

December 20, 2007

THE 2007 MOUNT RAINIER NATIONAL PARK ANNUAL REPORT:
Steven's Canyon Road Revegetation Project



Figure 1. PMC volunteer collecting seed along Steven's Canyon Rd, Mount Rainier National Park, September 5, 2007.

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 2007 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 2007 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 2007.

Species	Common Name	Code	Accession Number	Activity in 2007¹
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, pxn
Lower Elevation				
<i>Elymus glaucus</i>	blue wildrye	ELGL	9079520	col, sfp
<i>Festuca rubra</i>	red fescue	FERU	9079521	col, sfp

¹- sfp= seed increase, pxn=plant production, 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. A 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 2007.

Species	Accession Number	Collection dates	Amount Collected
Upper Elevation			
<i>Elymus glaucus</i>	9079518	Aug 22- Sept 7	590 g
<i>Festuca rubra</i>	9079519	Aug 22- Sept 7	488 g
<i>Bromus carinatus</i>	9079531	Aug 22- Sept 7	85 g
Lower Elevation			
<i>Elymus glaucus</i>	9079520	Aug 22-24	985 g
<i>Festuca rubra</i>	9079521	Aug 22-24	920g

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*.

IV. Field Seed Increase Activities

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 24ft 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 3. Seed increase field establishment in the fall of 2007 for the Steven's Canyon Road revegetation project in 2007.

Species	Accession Number	Date	Seeding method	Bulk Seeding rate	Field size
Upper Elevation					
<i>Elymus glaucus</i>	9079518	29-Oct	cone-seeder	8.5 lbs/ac	0.14 ac
<i>Festuca rubra</i>	9079519	4-Nov	cone-seeder	3.7 lb/ac	0.26 ac
Lower Elevation					
<i>Elymus glaucus</i>	9079520	27-Sep	cone-seeder	10 lbs/ac	0.20 ac
<i>Festuca rubra</i>	9079521	6-Nov	cone-seeder	5.4 lbs/ac	0.37 ac

V. Container Plant Production.

On September 15, 2007, seeds of *B. carinatus* were sown into Ray Leach stubby cone-tainers filled with moistened media (Sunshine #1: a special peat-based soil-less mix) and lightly covered with fine vermiculite and placed in a greenhouse set at moderate temperatures (65 ° F day/ 50° F night). Plants will be transplanted out into fields in early spring. This method of field establishment was chosen over direct seeding due to the limited amount of wild collected seed.

VI. Delivery of Plant Materials.

No materials were delivered in 2007.