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Landscapes, Nightmares, and Dreams Come True

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Many proud owners who scrimped and saved and finally bought their "dream home" are waking up to a nightmare. It begins with the never-ending job of maintenance and screeches to a climax when the bills arrive. And like a movie that's held over by popular demand, the picture plays on and on.

Pulling up stakes and leaving is a little more difficult than simply walking out of the theater when the movie gets too scary. After all, this is what the homeowner has dreamed about for years--at least part of it.

Unfortunately, many present landscapes are nightmares. Reports show water consumption rates related to urban landscapes are exorbitant. Nursery managers confirm that customers are primarily interested in aesthetic appeal and most pay little attention to water efficiency.

According to scientists with the Texas Agricultural Experiment Station, homeowners could substantially reduce the amount of water their landscapes require by following a few simple guidelines in design and maintenance. They estimate that water used for irrigating landscapes could be reduced 25 to 30 percent by applying present technolo gy and information. In addition, turfgrass scientists are developing strains that resist drought and disease.

Many landscape problems begin in the planning stage. In reality the homeowner will probably throw a landscape together with little or no planning. Many conscientious homeowners think nothing of pouring money into their yard with little thought as to form or function. They may spend weeks selecting energy-saving windows but only a few hours selecting plants for the yard. Few take into consideration the water requirements of plants or the possibility of future water rationing by their city government. Fewer still

seek out information on the best irrigation methods to maintain their lawns after they are established.

The first and most critical step in saving water is developing a plan. Carefully planned landscapes do not turn into nightmares a few months or years after the dream home is completed. Keeping a mental picture of what he wants the landscape to look like, the homeowner should develop a plan to achieve the desired results. Since the primary goal is water efficiency, the homeowner should select plants for the landscape which are drought and disease tolerant. He should also group those plants with similar water requirements together.

In the past, plant water requirements have been virtually ignored by the homeowner when selecting ornamentals. In fact, emphasis is actually placed on design which incorporates exotic, water-consuming plants into the landscape. These types of landscapes were designed in northern Europe shortly after the Renaissance period to reflect the power and wealth of the landlord. These lavish designs were introduced to North America and to Texas at a time when water was readily available and "cheap." Landscape designs have changed very little to adapt to the diminishing water supply.

The majority of ornamentals in the nursery trade today originate from foreign lands. Most were selected by plant hunters of the eastern and northern United States strictly for their ornamental characteristics. As a result, many ornamentals have biological characteristics which match eastern and northern climates and soils. Typically, these plants are cold tolerant but are unable to withstand a drought. Until Texans seek out exotic plants from foreign lands which more closely match the state's climate and soils, homeowners will have to rely heavily on native plants to obtain drought tolerant ornamentals.

Native plants for ornamentals should be selected from areas of the state with no more than 30 inches of rainfall--less than 20 inches is even better. Limiting selection to drought tolerant plants shouldn't limit creativity. A wide array of species and options are available to the homeowner, so he is limited only by his imagination. Four native bushes, in fact, were released to commercial nurseries through the Texas A&M Research and Extension Center in Dallas in 1983. Species not available to homeowners until then were three types of cenizo and a mountain sage. Scientists at the research center collect, test, and propagate native plants they feel have potential for urban landscapes.

A type of grass should be selected which will adapt well to the climate and achieve the primary goal of water efficiency. As with ornamentals, turfgrasses should be selected with biological characteristics similar to the landscape environment.

Although researchers have already made tremendous strides in developing drought resistant strains of turfgrasses, in actual practice, homeowners are not aware of or pay little attention to selecting turfgrasses for water use efficiency. Most turfgrasses which are commercially available now were selected and developed to create lavish green lawns under moderate to intensive management.

Researchers for the Texas Agricultural Experiment Station are working to develop strains of turfgrasses suited for Texas environmental conditions. By matching agronomic characteristics of turfgrasses to the environment, researchers hope to develop varieties which will thrive in the diverse Texas climate with a minimum of water and maintenance. They have examined more than 500 species of grasses which can be found in Texas. Of these, fewer than 200 species have any agronomic value beyond natural soil stabilization and land cover. Only 30 to 35 species are important to turfgrass culture. Buffalograss, zoysiagrass and tall fescue are promising species for Texas which scientists are studying for their water use efficiency.

Buffalograss enters a period of dormancy under moisture stress conditions and spreads rapidly when rain occurs. This tolerance for drought conditions makes buffalograss especially promising for highway right-of-ways, roughs on golf courses and other areas which do not require continual growth to remain functional.

Zoysiagrass was introduced into the United States in 1895 from the Orient. It adapts well to shade and has an excellent wear tolerance which is ideal for high traffic areas such as athletic fields and golf greens. Zoysiagrass grows slowly, reducing mowing frequency; it recovers slowly from injury, however, and is somewhat difficult to establish.

Tall fescue has received considerable attention recently because of its tolerance for variable soil pH, drainage, heat, drought, disease and insects. The genetic diversity in the species indicates selection is possible for improved heat tolerance and summer survival.

Plant selection is only part of the process to establish a water efficient lawn. To get the most out of every drop of water, plants with similar water requirements should be grouped together. A cactus planted next to a water lily will drown if the water lily is watered correctly. This example is a little extreme, but the concept is valid. Tropical plants simply don't live happily with desert plants.

If the homeowner has developed a workable plan and followed the guidelines for achieving the primary goal of water efficiency, maintaining the landscape properly should require a minimum of water and still produce satisfactory results.

During the planning phase, the homeowner should decide on what type of irrigation method he will use. Generally, irrigation systems fall into two categories: hose-end sprinklers or underground sprinkler systems. Approximately 90 percent of all Texas home landscapes are watered by hose-end sprinklers. Homeowners tend to either underwater or drown their lawns using this type of irrigation. This usually occurs because proper watering requires too much attention. First, a homeowner must keep track of how long the hose has been in one spot. Secondly, he has to remember to go change it periodically. And finally, to water most efficiently, he should consult manufacturer information on the performance of the sprinkler based on pressure and precipitation rates and apply this knowledge to turfgrass water requirements, remembering to take into consideration sloped areas, soil composition and regional climate.

Obviously, not too many homeowners go to this much trouble to save water---no matter how expensive or scarce the water is.

The other 10 percent of Texas homeowners invest in an underground sprinkler system. Residential systems are expensive to install, but the added savings of efficient water distribution and decreased maintenance are important points to consider. Typically, installed systems require less of the homeowner's time, obtain better coverage and waste less water.

Regardless of the type used, the efficiency of an irrigation system depends upon its design and how it is operated. A poorly designed or improperly installed system is a burden from the start. Improperly spaced sprinklers and faulty system zoning (watering turf and ornamentals in the same zone) are common mistakes.

In order to protect homeowners, the Texas Legislature has passed a Licensed Irrigators Act which requires irrigators and installers to pass a four-hour written exam in order to qualify for a certificate of registration. The act also created a board of irrigators whose duties include administering the examinations and investigating complaints.

No matter how well a system is designed, it is only as good as the operator behind it. If the homeowner doesn't know or doesn't care how long or what time of the day he should water to get good results, he will probably water inefficiently even with the best system available. Obtaining local climate data and applying that knowledge to watering patterns based on water requirements for a particular lawn will improve results significantly and eliminate waste. Above all, the homeowner should exercise a little common sense. Watering during extremely windy periods or during the hottest time of the day are examples of poor management practices which result in unnecessary evaporation losses.

The technology exists and the information is available to significantly improve landscape water efficiency. With a well-thought-out plan, the homeowner can select ornamentals and turfgrasses which require little water and maintenance. By following a few simple guidelines when establishing and maintaining his yard, the homeowner can squeeze every penny out of every dollar he spends on water. Establishing water efficient landscapes will become increasingly important in the future as cities tighten supplies to cope with predicted statewide shortages. Choices made by the homeowner today may determine what he wakes up to tomorrow.

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