

## **Increasing Native Plant Diversity in Crested Wheatgrass Stands: Theory, Practice and Problems**

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Restoring native plant diversity to rangelands dominated by exotic annual weeds is a goal of land managers. One approach may be to combine the earlier strategy of reclamation using crested wheatgrass with a subsequent infusion with native plant species. Crested wheatgrass has been successfully established over millions of acres throughout the West and has demonstrated the ability to competitively exclude invasive annuals to their near extirpation on a site. Unfortunately, near pure stands of crested wheatgrass are subject to insect invasions and are limited in their value for biodiversity of other organisms. On western rangelands, the recapture of a site with crested wheatgrass from annual plant domination represents a shift back to a perennial ecology of resource utilization and fire frequency. Using crested wheatgrass as a surrogate for early colonizers creates a fire resistant vegetative cover that can suppress annuals. Unfortunately, it also provides resistance to the recovery of native perennials. Established stands of crested wheatgrass would have to be significantly disrupted to open niches for the insertion of native species. This disruption can most effectively be achieved through the use of mechanical or herbicide treatments. Theoretically, niche opening treatments are designed to weaken the existing stand's hold on site resources by reducing density and health of these plants while facilitating establishment of seeded native species. Two primary questions must be addressed: 1) can crested wheatgrass stands be sufficiently suppressed to allow insertion and establishment of the native species, and 2) does this niche opening expose sites to reinvasion by the annual weeds.