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December 17, 2015

To: Project Funders and Partners

White Lake & Christie Lake Fish Habitat Enhancement Project Report

INTRODUCTION

In 2015, Watersheds Canada was the recipient of \$74,000 in funding support from the Department of Fisheries and Oceans Recreational Fisheries Conservation Partnerships Program and \$3,500 from TD Friends of the Environment Foundation, for the completion of the White Lake and Christie Lake Fish Enhancement Project.

The goal of the project was to make improvements for Ontario's recreational fisheries and water quality, by naturalizing shorelines and providing and enhancing fish habitat. Projects like this help to address loss of native fisheries and declining quality of warm water sport fisheries, such as walleye and restoring areas brought about by waterfront development.

With partner support from the Lanark County Stewardship Council and other groups and volunteers, we successfully completed three walleye spawning bed enhancements, improved thirty-eight fish habitat locations with brush bundles on White Lake (located in the four townships of Lanark Highlands, McNab/Braeside, Mississippi Mills, Greater Madawaska) and Christie Lake (located in Tay Valley Township). As well as naturalized fifteen properties, with 1062 native plants.

PROJECT DETAILS

Preliminary Steps and Planning

The project first began in September of 2014 with initial site visits to White Lake and Christie Lake by Anne Bendig, retired Ministry of Natural Resources & Forestry (MNRF) Fisheries biologist & Lanark Stewardship Council Coordinator, Watersheds Canada, members of the White Lake Preservation Project (WLPP) and Christie Lakes Association, looking at historical walleye spawning sites (documented by MNRF) and possible locations for fish habitat enhancement. Potential sites for both lakes were documented and mapped.

Your Lakes. Your Rivers. Your Future.



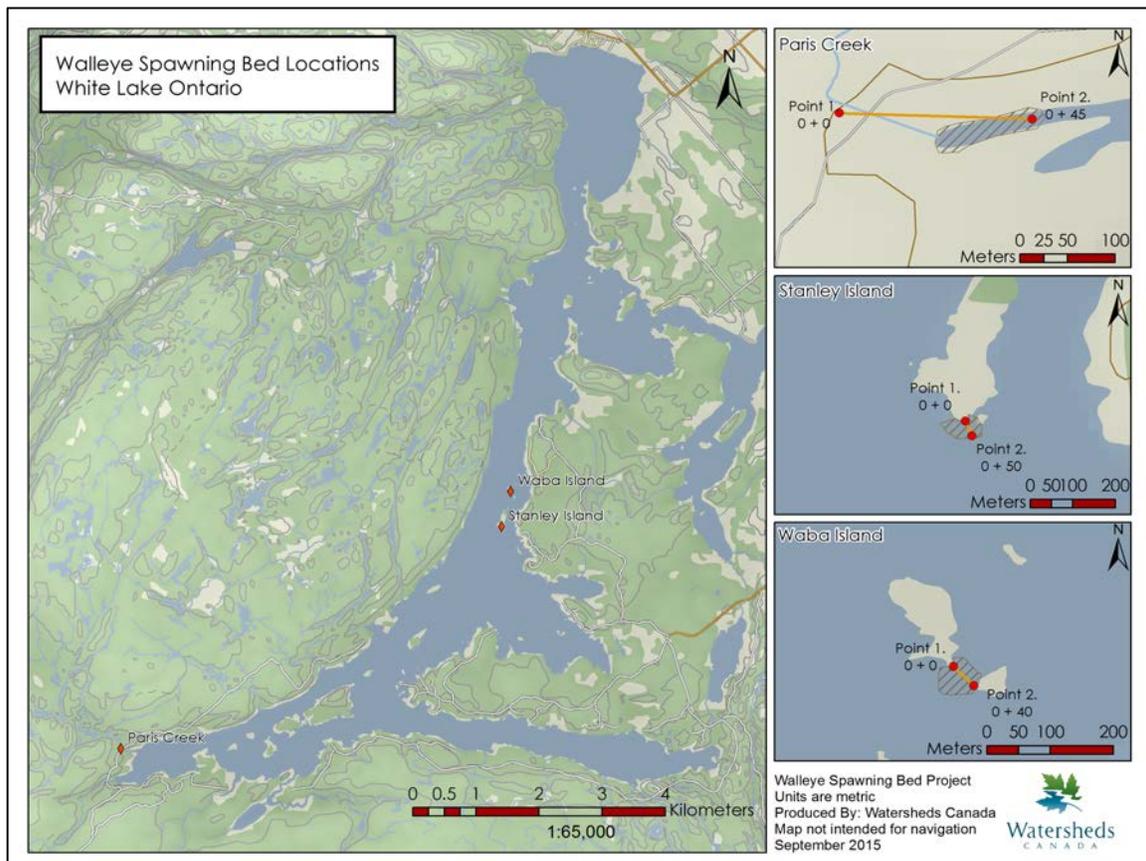
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In January 2015, Home Hardware in Perth was contacted about the potential of donating any leftover Christmas trees for the fish enhancement project. They graciously donated 40 trees, 20 for each lake.

In early May of 2015, Anne Bendig, Wendell Crosbie, President of the Lanark & District Fish & Game Conservation Club, and Hans Von Rosen, former MNRF and knowledgeable of White Lake spawning sites, conducted a site visit of Paris Creek, which was deemed a good location for enhancement.

A White Lake boat tour was scheduled for June 28th, 2015 with local anglers, members of the Lanark County Stewardship Council, Arnprior and Lanark & District Fish & Game Clubs, WLPP and Watersheds Canada to confirm and map the locations of the three walleye spawning beds (outlet of Paris Creek, near Wabalac Road; west of Stanley Island; and west of Waba Island) and brush bundle sites requiring enhancement. This included areas near fish habitat such as shoals, points, bays and undeveloped shorelines, as well as where the walleye spawn on the lake. An important consideration in selecting these sites was to ensure the locations did not interfere with cottage activities or structures such as docks and boathouses. Brush pile sites were selected in depths of 12 feet or greater to also ensure they did not interfere with boat operations on the lake.

Figure 1: Map of White Lake Spawning Bed Enhancement Sites



Applications for work permits from the MNRF were obtained and received for the project.

Site visits were required to organize access points to the spawning beds. For Paris Creek, an MNRF boat launch was chosen, the site being directly across from the outlet of the creek, off Highway 511. Accessing the interior islands was more challenging. After inquiring with all local marinas and resorts with negative results, a local resident Winston Miller, offered use of their property that was located directly across from the islands.

Quotes for equipment rentals and 150 tonnes of washed river rock were obtained. Laventure Construction from Arnprior, offered to donate the use of a large loader with an extendable boom and three crewmembers, to help with the project. M. Sullivan & Son Ltd. also offered to donate the use of a large barge with a dump trailer to move the washed river rock, a barge operator and a backhoe loader. They also arranged delivery of the rock to the two work sites.

On August 10th, 2015, members of the WLPP and Watersheds Canada went out to photograph and video the walleye spawning beds underwater before the enhancements began.

Volunteers were organized and safety equipment was purchased. Health and safety policies and procedures were explained to partners and volunteers.

Photo 1: Waba Island Bass



Photo 2: Snorkelling upstream to Paris Creek

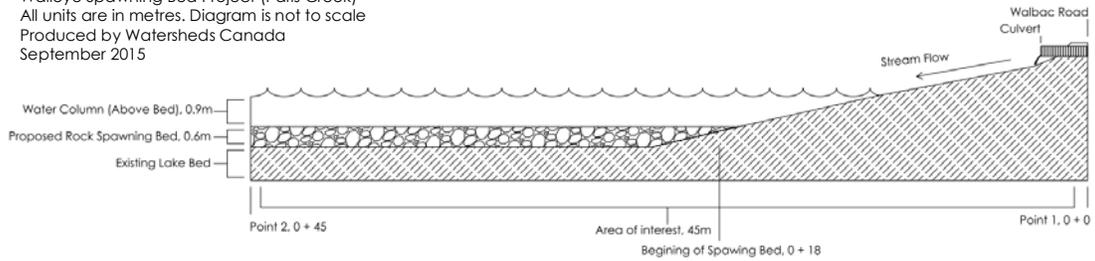


Photo 3: Scuba diving Stanley Island

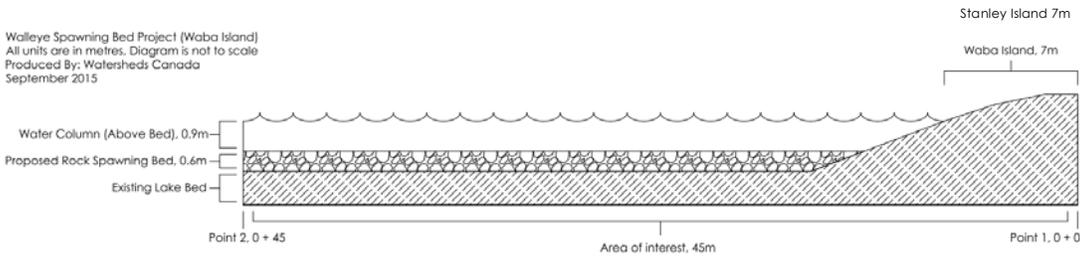


Figure 2: Walleye Spawning Bed Enhancement Diagrams

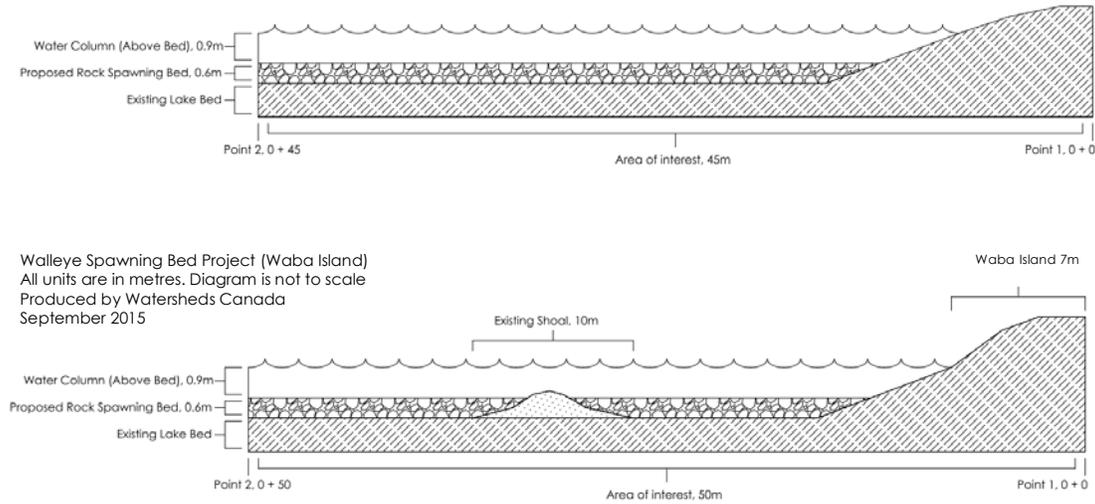
Walleye Spawning Bed Project (Paris Creek)
 All units are in metres. Diagram is not to scale
 Produced by Watersheds Canada
 September 2015



Walleye Spawning Bed Project (Stanley Island)
 All units are in metres. Diagram is not to scale
 Produced by Watersheds Canada
 September 2015



Walleye Spawning Bed Project (Waba Island)
 All units are in metres. Diagram is not to scale
 Produced By: Watersheds Canada
 September 2015



Project Implementation

Spawning Bed Enhancement - White Lake

Work began early on October 7th, 2015, for Paris Creek, using the MNRF boat launch off Highway 511, Lanark Highlands. A crew made up of volunteers from the Lanark County Stewardship Council and the Lanark & District Fish & Game Conservation Club, along with Watersheds Canada took a pontoon boat (donated by Lou Laventure) to the site to ensure the clearance for the barge. Large trees that had blocked the creek were cleared and secured to shore. The silt curtains were deployed before the work began and removed after everything settled.

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The large barge, equipped with a dump trailer (M. Sullivan & Son Ltd), was loaded with washed river rock (4-12 inch in diameter) using the loader from Laventure Construction. The barge then traveled across the bay, up the creek and dumped the rock onto the spawning bed. A total of 44 tonnes of rock was delivered by M. Sullivan & Son Ltd. and was placed on the Paris Creek Spawning bed.



Photo 4: Unloading rock on Paris Creek Spawning Bed

“I was quite pleased to be part of the White Lake Spawning Bed Project. At first glance the notion of delivering 150 tonnes of river rock to remote areas of the Lake seemed like an impossible task. Just as many hands make light work, it felt good to volunteer with other local contractors to make the impossible a reality. When watching news and hearing stories of environmental mishaps, I feel proud to have been a part of the White Lake team that was able to help balance scales and leave positive impact on environment.” Lou Laventure, Laventure Construction

The next phase of the project took place on October 8th, 2015, at the east end of White Lake, where work began on spawning bed number two and three. The second location (cottage of Winston Miller) was across from the Stanley and Waba Islands spawning beds.

“Environmental projects are dear to our heart so it was an honour and pleasure for M. Sullivan & Son Limited to work with our community members and Watersheds Canada to make White Lake just a little bit better.” Paddy Sullivan

Photo 5: Placing the silt curtain at Stanley Island



Photo 6: Loading the barge with river rock



Walleye Spawning Beds Before and After Enhancement

Photo 7: Paris Creek - Before



Photo 8: Paris Creek - Before



Photo 9: Paris Creek - After



Photo 10: Paris Creek - After



Photo 11: Stanley Island - Before



Photo 12: Stanley Island - Before



Photo 13: Stanley Island - After



Photo 14: Stanley Island - After



Photo 15: Waba Island - Before



Photo 16: Waba Island - Before



Photo 17: Waba Island - After



Photo 18: Waba Island - After

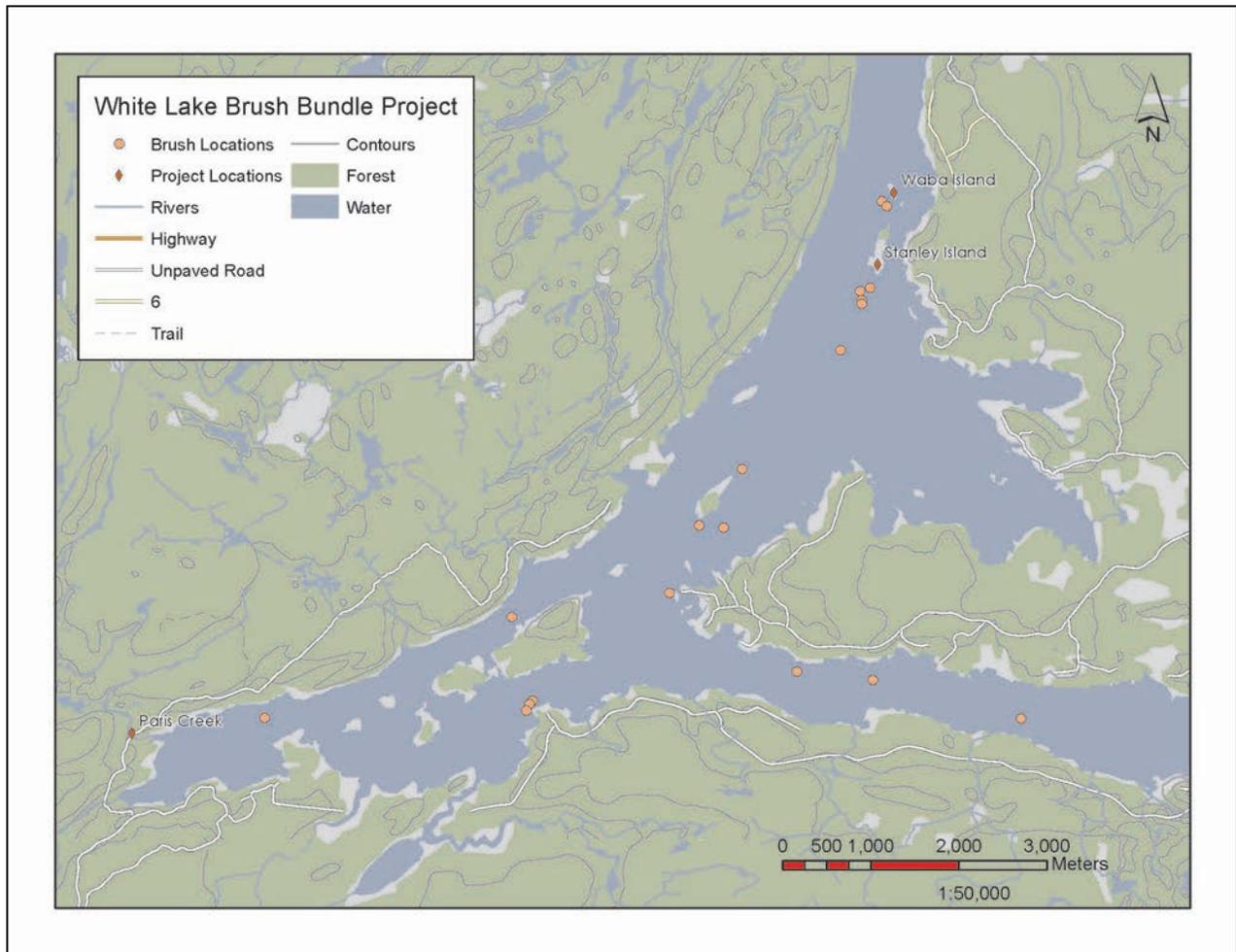


Brush Bundles

White Lake

In addition to the spawning beds, habitat was further enhanced with the use of brush bundles, sometimes called “fishsticks,” at various locations on the White Lake. Equipment was purchased and loaned for use, including 500ft of 3/8” Derby rope, safety equipment, wire and cutters (donated by Austin Swezey, Christie Lake Association), and drills.

Figure 3: Map of White Lake Brush Bundle Enhancement Sites



Adam Pugh of Cedar Cove Resort & Adam’s Outfitting, offered to provide the brush needed and host the building of the bundles. He organized a few resort staff and equipment (backhoe, tractor & wagon to transport bundles to docks) to help, along with three boats and a barge for deployment. Lou Laventure, Laventure Construction brought three of his crew along with a large pontoon boat and barge. Eric Smith of Arnprior Fish & Game Club,

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along with 8 White Lake residents and WLPP members, Melissa Dakers and 3 staff of Watersheds Canada, made up an incredible work crew of 19.

Photo 19: Transporting Christmas trees to sites.



Photo 20: Demonstrating brush bundle building.



Photo 21: Volunteers building bundles.



Photo 22: Cedar Cove Resort– moving bundles



The volunteers tied the bundles together with nylon rope and moved 16 brush bundles and 19 Christmas trees, using the tractor and wagon down to the docks. The Christmas trees were attached to cement blocks using large bolts dockside. They were then loaded by hand onto two barges. Each barge held three volunteers along with half the brush and trees. Each bundle was attached to two or three cement blocks to act as anchors and ensure they quickly sank to the bottom. The rest of the volunteers rode in boats that towed the barges. Melissa Dakers and Adam Pugh led the caravan around White Lake to the designated sites, which were confirmed with GPS, underwater depth finders and video equipment (supplied by Adam Pugh). Extra sites were added using Adam’s local angling knowledge.

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Photo 23: Securing Christmas trees to blocks.



Photo 24: Transporting the brush bundles.



Photo 25: Getting into position.



Photo 26: Deploying a brush bundle.



"I felt privileged to be a part of such a fantastic project happening on White Lake! It's great to see conservation in action and what can be accomplished by hard working and passionate individuals. Can't wait to see the results!" Adam Pugh, Cedar Cove Resort & Adam's Outfitting

The White Lake Preservation Project (WLPP) hired Jim Austin, videographer to document the implementation days (October 5, 7 & 8, 2015). Jim spent approximately 12 hours filming the crews. Footage is currently being edited and uploaded to the WLPP website when completed. (wlpp.ca)

Christie Lake

Fish habitat enhancement with the use of brush bundles and weighted Christmas trees, was also conducted at 19 locations on Christie Lake located in Tay Valley Township in Lanark County. With support from the Christie Lake Association various locations were determined and mapped. Equipment was purchased and organized with volunteers. This project took place on several weekends over a three-month period due to volunteer availability.

Figure 4: Map of Christie Lake Brush Bundle Enhancement Sites

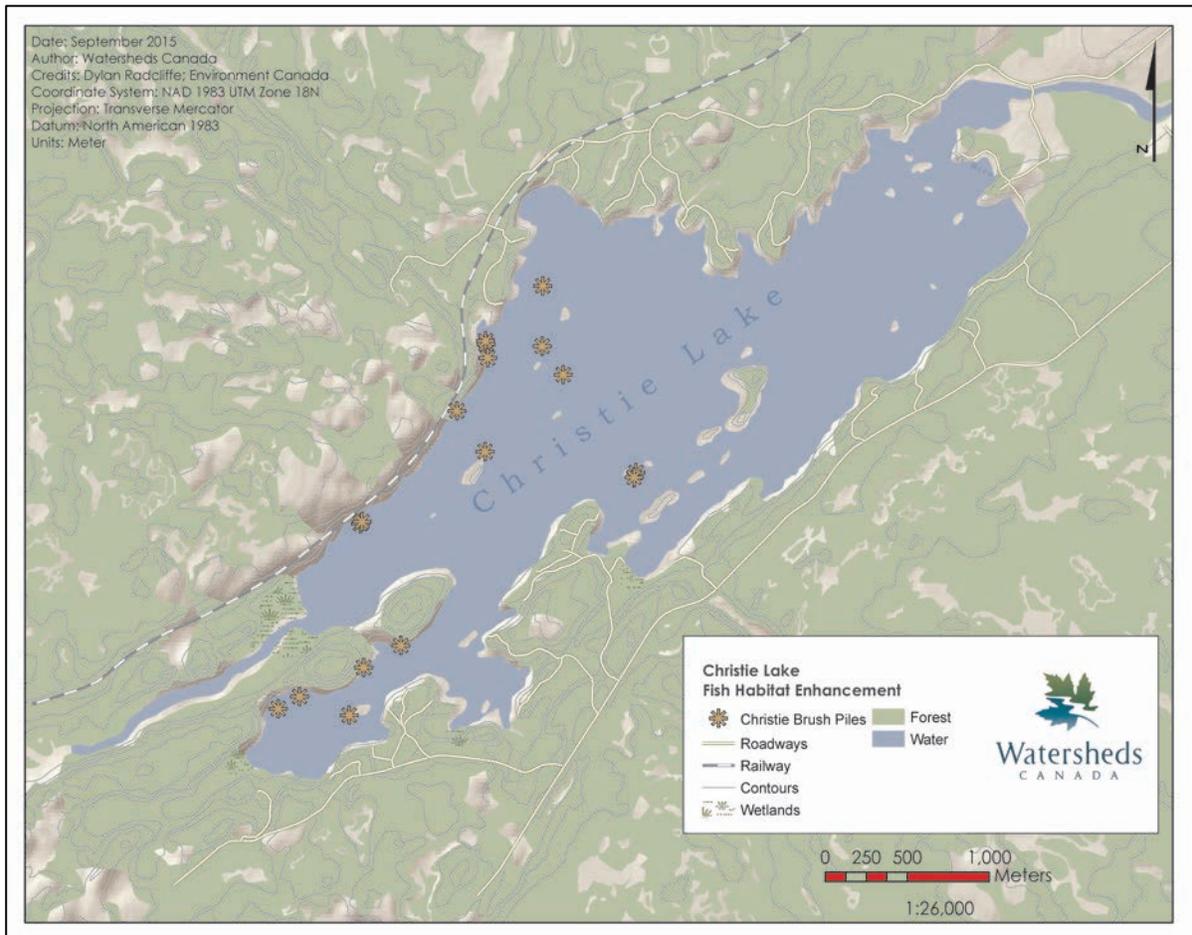


Photo 27: Building brush bundles.

On August 16th, 2015, eleven volunteers (from the Lanark Stewardship Council, Christie Lake Association, property owners and Watersheds Canada) gathered to start building the brush bundles and anchoring the Christmas trees. Anne Bendig and Melissa Dakers located the sites and recorded the GPS coordinates while volunteers deployed the bundles and trees. Four sites were completed using small aluminum boats. Additional bundles were built ready for another day.

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Austin Sweezy arranged for Opemikon Scout camp (located on south-west end of Christie Lake) to host the next gathering on September 19th, 2015 and also provided use of his aluminum boat. For four hours, twelve members of the 14th Gloucester Venturer Scout group, along with Austin Sweeney and Melissa Dakers from Watersheds Canada, worked to build the remaining brush bundles and anchor Christmas trees needed for this project. We were also able to deploy several Christmas trees to two sites located near the camp, before the heavy rains came. Theresa Strickland, Camp Warden of Opemikon, generously provided lunch to our volunteers.

Photo 28: 14th Gloucester Venturer Company.



Photo 29: Deploying Christmas trees.



Photo 30: Anchoring Christmas trees.



Photo 31: 14th Gloucester Venturer Scout Company



On a beautiful Thanksgiving weekend (October 10th), Anne Bendig, Austin & Rachael Sweezy, Luke Green and Dave Mullins deployed the remaining bundles and trees to twelve more sites on the lake, for a grand total of 22 trees and 16 brush bundles placed at 19 sites on Christie Lake.

Photo 32: Transporting Christmas trees



Photo 33: Towing brush bundles to site



Photo 34: Deployment of brush bundle



Many lakes are now lacking natural woody structure due to cottages, marinas and resorts that all want to clean up their waterfront properties by removing natural fallen trees, branches and stumps. The brush bundles will provide habitat for the fish for shelter, reproduction and feeding. Algae and microorganisms will attach to the bundles,

providing food for fish and waterfowl. The fish can also use the structures to lay their eggs, and the young fish then can hide in them to escape larger adult predatory fish, such as pike and walleye. In addition, turtles and snakes can utilize the brush bundles for cover.

Shoreline Rehabilitation

The final phase of the project is to conduct native species planting on nine properties on White Lake and three properties on Christie Lake, with shoreline vegetation to provide shading and a runoff buffer to promote spawning and rearing habitats and increase productivity for warm water fish species such as walleye, smallmouth and largemouth bass, northern pike, yellow perch, crappie and panfish. Fifteen shoreline properties have been stabilized where runoff, erosion, vegetation removal and nutrient loading have affected fish habitat.

MEDIA COVERAGE

This project was covered by various media – social media & newspapers (both online & print) The Millstone, the Almonte Carleton Place Gazette, The Perth Courier. Articles are attached.

CONCLUSION

This entire project would not have been possible without the support of the many partners and volunteers who made it successful. It was a combined effort involving the Lanark County Stewardship Council, White Lake Preservation Project, Laventure Construction, M. Sullivan & Son Limited, Cedar Cove Resort, Lanark & District Fish & Game Conservation Club members, Arnprior Fish & Game Club, Christie Lake Association, Camp Opemikon, 14th Gloucester Venturer Scout group, Jim Austin (video production), Watersheds Canada and the involvement of property owners around the lakes. Special thanks to the Department of Fisheries and Oceans Recreational Fisheries Conservation Partnerships Program and TD Friends of the Environment Foundation for the financial support in the completion of the White Lake and Christie Lake Fish Enhancement Project.

