Recommendations for Integrating Restoration Ecology and Conservation Biology in Ponderosa Pine Forests of the Southwestern United States

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Abstract

Over the past century, ponderosa pine–dominated landscapes of the southwestern United States have been altered by human activities such as grazing, timber harvest, road building, and fire exclusion. Most forested areas within these landscapes now show increased susceptibility to stand-replacing fires, insect outbreaks, and drought-related mortality. Recent large wildfires in the region have spurred public interest in large-scale fuel reduction and restoration programs, which create perceived and real conflicts with the conservation of biodiversity. Conservation concerns include the potential for larger road networks, soil and understory disturbance, exotic plant invasion, and the removal of large trees in treated areas. Pursuing prescribed burning, thinning, or other treatments on the broad scale that many scientists and managers envision requires the reconciliation of ecological restoration with biodiversity conservation. This study presents recommendations from a workshop for integrating the principles and practices of restoration ecology and conservation biology, toward the objective of restoring the composition, structure, and function of dry ponderosa pine forests. Planning on the scale of hundreds of thousands of hectares offers opportunities to achieve multiple objectives (e.g., rare species protection and restoration of ecological structures and processes) that cannot easily be addressed on a site-by-site basis. However, restoration must be coordinated with conservation planning to achieve mutual objectives and should include strict guidelines for protection of rare, declining, and sensitive habitats and species.

Key words: biodiversity, conservation, ponderosa pine, restoration.