

Project No. 08S208
Annual Report – December 2001
By: Dr. Gary L. Noller

**Mesa Verde Cooperative
Plant Materials Agreement**

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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 2001. The Upper Colorado Environmental Plant Center entered into an agreement with Mesa Verde National Park initially on September 26, 1990. This agreement was amended most recently in 2000 and no longer involves seed production. In 2001, work was done in the plant centers greenhouse to provide live plants to the park.

Plant materials were provided for the park twice in 2001. Seed was requested by the contractor for the park, and live plants were delivered to the park.

Native plant mats grown in the plant centers greenhouse are still growing at the plant center, however, no notes were taken on them in 2001.

CURRENT CONTRACT SPECIES

Common Name Number	Scientific Name	Symbol
Utah serviceberry (9024869)	<i>Amelanchier utahensis</i>	AMUT
Mountain mahogany (9024874)	<i>Cercocarpus montanus</i>	CEMO2
Snowberry (9024898)	<i>Symphoricarpos oreophilus</i>	SYOR2
Gambels oak (9024895)	<i>Quercus gambelii</i>	QUGA
Fourwing saltbush (9024878)	<i>Atriplex canescens</i>	ATCA2
Blueleaf aster (9024870)	<i>Aster glaucodes</i>	ASGL3

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SEED COLLECTION AND CONDITION INFORMATION

No seed collection trips were made to the park in 2001. Serviceberry was collected by park personnel and sent to the center and 2001. This amounted to 190.0 g.

SEED PRODUCTION

Seed production for Mesa Verde was concluded in 2000.

NATIVE PLANT MATS

Native plant mats are still growing at the plant center, but notes were not taken on them in 2001.

TRANSPLANT PRODUCTION

Introduction

This section updates the 10 ft row plantings. No notes were taken on these materials in 2001, but no substantial changes in the planting were noted from 1998. In addition, no seed was harvested from these materials in 2001.

Row Plantings

Five new 10 ft rows were added to the planting in 1994 to serve as a test for producing Utah serviceberry. All five rows were watered in May 1995 and kept moist. April and May of 1995 were wet months. Several of these rows did have seedlings in May of 1995 and many were still present in August of 1995. A hail storm in late May was probably responsible for the loss of some of the seedlings recorded on August 31, 1995. Row 29 (16 hulled seeds in groups at 1 foot intervals) produced the most seedlings in May and August.

In 1996, three 10 ft rows were added to the planting. On June 13, 1996 a row of each of the three forbs added to the contract in 1995 was planted. Three grams of seed for each was planted in each 10 ft row. Seeds were stratified for approximately 120 days at about 40 F. Seeds for low penstemon were from two lots received in 1995 (two grams from a lot received in early 1995 and one gram from a lot received in late 1995).

Also in 1996, a planting of evening primrose grown in the greenhouse was added. Seventy-eight plants were planted on June 16 and 16 plants were added on August 23. These plants produced numerous sprouts and seed was collected from September 9 to October 9, amounting to 4.00 grams of clean seed. Seed was collected in 1997 on August 6 and 7 which amounted to 1.47 lb clean seed. In 1998, 0.78 lb of seed was collected by hand on August 11 - 13.

In 1997, the materials seeded in 1994 in 10 ft rows were dug on April 21 and provided to the park on April 22 as bareroot materials.

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Row 33. Low penstemon - planted 3 grams of seed (from two separate collections in 1995) in 10 ft of row on June 13, 1996 - rows were watered from time of planting to August 15, 1996 - no plants were found on August 23, 1996 - Noted first seedlings April 22, 1997 - November 6, 1997, numerous plants for portion of row seeded with the early collected 1995 seed - October 14, 1998, plants numerous for three-fourths of the row - very light seed was present, not collected. Seed collected by hand September 22, 1999, produced 3 grams clean seed - No seed was collected in 2001.

Row 34. Evening primrose - planted 3 grams of seed in 10 ft of row on June 13, 1996 - rows were watered from time of planting to August 15, 1996 - plants have sprouts - 5 plants plus sprouts August 23, 1996 - November 6, 1997, numerous plants - some plants 15 ft from where planted, spreading by roots - seed collected August 6 and 7, 1997 by hand - October 14, 1998, numerous plants, some almost 20 ft from original row - Seed collected August 11 - 13, 1998. Seed collected by hand September 22, 1999, produced 0.62 lb clean seed - No seed was collected in 2001.

Row 35. Spur lupine - planted 3 grams of seed in 10 ft of row - rows were watered from time of planting to August 15, 1996 - 1 plant has flowers - 8 plants on August 23, 1996 - November 6, 1997, approximately 7 plants - most produced seed, but was not collected - October 14, 1998, several large plants, some seedlings 20 ft from original row, abundant seed but not collected, still flowering - No seed was collected in 2001.

Greenhouse production

Plants were grown in the greenhouse for Mesa Verde in 2001. Most of these plants were delivered to the park in 2001. Oaks that were provided with this delivery had increased in number from 364 that had germinated in the fall of 2000, to 709, which includes those that germinated later. In addition, plants of blueleaf aster (98) and Utah serviceberry (697) are growing in the greenhouse for future use by Mesa Verde.

Field Scale Transplant Nursery

All plants were provided to the park in 1997.

Plant Materials provided to the Park

Two shipments of plant materials were provided to the park in 2001. Seed was provided to the park contractor in June (see 596 # 200113) and live plants were taken to the park in September (see 596 # 200124).

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SUMMARY

1. A new Interagency Agreement and an Amendment to that agreement were approved in 2000.
2. No seed collection trips to the park were made in 2001. However, park personnel collected Utah serviceberry and sent the seed to the plant center.
3. One plant delivery trip was made to the park in 2001.
4. Native Plant Mats grown for Mesa Verde at the plant center in 2000, are still at the plant center, but no notes were taken on them in 2001.
5. Seed lots of Mesa Verde materials were updated for germination in 1999. Quantities for each species were updated in 2001 (Table 1).
6. Table 2 was prepared in 2000 to identify the amount of seed necessary to reestablish seed production fields at the plant center.
7. 2000 was the last year for contract seed production for the park.
8. Live plants of blueleaf aster and Utah serviceberry are growing in the plant centers greenhouse for future use by Mesa Verde.

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Table 1. An updated seed list of Mesa Verde materials. 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.

SPECIES	QUANTITY PLS
Western wheatgrass	62.90 lb
Slender wheatgrass	235.10 lb
Salina wildrye	3.00 lb
Mutton grass	57.40 lb
Yarrow	35.50 lb
Blueleaf aster	1.60 lb
Hairy golden aster	11.50 lb
Louisiana sage	38.10 lb
Patterson locoweed	45 g (bulk-not tested)
Mentzelia multiflora	0.10 lb
Corymbid eriogonum	44 g (bulk-not tested)
Tarragon	0.30 lb
Spur lupine	86 g (bulk-not tested)
Evening primrose	1.50 lb
Low penstemon	69 g (bulk-not tested)
Utah serviceberry	4.20 lb
Mountain mahogany	3.00 lb
Snowberry	7.00 lb
Fourwing saltbush	4.40 lb
Datil yucca	2.30 lb

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SPECIES	QUANTITY PLS
Antelope bitterbrush	23.00 lb
Rubber rabbitbrush	0 (seed dead)
Utah juniper	0.20 lb
Pinyon pine	17.90 lb

Table 2. Seed necessary to reestablish seed production fields at the plant center.

Name	Quantity PLS
GRASSES	
Western wheatgrass	5.00 lb
Slender wheatgrass	5.00 lb
Salina wildrye	2.00 lb
Mutton grass	5.00 lb
FORBS	
Yarrow	1.00 lb
Hairy golden aster	1.00 lb
Louisiana sage	1.00 lb