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Wildcat Brook Shale Pit Remediation and Wetland Expansion Project

Project Background:

Wildcat Brook is part of the Petite Rivière watershed, which is situated just outside of the Town of Bridgewater near the community of Wileville. Monthly water quality sampling, conducted by Coastal Action within the brook, has revealed high acidity. This high acidity is likely caused by bedrock geology in the area. In particular, there are old abandoned shale pit sites that have been previously excavated for construction purposes over 20 years ago. When pyritic shale is exposed to water and the atmosphere it will chemically react to create sulfuric acid.

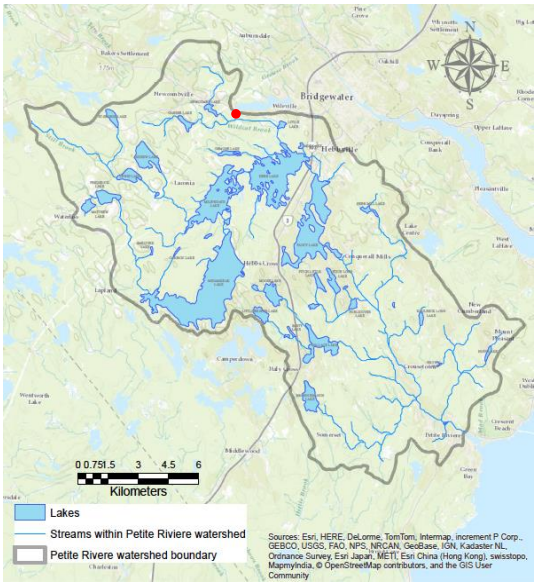

Figure 1. Petite Rivère Watershed, red marker indicates the rough location of the Wildcat Shale Pit Project.

Rainwater collects and pools in the excavated pits, which can then overflow into nearby Wildcat Brook during heavy rainfall events. These acidic "shocks" to the brook can be detrimental to aquatic life. Wildcat Brook is a tributary to Hebb Lake, one of the three lakes that provide habitat for the globally endangered Atlantic whitefish (*Coregonus hunsmani*), and also acts as the drinking reservoir for the Town of Bridgewater. Acidification of aquatic habitats is being recognized as one of the threats to the recovery of the Atlantic whitefish, and it also impacts other aquatic species such as trout and salmon.

Restoration Plan:

Coastal Action has teamed up with land reclamation experts, East Coast Aquatics (ECA), to develop a plan to restore the old abandoned shale pit sites. There are several open shale pit sites in the area, but for the moment Coastal Action plans to focus on the smallest, a site approximately 1 ha in area. The plan is to transform this area into a wetland by replacing the open and barren landscape with organic soils and adding vegetation.

Figure 2. Restoration efforts at the Wildcat Shale Pit Project site - spreading of organic wetland material and planting vegetation.

Monitoring of the site will occur throughout the remediation efforts as well as upon completion of the project to gauge impact. The monitoring will include water quality sampling, invertebrate sampling, periodic electro-fishing in the area, and monitoring vegetation growth. **This project will improve overall water quality of the brook by raising the pH, reducing toxic metals and water colour,** while also providing a natural habitat to many wildlife species both terrestrial and aquatic.