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| Altri autori (Persone)  | WeiskittelAaron R  |
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| Soggetti                | Trees - Growth - Computer simulation<br>Forest productivity - Computer simulation<br>Trees - Growth - Mathematical models<br>Forest productivity - Mathematical models   |
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| Formato                 | Materiale a stampa   |
| Livello bibliografico   | Monografia   |
| Note generali           | Description based upon print version of record.  |
| Nota di bibliografia    | Includes bibliographical references and index.   |
| Nota di contenuto       | Forest Growth and Yield Modeling; Contents; Preface; Acknowledgements; 1 Introduction; 1.1 Model development and validation; 1.2 Important uses; 1.3 Overview of the book; 2 Indices of competition; 2.1 Introduction; 2.2 Two-sided competition; 2.2.1 Distance-independent; 2.2.2 Distance-dependent; 2.3 One-sided competition; 2.3.1 Distance-independent; 2.3.2 Distance-dependent; 2.4 Limitations; 2.4.1 Low predictive power; 2.4.2 Distance-independent vs. distance-dependent; 2.4.3 Influence of sampling design; 2.5 Summary; 3 Forest site evaluation; 3.1 Introduction 3.2 Phytocentric measures of site quality3.2.1 Site index; 3.2.2 Plant indicators; 3.2.3 Other phytocentric measures; 3.3 Geocentric measures of site productivity; 3.3.1 Physiographic measures; 3.3.2 Climatic measures; 3.3.3 Soil measures; 3.4 Summary; 4 Whole-stand and size-class models; 4.1 Introduction; 4.2 Whole-stand models; 4.2.1 Yield tables and equations; 4.2.2 Compatible growth and yield equations; 4.2.3 Systems of equations; 4.2.4 State-space models; 4.2.5 Transition |

matrix models; 4.3 Size-class models; 4.3.1 Stand table projection; 4.3.2 Matrix models; 4.3.3 Diameter-class models 4.3.4 Cohort models 4.4 Summary; 5 Tree-level models; 5.1 Introduction; 5.2 Single-tree distance-dependent models; 5.2.1 Example models; 5.3 Tree-list distance-independent models; 5.3.1 Example models; 5.4 Summary; 6 Components of tree-list models; 6.1 Introduction; 6.2 Diameter increment; 6.2.1 Potential diameter increment equations with multiplicative modifiers; 6.2.2 Realized diameter increment equations; 6.3 Height increment; 6.3.1 Potential height increment equations with multiplicative modifiers; 6.3.2 Realized height increment equations; 6.4 Crown recession 6.4.1 Individual-tree crown recession models 6.4.2 Branch-level crown recession models; 6.5 Summary; 7 Individual-tree static equations; 7.1 Introduction; 7.2 Total height; 7.3 Crown length; 7.4 Crown width and profile; 7.5 Stem volume and taper; 7.6 Biomass; 7.7 Use of static equations to predict missing values; 7.8 Summary; 8 Mortality; 8.1 Introduction; 8.2 Stand-level mortality; 8.3 Individual-tree-level mortality; 8.4 Mechanistic models of mortality; 8.5 Development and application of mortality equations; 8.6 Summary; 9 Seeding, regeneration, and recruitment; 9.1 Introduction; 9.2 Seeding 9.2.1 Flowering and pollination 9.2.2 Seed production; 9.2.3 Seed dispersal; 9.2.4 Seed germination; 9.3 Regeneration; 9.4 Recruitment; 9.4.1 Static; 9.4.2 Dynamic; 9.5 Summary; 10 Linking growth models of different resolutions; 10.1 Introduction; 10.2 Linked stand- and size-class models; 10.2.1 Parameter recovery; 10.2.2 Modified stand table projection; 10.3 Linked stand- and tree-level models; 10.3.1 Disaggregation; 10.3.2 Constrained; 10.3.3 Combined; 10.4 Summary; 11 Modeling silvicultural treatments; 11.1 Introduction; 11.2 Genetic improvements; 11.2.1 Stand-level; 11.2.2 Tree-level 11.3 Early stand treatments

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## Sommario/riassunto

"Completely updated and expanded new edition of this widely cited book, *Modelling Forest Growth and Yield*, 2nd Edition synthesizes current scientific literature, provides insights in how models are constructed, gives suggestions for future developments, and outlines keys for successful implementation of models. The book describes current modeling approaches for predicting forest growth and yield and explores the components that comprise the various modeling approaches. It provides the reader with the tools for evaluating and calibrating growth and yield models and outlines the steps necessary for developing a forest growth and yield model"--

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