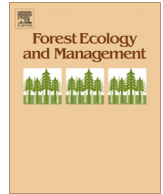




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# Forest Ecology and Management

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## Preface

# Conservation importance of early post-disturbance temperate forests



## 1. Introduction

The early post-disturbance stage of temperate forest succession (also referred to as 'early-seral' or 'early-successional' forest) has been the subject of interest and debate. Often thought of as an ephemeral (and often disorganized) state of eventual closed-canopy systems, its direct and immediate role in conservation traditionally has been ignored except by game biologists. Conservation biologists, until recently, viewed early-seral forest as transitory or a degraded condition of mature or old-growth forest, and, not surprisingly, have studied and promoted management efforts to accelerate forest succession (Keeton and Franklin, 2005).

Over the past half century, an increase in forested areas on the temperate North American landscape has coincided with noted declines in early-successional forest habitat (Litvaitis, 1993; Brooks, 2003) and the species that typify them (Askins, 1993; Peterjohn et al., 1995; Hunter et al., 2001; Schlossberg and King, 2007). This has led to re-examining the conservation importance of the early post-disturbance stage. This includes efforts aimed toward better understanding facets of disturbance regimes necessary to create and sustain the structure and composition of early post-disturbance forests and species reliant on those attributes (Betts et al., 2010; Greenberg et al., 2011).

Conservation, restoration, and management plans for species of concern, including threatened and endangered (T&E) species, are a driving force for interests in the post-disturbance phase in forested and traditionally forested systems. Some of the targeted species spend their entire life cycle in early-successional habitats, while others rely on such habitats to varying degrees for only a portion of their life cycle. Indeed, forest management plans are now considering existence and size of early-successional patches for current and proposed T&E species (Loeb and O'Keefe, 2006; Freese et al., 2006; Lagory et al., 2009; Buffum et al., 2011). In North America, this emphasis arguably has been more pronounced in eastern than in western systems (King et al., 2011); though recognition of the importance of the post-disturbance phase of forest succession is gaining traction in western forests (Swanson et al., 2011).

The intensified interest in biodiversity conservation in post-disturbance early-successional habitats in temperate forest systems carries with it the challenge of understanding whether and how to best manage forest systems. More specifically, it calls into question the predictability and sustainability of desired populations, communities, and habitat features (e.g., structure and composition) following adequate disturbance, and how critical the management of early-successional communities can be to both biodiversity and future forest development. The papers that follow

comprise a much needed compilation that addresses (a) gaps in conceptual knowledge of biodiversity (Swanson et al., 2014) and trait-based functionality (Campbell and Donato, 2014; Wilfahrt et al., 2014) in early-successional phases, and (b) effectiveness of conservation and management approaches to improve native biodiversity (King and Schlossberg, 2014) and ward off exotic species invasions (Kuebbing et al., 2014) therein. The challenges that face the managers of temperate forest systems encompass how to manage these systems to benefit populations and communities of native biota and protected species of early post-disturbance phases, while at the same time promoting the processes and services necessary to ensure the health of the closed-canopy condition. We intend our efforts to provide direction and inspiration for future work in this arena.

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