



## DROUGHT PROOF YOUR YARD: EMBRACE XERISCAPING FOR A GREENER FUTURE

**Shaik Ehlam Nida Arsh<sup>\*</sup>, Dr. M. Raja Naik, Asma Siddiqua**

*Department of Floriculture and Landscaping*

*Dr.Y.S.R Horticultural University, College of Horticulture, Anantarajupeta, Annamayya dist. A.P- 516105*

*\*Corresponding Author Mail ID: [shaiknidaarsh17@gmail.com](mailto:shaiknidaarsh17@gmail.com)*

### Introduction

The current lack of water is a serious threat to landscaping. To preserve our green areas, we need to use water resources wisely. One solution to this problem is Xeriscaping. Xeriscaping, a modern gardening technique, is more prominent than other types of gardening. The term Xeriscape is derived from the Greek word "Xeros" meaning dry, and "Scape" from the word "Landscape". Xeriscaping, also known as low-water use landscaping, is a creative method of landscaping aimed at conserving water. It involves using drought-tolerant and native plants which are adapted to hot, dry climates, along with water-saving techniques. It requires minimal maintenance, reduces water usage by 50% to 75%, and also diminishes the need for fertilizer and herbicide, thus aiding in ecosystem preservation. It may also transform any sort of garden.



It offers numerous benefits:

#### **Low Maintenance:**

Xeriscaping requires less time for mowing and maintenance compared to traditional landscaping.

#### **Limited Water Usage:**

Xeriscaping greatly reduces water usage, making it a sustainable choice amid global water scarcity. About nine billion gallons of fresh water is consumed for irrigation purposes in landscape gardening. Thus, xeriscaping can save many gallons of water per year.

#### **Attract Pollinators:**

Carefully selected flora in a xeriscape environment has the potential to draw in honeybees, birds, butterflies, and other essential pollinators.

**Reduced dependence on chemicals:**

To effectively minimize the reliance on pesticides, xeriscaping adopts the use of native plant species that demonstrate higher resistance to indigenous pests and diseases.

This practice helps minimize the discharge of detrimental chemicals into watersheds and waterways.

**Disease, Pest, and Drought-Tolerant Plants:**

Xeriscaping commonly incorporates the use of indigenous, drought-tolerant plants that exhibit higher resistance to local pests and diseases.

**Environmental Impact:**

Xeriscaping contributes to the preservation of local wildlife habitats and the maintenance of healthy soil, while also serving to reduce water runoff.

**Enhanced Property Value:**

Xeriscaping can enhance property value by creating bright and beautiful landscapes.

By adopting xeriscaping, homeowners can contribute to water conservation and create aesthetically pleasing and eco-friendly landscapes.

**Establishment of a xeriscape garden****1. Planning a Xeriscape garden**

Let's remember that planning, though not elaborate, should carefully consider the exposures on the site. Planning is considered as an important step for creating a new landscape design or improving the old landscape design. For designing a xeriscape garden, the lawn area should be kept considerably low to reduce the water requirement. The use of stones, pebbles and boulders can hold the humus layer and decrease the impact of the soil erosion and these can also increase the look and aesthetics of the garden. The southern and western exposures contribute to higher water losses, particularly in close proximity to buildings or paved surfaces. To minimize water usage, it would be beneficial to consider incorporating plants that exhibit reduced water requirements. Utilizing drought-resistant ground cover can effectively slow down water loss and provide shading for the soil. A xeriscape plan further divides the landscapes into three water-use zones i.e., High, moderate, and low.

**2. Soil improvement**

Xeriscaping, which emphasizes water conservation, requires careful soil analysis to assess whether soil improvements are necessary for enhanced water absorption, water-holding capacity, and appropriate plant selection. Here is a detailed breakdown:

**Soil Analysis**

Conduct soil testing to determine its composition and drainage capacity. Identify any deficiencies that might hinder plant growth.

**Organic Matter Addition**

Apply a layer of organic matter, approximately 7.6-10 cm (3-4 inches) thick. As a general rule,

add 1/3 more organic matter to your local soil. Thoroughly incorporate this organic matter into the existing soil. This helps improve soil structure, nutrient content, and water retention.

**Exceptions**

**Large Turf Grass Areas:** Incorporating organic matter is not necessary in this type and is often not economically feasible.

**Native Plants:** Soil amendment might not be required, but it's important to ensure the soil is loosened to promote root growth and water infiltration.

For the plants which are susceptible to drought which are in the places with scarce irrigation facilities Water-absorbing polymers like hydrogels are used. These hydrogels can hold water hundred times its own weight. These can persist in soil for six months to several years. By following these guidelines, xeriscaping can effectively reduce water usage while maintaining a healthy and sustainable landscape.

Beautification purpose	Useful for wild life
<i>Beaucarnea recurvata</i>	<i>Pereskia atriplicifolia</i> (Russia sage)
<i>Cycas revoluta</i>	<i>Lavendula angustifolia</i>
<i>Cycas circinalis</i>	<i>Festuca glauca</i>
Yucca	Iris
Furcraea	<i>Poinsettia pulcherimma</i>

**3. Plant selection:**

Choosing plants for the xeriscape garden requires consideration. To reduce water requirements and promote happy plant growth, it is possible to plant trees, shrubs, and other plants like succulents that are drought-tolerant or use less water. Perennials are easily grown and come in a multitude of colors and shapes to suit a wide range of climates. Thus,

decision may be made based on preference for different locales while taking the climate into consideration. Native plants tend to be more resilient.

Trees	Shrubs
Japanese Pagoda tree ( <i>Sophora japonica</i> )	Heavenly Bamboo ( <i>Nandina domestica</i> )
Red Cedar ( <i>Juniperus virginiana</i> )	Rock Spiraea ( <i>Holodiscus dumosus</i> )
Golden rain tree/ soapberry ( <i>Koelreuteria paniculata</i> )	Cotoneaster ( <i>Cotoneaster spp.</i> )
Red Maple ( <i>Acer rubrum</i> )	Tea rose ( <i>Rosa adorata</i> )
Live oak ( <i>Quercus virginiana</i> )	Oleander ( <i>Nerium oleander</i> )
Weeping bottle brush ( <i>Callistemon viminalis</i> )	Red yucca ( <i>Hesperaloe parvifolia</i> )
Wild olive ( <i>Sapindus drummondii</i> )	Lilic ( <i>Syringa vulgaris</i> )

Ground covers	Grasses
Wedelia ( <i>Sphagneticola trilobata</i> )	Buffalo grass ( <i>Bouteloua dactyloides</i> )
Algerian Ivy ( <i>Hedera algeriensis</i> )	Zoysia grass ( <i>Zoysia japonica</i> )
Confederate jasmine ( <i>Trachelospermum jasminoides</i> )	Bermuda grass ( <i>Cynodon dactylon</i> )
Asiatic Jasmine ( <i>Trachelospermum asiaticum</i> )	Tifway419 ( <i>Cynodon dactylon</i> )
Light blue flowers ( <i>Santolina Santolina</i> sp.)	St. Augustine ( <i>Stenotaphrum secundatum</i> )

#### 4. Limiting turf areas

Xeriscape design aims to balance beauty with water conservation, so strategically limit turf areas while maintaining visual appeal and open space

##### Reducing the Lawn Areas

Xeriscape landscaping reduces turf grass in favor of other plantings and ornamental grasses, aiming to minimize water consumption. Consider transforming lawns into flower beds, hardscapes, or rock gardens.

##### Choose Drought-Tolerant Grasses

If you want to keep some grass, choose types that need less water. Buffalo grass and blue grama are native and can thrive on rainfall, even in dry areas. New types of buffalo grass can make a low-maintenance lawn that's similar to traditional fescue.

##### Create Irrigation Zones

Group plants by water needs to create efficient irrigation zones. This practice promotes healthier gardens and ensures water reaches the roots effectively.

#### 5. Irrigation for garden

Gardens designed using xeriscape principles prioritize water conservation by choosing plants that need less water to grow and bloom. These gardens are especially important in dry climates and areas near deserts, where water is scarce.

They also help in regions with falling water levels. Using native plants and minimizing lawn areas are key features of xeriscape gardens.

It's essential to carefully plan and execute these gardens to balance water conservation with the joy and beauty of gardening. se back seat to aesthetic and joy of

gardening. Now-a-days keeping water constraint in view, planning and execution should be done carefully

Water plants during the early morning or late evening to minimize evaporation. Use the right irrigation method, watering deeply only when necessary to help roots grow. Make sure the area has good drainage. Water the plants three days a week as you make improvements to the land.

To help roots grow, water deeply but not too often. The best time to water is between 9 p.m. and 9 a.m. Don't water more than 1 inch at a time. Consider installing a rain sensor to stop the watering system when it rains.

Irrigation can be done through garden hose, sprinkler irrigation, drip Irrigation

##### Garden hose

Traditional irrigation systems don't distribute water evenly and take a lot of time and effort. By keeping an eye on the plants and controlling the timing and amount of water, hand watering can meet the needs of both the soil and the plants.

If the hose doesn't have a nozzle, it releases too much water and makes the soil wash away, causing a big loss of water. To make sure the soil is completely wet, water the plant once and then wait for about 15 minutes before watering it again.



Heavenly Bamboo  
(*Nandina domestica*)



Tea rose  
(*Rosa adorata*)



Oleander  
(*Nerium oleander*)



Weeping bottle brush  
(*Callistemon viminalis*)



Wild olive  
(*Sapindus drummondii*)



Golden rain tree/ soapberry  
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Furcraea



*Cycas revoluta*



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Wedelia  
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Confederate jasmine  
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*Festuca glauca*



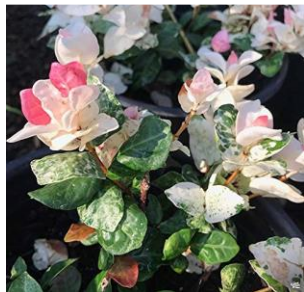
*Beaucarnea recurvata*



*Pereskia atropurpurea*



Buffalo grass  
(*Bouteloua dactyloides*)



Asiatic Jasmine  
(*Trachelospermum asiaticum*)



Iris

**Sprinkler irrigation**

For the vast surfaces like turf, sprinkler system work best.

**Drip Irrigation**

Water is delivered directly to a plant's root zone through drip or trickle irrigation. If you use the system in an area with mulch, you can bury it underground.

**Reuse of waste water for irrigation**

Some wastewater is suitable for irrigation, while other types are not. For example, untreated wastewater from sinks and construction projects can be treated and

used for industrial purposes, but it cannot be used for irrigation. On the other hand, wastewater from toilet flushing can be treated and used for irrigation.

**6. Mulching**

Mulching plays a crucial role in water conservation for xeriscape gardens. There shouldn't be any exposed soil in a Xeriscape Garden; instead, apply mulch whenever possible for Mulch helps limit water evaporation from the soil surface, reducing the need for frequent watering. A layer of mulch prevents weed growth, keeping your garden tidy and minimizing competition for water. Organic mulch materials enrich the soil as they break down. Consider using wood chips, bark chips, cedar shavings, or sawdust. These materials decompose over time, adding valuable organic matter to the soil

Different types of mulches used are Limestone, wood chips, shredded bark, wood chips, clean straw, newspapers, leaves, cocoa hulls, Peat moss, and pine straw. Newspaper serves as an effective medium for recycling and contributes to enhancing soil water retention when positioned beneath organic mulches. During planting, it is recommended to place two sheets of newspaper thickly on the soil's surface under an organic mulch. Subsequently, the newspaper should be thoroughly saturated upon application.

**7. Care and maintenance**

**1. Irrigation Management**

Regularly inspect your irrigation system. Ensure there are no leaks, clogs, or broken components. Adjust the watering schedule based on weather conditions (hotter or cooler days) and the specific water needs of your plants. Water deeply but infrequently. Encourage deep root growth by allowing the soil to dry out slightly between watering

sessions. Monitor the moisture level in the soil. Mulch helps retain moisture, so ensure it's spread evenly around plants. If the top inch of soil feels dry, it's time to water. Consider using smart irrigation controllers that adjust watering based on real-time weather data and soil moisture levels.

## **2. Weeding and Mulching**

Regularly remove weeds to prevent them from competing with your xeriscape plants for water and nutrients. Check the mulch layer. Over time, it breaks down and loses effectiveness. Replenish it as needed to maintain moisture retention and suppress weeds.

## **3. Pruning and Deadheading**

Prune your plants to maintain their shape, remove dead or diseased branches, and encourage healthy growth. Different plants have varying pruning requirements, so research specific guidelines for each species. Remove spent flowers (deadheading) to encourage continuous blooming and prevent seed production. This redirects the plant's energy toward new growth.

## **4. Fertilization and Soil Health**

Xeriscaped gardens generally require less fertilization. Use slow-release, organic fertilizers sparingly to avoid excessive growth. Periodically assess soil health. Add organic matter (compost, well-rotted manure) to improve soil structure and nutrient availability.

## **5. Pest and Disease Management**

Regularly inspect plants for signs of pests (insects, snails, etc.) and diseases (leaf spots, wilting, etc.). Early detection allows for prompt action. Consider natural pest control methods like introducing beneficial insects (ladybugs, lacewings) or using neem oil sprays. Proper spacing, good air circulation, and

avoiding overwatering help prevent fungal diseases.

## **6. Seasonal Adjustments**

### **Winter Care**

In colder climates, protect sensitive plants from frost. Cover them with frost blankets or move potted plants indoors.

### **Summer Heat**

Provide shade for heat-sensitive plants during scorching summer days.