PLANSFM

STANDMODEL

Development of dynamic yield models for conifers, broadleaves and mixtures

PROJECT TEAM
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COMPLETION DATE
December 2012

Sectional measurement of a felled volume sample in a STANDMODEL Japanese larch plot, near Virginia, Co Cavan.

OBJECTIVES

- Produce new dynamic yield models for Japanese larch (thinned and unthinned) and ash (thinned) and integrate these into the existing Irish Dynamic Yield Model User Interface.
- Investigate the potential for generating growth forecasts for species mixtures using existing model combinations.
- Investigate the potential for utilising National Forest Inventory plot data in validating and strengthening existing dynamic yield models and in generating new ones.
- Develop additional functionality for the Irish Dynamic Yield Model User Interface in the form of user defined assortments, optimisation/goal seeking capability, and facility for mixtures.

PROGRESS

Collection of Japanese larch data

These data will be added to the national forest measurement database managed by Coillte. Data collection will be completed in 2008. Validation data will be collected in 2009. Collection of 2006/2007 data from 100 Japanese larch plots was completed in February 2007. These data have been verified and are now included in the overall database for Japanese larch. Collection of 2007/2008 data from these plots was completed in January 2008. A total of 350 stems from these plots have been marked as volume samples and will shortly be felled and detailed sectional measurement will be undertaken.

Collection of ash data

These data will be added to the national forest measurement database managed by Coillte. Data collection will be completed in 2010. It is planned that a further 3-year period of data collection will follow. A provisional sample of Coillte ash sites

was selected to generate a profile of the types of older and reforestation ash stands that are owned by Coillte. This also provides useful guidance, at an early stage in the project, on issues such as stratification, sampling, experimental design and measurement. A sample of 10 sites was visited and this, along with information from private sector sites, formed the basis of discussion during a week long visit by Dr Lance Broad from New Zealand. During this period a workshop and field day were held by the project team with representatives from linked research work. It was concluded that measurement should continue at the Coillte ash spacing trial at Knocktopher.

A stand selection protocol was agreed. Forty-one ash stands (each to host two plots), across a range of age classes, in Coillte forests were visited to ensure their suitability. In addition, nine ash stands in private ownership were selected, with age classes 1988 and 2000. Data collection from all 50 stands (100 plots) has commenced and will be completed, including volume sample measurement, by mid April 2008.

Japanese larch dynamic yield model

The Japanese larch models will be published in 2009.

Ash dynamic yield model

A preliminary ash model will be published in 2010. It is planned to update the model by 2013.

Development of yield model user interface

The user interface will be updated as new/refined models become available. The two new interfaces will be completed during the lifetime of the project. All updates will be circulated to registered GROWFOR users (see Services and Technology Transfer), with an updated user manual. In addition, user-defined assortments have been developed for Scots pine and lodgepole pine.

ACTIVITIES PLANNED

- 100 ash plots will be established with baseline measurements and a first round of destructive sampling completed in the winter of 2007/2008.
- Sample tree measurement will take place in the 100 Japanese larch plots in February/March 2008.
- There will be continued work on the user defined assortments and those for Scots pine and lodgepole pine will be uploaded into GROWFOR.

OUTPUTS

Nieuwenhuis, M. and Purser, P. 2007. STANDMODEL: Dynamic Yield Models for larch, ash and mixtures. *Irish Timber and Forestry* 16(5): 22 - 23.

Measuring ash in a new STANDMODEL ash plots, near Rathangan, Co Kildare.