

Equipment and Approaches for Restoring Diversity in Grass Monocultures

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Reestablishing diverse native plant communities on lands seeded to crested wheatgrass will enhance wildlife habitat and ecosystem processes. Manipulation of crested wheatgrass stands could free up soil water and nutrient resources not only for seeded native species, but also for weeds if sown species do not adequately preempt those resources. Given the risk of unsuccessful native species revegetation on Wyoming big sagebrush sites seeded to grass monocultures, we should determine strategies and methodologies to minimize weed invasion while increasing native diversity. Managers must balance the potential to diversify these lands with the risk of degrading them by opening them up to weed invasion. Because no methodologies can ensure success, managers need a set of control strategies to minimize risk while implementing native community restoration. To increase native diversity in grass monocultures we are testing chemical and mechanical manipulations followed by seeding at two sites in Utah. The treatments are: 1) partial wheatgrass control, 2) complete wheatgrass control, and 3) no crested wheatgrass control (undisturbed). Partial control plots were either disked one-way or sprayed with Roundup Original Max at a rate of 1.17 liters per hectare. Full control plots were either disked in two directions or sprayed at a rate of 3.21 liters per hectare. All treatments were applied on five, 1-acre plots in spring of 2005. Half of each treatment plot (0.5 acre) was seeded with 10 native species using a modified Truax drill during October 2005. Preliminary results of the crested wheatgrass control treatments and our experience using the modified Truax drill will be presented.