University of Canterbury provides on-line access to growth and yield models

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The School of Forestry at the University of Canterbury has established an on-line source for forestry software, including some growth and yield models.

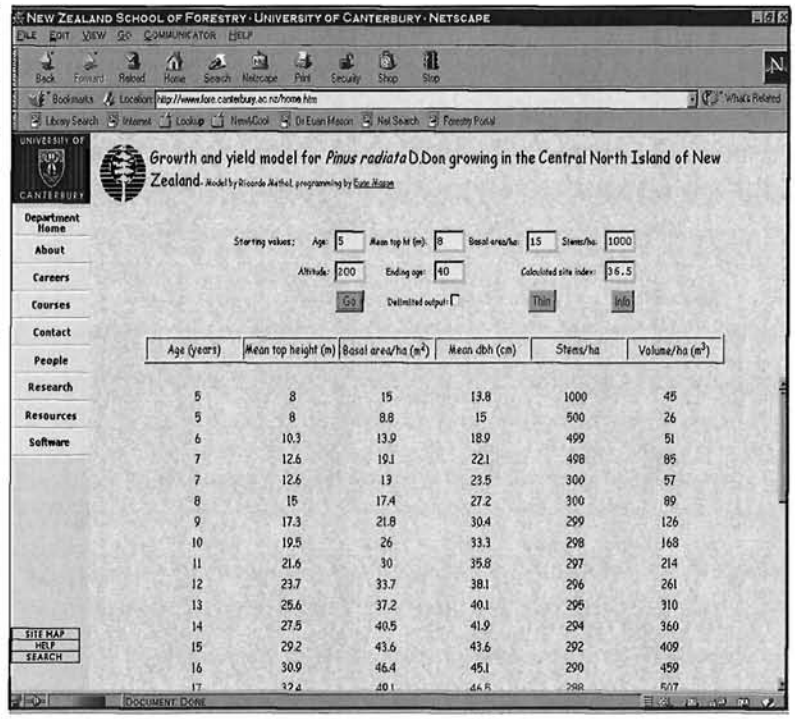
The models are programmed so that they run in a web browser like Netscape or Internet Explorer. This format means that models will run on any machine, they do not have to be downloaded and installed by users, and they can be updated very easily.

Models may be used free of charge, so long as acknowledgement is made to the School of Forestry when projections are quoted in documents. At time of writing, growth and yield models for Douglas-fir in the South Island and radiata pine in the Central North Island are available. Two smaller tools include a wilding risk estimator (built in collaboration with Nick Ledgard of Forest Research), and a tree height calculator.

The school's web address is http://www.fore.canterbury.ac.nz. Click "Software" on the left hand menu to access the tools.

The School has a commitment to provide decision tools to the industry, and you can expect to see the site grow as models are added for other regions and species.

There is potential for more than just growth and yield models to be provided in this way, and we welcome your suggestions. Please email me at e.mason@fore.canterbury.ac.nz with comments, queries or requests.



A screen shot of the model for radiata pine in the Central North Island that runs in your browser. You need only enter the current age, mean top height, basal area, stocking and altitude, and click "Go" to get a yield table describing future growth in your wood lot. You may nominate up to five thinning treatments.

Sustainable management using Woodstock

Sustainable management practices are key to conserving New Zealand forests in the long-term. But in addition to the environmental impact, management regimes that promote sustainable development of indigenous and plantation resources make sound economic sense as well.

Indeed, forest products are already one of New Zealand's largest export earners and by the year 2010, the commodities are expected to account for 30 per cent of the country's total export earnings - so ensuring timber supplies are safeguarded for the long-term is in everybody's best interest.

Sustainability with Woodstock

Woodstock forest modeling software is flexible, robust software package that is in use throughout North America, Australia and now in New Zealand to help devise management strategies which balance commercial and environmental constraints for the creation of sustainable forest management plans.

Created by Canadian software developers Remsoft Inc., Woodstock is Windows-based software used for forest modeling problems such as harvest scheduling, timber supply analysis (for both wildland and plantation woodlands), vegetation succession modeling and wildlife habitat and ecosystem management.

In addition, detailed, long-term management plans developed using Woodstock are used to demonstrate compliance with the regulations of certification programmes such as the Sustainable Forestry Initiative (SFI), ISO14001 and Forest Stewardship Council (FSC).

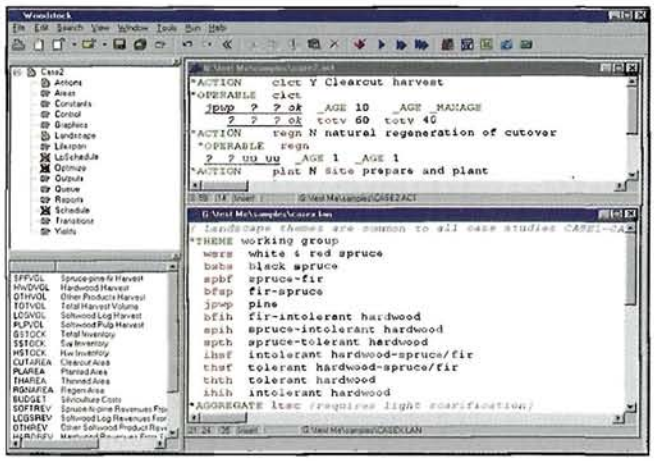
Such a broad range of planning issues can be addressed using Woodstock because everything about the model is user-defined.

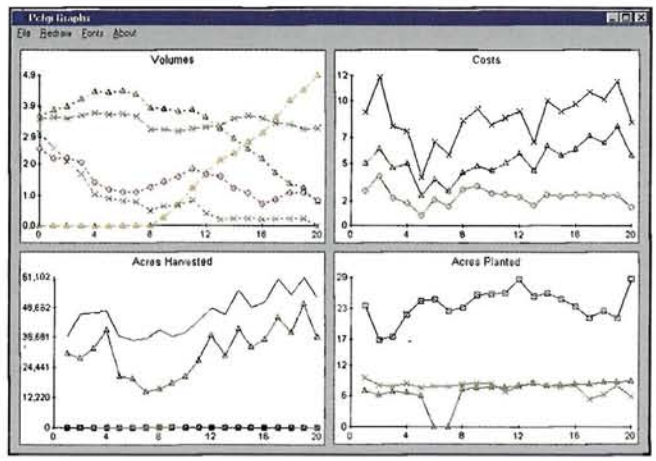
Woodstock is already being used to model Australian eucalyptus forests, southern pine plantations in the US and boreal forests in Canada.

What is Woodstock?

Woodstock consists of:

- A flexible modeling language for describing the forest landscape, the dynamics driving the system and the actions operating on it;





- An editor that you can use to create and run your models;
- An interpreter that runs the model and produces output in the form of graphs and report files.

To build a Woodstock model, users need to be able to describe the landscape - that is the composition of the forest and its dynamic elements - forest classes, yield components, actions and transitions and outputs.

Rather than strong technical ability, building a model requires a general knowledge of forestry and the language of the science, since the Woodstock syntax used to describe land attributes, actions and transitions, et cetera, reflect underlying forestry principles and not software terminology.

Both static and dynamic attributes can be defined at the outset - employing the users own terms - and additional information added later as more information is gleaned about the forest.

The next step is to define activities that take place on the land, whether man-made interventions such as, fertilization and planting, or naturally occurring activities like insect infestation or fire. This enables users to try different 'what-if' scenarios.

Because Woodstock also lets the user define what the model outputs will be, whether a quantity such as harvest volume, or an economic value such as costs or revenues, the models can be customized to tell the users exactly what they want to know, instead of providing only a very limited set outputs.

Choice of model formulations

Woodstock's flexibility extends beyond initial model formulation to model runs as well. Users can solve models using optimization, simulation and random simulation methods, so that a planning problem can be examined from different points of view and an optimal solution derived.

And because the forest dynamics syntax is the same for all formulations, it is seamless to convert from one formulation to another within the same model. Outputs defined in the model can easily be displayed using text reports, runtime colour graphs and spreadsheets.

Moving from strategic to spatial

When it is time to move to on-the-ground, spatial harvest scheduling, models developed using Woodstock can easily be put into action using Stanley, Remsoft's spatial harvest scheduling software.

Stanley uses the list of optimal harvest treatments generated by Woodstock to lay out a sustainable, blocked harvest schedule.

And once a plan is complete, Stanley can be used to visually display what a forest will look like in the future, complete with stand types, age class distribution and treatment status overtime.

Contact Details

Woodstock can be ordered via telephone at +1 506 450-1511; or by email at **woodstock @remsoft.com**; URL: **www.remsoft.com**