



NATURAL RESOURCE SOLUTIONS INC.

Aquatic, Terrestrial and Wetland Biologists

Lafontaine Beach Park Class EA Natural Environment

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Overview

- **Methods**
 - **Background Review**
 - **Field Surveys**
- **Results**
- **Impact Assessment of Alternatives**
- **Recommendations**





Background Review

- **Collection and Review of Background Information from:**
 - **Nottawasaga Valley Conservation Authority (NVCA);**
 - **Natural Heritage Information Centre (NHIC) Biodiversity Explorer database;**
 - **Ontario Ministry of Natural Resources – Midhurst District office; and**
 - **Department of Fisheries and Oceans (DFO) Species at Risk Mapping**



Field Surveys

- **Vegetation**
 - **Ecological Land Classification (ELC) System for southern Ontario (Lee et al. 1998, Lee 2008).**
 - **Detailed vascular plant surveys**
- **Other Wildlife**
 - **Reptiles, amphibians, mammals and butterflies were documented on all field visits.**
- **Aquatics**
 - **visual habitat characterization - substrates, cover, riparian habitat and aquatic vegetation**
 - **background fish community assessment, no species at risk identified in the study area**



Results

- **Terrestrial Environment**
 - **Significant Wildlife Habitat (SWH) Graminoid Sand Dune is provincially rare**
 - **No Designated Natural Areas within study area**
 - **No known significant vegetation communities**
 - **7 species of reptiles/amphibians and 9 species of mammals identified in background review**
 - **106 bird species identified**



Aquatic Environment

- **MNR Midhurst District recorded juvenile and staging adult lake sturgeon near the Nottawasaga River mouth**
- **Area south of Lafontaine Beach is classified as potential larval lake whitefish habitat**
- **Rainbow trout (Steelhead) and Chinook salmon utilize Lafontaine Creek for spawning 6km south of the project area (Findlay, *pers. comm.* 2012).**
- **Lake trout and lake whitefish are also known to spawn within Nottawasaga Bay (Findlay, *pers. comm.* 2012).**



Field Investigation Results

- **Ecological Land Classification**
 - **3 Vegetation Communities:**
 - **Dry – Fresh White Pine – Oak Mixed Forest**
 - **Graminoid Mineral Shallow Marsh Ecosite**
 - **Beach Grass – Wormwood Graminoid Sand Dune Type**
 - **Inventories documented 57 species within the study area**



Impact Assessment - A

Possible Direct Impacts to Terrestrial Environment	Possible Direct Impacts to Aquatic Environment
<ul style="list-style-type: none">• Vegetation removal in SWH (sand barren) associated with construction equipment access• Vegetation and wildlife habitat removal in the wetland when capped by groyne substrates	<ul style="list-style-type: none">• Temporary disturbance to fish habitat immediately adjacent to the groyne during removal.• Overall neutral or positive impact to fish habitat in terms of overall area and habitat diversity• Temporary sediment suspension;



Impact Assessment - B

Possible Direct Impacts to Terrestrial Environment	Possible Direct Impacts to Aquatic Environment
<ul style="list-style-type: none">• Vegetation removal in SWH (sand barren) associated with construction equipment access	<ul style="list-style-type: none">• Temporary suspension of sediment



Impact Assessment - C

Possible Direct Impacts to Terrestrial Environment	Possible Direct Impacts to Aquatic Environment
<ul style="list-style-type: none">• Vegetation removal in SWH (sand barren) associated with construction equipment access• Vegetation and wildlife habitat removal in the wetland when scraped to remove fine sediments and organic soils	<ul style="list-style-type: none">• Altering (removing) the substrates can have negative impacts to fish habitat (completely destroyed)• Temporary suspension of sediment



Environmental Objectives

- **Objective for Restoration:**
- **Existing wetland shoreline – originally the shoreline was a sandy, wave dominated shoreline before installation of groynes**
- **Alternative A: Essentially this option is attempting to move towards restoring the shoreline to a pre-existing state of sandy (or coarser materials than existing soft sediments), wave dominated shoreline**
- **As such, the partial removal of the groynes will have limited long-term environmental impacts**



Environmental Objectives

- **Alternative B will improve the environment in the long-term and will have minimum effects on the existing environment**



Recommendations

- **Terrestrial Mitigation**
 - **Construction plan to minimize destruction of vegetation within the beach park area**
 - **Replant any affected areas of the beach grass Graminoid Sand Dune Significant Wildlife Habitat**



Recommendations

- **Construction Related Mitigations**
 - **Staging areas to prevent unnecessary encroachment into the surrounding natural features**
 - **Designated areas for construction lay-down, vehicle access and parking, equipment storage**
 - **Erosion and sediment control – re-vegetate susceptible areas**



Recommendations

- **Aquatic Mitigation**

- **Timing of Works**

- **Activities near or in-water should take place during low flow late summer periods to minimize impacts **MNR Timing window—no in water works between October 15 and June 30****
 - **Construction should avoid high volume rain events (20 mm in 24 hours) and significant snow melts/thaws, resuming once soils have stabilized**
 - **Spill Response Planning to deal with events such as the release of petroleum, oils and lubricants or other hazardous liquids and chemicals**