

Developing a Water Wise Landscape

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Script

NOTE: If you are showing this slide set via a Power Point presentation, the symbol (#) throughout the script indicates when to press your mouse button to change the animation within a slide.

Slide

1. TITLE SLIDE. Developing a Water Wise Landscape. This presentation was produced by The University of Georgia, Department of Horticulture, and is brought to you by the Georgia Water Smart Initiative.
2. WATER FALL. WATER.... It's one of our most precious natural resources - a resource we can't live without... a resource we so often take for granted. It's also the basis for one of the most prominent environmental issues facing us today.
3. CITY SCENE. As our urban centers continue to grow and develop, new industries, businesses and housing developments place an ever-increasing strain on available water supplies.
4. PRAYER FOR RAIN. Periodic drought makes the problem even more pronounced, causing reservoir and river levels to drop, often forcing water authorities and elected officials to place restrictions or bans on outdoor water use in an effort to conserve available water supplies.
5. FACTS ABOUT WATER. Let's begin by looking at some facts about water. (#) We have the same amount of water on earth today as we did when the earth was created. Water is not manufactured... it is simply recycled. (#) Of all the earth's water, 97% is salt water located in the oceans and seas. (#) Another 2% of the earth's water is tied up in the polar ice caps and is unavailable. (#) Only 1% of all the earth's water is fresh water available for drinking, bathing and cooking. This water is found in rivers, lakes, streams, reservoirs, and underground aquifers.
6. FACTS ABOUT WATER. Ironically, we only need about 15 gallons of water per person each day for drinking, bathing and cooking, yet per capita water consumption in the U.S. exceeds 100 gallons per day. Now you might say you don't use that much water, but think about all the ways you use water each day. Twenty to forty gallons, for instance, are often used during a daily shower. (#) Nevertheless, if each household in the U.S. saved just 1 gallon of water per day, we would save 120 million gallons per day, enough water to supply the daily needs of a city the size of Jacksonville, Florida.
7. WORLDWIDE. On a global perspective, demand for fresh water is projected to double every twenty years.

8. **U.S. POPULATION.** In the United States, over two-thirds of our population lives in metropolitan areas in and around urban centers. (#) In Georgia, over half of our state's population resides in just 12 counties, the dark blue counties highlighted on the map. (#) Two-thirds of Georgia's population resides in 26 of its 159 counties, shown here by the dark blue and light blue counties highlighted on the map. (#) Twenty-one counties have populations over 100,000 residents.
9. **AVERAGE RESIDENTIAL WATER USE.** Average residential water use increases between 30% and 50% during the summer months when citizens irrigate their outdoor landscape. Unfortunately, much of this water is used unnecessarily to irrigate plants that may not need water, and some of it is simply lost to evaporation when irrigation is done during mid-day.
10. **LAWN SPRINKLER.** We can save a lot of water simply by learning when to water, how to water, how much water to apply, and the most efficient ways to apply water. We also need to recognize that plants in the landscape require different amounts of water, and we don't need to water all plants the same. A single oscillating lawn sprinkler, like the one shown here, will typically use 6 gallons of water per minute or 360 gallons per hour of operation. (#) On a comparative basis, 360 gallons of water is equivalent to (#) 14 five-minute showers, (#) 26 runs of the dishwasher, (#) 72 flushes of the toilet, (#) or 9 full loads of laundry. When using low-flow fixtures and energy-efficient appliances, the numbers will be higher. We need to make a conscious decision where we are going to allocate our drinkable water supplies. Will we use them for healthful indoor purposes or outdoors to maintain a lush green environment? If we don't use our water resources wisely, we will be forced to conserve through higher water prices, water-use restrictions, or perhaps total bans on outdoor water use.
11. **WATER CONSERVATION MEASURES.** Water authorities across the state have various water conservation measures, techniques or incentives for conserving water. (#) For instance, many utilities will apply a summer surcharge to water bills during the summer months when usage exceeds the average winter consumption. In some counties, water cost may double during the summer months when a customer's water use exceeds his average winter use. (#) Restrictions on outdoor watering is another water conservation strategy. (#) When water supplies become severely limited, total bans on outdoor water use may be imposed. (#) However, the best long-term solution to water conservation is **EDUCATION** - educating ourselves and others about wise water use.
12. **PERMANENT RESTRICTIONS.** In Georgia, permanent outdoor watering restrictions are in effect. (#) Odd-numbered addresses may water on Tuesdays, Thursdays and Sundays, but not between 10 am and 4 pm. (#) Even-numbered and unnumbered addresses may water on Mondays, Wednesdays and Saturdays, but not between 10 am and 4 pm. (#) No one may water on Fridays.
13. **GOAL OF A WATER-WISE LANDSCAPE.** The goal in developing a water-wise landscape is to reduce and minimize the size of the area irrigated and the frequency of irrigation. You can do this by shifting as much of the landscape as possible into low water-use zones and by converting high water-use areas to moderate water use, thereby reducing irrigation frequency. The key is to make this conversion without sacrificing the quality of the environment. It can be done by following the seven steps of Xeriscape.

14. XERISCAPE. Xeriscape, pronounced with a “Z”, is a term coined in Colorado in 1981 in response to a drought in that state. It stems from the Greek word “Xeros” which means “dry”.
15. SEVEN STEPS OF XERISCAPE. The concept of Xeriscape involves seven steps. These include (#) Planning and Design, (#) Soil Analysis, (#) Appropriate Plant Selection, (#) Practical Turf Areas, (#) Efficient Irrigation, (#) Use of Mulches, (#) and Appropriate Maintenance. Collectively these are called Xeriscape. The more of them you implement, the more water efficient your landscape will be. You don’t have to totally renovate your landscape or spend a lot of money to develop a Xeriscape. You may be able to save a significant amount of water just by changing your irrigation habits, or by converting a high water use area to a natural ground cover, like pine straw or wood chips.
16. CACTUS GARDEN. Because Xeriscape originated in the arid regions of the United States, it is sometimes associated with cactus gardens, but this is **not** what Xeriscape is.
17. RURAL HOME. This is a Zero-Scape, not a Xeriscape. Although this landscape probably is not irrigated, it is not a quality landscape and therefore is **not** a Xeriscape.
18. XERISCAPE. This is a Xeriscape at Post Vinings in Atlanta. It’s a quality landscape that receives very little supplemental irrigation. In fact, over two-thirds of the landscape is not irrigated at all. It was installed on a drainage easement to take advantage of the natural drainage of the site. All seven steps of Xeriscape are well illustrated in this landscape.
19. PLANNING AND DESIGN. Now let’s examine each of the seven steps of Xeriscape in more detail. Any landscape, whether it is a conventional landscape or a Xeriscape, starts with good Planning and Design.
20. NATIVE AREA INCORPORATED INTO LANDSCAPE. If you are designing a new landscape, think of ways you can incorporate natural vegetation on the site into the design. Incorporating native areas that require no supplemental irrigation into the design is a great first step toward water conservation.
21. SITE ANALYSIS. Site analysis is a critical step in any landscape process. Whether you are designing a new landscape or adding to an existing landscape, site analysis will help you determine how you might change the site to fit the type of plants you want to grow, or which plants are best for each location in the landscape. There frequently are considerable differences in soil type, sunlight pattern and drainage characteristics in an individual landscape which need to be cataloged. For instance, shade-loving plants are best located on the east side of the home or building where they are shaded from the afternoon sun. Tender, cold-sensitive plants are best placed on the south or east side of a building where they are protected from the cold northwestern winds, while more cold-hardy plants are situated on the north or northwest side of the property because they can tolerate the cold winter winds. By putting plants in their preferred environment, they will be healthier and more low-maintenance than plants forced to grow in harsh, unfriendly environments.

22. **THREE WATER-USE ZONES.** When designing a Xeriscape, plants are assigned to one of three water-use zones. (#)High Water-use Zones, also called an Oasis Zones, (#)Moderate Water-use Zones or Transition Zones, or (#) or Low Water-use Zones, sometimes called Xeric Zones. There may be several of each of these zones in an individual landscape.
23. **HIGH WATER-USE ZONE.** The High Water-use Zones are small, highly visible, high-impact areas of the landscape where plants are watered routinely to encourage their optimum growth and performance. (#) This zone is usually limited to the entrance to the home or business.
24. **MODERATE WATER-USE ZONE.** In the Moderate Water-use Zones, plants are watered routinely during establishment, and then they are watered only when they show signs of moisture stress by turning a gray-green color or by wilting. (#) Typical landscape plants located in this zone would include azaleas, dogwoods, redbuds and herbaceous perennials.
25. **LOW WATER-USE ZONE.** Plants in the Low Water-use Zones are not irrigated once they are established, except during extreme drought. A large number of our common landscape plants will adapt to the low water-use zones, (#) including junipers, crape myrtle, yaupon holly and oaks. (#) Native, undisturbed areas would also be treated as low water-use zones.
26. **OASIS LANDSCAPING.** Another way of visualizing the various water-use zones is by thinking of the highly visible area as the oasis area where plants are grown for their optimum beauty. Then, as one moves outward from the entrance, the transition or moderate water-use zones are irrigated selectively on demand. These flow into the xeric zones or low water-use zones that are not irrigated. (#) Ideally, only 10% of the total landscaped area should be high water-use zones which are irrigated regularly, (#) not over 30% of the total area should be zoned for moderate water-use and watered on demand, (#) while 60% or more should be placed in xeric or low water-use zones and not irrigated at all.
27. **SHADE REDUCES EVAPORATIVE WATER LOSS.** Shade is a design element that keeps the landscape cooler and reduces evaporative loss of water. A shaded landscape may be 10 to 15 degrees cooler than an adjacent landscape in full sun. Garden structures and trees are commonly used to provide shade in landscapes.
28. **CONTAINERIZED COLOR.** An alternative to beds of seasonal color that require a great deal of water are seasonal color containers strategically placed in the high-impact area of the landscape. You can vary the size and shape of the containers and their arrangement and can be creative in plant combinations. Although the containers are high water use, you can concentrate your watering and save a significant amount of water.
29. **TYPICAL GEORGIA RESIDENCE.** Let's look at an example retrofit of what might be a typical residential landscape. The house is bordered by a good combination of foundation shrubs. The azaleas are planted on the east side of the home where they get morning sun and afternoon shade, which is good. Fatsia is used at the front door as an accent plant. Nandina is used along the remainder of the front, with a Little Gem

Magnolia used to soften the corner. Spirea is used along the foundation on the north side of the home. There are a few native trees on the north side of the property and a native oak in front. The remainder of the landscape is turfgrass.

30. RESIDENCE - WATER USE ZONES. Now let's look at the existing water-use zones of this property. (#) The azaleas are irrigated "as needed" and are in a moderate water-use zone. (#) The Nandina and Magnolia have very good drought tolerance once established and can be placed in a low water-use zone, (#) as can the spirea. (#) The turfgrass was irrigated regularly to maintain optimum growth and beauty and therefore is a high water-use zone.
31. RESIDENCE RETROFIT. Now let's look at a way we might modify this landscape to reduce its water requirement. (#) First, lay garden hose in the sun and allow it to become flexible, and then use it to create some new bed lines. In this case, we are creating a bed that includes the native oak in the front. Once we are satisfied with the shape of the new bed outline, we use baking flour or hydrated lime to mark the line. (#) Then we move the garden hose to the native trees on the north side of the property and incorporate them into another bed. Then we spray the turfgrass within the beds with Round-Up herbicide to kill the existing turfgrass. (#) Once the Round-Up dries on the foliage, we spread pinestraw within the bed and under the native trees on the north side of the property. However, simply filling this bed with pinestraw might look monotonous, (#) so we will create a small raised bed adjacent to the street using some good topsoil or compost. (#) This bed will be planted with annual flowers. (#) Another bed will be made near the walkway entrance. Here we will plant some herbaceous perennials, including daffodils, Siberian iris, and daylilies. (#) Finally, we will place three ornamental grasses in the front bed to add textural interest to the entrance bed, (#) then we will spread pinestraw throughout the remainder of the bed.
32. RESIDENTIAL RETROFIT WATER ZONES. Looking at the water use zones again, we see that we have reduced the size of the high water-use zone significantly. (#) The mulched area under the native trees has been shifted to a low water-use zone (#) as has the mulched area near the entrance. (#) The herbaceous perennial bed is watered on-demand, so it becomes a moderate water-use zone, (#) and the seasonal color bed is a high water-use zone.
33. RESIDENTIAL RETROFIT CONTINUED. Now, let's look at the same landscape one year later. (#) This year we decide to invest a little more money and plant the area under the trees with lirioppe to prevent having to re-straw each year. Once we define this area with green plants, (#) we get out garden hose again and think of a way to aesthetically expand the natural mulch area. The local municipality provides mulch to local citizens by the truckload, so we are going to take advantage of the excellent mulch source and use it in this area. Once again, we kill the existing vegetation with Round-Up herbicide before putting down the mulch. (#) Hybrid Bermuda grass was sodded in the turfgrass area because it is one of the most drought tolerant warm-season turfgrasses.
34. RESIDENTIAL RETROFIT WATER ZONES (YEAR 2). By year 2 we have shifted another 1/3 of the landscape to a low water-use zone with the bed of mulch. (#) The Bermuda grass, once established, becomes a moderate water-use zone and is watered only when it shows signs of moisture stress. (#) The lirioppe bed becomes a moderate

water-use zone during the first growing season after establishment. So you can see how we have retrofited this landscape and changed its water needs significantly.

35. **SOIL ANALYSIS.** Soil analysis is the next step toward developing a water-wise landscape.
36. **DON'T GUESS...SOIL TEST!** This involves knowing the physical and chemical characteristics of your soil. Use a shovel or auger, like the one shown here, to check the structure and texture of the soil in different spots throughout the landscape. Some soils have a layer of clay (called hardpan) beneath their surface that inhibits soil drainage. Others may have rock beneath the surface that prevents drainage. Soil structure and texture can vary tremendously throughout a landscape. A soil test, available through your local county Extension office for a nominal fee, will tell you the pH and nutrient content of the soil and will help you determine whether lime is needed to improve nutrient availability of the soil.
37. **RICH ORGANIC SOIL.** Organic matter benefits most well-drained soils by improving their water and nutrient holding capacity. Organic matter also improves the structure of hard, compact soils.
38. **USE ONLY DECOMPOSED ORGANIC MATERIAL.** Organic matter added to the soil as an amendment should be well rotted, like that on the right. Never incorporate undecomposed organic matter, like that shown on the left, into the soil right before planting because the pH and nitrogen content of the soil may drop dramatically as micro-organisms work to break down the organic matter. As a result, plants may look anemic and stunted as they compete with the micro-organisms for nutrients.
39. **PERCOLATION TEST.** Poorly drained soils are a leading cause of plant problems in many areas of Georgia. Some soils have a hard clay-like layer a short distance from the surface that prevents water from draining after rain or irrigation. (#) Ironically, more plants are killed in Georgia each year from over-watering than from drought. Standing water will suffocate roots and cause plant stress. To check drainage, simply dig a hole two to three feet wide and two to three feet deep and fill it with water. If a substantial amount of water remains in the hole two hours later, a drainage problem exists.
40. **POSSIBLE SOLUTIONS TO POORLY-DRAINED SOILS.** There are several possible solutions to poorly drained soils. (#) One is to change the grade of the site and plant on raised beds. (#) Another possible solution is to cultivate deeply to break apart a hard-pan layer under the surface. (#) Sub-surface drainage systems, such as porous PVC pipe may be required in some soils to help carry the water off the site. (#) Still another possible solution is to select plants adapted to the drainage characteristics of the site. Place moisture-sensitive plants at higher elevations and moisture-requiring plants at lower elevations. Often a combination of these solutions is needed to overcome a drainage problem on a landscape site.
41. **APPROPRIATE PLANT SELECTION.** Appropriate Plant Selection is the third step to a water-wise landscape.
42. **SELECT ADAPTED PLANTS.** As stated previously during the discussion of site

analysis, it is critical that you select plants adapted to the site and the stresses of the local environment. However, it's a mistake to select plants on the basis of one criteria alone. (#) Drought tolerance, for instance, is important, but one should also consider potential insect and disease problems as well as the sunlight and soil requirements of the plant.

43. **RED-TIP PHOTINIA EXAMPLE.** Red-tip Photinia, for example, is extremely drought tolerant, (#) but it also is very susceptible to a leaf-spot disease that will sometimes defoliate it in summer. The disease appears to be more pronounced on plants growing on drought-prone sites or sites that stay too wet after rain or irrigation.
44. **EXAMPLES OF PLANTS FOR SHADY SITES.** If shade is a factor, then select plants adapted to the shade. Here are some excellent examples of plants that perform best under shaded conditions: Azalea, Hosta, and Japanese Pachysandra. (#) Other excellent alternatives to turf grasses in shaded areas are (#) Liriope and (#) Mondo grass.
45. **EXAMPLES OF PLANTS FOR SUNNY SITES.** Here is an example of a great combination of plants for a full sun site: Zebra Grass, Sun-loving Coleus, Mexican Heather and Purple Passion (also called *Setcreasea*). The ornamental grass can survive long periods without water and would be a good choice for a low water-use zone, while the coleus, heather and purple passion would be good selections for moderate water-use zones.
46. **EXAMPLE OF TREES FOR DRY, SUNNY SITES.** Here are some great trees for sunny low water-use zones. Chastetree (also called Vitex or Summer Lilac) is grown widely in the hot, arid regions of the desert southwest and is an excellent choice for hot, dry sites in the southeast too. It bears light blue flowers in May and June and has pest-free foliage. Little Gem Magnolia is a tough as nails plant for dry, sunny sites. It's a dwarf magnolia, growing about 20 feet tall and eight feet wide at maturity and is a great hedge plant along the side of a property or a specimen plant to soften the corner of a building. Other good tree choices include (#) Chinese Pistache, a wide variety of hollies, Japanese Zelkova, (#) Lacebark Elm, Trident Maple and Crape Myrtle.
47. **EXAMPLES OF SOME TOUGH SHRUBS AND ORNAMENTAL GRASSES.** There are a number of good shrubs and ornamental grasses for sunny, low water-use zones. Some of the proven performers include Forsythia and Maidengrass. Other possible choices are (#) Spirea, Dwarf Yaupon Holly, (#) Aucuba, Barberry and Chinese Holly. Once established, these plants can survive weeks without supplemental rainfall or irrigation and seldom show stress on even the harshest sites.
48. **EXAMPLE GROUND COVERS FOR LOW WATER-USE AREAS.** The list of possible ground covers for hot, dry low water-use areas is extensive. Some excellent choices include Blue Rug Juniper and Liriope. (#) Other great choices are Asiatic Jasmine, Daylily, St. Johns Wort, (#) Carolina Jessamine, and Wintercreeper Euonymus.
49. **EXAMPLES OF LOW WATER-USE HERBACEOUS PERENNIALS.** There are also a number of herbaceous perennials known for their durability in low water-use zones. Among them are Wormwood and Autumn Joy Sedum. (#) Other good low water-use selections include Gaura, Black-eyed Susan, Russian Sage, (#) Red Hot Poker, Rosemary, and Agave.

50. **EXAMPLES OF LOW WATER USE ANNUALS.** Although summer annuals seldom perform to their optimum in low water-use zones of the landscape, there are several that perform well in hot, dry locations and can be grown in moderate water-use zones where they are watered when they show signs of moisture stress. These include Globe Amaranth and Creeping Zinnia. Other good choices include (#) Baby's Breath, Verbena, Annual Periwinkle, (#) Dusty Miller, Gazania, and Portulaca.
51. **DROUGHT TOLERANT TURFGRASSES.** Turfgrasses vary widely in their ability to tolerate drought. Hybrid Bermuda is one of the most drought tolerant of the warm-season turfgrasses. Fescue, a cool-season turfgrass commonly grown in the northern half of the state, has poor drought tolerance.
52. **PLANTS DON'T SAVE WATER.** Remember, however, that plants themselves don't save water..... (#) **PEOPLE SAVE WATER!** Select plants adapted to the site and water them according to their needs.
53. **PRACTICAL TURF AREAS.** The next step toward a water-wise landscape is to use practical turf areas.
54. **USE TURFGRASS FOR A PURPOSE.** Turfgrass is a very functional plant in the landscape. However, just as we use ornamental plants to add color, texture and interest to the landscape, turfgrass should be used for a purpose. (#) A well-manicured turfgrass area provides a green welcome mat to the home. (#) Turfgrass also provides an excellent recreational surface for outdoor activities, (#) and it can be used effectively for erosion control. (#) Our goal in Xeriscape is to minimize the amount of irrigated turfgrass, just as we try to minimize the amount of irrigated area in general.
55. **AVOID USING IRRIGATED TURFGRASS JUST TO FILL SPACE.** Unfortunately, in a typical landscape, turfgrass frequently receives the highest amount of supplemental irrigation of any plant in the landscape. If water conservation is your goal, then avoid using irrigated turfgrass just to fill space.
56. **TURFGRASS USED AS A WELCOME MAT.** In this landscape, turfgrass serves as a welcome mat to the home. It is irrigated on demand and is considered a moderate water-use zone. In a Xeriscape, no more than 20% of the landscape should be irrigated turfgrass.
57. **EFFICIENT IRRIGATION.** Using Efficient Irrigation is the next step to a water-wise landscape.
58. **WATER AT NIGHT.** Less evaporative loss of water will occur if irrigation is applied from late evening to early morning. Research has shown that as much as 50% of the water applied during mid-day can be lost to evaporation. Night-time watering does not encourage plant disease because the foliage is usually wet from the night-time dew anyway. (#) Avoid light, frequent irrigation because it encourages a shallow root system which causes the plant to demand more water.
59. **TARGET IRRIGATION TO PLANTS THAT SHOW SIGNS OF STRESS.** Not all

plants in the landscape have the same requirement for water, so target your irrigation to plants that show symptoms of moisture stress. (#) Plants will tell you when they need water by turning a gray/green color or by wilting. Some trees and shrubs will shut down selected branches in an effort to conserve moisture. (#) Use a hand-held hose with an attached water breaker or a sprinkler can to target irrigation to plants showing moisture stress.

60. **DRIP IRRIGATION.** Drip or low-volume irrigation is an efficient way to irrigate ornamental plants. With these systems, water oozes or drips from tubing at a rate of 1 to 2 gallons per hour. (#) It uses 30 to 50% less water than sprinkler irrigation. (#) By applying water to the root area of plants, the foliage remains dry, thereby keeping foliar diseases to a minimum. (#) There is no spray drift with drip irrigation like you sometime get with sprinkler irrigation, particularly on a windy day. (#) And only a portion of the root system needs to be irrigated to absorb all the water a plant needs. Water is very mobile in the plant. So once it is absorbed, it is transferred readily throughout the plant.
61. **USE OF MULCHES.** Use of mulches around ornamental plants is an important step in developing a water-wise landscape.
62. **BENEFITS OF MULCH.** Mulch provides a number of benefits to the landscape. (#) From the water conservation standpoint, mulch prevents evaporative water loss from the soil. (#) It also prevents certain soil-borne diseases by acting as a barrier between the soil and the plant. (#) It insulates the roots of plants from extreme heat and cold, (#) and it reduces weed competition by blocking light and preventing some weed seeds from germinating.
63. **BEST MULCH.** Generally, the best mulch for the landscape is one that is organic, fine-textured and non-matting. Examples include pine straw, pine bark mini-nuggets, shredded hardwood mulch, or cypress mulch. Inorganic mulches, such as rock or gravel, are not good mulches in the South because they absorb and re-radiate heat around the plant canopy and increase evaporative loss of water from the plant. Fine-textured mulches, such as mini-nuggets or shredded hardwood, do a better job of holding moisture in the soil than more porous coarse-textured mulches.
64. **HOW MUCH MULCH TO APPLY.** To realize the benefits from mulch, (#) apply it at a depth of 3 to 5 inches. (#) If you purchase pine straw, 1 bale will cover approximately 50 square feet when applied a 3- to 5-inch depth. If you purchase bagged bark mulches, you will need nine 3-cu. ft. bags or thirteen 2-cu. ft. bags for each 100 square feet of mulched area.
65. **USE RECYCLED MULCH.** Many municipalities in Georgia are now collecting woody brush and grinding it into mulch for use in public parks and municipal landscapes. Some local governments also offer this mulch free or at low cost to local citizens. Check with your local municipality on the availability of this material.
66. **USING NEWSPAPER UNDER MULCH TO CONSERVE MOISTURE.** When installing new plants in low water-use zones, consider adding newspaper, two to three sheets thick, over the soil surface to serve as an added barrier to moisture loss. This is a great way to recycle and reuse newspaper while conserving moisture in the soil. (#) Once

in place, cover the newspaper with an organic mulch to hide it and hold it in place. The newspaper will gradually decompose and add organic matter to the soil.

67. **APPROPRIATE MAINTENANCE.** Last, but certainly not least among the steps to a water-wise landscape is Appropriate Maintenance. Now that you have applied the first six steps to develop a water-wise landscape, it's important to also manage the landscape with water conservation in mind. This means doing everything possible to assure good health while minimizing plant stress and water demand.
68. **AVOID FREQUENT SPURTS OF NEW GROWTH.** Try to avoid promoting frequent flushes of new growth on plants through (#) fertilization, (#) pruning, (#) and irrigation. New growth not only increases the water demand of the plant, but also increases maintenance requirements by increasing the frequency of pruning.
69. **FERTILIZATION.** Fertilization, like pruning and watering, promotes new vegetative growth and increases water demand of plants. (#) Target fertilization to plants that need it, such as annuals, herbaceous perennials or newly planted ground covers. Established trees and shrubs may not need to be fertilized annually. (#) When selecting fertilizer, look for slow-release forms of nitrogen, such as urea formaldehyde, IBDU or sulfur-coated urea. These forms of nitrogen are released slowly and evenly to the plant throughout the growing season. (#) Use low rates of fertilizer. Again, the goal is to maintain plant health, not promote optimum growth. (#) Finally, and most importantly, limit fertilization during dry periods. Fertilizers are chemically salts and can dehydrate roots and cause plant stress.
70. **SELECTIVE THINNING.** Whenever possible, prune plants by making selective thinning cuts instead of shearing them. Thinning opens up the plant canopy, increases air circulation around the foliage and helps prevent diseases. It also results in a more natural growth form. Shearing, on the other hand, stimulates an abundance of new thick, dense growth at the tips of the canopy. As a result, air circulation within the canopy decreases, insect and disease problems are encouraged, and pruning requirements increase.
71. **GRASSCYCLING.** Grasscycling, the practice of letting lawn clippings fall back on the lawn when mowing, is a proven cultural practice with many environmental benefits. (#) From the water conservation standpoint, clippings recycled back to the turf save water by acting as a mulch at the base of the grass blades. (#) Clippings DO NOT cause thatch build-up in turfgrass. Thatch results from an accumulation of fibrous stems and roots. (#) Grasscycling also recycles nutrients back to the turf and reduces the lawn's requirement for fertilizer. The key to successful grasscycling is to mow frequently enough so that no more than one-third of the total plant height is removed at each mowing. Small clippings decompose quickly.
72. **SEVEN STEPS OF XERISCAPE.** So you see, Xeriscape is nothing more than seven common-sense practices that result in water conservation. The more of them you implement, the more water-wise your landscape will become.
73. **NICE XERISCAPE.** Quality landscapes that save water and protect the environment... that's what Xeriscape is all about. By following the steps outlined in this presentation, you too can have twice the landscape for half the water.

74. **FOR ADDITIONAL INFORMATION.** For additional information on water wise landscapes and selecting adapted plants for your area, (#) contact your local county Extension agent (in your telephone book), (#) visit your local garden, or (#) go to the Conserve Water Georgia web site at www.conservewatergeorgia.net. (#) The Cooperative Extension Service also has publications on the Internet that can help you select regionally adapted plants. Look for (#) *Coping with Watering Restrictions in the Landscape*, *Xeriscape: A Guide to Developing a Water Wise Landscape*, *Landscape Plants for Georgia*, and *Lawns in Georgia*.

75. **WATER SMART.** Water Smart is a state-wide water conservation initiative of the Education Roundtable. The Education Roundtable is comprised of state agencies and other organizations interested in a coordinated effort to save water. Water Smart encourages citizens to save water by following a few easy guidelines.

The Water Smart Initiative recommends you (#) “Try these five to help them thrive.”

(#) - 1. Water plants only once a week, in the absence of rain.

(#) - 2. Soak, don't sprinkle. Hand watering is an efficient way of watering only plants that need water. Apply water slowly to avoid run-off.

(#) - 3. Don't water in the heat of the day. You will only lose water to evaporation

(#) - 4. Turn off sprinkler systems when it rains. Install an inexpensive rain sensor shut-off switch.

(#) - 5. Mulch! Pine straw, bark chips or ground hardwood mulch on the roots of plants and trees helps the soil retain water.

76. **CHILDREN PLAYING IN WATER FOUNTAIN.** Water... it's a resource we can no longer take for granted. As urban areas continue to grow and competition for water increases, we simply are not going to have as much water in the future as we've had in the past. We all must do our part to conserve this resource so that our children and future generations can continue to enjoy the same quality of life that we appreciate today.

77. **MAKE EVERY DROP COUNT.** It's up to each of us to **MAKE EVERY DROP COUNT!** (#) Our future depends on it.

78. **CREDIT SLIDE.**

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