



Advantages of Xeriscaping

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Xeriscaping has the potential to reduce water usage and maintenance, improve biodiversity, lower pollution, as well as mitigate heat within urban areas; however, the effectiveness of this sustainable process hasn't been evaluated on a long-term large-scale basis. Xeriscaping utilizes native/indigenous vegetation as opposed to store bought grass and imported plants to retain water and minimize supplemental irrigation. Currently within the United States it was found that in arid climates (such as Arizona and Nevada) that 75% of household's potable water was used to water residential and urban lawns. With current climate conditions fresh drinking water is becoming a scarce commodity on a global scale as frequency of droughts rapidly rises. Xeriscaping helps preserve water for people and animals as it is more reliant on natural rainfall and minimal maintenance when compared to the current practiced green spaces.

Water Conservation and Lower Maintenance

Xeriscapes can reduce water consumption by 60% or more compared to regular lawn landscapes. In Turkey, one of the first large scale xeriscaping evaluations was conducted. It was found that switching an average city park to more native vegetation in the region can lower irrigation usage by 30–50%. Assuming, a water usage reduction of 30% it was found that a city can save roughly \$2 million annually (however, this exact value is dependent on location). The use of native plants lowers the necessity of watering as the vegetation has already adapted to thrive in the climate and doesn't require assistance with irrigation or fertilization.

The Leadership in Energy and Environmental Design program has recognized xeriscaping as an effective water reduction process and has started to incorporate credits in the certification process across all their programs for facilities that reduce their outside water use and irrigation. This credit can be met by using xeriscaping strategies and efficient irrigation systems. This further validates the beneficial claims behind xeriscaping, and it is anticipated that more energy and environmental credit systems as well state ran programs will encourage and incentivize xeriscaping for greenspace development.

While evaluating the cost of annual maintenance and park construction, xeriscaping drastically lowers these costs by roughly 55% and 57%, respectively. Aside from occasional weeding and mulching Xeriscaping requires far less time and effort to maintain. This is the case because under xeriscaping principles the vegetation used for urban green spaces are indigenous to the area; therefore, are less expensive and require less assistance to acclimate and survive in the environment when compared to imported vegetation. This means that the systems use less water as well as lower rates of pesticides, and fertilizers when compared to current urban and residential green spaces; this further helps

lower annual maintenance costs. Furthermore, maintenance waste, such as lawn clippings, contribute organic waste to landfills and fertilizers contribute to urban runoff pollution; however, xeriscaping eliminates these negative effects as clippings are encouraged to remain on the greenspace which allows for a lower use of fertilizers.

Biodiversity

Often times when areas develop there is a loss of forestation, and animal populations dwindle as they are forced to relocate. Implementing native vegetation in green spaces helps improve the insect and wildlife found in the environment as the habitat is reestablished to a degree, offering food and shelter to the wildlife. One application of xeriscaping that drastically improves biodiversity is the implementation of pocket forests.



Environmental and Thermal Discomfort Remediation

Additionally, xeriscaping has been theorized to help offset the urban heating island (UHI) effect. UHI refers to the phenomenon in which urban areas are found to be hotter than neighboring rural sites due to large amounts of human activity. This temperature difference of a city area and its surroundings is usually higher at night as winds are lower and can't dissipate the large amounts of heat generated in an urban area's boundaries as readily. Upon investigating xeriscaping strategies in Phoenix, AZ, it was found that dry areas that utilized xeriscaping with shade trees were found to mitigate UHI effects during the day and night with an average temperature difference of roughly 2.5 °C (4.5 °F) cooler. However, when these same strategies were implemented in a mesic area, an environment with moderate amounts of moisture, it was found that thermal discomfort increased for residents and that these strategies had opposite effects to their intentions. Although xeriscaping strategies were found to mitigate UHI effects, it's important to consider the climate and current landscape in which it is implemented in, in order to maximize its benefits and effectiveness

Legal Issue

Some home owners associations (HOAs) have strict rules requiring a certain percentage of land to be used as lawns but these rules either have been or are in the process of being overturned in many areas. As it stands most states in arid and hot climate regions in the US have started to pass legislation that allows homeowners to design lawns using xeriscaping methods. These states are currently Texas, Nevada, Arizona, California, Colorado, Louisiana, and Florida. Most states currently don't have direct legislation regarding a homeowner's right to landscape in relation to existing HOAs; however, most allow residents to at least protest HOA requirements and landscape their lawn with "reasonable" designs.

References

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