

Using weed-resistant native seed mixes to restore burned areas

2007 Accomplishments

We are investigating effective ways to use knapweed-resistant native vegetation to prevent weed expansion on areas affected by fire. The research has three phases: 1) use known native knapweed-resistant species to restore slash pile burns and reduce weed expansion, 2) use greenhouse experiments to expand our list of knapweed-resistant species, and 3) field test these new resistant species. **Phase 1:** In May, we applied three treatments to 75 burn piles in the Ninemile Valley, Montana. The three treatments are current "USFS mix" (prairie junegrass, bluebunch wheatgrass, Idaho fescue, and basin wild rye); "competition mix" (prairie junegrass, bluebunch wheatgrass, Idaho fescue, basin wild rye, blanket-flower, yarrow, fringed sage, and silky lupine), and "no seed", natural controls. In August, we recorded the cover of all species that established during this first growing season. The cover and diversity of exotics did not differ among treatments (5-6 species in each treatment) and spotted knapweed had only initiated establishment (<1% cover). The cover and diversity of natives species, however, varied with treatment; lowest on no-seed, natural control, intermediate in the USFS mix treatment, and highest in the competition mix treatment (Figures 1 and 2). These plots will be re-measured in the early and late summers of 2008 and 2009. **Phase 2,** the greenhouse experiments, will be start this winter and **Phase 3,** field testing the new knapweed-resistant species will start in the spring of 2008.

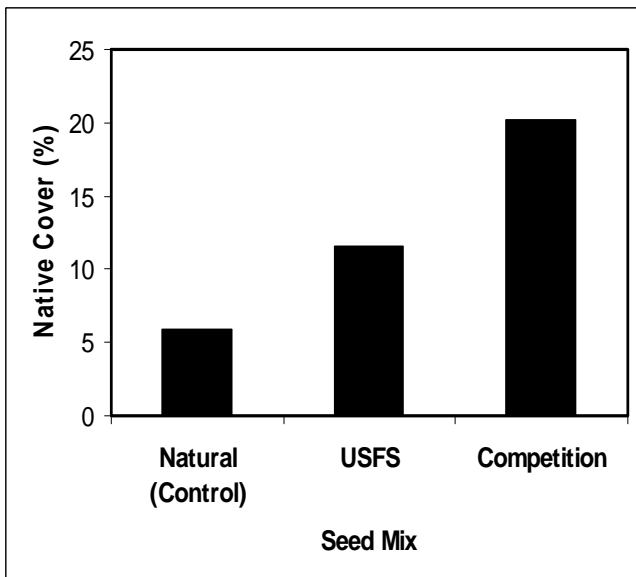


Figure 1. Cover of native species using natural seeding, USFS seed mix, and competition seed mix.

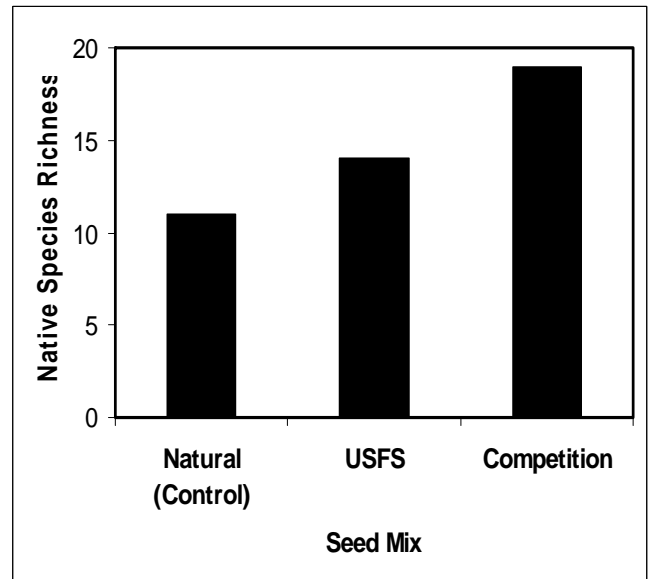


Figure 2. Diversity of native species using natural seeding, USFS seed mix, and competition seed mix.

Year Awarded: initial award in 2007

Project completion: 2010

Report number: 1 of 3

Expenditures (through 11/2007):
FY07 funding \$19,127, expend. \$16,366, \$2,761 remaining

•**Total funding \$50,000, total expend \$16,366; \$33,634 total remaining**

Partners/Contractors/Coop: University of Montana

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