

PINE CREEK MINE, BISHOP CA

This project involved stabilizing 90 acres of historic tailings ponds. The tailings are located at the top of Pine Creek Canyon, which is located at 7500' on the eastern front of the Sierras 15 miles northwest of Bishop California. Heavy winds and harsh winter conditions were continually sending sediments down the canyon. The USFS reached an agreement with the current owner to stabilize these ponds by placing six inches of local alluvium on the ponds as a cap and seeding with a desired seed mix. Fortunately, the client analyzed the tailings and found them to be relatively benign and saturated with water. The contractor excavated 80,000 yards of alluvium from a historic barrow pit just east of the tailings. They installed a 6 inch cap and left a slight grade on the tailings surface. The seed was broadcast and dragged just prior to winter. Snow was falling during the last few days of seeding.

The USFS required that 1500 lbs of local seed to be collected for this project. We agreed to collect as much local seed as possible but emphasized to the USFS that this priority needs to allow room for aggressive colonizers whether native or not. We have seen many project designs where the native philosophy has compromised short-term physical stability by excluding colonizers.

This job has been successful with initial colonization of native colonizers as well as germination of many later seral shrubs. In the end, we will continue to expand our inventory of early seral natives and hope to strike a good balance between natives and the need for physical stability without introducing aggressive species that may interrupt normal seral advance.

<u>SPECIES</u>		<u>PLS #/ACRE</u>
Grasses		
Indian ricegrass	Achnantherum hymenoides	.15
Bluegrass sandberg	Poa secunda var. juncifolia	2.50
Wildrye Great Basin	Leymus cinereus	4.00
Wildrye creeping	Leymus triticoides	1.25
Squirreltail bottlebrush	Elymus elymoides	1.30
Desert needlegrass	Achnantherum speciosa	.25
Shrubs		
Rabbitbrush rubber	Chrysothamnus nauseosus	.15
Desert bitterbrush	Purshia glandulosa	3.00
Basin sagebrush	Artemisia tridentata tridentata	.50
Bittercherry	Prunus emarginata	.25
Desert peach	Prunus andersonii	.65
Forbs		
Giant blazing star	Mentzelia laevicaulis	.10
Buckwheat sulfur	Eriogonum umbellatum	.30
Buckwheat nakedstem	Eriogonum nudum	.08
Buckwheat flat-top	Eriogonum fasciculatum	.10
Louisiana sagebrush	Artemisia ludoviciana	.45
Prickly poppy	Argemone munita	.20
Penstemon	Penstemon speciosa	.10
Dusty maidens	Chaenactis douglasii	.10

Total PLS lbs per acre: 15.43

This blend applied 160 seeds per square foot. We have found that Poa, Leymus, and Achnantherum all exhibit slow germination and low seedling vigor. We were fortunate that seeding occurred in the fall, allowing the species to winter over and gain the benefits from the cool stratification and spring freeze/thaw cycles. The most aggressive colonizers included the three forbs, Blazing star, Louisiana sagebrush, and Prickly poppy. Rabbitbrush was also initially quite common.



TAILINGS BEFORE RECLAMATION 2001



SOIL APPLICATION 2001

CHRYSOTHAMNUS 2002



TAILINGS 2005



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