

**SEQUOIA AND KINGS CANYON NATIONAL PARKS**  
**1996 Annual Report**  
**prepared by**

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**INTRODUCTION:** The Upper Colorado Environmental Plant Center (UCEPC) entered into an agreement with Sequoia and Kings Canyon National Parks on June 20, 1994. The agreement was amended in 1995. The goal of the project is to develop propagation, cultivation, and cleaning technology for and deliver a total of 800 PLS lbs. of seed for Wuksachi Village and 440 PLS lbs. of seed for Giant Forest. The species list was expanded with the 1995 Amendment.

**ACCOMPLISHMENTS:** Two meetings took place to discuss separation of materials for Wuksachi Village and Giant Forest and the loss of seed fields during the winter of 1995-96. Fields were kept separate. Seeds received in 1995 in large enough quantities were tested at the Colorado Seed Laboratory in 1996. In December, 1996, seed was received from the park for 11 species. Seed was harvested from 4 contract species in 1996. Seed was used to plant or replant seed fields for 8 contract species in 1996. Plants from the greenhouse were planted in seed fields for 5 contract species in 1996. Three contract species (Orcutt's brome, bearded melicgrass and naked buckwheat - all from Wuksachi Village) had plants alive in 1995 that were dead or mostly dead in 1996. Snow fence was installed for 5 species in 1996 to simulate park conditions and determine effects on species survival.

<b>Seed Fields</b>	<b>Seed Harvest (Cleaned)</b>
<b><u>Grasses</u></b>	<b><u>Wuksachi</u></b>
1. Blue wildrye - 0.62 acre	54.0 lbs.
2. Orcutt's brome - 0.64 acre	8.2 lbs.
3. California needlegrass - 0.12 acre	12.0 gms.
<b><u>Forbs</u></b>	
1. Sticky cinquefoil - 0.34 acre	212.0 gms.

Seed was hand harvested from plants grown in greenhouse and planted in the field in 1996.

**TECHNOLOGY DEVELOPMENTS:** Seed cleaning technology was developed for each species cleaned. Specific information can be provided on request.

## I. Introduction

This progress report covers the 1996 activities conducted by the Upper Colorado Environmental Plant Center Meeker, Colorado, for Sequoia and Kings Canyon National Parks Cooperative Plant Materials Agreement. The agreement was amended in 1995. No seed collections from the park were made in 1996. Seeds received in 1995 in large enough quantities were tested in 1996 (See Colorado Seed Laboratory Reports).

## II. Contract species (Wuksachi Village)

<b>Common Name</b>	<b>Scientific Name</b>	<b>Accession No.</b>
<b>Grasses</b>		
Blue wildrye	<i>Elymus glaucus</i>	9070859
Orcutt's brome	<i>Bromus orcuttianus</i>	9070855
California needlegrass	<i>Stipa californica</i>	9070860
Bearded melicgrass	<i>Melica aristata</i>	9070858
<b>Forbs</b>		
Sticky cinquefoil	<i>Potentilla glandulosa</i>	9070856
Naked buckwheat	<i>Eriogonum nudum</i>	9070857

The original species list was amended in 1995 and expanded to include the following.

## III. Seed collection and conditioning information

No seed collections from the park were made in 1996. Seeds received in 1995 in large enough quantities were tested in 1996 (See Colorado Seed Laboratory Reports).

## IV. Seed Production

Six seed production fields were planted in 1995. Seeds were planted at a rate of about 30 seeds per foot of row in rows spaced 3 feet apart. Plants were grown in the greenhouse for 4 species of grasses. These plants were planted in the seed fields as tublings. No seed was harvested from these fields in 1995.

In 1996 additional seed fields were seeded and live plants that were grown in the greenhouse were planted in some fields. The following is a review of what has been done for each location (Wuksachi Village or Giant Forest) species by species.

### Grasses

1. Blue wildrye (Wuksachi Village) - 0.62 acre was planted on April 14, 1995 - good stand on August 30, 1995 - very light seed heads, no harvest in 1995 - 700 tublings were planted on August 8, 1995 - no additional planting in 1996 seed harvested July 16 - 30, 1996 - lbs. clean seed.
2. Blue wildrye - 9070923 - (Giant Forest) - 0.15 acre planted May 31, 1996 - seeded at rate of about 30 seeds per foot of row - moderately good stand on August 20, 1996 - no seed harvest in 1996.
3. Orcutt's brome (Wuksachi Village) - 0.64 acre was planted on April 14, 1995 - good stand on August 30, 1995 light to moderated seed heads, no harvest in 1995 - 600 tublings were planted on August 8, 1995 - planting mostly dead spring of 1996 - seed harvested July 12 1996, lbs. clean seed - 4 row interseeded on west side of field August 7, 1996.
4. Orcutt's brome - 9070924 - (Giant Forest) - 0.19 acre planted May 30, 1996 - seeded at rate of about 30 seeds per foot of row - stand spotty on August 20, 1996 - no seed harvested in 1996.
5. California needlegrass (Wuksachi village) - 0.12 acre was planted on June 6, 1995 - poor stand on August 30, 1995, only few seed heads - 100 tublings were planted on September 5, 1995 - 60 plants from greenhouse planted July 3, 1996 - hand harvested seed July 3-22, 1996, grams clean seed 3 rows interseeded August 8, 1996 - poor stand August 20, 1996.
6. California needlegrass - 9070925 - (Giant Forest) - 0.06 acre planted May 31, 1996 - seeded at rate of about 30 seed per foot of row - planted approximately 60 plants from greenhouse on July 3, 1996 - poor stand August 20, 1996 no seed harvest 1996.
7. Bearded melicgrass (Wuksachi Village) - 0.20 acre planted on June 6, 1995 - fair stand on August 30, 1995 plants are small - 1300 tublings were planted on August 9, 1995 - planting mostly dead spring 1996 - planted approximately 100 plants from greenhouse July 26, 1996 planted 0.05 acre from seed on west side of field August 7, 1996 - see no new plants August 20, 1996 - no harvest 1996.
8. Bearded melicgrass - 9070926 - (Giant Forest) - 0.03 acre planted May 31, 1996 - seeded at rate of about 30 seeds per foot of row - planted 330 plants from greenhouse July 3, 1996 - poor stand August 20, 1996, plants from greenhouse look OK. - no seed harvest 1996.

### Forbs

9. Sticky cinquefoil (Wuksachi Village) - 0.34 acre was planted on May 26, 1995 - no plants were found on August 30, 1995 - no plants spring 1996 - planted approximately 1200 tublings from greenhouse May 15, 1996 - seeded 0.12 acre August 7, 1996 - seed hand collected July 25 to August 15, 1996, grams clean seed - no plants from seed August 20, 1996 - plants from greenhouse look OK.

10. Naked buckwheat - 0.25 acre was planted on May 26, 1995  
- good stand on August 30, 1995, light to moderate flowering  
- plants dead spring 1996 - few plants from late germination in 1996, left in field to see if they survive to 1997.

11. Pink stickseed 9070927 - (Giant Forest) - seed cleaned 192 grams not planted on center due to weedy appearance - attempted germination tests in greenhouse with only very marginal success in an attempt to produce plants through greenhouse.

#### V. Summary

1. Had two meetings (March 12, and June 6, 1996) to determine if materials should be kept separate for Wuksachi Village and Giant Forest and to discuss loss of seed fields over winter of 1995 - 96. Fields were kept separate for Wuksachi Village and Giant Forest (See memorandum from Wendell Hassell).

2. Seeds received in large enough quantities in 1995 were tested in 1996 at Colorado Seed Laboratory.

3. Seed was harvested from 4 contract species in 1996.

4. Seed was used to plant or replant fields for 8 contract species in 1996.

5. Plants from greenhouse were planted in seed fields for 5 contract species in 1996.

6. 3 contract species had plants alive in 1995 that were dead or mostly dead in 1996.

7. Pink stickseed was tested for germination in greenhouse in 1996 with marginal success.