

Equipment and Strategies to Enhance the Post-Wildfire Establishment and Persistence of Great Basin Native Plants

**USDA NRCS
Aberdeen, Idaho, Plant Materials Center
Progress Report
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The objectives of this project are to: examine seeding techniques for Wyoming big sagebrush; test seeding technology for native species, particularly native forbs; compare the ability of a modified rangeland drill and an experimental minimum-till drill to plant native seed species of diverse size and to reduce surface disturbance; apply and examine the use of USGS proposed monitoring protocols for gauging seeding success for both the short and long term; and provide plantings for long-term examination of livestock on diversity in native seedings.

The minimum-till drill (Truax Rough Rider range drill) which has been significantly modified by PMC personnel was provided by the USDA FS Rocky Mountain Research Station. The PMC provided transportation of the equipment including a trailer and tractor and the Utah Division of Wildlife provided an additional tractor. The modified rangeland drill (Kemmerer range drill) was provided by the USDI BLM. Photographs of each drill are attached.

The PMC mixed the seed and rice hull mixtures and calibrated both drills prior to seeding. The PMC also made a modification to the Kemmerer drill by replacing the existing drop tubes with used aluminum 3 inch diameter irrigation pipe to facilitate seed flow to the drill openers. The aluminum pipe provided a more slippery surface for the seed to flow. The drills were set up to both broadcast and drill seed in the same pass so species that require broadcasting or very shallow planting were broadcast and species needing deeper seeding were drill seeded in alternating rows.

Wildfire sites near Mountain Home, ID and Burns, OR were seeded during the week of October 28, 2007. Approximately 184.3 total acres were seeded in plots to the following mixes:

Species	Cover Crop Mix	
	24.3 acres	
	Pounds PLS/ac	Pounds Bulk Seed/ac
Rimrock Indian ricegrass	4.5	5.25
Anatone bluebunch wheatgrass	4.0	4.64
Rice Hulls		6.16

Drill Mix

80.0 acres

<u>Species</u>	<u>Pounds PLS/ac</u>	<u>Pounds Bulk Seed/ac</u>
Rimrock Indian ricegrass	1.0	1.17
Munro globemallow	0.50	0.94
Anatone bluebunch wheatgrass	2.0	2.32
Toe Jam Cr. b. squirreltail	1.0	1.09
Sulphurflower buckwheat	0.24	0.39
Rice Hulls		1.79

Mountain Home 10X Broadcast Mix

5 acres

<u>Species</u>	<u>Pounds PLS/ac</u>	<u>Pounds Bulk Seed/ac</u>
Wyoming big sagebrush	1.30	6.22
Rubber rabbitbrush	0.50	1.85
Hotrock penstemon	0.09	0.16
Mtn. Home Sandberg bluegrass	0.40	0.48
Rice Hulls		5.05

Mountain Home 5X Broadcast Mix

30 acres

<u>Species</u>	<u>Pounds PLS/ac</u>	<u>Pounds Bulk Seed/ac</u>
Wyoming big sagebrush	0.65	3.11
Rubber rabbitbrush	0.50	1.85
Hotrock penstemon	0.09	0.16
Mtn. Home Sandberg bluegrass	0.40	0.48
Rice Hulls		5.05

Mountain Home Standard Broadcast Mix

5 acres

<u>Species</u>	<u>Pounds PLS/ac</u>	<u>Pounds Bulk Seed/ac</u>
Wyoming big sagebrush	0.13	0.62
Rubber rabbitbrush	0.50	1.85
Hotrock penstemon	0.09	0.16
Mtn. Home Sandberg bluegrass	0.40	0.48
Rice Hulls		3.54

Burns 10X Broadcast Mix

5 acres

<u>Species</u>	<u>Pounds PLS/ac</u>	<u>Pounds Bulk Seed/ac</u>
Wyoming big sagebrush	0.95	3.25
Rubber rabbitbrush	0.50	1.85
Hotrock penstemon	0.09	0.16
Mtn. Home Sandberg bluegrass	0.40	0.48
Rice Hulls		8.03

Burns 5X Broadcast Mix

30 acres

<u>Species</u>	<u>Pounds PLS/ac</u>	<u>Pounds Bulk Seed/ac</u>
Wyoming big sagebrush	0.45	1.54
Rubber rabbitbrush	0.50	1.85
Hotrock penstemon	0.09	0.16
Mtn. Home Sandberg bluegrass	0.40	0.48
Rice Hulls		6.62

Burns Standard Broadcast Mix

5 acres

<u>Species</u>	<u>Pounds PLS/ac</u>	<u>Pounds Bulk Seed/ac</u>
Wyoming big sagebrush	0.10	0.34
Rubber rabbitbrush	0.50	1.85
Hotrock penstemon	0.09	0.16
Mtn. Home Sandberg bluegrass	0.40	0.48
Rice Hulls		3.81

PMC personnel also assisted with the evaluation of the plots at Mountain Home during the week of June 2, 2008.

It is planned to repeat these trials in the fall of 2008. Location of the trials to be determined based on areas that burn during the 2008 fire season.

Publications

(Available online at <http://plant-materials.nrcs.usda.gov/idpmc/publications.html>)

St. John, L, Cornforth, B., Simonson, B., Ogle, D. and D. Tilley. 2007. Technical Note 20: Calibrating the Truax Rough Rider Drill for Restoration Plantings. USDA NRCS Aberdeen Plant Materials Center, Aberdeen, ID. April, 2008. December 10, 2007. 15p.



Kemmerer drill with modified drop tubes and jack stands for safety.



Truax Rough Rider drill with modifications by Aberdeen Plant Materials Center.