

Project Number COPMC-S-0107-CR
Annual Report 2003
By: Steve Parr

LASSEN VOLCANIC NATIONAL PARK
COOPERATIVE AGREEMENT

COPMC-S-0107-CR
Annual Report 2003

INTRODUCTION - This report covers the activities of the Upper Colorado Environmental Plant Center as they relate to Interagency Project Number IA9000-01-004 for the production of seed materials for Lassen Volcanic National Park. The original agreement called for the establishment and production of a single material, blue wildrye, through fiscal year 2003. This agreement was signed into effect in June of 2001. A second material, California brome, was later added to the agreement through an amendment signed into effect in September of 2001. This amendment added the production of California brome through fiscal year 2003 for Lassen. A second amendment, signed in November of 2002, allowed for the transfer of funds for the cleaning of wild collections of seed from Lassen Volcanic National Park in 2002. In 2003, a third amendment was signed that calls for the production of established materials through 2004.

ACTIVITIES - The two collections that were established for seed increase fields were given the following accession numbers for identification and tracking purposes:

Blue wildrye	<i>Elymus glaucus</i>	9070984
California brome	<i>Bromus carinatus</i>	9070985

Blue wildrye was collected during the 2000 growing season by Bitterroot Restoration and was shipped to UCEPC for planting during 2001. A message following the shipment from Bitterroot indicated the seed had been cleaned and treated with a 5% bleach solution for 5 minutes to help reduce the mold, which was detected on the seed after collection and prior to shipment. Upon receipt, UCEPC prepared to plant the seed, but on the date of planting, discovered the seed to be too “fluffy” for proper distribution. As a result, UCEPC further cleaned the seed and sent a sample to the Colorado State Seed Laboratory for analysis of purity, germination, off type seeds and to see if they could determine damage by the worms (larvae), that Bitterroot had detected prior to UCEPC planting. The seed test results were completed on July 27, 2001 and no worms were noted.

On September 4, 2001, 1 acre of Lassen Volcanic National Park blue wildrye was planted. A very good stand was noted in October.

The California brome was collected during the 2000 and 2001 growing seasons and samples of each collection were sent to the Colorado Seed Laboratory in the fall of 2001. The reports were completed on October 19, 2001. The collection from 2000, while having the best germination, had a very high percent of other crop seed, at nearly 3%. Since the collections occurred in Lassen, conversations with Russ Haas indicated it would be all right to plant the brome with the blue wildrye seed in it without concern of crop contamination from that species. The other two lots, LAV02 and LAV03, had a high amount of visible head smut. As a result, only a small amount of LAV03 seed was planted, along with the entire LAV01 seed lot. Each material was treated with “Vitavax” for head smut control.

On November 16, 2001, 4.8 rows of LAV01 California brome were planted. An additional 65 feet of LAV03 seed was planted in the southeast portion of row 5. Both materials were treated

COPMC-S-0107-CR
Annual Report 2003

for head smut control at 2 grams per pound of seed treated. A planting rate of 36 PLS seeds per foot of row was achieved with the Planet Junior seeding of the 4.8 rows. A hoe was used to plant the last 65 feet.

Because of the limited amount of California brome which was available for planting, it was determined that seed collected from Lassen Volcanic National Park be used to supplement the 2001 planting if possible. An e-mail from Russ Haas on June 4, 2002, to Sara Koenig, Plant Ecologist for Lassen, asked for her input. It was suggested that if collection opportunities looked grim within the park, that seed harvested from the established stand at UCEPC could be used to boost the planting. Sara indicated that Lassen personnel or Bitterroot Growers would try to collect California brome seed from within the park to add to the planting. Irrigation and hand weeding were conducted as necessary during the season. An application of herbicide was also applied for broadleaf weed control as a post-harvest treatment. No other field activities were conducted in 2002.

We received a request from Sara on September 23, 2002 for a shipment of seed for a project they were working on. On September 27, 2002, seed of two species, both UCEPC produced materials and wild collected seed, were shipped to Sara at the park. Included with this shipment was a Distribution and Delivery Record and an explanation of the materials shipped. This shipment also included the 2002 UCEPC production of blue wildrye and California brome, which is customarily shipped the following year. Because of the need for seed, however, it was determined that a tetrazolium test would have to suffice for planting purposes as time would not allow a full germination test to be useful for planning seed distribution. Tetrazolium tests were conducted for both produced materials and results were completed by October 2, 2002 (seed test results included).

Bitterroot Growers had collected approximately 5 pounds of California brome, which they sent to UCEPC for field increase. This seed was tested by the Colorado Seed Laboratory for purity and germination and was completed on November 27, 2002. As indicated, this seed was to be used to increase the production field size to one acre as per the agreement. From a conservative position, it was felt that no seed from this lot should be shipped without first establishing the remainder of the field at UCEPC.

May 29, 2003 an additional 0.7 acre of California brome was planted in field 2, next to the existing planting. The total planted acreage is 0.88, or 26 480 foot rows. Seed collected from the park the previous year was used for the field addition, and all but the four southern most rows were treated with 'Vitavax' for head smut control.

During the growing season, no smut was noted in any of the sections of the brome field, even the portion that was planted with smutted seed. It will be interesting to note whether any smut develops in the four most southern rows that were inadvertently planted without a 'Vitavax' treatment.

**COPMC-S-0107-CR
Annual Report 2003**

The need to use seed the same year it was harvested was again the situation this year. Lassen Volcanic had a project where some of the year's produced seed was needed for revegetating. As a result, tetrazolium tests were conducted, along with purity, to provide specific pls quantities of seed for park projects.

In addition, 39 species of park collected materials were sent September 11 along with UCEPC produced seed. As called for in Amendment 2, 20 species of wild collected seed were cleaned by UCEPC in 2003. Correspondence between Russ Haas, Sara Koenig and Steve Parr determined which products should be cleaned, which ones should be tested and which ones should simply be stored until requested by the park. Of the 20 cleaned products, four had seed testing done. Materials that were tested include *Arctostaphylos nevadensis*, *Lupinus arbustus*, *Lupinus obtusilobus*, and *Monardella odoratissima*. The other 19 collections were not large enough to warrant cleaning. In fact, no product with less than 70 bulk grams of seed was cleaned. (See attached lists of collected seed inventory, cleaned seed and seed tests of four cleaned products).

RESULTS

Species	Blue wildrye	<i>Elymus glaucus</i>
Seeded	1 acre with Planet Junior	September 4, 2001
Harvested	10.4 lb	July 18, 2002
Shipped	10.4 lb	September 27, 2002
Harvested	205 lb	July 21, 2003
Shipped	40 lb	September 11, 2003

Species	California brome	<i>Bromus carinatus</i>
Seeded	0.18 acre with Planet Junior and 65 feet of southeast part of row 5 with a hoe.	November 16, 2001
Harvested	1.4 lb	July 11, 2002
Shipped	1.4 lb	September 27, 2002
Harvested	64 lb	June 30, 2003
Shipped	30 lb	September 11, 2003

COPMC-S-0107-CR
Annual Report 2003

SUMMARY - During the first year of Interagency Agreement number 9000-01-004, two species were tested by the Colorado Seed Laboratory, identified for purity, germination, off type seeds and dormancy. This information provided a basis for the selection of seed lots for the establishment of seed production fields at UCEPC. Seed lot selections were made and successfully planted in 2001 for seed increase for future revegetation uses at Lassen Volcanic National Park. Seed planted in 2001 was harvested, cleaned, tested via tetrazolium methods and returned to the park for use on a project in 2002.

In 2003, seed harvested in June and July was cleaned on September 8th and 9th and shipped September 11, 2003. This was done after a determination from testing for purity and live seed via tetrazolium methods by the Colorado State Seed Laboratory. These products were received by the Lab on September 10th and reported out on September 11th! The seed was then prepared and shipped on September 11th for park uses.