

von Gadow, K. & Hui, G. (1999): Modelling Forest Development. Forestry Sciences 47., Kluwer Academic Publishers, Dordrecht

Reference

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Short reference

von Gadow & Hui (1999)

First author

von Gadow, Klaus

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Abstract

Modelling Forest Development

Klaus von Gadow

Gangying Hui

The key to successful timber management is a proper understanding of growth processes, and one of the objectives of modelling forest development is to provide the tools that enable foresters to compare alternative silvicultural treatments. In a managed woodland, the most important periodic disturbances are the thinning operations, which are often carried out at regular intervals and which usually have a significant effect on the future evolution of the resource. Thus, a realistic model of forest development includes both natural growth and thinnings. One of the outstanding features of this book is its inclusion of thinning models at varying levels of resolution and consideration of differences in forester's tree marking behaviour. Other interesting aspects include regional resource forecasting approaches, generalized stem taper functions, generalized diameter-height relations, new ways of describing and reproducing forest spatial structures, crown modeling and iterative competition modeling. Worked examples and code are provided where appropriate. The intended readership is graduate students.

[forest management](#)

[methodology: modelling](#)

Notes

Modelling Forest Development

Klaus von Gadow

Gangying Hui

Tartalom:

1. Introduction

Types of Forest Models

Data Requirements

Permanent Plots

Temporary Plots

Interval Plots

2. Projecting Regional Timber Resources

Empirical Yield Functions

Fully Stocked Forests

Non-fully Stocked Forests

Yield Functions based on MAI Estimates

3. Modelling Stand Development

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Non-Disjoint Polymorphic Height Models

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Potential Density

The limiting Line

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Natural Decline of Stem Number

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Stand Volume and Product Yields

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Classical Description of Thinning Operations

Thinning Weight

Type of Thinning

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-Growth Modifiers

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- Parameter-parsimonious Stem Profile Functions
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List of Symbols

Literature

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