

CORVALLIS PLANT MATERIALS CENTER
NATURAL RESOURCES CONSERVATION SERVICE
CORVALLIS, OREGON
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THE 2008 MOUNT RAINIER NATIONAL PARK ANNUAL REPORT:
Steven's Canyon Road Revegetation Project

I. Brief Background of Project

The Corvallis Plant Materials Center (PMC) entered into a new agreement with the National Park Service (NPS) in 2007 to provide native plant materials for ecological restoration along Steven's Canyon Road following road construction. It was agreed that the PMC would establish and maintain seed increase fields of three grasses (five accessions). The PMC will deliver 195 lbs (PLS) of upper elevation grasses and 135 lbs (PLS) of lower elevation grasses. This project is expected to be complete in 2009. All seed is planned to be delivered in the fall of 2009. Activities in 2008 included wild seed collection and seed increase field establishment of high and low elevation ecotypes of three grasses.

II. Accessions Involved

Accessions included for the Steven's Canyon Road revegetation project in 2008 are listed in Table 1. This table also displays activities performed by PMC staff.

Table 1. Accessions involved for the Steven's Canyon Road revegetation project in 2008.

Species	Common Name	Code	Accession Number	Activity in 2008¹
Upper Elevation				
<i>Elymus glaucus</i>	blue wildrye	ELGL	9079518	Col, sfp
<i>Festuca rubra</i>	red fescue	FERU	9079519	Col, sfp
<i>Bromus carinatus</i>	California brome	BRCA5	9079531	Col, sfp
Lower Elevation				
<i>Elymus glaucus</i>	blue wildrye	ELGL	9079520	Sfp
<i>Festuca rubra</i>	red fescue	FERU	9079521	Sfp

¹- sfp= seed increase, col= collected plant materials

III. Wild Seed Collection

PMC staff was responsible for collecting seed from the park to establish the seed increase fields. Collection boundaries were determined by park staff. The upper collection zone was the intersection of Steven's Canyon Rd. and Paradise Rd. down to the intersection of

Steven's Creek and Steven's Canyon Rd. The lower collection zone was defined as the intersection of Backbone Ridge and Steven's Canyon Rd. down to the entrance station near the intersection of Steven's Canyon Rd. and SR 123. The dominant *Bromus* species along the upper section of the road was determined to be *Bromus inermis* (a non-native plant). This species was not collected by PMC staff. Few plants of *Bromus carinatus* were found along the upper roadsides, but it was very limited.

Table 2. Wild collections for the Steven's Canyon Road revegetation project in 2008.

Species	Accession Number	Collection dates	Amount Collected
Upper Elevation			
<i>Elymus glaucus</i>	9079518	August 26-28	152 g
<i>Festuca rubra</i>	9079519	August 26-28	1052 g
<i>Bromus carinatus</i>	9079531	August 26-28	10 g

Seeds were brought back to the PMC greenhouses to dry. Seed was cleaned and then informal germination tests were performed on both high and low ecotypes of *Elymus glaucus* and *Festuca rubra* prior to sowing.

IV. Field Seed Increase Activities

All of the fields that were seeded in the fall of 2007 emerged well and grew vigorously. Only the low elevation ecotypes of *E. glaucus*, *F. rubra*, and the high elevation ecotype of *B. carinatus* flowered and set seed in summer of 2008. All three fields were harvested using a seed stripper.

Table 3. Seed Harvested for Steven's Canyon Road Revegetation Project at Corvallis Plant Materials Center in 2008.

Species	Accession Number	Field size	Harvest date	Method	Yield
Upper Elevation					
<i>Bromus carinatus</i>	9079531	0.001	July 10-15	seed stripper	2.2 lbs
Lower Elevation					
<i>Elymus glaucus</i>	9079520	0.2	July 7	seed stripper	30 lbs
<i>Festuca rubra</i>	9079521	0.37	July 5	seed stripper	6.6 lbs

2008 Field Seed Production Notes:

All fields were fertilized in October 2008 with 25 lbs/ac nitrogen (N), and in February 2008 with 50 lbs/ac N plus 15 lbs/ac sulfur (S). Weed control within the plots was mainly performed by hand-hoeing and rousing, and broadleaf herbicides. Field borders were cultivated periodically throughout the year. After harvest, fields were burned using

drip torches. In mid October of 2008, a pre-emergent herbicide, Outlook®, was applied to all fields.



Figure 1. The PMC’s new precision cone-seeder equipped with a carbon-banding unit.

In September and October, fields were sown using the PMC’s new precision cone-seeder. This type of seeder is calibrated to drill a programmed amount of seed over a programmed area. The PMC staff set the seeder for intervals of 24ft. Pre-weighed packets were fed into the seed drill at 24 ft intervals. It is very precise and is a good choice for drilling limited amounts of wild-collected seed. This new seeder is a huge improvement over the old Plantet Jr seeder.

Table 4. Seed increase field establishment in the fall of 2008 for the Steven’s Canyon Road revegetation project.

Species	Accession Number	Date	Seeding method	Bulk Seeding rate	Area sown
Upper Elevation					
<i>Elymus glaucus</i>	9079518	23-Oct	cone seeder	10 lbs/ac	0.15
<i>Festuca rubra</i>	9079519	14-Oct	cone seeder	5 lbs/ac	0.2
<i>Bromus carinatus</i>	9079531	8-Oct	cone seeder	15 lbs/ ac	0.16

V. Container Plant Production.

No containerized production occurred for this project in 2008.

VI. Delivery of Plant Materials.

No materials were delivered in 2008. Seed that was produced in 2008 will be kept in the seed storage facilities at the PMC. Only the blue wild rye seed was tested for purity and germination. It was found to be 98.68 % pure and has a germination of 68%.

Table 5. Seed currently in storage as of February 10, 2008 for the Steven's Canyon Rd revegetation project at the PMC.

Species	Code	Accession Number	Amount in Storage
Lower Elevation			
<i>Elymus glaucus</i>	ELGL	9079520	30 lbs
<i>Festuca rubra</i>	FERU	9079521	6 lbs