

MOUNT RAINIER NATIONAL PARK
State Road 123 Revegetation Project

2004 Annual Summary Report
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NATURAL RESOURCES CONSERVATION SERVICE
CORVALLIS PLANT MATERIALS CENTER
CORVALLIS, OREGON

INTRODUCTION- The Corvallis Plant Materials Center (PMC) entered a new agreement with Mount Rainier National Park (NPS) to provide native plant materials for the ecological restoration of State Road 123. It was agreed that the PMC would produce a minimum of 25 lbs (PLS) of blue wildrye, 50 lbs (PLS) of California brome, and 25 lbs (PLS) of red fescue for delivery in the fall of 2005.

ACCOMPLISHMENTS- Seed collected by the park staff in 2003 was provided to the PMC and seeded into cone-tainers in late fall of 2003. Plants were transplanted into seed increase fields in early spring of 2004. Fields were hand-harvested in late June and July. The fields of Blue wildrye and California brome produced 8 lbs (bulk) and 20 lbs (bulk), respectively. NPS staff collected seed again in 2004 and amounts were large enough to seed directly into fields in September and October. Fields will not be expanded in future years.

TECHNOLOGY DEVELOPMENTS- Park staff had collected very little seed in the fall of 2003, but were hoping to have moderate size fields (0.5 acre) established by fall of 2004. The PMC received the 46g of blue wildrye and sowed it into cone-tainers. Seedlings were grown in a greenhouse for two months (November and December), then moved to a lathhouse to acclimate to winter temperatures. They were transplanted into the fields in late February. It was not known if the seedlings were properly vernalized due to late exposure to winter temperatures. Plants flowered abundantly considering that it was the first production year. The .02 acre field produced 8 lbs. This technique worked well for quickly establishing a seed increase field with very small amount of seed.

**THE 2004 MOUNT RAINIER NATIONAL PARK ANNUAL REPORT:
*State Road 123 Revegetation Project***

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NATURAL RESOURCES CONSERVATION SERVICE
CORVALLIS, OREGON
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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*.

Activities in 2004 included cleaning of native seed collected by NPS staff, establishment, and maintenance of three grass seed fields, and harvest and seed cleaning of two grass seed increase fields.

II. Accessions Involved

Accessions included for State Road 123 are listed in Table 1. This table also displays activities performed by PMC staff in 2004.

Table 1. Accessions involved for State Road 123 cooperative agreement with Corvallis Plant Materials Center in 2004.

Scientific Name	Common Name	Symbol	Accession #	2004 Activity¹
<i>Bromus carinatus</i>	California brome	BRCA5	9079309	Sfp
<i>Elymus glaucus</i>	blue wildrye	ELGL	9079310	Sfp
<i>Festuca rubra</i>	Red fescue	FERU	9079308	Sfp

1- sfp= seed field production.

III. Experimental Propagation

There was no experimental propagation in 2004.

IV. Field Seed Increase

Fall 2003 seeding:

Seed increase field of California brome was established on October 23, 2003, from seed that was provided by the park and cleaned by PMC staff. A Plantet-jr single row seeder was used to establish the field. 150g of seed was used to sow three 150' rows. Field had

been sprayed with Roundup one week prior to seeding. Very minimal seed of *Elymus glaucus* was provided (40g) and it was decided that the seed would be sown into containers. These seedlings were grown in a greenhouse for two months in the late fall then moved outside in December to acclimate to winter temperatures. Seedlings were transplanted into a field on March 2, 2004 on 1' X 1' spacing.

Fall 2004 seeding:

Park staff quickly provided the PMC with seed that was collected in the fall of 2004 for early fall seeding. Fields of ELGL and BRCA5 were expanded and the FERU field was established. ELGL field was created using a large seven-row seeder equipped with a carbon-banding unit. BRCA5 and FERU were seeded with a six-row Planetet-jr seeder. FERU rows were carbon-banded using a backpack sprayer.

Table 2. Seed Increase Field Establishment in Fall 2004.

Species/ Ac	Seeding Rate	Method	Weed Control
BRCA .03 acre 8 150' rows	10 (bulk)lbs/acre	Seeded with six-row Planet Jr. seeder	none
ELGL .57 acre 165 150' rows	14 (bulk)lbs/acre	Carbon banded	Diuron application following carbon banding
FERU .04 acres 10 150' rows	7 (bulk)lbs/acre	Seeded with six-row Planet Jr. seeder carbon-banded using a backpack sprayer	Diuron application following carbon banding

2004 Field Seed Production Notes:

Both grass species received three applications of Tilt and Bravo fungicides in April/early May for rust control. Both fields were fertilized in October 2002 with 25 lbs/ac nitrogen (N), and in February with 50 lbs/ac N plus 15 lbs/ac sulfur (S). Weed control within the plots was mainly performed by hand-hoeing and rouging. Roundup was used on the field borders. Grass fields were mowed, and the residue was baled as necessary following seed harvest.

Fields established in the late fall of 2003 grew vigorously and flowered well in the late spring. The ELGL field contained many *Bromus vulgaris* plants. The park determined that the seed collectors had mistakenly collected the *Bromus vulgaris* and mixed it in with the ELGL seed. PMC hand-stripped seed from the *Bromus* plants, saved it for the park, and removed the *Bromus* plants. ELGL and BRCA5 fields were harvested by hand using sickles and rice knives.

Table 3. Seed Harvested for State Road 123 Revegetation Project at Corvallis Plant Materials Center in 2004.

Species	Area Harvested	Date(s)	Method	Yield	Comments
BRCA5	.014 acre	June 21	Hand	20lbs	Excellent stand, high vigor
ELGL	.08 acre	July 9	Hand	8lbs	Excellent stand, high vigor

All seed produced in 2004 will be held in PMC seed storage facilities and delivered in 2005 when contract requirements have been met.

VI. Delivery of Plant Materials.

No deliveries were made in 2004.