

Xeriscape demonstration

11 The eight mini landscapes demonstrate landscaping themes using plants with similar water requirements. As the plants mature the amount of water use will be noted. This should provide details and ideas to create gardens and landscapes that use less water.

For example, a well-maintained lawn uses approximately 80-90 percent of Reference ET, depending upon the grass species and variety.

A Low Water Use Garden displays plants native to Colorado and the region as listed in Colorado State University Cooperative Extension literature. They thrive on a low water, estimated to be about 25-50 percent of Reference ET.

Low Water Use Garden includes plants that have been introduced from other parts of the country and world but seem to do well in our climate. Many are popularly used in new landscapes and are available at nurseries and garden centers. They also do well on low water, at 25-50 percent of Reference ET.

B Medium Water Use Garden displays plants that require about 50-75 percent of Reference ET.

C The 4 Seasons Garden uses a variety of plants to show color and interest throughout the year. This garden's look changes as the seasons do.

D The "Colorado Style" Landscape shows an arrangement of frequently used plants.

E Prairie Landscape shows the plants and predominant grasses found native to the short grass prairie of northeastern Colorado, where average annual precipitation is less than 15 inches per year.

F Very Low Water Use Garden requires no additional water. Once established, it survives during a typical year with normal precipitation. It may need additional water during drought periods.

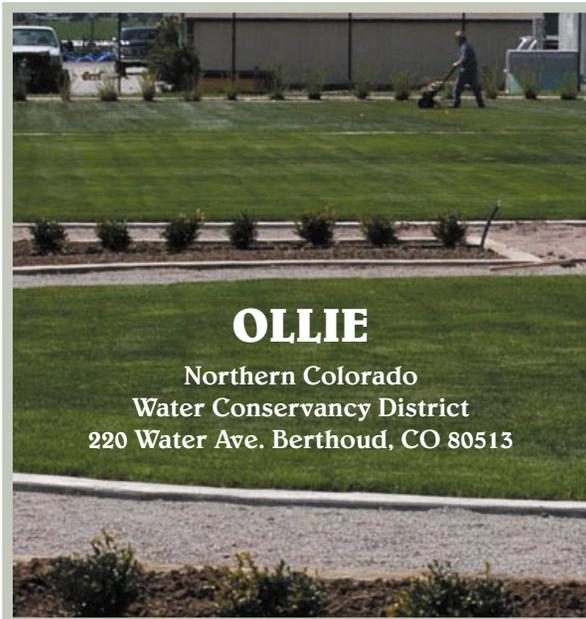
General information

The Northern Colorado Water Conservancy District is a public agency created in 1937 under the Water Conservancy District Act. The District contracted with the U.S. Bureau of Reclamation to construct the Colorado-Big Thompson Project.

As part of the District's mission, an Irrigation Management Service was established in 1981. IMS initially focused on agricultural water conservation. In 1994 the program was expanded to include a landscape irrigation management component. The intent was to provide practical information to homeowners, industry and landscape professionals on water conservation and related subjects.

Today, OLLIE is part of that mission. The outdoor lab provides public demonstrations of the latest technologies for improved turf and water management in urban settings. The studies in this garden are dynamic and ongoing.

For details please see the District's Web site at www.ncwcd.org or call the headquarters office at 970-532-7700.



Outdoor Laboratory for Landscape and Irrigation Education



Native grasses

1 Indigenous grasses grow along the prairie regions of Colorado's Front Range. Cool season grasses grow best during the spring and fall, while warm season grasses grow best during the hottest times of the year. There are many more native grasses than the ones displayed, but these were selected for their potential use in urban landscapes. Appropriate cultural practices also will be studied.

Irrigation technology demonstration

2 In the past few years, sprinkler heads, nozzles, valves and controllers have undergone many innovations. The new products introduced to the landscape market include several new controllers that use weather data or soil moisture to determine how much water should be applied to the lawn and landscape.

Comparative irrigation techniques

3 Two different systems operate side by side. Subsurface, or below-ground drip irrigation, is installed in one half. The other employs traditional sprinkler products. Each is metered to measure the amount of water required to maintain a healthy lawn.

Soil revitalization demonstration

4 During construction of the NCWCD headquarters, the general contractor used this plot as a staging area. The soil became extremely compacted. Without tilling or preparing the soil, sod was laid, mimicking how many lawns are installed. The study's purpose is to improve the soil's health by applying different products or cultural techniques that could be done by homeowners without removing the lawn and starting over. By improving soil health, the grass becomes healthier, water need is reduced and the lawn becomes more drought-tolerant.

Soil preparation study

5 Using different types of compost, the study investigates ways to improve the soil conditions and reduce water use. Organic amendments included animal and plant waste compost. Both were applied at the rates of 3 cubic yards and 6 cubic yards per thousand square feet. Biologicals and soil microorgan-

ASCE Standardized Penman-Monteith Evapotranspiration equation to calculate Reference ET. It is modified to estimate how much water plants and grasses need.

Surrounding the weather station area are the controllers and data collecting equipment. The plants are "walkable" ground covers, drought hardy perennials and annual flowers.

Sprinkler test pad

7 Sprinkler head performance is based on spacing, configuration and operating pressure. The tests measure how fast and how evenly the water is applied, or precipitation rate and distribution uniformity, respectively. The figures are a basis for recommendations for a high efficiency sprinkler system.

Alternative grass mixes

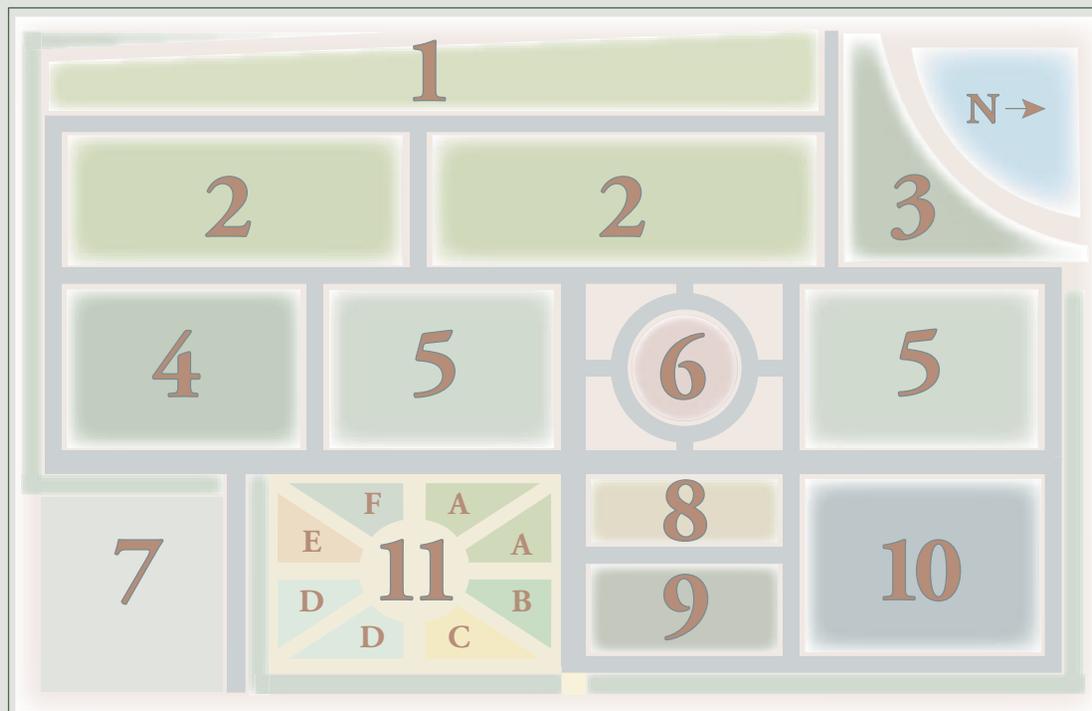
8 Different grass mixes can be used in the urban landscape. Mowing, fertilizing, weed control and irrigation may have to change to ensure they thrive. Most of the mixes require less water than typical lawns in our region.

Tall Fescue review

9 New cultivars and varieties of turf-type tall fescue have been developed for urban landscapes. Many are compact and finer bladed than past varieties. A few are Aglyphosphate (Roundup) tolerant. Special attention will be paid to irrigation and maintenance to note which varieties show reduced water demand and greater drought resistance and tolerance.

Bluegrass review

10 Research facilities supplied new Kentucky bluegrass varieties and cultivars to grow and evaluate in our heavy clay soils and arid climate. Some could be used for sod or lawns. Of primary interest is to find new types that better tolerate drought.



isms were added to some treatments to see if there is any additional benefit to naturally-occurring substances and microorganisms.

The west half of each plot was tilled 4-6 inches in the traditional manner. The east half of the plot was first excavated to a depth of 12-15 inches prior to rototilling to see if there is significant benefit to deeper tillage practices. The north plot is an area that was protected from disturbance while the building was constructed.

Weather station area

6 The weather station provides data to calculate the amount of water needed to grow healthy lawns. By measuring the sunshine, temperature, relative humidity and wind we can then use the

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