



Creating an Environmental Friendly Home Landscape

Greg Church, Ph.D.
 County Extension Agent for Horticulture
 Texas A&M AgriLife Extension Service – Collin County
gtchurch@tamu.edu
<http://collin.agrilife.org>

How do Gardening practices affect the Environment?


Water	Pollutants	Waste	Energy
-------	------------	-------	--------






Examples of Impact

- It is estimated that at least 50% of landscape water use is wasted.
- If we all stop wasting this water we (USA) would save 3.25 mil gal/day, or 1.2 trillion gallon / year.
 - Source: EPA



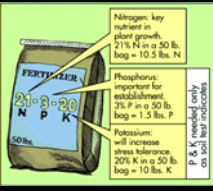
Effects of Droughts on Local Water Supply



Lake Lavon
 12ft below conservation pool

Examples of Impact

- It is estimated that 50% of Nitrogen fertilizer use is lost to the atmosphere, to runoff, or through leaching.
- Runoff containing fertilizer can pollute our waterways causing algal blooms, depleting oxygen, and damaging aquatic life.
 - Source: North Carolina State Univ.
- Phosphorus has shown to have similar negative effects on the environment




Nitrogen: key nutrient in plant growth, 21% N in a 50 lb. bag = 10.5 lbs. N

Phosphorus: important for establishment, 2% P in a 50 lb. bag = 1.0 lbs. P

Potassium: will increase stress tolerance, 20% K in a 50 lb. bag = 10 lbs. K

Do not use on lawns, lawns, or other areas where it is not needed.



Examples of Impact

- It is estimated that 20% of wastes entering the landfills are yard wastes
- Diverting these organic materials to a compost pile or municipal recycling center would save 32 million tons each year.
- Provides a excellent source of organic material for our landscapes and gardens.




Examples of Impact

- The over use and abuse of pesticide has negative consequences to the environment and human health.
- Negative impact on:
 - pollinators and other beneficial insects
 - drinking water supply
 - soil productivity
 - Etc.



What is Environmental Stewardship?

- Environmental stewardship is the responsibility for environmental quality shared by all those whose actions affect the environment.

• Source: www.EPA.gov



8

Earth-Kind® Environmental Stewardship



- Landscape Management System focused on preserving and protecting the environment
- Purpose:
 - Environmental Stewardship
 - Eliminate pesticide and fertilizer use
 - Reduce water use and survive droughts
 - Recycling of Yard Wastes
 - Lower Maintenance
 - Beautify Landscapes



Earth-Kind Principles

Earth Kind landscaping incorporates seven basic principles :

- Planning and Design
- Appropriate plant selection
- Practical turf areas
- Soil analysis and preparation
- Efficient irrigation
- Use of mulches
- Appropriate maintenance

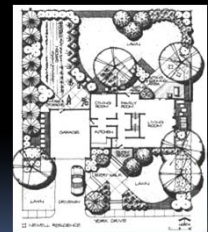
Landscape Planning and Design

- Creating an environmentally friendly landscape begins with a well-thought-out landscape design.
- The plan should incorporate all other principles and practices of Earth-Kind:
 - Drought Tolerant Plants
 - Practical use of turfgrass (1/3)
 - Soil Preparation
 - Efficient Irrigation
 - Use of Mulch



Earth Kind® Planning


- Proper planning and design
 - Plan the placement of plants so they receive all their requirements:
 - Sun, Water, Light, Air, and Soil
 - Use plants for sun and wind protection to conserve energy and enjoy the outdoors
 - Allow for **only** the practical use of turf grass



Proper Planning and Design

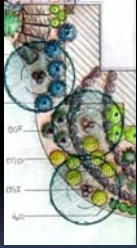
Plant Requirements

- Space
 - Mature Size in your environment
- Soil
 - Drainage, Type, pH, Nutrients
- Water
 - Quality, Quantity, Reliability
- Light
 - Intensity and Length of Time


Space

- What does the right spacing do?
 - efficient use of soil, water, light
 - reduces competition between plants
 - reduces risk of disease
 - efficiently uses space
 - improves weed control



Soil Analysis and Preparation

- To increase plant health and conserve water, incorporate at least 3 inches of compost to the soil of shrub and flower bed areas.
- This increases the soil's ability to absorb and store water in a form available to the plant.



Earth Kind® Practices

- Use compost for:
 - source of fertilizer
 - providing improved aeration and drainage.
 - improved ability of the soil to hold water and nutrients
 - reduce the need for chemical fertilizers and risk of environmental contamination
- To increase plant health and conserve water, incorporate at least 3 inches of compost to the soil of shrub and flower bed areas.



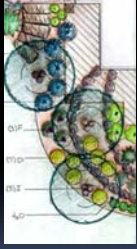
Earth Kind® Practices

- Compost Once, Mulch Forever!
 - By Steve Chaney, Extension Horticulturalist
- Mulch is a Super Slow Release, Long-Term Fertilizer!
 - By Steve George, Ph.D., Extension Horticulturalist
- Healthy Plants start with a Healthy Soil!
 - By Greg Church, Ph.D., Extension Horticulturalist and Plant Pathologist




Plant Selection

- Proper Plant Selection helps prevent problems before they occur
- Plants that are well adapted to your area will:
 - Use less water
 - Need less soil modification
 - Require little or no fertilizer
 - Resistant to pest and diseases
 - Tolerant of stressful environmental conditions



Practical Use of Turf

- Designing a landscape with the practical use of turf grass can lower your water use and maintenance efforts.
- 1/3 of the property is recommended



Efficient Irrigation

- Irrigation systems are for providing supplemental irrigation in the absence of rainfall.
- Drip irrigation offers increased watering efficiency and plant performance when compared to sprinkler irrigation.
- Replace your sprinkler head in your flower beds with drip irrigation to save water and more effectively irrigate.



Proper Watering Techniques

- Most lawns and landscapes receive twice as much water as they require for a healthy appearance.
- The key to watering plants is to apply the water deeply and infrequently, creating a deep root system that efficiently uses water stored in the soil.
- To know when to water your plants, simply observe the plants:
 - Wilting and discoloration are signs of water stress
- Water only when needed and watering thoroughly produces a deep root system which is more water efficient and drought enduring.



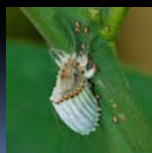
Use Mulch

- Use a layer of organic mulch to cover the soil surface around plants.
- Significantly reduces moisture evaporation from the soil
- Mulch also:
 - Reduces weed populations
 - Prevents soil compaction
 - Moderates soil temperatures
 - Source of plant nutrients
- 3 inches recommended



Earth Kind® Practices

- Integrated Pest Management (IPM)
 - is a strategy of managing pests that reduces or eliminates the need for the use of pesticides

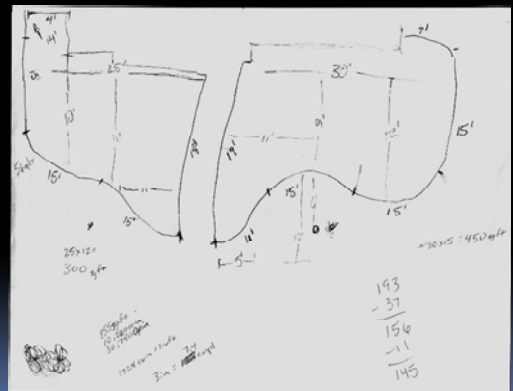
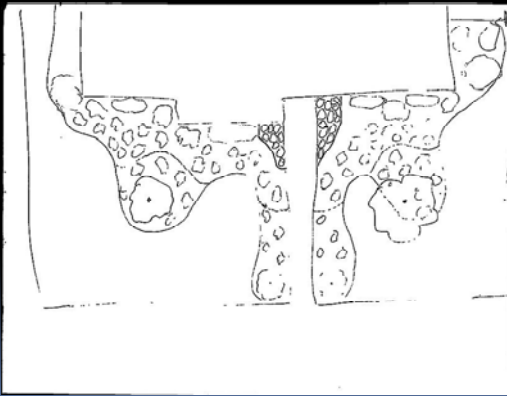


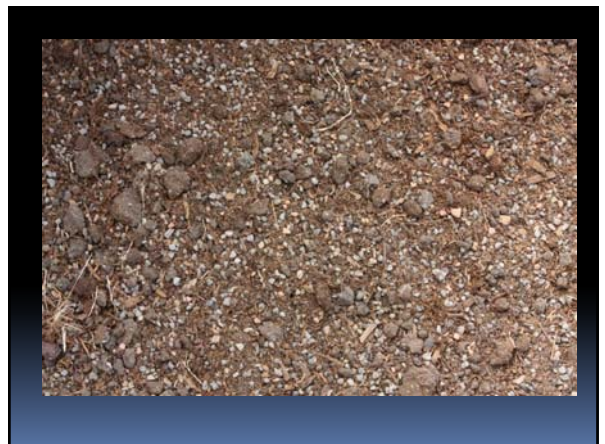
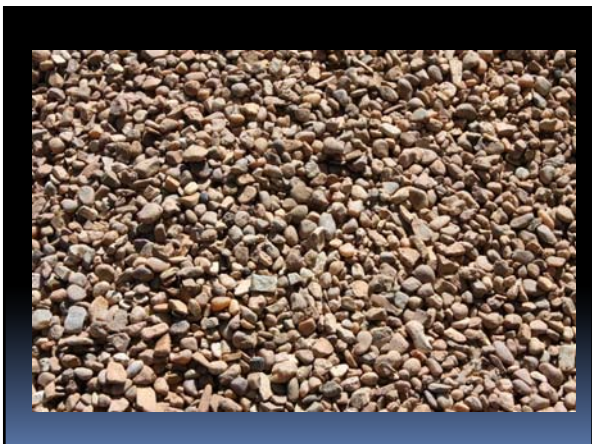
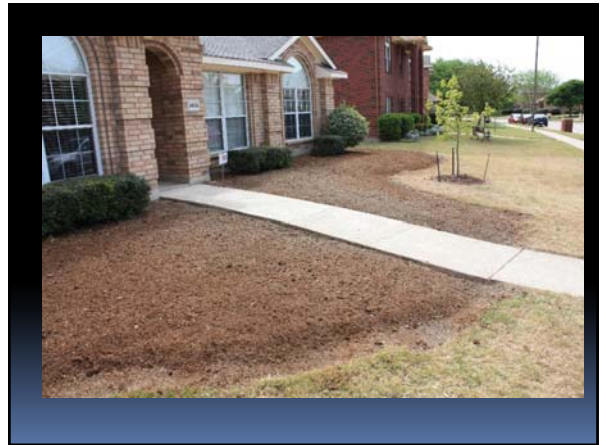
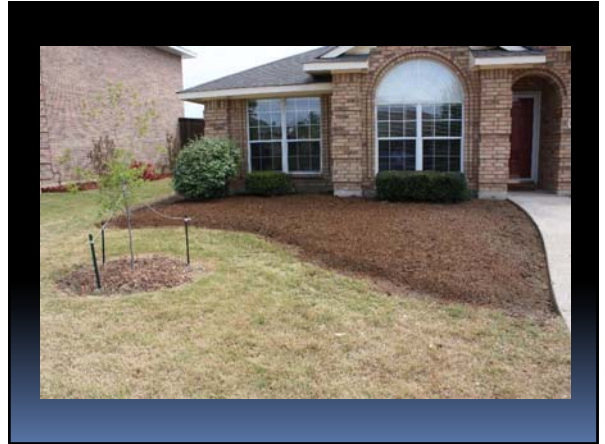
How to do you put this information to practical use?

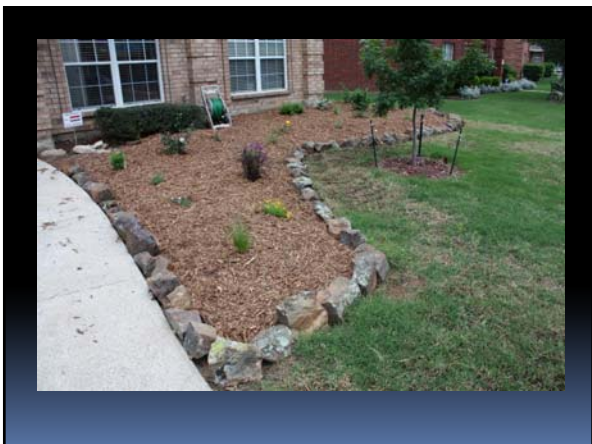
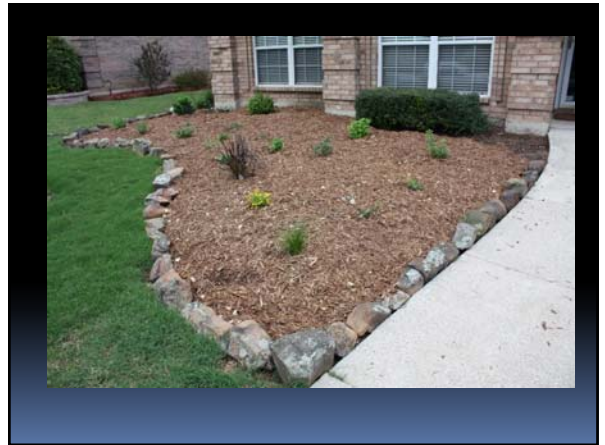
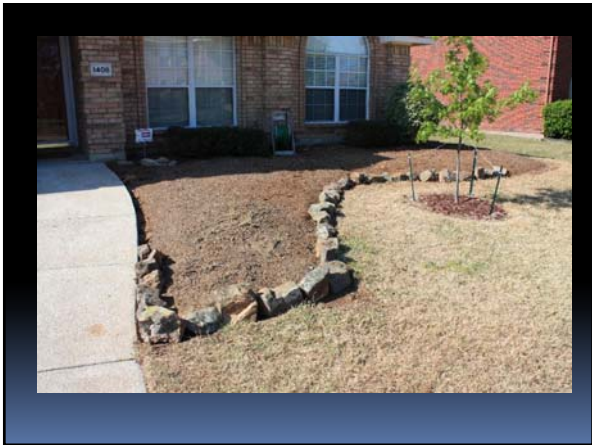
Practical Tips to Landscaping

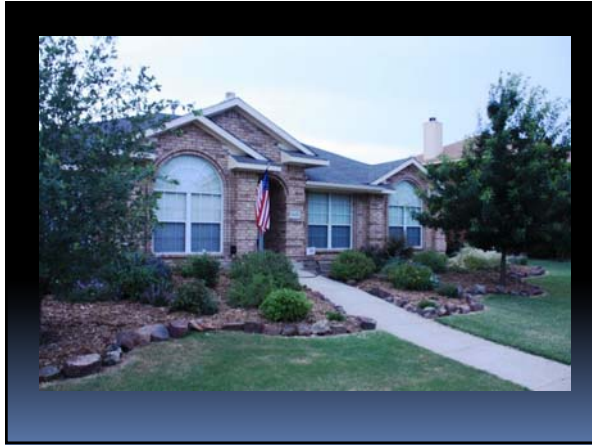
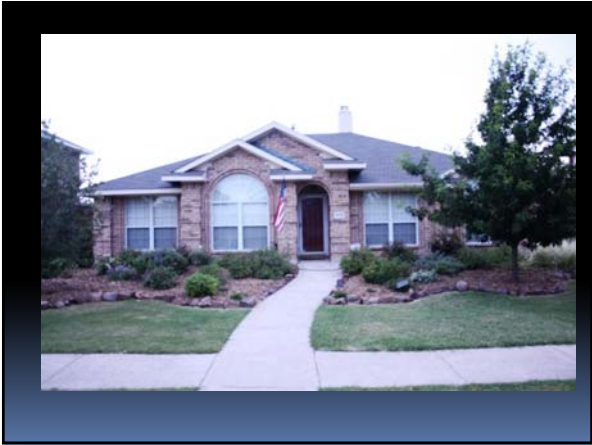
- Use compost to improve your soil
- Add expanded shale as needed
- Select the best plants for your design
- Space plants for the mature size
- Don't worry about having a perfect design
- Install plants properly and water to establish
- Use 3" of hardwood mulch
- Water established plants only as needed
- Just do it and Enjoy!

My home landscaping project









Use online maps to get started designing your landscape

Property Survey is great way to get started designing

Earth-Kind Research Gardens

Purpose:

- Evaluate plants that perform within the Earth-Kind Landscape Management System
- Identify plants that do not require supplemental fertilizer and pesticides, and limited irrigation
- Utilize the Earth-Kind Soil Management System to improve soil properties, reduce weed pressure, conserve soil moisture and plant health
- Identify superior plants for the landscape that require lower maintenance
- Identify plants that can beautify the landscape while preserving and protecting the environment



Results

- Data indicates a significant number of plants:
 - do not require supplemental fertilizer
 - are resistant to insect and diseases
 - are extremely drought tolerant
 - exceed recorded growth expectations
 - will allow the public to become better stewards of the environment



Earth-Kind Educational Programs and Garden Tours



For more info: <http://collin.agrilife.org> or <http://ccmgatx.org>

55