CRATER LAKE NATIONAL PARK
Mazama Dorm Project
2000 Annual Report Summary
Prepared by
NATURAL RESOURCES CONSERVATION SERVICE
CORVALLIS PLANT MATERIALS CENTER

INTRODUCTION- The Corvallis Plant Materials Center (PMC) entered into an amended agreement with Crater Lake National Park in 2000 to evaluate and increase grasses and sedges for revegetation purposes (Mazama Dorm Project). It was agreed to maintain and harvest two grass and two sedge fields and clean/process and provide the resulting seed to Crater Lake National Park in September 2000.

ACCOMPLISHMENTS- Activities in 2000 included maintenance and seed harvest of field increase plantings, maintenance of excess containerized stock, establishment of seed increase fields, and delivery of plant materials. A total of 10.9 kg clean seed was harvested from two grass and two sedge plots. Although *Carex spectabilis* flowered in 2000, no seed set occurred. All seed harvested in 2000 was provided to Crater Lake National Park personnel on September 26, 2000. Excess containerized stock involved five species and 140 containers. Two seed increase fields were established in fall 2000 in anticipation of seed needs for future restoration projects at Crater Lake National Park.

TECHNOLOGY DEVELOPMENTS- Two new seed increase fields (*Elymus glaucus*, 0.41 A; *Bromus carinatus*, 0.16 A) were established via carbon banding on September 14, 2000. Prior to drilling, the *Bromus carinatus* seed was treated with a systemic fungicide to control smut and other seed borne fungal diseases. Diuron was applied immediately after drilling to prevent weed seed emergence between rows. Both species established well, and diuron provided excellent weed control.

CORVALLIS PLANT MATERIALS CENTER
NATURAL RESOURCES CONSERVATION SERVICE
CORVALLIS, OREGON

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THE 2000 CRATER LAKE NATIONAL PARK ANNUAL REPORT:
MAZAMA DORM PROJECT

I. Brief Background of Project

The Corvallis Plant Materials Center (PMC) entered into an amended agreement with Crater Lake National Park in 2000 to evaluate and increase grasses and sedges for revegetation purposes (Mazama Dorm Project). It was agreed to maintain and harvest two grass and two sedge fields and clean/process and provide the resulting seed to Crater Lake National Park in September 2000.

Activities in 2000 included maintenance and seed harvest of field increase plantings, maintenance of excess containerized stock, establishment of seed increase fields, and delivery of plant materials. Details are provided below.

II. Accessions Involved

Accessions included for Mazama Dorm are listed in Table 1 (below). All of these accessions have been described in previous Annual Reports; this report includes a summary listing along with the activities conducted by PMC staff in 2000.

Table 1. Accessions involved for Mazama Dorm cooperative agreement with Corvallis Plant Materials Center in 2000

Common name	Scientific name	Symbol	Accession	Activities in 2000[1]
Mountain maple	*Acer glabrum*	ACGL	9056271	---
Pearly everlasting	*Anaphalis margaritacea*	ANMA	9056268	---
Red Columbine	*Aquilegia formosa*	AQFO	9056251	---
Pinemat manzanita	*Arctostaphylos nevadensis*	ARNE	9056252	---
Greenleaf mazanita	*Arctostaphylos patula*	ARPA	9056337	---
Cascade aster	*Aster ledophyllus*	ASLE	9056307	---
California brome	*Bromus carinatus*	BRCA5	9056244	Sfp Dlv
Hall's sedge	*Carex halliana*	CAHA2	9056265	---
Thick-headed sedge	*Carex pachystachya*	CAPA14	9056248	Sfp Dlv
Showy sedge	*Carex spectibilis*	CASP5	9056249	Sfp ---

[1] Activity Codes: Col = collected at park; Dlv = plant material delivered to park; Pxn = Plants grown in container production; Sfp = seed produced at PMC; Trl = propagation trials.

Blue wildrye	*Elymus glaucus*	ELGL	9056242	Sfp Dlv
Wild buckwheat	*Eriogonum marifolium*	ERMA4	9056262	---
Oceanspray	*Holodiscus dicolor*	HODI	9056258	---
Bush honeysuckle	*Lonicera involucrata*	LOIN5	9056253	---
Broadleaf lupine	*Lupinus latifolius*[2]	LULA4	9056247	---
Cliff beardtongue	*Penstemon rupicola*	PERU	9056310	---
Phacelia spp	*Phacelia*	PHACE	9056399	---
Spreading phlox	*Phlox diffusa*	PHDI3	9056274	---
Squaw currant	*Ribes cereum*	RICE	9056295	---
Crater Lake currant	*Ribes erythrocarpum*	RIER	9056254	---
Sierra willow	*Salix orestera*	SAOR	9056255	---
Red elderberry	*Sambucus racemosa*	SARA2	9056256	---
Mountain ash	*Sorbus scopulina*	SOSC	9056269	---
Alpine spirea	*Spirea splendens v splendens*	SPSPS	9056257	---
Western needlegrass	*Stipa occidentalis*	STOC2	9056246	---
Grouse whortleberry	*Vaccinium scoparium*	VASC	9056267	---

III. Field Seed Increase

Seed was harvested from established stands of *Elymus glaucus*, *Bromus carinatus*, and *Carex pachyastachya*. Although *Carex spectabilis* flowered in 2000, no seed set occurred. Seed harvest and additional cultural notes are summarized in Table 2 (below):

Table 2. Seed Harvest for Crater Lake National Park- Mazama Dorm revegetation project, at Corvallis Plant Materials Center in 2000

Species Code	Area Harvested	Date(s)	Method	Yield	Comments
ELGL	0.23 AC	June 27,28,29	Hand	2.67 kg	fair stand; low vigor
BRCA5	0.28 AC	June 19,20	Hand	7.44 kg	Hand-rogued for smut fair stand; good vigor
CAPA14	0.03 AC	June 6	Hand	0.77 kg	Good stand; fair vigor

2000 Field Seed Production Notes:

All grass and sedge species received three applications of Tilt and Bravo fungicides in April/early May for rust control. All plots were fertilized in September 1999 with 25 lbs/ac nitrogen (N), and in February 2000 with 50 lbs/ac N plus 15 lbs/ac Sulfur (S). Weed control was primarily performed by rototilling and swiping with Roundup between rows when possible, spraying borders with Roundup, and hand-hoeing and roguing.

[2] Seed collected by NPS in 1995 and 1996 was not *L. latifolius*- a tentitive ID was made in 1997 as *L. andersonii*. Substitution for *L. latifolius* was made on a informal basis.

Broadleaf herbicides were applied in August (2,4-D and Banvel) and again in October 2,4-D and Gallery) to control broadleaves in the BRCA5 plot. Sedge plots were irrigated throughout the growing season to improve seed yields. Grass and sedge fields were mowed, and the residue was baled and/or removed as necessary following seed harvest. Preemergent herbicides were applied between rows in sedge plots in October (Surflan) and to the BRCA5 plot in October (Karmex).

Establishment of New Seed Increase Fields in 2000:

Two new seed increase fields of California brome and blue wildrye were established on September 14, 2000 at the Corvallis PMC in anticipation of seed needed for future restoration projects at Crater Lake National Park (and future cooperative agreements between the PMC and the Park.) Diuron (Karmex) was applied immediately after drilling to prevent weed seed emergence between rows. Irrigation was provided as necessary during September and October to promote establishment. Most seedlings emerged within 2-3 weeks after planting, and stand establishment and vigor was rated as good/good for both species. Overall, Karmex provided excellent weed control. Broadleaf herbicides (2,4-D and Banvel) were applied in October to both new fields to control the few broadleaves that were not controlled with Karmex. Details are provided in Table 3 (below):

Table 3. Establishment information for new seed increase fields for Crater Lake National Park, at the Corvallis PMC in 2000

Species/Ac	Seeding Rate	Pretreatment	Method	Weed Control
BRCA 0.16 acres or 32 175' rows 12" btwn rows	31 PLS/ft-row (rice hulls were added to improve flow)	Vitavax (fungicide to control smut and other seed borne diseases)	Carbon banding (used 10 gal charcoal slurry)	Karmex (diuron) @ 3 lb a.i. per acre On 9/15/00
ELGL 0.41 acres or 80 180' rows 12" btwn rows	40 PLS/ft-row (rice hulls were added to improve flow)	None	Carbon banding (used 25 gal charcoal slurry)	Karmex (diuron) @ 3 lb a.i. per acre On 9/15/00

IV. Experimental Propagation

No experimental propagation trials were conducted in 2000.

V. Container Plant Production

No container plant production was conducted in 2000, but excess containerized stock were maintained. This involved five species (ACGL- 11 1-gal; LOIN5- 8 1-gal; VASC- 16 1-gal; ERMA- 75 conetainers; and PERU- 30 4" pots).

VI. Delivery of Plant Materials

Seed provided to park personnel in September 2000 for the Mazama Dorm rehabilitation plantings is shown as Appendix I. All seed lots were tested just prior to delivery (tests were completed by September 29, 2000) for percent viability and percent purity. The grass seed lots, blue wildrye and California brome, exhibited 86 and 53 percent viability and 99 and 94 percent purity, respectively. The thick-headed sedge seed lot exhibited 82 percent viability and 99 percent purity.

Appendix I. Distribution and delivery record record of seed provided to Crater Lake National Park personnel on September 26, 2000 by the Corvallis Plant Materials Center for the Mazama Dorm rehabilitation project.

Accession	Species	Seed lot	Amount
9056244	*Bromus carinatus*	SFP-00	7437 g
9056248	*Carex pachystachya*	SFP-00	771 g
9056242	*Elymus glaucus*	SFP-00	2667 g