

TREEMODEL

Development of single-tree volume models and stem profile models

PROJECT TEAM

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COMPLETION DATE

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OBJECTIVES

- Produce stem profile models for Sitka spruce, Norway spruce, Douglas fir, lodgepole pine, Japanese larch, Scots pine and ash.
- Validate these models with newly collected stem data.
- Describe the different inventory tools available for collecting necessary data for stem profile models.
- Develop recommendations for the integration of stem profile models into everyday private sector inventory and management practice.

PROGRESS

- Stem data provided from the Coillte measurement database will be compiled for analysis. This will be done on a species by species basis as data for some species will take longer to source than others. In particular, data for Japanese larch and ash will not be available until year three of the project. This cleaned database will be retained and made available for other COFORD projects, avoiding the need for future editing by other users. A short handbook to the database will be prepared to inform users. Stem data from the Coillte measurement database are available in several Access databases. These

data were checked for inconsistency; missing, inconsistent or incorrect values were recalculated. All the databases have been combined, restructured and converted into the Field-Map database to be available for the StemProfiler software. As Field-Map enables visualization of stem profiles, data were also checked visually. The fully cleaned database will be available for future use by other research projects and there has been strong liaison with the CARBWARE project in this regard.

- Parameterisation of models will be carried out on a species by species basis. Parameterisation of the Sitka spruce model has been completed and is currently being tested with validation data recently collected. Models for other species have yet to be completed.
- Model validation will be carried out on a species by species basis. In collaboration with the FORESTSCAN project, 19 sample plots were established at Clonmel and Mountrath and validation data were collected for the Sitka spruce model. Data has been verified and are available for processing. It is planned to compare results of field measurement for both methods (laser scanner and field-map technology).
- A report will be prepared identifying how stem profile models can be utilised in everyday inventory systems.

ACTIVITIES PLANNED

The parameterised Sitka spruce model will be validated and then made available for use. Work on other species will commence. The integration of the new single models into practical inventory systems will be advanced. There will be further work on the development of a measurement equipment database.