



## FINANCIAL CALCULATOR FOR SILVICULTURE SCENARIOS

### A USEFUL TOOL FOR FORECASTING COSTS ASSOCIATED WITH CLIMATE ADAPTATION

NHRI, in collaboration with Strata Resource Management, is developing a financial calculator tool for forest managers. Amongst other uses, this new tool will be very useful for calculating some of the financial ramifications associated with considering various silviculture scenarios in the context of a changing climate. This new product will serve the purpose of comparing predicted outcomes based on various treatment options in hardwood stands. The financial calculator for silviculture scenarios will also enable the production of financial yield curves that can eventually be incorporated in the ERD wood-supply model. This tool is meant to serve the interest of operational forest practitioners whether on private or crown land.

For now, the financial calculator is Excel-based as this platform makes it easy to explicitly show calculations and connections to a wider audience and also renders the on-going modifications much simpler during the beta phase of development. It is currently meant to be used at a stand-level with pre-defined treatments and regimes. It will also be able to determine some block inputs, such as road cost, silviculture cost and harvest cost. Later on, with the help of other partners, this financial tool could be improved upon and have the flexibility of optimizing treatment sequences and choices. As the initial phases of the project are completed the format might change to allow integration of data directly into OSM—Open Stand Model. This improved version could create financial Woodstock yield data and create a more user-friendly interface for less software savvy practitioners.



#### KEY INPUTS

##### Tree/Product Related Attributes

- OSM Treelist: The treelist is the logical fundamental input since it has the necessary attributes to connect to the NHRI Product Matrix, using species, diameter, and a form and risk prediction. Removal volumes will be used to calculate revenues and inventory volumes will be used to calculate standing value;
- Timber product splits will be informed by the data from the NHRI Product Matrix;
- General financial data such as timber product prices, and harvest and transport costs.

##### Costs

###### Harvest Cost

- By machine system type;
- Tree Size dependent costs;
- Prescription.

###### Silviculture Cost

- Area-based silviculture (non-harvest methods);
- Additional harvest cost beyond clearcut could be considered as silviculture cost.

###### Transportation and road building Costs

- Both costs will not be incorporated into the treelist element of the calculator; however, there will be an option for users to add in these costs. This element will be further refined in following phases where spatial functionality can be incorporated (e.g. in a wood-supply model).

#### VALUATION METHOD

- Net Present Value (NPV) is really the only option since it can value the forest at any point within a stand's life;
- The use of a discount rate (or Opportunity Cost) will be necessary to account for the time value of money to make all financial results available in present value.





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