



## **Oral Presentation**

### **Submission from Eastern Georgian Bay Stewardship Council**

In the Matter of

#### **Bruce Power Inc. – Bruce A and B Nuclear Generating Station**

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Request for a ten-year renewal of its Nuclear Power Reactor Operating Licence for the Bruce A and B Nuclear Generating Station

**Commission Public Hearing – Part 2**

**May 28-31, 2018**

## **Exposé oral**

### **Mémoire de Eastern Georgian Bay Stewardship Council**

À l'égard de

#### **Bruce Power Inc. - Centrale nucléaire de Bruce A et Bruce B**

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Demande de renouvellement, pour une période de dix ans, de son permis d'exploitation d'un réacteur nucléaire de puissance à la centrale nucléaire de Bruce A et Bruce B

**Audience publique de la Commission – Partie 2**

**28-31 mai 2018**



# **CNSC Public Commission Hearing – Eastern Georgian Bay Stewardship Council**

## **Purpose of Submission:**

To discuss the Shebeshekong River restoration project and Bruce Power's continued involvement and support in the project, as part of their commitment to environmental stewardship.

## **Project Background/Context:**

Data from the Ministry of Natural Resources and Forestry's (MNR) Upper Great Lakes Management Unit shows that in many areas of eastern Georgian Bay, Walleye, and Sucker species, are in decline. The Eastern Georgian Bay Stewardship Council (EGBSC) has been working since 2000 to improve Walleye populations, and between 2006 and 2015, has completed five restoration projects, three of which improved Walleye spawning habitat and two that improved both Walleye and Lake Sturgeon spawning habitat. EGBSC is a non-profit organization that depends on grants and donations to carry out important fisheries stewardship projects. Many grants for the Great Lakes and Georgian Bay focus on restoration to help address the declines occurring in native fish species, but very little work has been done in eastern Georgian Bay to assess whether restoration is needed.

In the summer of 2015, EGBSC received a grant to complete habitat assessments on eight tributaries to eastern Georgian Bay to evaluate spawning, nursery, rearing and foraging habitat for Walleye, Lake Sturgeon, and Sucker species, in order to identify and prioritize restoration sites and complete one habitat restoration project.

EGBSC first visited the Shebeshekong River in 2015 by travelling upstream to the first set of rapids. During that first site visit, it was clearly evident that something was wrong, due to large patches of established vegetation growing in the actual spawning substrate for Walleye and Sucker species. It was also evident that MNR had done some past restoration work at the site but that it was not functioning as intended.

In the spring of 2016, EGBSC carried out the first spawning surveys on the Shebeshekong River, which included collecting background information from landowners on changes and issues, searching for documentation on the MNR restoration, and carrying out regular site visits (every 3 days) to collect flow data, depth data and take aerial photos with a drone to help document changes to the spawning area over the spawning and egg incubation period. In addition, EGBSC installed egg mats to help ascertain where spawning may be occurring and to what degree. Basic water chemistry (pH, water temperature, dissolved oxygen, and conductivity) were measured between April and May.

In summary, EGBSC found that very few Walleye were coming into the rapids to spawn, Walleye did not seem to be moving past the rapids, whereas White Sucker were, and most Walleye eggs deposited at the site were stranded out of water due to dramatic fluctuations in flow and water levels. EGBSC concluded that this set of rapids (Dillon) was not a suitable site for spawning due to water flow and water level issues.

Based on conversations with landowners and First Nation community members, EGBSC learned that the number of spawning Walleye in the Shebeshekong used to be exponentially higher. Historically, Walleye and Sucker species would swim up the Shebeshekong River, past the first two sets of rapids (Dillon and Young's) and move farther upstream to better quality spawning areas. The changes to the river from logging and road development have made it difficult for fish to access their historical spawning sites and have changed the morphology and hydrology at Dillon Rapids, and another set of rapids upstream of Dillon (Young's). At Dillon Rapids, fish need to use the east side of the rapids in order to swim farther upstream, and those changes have focused flows on the west side of the rapids, meaning that the east side of the rapids is too shallow for passage and dries up quickly. Walleye have not been seen moving upstream of Dillon Rapids in many years.

## **Project Development & Bruce Power's Involvement:**

In 2016, one of EGBSC's project partners changed, which meant that EGBSC needed to hire a consultant to help complete a more detailed assessment of the site and design the restoration project, which EGBSC did not have the funds to do. This is when Bruce Power reached out to EGBSC to ask if there were any projects they needed financial assistance for. A partnership agreement was formed, and EGBSC hired Biotactic Inc., a consulting firm that specializes in fisheries research and fish passage.

In the spring of 2017, a detailed fish study was completed on the Shebeshekong River, including the use of underwater infrared cameras, which confirmed that Walleye were not able to get past Dillon Rapids. Biotactic completed the restoration design, and EGBSC obtained permits to modify the rapids at Dillon and Young's to restore three kilometres of fish passage for Walleye. It should also be noted that in 2016, White Sucker were

able to ascend Young's Rapids, but in 2017 (higher flows and water levels), White Sucker had problems ascending the rapids, and no White Sucker were recorded on camera above Young's Rapids. The restoration work will also make it easier for White Sucker to move upstream. Northern Pike also spawn in the river, and restoration may improve Northern Pike passage.

In October 2017, EGBSC and Biotactic modified the past restoration work that MNRF had started, by removing bedrock from a channel within Dillon Rapids to create a better slope and better depth for Walleye passage. A boulder was placed above the site to help focus flows onto the east side of the rapids. At Young's Rapids, a 70 metre bypass channel around the rapids was restored, and the shoreline was planted with 100 native species.

EGBSC has been working with Bruce Power and Biotactic throughout the restoration process and has planned restoration monitoring work for the spring of 2018 and beyond, so that fish passage can continue to be evaluated and any additional work that needs to be completed can be done.

#### **EGBSC's Experience with Bruce Power:**

It is fairly simple and straightforward for a non-profit organization to obtain funds for restoration work. It is extremely difficult to obtain funding for monitoring, which is why most restoration projects get completed, with no follow-up monitoring done to see how effective the restoration work has been. This is a common critique of the restoration field as a whole, and a common problem for the majority of non-profit organizations working on restoration projects. In addition, with restoration work, there are always extra unseen costs or field activities that are discovered along the way, which there may not be funding for.

It has been extremely valuable for EGBSC to have partnered with Bruce Power. The financial contributions from Bruce Power have not only made the restoration work on the Shebeshekong possible, but they have also made follow up monitoring possible, which is just as important as the restoration work. In return, this project helps Bruce Power continue to build upon their environmental stewardship commitments, and provides them with an opportunity to support community projects.

Throughout the past year, Bruce Power has been keen to help with all project aspects. They have also been very open about their process, and the environmental effects from their operations. We know that operations from Bruce Power lead to impingement and entrainment of fish, which is an issue EGBSC takes very seriously due to the environmental implications and our many years of fisheries stewardship work. But we also understand that Bruce Power has (and is) undertaking serious and genuine efforts to attempt to mitigate those effects through their Offsetting Program. We feel that through their license renewal application, there are opportunities to make real improvements to fish populations in Georgian Bay, which is what we are working towards on the Shebeshekong River, in partnership with Bruce Power. The ability for EGBSC to have a partner at the table for the long-term means that we can carry out restoration work, and know that we can monitor that effectiveness and make modifications to that restoration work as needed, so that the restoration work will result in a real increase of fish biomass.

An aerial photograph of a lush, forested landscape. A winding river flows through the center of the image, surrounded by dense trees. In the foreground, there is a large, dark pond or reservoir. The sky is clear and blue, and the overall scene is vibrant with green and brown tones, suggesting a healthy natural environment.

**Eastern Georgian Bay Stewardship  
Council: Partnership with Bruce Power  
to Restore the Shebeshekong River**

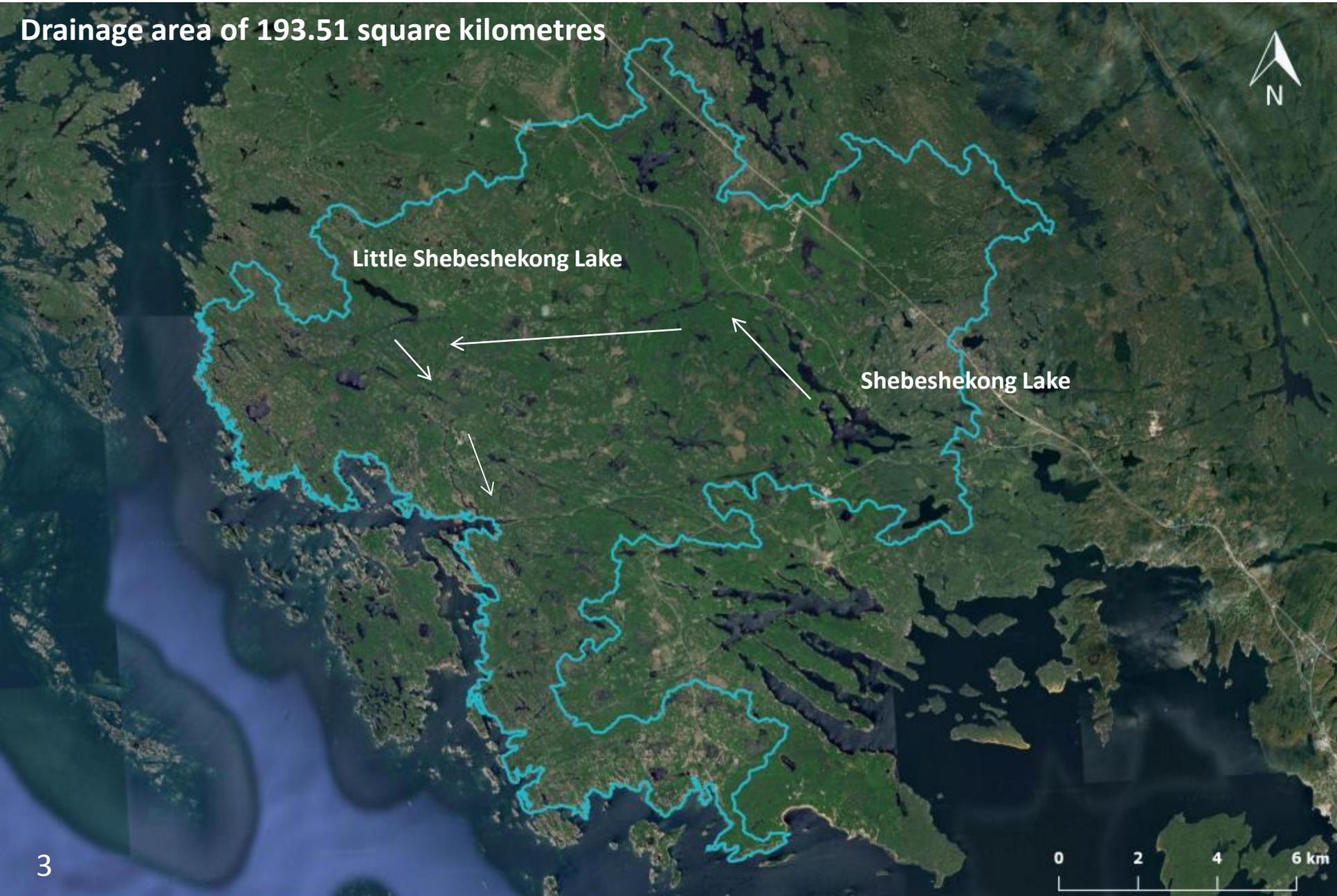


# Who Are We?

- Eastern Georgian Bay Stewardship Council:
  - Brings stakeholders together to develop stewardship goals
  - Works with stakeholders to carry out projects that will achieve those goals
  - Complements the work of other organizations, communities, and agencies to ensure eastern Georgian Bay remains healthy

# Shebeshekong River Watershed

Drainage area of 193.51 square kilometres



3

0 2 4 6 km



- Spawning bed #1 – Dillon Rapids, 1.8 km upstream
- Spawning bed #2 – Young’s Rapids, 1.5 km upstream of Dillon Rapids
- Spawning bed #3 – unnamed, 1.5 km upstream from Young’s Rapids

# Historical spawning area – 3<sup>rd</sup> set of rapids



# Shebeshekong River Issues

- Historical changes – logging and road development
- Small watershed – considerable water level and flow fluctuations
- Low numbers of Walleye spawning
- Walleye limited to Dillon Rapids for spawning, leading to egg stranding
- White Sucker have challenges with passage during years with higher flows and water levels



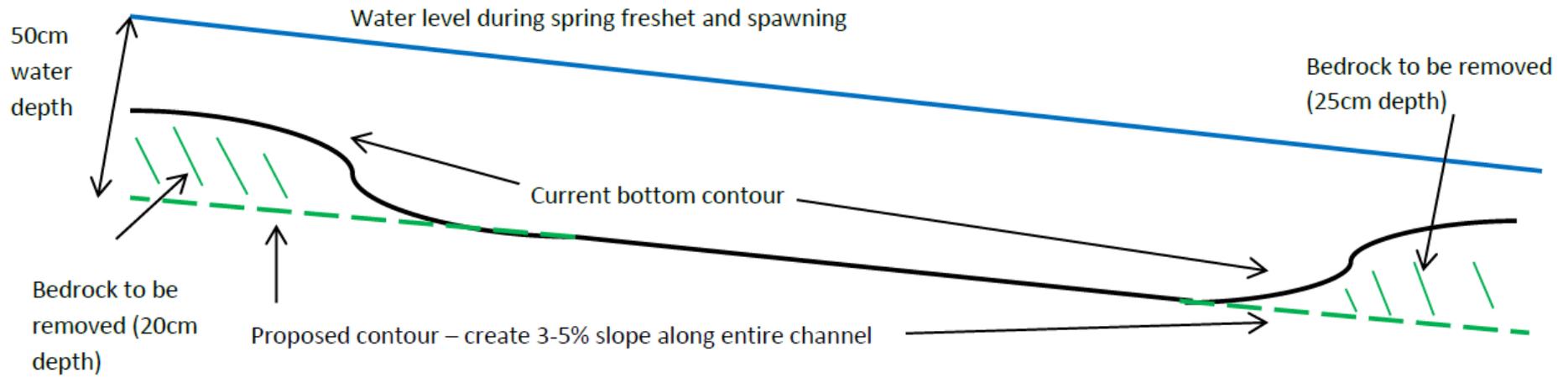
**Apr 26, 2016**



**May 12, 2016**

**Area of rapids that  
has been filled in  
from road  
development**

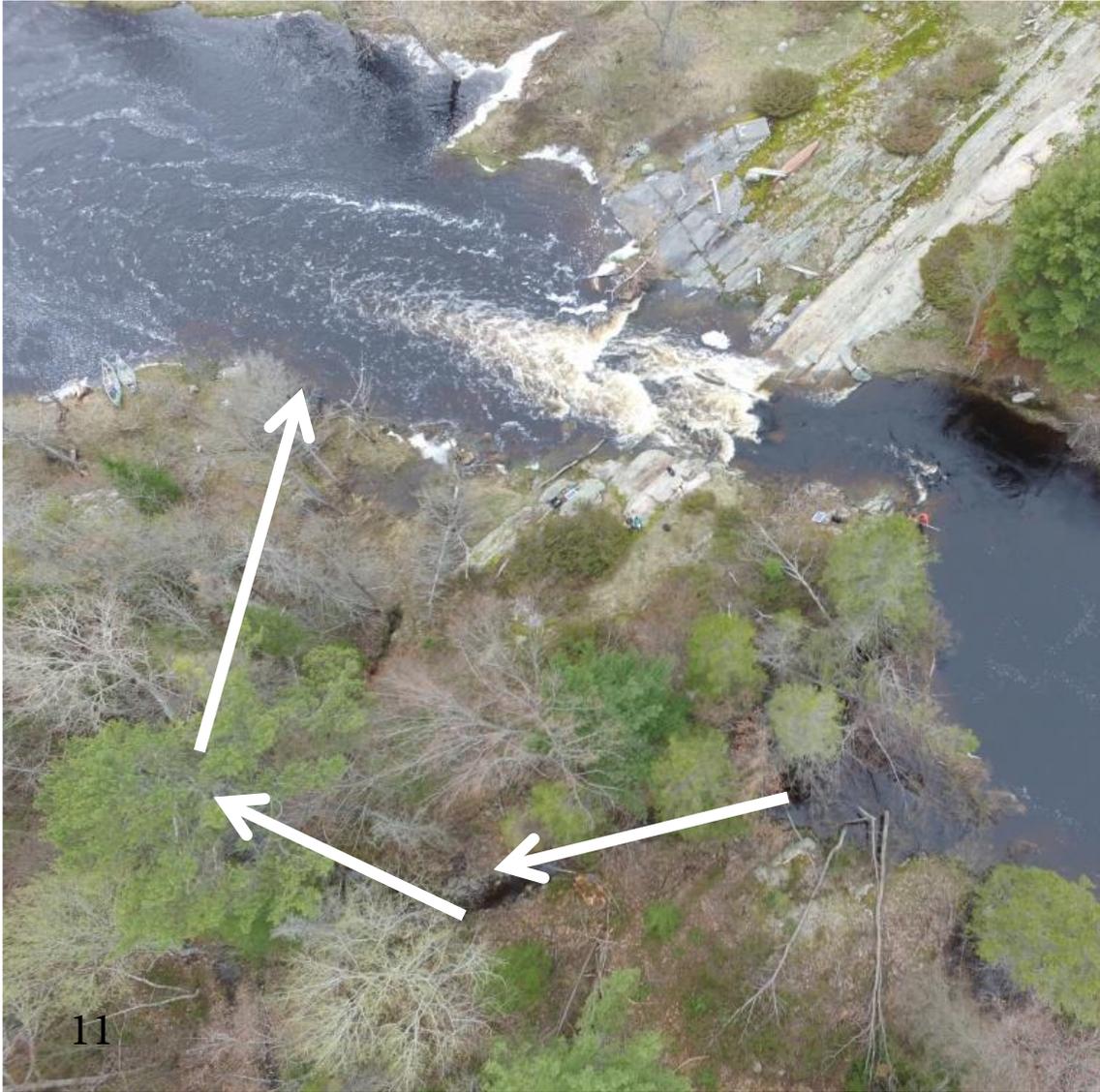








# Historical By-pass Channel at Young's



# Restoration of the By-pass Channel



# Continued Monitoring and Partnership

