

Ecologic Function

Coarse Scale Habitat – Forest Cover Target –Ecologic Function

The purpose of setting a target related to this value is to ensure that the preferred scenario includes the minimum amount of forest cover to support a range of wildlife species.

The current conservation planning literature emphasizes the complex relationship between the amount of forest cover in a landscape and its ability to support wildlife species. There is much discussion between experts about whether-or-not the size of the patches of forest is more important than the overall amount of cover. In a landscape as fragmented as Niagara, targets have been set for both the size of the forest patches and the amount of forest cover to provide the greatest benefits and opportunities to wildlife.

Datasets

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

The Niagara Watershed currently has 18% of its land base in forest cover, which constitutes 60% of all existing natural cover (totaling 30% across the land base). It is significant to note that 56% of all forest cover in Niagara is actually swamp (wetland) communities.

Forest cover is determined by combining all of the mature wooded area community types from the ELC mapping. This means that most mature tree dominated communities like Woodlands, Savannahs and Plantations are included with the ELC 'Forest' community and considered part of the broader and more general concept of 'forest cover' as it pertains to habitat.

Discussion

The discussion for this value focused on the idea of pre-settlement mapping. The group accepted that in the absence of pre-settlement condition mapping, we have to assume that 100% of the land area would have been in some form of natural cover. Based on the soils and topography, we can ascertain what would have been in upland and lowland forested communities. The ratio according to this type of mapping for our study area would have been about a 50:50 split.

There was also recognition that a forest cover target of 30%, as suggested by science, would not be found in many areas of the watershed nor would voluntary restoration to 30% be feasible in all areas given the current land uses.

Data Gap

There is a lack of information about the presettlement condition in the study area.

Decision

Date: April 7, 2011

30% of the overall land area in forest cover distributed by soil landscape.

Representation in the Learning Scenarios

Most of the natural cover in the study area is forest cover. It contributes roughly two thirds of

all natural cover.

Given the condition of the landscape at 18% current forest cover, and the scientific target being much higher at 30%, there is insufficient forest cover in all but one soil landscape unit. As a result, under many of the scenarios, all of the remaining forest cover was captured.

It is important to note that in many cases, one particular feature will contribute to multiple targets. Some forest types are swamp communities that would have also contributed to the wetland targets, based on their size and configuration they would have contributed to the patch sizes and forest interior targets.

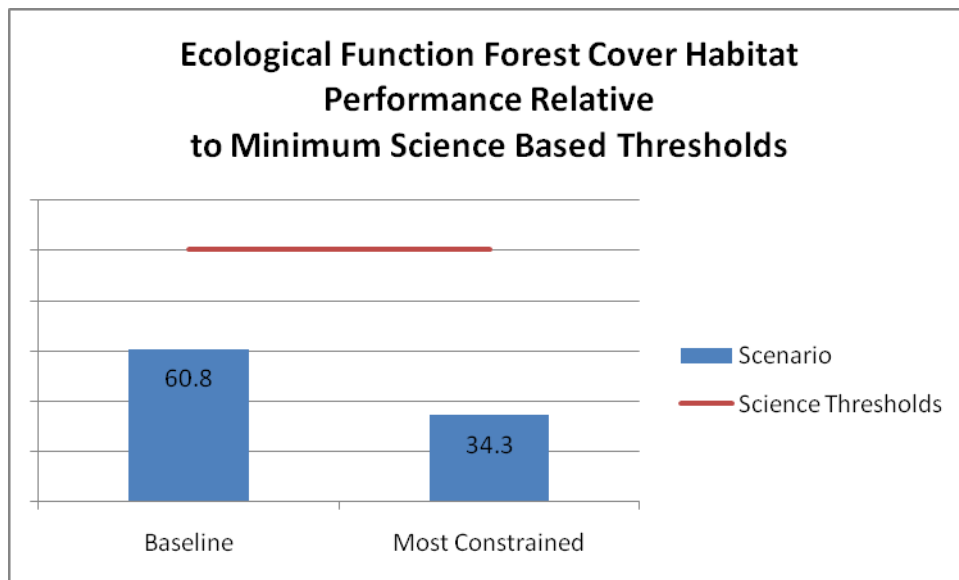
When considering biodiversity targets, many forest types contributed to the 5% minimum representation.

Representation in the Final Scenarios

Under the Baseline Comparator, forest cover was a driving factor for the spatial configuration of the solution. This was based once again on the shortfall of the existing natural cover relative to the minimum thresholds which meant everything available was selected to contribute.

Baseline Scenario, Forest Cover for Ecological Function achieved 60.8% of the minimum amount suggested by science and used 99.7% of the existing amount of forest cover.

Figure 13: Forest Cover Habitat Performance Relative to Science Thresholds

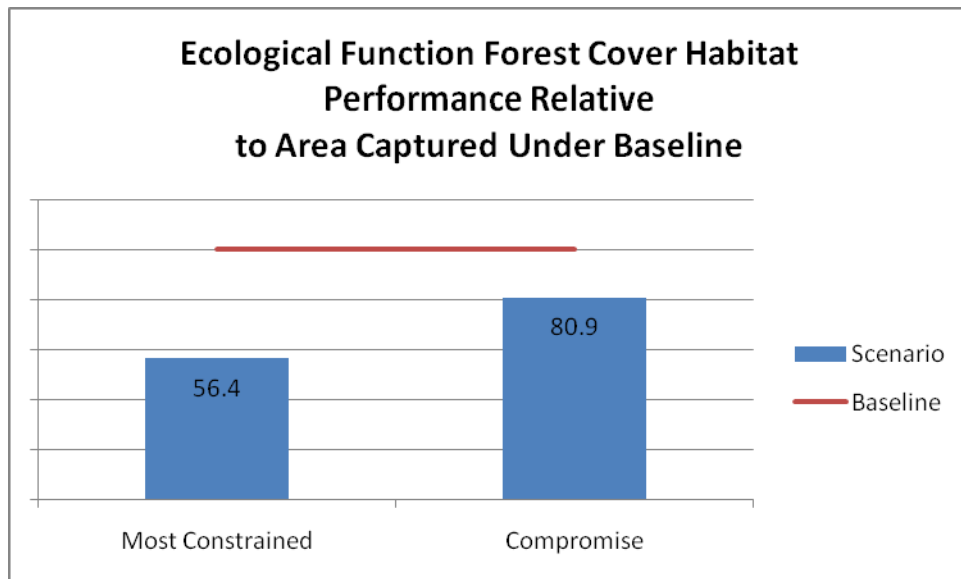


Under the Most Constrained Scenario, forest cover was limited to those areas that were not found on agricultural capable soils or in urban areas. Under this scenario, the exclusions were the driving factor not the fragmented of the existing natural cover.

Forest Cover, Ecologic Function under the Most Constrained Scenario achieved only 34.3% of the minimum amount suggested by science and 56.4% of the value held in the Baseline Scenario. In essence, under the Most Constrained Scenario, only those areas of forest cover already protected through existing policies and legislation are permitted to contribute to the targets. This suggests that roughly 56% of the existing forest cover has a conservation

designation and largely correlates to the swamp forest communities with Provincially Significant Wetland significance that were given an 'Included' social political constraint status.

Figure 14: Forest Cover Habitat Performance Relative to Baseline Comparator



Within the Compromise Scenario, forest cover was once again a determining factor in the spatial configuration even though under this scenario, the model was seeking only 80% of what exists on the landscape. As anticipated, the 80% of existing forest cover target was achieved within all the soil landscape units used to ensure distribution across the entire landscape.

Forest Cover, Ecologic Function as it relates to the Ecological Function targets in the Compromise Scenario achieved 80.9% of the value based on area relative that held in the Baseline Comparator.

Recommendations

Complete pre-settlement mapping for the watershed.

Add feature typing to the local ELC community mapping based on size thresholds and surrounding land use context to identify true forest habitats from more general wooded habitat types. There are many small wooded area polygons of mature trees in the mapping that are classified as forest communities that may provide refuge for species but do not necessarily provide true forest habitat.

Swamps (ELC class level) identified through the Ontario Wetland Evaluation System (OWES) protocol at the wetland complex level should be held to more scrutiny as potential forest cover based on their individual wetland unit poly forms to remove the dominant open water and emergent type communities (ELC series level) that are spatially generalized within them.

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