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Abstract

The current status and trend of aspen is a topic of debate; some studies have claimed dramatic reductions in aspen stands while others have found no major changes. The actual picture of aspen forests across the West is variable, and the presence of conifers and ungulates in aspen may or may not indicate a progressive loss of aspen. These proceedings summarize the state of knowledge about aspen ecology, the condition and trends in aspen ecosystems in the West, and human dimensions and management options for sustaining aspen.

Keywords: ecosystem management, ecosystem research, sustainable forests, quaking aspen, *Populus tremuloides*

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Compilers' Note

Papers presented from the conference were subjected to peer technical review. The views expressed are those of the presenters.

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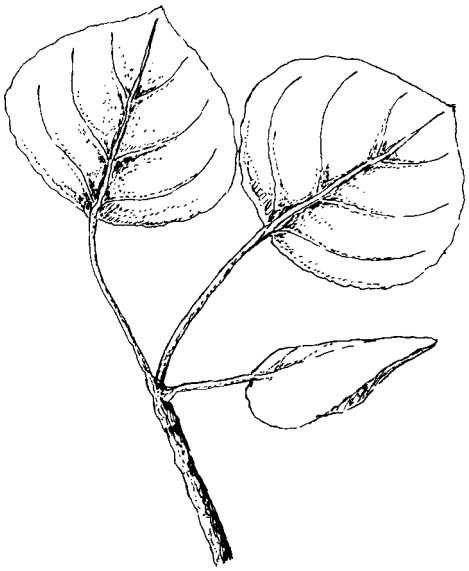

Landscape Dynamics of Aspen and Conifer Forests

Human Dimensions

Animal/Aspen Interactions

Aspen's Ecological Role in the West

Physiology and Production Ecology

Manipulating Aspen Ecosystems

Aspen Forest Products

USDA Forest Service Proceedings RMRS-P-18. 2001.

Foreword: "We already know all about aspen"

Dan Binkley[1]

As we developed plans for the symposium on sustaining aspen in western landscapes (held in Grand Junction, Colorado, on June 13–15, 2000), we solicited support from state and federal agencies, universities, and the Rocky Mountain Elk Foundation. The widespread support was very encouraging, and only one agency turned down the opportunity to join in supporting this symposium because, it said, "We already know all about aspen." It's true that aspen has been a focal point for research for 100 years in the West, and much of this knowledge was compiled in a wonderful report in 1985 (DeByle and Winokur 1985). But did we really know enough to sustain aspen in western landscapes?

The state of knowledge in 1985 included detailed knowledge of the aspen taxonomy and regeneration, some basic ecology (including site factors), the resource values of aspen forests, and fundamental information on managing aspen forests (DeByle and Winokur 1985). This fundamental knowledge provides much of what we need to know about aspen, but the symposium organizers felt that three critical areas needed further development: (1) the changes in aspen forests across landscapes through time (especially as a result of management decisions), (2) the management options for enhancing aspen forests on landscapes, and (3) the level of collaboration and activity among managers and scientists with interests in aspen.

This volume of proceedings from the conference shows we've learned a great deal about basic ecology of aspen since 1985, including new insights on herbivory, secondary chemistry, functional responses of aspen, elk and wolves, mycorrhizae, and rooting relationships. More importantly, we've learned about the patterns of aspen forests in space and time, including some alarming news about changes in aspen forests over the past few decades. Reports were published that noted dramatic reductions in the area of aspen forests. The combined effects of fire prevention, cattle grazing, and increased ungulate populations had reduced the extent of aspen stands in Utah by more than half in just 50 years (Kay 1997; Bartos and Campbell 1998). The policy of "natural regulation" of elk populations (without the natural levels of predation by humans, wolves, and bears) in Yellowstone and Rocky Mountain National Parks appeared to prevent normal regeneration of aspen (Baker et al. 1997; Ripple et al. 2000). These reports of declines in aspen regeneration appeared to include components of weather patterns (Romme et al. 1995), and spatial variation of aspen regeneration within the Parks (Suzuki et al. 1999).

Many research projects since 1985 have tested management options for sustaining aspen, including fencing to control cattle and ungulate browsing of aspen suckers, and logging and prescribed fire to rejuvenate clones. A major lesson (as noted in these proceedings) has been that successful operations often require multiple approaches; logging a decadent clone may not lead to successful aspen regeneration without controlling browsing levels. Prescribed fires in the absence of browsing controls may lead to the death of ancient aspen clones.

[1]Colorado State University, Fort Collins, CO.

Aspen is a fascinating species, and changes in aspen forests have great implications for the plants, animals, and people of western landscapes. As our knowledge increased on the status and trends of aspen forests, we still lacked a complete picture across the West. Where were aspen forests increasing, decreasing, or holding steady? Where aspen forests were decreasing, what were the causes? How could land managers prescribe management treatments to enhance aspen stands? We felt that these important questions needed an increase in the level of collaboration or activity to foster and sustain aspen, and this symposium was the first step. These proceedings are the second step, with the information from the meeting documented for use by those who attended, and by those who could not join us in Grand Junction.

The third step will be the development of an Aspen Forest Network. The participants in the symposium were asked to fill out a questionnaire about their interests in developing more collaboration on aspen forests, and 94% of those in attendance said that a new "Aspen Forest Network" would be helpful or very helpful to them. Over the next year or two, we'll begin to develop a web page for the Aspen Forest Network, which will include basic information about aspen, links to other aspen pages, printable copies of papers on aspen (including this proceedings), and contact information for people interested in aspen. Continue learning more about aspen by visiting the Aspen Forest Network at: http://www.cnr.colostate.edu/outreach/aspen/.

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