



Pollution Prevention with Xeriscape

Conserving water resources and using them efficiently is crucial to sustaining Earth's water supply. In Arizona's valley, natural turf landscapes account for 70% of outdoor water usage. This informational fact sheet is intended to provide useful resources and tips to help manage and reduce outdoor water consumption through xeriscape techniques. Adopting these solutions may significantly reduce water and energy consumption, benefit the environment, mitigate temperature increases and beautify the surrounding areas.

Xeriscape Conversion

Xeriscaping, as defined by the [Environmental Protection Agency](#)¹ (EPA), is *quality landscaping that conserves water and protects the environment*.

The steps listed below will aid in implementing a successful xeriscape program

1. Proper planning and design before planting

- Research and understand the climate conditions of the site.
- Ensure plants are grouped by their water needs and take into account the existing vegetation, topography and the intended uses of the property.
- Plan and outline the site to determine the existing features such as benches, water fountains, pavement, and open areas.
- Assess where plants are best suited to provide shade, absorb flood runoff and capture water.

2. Soil analysis and improvement

- Test your soil before implementing landscape improvements.
- To find a list of laboratories that can test your soil see the University of Arizona's [Laboratories Conducting Soil, Plant, Feed or Water Testing](#)².
- Use compost to improve soils. Compost is organic material, which includes food scrap and yard waste, that can be added to the soil to help plants grow. Composting increases water retention in soils, reduces the need for fertilizer, promotes healthier plants and encourages the recycling of organic materials.
- Find out more about composting by visiting EPA's website to [compost at home](#)³.



3. Appropriate plant selection

- When considering new plants, choose native plants since they are adapted to local soils, climatic conditions and require less water and maintenance.
- Preserve existing trees, shrubs and noninvasive species. Native plants typically do not require additional fertilizers and are more resistant to pests and diseases.
- Avoid non-indigenous species because they typically require more water and fertilizer and can become invasive eradicating other plants.
- Avoid labels with "hard to establish," "susceptible to disease," or "needs frequent attention" when selecting plants as these plants typically require more water, fertilizer and pesticides.

- Choose the best suited plants and know when and where to plant them. See the Municipal Water Users Association's [Landscape Plants for the Arizona Desert](#)⁴, or the Department of Water Resources' [Drought Tolerant/Low Water Use Plant Lists](#)⁵ or other resources to choose the best suited plants.
- Look for [tax incentives and rebates](#)⁵ to reduce the cost of converting from turf to xeriscape.
- Conduct a water audit before and after to see how much water is being used. This will help you identify water savings opportunities such as investing in plants requiring less water. Monitor progress and compare last year's water bills with current water bills.

4. Practical turf areas

- Convert from turf to xeriscape to save money, water and time. Turf (natural grass, lawn or sod) areas require a large amount of extra water, additional costs and greater maintenance compared to native plants and vegetation. Additional expenses may be incurred when converting from turf to xeriscape; however, the cost savings can return the investment within 2 ½ to 6 years.
- See a [2002 study](#)⁶ by the Arizona Department of Water Resources that estimated an annual savings ranging from \$1,900 to \$14,100 by converting to xeriscape.
- If necessary, strategically place turf in areas where it has a practical function such as recreation areas. Group these turf areas to increase water efficiency and reduce evaporation and runoff.
- When placing turf, select types that can withstand drought periods and can become dormant.



5. Use of mulches

- Use high quality and organic mulch to improve soil conditions.
- Avoid compacting mulch because this can restrict water flow to the plant roots.
- Avoid using rock mulch because it radiates large amounts of heat and promotes water loss in Arizona.

6. Efficient irrigation

- Consider efficient irrigation techniques to reduce water loss because water is applied deep or shallow, depending on the plants and soils, as needed.
- Use low-volume or drip irrigation technologies as they deliver water directly to the plants roots.
- Consider soil types, conditions of plants, type of plants, season and weather conditions when irrigating.
- Group plants according to their water needs to reduce under or over watering.
- See the [Landscape Water Guide for the Arizona Desert](#)⁷ which provides detailed desert landscape watering techniques.
- Irrigate with recycled water from effluent water in the building sinks, dishwashers, laundry machines and HVAC systems. Be sure to understand permits and requirements in your area.
- Adopt rainwater harvesting techniques to reduce city water consumption as well as reducing water runoff. Rainwater harvesting ranges from complex commercial rooftop collection systems as well as low-cost downspouts that funnel into a covered collection bin. See the [Harvesting Rainwater](#)⁸ guide for more information.

- Audit current irrigation systems to make sure sprinklers are only watering the landscape or garden. Consult a certified irrigation professional that can design, install, maintain, and/or audit your system for optimal efficiency.
- Irrigation and water systems should be functioning properly. When looking for a new irrigation system, look for a [WaterSense](#)⁹ labeled irrigation controller because they use local weather data to determine whether your sprinkler system needs to turn on. Ensure that sprinklers on timers are operating during hours of low-sun (dusk or dawn) and shut off irrigation systems when it is raining.



With the proper planning and mindset, your facility can enjoy the benefits of xeriscaping while saving money and water.

7. Maintenance

- Don't take your soil and landscape for granted! Maintain it regularly!
- Water and fertilize plants only as needed to maintain longevity of plants and soils.
- Like any landscape, regular pruning, weeding, fertilization and irrigation should be practiced.
- Replace mulch around shrubs and plants at least once a year. As the Xeriscape matures, less maintenance and water will be necessary.

References

The following is a list of resources to assist you in learning more about xeriscaping. For more information, look to your city, county, local library, community colleges or nurseries.

- ¹ What is Water Efficient Landscaping: <https://nepis.epa.gov/Exe/ZyPDF.cgi/200043WG.PDF?Dockey=200043WG.PDF>
- ² University of Arizona's *Laboratories Conducting Soil, Plant, Feed or Water Testing*—https://extension.arizona.edu/sites/extension.arizona.edu/files/pubs/az1111-2016_0.pdf
- ³ EPA Composting at Home Website: <https://www.epa.gov/recycle/composting-home>
- ⁴ Arizona Municipal Water Users Association *Landscape Plants for the Arizona Desert*: <http://www.amwua.org/plants/>
- ⁵ Department of Water Resources *Drought Tolerant/Low Water Use Plant Lists*: <http://www.azwater.gov/azdwr/WaterManagement/AMAs/LowWaterUsePlantList.htm>
- ⁵ Arizona Irrigation/Xeriscape Conversion Rebate Programs: <https://www.rainbird.com/documents/corporate/WaterRebates/WaterSavingsRebates-Arizona-01MAY2014.pdf>.
- ⁶ A Study by the Arizona Department of Water Resources on *Saving Money and Water with Xeriscape Landscaping* http://www.amwua.org/pdfs/save_money_and_water.pdf
- ⁷ *Landscape Watering by the Numbers – A Guide for the Arizona Desert* <http://wateruseitwisely.com/wp-content/uploads/2013/07/Landscape-Watering-Guide.pdf>
- ⁸ Harvesting Rainwater http://www.azwater.gov/AzDWR/StatewidePlanning/Conservation2/Documents/documents/Harvesting_Rainwater.pdf
- ⁹ EPA's WaterSense Program: <https://www.epa.gov/watersense>

Additional Resources

High Country Xeriscape Council of Arizona: http://xeriscapeaz.org/composting_success.htm