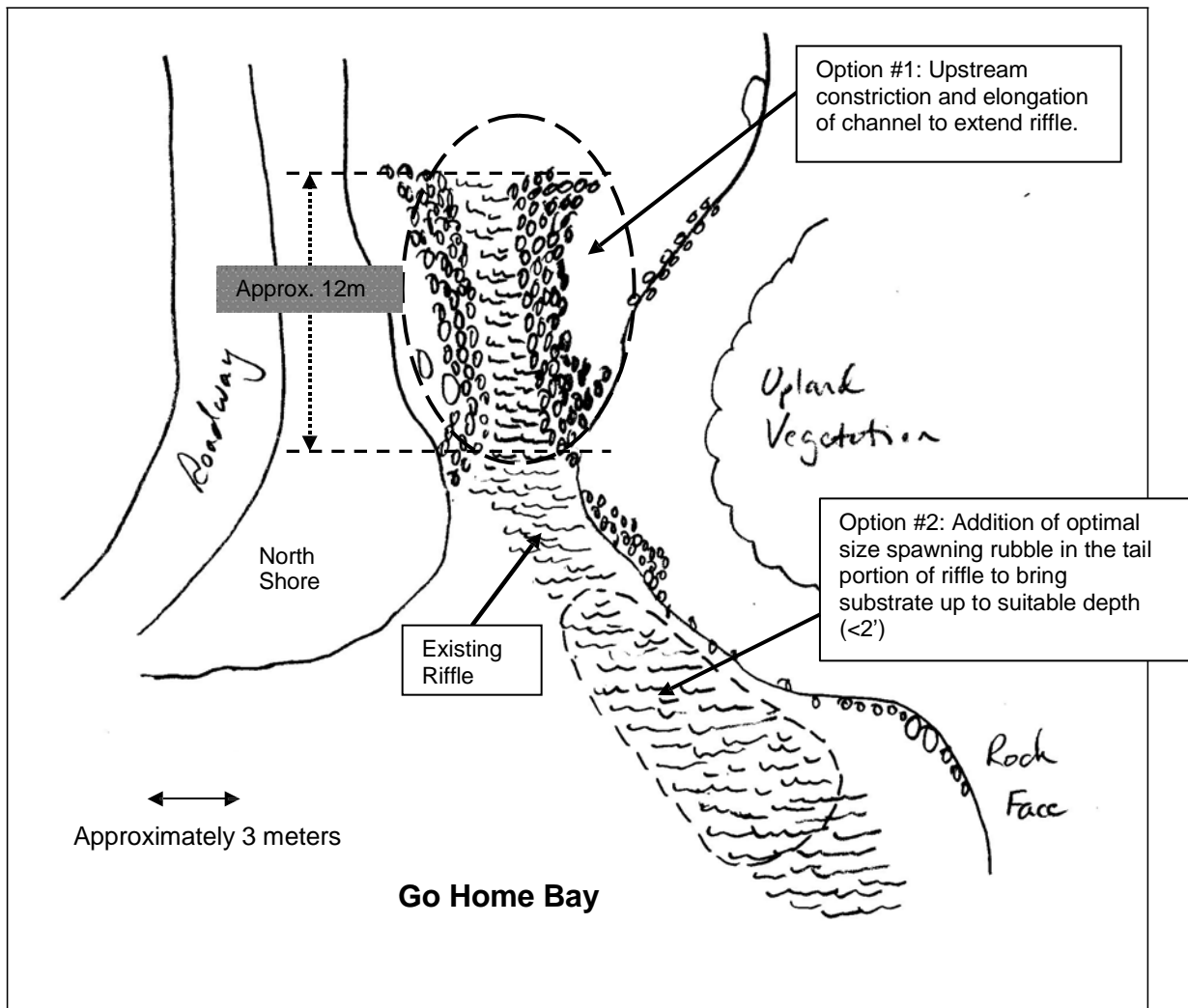
4.2 Formulate a site-specific design for an enhanced walleye spawning bed that provides suitable quantity and high quality walleye spawning habitat to facilitate a high degree of reproductive success.

Two enhancement options were proposed for the site as described in the *Project Description Report* (McIntyre, 2009b). Basically these options entailed:

- Option #1 – Extending the existing riffle into the upstream pool area through the creation of an elongated channel; and
- Option #2 – Extending the existing riffle downstream (see Figure 3).

Option #1 was preferred on the basis that areas upstream of the riffle were shallow and consequently a larger spawning area could be created with a smaller volume of rock imported as spawning substrate. (A detailed evaluation of these options is presented in the *Project Description Report* (McIntyre, 2009b)).

Figure 3. Diagram of proposed options to enhance walleye spawning habitat at Go Home Bay Chutes.



4.3 Enhancement of the Go Home Bay chutes spawning site during the fall (October) of 2009.

Construction work to enhance the Go Home Bay chutes was awarded to Schlager Inc. by way of tender. (*Terms and conditions of the tender are contained in Agreement Number OSS-078276 – available upon request.*)

Work called for the importation and strategic placement of 60 cubic meters of round, granite stone ranging in diameter from 8 – 30 cm (3-12"). Ten granite boulders, a minimum of 50 cm in diameter were also randomly placed throughout the finished spawning bed to act as current deflectors. The enhanced spawning bed (i.e. post-treatment) is shown in Figure 4.

Work was conducted from October 13 – 16, 2008.

Figure 4. Go Home Bay chutes walleye spawning bed after enhancement work conducted during the fall of 2009.



Figure 5 – Round, granite rock imported as walleye spawning substrate



Figure 6 – Excavator placing and manipulating rock present at and imported to the site

5.0 Future Work:

Completion of spawning bed enhancement work means we have completed step 4 in the seven-step plan to re-introduce walleye to Go Home Bay.

Due to the absence of a remnant walleye spawning population at this site, it is absolutely essential that introductory plantings of walleye be made to form the nucleus of a spawning population. Legislative and regulatory requirements for such plantings will be addressed in the coming months with the intention of planting walleye for a 3-year period (2010 – 2012). These plantings represent step #5 in the re-introduction plan.

Assessment of these plantings will also be conducted several years in the future (step #6) with possible adjustment of sport fishing regulations (step #7) as deemed appropriate in light of assessment results.

Note: A complete description and discussion of the above plantings (step 5), assessment work (step 6) and regulatory adjustments (step 7) is provided in the *Project Description Report* (McIntyre, 2009b).

6.0 Literature Cited:

- DesJardine, R.L., T.K. Gorenflo, R.N. Payne and J.D. Schrouder. 1995. Fish-community objectives for Lake Huron. *Great Lakes Fish. Spec. Pub.* 95-1. 38 p.
- McIntyre, E. 2009a. Go Home Bay – Walleye Spawning Investigation Report. Unpublished EGBSC report. 4 p.
- McIntyre, E. 2009b. Project Description Report for the Go Home Bay (of Eastern Georgian Bay) Walleye Rehabilitation / Restoration Project. Unpublished EGBSC report. 13 p.