

10 YEARS OF TESTING INDIGENOUS PLANT MATERIAL ON DRASTICALLY DISTURBED MINELAND IN WESTERN MONTANA¹

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Abstract: The Development of Acid/Heavy-Metal Tolerant Germplasm Project began in 1995 to assemble and evaluate native indigenous plant material from areas heavily impacted by historic mining and smelting activities in western Montana. The Deer Lodge Valley Conservation District, in cooperation with the USDA-NRCS Bridger Plant Materials Center, has managed this project with grant monies from state and federal agencies responsible for the remediation and cleanup of the EPA's Upper Clark Fork River Basin Superfund Site. Seven field studies have compared more than 500 local and non-local seed and plant collections in approximately 1,900 plots. Site preparation has consisted of deep plowing to dilute surface contamination or amending soils with lime and deep plowing to raise pH levels. The Woody Comparative Evaluation Planting, established in 2000, contains 19 accessions of seven native shrub and tree species. Top performers of the indigenous ecotypes are common snowberry, ponderosa pine, silver buffaloberry, wax currant, and Woods' rose. At the deep-plowed and lime-amended site on Stuckey Ridge, 87 accessions of grasses, forbs, and shrubs, including two mixes each of indigenous and non-indigenous material, were planted in 2003. Superior performing indigenous species include basin wildrye, bluebunch wheatgrass, big bluegrass, slender wheatgrass, western wheatgrass, and silverleaf phacelia. Since the project's inception, three plants were selected for pre-varietal release to the commercial seed industry: Selected class of Washoe Germplasm basin wildrye and Prospectors Germplasm common snowberry, and Source Identified class of Old Works Germplasm fuzzytongue penstemon. Certified seed production fields of Washoe and Old Works have been established in Montana, Idaho, and Washington.

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