

*Create a
Waterwise
Landscape*

**STONE
HOUSE
LANDSCAPE
DESIGN**

with Sharon Browder



Why do we need to conserve water
in Hailey?



The cold, dry facts...

- Nearly 97% of the world's water is saltwater or otherwise undrinkable.
- Another 2% is locked up in ice caps and glaciers.
- Only 1% remains for all of the world's freshwater needs—fish, wildlife, agricultural, residential, industrial, and community needs.

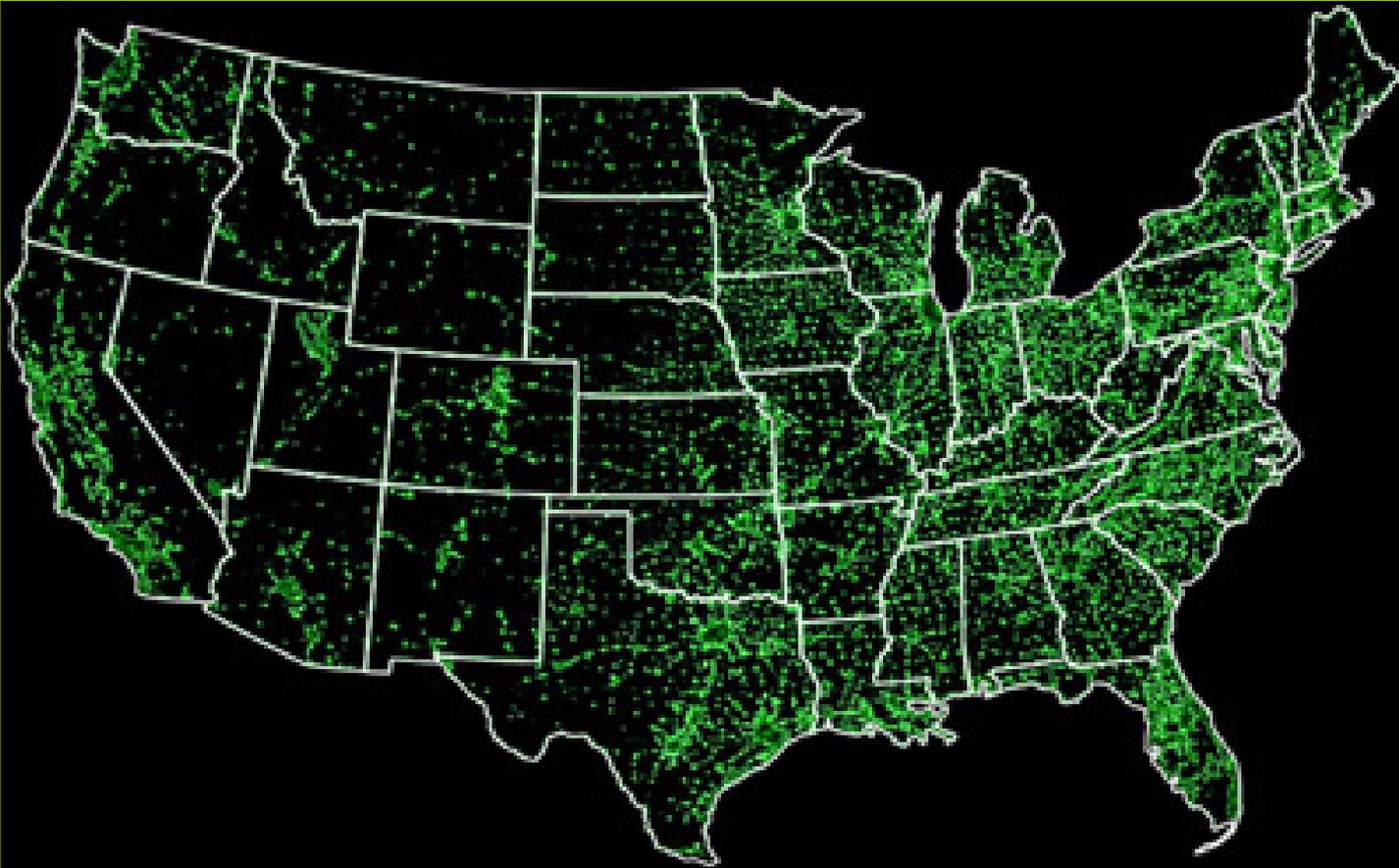
The cold, dry facts...

- If present consumption patterns continue, two out of every three people on Earth will live in water-stressed conditions by the year 2025.
- On average, Americans use 50- 75 percent of their total water consumption on landscaping.

The cold, dry facts...

- In order to maintain all the lawns in America, it takes approximately 200 gallons per person per day.
- The Wood River Valley has one of the highest per capita water use rates in the nation.
- Although agriculture is the largest water user in our area, municipal water use does matter.

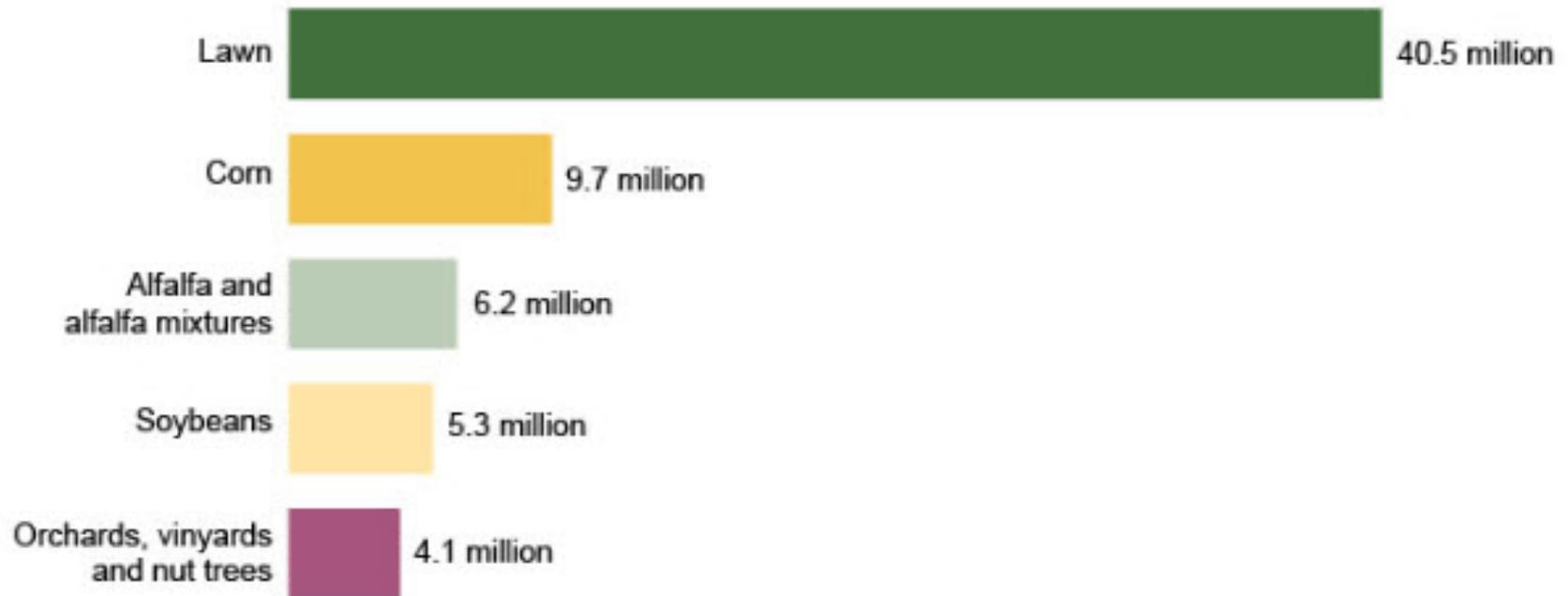
Turfgrass is the largest irrigated "crop" in the United States.



Milesi et al. 2005. *Environmental Management* 36.3.

Turfgrass is the largest irrigated “crop” in the United States.

Acres of irrigated land

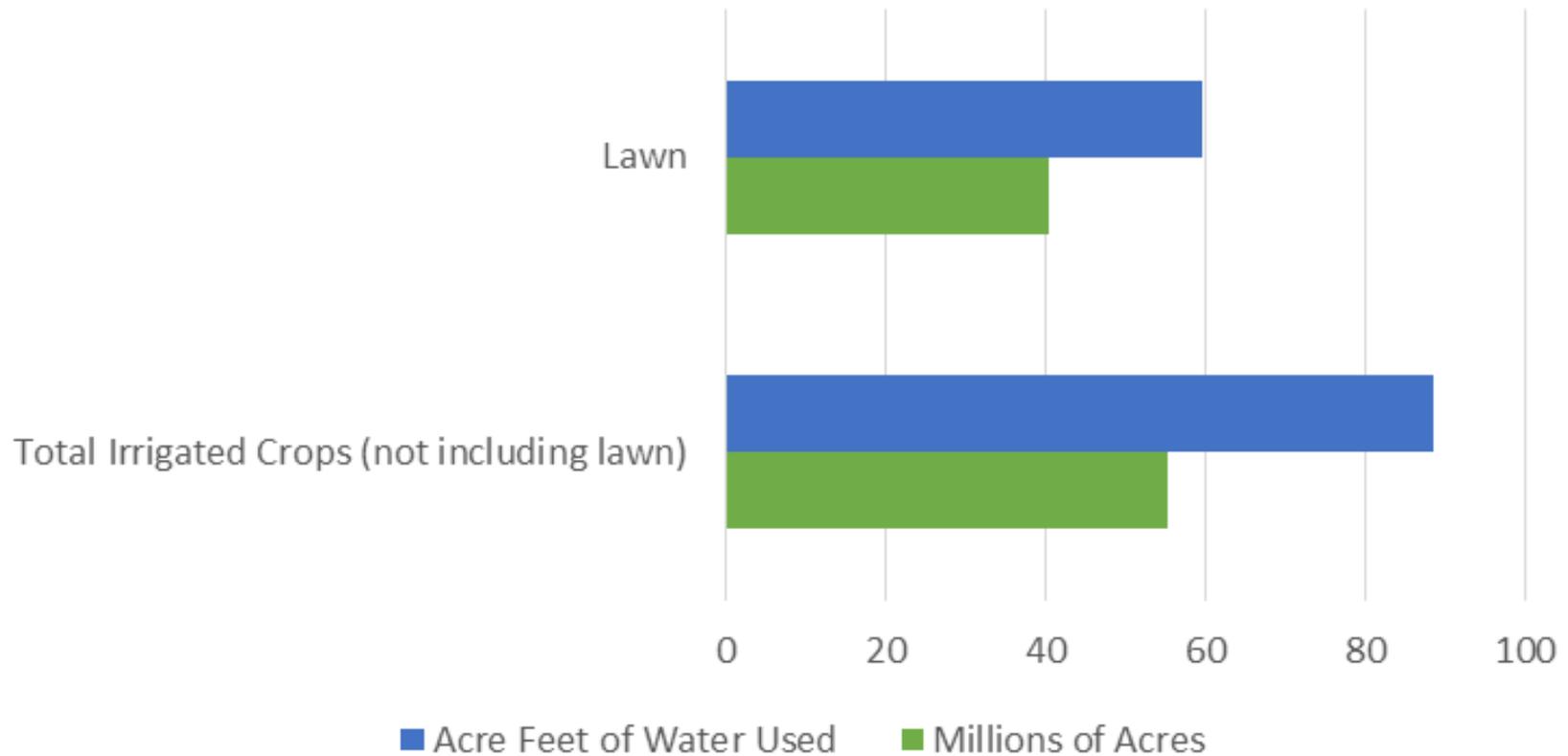


Turfgrass is the largest irrigated “crop” in the United States.

Acre-feet of water used in a year



Irrigation of Lawn vs. Crops in the U.S.



Milesi et al. 2005. Environmental Management 36. Issue 3, pp 426-438.

USDA. 2014. 2012 Census of Agriculture Highlights. Irrigation: Results from the 2013 Farm and Ranch Irrigation Survey. ACH12-16/November 2014. USDA.

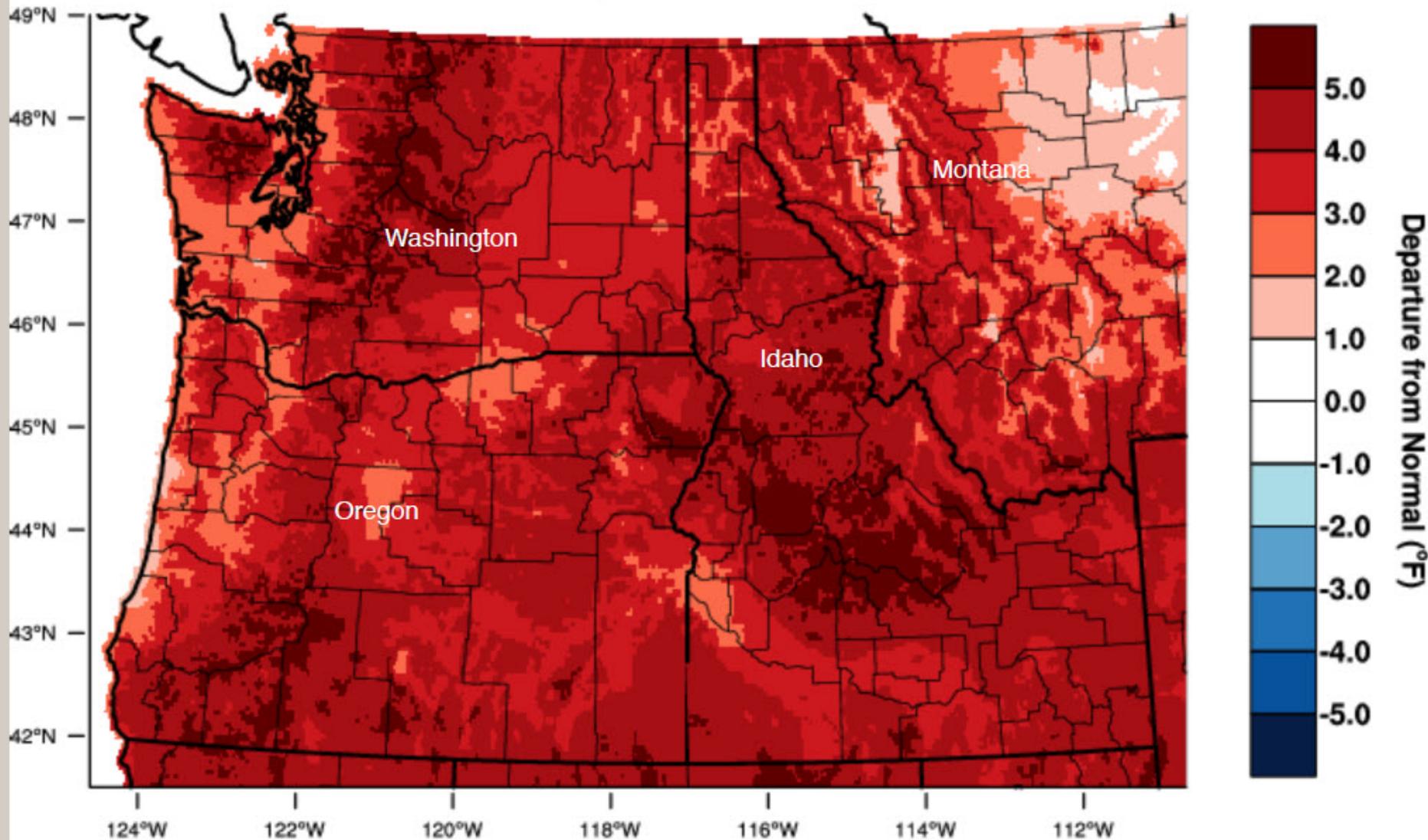
Climate Impacts Research Consortium Study 2015: Key Findings for the Big Wood

- Compared to past climate (1980-2010) temperatures may increase between 4 degrees F in the low change scenario and up to 11 degrees F in the warm/dry scenario by 2070.
- The average change across all three climate scenarios is approximately 7.5 degrees F warmer than the 1981-2010 average.
- Snow pack is expected to continue its 30-year decline and peak up to 6 weeks earlier.

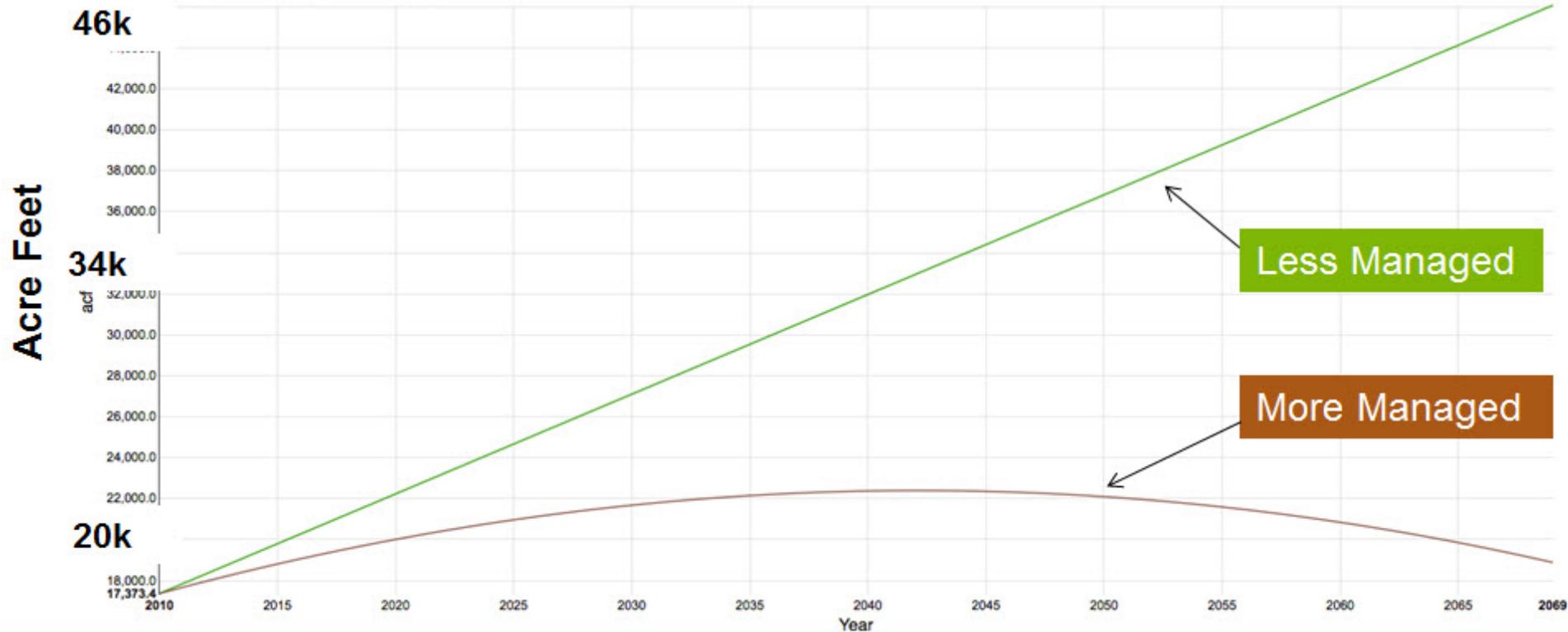
Last Year

Pacific Northwest - Mean Temperature

November-June 2015 Departure from 1981-2010 Normal



Climate Impacts Research Consortium Study 2015: Key Findings for the Big Wood



The Data

The chart depicts the results of two management scenarios: 1) the status quo cropping systems and conveyance/irrigation efficiency under future climate (avg. of all three climate scenarios); and 2) a future where there is an increase in use of lower water demanding crops and increase in conveyance efficiency from 60% to 70%. As expected water demand increases under warmer climate in the status quo scenario, whereas demand is generally maintained or decreased under the alternative scenarios despite warmer temperatures. – John Stevenson, Climate Impacts Research Consortium, Oregon State University

Water calls from senior water rights holders will likely continue...without changes, this could be the future of landscaping in the Wood River Valley...



Municipalities in many western states have already taken steps to reduce water wasted on landscaping...now Hailey joins them.



Why Waterwise?



- Implementing waterwise or Xeriscape™ principles into a carefully designed landscape can lower water and maintenance costs by up to 60%
- Property values may increase by up to 15%

What is Xeriscape™?

- A popular term for waterwise landscaping originally coined by Denver Water (Greek *xeros* = dry)
- The concept of saving water in landscaping through design and appropriately chosen and zoned plantings

Xeriscape...Not "Zero Scape!"



Zero Scape!

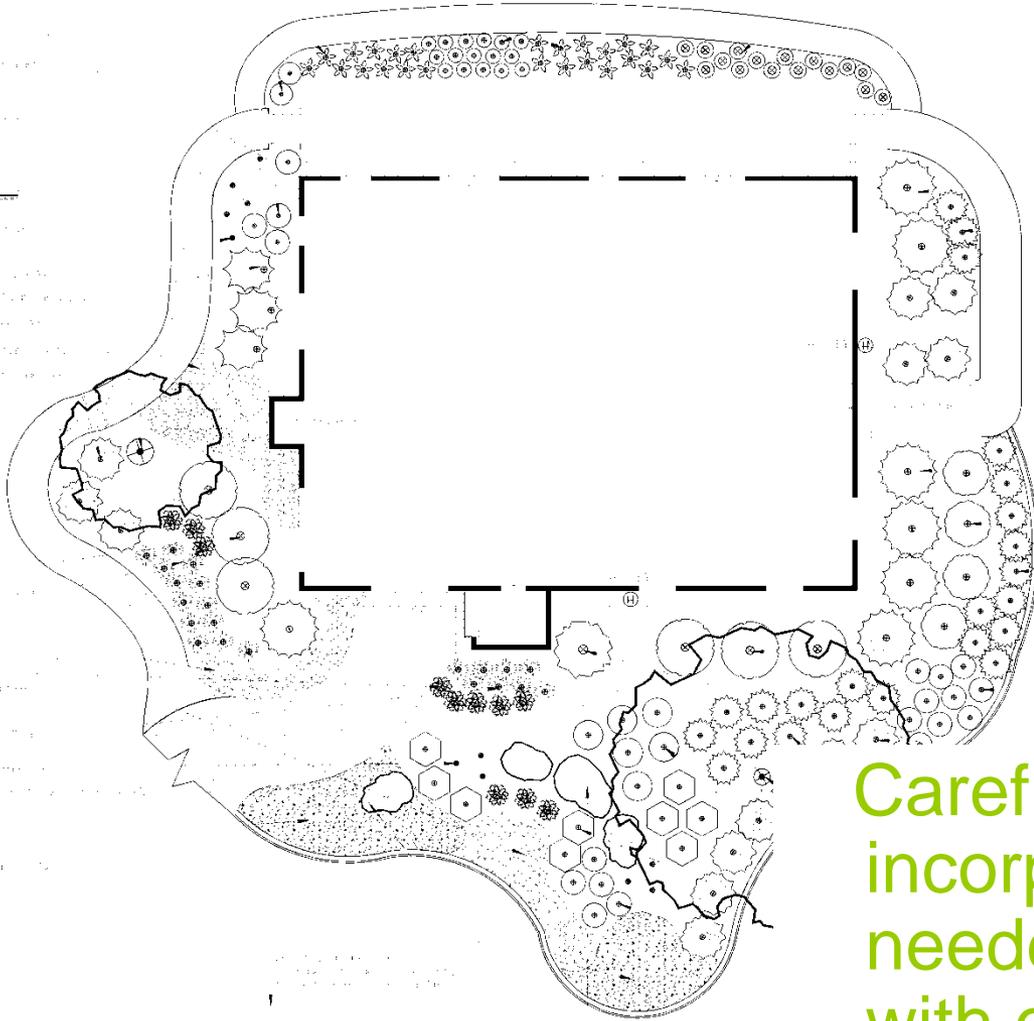
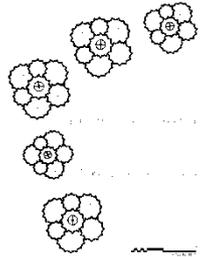


7 Principles of Xeriscape™

1. Planning and design
2. Limiting turf areas
3. Improving the soil
4. Zoning plantings
5. Mulching
6. Irrigating efficiently
7. Completing appropriate maintenance



1. Planning and Design



Careful layout incorporates all needed elements with efficient water use in mind.

NOTES

Stonebridge Landscape Design
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Blount, Montana 59875
Phone: 406.842.3209
Fax: 406.842.5709
E-mail: stonebridge@stbdesign.com
Web: www.stbdesign.com

NO.	DATE	DESCRIPTION



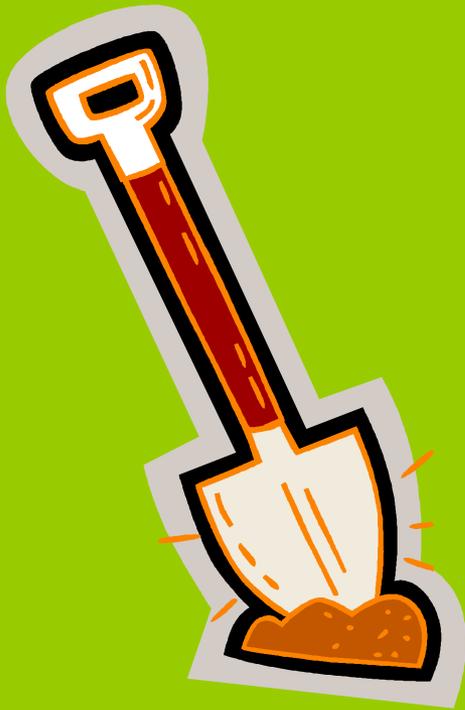
STONE
BRIDGE
LANDSCAPE
DESIGN

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2. Limiting Turf Areas

- Minimize the size
- Conventional lawns often require over 48" of water in a growing season

3. Improving the Soil



- In some instances it may be necessary to add compost or manure to increase soil texture and fertility
- Increase soil water retention

Water Zones: Easy As 1-2-3

4. Zoning Plants

**ZONE
Three**

Oasis

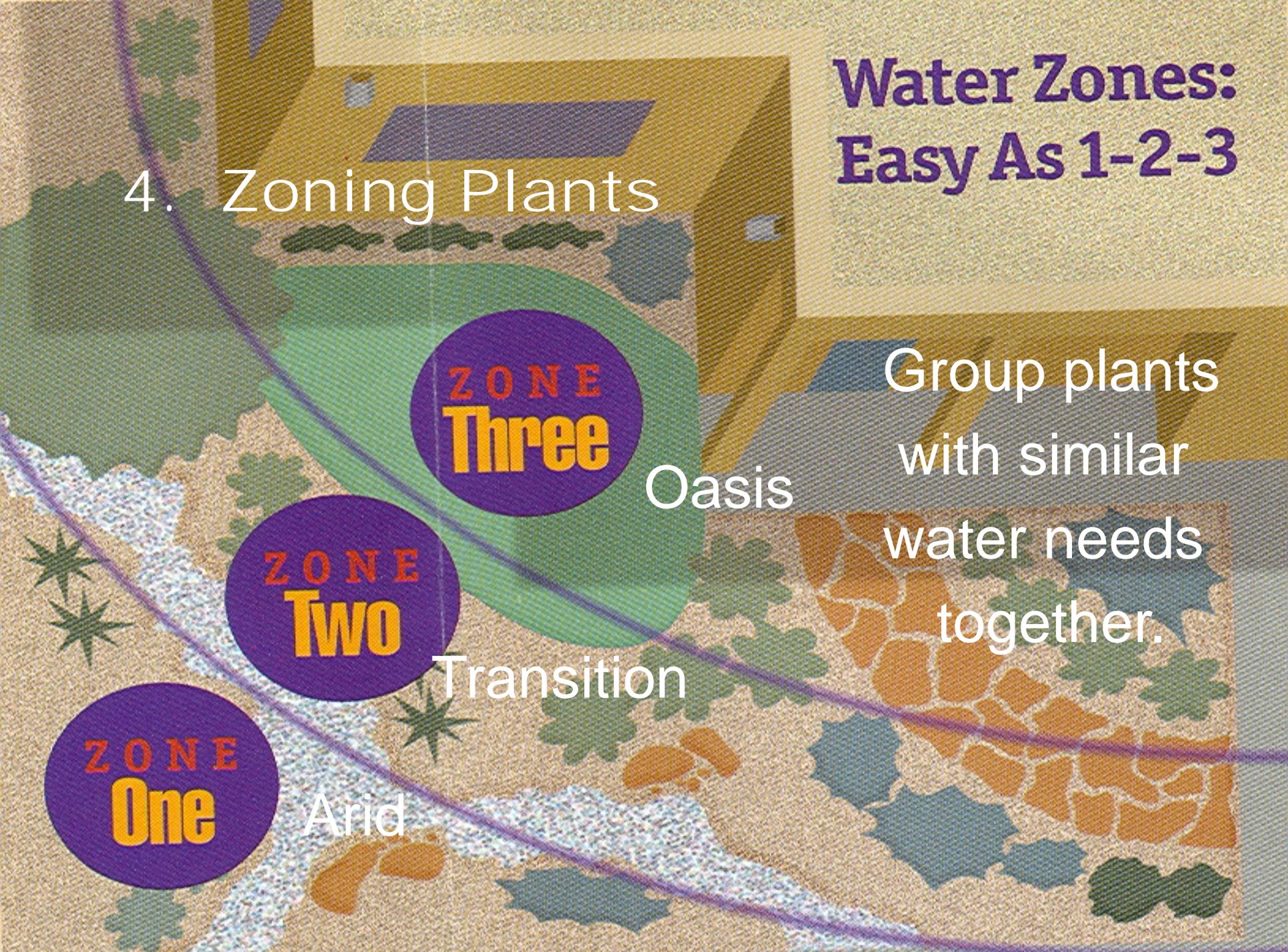
Group plants with similar water needs together.

**ZONE
Two**

Transition

**ZONE
One**

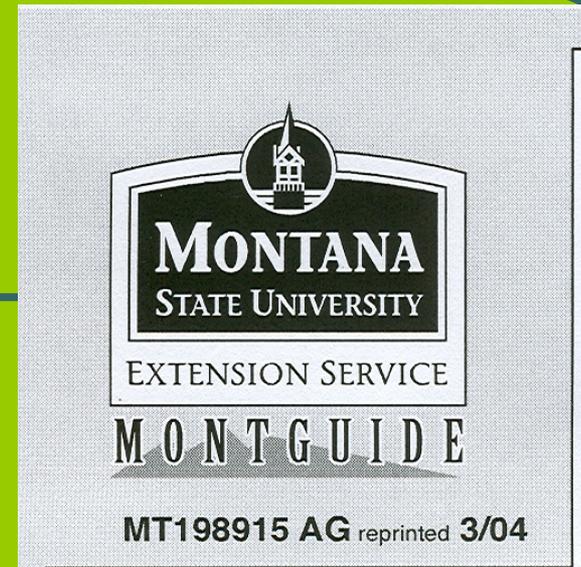
Arid



5. Mulching

- Cover the area between plants with a protective layer of wood chips (don't use wood chips in areas prone to wildfire), gravel, cobbles, or flagstones.
- Do not use landscape fabric or weed mat!

6. Irrigate Efficiently



- Measure your water use and time watering to fit your soil type.
- Learn how in the “Yard and Garden Water Management” Montguide.

7. Complete Appropriate Maintenance

- Even a low-maintenance landscape requires attention
- No landscape is “no-maintenance”
- Replenish mulch
- Prune and trim as necessary





Five-Step Method
for
Creating a Water-Wise Garden

Step 1. Make a Wish List

- Identify your primary focus or goal.
- Make a list of what you want to do in the landscape.
- Identify views to enhance and views to screen.
- Determine your budget.

Step 2. Take Inventory

- Identify microclimates (hot dry south, west slopes)
- Determine how much lawn is really needed, if any
- Consider which plants to keep
- Read, research water-wise and native plants and landscape design

Site Evaluation Considerations

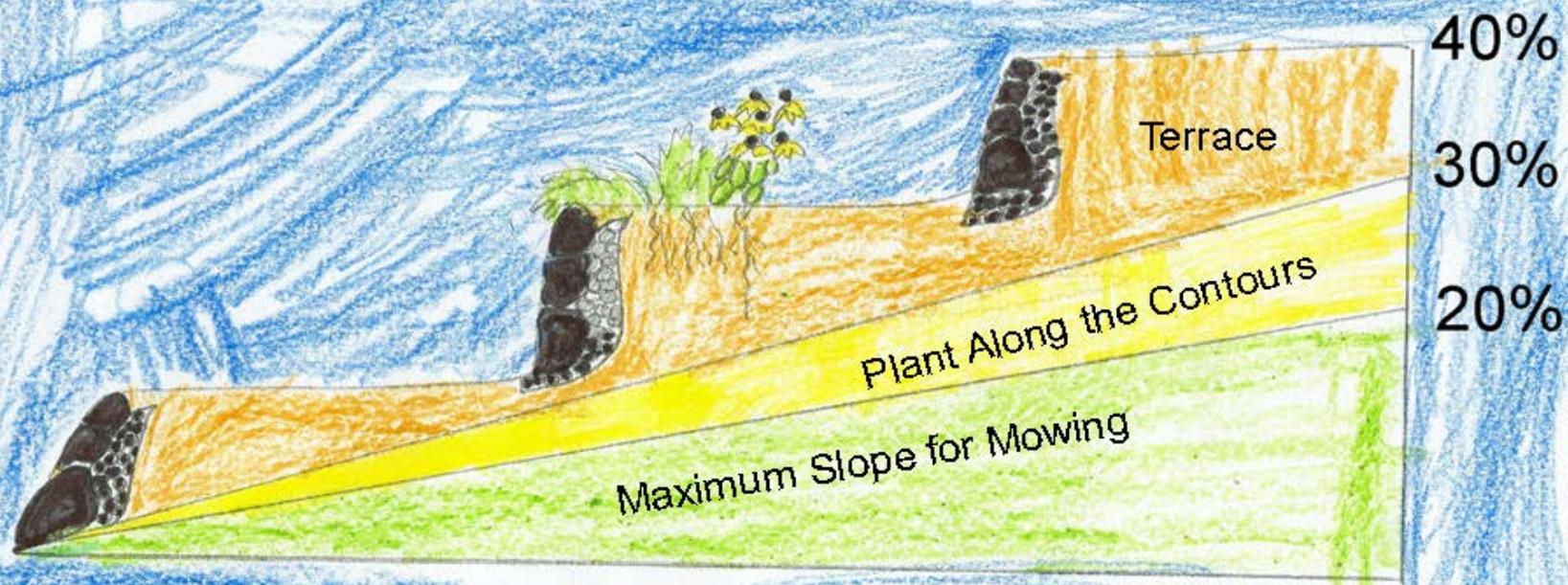
- Views to screen or enhance
- Slope
- Aspect
- Soil texture and pH
- Drainage characteristics
- Hours of sunlight



A Word on Slope

- A slope greater than 30% (a rise of more than 3 feet over a 10 foot run) is too steep to garden easily
- A slope greater than 20% is too steep to mow comfortably
- Consider a series of terraces or more permanent plants if you must garden in such a location

Gardening on a Slope

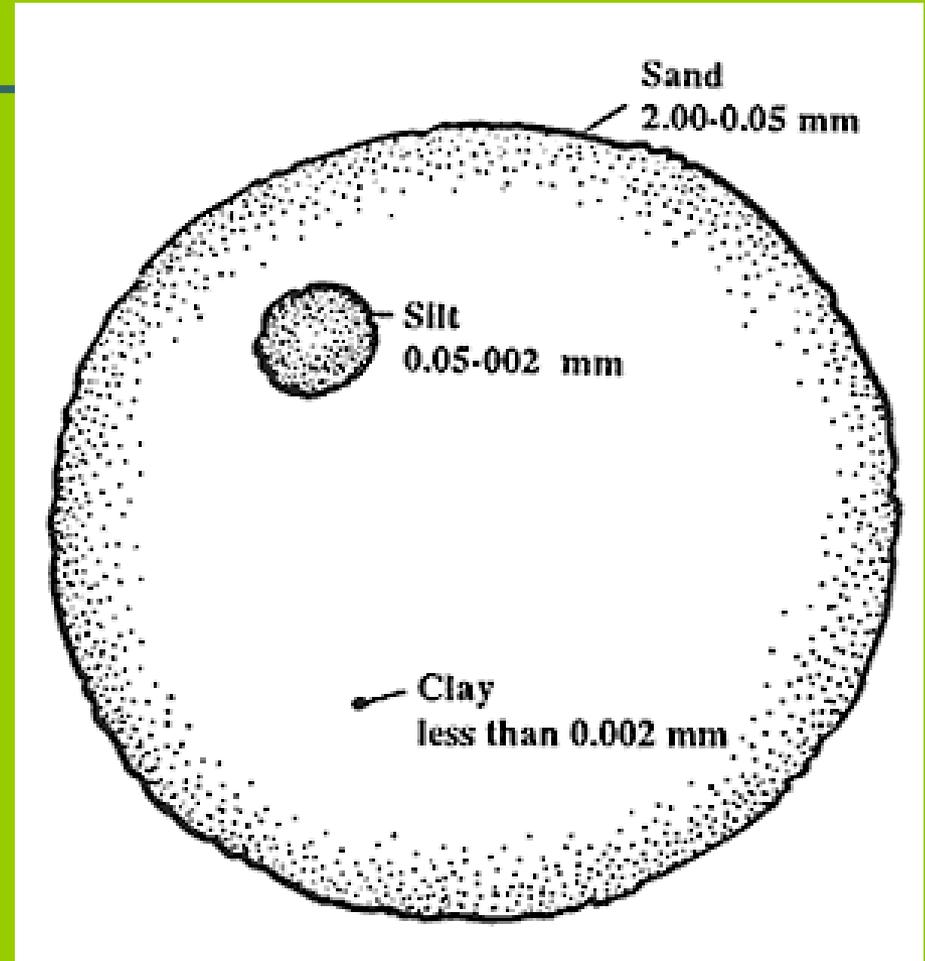


More Site Evaluation Considerations

- Water availability and source
- Competing plants (aspen, smooth brome, etc.)
- Wildfire danger. If this is an issue, consult www.firewise.org
- Hardscaping needs (paths, driveways)

A Word on Soils

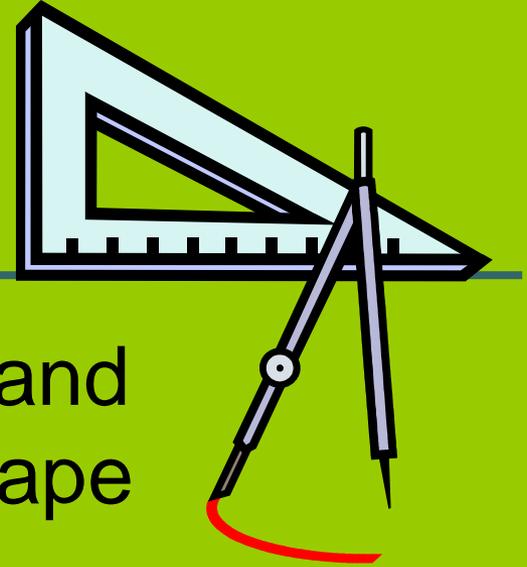
- Texture & pH will be your most important considerations
- Texture is a function of particle size
- Most western soils are high pH (alkaline), test to be sure



Step 3. Make a Plan

- Incorporate ideas and needs from steps 1. Wish List, and 2. Inventory
- Consider hiring a professional designer if you want to add new terraces, walkways, wall, or other structures

Why Design?

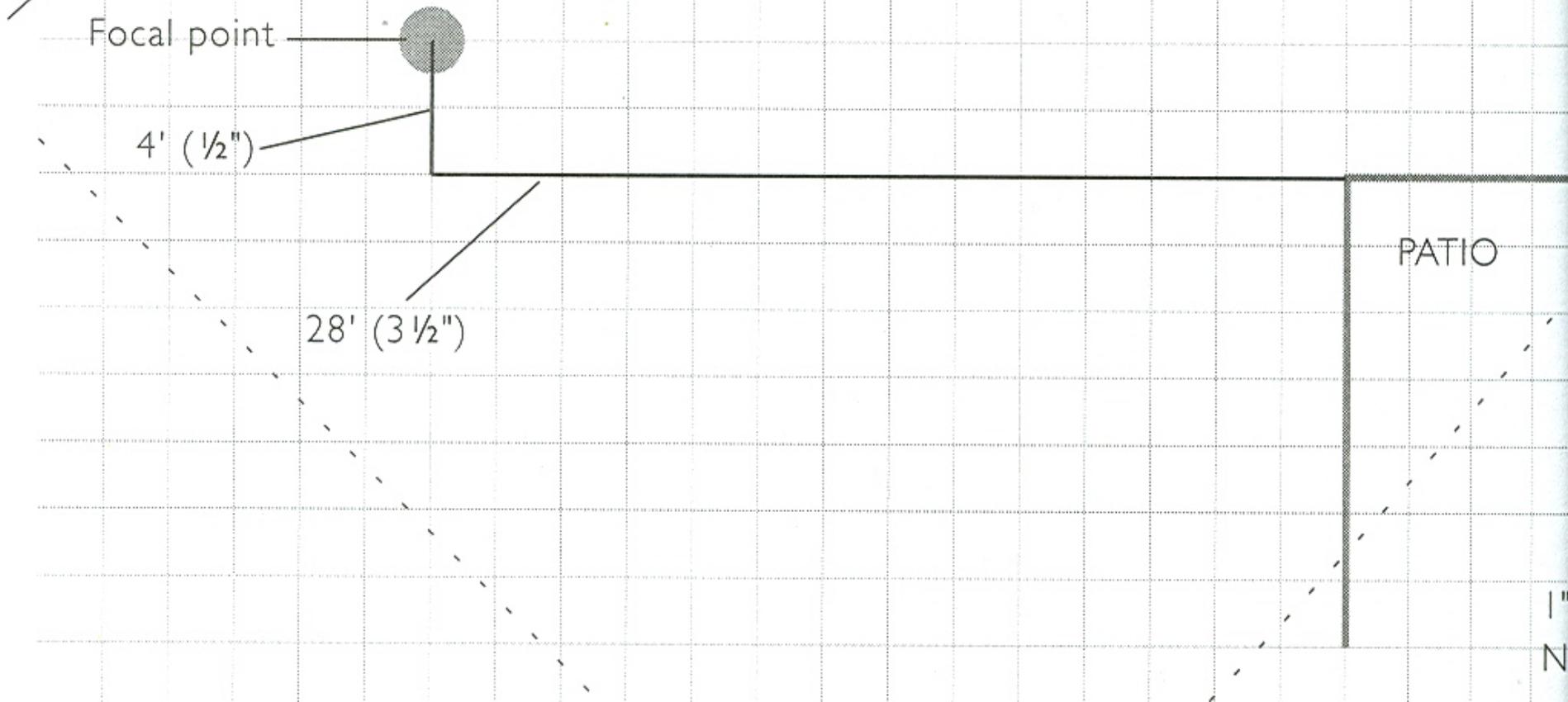


- To maximize the efficiency and attractiveness of the landscape
- To save time and money
- To save frustration

Make a Sketch!

- Use a pencil and 8 ½” x 11” paper and a clipboard and a 50 or 100 ft tape
- Sketch in every permanent object: buildings, trees, well casings, etc.
- Be sure to mark north
- You will refer to this drawing again and again in the process

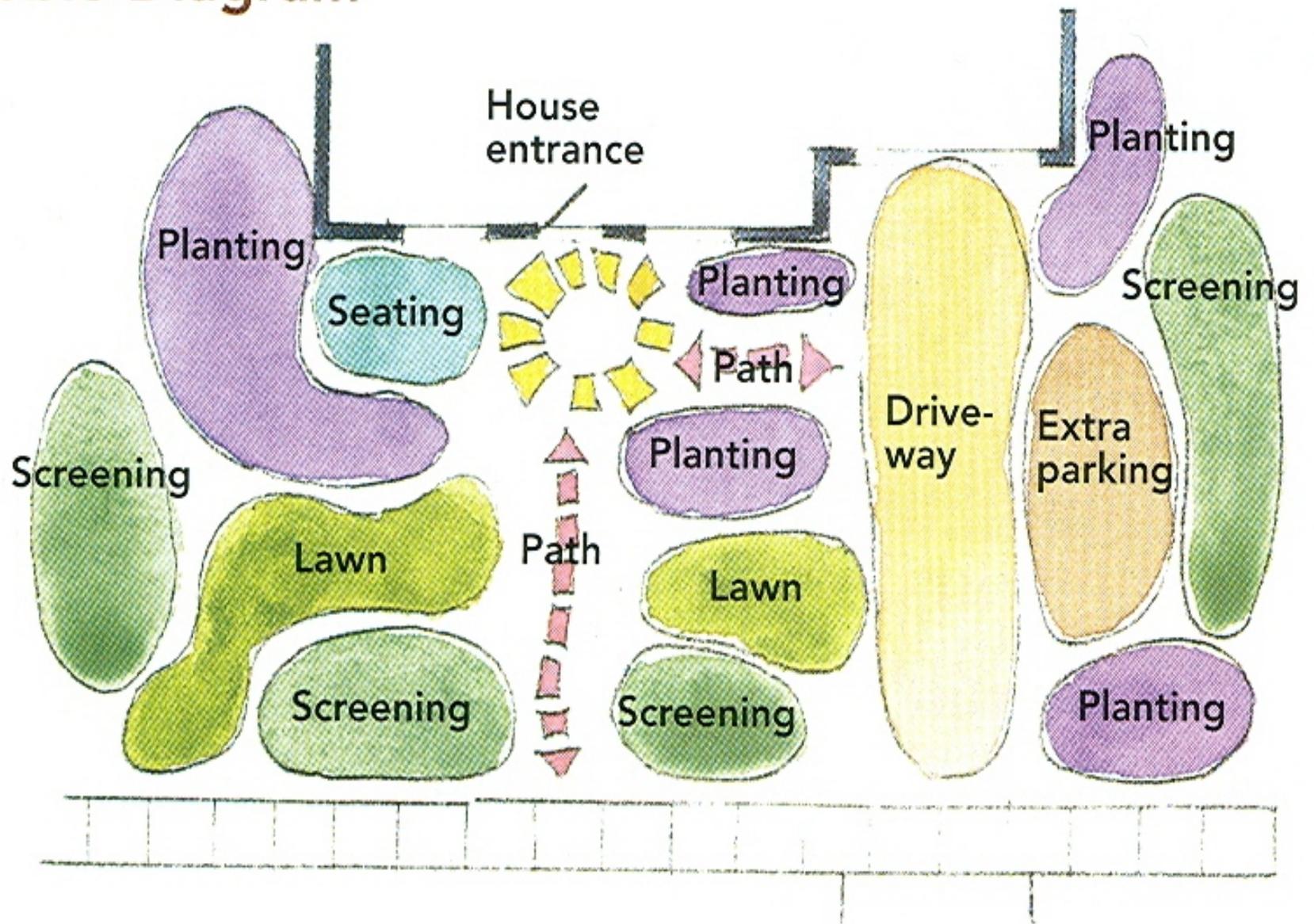
Measure at right angles from the point of reference.



Make a Bubble Diagram

- Transfer rough sketch to scale drawing on graph paper.
- Make several photocopies.
- Use your scale drawing and clipboard to create a functional diagram – or bubble diagram.

Bubble Diagram



Make a Bubble Diagram

- Walk around the yard to “walk through” your design as you lay it out
- Include all of the objectives from your wish list, eliminating those that don’t seem feasible
- Just use general terms such as “shrubs”, “flowers”, “groundcover”, “pathway” and determine the best plants and materials to use later

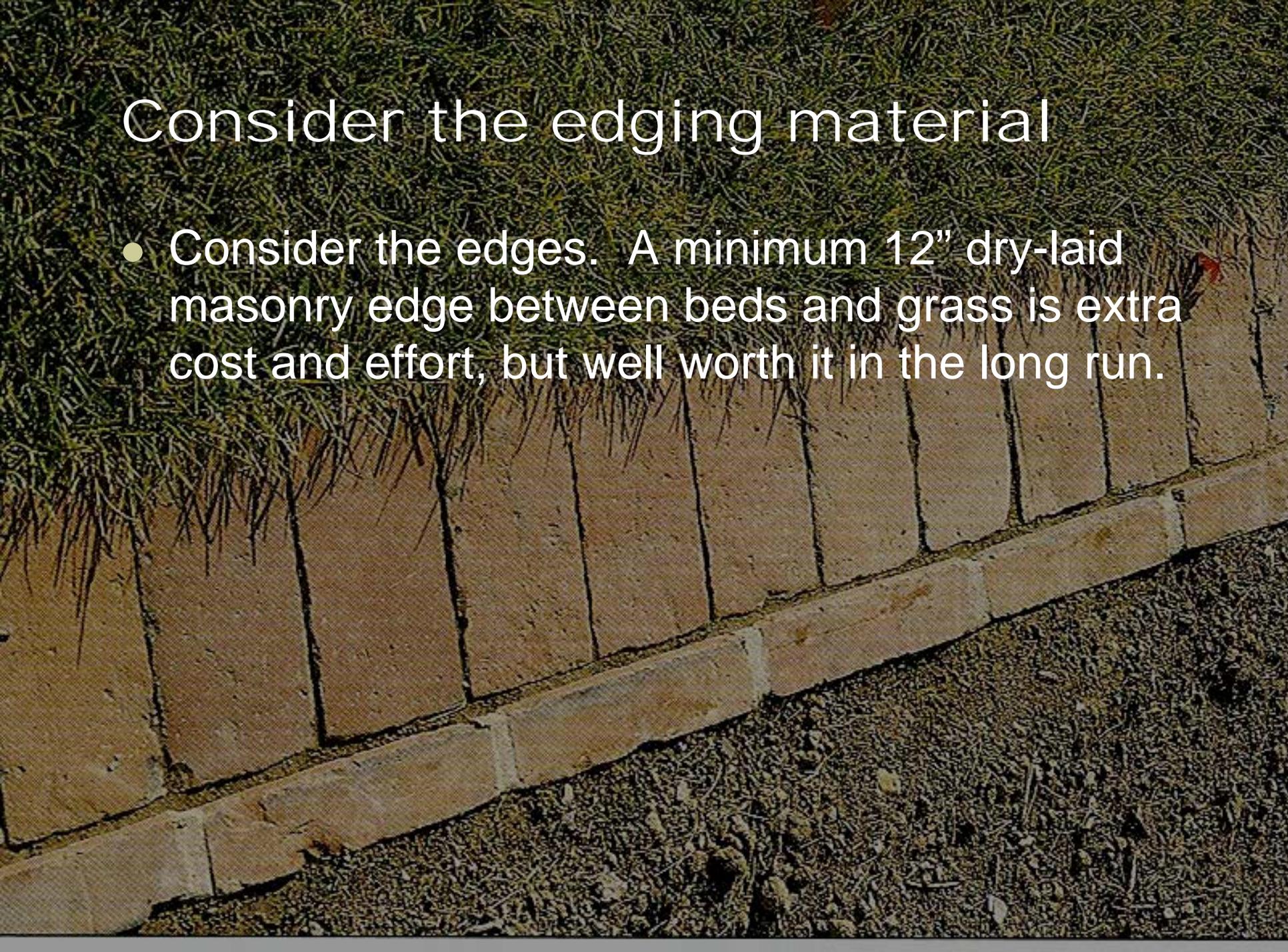


Think About Maintenance

- Who will care for the garden, evaluate caretakers skills
- How many hours a week are needed to care for the garden (an experienced gardener might maintain 200-400 square feet in 1 hour)
- Time expended depends on standard of “neatness”

Consider the edging material

- Consider the edges. A minimum 12" dry-laid masonry edge between beds and grass is extra cost and effort, but well worth it in the long run.





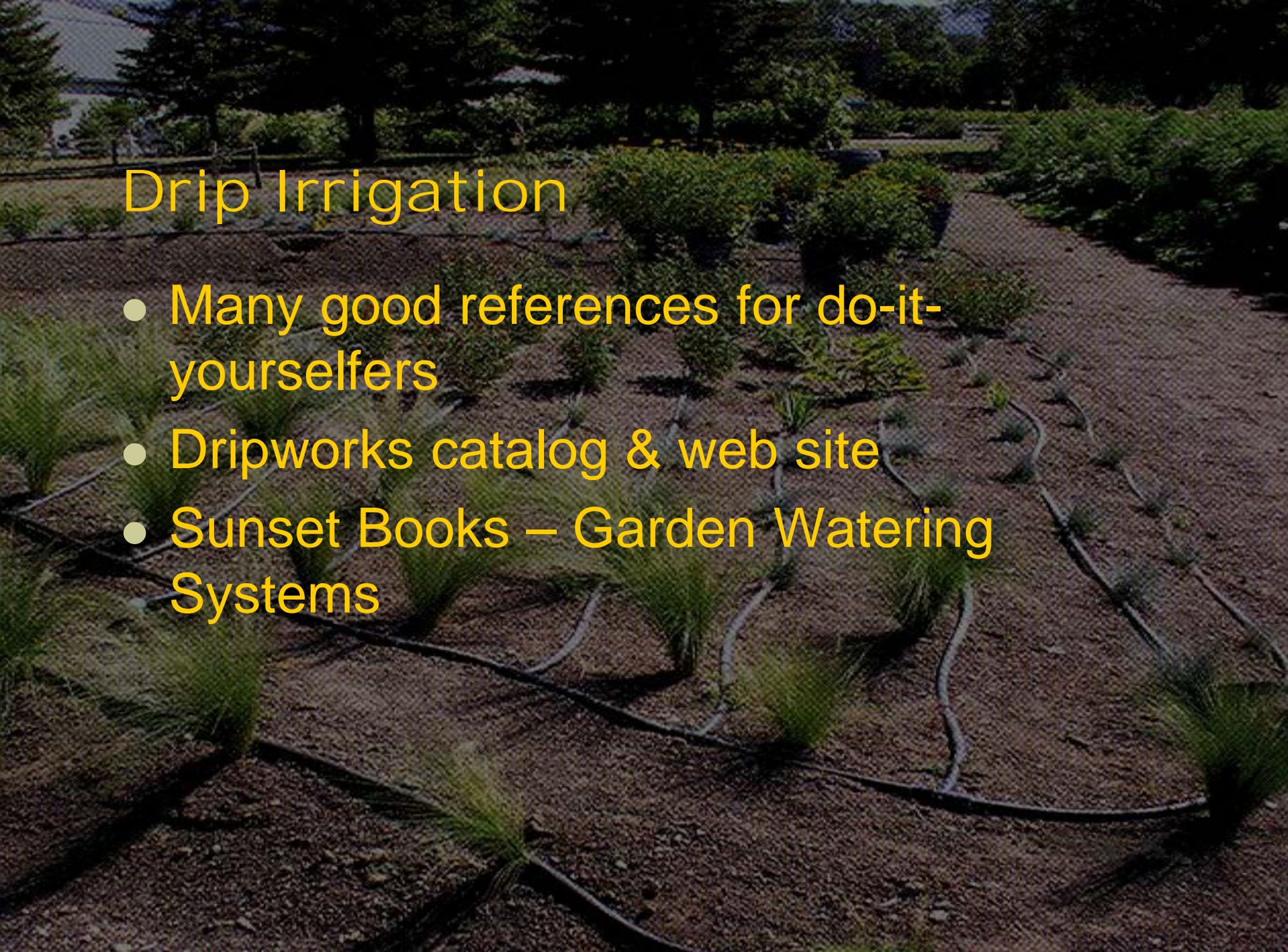
Design for Lower Maintenance

- Consider the type of plants – some need more care than others (division, deadheading)
- Consider the size, accessibility for weeding (leave space between groupings of plants for narrow pathways or stepping stones)

A Word on Irrigation

- Group plants by similar water needs
- Decide which elements of your existing irrigation system can be converted
- Be sure lawns sprinklers are on a separate valve from drip irrigation

Drip Irrigation



- Many good references for do-it-yourselfers
- Dripworks catalog & web site
- Sunset Books – Garden Watering Systems

Step 4. Install Your Xeriscape

- Hardscape and other construction projects come first – check for restrictions and permits, buried lines, etc.
- Irrigation – test your system using Monguide “Yard and Garden Water Management”
- Plants – get a soil test. Most natives need little soil improvement, but compost will enhance soil moisture retention and improve drainage somewhat in clay soils

A photograph of a well-maintained garden. In the foreground, there are stone steps leading up a slope. The garden is filled with various plants, including green foliage, small yellow flowers, and clusters of pink flowers. A large, light-colored rock is prominent on the right side. In the background, a house with dark siding and windows is visible, along with several trees, including a white-barked tree. The overall scene is vibrant and detailed.

Step 5. Maintain and Enjoy!

- Weed
- Maintain mulch
- Check irrigation system regularly
- Monitor water needs and use
- Remove temporary irrigation systems on dry native areas once plants are established

3-Year Conversion Plan



Year One

- Complete design
- Kill unnecessary turfgrass with commercial weed mat or a sod cutter
- Begin structural and architectural changes (hardscaping)





Year Two

- Complete hardscaping projects
- Convert irrigation system to drip or soaker hose
- Install plants and mulch

Year Three

- Weed
- Maintain irrigation system
- Maintain mulch

You will be making a difference
saving water in our community.
Educate your neighbors so they
can, too!

