

Forecasting the Future Availability of a Nation's Wood Production from Fast Growing Plantations

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Forecasting the wood supply at a regional or national level over the long term presents different problems for fast growing plantations compared to slower growing forests with a long history of use. Change is rapid. High growth rates, short rotations and varying annual rates of afforestation with a consequent irregular age class distribution affect future levels of harvest. New Zealand has separated the problem of predicting the total market demand for logs within a country from that of predicting the availability of volumes for harvest. A series of wood supply forecasts have been carried out at regular intervals over the past 30 years.

These forecasts utilise data on areas of annual age classes by species, silvicultural regime and region, maintained as a database of the National Exotic Forest Description. These data are updated by postal surveys carried out each year to varying levels of ownership category. Periodically, a survey is made of companies managing forests in order to obtain their best estimates of merchantable volume yield tables based on their operational experience. These data are integrated by a linear programming yield regulation model that operates under a series of constraints and assumptions on rotation age and levels of future afforestation to provide a range of forecasts for various scenarios. Recently, these longer-term forecasts have been supplemented by regional "Harvest Intention" studies that summarise and consolidate surveys of the larger forest owners' predictions of their own harvest plans over the shorter term. Despite this effort in regularly revising the forecasts, actual harvests and their trends have at times differed significantly from what has been forecast and work is currently in train to improve methods.