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Xeriscape by Design

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Xeriscaping began in the early 1980s in Denver as a means to conserve water through times of drought and water restrictions. Colorado is a mile high desert and we need to garden like it is.

Xeriscape is not a landscape style or garden design

- It is the creation of a healthy, attractive landscape that conserves water.
- Xeriscaping naturally lends itself to an array of beautiful and colorful and even bold textures.
- Xeriscaping is a concept of water conservation that may be applied to landscapes of any style.
- The principles used to develop Xeriscapes are healthy horticultural practices that need to be applied to our unique mile high desert environment!
- Xeriscaping is natural landscaping, mimicking nature and relinquishing control.

Even more reasons to install a xeric landscape

- A surprising amount of water is used in the home landscape. Studies have shown that as much as 70 percent of water from a municipal water system can be attributed to residential use. In addition to municipal water sources, a percentage of water from private sources or wells also goes to residential use.
- Of water used at homes, almost half is used to maintain the landscape.
- Use only what you need.

Principles of xeriscape landscaping—there are seven

Design and Planning

- A good landscape begins with a good design. Water conservation in the garden can be maximized when it is worked into the initial planning phase.
- Xeriscapes are divided into zones with different water requirements.
- The “Oasis," refers to a zone with the highest water use, this should be a moderate use area. This may be your turf area or and planting areas close by where runoff may occur or your vegetable garden.
- Sometimes beyond the oasis there is a transition zone of lower water use. The transition zone contains plants that require less frequent irrigation. Then there are areas of very-low to no water usage, which should be optimized. Very-Low-water to no-use zone require no supplemental water or very infrequent irrigation once plants are established
- Designing the landscape with areas of differing water demands is called "hydro zoning."

Soil Improvement

- Soil preparation is the most important part of a successful xeriscape or any type of garden.
- Testing should always be done prior to planting; soil testing can help determine which plants are best adapted to the site and which amendments are appropriate

for the soil in the selected sites to be planted. In the oasis/moderate water use zones, adding compost increases the soil's water-holding capacity. In the low-water use zone, soil preparation may only consist of loosening to reduce the soil compaction in the planting areas, moderate use of compost may be recommended (depending on soil test and plant selection). Loosening the soil improves root development and allows better infiltration of water and air needed by plants' roots. This is important in all water use zones. However, soil disturbance promotes the germination of weed seeds, just an FYI!

- Keep it healthy--keep it organic.
- Soil is alive: *www.soilfoodweb.com/sfi_approach1.html#Benefits*

Proper Irrigation

- Irrigation is necessary in any landscape, even a xeric landscape, especially during the first few years while root systems are developing. But water will be used much more efficiently with a xeric design. Following establishment, irrigation may only be necessary during periods of extreme drought and depending on the landscape design and plants' needs.
- The moderate water use zone should be designated as the area for the most irrigation, such as the vegetable/edible garden and certain trees, but it is wise to plan irrigation for the low-water use and very low to no use zones to allow for new plantings, changes and years of severe drought.
- The irrigation system--whether automatic, manual or hoses are an integral part of landscape planning and design. It is the foundation around which the plantings are designed; the water use zones—very low, low and moderate—and each should be separate from one other and managed independently with in-ground irrigation systems, each zone should be under a separate valve.
- The water should be applied as efficiently as possible. Sprinkler systems using rotary heads are appropriate in areas of turf. Drip, bubbler and micro-spray systems or soaker hoses are appropriate for shrubs, trees and vegetable and perennial plantings. Efficient irrigation applies water where it is needed, not where it will be wasted and benefit only weeds or sidewalks.
- It takes approximately 27,154 gallons of water to apply one inch of water to one acre of land.

Turf has its place

- Fact: Each weekend, about 54 million Americans mow their lawns, using 800 million gallons of gas per year and producing tons of air pollutants.
- Garden equipment engines, which have had unregulated emissions until the late 1990s, emit high levels of carbon monoxide, volatile organic compounds and nitrogen oxides producing up to 5% of the nation's air pollution and a good deal more in metropolitan areas.
- Fact: According to the U.S. Environmental Protection Agency (EPA), a new gas powered lawn mower produces as much volatile organic compounds and nitrogen oxides emissions air pollution, in one hour of operation, as 11 new cars, each being driven for one hour.
- Fact: one hour of mowing is the equivalent of driving 350 miles in terms of volatile organic compounds.

- Fact: Over 17 million gallons of gas are spilled each year refueling lawn and garden equipment–more oil than was spilled by the Exxon Valdez.
- According to the EPA, one gas mower spews 88 lbs. of the greenhouse gas CO2 and 34 lbs. of other pollutants into the air every year.
- *www.peoplepoweredmachines.com/faq-environment.htm*
- Turfgrasses have a place in the landscape and should be carefully considered in a xeric design
- Although some turfgrasses require more frequent care than many other landscape plants, turf does provide a play surface for children and pets and it is an important element in cooling the local environment, reducing erosion, sequestering carbon and preventing glare from the sun.
- Other groundcover plants can perform these functions, except providing a play area, i.e. creeping thymes
- Consider why you have or need turf and how it will be used, how much do you really need? And when you use it most. You can then limit the turf to useful spaces and determine which grasses will best serve your needs.
- Use a grass that needs less water such as buffalograss, blue grama or native fescues. If the area is only for appearance, other groundcover plants may be more appropriate and may be irrigated more efficiently. Choose the best plants for each purpose by carefully defining your needs.

Mulching

- Mulch provides a cover for the soil, reducing evaporation, soil temperature and erosion. It also limits weed growth--competition for water and nutrients. Landscape mulch materials vary in their suitability for various uses. Mulching is essential in our climate.
- Organic vs. Inorganic
- Organic: types of cedar mulches, pine needles, compost
- Inorganic: types of stone, pea gravel, river rock
- Bark, gravel and other porous mulches allow water and oxygen to pass to plant roots. What mulch you use really depends on your landscape and what you are planting.
- All mulches keep the soil moist and cool.
- Bark mulch should not be used on steep slopes or in drainageways because it washes away in heavy rains.
- Landscape fabric is not mulch and should not be used as such!
- Proper mulching lends itself to proper maintenance.

Maintenance

- Maintaining the landscape cannot be forgotten, no matter what style or principle is applied. The design will determine the required maintenance. Any garden will require some maintenance: pruning, weeding and pest management (very little if you follow the seven principles), checking and adjusting the irrigation system as the seasons change.
- Xeriscaping offers a way to have beautiful, livable landscapes without excess water use.
- It allows some areas to be cooler and hospitable, while investing less water on other parts of the landscape.

- All-water use areas can be very attractive if the seven xeriscape principles are applied.
- Using xeriscape principles makes our landscapes more compatible with our mile high desert climate and helps support our biodiversity – birds and bees!
- So it's up to you if you follow all the principles you will have a healthy landscape that will in turn lend itself to less maintenance

A few more water saving ideas

- Found water. Water that runs off roofs, paving or a steep slope, as a result of rain or snow melt, can be used to help reduce the need for supplemental irrigation. This water should be, if possible, directed to the areas requiring the most water, but can be directed to any garden area or area in your landscape. Because this water requires grading to channel and direct, these areas need to be identified and should planned into the landscape design, i.e. dry creek beds.
- Channel the water from gutters into the landscape where needed. Create a depression at the base of the down spout lined with locally available rocks or decorative gravel to slow water and encourage infiltration on site.
- Or replace the gutter or downspout with a decorative rain chain.
- When creating hard surfaces, use flagstone, pavers or some type of pervious material, that allows more rain to enter the soil beneath than would concrete.

Design considerations

- Ask yourself some questions
  - Is the front yard the showpiece of your landscape and the backyard is all your own? A sanctuary for relaxation, entertaining, and play?
  - Whether it is your front or backyard you are re-designing, don't make the mistake of piecing it together.
  - Have an overall plan! Consider the space holistically and wholly, from how you want to use the yard to how much time you want to spend working in it.
  - What is your ultimate goal?
  - Once you have an overall plan, the landscape project can be organized into phases.
- "Every plant has fitness and must be placed in its proper surroundings so as to bring out its full beauty. Therein lies the art of landscaping*." Jens Jensen (1860-1951), Danis- American landscape architect**
- Choose plants well adapted to the site, soil and moisture levels.
- Drought tolerant plants generally go on higher ground; moisture-tolerant plants in low lying areas.
- The right plant for the right place.
- Group plants with similar cultural needs:
  - Water
  - Sun
- Native plants support more the just a beautiful landscape--biodiversity!
- Xeriscaping naturally lends itself to an array of beautiful textures.
- Size matters–measure the space and know the plant's mature size, this should be considered when creating the design/plan.

- Trees and shrubs should not be planted with the intent of pruning to fit the space but with the intent of growing into the space-know your space and what plants will be a good fit.
- Seasons--garden through the seasons

Why you should consider a xeric design

- Too much grass
- Not enough grass
- Forgot to water, again
- No place to go…create a destination

Other important considerations to work into the design

- Aspect
  - North, South, East, West
- Microclimates
  - Hot spots, shade from structures or existing landscape, boggy areas, windswept areas
- Slopes
  - How big and how to handle
- Drainage
  - Where
  - Does it need to be redirected?
- Why are you landscaping?
  - What is your ultimate goal?
  - Destination, play, food, privacy
- Even a xeric design needs to be defined
  - Views
  - Check the plan from inside
  - Outdoor spaces should bring pleasure every day, even when you're inside. "When designed right, your backyard becomes artwork in the windows."
- Back up and use your wide lens
  - When putting your design together, look at your landscape, both in relation to the house and to itself, is it all in scale and harmony
  - Is there a flow from on area to the next
  - Don't get too busy

Great plant combinations for Colorado…

- *Agastache cana* and Giant Sacatoon Grass *Sporobolus wrightii*
- Panicum 'Shenandoah', Lavandula 'Munstead, Echinacea 'White Swan', *Kniphofia uvaria*, Blue avena grass, *Nepeta 'Blue Wonder' Origanum libonaticum*, Hemerocallis varieties
- Eremerus, *Penstemon mexicali, Nasella tenuissima* grass, Hesparolae, Oenothera
- Nepeta 'Walker's Low, *Centranthus ruber*, California poppies, *Yucca baccata, Opuntia macrorhiza, Chamaebataria millefolium, Nasella tenuissima*, Pinyon Pine *Pinus edulis*
- *Penstemon mexicalli* 'Pike's Peak Purple', *Marrubium vulgare, Agastache rupestris, Veronica liwanensis*, Giant Sacatoon Grass, Sedum 'Autumn Joy', *Oenothera missouriensis*

- Sedum ‘Angelina’, lavandula ‘Munstead’, *Marubium vulgare*, Apache Plume *Fallugia paradoxa*
- *Agastache rupestris*, Sedum ‘Autumn Joy’, *Kniphofia uvaria*, *Agastache rupestris*, *Verbena bonariensis*, Pinyon Pine
- *Agave havardiana*, *Yucca harrimaniae*, opuntia varieties, *Nasella tenuissima*, California poppy
- Cholla *Cyllindropuntia*, Prickly Pear *Opuntia*, yucca
- Stachys, Prickly Pear *Opuntia*
- Colorado Natives: *Penstemon hallii*, Blue grama grass *Bouteluoa gracilis*, *Geum triflorum*
- *Penstemon mexicali* ‘Pike’s Peak Purple’ *Tanacetum niveum*, Sedum ‘Autumn Joy’, Giant Sacatoon Grass(Sporobolus wrightii) *Veronica liwanensiss*, *Agastache rupestris*, *Oenothera missouriensiss*
- Blue Avena Grass *Helictitrichon sempervirens*, *Zauschneria garrettii* ‘Orange Carpet’
- Nepeta ‘Blue Wonder’ Allium sp, *Penstemon hirsutus pygmaeus*, Globe Blue Spruce
- Russian Sage *Perovskia atriplicifolia*, Prickly Pear Cactus, Sea Holly *Eryngium maritimum*, Agastache
- *Aquilegia chrysantha* ‘Denver Gold’, Blue Fescue Grass ‘Elijah Blue’, Geranium ‘Roxanne’
- *Nassella tenuissima*, Sedum ‘Rosy Glow’, Rudbeckia, var., annual zinnia
- Yucca, Allium, Delosperma, Blue Aevena grass, Blue Stem Joint Fir, sedums, euphorbia,Achillea ‘Moonshine’
- *Zauschneria garrettii*, Blue Fescue
- *Nepeta mussini*, Callirhoe, *Nasella tenuissima*, Eremerus, Alliums, Stachys, California Poppies
- Oenothera missouriensis, Agastache rupestris, Nepeta ‘Little Trudy’, Upright Albyn Scotch Pine
- Fernbush *Chamaebatiara millefolium*, Cholla
- *Heuchera sanquinea*, ‘Firefly’, *Bergenia cordifolia*, *Aquilegia chrysantha* ‘Denver Gold’, Calamagrostis ‘Karl Foerster’, Crab Apple *Malus*
- Giant Saccatoon Grass, Manzanita ‘Cheiftan’, Agastache rupestris
- Agastache rupestris, kniphofia stricta, Gaura
- Nassella tenuissima, Eriogonum, Dianthus sp., pinus banksiana sp, Artemesias opuntia sp., Verbascums, Agaves, Yuccas, Chollas
- Echinacea pallida, Salvia sclarea, festuca mairei, Koeleria macrantha