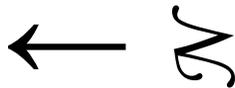


NRCs Aberdeen Plant Materials Center  
 Display Nursery, Orchard, Idaho  
 (Planted November 16, 2004)



\*=Introduced species

White River Indian Ricegrass	Thurber's Needlegrass
Nezpar Indian Ricegrass	Sherman Sandberg Bluegrass
Paloma Indian Ricegrass	High Plains Sandberg Bluegrass
Rimrock Indian Ricegrass	Mountain Home Sandberg Bluegrass
Ribstone Indian Ricegrass	Toole County, MT Sandberg Bluegrass
Sand Hollow Bottlebrush Squirreltail	Hanford Source Sandberg Bluegrass
Fish Creek Bottlebrush Squirreltail	Nordan Crested Wheatgrass*
Toe Jam Bottlebrush Squirreltail	Hycrest Crested Wheatgrass*
9019219 Bottlebrush Squirreltail	CD-II Crested Wheatgrass*
Shaniko Plateau Bottlebrush Squirreltail	Ephraim Crested Wheatgrass*
Bannock Thickspike Wheatgrass	Douglas Crested Wheatgrass*
Sodar Thickspike Wheatgrass	Roadcrest Crested Wheatgrass*
Critana Thickspike Wheatgrass	P-27 Siberian Wheatgrass*
Schwendimar Thickspike Wheatgrass	Vavilov Siberian Wheatgrass*
Pryor Slender Wheatgrass	Luna Pubescent Wheatgrass*
San Luis Slender Wheatgrass	Manska Pubescent Wheatgrass*
Revenue Slender Wheatgrass	Greenleaf Pubescent Wheatgrass*
Rosana Western Wheatgrass	Rush Pubescent Wheatgrass*
Rodan Western Wheatgrass	Eejay Altai Wildrye*
Arriba Western Wheatgrass	Pearl Altai Wildrye*
Goldar Bluebunch Wheatgrass	Prairieland Altai Wildrye*
Anatone Bluebunch Wheatgrass	Tetra-can Russian Wildrye*
Columbia Bluebunch Wheatgrass	Bozoisky Select Russian Wildrye*
Jim Creek Bluebunch Wheatgrass	Syn-A Russian Wildrye*
Wahluke Bluebunch Wheatgrass	Mankota Russian Wildrye*
P-5 Bluebunch Wheatgrass	Eagle Western Yarrow
P-7 Bluebunch Wheatgrass	Great Northern Western Yarrow
P-12 Bluebunch Wheatgrass	Timp Utah Sweetvetch
P-15 Bluebunch Wheatgrass	Richfield Selection Firecracker Penstemon
Secar Snake River Wheatgrass	Scarlet Globemallow
Expedition Snake River Wheatgrass	Maple Grove Lewis Flax
E-26 Snake River Wheatgrass	Appar Blue Flax*
SERDP Snake River Wheatgrass	Wyoming Big Sagebrush
Magnar Basin Wildrye	Snake River Plains 4-Wing Saltbush
Trailhead Basin Wildrye	Wytana 4-Wing Saltbush
Washoe Basin Wildrye	Rincon 4-Wing Saltbush
U70-01 Basin Wildrye	9016134 Gardner's Saltbush
U108-02 Basin Wildrye	Northern Cold Desert Winterfat
U100-01 Basin Wildrye	Hatch Winterfat
Initial Point Sheep Fescue	Open Range Winterfat
Covar Sheep Fescue	Immigrant Forage Kochia*

## Introduction

The Orchard Display Nursery was planted on November 16, 2004 in cooperation with the Great Basin Native Plant Selection and Increase Project. The test site is located on loamy soils in an ecological site that historically supported a Wyoming big sagebrush, bluebunch wheatgrass, Thurber's needlegrass plant community.

The original planting included 82 accessions of 27 native and introduced grass, forb and shrub species. Each accession was planted in a 7 X 60 foot plot. See Tilley et al (2005) for descriptions of the species and accessions planted. The remaining area was planted to a cover mixture of 50% Anatone bluebunch wheatgrass, 20% Bannock thickspike wheatgrass, 20% Magnar basin wildrye and 10% Snake River Plains fourwing saltbush.

The Orchard display nursery was evaluated from 2005 to 2008 and again in 2010.

## Materials and Methods

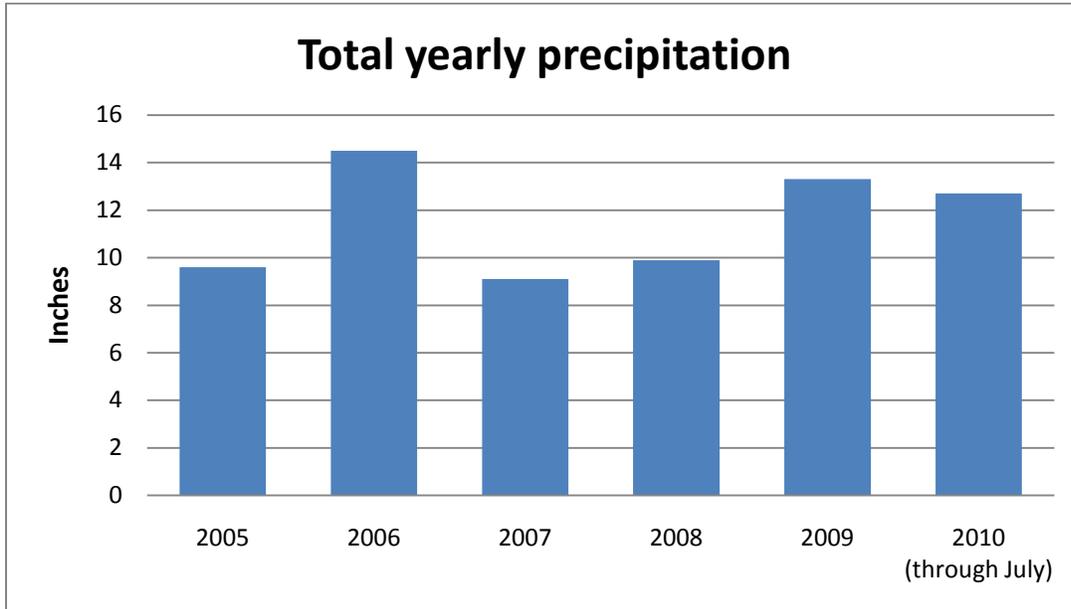
The Bureau of Land Management (BLM) prescribed burned the site in the fall of 2002. The site was later sprayed by Aberdeen PMC staff in May 2003 and May 2004 with a Roundup/2, 4-D herbicide mix to create a weed free seedbed. Due to limited breakdown of dead grass clumps that would inhibit proper seed placement with a drill, and to ensure a clean seedbed, the decision was made to cultivate the site with a culti-packer just prior to seeding. During the first evaluation most plots contained high densities of Russian thistle (*Salsola* sp.) and moderate amounts of bur buttercup (*Ranunculus testiculatus* Crantz) plants. Russian thistle plants were approximately two to three inches tall and the buttercup plants had already flowered. At the time of the second evaluation, there was a heavy infestation of tumble mustard (*Sisymbrium altissimum* L.). Grass plots were consequently sprayed again on June 9, 2005 with 16 oz. 2, 4-D and 8 oz. Clarity per acre to control the mustard.

The first evaluation of the plots for initial establishment was conducted on April 27, 2005 using a frequency grid based on that described by Vogel and Masters (2001). The grid measured approximately 40X41 inches, having four ten inch columns (to incorporate 1 drill row per column) and five rows, totaling 20 cells. The first grid was laid on the rows approximately two grid lengths (80 inches) into the plot. Counts were made of the cells that contained at least one plant. Grids were subsequently flipped and evaluated three additional times giving a total of 80 evaluated cells. Total area for one grid is approximately 1 m<sup>2</sup>. Total area evaluated is therefore approximately 4 m<sup>2</sup>. A conservative estimate of plant density (plants/m<sup>2</sup>) is the total number of cells containing at least one plant divided by four. Numbers for approximate plants/m<sup>2</sup> were then divided by 10.8 to calculate approximate plants/ft<sup>2</sup>. It is important to note that because cells with plants were counted and not number of plants per cell, the best possible score is 100 hits per five frames which converts to 20 plants/m<sup>2</sup> or 1.85 plants/ft<sup>2</sup>. Actual plant density may be higher than the numbers indicated below. All tables have been arranged with accessions ranked from highest plant density to the lowest at the time of the final evaluation in 2010. Due to the non-replicated design, data were not analyzed for significance.

### *Weather*

On average, this site receives 8 to 12 inches of mean annual precipitation. Approximately 60- 65 percent of this comes as winter snow and rain with the remaining 35- 40 percent primarily as

spring rain. The summer months are commonly very dry, and it is common to have no precipitation during the months of July and August. From 2005 to 2010 the mean annual precipitation was 11.5 inches. The lowest water years were 2007, 2005 and 2008 which received 9.1, 9.6 and 9.9 inches respectively. Water years 2010, 2009 and 2006 had good moisture with 12.7, 13.3 and 14.5 inches respectively (USDA-NRCS, 2010).



## Performance Results

Native Grasses Species	Name or accession	4/27/05	5/25/05	5/30/06	5/16/07	5/1/08	7/2/10
		-----Plants/ft <sup>2</sup> -----					
<b>Indian ricegrass</b>	Rimrock	0.37	0.20	0.00	0.00	0.00	0.00
	White River	0.56	0.17	0.00	0.00	0.00	0.00
	Nezpar	0.42	0.17	0.00	0.00	0.00	0.00
	Ribstone	0.14	0.09	0.00	0.00	0.00	0.00
	Paloma	0.05	0.00	0.00	0.00	0.00	0.00
<b>Squirreltail</b>	Sand Hollow	0.37	0.20	0.19	0.20	0.24	0.15
	Fish Creek	0.97	0.54	0.26	0.22	0.67	0.11
	Shaniko Plateau	0.81	0.52	0.06	0.09	0.00	0.06
	Toe Jam Creek	0.58	0.17	0.00	0.00	0.02	0.00
	9019219	0.02	0.02	0.00	0.00	0.00	0.00
<b>Thickspike wheatgrass</b>	Bannock	1.04	1.07	0.58	0.43	0.28	0.39
	Schwendimar	0.69	0.52	0.39	0.24	0.17	0.30
	Critana	0.90	0.56	0.24	0.17	0.00	0.04
	Sodar	0.37	0.30	0.15	0.07	0.00	0.04
<b>Slender wheatgrass</b>	Pryor	0.30	0.30	0.02	0.00	0.00	0.07
	Revenue	1.00	0.93	0.00	0.00	0.00	0.00
	San Luis	0.60	0.69	0.00	0.00	0.00	0.00
<b>Western wheatgrass</b>	Arriba	0.16	0.15	0.06	0.00	0.00	0.04
	Rodan	0.28	0.35	0.13	0.00	0.00	0.00
	Rosana	0.05	0.20	0.04	0.00	0.00	0.00
<b>Bluebunch wheatgrass</b>	Jim Creek	0.83	1.02	1.02	1.07	1.10	0.99

	Wahluke	0.97	1.26	1.02	0.98	1.10	0.80
	P-12	1.34	1.59	1.04	0.89	0.82	0.61
	Anatone	0.81	1.15	0.80	0.69	0.47	0.61
	Columbia	1.30	1.23	0.84	0.83	0.65	0.54
	P-15	0.60	0.93	0.54	0.50	0.41	0.45
	P-7	0.93	1.15	0.67	0.57	0.75	0.41
	Goldar	0.51	0.37	0.33	0.19	0.24	0.09
	P-5	0.42	0.61	0.22	0.13	0.17	0.11
<b>Snake River wheatgrass</b>	SERDP	1.02	0.94	0.67	0.70	0.80	0.50
	Secar	1.00	1.11	0.76	0.56	0.54	0.46
	Expedition	1.27	1.44	0.54	0.41	0.34	0.26
	E-26	0.21	0.23	0.22	0.13	0.11	0.19
<b>Basin wildrye</b>	U100-01	0.53	0.41	0.11	0.13	0.06	0.17
	U108-02	0.56	0.57	0.24	0.11	0.09	0.15
	Trailhead	0.60	0.52	0.26	0.17	0.04	0.11
	Magnar	0.28	0.22	0.04	0.04	0.02	0.09
	Washoe	0.21	0.09	0.09	0.06	0.00	0.06
	U70-01	0.30	0.22	0.02	0.02	0.02	0.00
<b>Sheep fescue</b>	Covar	0.16	0.00	0.07	0.07	0.06	0.06
	Initial Point	0.21	0.04	0.02	0.00	0.02	0.04
<b>Thurber's needlegrass</b>	Thurber's	0.00	0.00	0.00	0.00	0.00	0.00
<b>Sandberg bluegrass</b>	Hanford Source	0.00	0.00	0.19	0.00	0.56	0.22
	Mountain Home	0.00	0.00	0.35	0.00	0.03	0.02
	High Plains	0.25	0.00	0.54	0.00	0.00	0.00
	Sherman	0.00	0.00	0.02	0.00	0.00	0.00
	Toole County, MT	0.00	0.00	0.04	0.00	0.00	0.00

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<b>Introduced Grasses</b>		<b>4/27/05</b>	<b>5/25/05</b>	<b>5/30/06</b>	<b>5/16/07</b>	<b>5/8/08</b>	<b>7/2/10</b>
<b>Species</b>	<b>Name or accession</b>	<b>-----Plants/ft<sup>2</sup>-----</b>					
<b>Crested wheatgrass</b>	Nordan	1.30	1.19	1.10	0.67	0.88	0.56
	Roadcrest	1.30	0.07	0.52	0.19	0.71	0.28
	Hycrest	0.39	0.24	0.15	0.07	0.04	0.06
	Ephraim	0.65	0.28	1.23	0.02	0.00	0.00
	CD-II	0.56	0.24	0.20	0.00	0.00	0.00
	Douglas	0.28	0.04	0.09	0.00	0.04	0.00
<b>Siberian wheatgrass</b>	Vavilov	0.65	0.20	0.61	0.26	0.54	0.13
	P-27	0.09	0.02	0.33	0.00	0.00	0.00
<b>Pubescent wheatgrass</b>	Manska	0.69	0.65	0.28	0.13	0.09	0.02
	Greenleaf	0.60	0.59	0.15	0.09	0.02	0.02
	Luna	0.79	0.54	0.13	0.00	0.22	0.00
<b>Intermediate wheatgrass</b>	Rush	0.60	0.56	0.00	0.00	0.00	0.00
	Pearl	0.35	0.15	0.02	0.04	0.00	0.00
<b>Altai wildrye</b>	Prairieland	0.56	0.39	0.00	0.00	0.00	0.00
	Eejay	0.16	0.28	0.00	0.00	0.00	0.00
<b>Russian wildrye</b>	Bozoisky Select	0.72	0.54	0.58	0.35	0.11	0.20
	Mankota	0.46	0.28	0.32	0.19	0.02	0.15
	Bozoisky II	0.21	0.13	0.24	0.26	0.09	0.13
	Tetracan	0.42	0.20	0.17	0.07	0.04	0.03

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