## Ecologic Function

### Coarse Scale Habitat – Riparian Cover
### Target –Ecologic Function

The purpose of setting a target related to this value is to ensure that the preferred scenario includes adequate riparian vegetation to facilitate movement of species, provide nutrient inputs, moderate temperature, and protect aquatic systems from contaminants.

Current conservation planning literature supports a minimum 30 meter stream buffer on each side of a stream. The amount of natural vegetation adjacent to streams is directly linked to the level of protection that stream has from contaminants, erosion, thermal pollution, and other impacts to quantity and quality of the water. This vegetation provides habitat for a host of species by allowing feeding, breeding and shelter opportunities. Vegetated buffers provide benefits to the system no matter where they occur.

In addition, riparian vegetation aids in the attenuation of flood waters and limits the erosive force of water along stream banks.

### Datasets

1. NPCA NAI ELC Community Series Mapping
2. NPCA Large Scale Surface Water Inventory
3. Soil Landscapes of Canada

The riparian zone was derived by buffering applicable surface water features from the detailed inventory (removed as many minor surface water features such as ephemeral agricultural drainage, as well as non-natural channeled and anthropogenic municipal drains as possible) using the 30m threshold recommended by *How Much Habitat is Enough*. Instead of calculating length of streams with a 30m buffer, the riparian zone was intersected with the natural areas to determine what percent of it contained riparian cover.

Across the Niagara Watershed 47% of the riparian zone contains natural cover at 30m**.** The riparian zone constitutes approximately 15.7% of the landscape.

### Discussion
The discussion related to this target focused on what type of vegetated cover could be included as riparian cover and therefore contribute to this target. It was understood by the Scenario Development Team (SDT) that while manicured grass adjacent to watercourses does provide benefits towards the quality and quantity of water, such vegetated cover provides little if any habitat value.

There was also significant discussion about what types of surface water features were captured in the dataset. The Scenario Development Team (SDT) agreed that non-natural drainage features should not be considered in this assessment.

### Data Gap
Watercourse mapping available for the study area does not include consistent and comprehensive information that easily permits natural watercourses to be separated from non-natural drainage features.

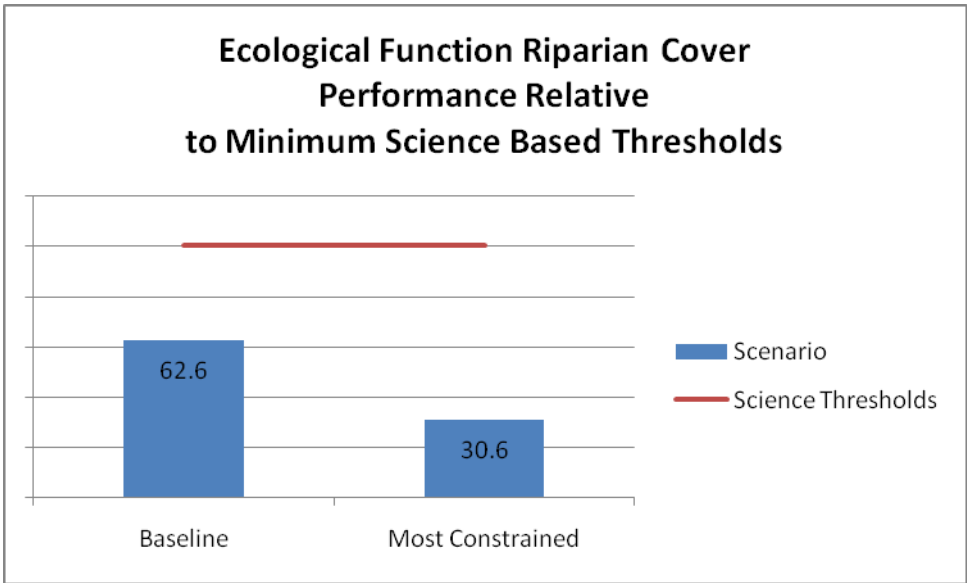
**Decision**
Date: May 5, 2011

**75% of the riparian zone in natural cover by soil landscape.**

**Representation in the Learning Scenarios**
Riparian Cover within the Learning Scenarios was defined as the area adjacent to surface water features within a 30 meter buffer. Riparian zones adjacent to constructed municipal drains were removed from the dataset prior to the modeling exercise. Municipal drains that function as natural channels remained in the data layer for consideration.

**Representation in the Final Scenarios**
Under the Baseline Scenario, the model had to capture almost all of the area available as riparian cover to achieve just over 62.6% of the target value. The distribution on the soil landscapes showed drastic fluctuations on the achievement across the watershed.

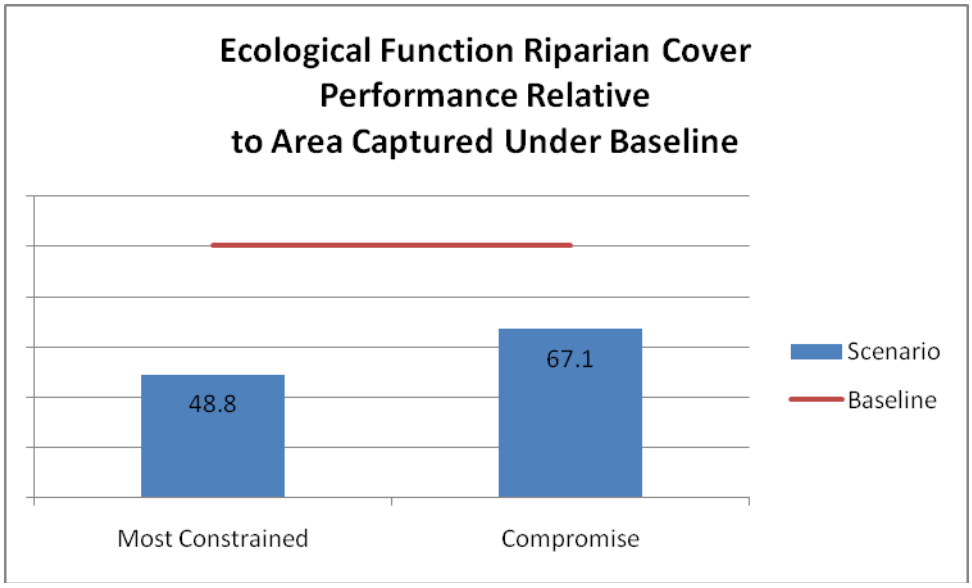
**Figure 21: Riparian Cover Performance Relative to Science Thresholds**




Under the Most Constrained Scenario, riparian cover was limited to those areas that were not excluded. This led to the poor performance in relation to the targets. Riparian Cover under the Most Constrained Scenario achieved 30.6% of the target value and 48.8% of the value held in the Baseline Scenario.

Within the Compromise Scenario, the model could not achieve the best 80% of what exists. This proved that much of the value associated with riparian cover is in meadow communities which were excluded from this compromise scenario therefore, could not contribute.

**Figure 22: Riparian Cover Performance Relative to Baseline Comparator**




Riparian Cover as it relates to the Ecological Function targets in the Compromise Scenario achieved 67.1% of the value in the Baseline.

**Recommendations**

Better feature typing for the watercourse layer would facilitate a more accurate riparian cover estimate by enabling the creation of the riparian zone on watercourse features where it is not unreasonable to expect persistent riparian habitat (confidently weed out all ephemeral features, certain ditch types etc.).

Consider breaking up soil landscape 569001 into zones east and west of the Welland Canal.