

Xeriscaping

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Xeriscape is a Greek word. Xeros means dry. It was coined by Nancy Leavit, Colorado in 1980. Quality landscaping that conserves the water and protects the environment. Xeriscape is an approach of Landscaping the dry Areas.

Definition:

- Xeriscape is not Zeroscape.
- It is landscaping designed specifically for areas that are susceptible to drought or for properties

where water conservation is practiced .

- Place based landscaping that meets the needs of today's world, without diminishing the ability of future generations to meet their needs.



Misconception:

- Xeriscape means rocks and yucca, or cactus and gravel
- It means no lawns .
- It means dry landscaping only .
- It is native plants only

Benefits:

- It saves the water, time, energy and money
- It takes full advantages of rainfall.
- No or less fertilizers or pesticides applied and pollution free environment
- Less vulnerable to the ravages of drought and water shortages.
- Develop a high-quality, beautiful landscape using ecologically sound landscaping practices.
- When water restrictions are implemented, xeriscape plants with tend to survive, while more traditional plants may be unable to adapt.

The world's first Xeriscape Demonstration Garden (now named Dryland Mesa) was created at the Denver Botanic Gardens in 1986. Its design was based on this "Seven Fundamentals" of Xeriscape.

To plan and design:

- To improve the soil
- To use appropriate plants and zone the landscape
- To create practical turf areas
- To consider using mulches
- To irrigate efficiently

- To maintain the landscape appropriately

Plan and desing:

Taking the time to carefully plant your landscape will result in a beautiful landscape for many years.

Begin with base map :

It is a plan of the property drawn to scale on graph paper showing the location of the house, its orientation to the sun, other structures on the site, unusual features so on....

Start with a site analysis:

- Assess factors that influence water as well as good or bad views
- Note the orientation of home.
- Collection of resources – Existing structures, trees, shrubs, and turf areas, etc.
- Plan for different use
- Establish water use zones

Types of hydrazones		
Hydrazones	Supplement water requirement	Plant type examples
Very low	Required for plant establishment	Most native
Low	Some required for growing seasons	Most perennial, some trees and shrubs
Moderate	Regular amount required during growing period	Fruit trees, ornamental trees, shrubs
High	Regular amount required during growing period	Turf grass and vegetable garden

Incorporate shade into the design:

- To keep cooler and reduce water loss
- 20°F cooler than one in the full sun

While go for plan we have to consider these points:

- Budge
- Appearance
- Function
- Maintenance
- Water needs
- Developing a master plan
- Fit plant to the design
- Take blue print of this design

Improve soil:

- Do not add organic matter to the planting hole for trees and shrubs

- Improve the structure of poor soil.

The general rule of thumb is to amend your native

soil with 1/3 organic matter

Use hydrogels – water absorbing polymers:

- 1 pound of crystals to 100 sq ft of bed area will absorb 20-25 gallons of water.

- They last from 6 month to several years in soil

Appropriate plant selection:

The following criterias are to be considered for the selection of plants

- Well suited to the planting area and local environment
- Drought tolerance
- Mature size and form
- Growth rate
- Texture
- Colour
- Functional use



Create practical turf areas :

It is one of the most versatile and functional plants in landscape. It is most effective plant covers to reduce runoff and erosion while recharging the ground water. Creation of turf grasses makes 300F cooler than a concrete and 10-140F cooler than the bare soil. Cooling effect of average lawn is equal to more than 8 tons of air conditioning. Plants absorbs dust and other air pollutants and produce oxygen.

Average water use and drought resistance of selected turf grass		
Common name	Water use	Drought resistance
Tifway Bermuda	Very low	Very high
Common Bermuda	Very low	High
Raleeigh St. Augustine	Very low	Very high
Rebel 11 tall fescue	Very low	Medium
Centipedi grass	Low	Medium-high
Meyer Zoysia	Low	Low
K 31 Tall Fescue	Low	Low-medium

Irrigate efficiently :

It is the heart of a successful xeriscape. It can be irrigated efficiently by hand or with an automatic sprinkler system. Spray, drip line or bubbler emitters are most efficient for watering trees, shrubs, flowers and

Annual per-area application of water to traditional and xeriscape type		
	Per unit area application (gallons/sq.ft./year)	Per unit area application (inches/ year)
Traditional	73.00	117.2
Xeriscape	17.2	27.6
Difference	55.8	89.6
t-test	27.0*	

Kent et al., 2005, Southern Nevada

groundcovers most efficient sprinklers release big drops close to the ground. Water deeply and infrequently to develop deep roots. Never water during the day to reduce water loss to evaporation (watering done by 9 pm to 9 am). If you have an automatic sprinkling system, adjust your controller monthly to accommodate weather conditions. Also, install a rain sensor to shut off the device when it rains.

Irrigation turf grass:

- Moderate water zone-irrigate only when it shows sign of moisture stress.
- Low water zone 1-2 inches/week and divide this amount into 2 application/

week

- Never apply more than 1 inch at a time
- Daily irrigation with small amounts encourages a shallow root system and reduces drought tolerance.

Mulch:

Mulch keeps plant roots cool, prevents soil from crusting, minimizes evaporation and reduces weed growth. Organic mulches, such as bark chips, pole peelings or wood grindings, should be applied 2 to 4 inches deep. Fiber mulches create a web that is more resistant to wind and rain washout. Inorganic mulches, such as rocks and gravel, should be applied 2 to 3 inches deep. Surrounding plants with rock makes the area hotter; limit this practice.

Maintenance :

All landscapes requires some degree of care during

Turf grasses		
Common name	Scientific name	Best adapted for Notes
Bermuda grass	<i>Cynodon dactylon</i>	7 Good drought tolerance; produces dense turf; poor shade tolerance; plant seed or sod
Buffalo grass	<i>Buchloe dactyloides</i>	Excellent drought tolerance; produces thin turf; poor shade tolerance; plant seed or sod
Carpet grass	<i>Axonopus affinis</i>	Adapted to moist sites; tolerates partial shade; many seed heads; thin turf; plant seed
Centipede grass	<i>Eremochloa ophiuroides</i>	Low maintenance; tolerates partial shade; tolerates drought; plant seed or sod
St. Augustine grass	<i>Stenotaphrum secundatum</i>	Produces dense turf; good shade tolerance; poor drought tolerance; plant sod
Tall fescue	<i>Festuca arundinacea</i>	Under irrigation, remains green year-round; good shade tolerance; poor drought tolerance; plant seed
Zoysia grass	<i>Zoysia spp.</i>	Produces dense turf; good shade tolerance; good drought tolerance; plant sod

Ground covers		
Common name	Scientific name	Best adapted for Notes
Ajuga	<i>Ajuga reptans</i>	Shade
Asiatic jasmine asiaticum	<i>Trachelospermum</i>	Sun/shade
Confederate jasmine	<i>Trachelospermum jasminoides</i>	Sun/shade
English ivy	<i>Hedera Helix</i>	Shade
Liriope	<i>Liriope muscari</i>	Sun/shade
Monkey grass	<i>Ophiopogon japonicus</i>	Sun/shade
Prostrate rosemary	<i>Rosmarinus officinalis</i>	Sun
Light blue flowers	<i>Santolina Santolina sp.</i>	Sun
Trailing juniper	<i>Juniperus sp.</i>	Sun

Shrubs		
Common name	Scientific name	Best adapted for Notes
Red yucca	<i>Hesperaloe parvifolia</i>	Sun
Barberry	<i>Berberis thunbergii</i>	Sun
China rose	<i>Rosa chinensis</i>	Sun
Indian hawthorne	<i>Raphiolepis indica</i>	Sun/shade
Juniper	<i>Juniperus sp.</i>	Sun
Tea rose	<i>Rosa adorata</i>	Sun
Pomegranate	<i>Punica granatum</i>	Sun
Lilic	<i>Syringa vulgaris</i>	Sun
Oleander	<i>Nerium oleander</i>	Sun
Russian olive	<i>Eleagnus angustifolia</i>	Sun/shade

Perennials		
Common name	Scientific name	Best adapted for Notes
Autumn sage	<i>Salvia greggii</i>	Sun
Baby sun/sunray coreopsis	<i>Coreopsis grandiflora</i>	Sun
Bearded iris	<i>Iris xiphoides</i>	Sun/shade
Blue plumbago	<i>Plumbago auriculata</i>	Sun/shade
Bouncing bet	<i>Sapinara officinalis</i>	Sun/shade
Cigar plant	<i>Cuphea micropetala</i>	Sun/shade
Daylily	<i>Hemerocallis sp.</i>	Sun
Garden canna	<i>Canna x generalis</i>	Sun/shade
Indian blanket	<i>Gaillardia sp.</i>	Sun
Rosemary	<i>Rosmarinus officinalis</i>	Sun/shade
Society garlic	<i>Tulbaghia violacea</i>	Sun/shade

Trees	
Common name	Scientific name
American plum	<i>Prunus americana</i>
Panicled golden raintree	<i>Koelreuteria paniculata</i>
Soapberry	<i>Sapindus drummondii</i>
Wild olive	<i>Sapindus drummondii</i>
Wild olive	<i>Corida boissieri</i>
Live oak	<i>Quercus virginiana</i>
Hackberry	<i>Celtis occidentalis</i>
Redbud	<i>Cercis sp.</i>
Nandina	<i>Nandina domestica</i>
Slash pine	<i>Pinus elliotii</i>
Winter honeysuckle	<i>Lonicera fragrantissima</i>

the initial year. Turf requires spring and fall aeration along with regular fertilization every 6 to 8 weeks. Keep your grass height at 3 inches and allow the clippings to fall. Trees, shrubs and perennials will need occasional pruning to remove dead stems, promote blooming or control height and spread. Much of the removed plant material can be shredded and used in composting piles.

Conclusion:

“Xeriscape is one of the important landscape practice mostly suitable for dry region of India but in our country most of the people shifted towards traditional landscape that is, high water using gardens so that, we are wasting lot of water in maintaining the gardens, hence there is a lot of scope in adopting the xeriscape technique”

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