

WEED EXCLUSION / ERADICATION DEMONSTRATION¹

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Abstract. The Weed Exclusion / Eradication Demonstration (WEED) is an effort to investigate the long term weed exclusion potential of several species of introduced and native grasses while demonstrating the necessity of first year weed control. This project specifically addresses problematic weed invasion observed in reclaimed areas in the upper Clark Fork Basin in southwest Montana – Butte, Anaconda, and Deer Lodge. The WEED site is located approximately one mile west of Butte and is representative of a frequently encountered scenario in upper Clark Fork reclamation - a recently disturbed area surrounded by perennial weed infestations (spotted knapweed, yellow and dalmation toadflaxes, leafy spurge). Exclusion treatments consisted of six seed mixes that were designed to investigate those species best suited to exclude weeds over time. Seed mixes included competitive introduced grass mixes, less competitive native grass mixes, the Uptown Butte mix that has been used since 1997, and a Russian wildrye / alfalfa mix. Four inch (10.16 cm) drill row spacing, versus the standard eight inch (20.32 cm), was additionally implemented on two of the treatments to investigate the potential weed exclusion benefits of tighter drill row spacing. All eight treatments were replicated three times yielding 24 plots. The eradication treatment consisted of a first season blanket application of a broadleaf selective herbicide, after the grasses had developed sufficient leaf growth. The plots were split, at random, with one half receiving herbicide application. All plots were qualitatively evaluated, with respect to cover, in August of the second season. Second year results indicate that competitive introduced grasses and first year weed control substantially reduce or eliminate weed invasion. The introduced grass seed mixes also exhibited the highest percentages of second year cover.

Additional Key Words: grass and weed competition, herbicide application, weed control

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