

COLORADO

UPPER COLORADO ENVIRONMENTAL
PLANT CENTER

2005 WRCC-21 PROGRESS REPORT

Prepared by:

DR. GARY L. NOLLER
UCEPC

5538 RBC #4
MEEKER, CO 81641

(970) 878-5003

INTRODUCTION:

Upper Colorado Environmental Plant Center (UCEPC) is a non-profit corporation organized by two Rio Blanco County, Colorado, Soil Conservation Districts. It is operated with technical assistance from the USDA Natural Resources Conservation Service (NRCS) as well as assistance from other federal and state agencies, and the private sector. UCEPC is situated on a 269 acre site near Meeker, Colorado. The plant center's service area is the Upper Colorado River Basin. The region is mountainous with high plateaus, open parks, mesas, and river valleys.

UCEPC has the following high priority areas identified in its long-range plan:

1. High altitude and disturbed lands revegetation
2. Vegetative treatment to improve water quality
3. Increased productivity and conservation of rangeland, pasture, and woodland resources
4. Wildlife habitat enhancement
5. Xeriscape and horticulture uses of native plant materials

ANNUAL HIGHLIGHTS:

In 2005, the plant center **released two plants**. They are:

Pueblo Germplasm Bottlebrush Squirreltail Selected Class Release.

This release, along with Wapiti germplasm, will represent the only releases of *ssp. brevifolius* from single sources. Pueblo was collected in 1976 in the wet mountains southwest of Pueblo, Colorado. It is intended for use on oil shale, coal and mined land, and transmission corridors as well as for erosion control on cropland and rangeland.

Wapiti Germplasm Bottlebrush Squirreltail Selected Class Release

Wapiti was collected in 1981 near Buford, Colorado. Its intended use is the same as the Pueblo source.

In 2005, several **seed production plantings** were established at the plant center. They are:

A. Plant Center Materials	
Wapiti squirreltail	1.0 ac
'Redondo' Arizona fescue	1.0 ac
'Timp' Utah sweetvetch	1.0 ac (spaced planting)
'Peru Creek' Tufted hair grass	plot
Fringed sage	plot
B. Bureau of Land Management Materials	
Utah sweetvetch	1.0 ac (spaced planting)
Sandberg bluegrass	1.0 ac
C. Uncompahgre Plateau Materials	
Lobeleaf groundsel	0.13 ac

- D. National Parks
 - Needle and thread (Rocky Mountain) 0.37 ac
 - Blue grama (Great Sand Dunes) 1.0 ac
 - Ring muhly (Great Sand Dunes) 0.20 ac
 - Slender wheatgrass (Teton) 1.0 ac

- E. Colorado Mined Land Reclamation Materials
 - Purple pinegrass (*Calamagrostis purpurascens*) plot

The following new **studies** were initiated at the plant center in 2005.

1. Mountain Brome Seed Treatment
To determine effectiveness of fungicides in controlling or reducing the incidence of head smut in mountain brome (Garnet germplasm). The study should also help to understand the incidence of the disease.

2. Junegrass Seeding Study
This study should help determine the best planting times and methods for establishing prairie junegrass.

The following is a new **conservation trial**.

1. South Park Conservation Trial
This trial will look at revegetation methods for sites where water sales have dewatered areas of south-central Colorado.

The following are new **field plantings**.

1. Lands End FEP
The purpose was to determine which plant materials if any, compete most successfully with Russian Knapweed and prevent re-invasion after herbicide treatment. The site receives 8 – 10 inches of annual precipitation.

2. Boulder County Open Space Demonstration
This planting is a demonstration to land owners etc., on the attributes of various selected plant materials to establish a permanent cover on what was becoming a weed infested site.

In June a **tour** of the plant center was provided for the American Society of Mining and Reclamation. Various aspects of the plant materials program were discussed.

ONGOING PROJECTS:

1. **The Tested Class Release of Garnet Mountain Brome**
Mountain brome is for use in conservation systems for controlling erosion, improving water quality, and to improve livestock and big game ranges above 6,000 feet in elevation that receive over 15 inches of annual precipitation. The accession has been selected for increased resistance to head smut, extended seed production, and increased longevity over 'Bromar'. It is intended for use in revegetation of coal, oil shale mined lands, transmission corridors, improvement of wildlife habitat, and erosion control on cropland. Garnet was released in 2000 and seed has been provided to growers.
2. **Release of Maybell Source Antelope Bitterbrush**
Antelope bitterbrush (*Purshia tridentata*) is a native shrub given high priority for oil shale restoration, wildlife habitat improvement, and rangeland seeding. The Maybell source was collected near Maybell, Colorado. A selected class release was approved in early 1997, and seed is available to commercial growers. A project has been initiated to re-establish Maybell bitterbrush on its original site after a series of fires destroyed most of the original stand. Bitterbrush has been planted and evaluated at the site. A study on the fate of fall-sown bitterbrush seed at Maybell, Colorado was completed in 2002. A project to examine the effects of seed age on bitterbrush establishment was completed in 2004.
3. **Exxon Planting**
The project has reference plots for comparison to oil shale revegetation work done by Exxon at the Colony Site. The project was last evaluated in 2004; however, the results from the project are under a non-disclosure agreement.
4. **Northwest Colorado Prairie Junegrass Crossing Block**
Seed from the crossing block was bulked and used for a 1 acre planting in 2002. The 1 acre planting was harvested in 2003, 2004, and 2005. The seed will be used to develop a Northwest Colorado release of prairie junegrass.
5. **Increase of Salina Wildrye**
Salina wildrye is a native, cool season, bunchgrass found on rocky slopes and sagebrush hills in Colorado, Idaho, Utah, and Wyoming. The grass is quite drought and alkali tolerant and should be important for reclamation of mined lands, roadsides, surface-disturbed areas, and areas of heavy use. Two plantings on the center are harvested, but have only provided small quantities of seed. Both plantings were harvested in 2005. An additional planting of salina wildrye was added in 2004.
6. **Shrub Orchard – Transplanted Woody Species**
Shrubs have been evaluated for survival, vigor, and wildlife usage. Certain accessions have been identified for xeriscape landscaping and horticulture plantings. An updated report on this project is developed each year.
7. **Seed Increase of Thinleaf Alder**
Seed from thinleaf alder from northwest Colorado has been collected. The seed will be used for a release of thinleaf alder. No seed was harvested in 2005.

8. **Park Agreements**
 In 2005, UCEPC had cooperative agreements with Rocky Mountain, Mesa Verde, Teton, Bryce Canyon, Lassen Volcanic, and Great Sand Dunes National Parks, and Dinosaur National Monument.

9. **Summitville Superfund Site Seed Increase**
 Seed production fields of alpine timothy, Bigelow groundsel (*Senecio bigelovii*), slender wheatgrass, spike trisetum, and tufted hairgrass, all high elevation plants, were established at the plant center. Seed was harvested from all but tufted hairgrass in 2002. The groundsel is from an alpine setting and vigorous plants are still present in the planting. As a result, we plan to evaluate the potential of the plant for use at high elevations.

10. **Native Plant Mats**
 In 2000, a small project was developed in the greenhouse to produce Native Plant Mats. In 2002 a field project was initiated to continue the development of these mats. The field project was evaluated in 2003 and a project report was written in 2004.

11. **UCEPC is currently responsible for breeder's class and/or foundation class seed of the following cultivars:**

<ul style="list-style-type: none"> 'Arriba' western wheatgrass ARS-2678 kura clover 'Bandera' Rocky Mountain penstemon Garnet mountain brome 'Hatch' winterfat 'Hobble creek' mtn. big sagebrush 'Hycrest' crested wheatgrass 'Luna' pubescent wheatgrass 	<ul style="list-style-type: none"> Maybell – source antelope bitterbrush 'Montane' mountain mahogany 'Peru Creek' tufted hairgrass 'Redondo' Arizona fescue 'San Luis' slender wheatgrass 'Summit' Louisiana sage 'Timp' northern sweetvetch 'Volga' mammoth wildrye
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CURRENT PUBLICATIONS AND PAPERS:

Maybell bitterbrush – Division of Wildlife – 2005 project report 08A210, (which includes COPMC-T-9802-WL Caching and tubling plants in plots and COPMC-T-9803-WL Tubling plants in rows).

Seed production – a plant center report for 2005.

Live plant production – a plant center report for 2005.

Transplanted orchard woody species – 2005 project report 08I020J.

2005 reports for National Parks:

- Bryce Canyon
- Dinosaur National Monument
- Grand Teton
- Great Sand Dunes
- Lassen Volcanic
- Mesa Verde
- Rocky Mountain

Northwest Colorado junegrass – 2005 project report 08A207

Monthly and annual weather report for plant center, 2005

Native vegetation mats - T-0201-CR

Smooth brome comparison – 08A209

Notice of release for both Pueblo and Wapiti germplasm bottlebrush squirreltail