

RESTORATION

RESTORATION OF PONDEROSA PINE ECOSYSTEMS: CONCEPTS AND PRINCIPLES

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ABSTRACT

The central concern in ecological restoration is reversing the degradation of ecosystems by restoring the structure and function of ecosystems to approximate those conditions present before degradation began. In many frequent-fire ecosystems, degradation can be traced to disruption of natural fire regimes. Typically, disruption of natural fire regimes has led to complex and undesirable ecosystem changes, some of which are not readily reversed by burning alone. It is essential that restorationists approach treatment design in a systematic, holistic fashion grounded firmly in ecological restoration concepts and principles. Reference conditions must be determined and sources of degradation identified and addressed. Next, symptoms of degradation must be analyzed. Finally, restoration goals must be specified, and treatments designed, tested, implemented, monitored, and revised as necessary. All these steps must be accomplished in a socially and politically acceptable context. We illustrate these principles by examining key elements of ecological restoration projects in southwestern ponderosa pine (*Pinus ponderosa*) ecosystems.

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