CORVALLIS PLANT MATERIALS CENTER
NATURAL RESOURCES CONSERVATION SERVICE
CORVALLIS, OREGON
Amy Bartow

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**THE 2006 MOUNT RAINIER NATIONAL PARK ANNUAL REPORT:**
*State Road 123 Revegetation Project*

## I. Brief Background of Project

The Corvallis Plant Materials Center (PMC) entered into a new agreement with Mount Rainier National Park in 2004 to provide native plant materials for the ecological restoration of the State Road 123 construction area. It was agreed that the PMC would produce a minimum of 25 lbs (PLS) of *Elymus glaucus*, 50 lbs (PLS) of *Bromus carinatus*, and 25 lbs (PLS) of *Festuca rubra*. A delivery of seed was scheduled to occur in fall of 2006 and the project should be completed in the fall of 2007.

Activities in 2006 included cleaning of native seed collected by NPS staff, establishment, maintenance, harvest and seed cleaning of three grass seed increase fields.

## II. Accessions Involved

Figure 1. California brome field at the Corvallis Plant Materials Center, May 15, 2006.

Accessions included for State Road 123 are listed in Table 1. This table also displays activities performed by PMC staff in 2006.

Table 1. Accessions involved for State Road 123 Revegetation Project with Corvallis Plant Materials Center in 2006.

| Scientific Name | Common Name | Symbol | Accession # | 2005 Activity[1] |
|---|---|---|---|---|
| *Bromus carinatus* | California brome | BRCA5 | 9079309 | sfp |
| *Elymus glaucus* | blue wildrye | ELGL | 9079310 | sfp |
| *Festuca rubra* | red fescue | FERU | 9079348 | sfp |

1- sfp= seed field production.

**III. Experimental Propagation**

There was no experimental propagation in 2006.

**IV. Seed Increase**

Park staff provided the PMC with seed for fall planting. On October 21, 2006 fields of FERU and BRCA5 were expanded using a six-row Plantet-jr® seeder with a carbon-banding unit. Fields were sprayed with Diuron (a non-selective pre-emergent herbicide) after planting. Fall rains began within a week of planting, therefore no irrigation was needed. Seedlings emerged within 2-3 weeks. The ELGL field did not need to be expanded this year.

Table 2. Seed increase field establishment October, 2006.

| Species/ Ac | Seeding Rate | Method | Weed Control |
|---|---|---|---|
| *Bromus carinatus*<br>0.17 acre<br>48 150' rows | 13 (bulk)lbs/acre | Seeded with six-row Planet Jr. seeder equipped with a carbon-banding unit | Diuron application following carbon banding |
| *Festuca rubra*<br>.07 acres<br>18 150'rows | 3 (bulk)lbs/acre | Seeded with six-row Planet Jr. equipped with a carbon-banding unit | Diuron application following carbon banding |

**2005 Field Seed Production Notes:**

All three fields (only the portions that were over 1 year old) were fertilized in October 2005 with 25 lbs/ac nitrogen (N), and in February 2006 with 50 lbs/ac N plus 15 lbs/ac sulfur (S). Weed control within the plots was mainly performed by hand-hoeing and rouging. Glyphosate was used on the field borders. Grass fields were burned using drip torches following harvest. In mid October, a new pre-emergent herbicide, Outlook®, was

applied to all fields that had been harvested in 2006. It will be evaluated in the winter and spring for effectiveness.

The *Festuca rubra* field was harvested by a hand-crafted machine nick-named the "moon rover." It is a self-propelled swather. The machine uses a conveyer belt to move all material after it is cut and loads it into bags. Two people operate it. One person drives and the other helps feed the material into bags. The moon rover has all the benefits of hand harvesting without the labor. Once material was bagged, it was placed onto tarps to dry and cure. It was then fed through a plot thresher and cleaned as usual.

Figure 2. PMC staff harvesting a seed increase field using the "moon rover."

Table 3. Seed Harvested for State Road 123 Revegetation Project at Corvallis Plant Materials Center in 2006.

| Species | Area Harvested | Date(s) | Method | Yield | Comments |
|---|---|---|---|---|---|
| *Bromus carinatus* | .045 acre | June 26 | Seed stripper | 20 lbs | Fair stand, high vigor |
| *Festuca rubra* | 0.12 acre | June 23 | Moon rover | 26 lbs | Excellent stand, high vigor |
| *Elymus glaucus* | 0.58 acre | June 29 | Swath/ combine | 270 lbs | Excellent stand, high vigor |

After harvest in 2005, *Festuca rubra* field was burned using drip torches. Three one-meter plots were sprayed with water prior to burning to act as control plots. These plots remained unburned as the fire passed, and were evaluated for seed yields in 2006. Vegetation and seed was harvested from six plants in unburned plots and six plants in the burned area of the field. Plants in the unburned plants had more vegetation than the burned plants. Burned plants produced, on average, 10g more seed per plant than

unburned plants. Burning also reduces thatch on the fields which makes pre-emergent herbicides more effective.

## V. Delivery of Plant Materials.

A portion of the seed produced was requested for delivery on September 12, 2006. It was mailed to the park and the remaining seed will be stored at the PMC until requested.

Table 4. Seed delivered on September 12, 2006 to Mount Rainier National Park.

| Species | Bulk Amt delivered | % Germination | % Purity | PLS amt delivered | Amount Remaining |
|---|---|---|---|---|---|
| *Bromus carinatus* | 20 lbs | 90 | 99.44 | 17.9 | 0 |
| *Festuca rubra* | 26 lbs | 91 | 91.28 | 23.5 | 0 |
| *Elymus glaucus* | 88 lbs | 96 | 98.89 | 21.6 | 181 lbs of 2006 seed<br>144 lbs of 2005 seed |