

**Project No. 08S208**  
**Annual Report – December 2003**  
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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
Gambels 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

**SEED COLLECTION AND CONDITION INFORMATION**

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
Dwarf penstemon	11/06/2003	N/A	To be stored for park use
Gambel's 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+

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**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>

**GREENHOUSE PRODUCTION IN 2003**

Upon receipt, Gambel's oak acorns were placed in a 5-gallon bucket with water, submerging with a weight overnight. The following day, after a few drowned larvae were noted, the 180 acorns were drained and then directly planted into Tinus book planters. Containers are being held over winter in the UCEPC greenhouse with emergence anticipated in the early spring of 2004. It may be more efficient to over winter the acorns in the refrigerator in a plastic container with damp peat moss. Weekly examination, however, would be necessary in order to be able to plant as soon as the radicle began to emerge.

Woods rose seed was shipped to us fresh and then cleaned in a modified blender in order to start conditioning in preparation for production.

Chokecherry, Utah serviceberry, Mountain Mahogany, and Douglas fir seed were mixed with a damp media and placed into the refrigerator for cold moist stratification.

**NATIVE PLANT MATS**

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

**DISCUSSION** - We have been looking into what seed is in storage from earlier agreements that is aging and losing viability. We have encouraged the park to use what they can while still leaving seed amounts necessary in order to replant fields for future contracts.

**PAST HISTORY OF THE PROJECT** - Seed production for Mesa Verde was concluded in 2000. Seed production fields have been removed. All seed lots of Mesa Verde materials were updated for germination in 1999. Results are listed in Table 1 below. The UCEPC will provide stored seed as requested.

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**TABLE 1.** In 2000, an updated seed list of Mesa Verde materials was prepared. All lots were updated for germination in August of 1999, unless noted. Total Pure Live Seed (PLS) amounts are listed for each species unless noted, but individual lots are not listed.

<b>Species</b>	<b>Quantity PLS</b>	
Antelope bitterbrush	23.00 lb	
Blueleaf aster	1.60 lb	Approx.
Corymbed eriogonum	44.00 g	Bulk-not tested
Datil yucca	2.30 lb	
Evening primrose	1.50 lb	
Fourwing saltbush	4.40 lb	Approx.
Hairy golden aster	1.51 lb	
Louisiana sage	36.58 lb	
Low penstemon	69.00 g	Bulk-not tested
Mentzelia multiflora	0.10 lb	
Mountain mahogany	3.00 lb	
Mutton grass	47.60 lb	
Patterson locoweed	45.00 g	Bulk-not tested
Pinyon pine	17.90 lb	
Rubber rabbitbrush	0	Dead seed
Salina wildrye	3.00 lb	
Slender wheatgrass	231.52 lb	
Snowberry	7.00 lb	Approx.
Spur lupine	86.00 g	Bulk-not tested
Tarragon	0.30 lb	
Utah juniper	0.20 lb	
Utah serviceberry	4.20 lb	Approx.
Western wheatgrass	60.70 lb	
Yarrow	35.04 lb	

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**TABLE 2. 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