

CORVALLIS PLANT MATERIALS CENTER
NATURAL RESOURCES CONSERVATION SERVICE
CORVALLIS, OREGON
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THE 2007 BUREAU OF LAND MANAGEMENT ANNUAL REPORT:
Roseburg District



Figure 1. *Lupinus rivularis* seed increase field at the Corvallis Plant Materials Center, May 23, 2007.

I. Brief Background of Project

The Corvallis Plant Materials Center (PMC) entered into a new agreement with the Roseburg District of the Bureau of Land Management (BLM) in 2005 to provide native plant materials for ecological restoration. It was agreed that the PMC would establish and maintain seed increase fields of three grasses (four accessions) and one legume. In the fall of 2006, new species were added to this agreement including one grass, two legumes, and three forbs. No new species were added in 2007. Seed increase fields were expanded using seed that was produced in 2007.

II. Accessions Involved

Accessions included for the Roseburg District BLM in 2007 are listed in Table 1. This table also displays activities performed by PMC staff.

Table 1. Accessions involved for Roseburg District BLM cooperative agreement with Corvallis Plant Materials Center in 2007.

Species	Common name	Symbol	Accession	Activity in 2007 ¹
<i>Eriogonum nudum</i>	barestem buckwheat	ERNU3	9079489	sfp
<i>Eriophyllum lanatum</i> var. <i>achillaeoides</i>	wooly sunflower	ERLAA	9079490	sfp
<i>Sisyrinchium bellum</i>	blue-eyed grass	SIBE	9079491	pxn
<i>Lupinus albifrons</i>	silver lupine	LUAL4	9079492	sfp
<i>Lotus micranthus</i>	small-flowered deervetch	LOMI	9079493	sfp
<i>Festuca californica</i>	California fescue	FECA	9079494	sfp
<i>Silene hookeri</i> ssp. <i>hookeri</i>	Hooker's silene	SIHO	9079495	pxn, sfp
<i>Danthonia californica</i>	California oatgrass	DACA	9079415	sfp
<i>Danthonia californica</i>	California oatgrass	DACA	9079428	sfp
<i>Elymus elymoides</i>	bottle-brush squirreltail	ELEL5	9079416	sfp
<i>Lupinus rivularis</i>	river lupine	LURI	9079430	sfp
<i>Achnatherum lemmonii</i>	Lemmon's needlegrass	ACLE8	9079429	sfp

1- sfp= seed increase, pxn=plant production, dlv=plant materials delivery

III. Field Seed Increase Activities

Forb fields that were sown in 2006 emerged in the spring of 2007. All three forb fields were patchy, but the stands are worth maintaining and plants will grow to fill in the gaps. Containerized plants of *Danthonia californica*, *Achnatherum lemmonii*, *Festuca californica*, *Silene hookeri*, *Lupinus albifrons*, and *Sisyrinchium bellum* that were grown in the fall of 2006 were used to establish small seed increase plots in the spring of 2007. The plants of all species except the *S. bellum* and *S. hookeri*, were transplanted into fields in early March.

Weed control in seed increase fields was performed mainly by hand. The squirreltail field was also sprayed with Bronate® in late spring to removed broadleaf weeds. Fields borders were tilled. Medusahead rye was discovered in the *E. elymoides* field once it began to bloom. This invasive weed was rogued from the field as much as possible. Since



Figure 2. *Eriogonum nudum* seed increase plot at the Corvallis Plant Materials Center, October 12, 2007.

rachis, making this species easier to combine. This reduced the amount of medusahead seeds that made it into the harvest. At this time it is not clear how much, if any medusahead seeds are in the seed lot harvested this year.

Figure 3. *Lupinus albilfrons* seed increase plot at the Corvallis Plant Materials Center, October 12, 2007.



it is an annual species, a pre-emergent such as Outlook will be applied to the field this fall. This should prevent any remaining medusahead seed from germinating and becoming established. The field should be medusahead free in the 2008 harvest. It is believed that the weed was in the collection provided to the PMC. The two grasses look very similar and medusahead was most likely collected by mistake.

Most fields were hand harvested multiple times throughout the growing season. The *D. californica* and *A. lemmonii* fields were harvested by hand using rice knives. The *E. elymoides* field was swathed and then harvested with a small plot combine. The medusahead rye plants that were missed during the many walks through the field came out of the back of the combine. The seed heads were not threshed by the action of the combine. The squirreltail seeds disarticulate very easily from the



Figures 4 & 5. *Lupinus rivularis* seed increase field at the Corvallis Plant Materials Center, May 23, 2007 (above). Swathing *L. rivularis* seed increase field, June 18, 2007.



The *Lupinus rivularis* field was swathed and then pitchforked onto tarps to shatter. Tarps were moved into an open shed to protect it from any summer rain. Once dry, the material was beaten with pitchforks. Most pods shattered while drying. Material was pitchforked off the tarps and the seeds and pods left on the tarp were run through a brush machine to break up any unopened pods. Seed was then cleaned using an air-screen machine.

The *S. hookeri* plants grew in their containers in the greenhouse until early summer. They began to flower and were moved outside where they had access to pollinators. When seed capsules were ripe they were picked from the plants and put in paper bags in an open greenhouse to dry.

Due to the very uneven ripening and easy seed shatter, the *L. micranthus* field was checked twice weekly for ripe pods. Pods were hand picked when mature but before they shattered. This was quite time consuming and inefficient. Next year the field will be grown using weed fabric so the seeds can shatter onto the fabric, where they will be swept up.

The *F. californica*, *L. albifrons*, and *E. lanatum* plots did not flower in their first year. This is typical for these species. They are expected to produce seed in 2008. The *E. nudum* field did flower very late in the season and produced a very minimal amount of seed.

Table 2. Seed yields for the Roseburg District BLM cooperative agreement with Corvallis Plant Materials Center in 2007.

Species	Accession	Field size (ac)	Date harvested	Method	Yield
<i>Lotus micranthus</i>	9079493	0.04 acres	June 18- August 15	hand	25 g
<i>Silene hookeri</i> ssp. <i>hookeri</i>	9079495	n/a	June 26, August 29	hand	84 g
<i>Danthonia californica</i>	9079415 CY	0.05	June 25, July 5	hand	6 lbs
<i>Danthonia californica</i>	9079428 YF	0.02	June 26, July 2	hand	585 g
<i>Elymus elymoides</i>	9079416	0.35	July 31	swath/ combine	12 lbs
<i>Lupinus rivularis</i>	9079430	0.17	June 18	swath	75 lbs
<i>Achnatherum lemmonii</i>	9079429	0.04	June 19, June 26	hand	4.23 lbs

Following harvest, *E. elymoides* field was burned and *A. lemmonii* field was mowed to remove residue. All established grass fields were sprayed in late October with Outlook®, a non-selective pre-emergent herbicide.

Table 3. Seed increase field establishment for the Roseburg District BLM cooperative agreement with Corvallis Plant Materials Center in 2007.

Species	Accession number	Date	Method	Field size (ac)	Seeding rate (bulk)
<i>Lupinus rivularis</i>	9079430	27-Sep	cone-seeder	0.48	12.5 lbs/ac
<i>Danthonia californica</i>	9079428	4-Nov	cone-seeder	0.13	9.3 lbs/ac
<i>Danthonia californica</i>	9079415	12-Oct	cone-seeder	0.45	13 lbs/ac
<i>Acnatherum lemmonii</i>	9079429	4-Nov	cone-seeder	0.3	12.6 lbs/ac

IV. Container Plant Production

On August 15, 2007, seeds of *D. californica* and *S. hookeri*, 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. Seeds of both species require cold-moist stratification to break dormancy so they were placed in polyethylene bags and



moved into the walk-in cooler (36-38° F). Flats were removed from the cooler on November 14, 2007 and placed in a greenhouse set at moderate temperatures (65° day/ 50° night). Plants will be transplanted out into fields in early spring.

Figure 5. *Silene hookeri* spp. *hookeri* flowering in the Corvallis Plant Material Center lathhouse, July 13, 2007.

Table 4. Plant Production for the Roseburg District BLM cooperative agreement with Corvallis Plant Materials Center in 2007.

Species	Accession	Amount seed used	Number produced
<i>Silene hookeri</i> ssp <i>hookeri</i>	9079495	10g	980
<i>Danthonia californica</i>	9079428	11g	980

V. Delivery of Plant Materials

No materials were delivered in 2007. Remaining seed will be kept in a cooled/dehumidified seed storage facility at the PMC until requested by BLM staff.

Table 5. Seeds in storage at the Corvallis Plant Materials Center for the Roseburg District BLM cooperative agreement with Corvallis Plant Materials Center in 2007.

Species	Lot number	Weight
<i>Eriogonum nudum</i>	SWC-06-RB489	99 g
<i>Eriophyllum lanatum</i> var. <i>achillaeoides</i>	SWC-06-RB490	234 g
<i>Sisyrinchium bellum</i>	SWC-06-RB491	75 g
<i>Lotus micranthus</i>	SWC-06-RB493	11 g
<i>Festuca californica</i>	SWC-06-RB494	4 g
<i>Silene hookeri</i> ssp. <i>hookeri</i>	SG1-07-RB495	72 g
<i>Silene hookeri</i> ssp. <i>hookeri</i>	SWC-06-RB495	23 g
<i>Danthonia californica</i>	SG2-07-RB415	100g
<i>Danthonia californica</i>	SG2-07-RB428	39 g
<i>Elymus elymoides</i>	SG1-06-RB416	5 lbs
<i>Elymus elymoides</i>	SG1-07-RB416	12 lbs
<i>Lupinus rivularis</i>	SG1-07-RB430	69 lbs
<i>Lupinus rivularis</i>	SG1-06-RB430	475 g
<i>Achnatherum lemmonii</i>	SG2-07-RB429	213 g