Ecologic Function

Coarse Scale Habitat – Wetland Proximity of Patches
Target –Ecologic Function

The purpose of setting a target related to this value is to ensure that the preferred scenario includes wetland features that are functionally connected to facilitate migration of wetland species between seasonal habitats.

A high proportion of Ontario's fish and wildlife species inhabit wetlands during part of their life cycle including many that are deemed at risk.

Wetlands are important on the landscape as they impound water and help to mitigate peak flows and run off protecting downstream areas from erosion and flooding.   In addition, wetlands help to augment low-flow conditions by releasing water over an extended period of time and raising the water table to increase base flow to streams.   Wetlands have the ability to perform a significant role in improving water quality by filtering sediments and contaminants and limiting the impacts of thermal pollution to the receiving water body (Environment Canada, *How Much habitat is Enough", 2006).*

While the size, type (bog, fen, marsh or swamp), and hydroperiod (the length of time a wetland is inundated with water) of a wetland are important to consider; the proximity of the wetlands to each other and other suitable habitats in order to promote habitat heterogeneity, and ease of movement between habitats is also critical across the landscape.

Datasets
The following datasets were considered as potential sources with which to facilitate potential target development for this ecological objective:

1. NPCA NAI ELC Community Series Mapping
2. Soil Landscapes of Canada

Wetland cover is determined by combining all of the mature wetland community types from the ELC mapping.   This means that Swamps, Marshes, and Bog dominant communities are considered part of the broader and more general concept of 'wetland cover' as it pertains to habitat. It should be noted that there are many sub dominant wetland communities complexed into the watershed's ELC mapping units.

Wetland patches were derived by dissolving the wetland ELC communities isolated as wetland cover habitat into individual mapping units.   A derivative patch is a polygon of wetland cover that does not share a border with another patch, there needs to be a separation by non natural cover in between

Nearest Neighbor analysis was performed on the wetland patches and summary statistics were generated for each soil landscape to consider as part of the discussion around potentially developing a target for this ecological objective

Across the study area there are a total of 12776 patches, with on average 55 meters between nearest neighbors (standard deviation of 93 m).

Discussion
The discussion concerning this target focused on idea that although it is important for them to be in close proximity to each other to facilitate movement of species, the group did not feel that wetlands had to rely on other wetlands but rather proximity to any habitat would be beneficial.

It was explained to the group that the MARXAN model could calculate proximity but that it would seriously increase the processing time. It was suggested to the Scenario Development Team (SDT) that proximity between features would be better determined once the most important areas of existing areas of existing natural cover were determined. For this reason, the group decided not to set a target on proximity of wetland patches to each other.

Data Gap
None noted.

Decision
Date: May 5, 2011

No target set on this value.
To be looked at after the analysis as a book keeping exercise on the preferred scenario.

Representation in the Learning Scenario
Due to the fact that no target was set for this value, there is nothing to report in relation to their performance in the scenarios.

Representation in the Final Scenario
Due to the fact that no target was set for this value, there is nothing to report in relation to their performance in the scenarios.

Recommendations

Run the analysis of proximity of wetland patches as a book keeping exercise on the preferred scenario.

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