

**Project No. 08S208**  
**Annual Report – December 2004**  
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**MESA VERDE**  
**COOPERATIVE AGREEMENT**

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**Mesa Verde Agreement - continued**

**INTRODUCTION** - This progress report covers the activities conducted by the Upper Colorado Environmental Plant Center, Meeker, Colorado for the Mesa Verde Cooperative Plant Materials Agreements in 2002. The Upper Colorado Environmental Plant Center (UCEPC) entered into an agreement with Mesa Verde National Park initially on September 26, 1990. Seed production for Mesa Verde was concluded in 2000. The Interagency Agreement Project No. 1211-00-003 was amended in 2000 and an additional amendment referred to as "MEVE 278F, Main Entrance Road" was signed September 17, 2003, involving the live plant production of seven shrubs and one conifer species.

**CURRENT CONTRACT SPECIES**

<b>Common Name</b>	<b>Scientific Name</b>	<b>Symbol</b>	<b>Accession Number</b>
Blueleaf aster	<i>Aster glaucodes</i>	ASGL3	9024870
Chokecherry	<i>Prunus virginiana</i>	PRVI	9070995
Douglas fir	<i>Pseudotsuga menziesii</i>	PSME	9070997
Fourwing saltbush	<i>Atriplex canescens</i>	ATCA2	9024878
Gambel oak	<i>Quercus gambelii</i>	QUGA	9024895
Mountain mahogany	<i>Cercocarpus montanus</i>	CEMO2	9024874
Snowberry	<i>Symphoricarpos oreophilus</i>	SYOR2	9024898
Utah serviceberry	<i>Amelanchier utahensis</i>	AMUT	9024869
Woods rose	<i>Rosa woodsii</i>	ROWO	9070996

**LIVE PLANT PRODUCTION**

**Quantity of Targeted Species for delivery Fall 2005:**

<b>Common Name</b>	<b>Scientific Name</b>	<b>Quantity</b>
Chokecherry	<i>Prunus virginiana</i>	175
Douglas fir	<i>Pseudotsuga menziesii</i>	100
Fourwing saltbush	<i>Atriplex canescens</i>	100
Gambel's oak	<i>Quercus gambelii</i>	875
Mountain mahogany	<i>Cercocarpus montanus</i>	260
Mountain snowberry	<i>Symphoricarpos oreophilus</i>	675
Utah serviceberry	<i>Amelanchier utahensis</i>	875
Woods rose	<i>Rosa woodsii</i>	<u>175</u>
<b>Total:</b>		<b>3235</b>

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**SEED COLLECTION AND CONDITION INFORMATION**

Seed of the following species were collected in Mesa Verde National Park in 2004, and shipped to UCEPC to be conditioned for propagation, or stored for the road revegetation seed mix.

<b>Seed</b>	<b>Arrival Date</b>	<b>Cleaned Weight</b>
Lupine	8/25/2004	265 grams
Low penstemon	11/03/2004	303 grams
Chokecherry	8/25/2004	189 grams
Woods rose	8/25/2004	76 grams
Gambel oak acorns	8/25/2004	8 lb planted in Greenhouse
Blue leaf aster	11/03/2004	To be stored for park use
Double bladder pod	8/25/2004	To be stored for park use
Globemallow	8/25/2004	To be stored for park use
Goldeneye	11/03/2004	To be stored for park use
Goldenrod	11/03/2004	To be stored for park use
Mountain mahogany	11/03/2004	To be stored for park use
Pepperweed	11/03/2004	To be stored for park use
Rabbitbrush	11/03/2004	To be stored for park use
Scarlet gillia	11/03/2004	To be stored for park use
Showy milkweed	11/03/2004	To be stored for park use
Tarragon	11/03/2004	To be stored for park use

**GREENHOUSE PRODUCTION IN 2004**

Working with a good collection of Gambel's oak acorns from the park, observations were made regarding larvae damage and viability. Upon receipt, the acorns were immersed overnight in a 5-gallon bucket with water, then drained, held in moist peat moss in the refrigerator and planted as germination occurred. Over 1500 cells of Tinus book planters were planted as acorns germinated in September and October, with leaf emergence anticipated in the spring of 2005.

Other park collected shrub seed was shipped to us fresh. Some fruit was cleaned immediately in a modified blender in order to start conditioning in preparation for production. Chokecherry, Utah serviceberry, Mountain mahogany, and Woods rose seed were mixed with a damp media and placed into the refrigerator for cold moist stratification.

Due to high rodent activity, there was a loss of more than half of the Utah serviceberry and Mountain mahogany 2003 greenhouse containerized production. Other shrubs are being held dormant in the lath house, while 2004 propagation will occupy the greenhouse.

**2004 SEED SHIPMENT**

See attached order number: CO PMC-04-21 and CO PMC-04-30

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**HISTORY**

**SEED COLLECTION - 2003**

Seed of the following species were collected in Mesa Verde National Park in 2003, and shipped to UCEPC to be conditioned, dried, cleaned, or stored.

<b>Seed</b>	<b>Arrival Date</b>	<b>Uncleaned Weight</b>	<b>Cleaned Weight</b>
Chokecherry	10/14/2003	8.8 lb	453 grams
Douglas fir	10/14/2003	2.8 lb	241 grams
Low penstemon	11/06/2003	N/A	To be stored for park use
Gambel oak acorns	9/24/2003	180 Acorns	Planted in Greenhouse 2003
Milk vetch	11/06/2003	N/A	To be stored for park use
Mules ears	10/14/2003	10.6 lb	To be stored for park use
Utah serviceberry	10/14/2003	3.8 lb	2 lb 17 grams
White thistle	10/14/2003	0.8 lb	To be stored for park use
Woods rose	10/14/2003	2.0 lb	287 grams+

**NATIVE PLANT MATS**

Native plant mats are still growing at UCEPC, although the project is currently on hold.

**Seed necessary to reestablish seed production fields at UCEPC.**

<b>Species</b>	<b>Quantity PLS</b>
<b>Grasses</b>	
Mutton grass	5 lb
Salina wildrye	2 lb
Slender wheatgrass	5 lb
Western wheatgrass	5 lb
<b>Forbs</b>	
Hairy golden aster	1 lb
Louisiana sage	1 lb
Yarrow	1 lb

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**SEED INVENTORY**

In 2004, an updated seed list of Mesa Verde materials was prepared. Stored seed was tested for germination in August of 2004 by the Colorado Seed Lab. The UCEPC will provide stored seed as requested.

<b>Species</b>	<b>Quantity PLS</b>
Antelope bitterbrush	23.00 lb
Blueleaf aster	1.60 lb
<b>Corymbed eriogonum</b>	<b>44.00 g *</b>
<b>Datil yucca</b>	<b>2.30 lb*</b>
<b>Evening primrose</b>	<b>1.50 lb*</b>
<b>Fourwing saltbush</b>	<b>4.40 lb*</b>
Hairy golden aster	6.70 lb
Louisiana sage	19.50 lb
<b>Low penstemon</b>	<b>69.00 g*</b>
<b>Mentzelia multiflora</b>	<b>0.10 lb*</b>
<b>Mountain mahogany</b>	<b>3.00 lb*</b>
Mutton grass	40.37 lb
<b>Patterson locoweed</b>	<b>45.00 g*</b>
<b>Pinyon pine</b>	<b>17.90 lb*</b>
Salina wildrye	3.00 lb
Slender wheatgrass	113.14 lb
<b>Snowberry</b>	<b>7.00 lb*</b>
<b>Spur lupine</b>	<b>86.00 g*</b>
<b>Tarragon</b>	<b>0.30 lb*</b>
<b>Utah juniper</b>	<b>0.20 lb*</b>
<b>Utah serviceberry</b>	<b>4.24 lb*</b>
Western wheatgrass	36.42 lb
Yarrow	31.59 lb

**\*Bulk-not tested**