

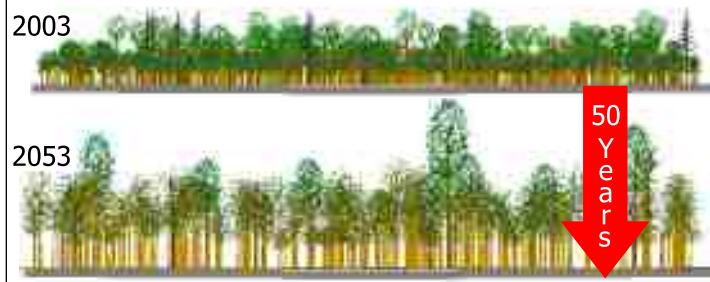
FOREST VEGETATION SIMULATOR FOR ONTARIO – FVS ONTARIO

Forestry Research Partnership Project No. 130-107

Aim

The Forest Vegetation Simulator (FVS) provides the modeling framework for updating the United States National Forest Inventory and supplies the growth and yield inputs to strategic wood supply analysis. It is a modeling tool that can help explain the impacts (if any) forest management has on keystone species and terrestrial habitats, and permit the modelling of structural and compositional changes in riparian zones. This project seeks to make FVS technology usable in Ontario, where no tools for this type of analysis currently exist; to calibrate the existing FVS model forms; and to refine the model source code to make it more compatible with Ontario's needs. This project will yield a silvicultural decision system to assist in the development of Silvicultural Ground Rules; a visualisation tool to support the Forest Management Planning (FMP) consultation process at information centres and Local Citizens Committee presentations; and a growth engine to facilitate future inventory updating and spatial wood supply modeling. A calibrated FVS model will allow the province's forest managers to evaluate intensive forest management strategies to determine appropriate treatments to maximize volume production or meet other management objectives.

Yellow Birch Example



Approach

Through its ability to predict and model habitat structural characteristics, FVS will provide an opportunity to evaluate management strategies to produce maximum wood flow as well as ensure an adequate supply of the necessary habitat structure at the stand and landscape levels. In addition, simulations through the use of a modelling framework will allow resource managers to evaluate long-term productivity site impacts through successive cropping scenarios. Empirical evidence and some expert opinion will be required to do this in the short term, as making the technology usable in Ontario will require rigorous testing and calibration standards to generate an optimal model. Validation efforts on Boreal and Great Lakes Forest conditions in Ontario will identify a species priority for the calibrated FVS model for Ontario, from which tree lists for model projection from all data sets prepared will be developed. Results of model



FVSOntario – the cycle of exploring silvicultural options



projections, including sensitivity analyses, of each Great Lakes-St. Lawrence species group will be completed and tests will be performed to compare the model's performance. A calibrated FVS model will allow the simulation of the best management options on a given site condition and within a landbase context to ensure that limited silvicultural dollars are linked with the efficient delivery of management objectives.

Tree Tip

The sustainable management of Ontario's forest resource requires the continual evolution and development of user-friendly and readily accessible growth and yield tools to improve wood supply analyses; further develop the Forest Resource Inventory (FRI); and increase the predictability of stand level dynamics, successional patterns and silvicultural treatment responses. Socio-economically, local communities will benefit from an improved ability to forecast valuable wood and other forest ecosystem products. FVS provides the flexibility required to address Ontario's identified growth and yield model needs and offers substantive new reliable knowledge and statistically sound methods to enhance the effectiveness and efficiency of resource management decision making. FVS gives

practitioners a vastly improved capacity to manage forest and predictable non-forest resources, and provides estimates of biodiversity through natural stand succession or management interventions. Its ability to model the province's diverse species mixes and management systems make it the optimal model for Ontario conditions.

Team

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For more detailed information, please visit: http://forestresearch.ca/partnership_projects/fibre_production/130-107.htm