Creating an Environmental Friendly Home Landscape

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How do Gardening practices affect the Environment?

<table>
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<tr>
<th>Water</th>
<th>Pollutants</th>
<th>Waste</th>
<th>Energy</th>
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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

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 overuse and abuse of pesticide have 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

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 a 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