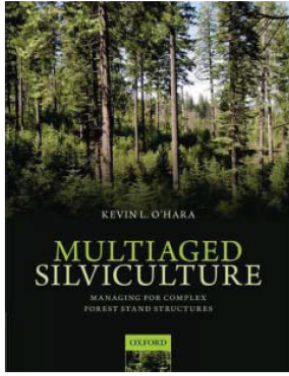


Multiaged Silviculture: Managing for Complex Forest Stand Structures

Kevin O'Hara

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This book by Kevin O'Hara, Professor of Silviculture at the University of California–Berkeley, delivers a fresh perspective on the scientific foundations for the silviculture of complex forest stand structures. This is a subject of increasing importance to sustainable forestry, and is especially relevant where woodlands are being managed for a wide range of ecosystem

services or according to close-to-nature principles.

A plethora of terms captures the concept of forest management in stands that are “not even-aged”. Examples much in use at the present time include uneven-aged silviculture, irregular forestry, complex adaptive systems and Continuous Cover Forestry (CCF), to name but a few. Each comes with its own definition or is more commonly used in different regions, and each appears to embrace a slightly different subset of silvicultural systems. Professor O'Hara chooses to side-step any narrow technical classification and opts for an ecological approach that embraces all forest stands composed of multiple age classes, and with one or more tree species. Although familiar terminology is used, there are no chapters dedicated to individual silvicultural systems. Instead, silviculture is applied in a landscape context where a freer mixture of stand interventions may be appropriate to achieve desired levels of structural heterogeneity.

The book is divided into 16 chapters that can be grouped, loosely, into five sections. The chapters follow in a logical sequence from building blocks of information, to applications and issues. Chapters 1 and 2 provide background information on the history and drivers of multi-aged silviculture. Chapters 3–5 address the biological and ecological principles of forest stand dynamics. Chapters 6–9 explain key silvicultural concepts, including stocking control (Chapter 7), regeneration (Chapter 8) and tending (Chapter 9).

The following four chapters focus on management of multi-aged forest stands. Chapter 10 presents an overview of silvicultural transformation, i.e., intervention pathways that move stands from even-aged to multi-aged structures. This is an important topic at the present time, especially where increased species and structural diversity is required to enhance the ecological resilience of managed woodlands. Chapter 11 discusses the use of multi-aged silviculture to

achieve objectives such as timber, biodiversity and carbon storage. Chapters 12 and 13 provide information on the estimation of site productivity, growth and yield, optimization of stand structure and economic productivity.

The final three chapters concentrate on the sustainability and social acceptance of multi-aged forests. It has long been recognised that silviculture can have a direct impact on the genetic composition of forest stands. Chapter 14 addresses this issue, with an overview of potential dysgenic processes and measures that promote gene conservation. The influences of wind, insects and fungal pathogens, as well as treatment options, are discussed in Chapter 15. Finally, in Chapter 16, there is a brief review of the social factors that influence multi-aged silviculture, including perceptions around forest aesthetics, naturalness and forest “beliefs”. These play a role in the choices forest managers make, and the degree to which multi-aged stands are managed to emulate natural patterns of change, or meet cultural and economic expectations of society.

Overall, this is a modern and comprehensive discourse on multi-aged silviculture – it is a significant contribution to forestry literature and acts as a counterweight to the many books that focus on even-aged or plantation systems. The scope of the book is very broad, yet information is carefully balanced to provide readers with an understanding of the scientific principles and issues associated with managing multi-aged forest stands. Perhaps the inclusion of a glossary and a few more-detailed case studies would have added to the practical value of the project, but the many hundreds of references cited throughout the text will serve as a springboard for readers wishing to delve deeper into specific topics. The book is written in an academic style, and diagrams and illustrations are carefully selected to support learning. While production standards are generally high, there are several passages where the writing is rather opaque and lacking in clarity. The use of colour photos would have been a positive feature, rather than grayscale images that often have insufficient contrast to show finer details. Hopefully there will be buoyant sales and an opportunity to review and rectify these issues in a second edition.

With reference to the target audience, this new volume will be most appropriate as a textbook for a senior undergraduate elective or postgraduate course in multi-aged silviculture. It can also be recommended as a supplementary reference for an introductory-level silviculture course. Forest managers with a keen interest in silvicultural systems may wish to acquire a copy for their library, although it is clearly not meant to serve as a practice guide. Postgraduate researchers and scientists will find the book useful for its up-to-date coverage of the literature, and for a synthesis of the issues bearing on silviculture at the present time.

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