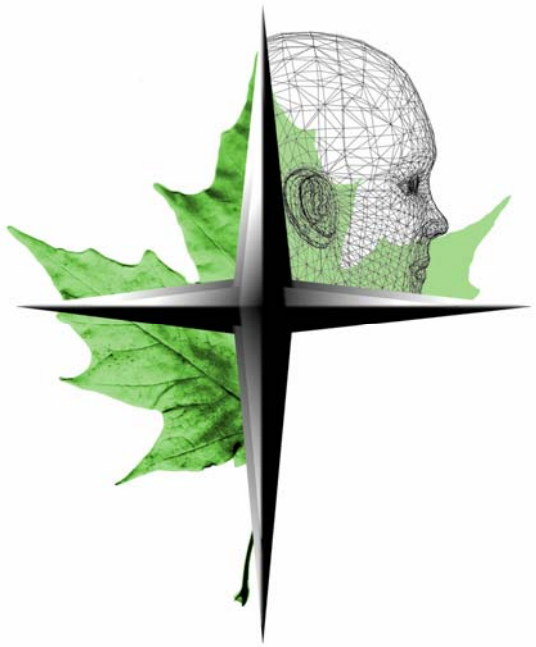
C A S E S T U D Y

FOREST PLANNING WITH REMSOFT®



Remsoft Spatial Planning System tested for conducting spatial analysis of habitat and other criteria on Northern Ontario

Special links to SFMM make it easy to visualize and map models

In Ontario, as elsewhere, there is a movement towards spatially explicit modeling for forest management. And it is not just with regard to issues that are traditionally considered spatial in nature – such as adjacencies, green-ups delays and locating buffers around road and waterways.

Both industry and government are continually looking for ways to improve the way land is managed - particularly Crown lands – and landscape modeling that includes a spatial component from the very start is one approach they are investigating as a way to improve planning.

So-called Landscape-level Guides are an area where Government researchers are considering how spatial modeling could benefit the overall management plan. (The Landscape-level Guides are part of a series of guides or regulations that Crown Licensees – or Sustainable Forest License Holders - must follow in creating long-term forest management plans. Other examples are technical guides, silvicultural guides, construction and operational manual.)

Landscape Guides are concerned with forest patch size and distribution and include Pine Marten habitat, Caribou habitat and Natural Distribution Pattern requirements – which stipulate that forest openings should be of varying sizes, shapes and locations to mimic the effects of natural disturbances, particularly forest fires.

Dirk Kloss, Resource Modelling Specialist, Ontario Ministry of Natural Resources, is involved in using spatial analysis to improve the accommodation of Landscape Guides in forest management plans.

“Guides were originally meant for operational-level planning – that is, how to lay out harvest blocks - but they are becoming strategically important,” Mr. Kloss explains.

“With spatial modeling the various, and sometimes contradictory, objectives of the guides can be identified during the early stages of forest planning; it is possible to see this, analyze alternatives and make trade-offs.”

Mr. Kloss has been investigating using Spatial Woodstock by Remsoft Inc. to carry out spatial analysis of Landscape Guides. Spatial

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Woodstock is a spatial database management and mapping software tool that creates linkages between models and inventory or a spatial database.

Though developed to work with Woodstock, forest modeling software, special links were built into Spatial Woodstock for users of Strategic Forest Management Model (SFMM) - OMNR optimization model – which is used throughout Ontario.

"Marten habitat is a spatial issue for instance because while my SFMM model can tell me there are so many hectares of mature spruce and balsam, it can't tell us where those patches are, whether the areas are contiguous and we can't project forward so we can see where the habitat is in 15 or 50 years. But modeling spatially, I can do these things," Mr. Kloss explained.

He noted that habitat and patches are also looked at within the larger forest management context and the future forest state can be evaluated in the presence and absence of management activities, so that different scenarios can be compared and the most appropriate solution chosen.

By evaluating spatial harvest plans spatially, it is possible to determine whether it a good or bad plan with respect to habitat requirement of pine martens or Caribou or another criteria and various approaches can be compared and rated to find the best possible plan.

"Management direction and policies are always evolving but by looking at different analytical tools and techniques we can gain insight into what we might be able to achieve through forest management, what consequences different management strategies have, and to what extent all the desired benefits can be achieved," Mr. Kloss says.

"The strength of the software as I see it is that it is like sitting inside your inventory and making management decisions – there are such strong linkages between your model and your spatial database. And exporting and reporting data has been easy."

"Policy formulation is evolutionary, so we are always looking for ways to improve planning and implementation," Mr. Kloss says.

Ugo Feunekes, the developer of Spatial Woodstock, said future releases of the software include patch analysis functionality, which will improve the modeler's ability to qualify and measure patches and zones over time.

"One of the key benefits of including patch analysis within Spatial Woodstock, is that analysis which used to take hours or days, can now be performed in minutes as the "nasty" issues like calculating spatial relationships, data formats, post treatment regeneration responses, forest aging, etc., are all handled automatically by Spatial Woodstock," Ugo explains.

For more information about Spatial Woodstock and the Remsoft Spatial Planning System, please visit **www.remsoft.com**.

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