

RESTORATION OF ASPEN IN DIFFERENT STAGES OF MORTALITY IN SOUTHERN UTAH

Investigators:

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Objectives:

(1) Determine if decadent, non-regenerating mature aspen stands could be regenerated through clearcutting; (2) determine the extent of ungulate use of regenerating aspen ramets; and (3) develop management recommendations for landowners and land managers.

Methodology

Clearcuts were made in late summer of 2001 in 10 different clones that exhibited various levels of decline on a continuum from relatively healthy to extremely deteriorated. Nested wildlife/livestock exclosures were constructed in each clearcut plot, as well as in a corresponding uncut control plot. In the fall of 2002, regenerating suckers were counted. In addition, vigor and ungulate utilization of these suckers were measured in the wildlife and livestock exclosures, as well as in an unprotected portion of the clearcut and control plots.

Results:

Regeneration of the clearcut plots ranged from none in the most decadent clones, to 75,000 stems/ha in the least decadent clone, and was significantly greater than the control plots. Greenhouse trials found no difference in regenerative abilities between clones, however regeneration success in the clearcut plots was significantly related clone basal area prior to treatment. Vigor, as measured by height of the suckers, was 1.5 to 2.1 times greater in the clearcut plots than in the control plots. Seventy-three percent of the suckers in the unprotected portion of the plots were heavily browsed, while only 12% were not browsed. As a result of severe decadence and browsing pressures, which may limit the clone's ability to successfully restock and remain on the landscape, management recommendations for Cedar Mountain aspen clones were successfully developed utilizing regenerative status, basal area, and browsing pressure.

Products:

- (1) Ohms, Seth Ray. 2003. Restoration of Aspen in Different Stages of Mortality in Southern Utah. M.S. Thesis, Utah State University, Logan, UT. 99 pp.
- (2) Ohms, S. R. and D. L. Bartos. 2004. *In review*. Browsing of aspen regeneration in a Utah aspen-dominated community. Rangeland Ecology and Management (Formerly the Journal of Range Management). Lakewood, CO.
- (3) Ohms, S. R. and D. L. Bartos. 2004. *In prep*. Clone basal area as a determinant of sucker production in a Utah aspen-dominated community. Western Journal of Applied Forestry. Bethesda, MD
- (4) Results presented at:
 - Utah Society for Range Management (SRM) 2002
 - Utah Wildlife Society 2003
 - Western Aspen Symposium 2004
 - International SRM meeting 2003
 - Utah Woolgrowers 2002
 - Multiple fieldtrips with local landowners and managers 2002-2004.
- (5) Video "Fading Gold—the decline of aspen in the west" Partial funding by UDWR, Fishlake N.F., R-4, RMEF, RMRS. This 15 minute video details the plight of aspen as it occurs in the west. This description is relevant to the Cedar Mountain Region of Southern Utah.

Additional Research Questions:

The role of insects and diseases related to the present aspen decline on Cedar Mountain was addressed but did not appear to be the primary factor leading to the decline.

Other Funding Partners:

Utah State University, U.S. Forest Service.