

COLORADO

**UPPER COLORADO ENVIRONMENTAL
PLANT CENTER**

2004 WRCC-21 PROGRESS REPORT

PREPARED BY:

**DR. GARY L. NOLLER
UCEPC**

**5538 RBC #4
MEEKER, CO 81641**

(970) 878-5003

INTRODUCTION:

The Upper Colorado Environmental Plant Center (UCEPC) is a non-profit corporation organized by two Rio Blanco County, Colorado, Soil and Water 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. The UCEPC is situated on a 269 acre site near Meeker, Colorado. The center's service area is the Upper Colorado River Basin. The region is mountainous with high plateaus, open parks, mesas, and river valleys.

The 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 2004, Bob Escherman (the new plant materials leader) attended our annual advisory meeting at the plant center.

The new linear move sprinkler system was used to water our North 80 acres and was able to cover that field with 1.5 inches of water in 5 days of continuous operation.

In 2004, several new plantings were initiated at the plant center. The following is a list of these plantings.

A. NRCS materials.

- | | | |
|-------------------|-----------------------------|---------------|
| 1. 'San Luis' | Slender wheatgrass | 1.0 acre (ac) |
| 2. 'Arriba' | Western wheatgrass | 1.3 ac |
| 3. Garnet | Mountain brome | 1.1 ac |
| 4. (not released) | Salina wildrye | 0.1 ac |
| 5. 'Bandera' | Rocky Mountain
Penstemon | 0.1 ac |

B. Bureau of Land Management (BLM) materials.

- | | |
|-----------------------------|--------|
| 1. Bluebunch wheatgrass | 0.9 ac |
| 2. Bottlebrush squirreltail | 0.2 ac |
| 3. Western wheatgrass | 0.8 ac |

C. Park Service materials.

1. Bryce Canyon	Slender wheatgrass	1.2 ac
2. Grand Teton	Showy goldeneye	0.3 ac
3. Lassen Volcanic	Mountain brome (increased size)	0.1 ac
4. Great Sand Dunes	Indian ricegrass	0.5 ac
	Blue grama	0.5 ac
	Ring muhly	0.2 ac

The following new studies were initiated at the plant center in 2004.

1. Advanced testing of Indian ricegrass for heavy soils.
2. Mountain brome seed treatment for control of head smut with emphasis on Garnet.

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. In 2004, a 0.18 acre planting on the center was harvested. In addition, a new planting of Garnet was added in 2004.
2. Release of Maybell source antelope bitterbrush
Antelope bitterbrush (Prushia tridentata) is a native shrub given high priority for oil shale restoration, wildlife habitat improvement, and rangeland seeding. The Maybell source (9024373) was collected near Maybell, Colorado, and a seed production orchard is planted at the plant center. 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 (COPMC-0202-WL) 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 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 and 2004, and 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 2004. 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 2004.
8. Park agreements
In 2004, the UCEPC had cooperative agreements with Rocky Mountain, Mesa Verde, Teton, Yosemite, Bryce Canyon, and Lassen Volcanic National Parks, and Great Sand Dunes and Dinosaur National Monuments.
9. Summitville superfund site seed increase
Seed production fields of alpine timothy, Bigelow groundsel (Senecio), 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 senecio 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. The 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
---	--

CURRENT PUBLICATIONS AND PAPERS:

Maybell bitterbrush – Division of Wildlife – 2004 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 2004.

Live plant production – a plant center report for 2004.

Transplanted orchard woody species – 2004 project report 08I020J.

2004 reports for National Parks:

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

Exxon plant materials studies – 2004 report 08A194

Northwest Colorado junegrass – 2004 project report 08A207

Monthly and annual weather report for plant center, 2004

Native vegetation mats - T-0201-CR

Smooth brome comparison – 08A209

Effects of seed age on germination and emergence of Maybell bitterbrush seed (COPMC-T-0202-WL)