

University of Idaho Water-efficient Landscape  
Nez Perce County  
Annual Report 2006-2007

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This demonstration landscape follows the Seven Principles of Xeriscape.

***#1. Designing for Water Conservation, Beauty and Utility.***

The purpose of the landscape is demonstration of non-turf water-efficient plants, so turf was not included in the plan. The site was easily accessible by educators and the public. The design was conceived to achieve a plant density typical of Xeriscapes, while providing the potential for evaluation of aesthetic appeal and plant quality. The landscape is also near a water source. Design turf areas so that they are not directly next to sidewalks and driveways – it is difficult to water these areas without waste.

***#2. Improving the Soil.***

It is important to amend soils which are very sandy or very clayey, since they do not do a very good job in holding soil moisture. Adding organic amendments such as manure or compost will add water-holding capacity to sandy soils and break up clay soils so that more moisture is available to plants.

The soil at the site is sandy loam was of reasonable quality for a water-efficient landscape. A mulch of well-rotted horse manure was added one inch deep over the native soil.

***#3. Creating Practical Turf Areas.***

Turfgrass needs about 42 inches of water each growing season in the Lewis-Clark Valley. Most of this water needs to be applied during the hot, dry months of July and August. Ever-tightening supplies of water require a change to landscapes that use less water.

A water-efficient landscape does not necessarily mean zero turf, just limited turf that serves a purpose. A water-efficient landscape utilizes turf where it is either needed for play or to emphasize colors and textures of other plants in the landscape. Turf is designed so that it can be irrigated to minimize water waste.

Consider the use of alternatives to Kentucky bluegrass in low input areas of the landscape. ***See our chart in the appendix.***

Since our landscape is intended to demonstrate water-efficient ground covers, perennials and woody ornamentals, it does not include turf.

## Water-efficient Alternatives to Kentucky bluegrass

Common name	Scientific name	Comments
Tall fescue	<i>Festuca arundinacea</i>	Cool season grass, but is heat-tolerant. Sod-forming. Deep root system. Can be irrigated less frequently than shallow –rooted turfs. Less drought resistant than K bluegrass.
Buffalograss	<i>Buchloe dactyloides</i>	Warm season grass. Fine textured grayish green color. Low shade tolerance. Needs very little water.
Fine fescues including red, Chewings, hard, sheep and Idaho	<i>Festuca</i> spp.	Cool season bunch grasses. Fine leaf texture. Good shade and drought tolerance.
Perennial ryegrass	<i>Lolium perenne</i>	Cool season, competitive grass. May be somewhat drought tolerant. May be mixed with other grasses. Germinates quickly.
Blue grama	<i>Bouteloua gracilis</i>	Warm season bunch grass. Loose, meadow-like appearance. Slow to establish. Excellent heat and drought tolerance.

### #4. Irrigating Efficiently.

A water-efficient landscape such as ours can provide quality aesthetics using half the water. Efficient irrigation attempts to place water directly where plants need it – the root. If it is feasible drip or soaker irrigation practices should be used. Turf still needs to be sprinkler irrigated. When sprinkler irrigating turf, use these practices to be as efficient as possible.

- ◆ Water in the evening or morning before temperatures climb. If you have an automatic system, set it to water between midnight and 6 am.

- ◆ Reduce over spray and runoff. Redesign turf areas so they are not adjacent to hardscapes. If you have clay soils, apply water a little at a time but more frequently.

- ◆ Apply one inch or less of water to turf at a time. Place tuna cans or coffee mug under the sprinkler so you can tell when you have applied enough water.

- ◆ Only water when your turf shows a dry spot.

In our case, we are practicing low volume irrigation to place small amounts of water nearer to the plant roots through a soaker hose. We meter every gallon of water that is applied to the landscape. In 2007, we have irrigated three times, most recently on May 30.

Our irrigation system consists of a network of soaker hoses. There is a loose garden hose attached to a spigot on the building. In spring 2006, the irrigation system was professionally

installed at a cost of \$700 – about 20 cents per square foot. The soaker hose is buried under a layer of mulch to keep it out of the sun and prolong its life and reduce evaporation from the soil surface. In 2007, we began metering the water that is applied to the garden.

We estimate our plants have an average rooting depth of 2-3 feet. Our sandy loam soil holds about 1.5 inches of water per foot of soil, about half of which is available to the plant. Therefore, we would need to apply about 2 inches of water at each application. These water-efficient plants use between 10-.15” per day, which means the irrigation interval should be between 10 and 15 days. It takes us 6 to 8 hours of soaker hose irrigation to apply this amount to the entire garden.

Sandy loam soils hold between 2.5” and 3.0” in two feet of soil. Normally, irrigation is recommended when 50% of this amount is depleted. Therefore, I recommend that we apply 1.5”-2.0” of water each time we irrigate. That means a set of 6 to 8 hours is appropriate. We should take into account local precipitation events, which I am monitoring at my home. We should supplement this schedule with observations on plant quality and health, and it should give us excellent information.

#### ***#5. Selecting Water-efficient Plants Appropriate for our Climate.***

On average, this water-efficient landscape receives about 50% as much water as turf mixed with traditional landscape plants. Our well-established plants will receive a deep irrigation two or three times per month, even in the summer. Xeriscape plants are drought tolerant plants that are more efficient at extracting water from the soil, so that soils can remain drier than traditional plants and turf. They withstand periods of drought without losing the characteristics that make them good landscape plants.

Many species in our landscape were selected because they can go longer periods without water and still look nice in the yard. These plants have not been irrigated since May 30. ***See the attached list of plants and map of the landscape.***

Part of this principle is to group plants according to their water needs. Our landscape is essentially one grouping. Some plants may not look as good under low water circumstances here in the LC Valley. Others may look outstanding.

#### ***#6. Mulch to Reduce Evaporation.***

Mulches, if used properly, can conserve up to 50% of soil moisture, reduce weeds (and work) and moderate soil temperature. All in all, it is good for you and good for your plants. Use organic mulches such as bark or wood chips if possible – they have a cooling effect on the landscape. Organic mulches will also decompose into the soil, adding valuable organic matter. Place mulches 2-3 inches deep around shrubs, vines, groundcovers and trees.

***#7. Maintain the Landscape for Water Conservation and Plant Health.***

Water-efficient landscapes require less mowing, but more pruning, dead-heading and dividing of non-turf plants. Additional mulch needs to be added occasionally as it decomposes and loses its color. Mowing turf at 3 inches in height will conserve soil moisture. Proper pruning, weeding and fertilization will help to reduce water use and maintain plant health.

Local Sources of Water-efficient Plants

Carlton Gardens  
3322 10<sup>th</sup> St.  
Lewiston ID 83501  
208-743-9105

Green Things Nursery  
PO Box 2167  
Orofino ID 83544  
208-476-3022

Patt's Garden Center  
1020 Port Ave.  
Clarkston WA 99403  
509-758-4104

Rozella's Greenhouse and Nursery  
3022 Clemans Rd.  
Asotin WA 99402  
509-243-1166

Other sources of water-efficient plants

High Country Gardens  
<http://www.highcountrygardens.com/>