

Effects of Ungulate Browsing on Aspen Regeneration in Northwestern Wyoming¹

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Abstract—Although clearcutting has been demonstrated to be an effective means to regenerate aspen, stand replacement may be retarded under conditions of intense browsing of regeneration, such as that experienced near elk feedgrounds in northwestern Wyoming. We studied the effects of ungulate browsing on regenerating aspen following clearcutting on the National Elk Refuge. Nine deteriorating, aspen-dominated stands were clearcut in the spring of 1988, and regeneration characteristics were subsequently measured periodically through 1996. Big game exclosures were placed in three stands immediately following treatment. Post-treatment sucker densities were relatively low but theoretically sufficient for stand replacement. The percentage of “suckers” that obtained heights >2 m was significantly greater inside the exclosures after 9 years than outside the exclosures. Average heights of browsed and unbrowsed suckers were markedly taller within the exclosures. Our findings suggest that repeated annual browsing substantially increased sucker mortality and limited the height achieved by aspen stems. Small-scale clearcutting to regenerate aspen may not be effective in areas of winter ungulate densities similar to those adjacent to elk feedgrounds.

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