

Summary of:

HSG Implementation Project; Dendron Resource Surveys Inc.;
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INTRODUCTION

The objective of this project was to develop and demonstrate the application of a forest simulation model to sustainable forest planning within the Prince Albert Model Forest (PAMF). The study was conducted by Dendron Resource Surveys Inc. with support from the Prince Albert Model Forest Association Inc., Weyerhaeuser Canada Ltd. and the Canadian Forestry Service through the Canada-Saskatchewan Partnership Agreement in Forestry.

Sustainable forestry is a key goal of the Prince Albert Model Forest. Adaptive management is a process well-suited to achieving this goal, requiring an on-going cycle of planning, assessment and modification to achieve management objectives. At the planning stage, sound decision-making is essential. In the context of sustainable forestry, creating an equitable, sustainable balance of goals requires dealing with uncertainty and numerous constraints, trade-offs, and risks. The decision-making required to achieve these goals can be assisted with the use of a Decision Support System (DSS). Forest Management DSS are designed to help forest managers and planners with the compilation, analysis and assessment of the enormous amounts of data and information needed to carry-out sustainable forest planning.

Although forest management DSS may vary considerably in their composition and arrangement, several key components are common to most. Vanguard (1992) defined four critical components as follows:

- (i) a forecasting element used to predict development of the forest resource over time,
- (ii) an interpretation element used to characterize the forest resource in terms of values and benefits,
- (iii) a strategy development element used to generate forest management strategies to achieve objectives, and
- (iv) a feedback element used to adapt forest management strategies to achieve management objectives more effectively.

In this DSS framework, forest simulation models can provide the forest inventory forecasting capabilities required for the first component and some of the resource interpretation capabilities required for the second component.

The forest modelling system selected for use in this project is the Harvest Schedule Generator (HSG) a forest inventory projection tool developed by Tom Moore and Carey Lockwood at the Petawawa National Forestry Institute to assist forest managers in forecasting and evaluating long-range forest management strategies. It can be used to forecast the development of a forest over time under alternative management strategies and constraints, and to evaluate the impact of these strategies through the examination of a wide range of user-defined indicators.