

Upper Colorado Environmental Plant Center

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Upper Colorado Environmental Plant Center (UCEPC) is a non-profit facility owned and operated by two soil conservation districts in north-west Colorado. The 269 acre center is located at an elevation of 6500 feet with 16 inches of annual precipitation and a 90 day frost free growing season. Our service area includes mountains, deserts, and plateaus of the Rocky Mountain west.



Our Goal

Upper Colorado Environmental Plant Center works to ensure an improved quality of life for people and those affected by human activities. We provide quality plant materials and associated technology to those engaged in natural resource management. Each of us understands the importance of plants in our lives. From a golf course fairway to a forested mountain; a houseplant to an alpine meadow. Plants and their successful management, affect our quality of life. It is our mission to conserve or improve environmental conditions through the wise use of plants.

High Priority Areas

Presently, there are many plant species and projects at UCEPC which our Technical Advisory Committee has identified as providing substantial benefit for resource conservation. These projects fall into one of five identified High Priority Areas:

- Revegetation of high altitude and disturbed land
- Increased productivity of rangeland and pastures
- Improved water quality
- Wildlife habitat
- Use of native plants in xeriscape and horticulture



'Arriba' Western Wheatgrass

Our Purpose

UCEPC is unique in that it is the highest elevation center within the Plant Materials system. A vital need was identified over 25 years ago within NRCS and among many NRCS customers for plant materials and associated technology for high elevation uses.



Bottlebrush squirreltail
Wapiti

Watershed Field Day

The Upper Colorado Environmental Plant Center, hosted a watershed field day on August 30, 2007. The field day was sponsored by White River, Douglas Creek, North Platte and Yampa River Conservation districts.

The purpose of the field day was to share information between industry, land owners, legislators and conservationists to mitigate the impacts that energy development is having in the entire watershed formed by the North Platte, White and Yampa River watershed.



Senator Jack Taylor addressing the attendees during the Luncheon

Attendees had a chance to share their opinions with legislators and industry on energy development impacts. A luncheon sponsored by EnCana (Industry) was provided during the field day. State Senator Jack Taylor spoke during the Luncheon. Taylor discussed concerns on Agriculture, erosion, water, power, infrastructure and other environmental impacts.



Tour of Piceance Basin

Attendees had the opportunity to tour the Plant Materials Center before lunch, and after lunch, took a bus tour of the Piceance basin, near Meeker, Colorado.

The Piceance Basin is nationally recognized for its rich mineral deposits, including oil shale. This basin is an important component of the North Platte, White and Yampa River watershed. Those on the tour had an opportunity to observe the impacts of energy development, and the work the White River and Douglas Creek Conservation Districts are doing to protect the watershed through reclamation and weed control projects.

Hands-on Plant Identification & Invasive Plant Control

For the second year in a row, the UCEPC provided plant materials training to NRCS employees. This year, 11 employees from Colorado, Utah, and Wyoming participated in the training. The two-day training was held at the Meeker Plant Center on June 13-14, 2006. Hands-on plant identification were one of the topics that students got experience on. Students identified grass and forb plants and presented the findings to the whole class. In addition to plant identification, a guest speaker, Dr. Daniel Bean, Manager of the insectary from Colorado Department of Agriculture located at Palisade, Colorado, provided students with hand-on biological control on invasive plants. Dr. Bean took students to a nearby site invaded by Leafy Spurge (*Euphorbia esula*) to demonstrate a release of flea beetles (*Aphthona* spp.) for biological control of this invasive weed. Adult's flea beetles eat the leaves of spurge while the larvae feed on the roots.



Flea beetle release by Dr. Daniel Bean

The training was well received by NRCS employees that another session is being planned for 2007.

Miller Creek Conservation Planting

As is the case with many western states, irrigation is critical for crop production. The Upper Colorado region is irrigated primarily from surface water rather than from wells which is more typical of other areas in the west.

In 2002, a major irrigation ditch in the upper White River Valley was partially destroyed from a major landslide. The damage to the ditch and the extent of the land movement was not fully realized until late spring after the snow melted off. However, because 2002 was a near record drought year, the evidence of this major land movement event occurred weeks earlier than it would have in a more normal year. Because of the early discovery and quick action by the local NRCS field office, NRCS area engineer, Farm Service Agency, and shareholders of the ditch company, the ditch was repaired and some irrigation benefit was realized before the end of the growing season.



Area below ditch
Before

Same area After

An emergency request for reseeding the repaired slopes above and below the ditch was received by UCEPC in June, 2002. The success of the seeding was deemed critical to prevent further erosion and potential damage to the ditch banks. The location of the damaged area of the ditch is elevated approximately 200 feet above the White River. It was feared that any compromise to the structural integrity of the ditch could result in significant detrimental effects to the White River and the entire slope below the area of ditch repair.

After repairs were completed to the contour areas below the ditch, personnel from UCPEC, members of the ditch company and the local NRCS field office planted 250 PLS pounds of grass seed on 18 acres of disturbance. A mixture of 14 cultivars with proven performance was broadcast by hand and by the use of an ATV broadcast planter on slopes that were approximately 1.5 to 1.



Repaired ditch prior
to reseeding



Vegetated ditch bank

An evaluation done in 2006 revealed excellent results from the seeding. The seeded area below the ditch had approximately 85% cover, 10% litter and 5% bare ground.



Repaired area above ditch

A combination of western, intermediate, slender and thickspike wheatgrass, meadow and mountain brome, and sheep fescue was used for the mixture. The seeded slope below the ditch appears to be stabilized, and further soil erosion on this slope should be minor.



Reseeded slope above...



and below ditch

Willow Planting in an Ephemeral Stream

With the increased interest in riparian improvement projects and national programs such as WHIP and EQIP, Upper Colorado Environmental Plant Center planted multiple willow species in three separate locations during the spring and summer of 2000. Each of the species planted was collected from the Center's willow cutting block, which included 13 species of native willows. Materials were collected as 24" hardwood cuttings in February and March of 2000 and held in suspended dormancy in a cold storage/bare root facility until the time of planting. Plantings were done at sites of varying elevations and stream characteristics.

The planting into an ephemeral stream's incised channel was done at an elevation of 6100 feet into alluvial soils with some alkaline characteristics. This planting was designed for species adaptability to heavy, alkaline soils, but also to re-establish woody riparian species into an ephemeral stream which is largely devoid of such materials. Extensive erosion of deep soils had created very deeply cut, steep sided channels with little stability. Adapted woody plants are needed to aid in channel stabilization and to improve stream system dynamics of perennial and ephemeral streams.

The objectives of this planting were to (1) determine if willow cuttings could be successfully established in Jordan Gulch, an ephemeral stream, and to (2) ascertain which of two species was more site adapted.

Two species, yellow willow (*Salix lutea*) and coyote willow (*Salix exigua*), were planted on August 22, 2000 in Jordan Gulch west of Meeker, Colorado. The planting consisted of four replications of three accessions. Each replicated accession was planted with five entries across or perpendicular to stream flow. The two-foot cuttings were placed as deeply as soil would allow such that two to three buds were above ground. The cuttings were also planted at a slanted, downstream angle to help prevent debris from hanging up on the cuttings and washing them out.

Two years after planting, both yellow willow and coyote willow were present, and the planted rows were identifiable. The evaluation in 2003, three



Two years after planting

years after planting, revealed the presence of both species, but there were no longer any discernable rows.

Six years after planting, willows persist upstream and downstream of the planting location. However, only coyote willows were observed, but they are present along the stream channel approximately 300 feet below the benchmark location for the planting. No yellow willows were found. Trapped sediment from the planting has raised the incised channel approximately 50 inches vertically, and has made a very suitable site for a robust herbaceous vegetative component. The willow planting in an ephemeral stream has been successful in reducing erosion, trapping sediment and increasing herbaceous cover, and for determining that one willow species of the two planted, coyote willow, is much better adapted than yellow willow to this particular site.



Pictures represent
six years
after planting

