



# Earth Kind Landscaping

- ▶ Susie Yarbrough
- ▶ Llano Estacado Texas Master Naturalist
- ▶ Permian Basin Master Gardener
- ▶ KMB TreeKeeper

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- ▶ Earth's resources are finite but infinitely renewable with proper management.

# Sustainable Life Initiative

- ▶ 1. Build Healthy, Fertile Soils
- ▶ 2. Avoid Chemical Contamination
- ▶ 3. Support Clean Air and Clean Water
- ▶ 4. Eliminate Artificial Irrigation
- ▶ 5. Utilize Long-lived, Locally Native, Noninvasive Plants and Disengage with Turf

# Sustainable Life Initiative

- ▶ 6. Focus on management rather than maintenance
- ▶ 7. Incorporate food production
- ▶ 8. Minimize or eliminate fossil fuel inputs during construction and management

# Sustainable Life Initiative

- ▶ 9. Use local materials
- ▶ 10. Support human health and well-being
- ▶ 11. Mitigate the Urban Island
- ▶ 12. Engage in biomimicry

# Goals of Earth-Kind

- ▶ 1. Conservation of water AND water quality
- ▶ 2. Reduction of chemical and fertilizer use
- ▶ 3. Energy conservation
- ▶ 4. Reduction of solid waste

# Water Quality and Conservation

- ▶ EarthKind Soil Management
- ▶ Drought tolerant plants
- ▶ Mulching
- ▶ Drip irrigation
- ▶ Permeable Hardscapes
- ▶ Rainwater Harvesting

# Reduction of Chemical and Fertilizer Use

- ▶ IPM - Integrated Pest Management
  - ▶ Cultural - crop rotation, resistant varieties, . . .
  - ▶ Mechanical - remove by hand, water spray, . . .
  - ▶ Chemical - ALWAYS a last resort
- ▶ MOST INSECTS ARE NOT PESTS!
  
- ▶ Use of natives in the landscape
- ▶ Healthy Soils
  
- ▶ NATURAL NUTRIENTS



# Reduction of Solid Waste

- ▶ Composting
- ▶ Leave the leaves
- ▶ \*Use uncontaminated grass clippings (if you or anyone you know mows a lawn)
- ▶ Scrub piles for wildlife
- ▶ It costs Texans over \$250 million a year to collect and dispose of yard wastes.

# Energy Conservation

- ▶ Turn the lights off
- ▶ No need for lawn mower, lawn blower, string trimmer, edger
- ▶ Landscape for energy conservation

# Principles of an EarthKind Landscape

- ▶ 1. Planning
- ▶ 2. Soil Analysis
- ▶ 3. Practical Turf Areas
- ▶ 4. Appropriate Plant Selection
- ▶ 5. Efficient Irrigation
- ▶ 6. Use of Mulches
- ▶ 7. Appropriate Maintenance

# PLANNING

- ▶ If you don't know where you are going, you'll end up someplace else.
- ▶ Yogi Berra

# 1. Planning

Write  
it  
Down

- ▶ What do you want from your yard?  
How and when will the spaces be used?
- ▶ What will your yard want from you?
- ▶ Mature sizes of plants
- ▶ Look up and look down
- ▶ Pathways
- ▶ Screening undesirable views
- ▶ Grouping plants with similar requirements - light, water, nutrients
- ▶ Sun, function, views, time

# PLANNING: WRITE IT DOWN

- ▶ Start with a program.
- ▶ Identify aspects of your current landscape that you like
- ▶ Identify aspects of your current landscape that you don't like
- ▶ Make a list of what you want - How & when are you going to use the landscape?
  - ▶ A place to interact with nature
  - ▶ Water feature
  - ▶ Rain collection
  - ▶ Outdoor cooking area
  - ▶ Fire pit
  - ▶ Vegetable garden
  - ▶ Storage building
  - ▶ Screening unsightly views - yours or a neighbor's

# Planning - Draw It

- ▶ Make a drawing - surveyor's plat, online maps, or draw it yourself
- ▶ a scale and directional compass
- ▶ Include existing structures on, above, and under the landscape
- ▶ use pencil
- ▶ Identify the size and type of plants that you need long before choosing specific plants

# Planning

- ▶ House boundaries
- ▶ Location of windows and doors
- ▶ Shed, fence, trees or other important plants, sidewalks, gutter downspouts
- ▶ Shade, sun, slope
- ▶ City ordinances

# Planning

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## HYDROZONING

Group plantings with similar watering requirements.

### HIGH WATER NEEDS

- **Once or more per week.**

- *Turfgrass & vegetable gardens*

### MODERATE WATER NEEDS

- **Around 1 to 2 times per month.**

- *Columbines, lantana, echinacea*

### LOW WATER NEEDS

- **Can generally survive on natural rainfall alone.**

- *Established native plants.*

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# Planning and Design



## 2. Soil Analysis and Preparation

- ▶ Soil is ALIVE!
- ▶ Plant Growth
- ▶ Water Regulator
- ▶ Recycler of Raw Materials
- ▶ Habitat
- ▶ Engineering Medium

# Soil Analysis and Preparation

## Fertilizer



## Soil Test Recommendations

**TEXAS A&M**  
**AGRI LIFE**  
**EXTENSION**

**Soil Analysis Report**  
Soil, Water and Forage Testing Laboratory  
Department of Soil and Crop Sciences  
2478 TAMU  
College Station, TX 77843-2478  
979-845-4816 (phone)  
979-845-5958 (FAX)  
Visit our website: <http://soiltesting.tamu.edu>

Sample received on: 2/3/2014  
Printed on: 2/5/2014  
Area Represented: 800 sqft

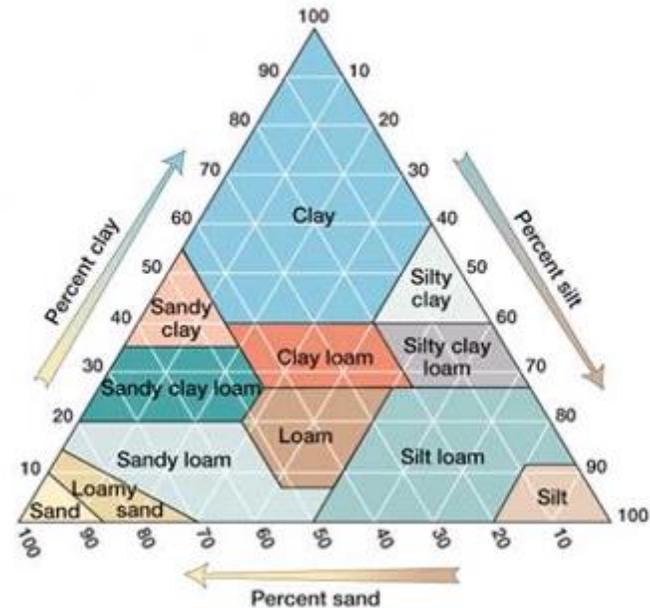
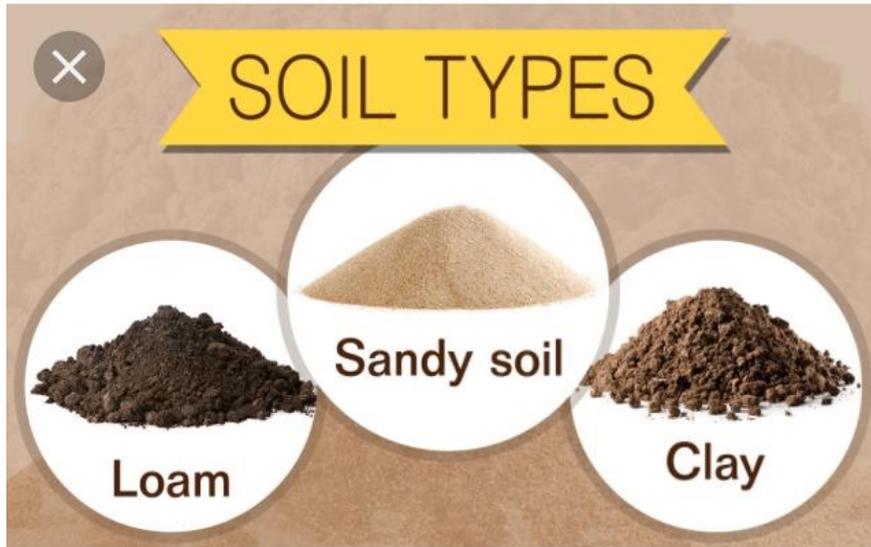
Laboratory Number: 402109  
Customer Sample ID: Vegetable Garden  
Crop Grown: GARDEN

| Analysis              | Results | CL*    | Units   | ExLow         | VLow | Low | Med | High | VHigh | Excess            |
|-----------------------|---------|--------|---------|---------------|------|-----|-----|------|-------|-------------------|
| pH                    | 7.8     | (5.5)  | -       | Mod. Alkaline |      |     |     |      |       |                   |
| Conductivity          | 247     | (-)    | umho/cm |               |      |     |     |      |       |                   |
| Nitrate-N             | 10      | (-)    | ppm**   |               |      |     |     |      |       |                   |
| Phosphorus            | 149     | (50)   | ppm     |               |      |     |     |      |       |                   |
| Potassium             | 215     | (175)  | ppm     |               |      |     |     |      |       |                   |
| Calcium               | 3,938   | (180)  | ppm     |               |      |     |     |      |       |                   |
| Magnesium             | 344     | (50)   | ppm     |               |      |     |     |      |       |                   |
| Sulfur                | 20      | (13)   | ppm     |               |      |     |     |      |       |                   |
| Sodium                | 203     | (-)    | ppm     |               |      |     |     |      |       |                   |
| Iron                  | 47.21   | (4.25) | ppm     |               |      |     |     |      |       |                   |
| Zinc                  | 13.82   | (0.27) | ppm     |               |      |     |     |      |       |                   |
| Manganese             | 9.87    | (1.00) | ppm     |               |      |     |     |      |       |                   |
| Copper                | 1.35    | (0.18) | ppm     |               |      |     |     |      |       |                   |
| Boron                 | 2.32    | (0.60) | ppm     |               |      |     |     |      |       |                   |
| Limestone Requirement |         |        |         |               |      |     |     |      |       | 0.00 lbs/1000sqft |

**Fertilizer Recommended**

- 1 lbs N/1000sqft
- 0 lbs P2O5/1000sqft
- 0 lbs K2O/1000sqft
- 0 lbs Ca/1000sqft
- 0 lbs Mg/1000sqft
- 0 lbs S/1000sqft

# Soil Analysis and Preparation



## 2. Soil Analysis and Preparation

### BUILD HEALTHY SOILS

- ▶ Reduce the use of fertilizers
- ▶ Add 4 - 6 inches of finished compost to the soil in shrub and flower beds
- ▶ Increases the soil's ability to store water in a form available to plants
- ▶ Increases the soil's nutrients
- ▶ Healthier plants

Maintaining our expansive lawns is ecologically expensive



### 3. Practical Turf and Turf Areas

- ▶ Running a lawn mower for one hour releases as much hydrocarbon into the air as driving a car for 11.5 hours

### 3. Practical Turf and Turf Areas

- ▶ Annually, 70 million pounds of pesticides, herbicides, and fertilizers are applied - the majority of which are washed into local streams and reservoirs by rain and sprinkler systems.

### 3. Practical Turf and Turf Areas

- ▶ Over 40 million acres of American soil is dedicated to the cultivation of turfgrass - three times the amount of irrigated cropland.

### 3. Practical Turf and Turf Areas

- ▶ We have created an ecological desert.
- ▶ Diversity = diversity
- ▶ Deadscape and Yawnscape
- ▶ You can reduce turf in stages or all at once.

# Buffalograss

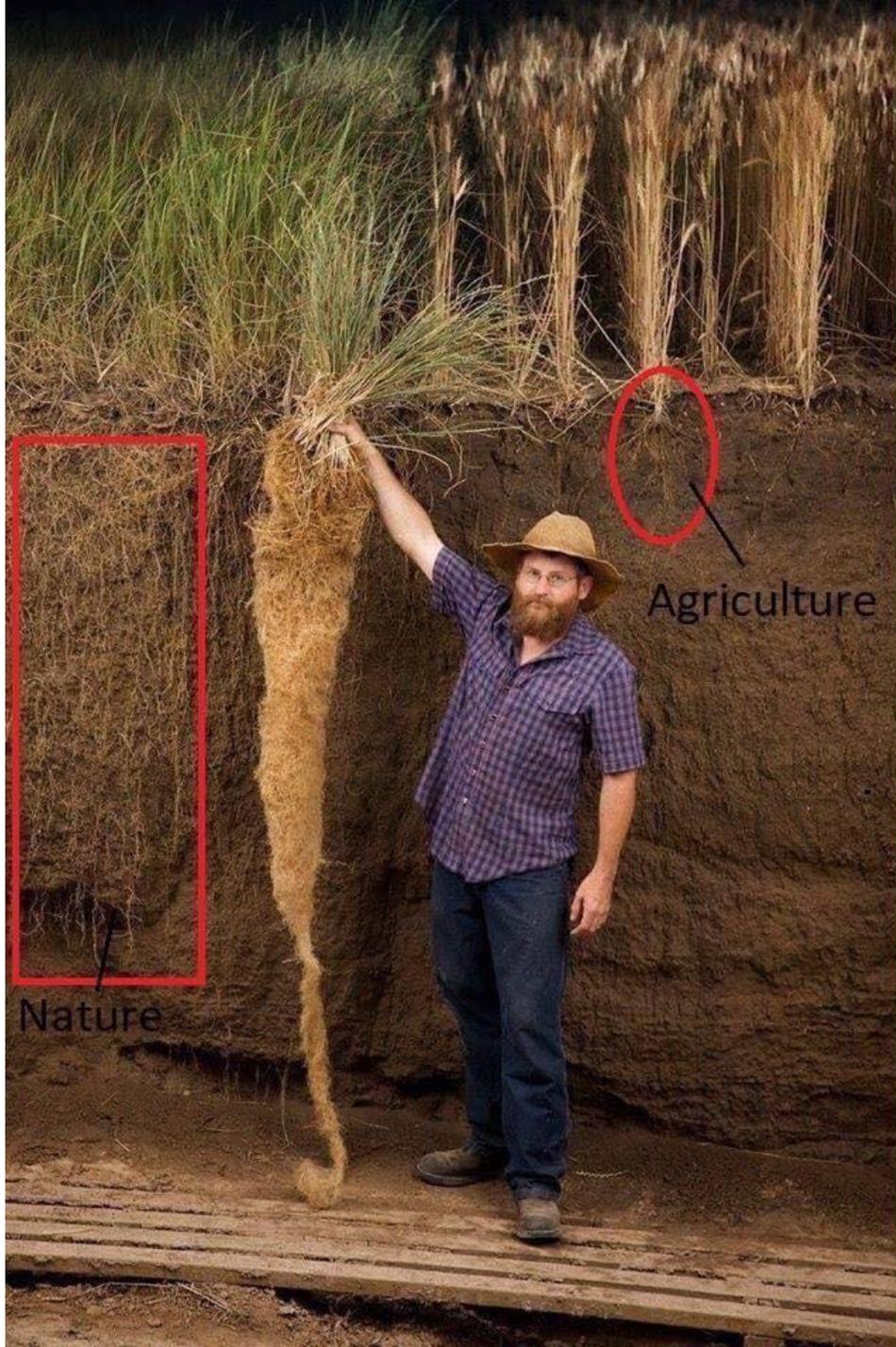


# Blue grama



# Curly mesquite





Nature



Agriculture



# Rethink Turf



# Reduce or Eliminate Turf

- ▶ Widen Paths
- ▶ Use Permeable Pavers
- ▶ Add Living Spaces
- ▶ Add Trees and Shrubs
- ▶ Create Habitats



## 4. Appropriate Plant Selection

### ▶ Native Plants

- ▶ Lower water usage
- ▶ Few pest problems
- ▶ Eliminate reliance on fertilizers
- ▶ Attractive to native wildlife

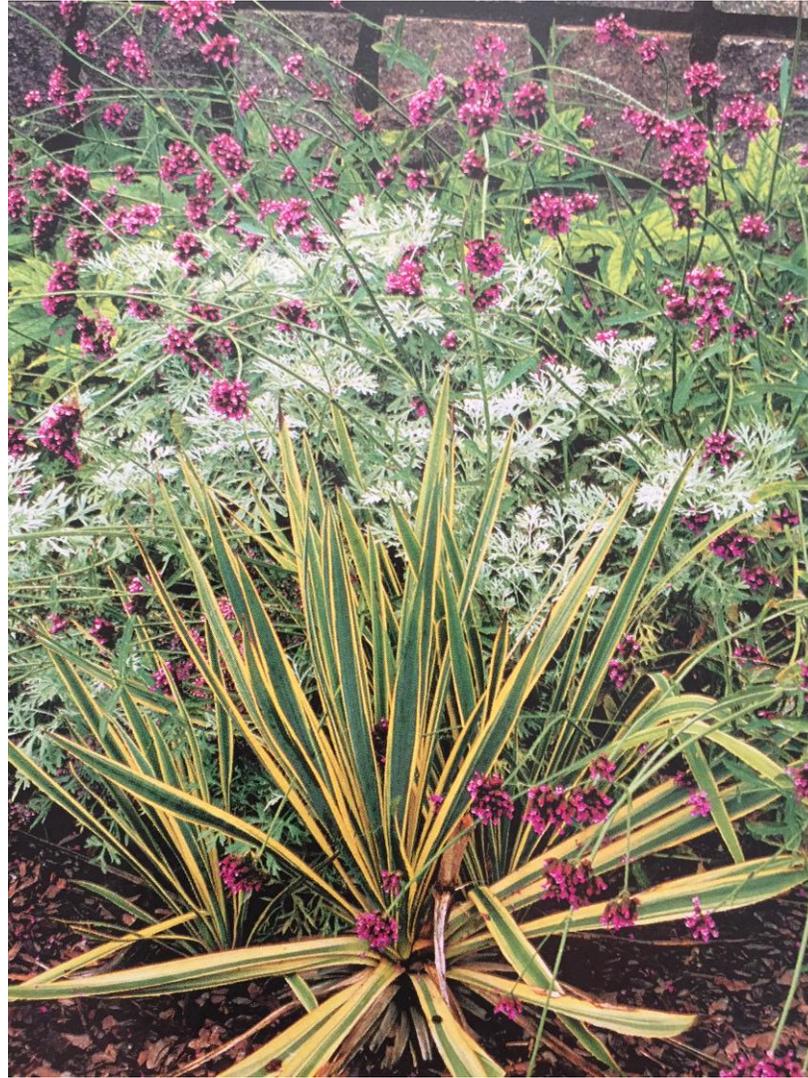
# Appropriate Plant Selection

- ▶ Biodiversity
- ▶ Choose from a limited range of plants
- ▶ Do not try to recreate Noah's Ark
- ▶ Succession of bloom
- ▶ Scale - graduated heights

## 4. Plant Selection

- ▶ [Westtexasgardening.org](http://Westtexasgardening.org)
  - ▶ Outstanding landscape plants for the Permian Basin
- ▶ <https://www.nwf.org/NativePlantFinder>
- ▶ <https://www.wildflower.org/plants/>

# Plant Selection



## 5. Efficient Irrigation

- ▶ MUCH WATER USED FOR IRRIGATION IS LOST  
GREATEST WASTE: run-off, evaporation, applying too much too often
- ▶ Water thoroughly, only when the plants need it
- ▶ Deep well-rooted plants use water stored in the soil

## 5. Efficient Irrigation

- ▶ Drip irrigation is highly effective at supplying one to four gallons of water per hour directly to the soil.
- ▶ The advantage of drip irrigation over sprinklers is that there is little water loss due to evaporation or runoff.
- ▶ You can use drip on slopes and in oddly shaped areas.
- ▶ It's particularly good for mulched areas because it can directly soak the soil without washing away the mulch.
- ▶ It's relatively easy to install.
- ▶ Avoid automatically timed systems - water only when water is necessary.

## 6. Use of Mulches

- ▶ Mulch is a layer of nonliving material covering the soil surface around plants
- ▶ Moderates soil temperatures
- ▶ Conserves water by significantly reducing moisture evaporation from the soil.
- ▶ Mulch also reduces weeds and prevents soil compaction
- ▶ Organic or inorganic

# Organic Mulch

- ▶ Wood Chips
- ▶ Nuggets
- ▶ Bark
- ▶ Whole Tree



# Organic Mulch

- ▶ Straw
- ▶ Clean and Uncontaminated



# Organic Mulch

- ▶ Grass Clippings
  - ▶ Avoid using clippings from lawns that have been treated with herbicides and pesticides



## Organic Mulch

- ▶ Compost is an excellent mulch



# Inorganic Mulch

- ▶ Rocks
- ▶ Will not break down to add nutrients to the soil
- ▶ Retain heat
- ▶ Collect wind-blown weed seeds
- ▶ People typically use herbicides and landscape fabric



# Inorganic Mulch

- ▶ Nothing about them is EarthKind
- ▶ Rubber or plastic
- ▶ Do not decompose
- ▶ Toxins may leach into the soil
- ▶ **HOT, NASTY, INSULTS TO NATURE**



# Mulch Volcano

- ▶ 3 inches of organic mulch
- ▶ Make donuts around plants, NOT volcanos!
- ▶ Leave space around the base of plants



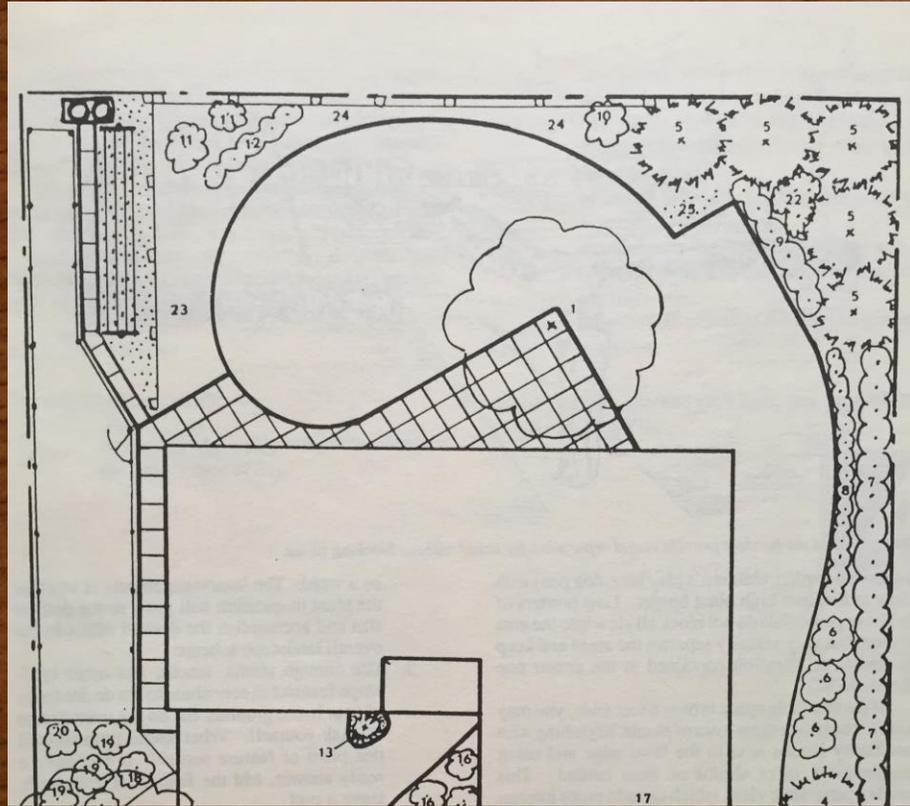
# 7. Appropriate Maintenance

- ▶ A well-designed landscape that uses EarthKind principles will reduce maintenance through:
- ▶ Reduced or NO mowing
- ▶ Elimination of chemical use
- ▶ once-a-year mulching
- ▶ elimination of plants that require lots of water
- ▶ efficient irrigation









# Planning and design

Planning and design is the foundation of any landscape.

Native plants can be used in any design..



## Soil analysis

Soil analysis will determine whether soil improvement is needed for better water absorption and improved water-holding capacity.

Uncontaminated organic matter and compost are good for any soil type



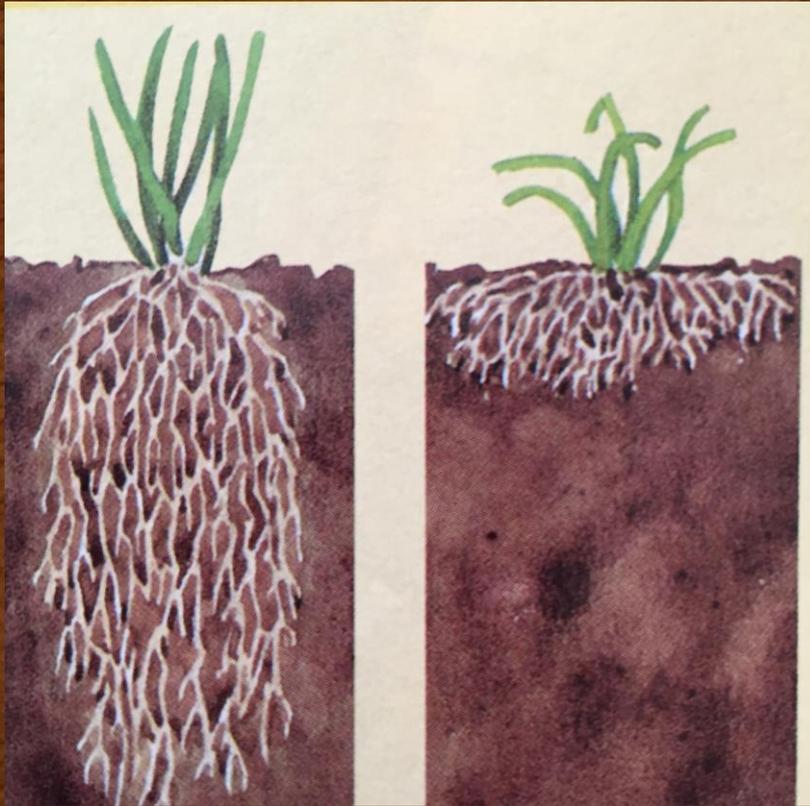
## Practical turf areas

- ▶ **Practical turf areas** suggests that turfgrasses be used as a planned element in the landscape. Avoid impractical turf use such as long, narrow areas and vast expanses of turf at the expense of plant diversity.

# Appropriate plant selection

Appropriate plant  
selection keeps the landscape in  
tune with the natural  
environment.





## Efficient Irrigation

Efficient irrigation can save on your water bill and result in healthier plants.



## Use Organic Mulches

- Conserve moisture
- Moderate soil temperatures
- Improve the soil
- Control weeds
- Reduce erosion
- Provide nutrients

Leave some bare areas for ground nesting insects.

# Appropriate Maintenance

- Pruning
- Dead-heading flowers
- Cutting back perennials
- Weeding
- Adjusting irrigation systems
- Reapplying mulch
- Composting yard waste
- Monitoring irrigation systems



Do what you can,  
with what you have,  
where you are.

-Theodore Roosevelt

# Sources

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