

Creating Healthy, Attractive, Water- Efficient Lawns

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Class Feedback



Monthly Newsletter





Not Typical Residential



Not Realistic for Real Lawn



































No irrigation as of May 15th

Personal Objectives

What does healthy lawn look like?

Is lawn that has drought stress still healthy?

What is your level of tolerance for imperfections in your lawn?

How much time, money and water do you care to put into it?

Turf Types

- **Cool Season:** Kentucky Blue Grass, Perennial Rye and Fescue (Tall and Fine)
 - Primary active growth occurs spring and fall when its cooler
 - Will go dormant (brown) if drought stressed
- **Warm Season:** Buffalo Grass, Blue Grama, Hybrid Bermuda
 - Active growth occurs in the summer months and requires heat to germinate and grow well.



Turf Varieties

Blue Grama



Buffalo Grass



Buffalo Grass Un-mowed

BIOTURF Tall Fescue



Bonsai Tall Fescue



Kentucky Bluegrass



Rhizomatous Tall Fescue



Perennial Rye

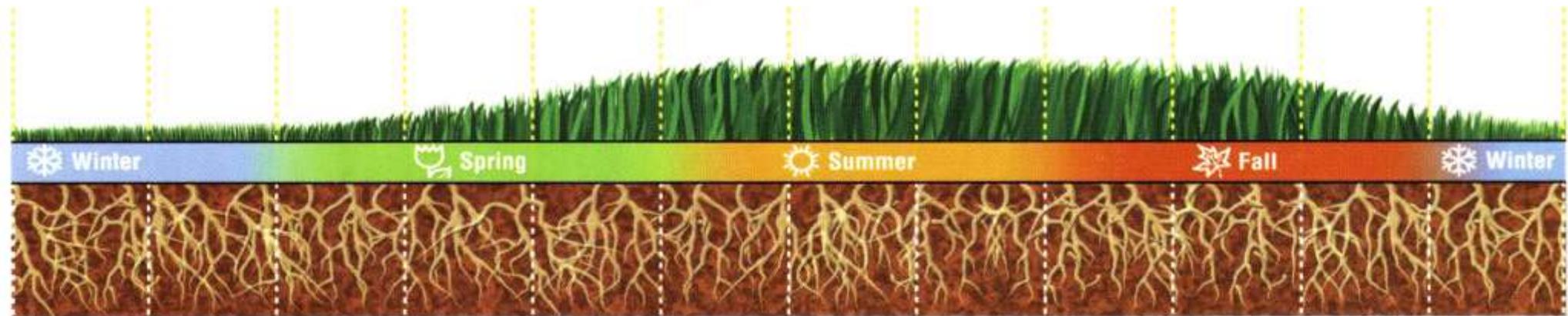


Artificial Turf



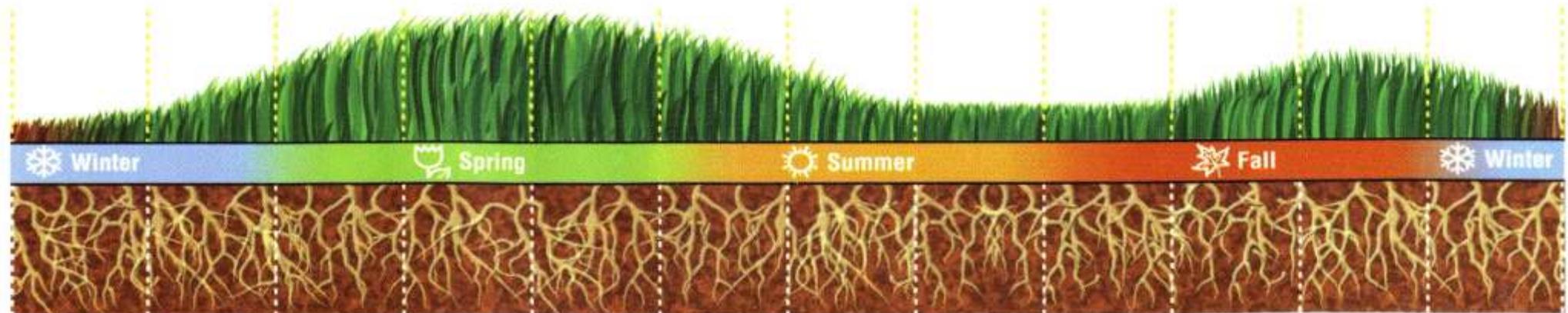
Grass Growth Cycle

Growth calendar for warm-climate grasses



Warm-climate grasses grow slower during the summer months when the temperatures are above 95 degrees F. When the weather cools down (below 80 degrees), the growing rate speeds up. It slows down again when temperatures fall below 55 degrees.

Growth calendar for cool-climate grasses



Cool-climate grasses have two distinct growing periods, the main one in the spring and a shorter one in the fall. During the hot, stressful summer months, growth slows.

Warm Season Lawns





Buffalo Grass



Bouteloua gracilis
Blue Grama



Blue Grama



Hybrid Bermuda- *Tahoma 31* (not the weed you know)



Cool Season Grasses

These are the primary grasses used in our climate. Utah is in a transitional zone, so both cool and warm season grasses grow here.

Kentucky Bluegrass blends are the primary lawn type grass used. Tall Fescue is the next most common.

Bluegrass

- Grass of choice in this region
- Rhizomatous – Repairs itself
- Drought tolerance improved with correct maintenance practices
- Most grass purchased is a blend of multiple varieties.



Fescue

- Bunchgrass
- Not rhizomatous
- Drought Resistant if soil is prepared properly before installation



Rye / Perennial Rye

- Non rhizomatous bunch grass
- Can stay green longer in the winter
- Is drought resistant if installed on proper soil bed



Best Management Practices (BMPs)

- Mowing
- Fertilization
- Irrigation
- Aeration
- Weed Control





Mowing

- Wait as long as you can to mow
 - Mow to a 2.5 - 3" height
 - Never mow more than 1/3 the blade
 - Mulch clippings and leave on the lawn
 - Taller Grass means deeper roots
 - Keep blades sharp





Fertilization

Fertilizing

2-5 lbs/per 1000 ft² nitrogen per year (average need)

Balanced Weed and Feed - Memorial Day

Optional-Regular Fertilizer --Independence Day

Optional-Regular Fertilizer - Labor Day

Winterizer - after Halloween (This is the most important fertilization of the year!)



HELPING TO GROW THE



THINGS YOU LOVE®

4STEP

Fertilizer Program



BUILDING YOUR HEALTHY LAWN
one step at a time, throughout the year

Efficient Irrigation Practices



Why Irrigate?

- When a plant can't get enough water from the environment
- How to Irrigate?
 - Irrigation systems
 - Sprinkler versus drip/low volume



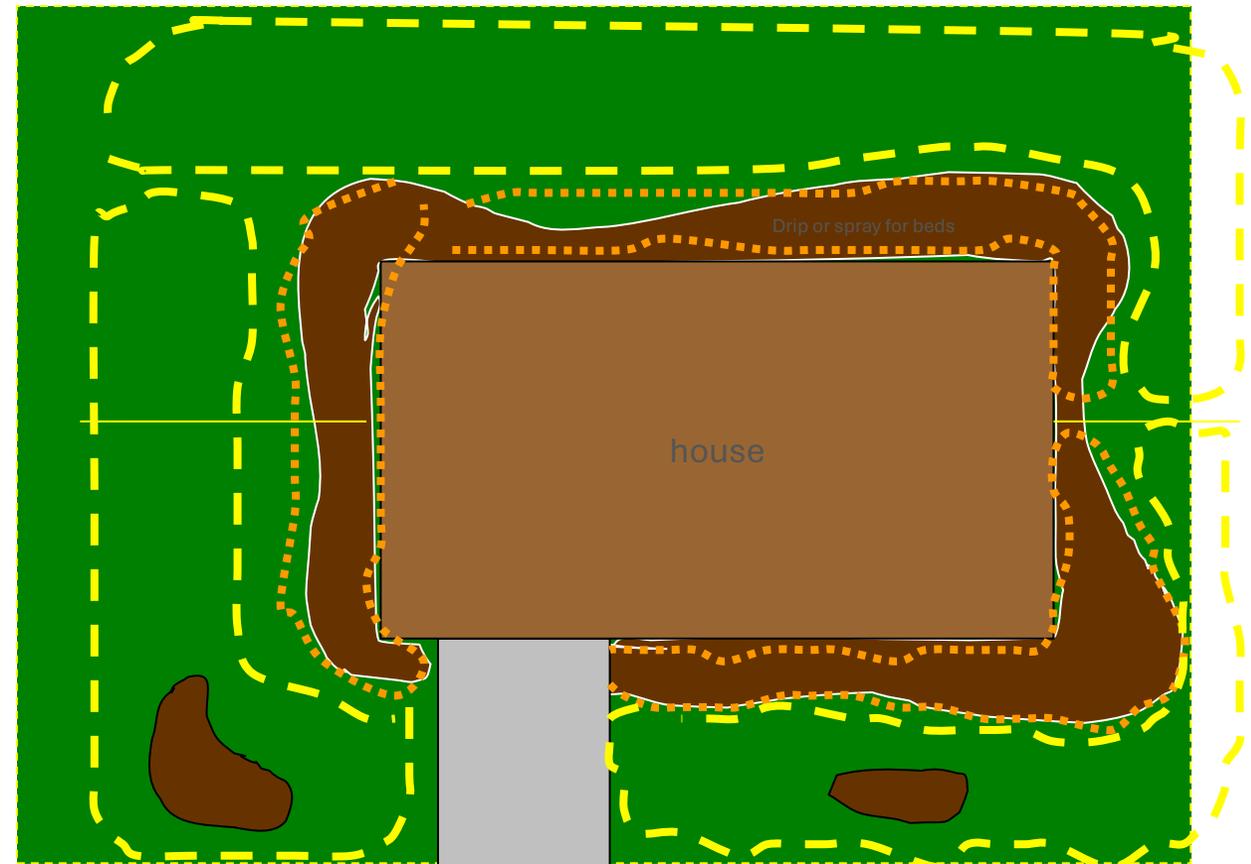
Irrigation Hydro-zoning

Separate irrigation zones should be based on:

- Turf
- Shrub/Flower beds
- Exposure/Micro-climate conditions
- Soil types

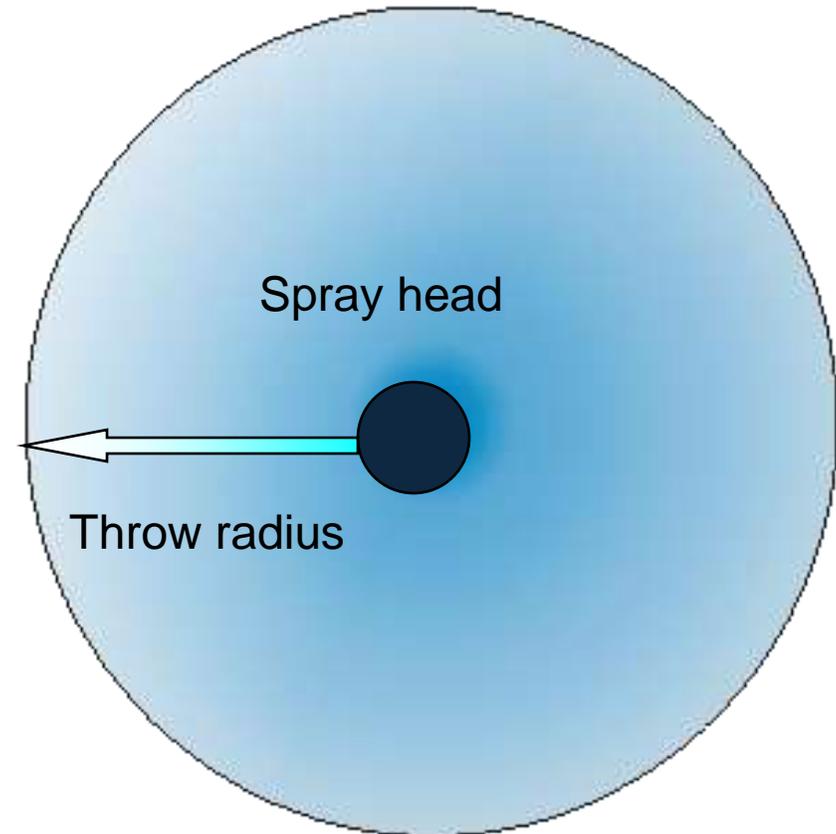
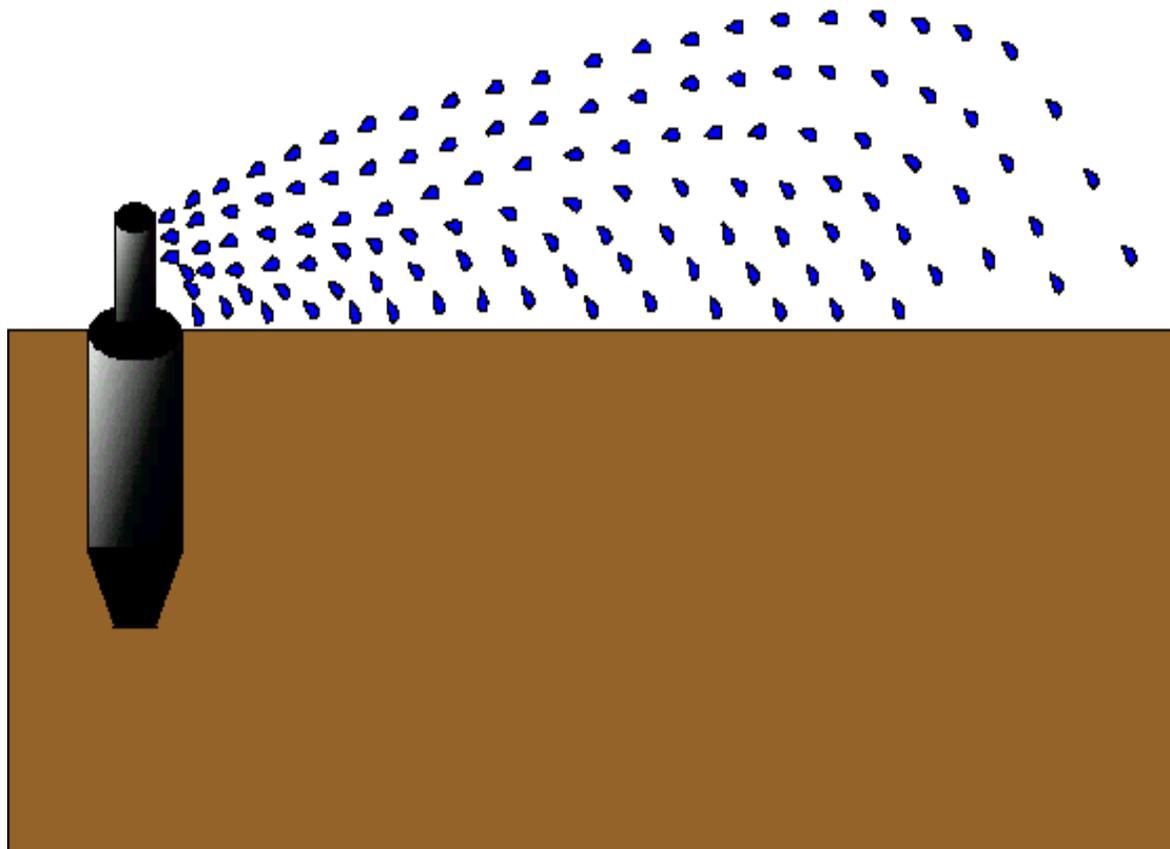
Run time is based on:

- **Seasonal changes in temperature/day length.**



Irrigation Design

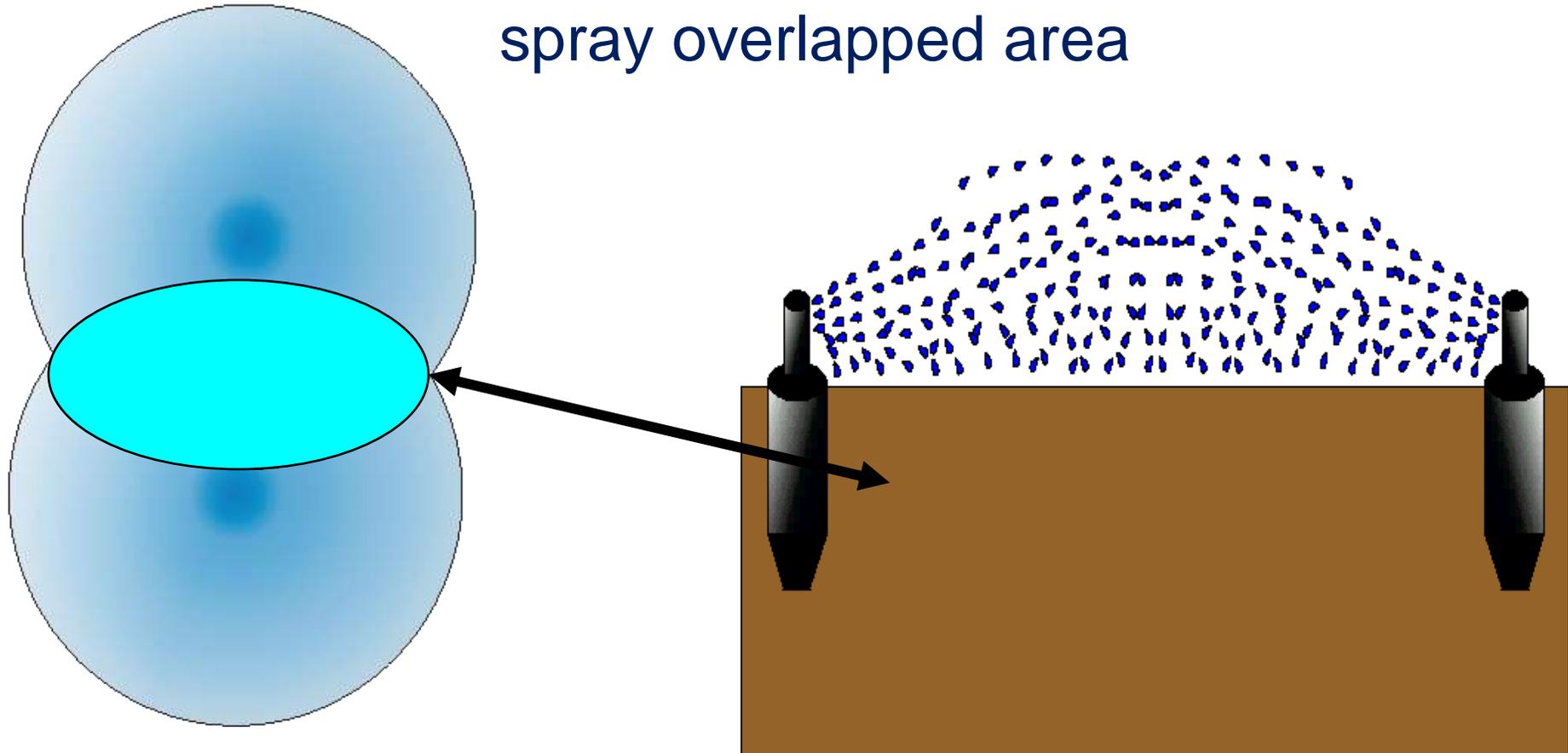
- Single sprinkler heads have non-uniform coverage
- Spray heads apply less water the farther away from the head



Irrigation Design

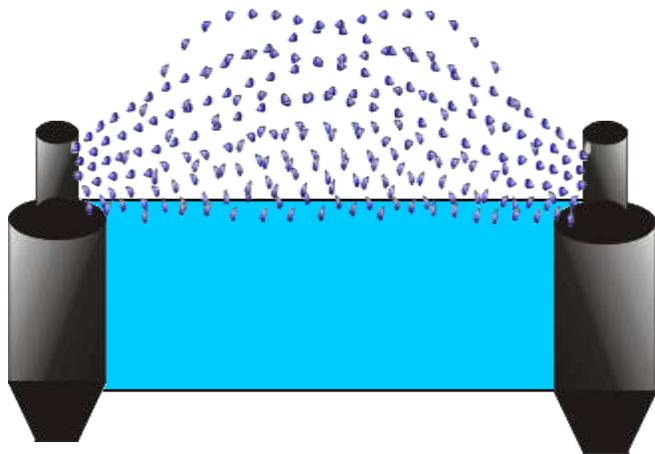
- Sprinklers: need to achieve overlap coverage to emulate rainfall

Precipitation (application) rate calculated from spray overlapped area

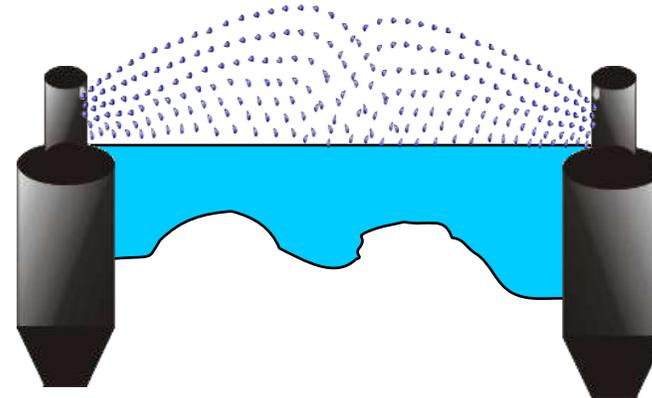


Irrigation Design

- Pressure below the specified range results in poor coverage



Coverage within
specified pressure
range



Coverage when
below specified
pressure range

Irrigate Efficiently

Proper irrigation saves water and results in healthier more drought resistant plants, and happy neighbors 😊.

Apply the proper amount and only when needed

Understand different water requirements for different areas of the landscape- Hydro-zones

Program the system in response to changing seasonal variations in temperature and rain.

Be aware and monitor your sprinkler system and make adjustments as needed to get a good uniform application.

Determine Watering Practices By Watching or Observing Your Lawn

Try to apply needed water in 1 application . Soil dependent, otherwise cycle and soak works well.

If you get “run-off” or puddling break up into cycles on same day.

If your lawn goes dry between watering break irrigation in more frequent intervals (soils play a large role)

Amount of water in Inches To Apply

Week	1st	2nd	3rd	4th
How often to water	Every day	Every other day	Every third Day	Every fourth day
April			*	
May	*	1/3	1/2	2/3
June	1/4	1/2	2/3	3/4
July	1/4	1/2	3/4	1
August	1/4	1/2	2/3	3/4
September	*	1/3	1/2	2/3
October			*	

*Apply 1/4 of an inch as needed

Watering New Sod

North/Central Utah

April	No irrigation recommended, unless needed under extremely dry periods
May	1 inch every 7-10 days
June	1 inch every 4-7 days
July	1 inch every 3-5 days
August	1 inch every 3-6 days
September	1 inch every 7-10 days
October	A good soaking to a depth of six to eight inches around the middle of the month- Each year may be different
November	No irrigation recommended unless unusually warm and lawn shows signs of stress

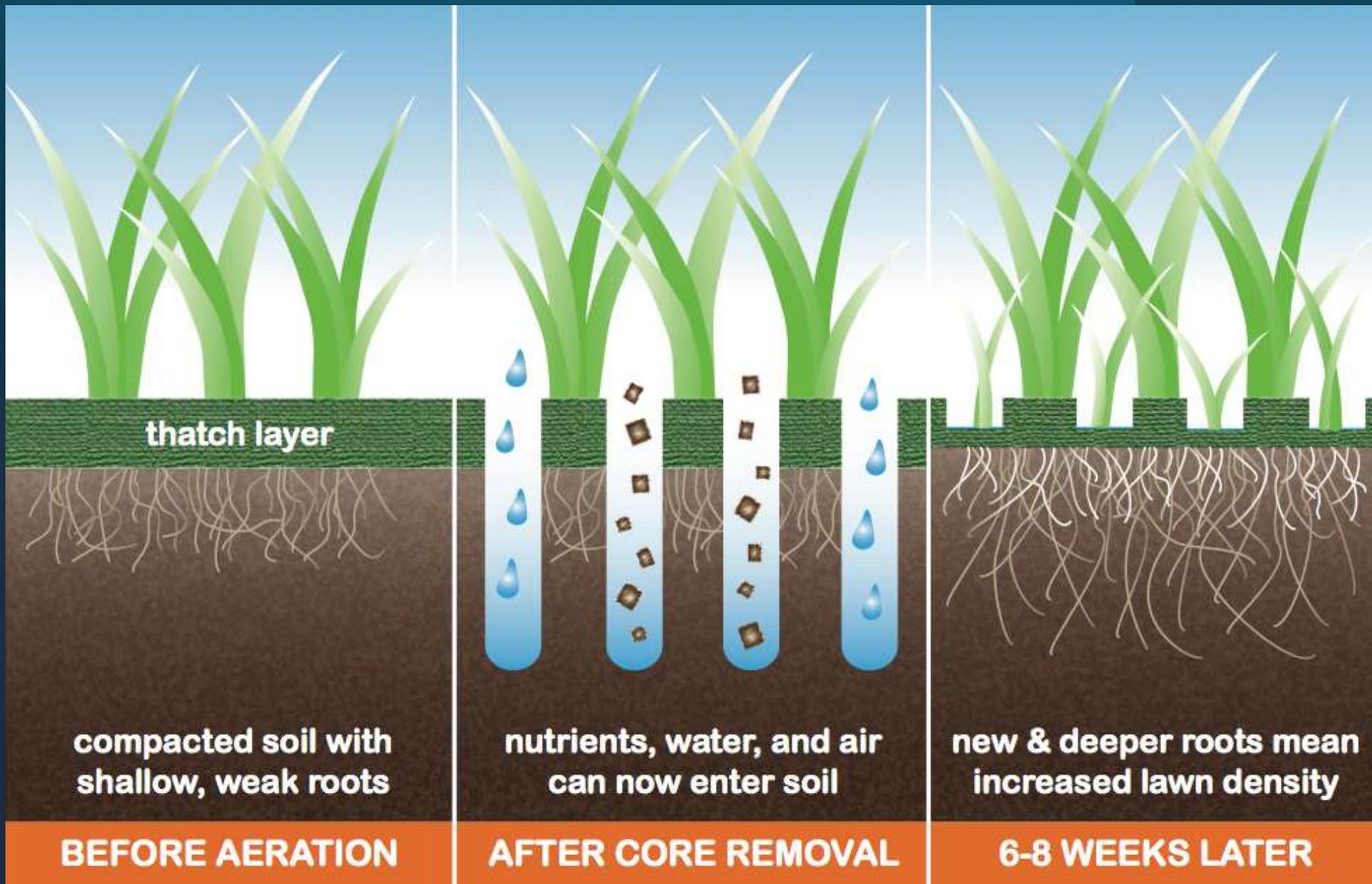
Watering Chart

Watering Tips

- Avoid watering in the wind
- Water at night or early in the morning
- Water when you have pressure
- Water deep and less frequently
- Stressing your lawn by going longer between watering will create a healthier, more drought tolerant lawn (healthy, deep roots)



Aeration





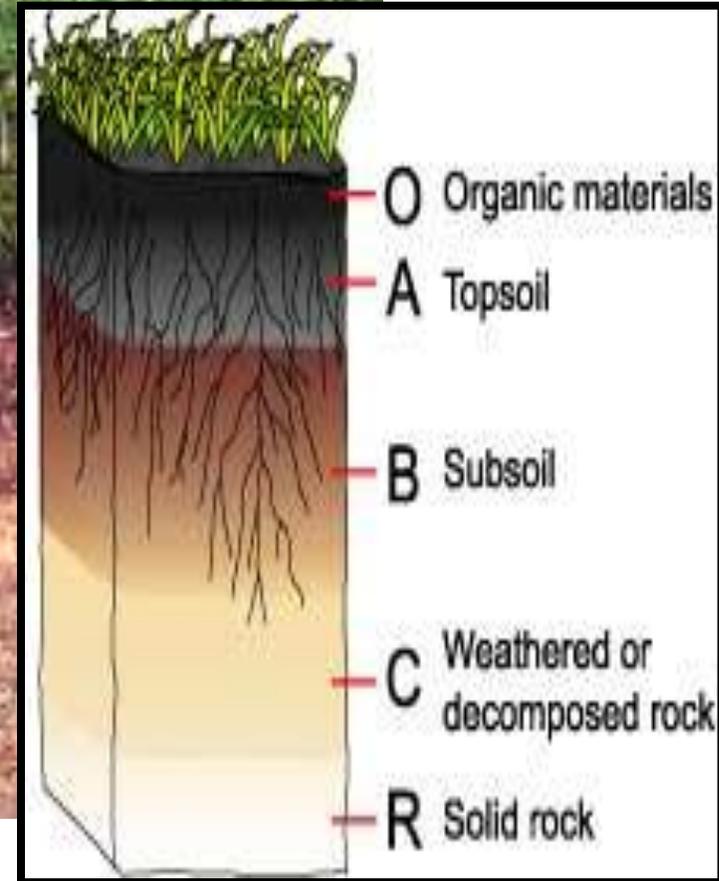
Tine Aeration & Overseeding

Other Factors You Need to Know

- Soils
- Soil/Water Movement
- Weed and Pest Control



Soils



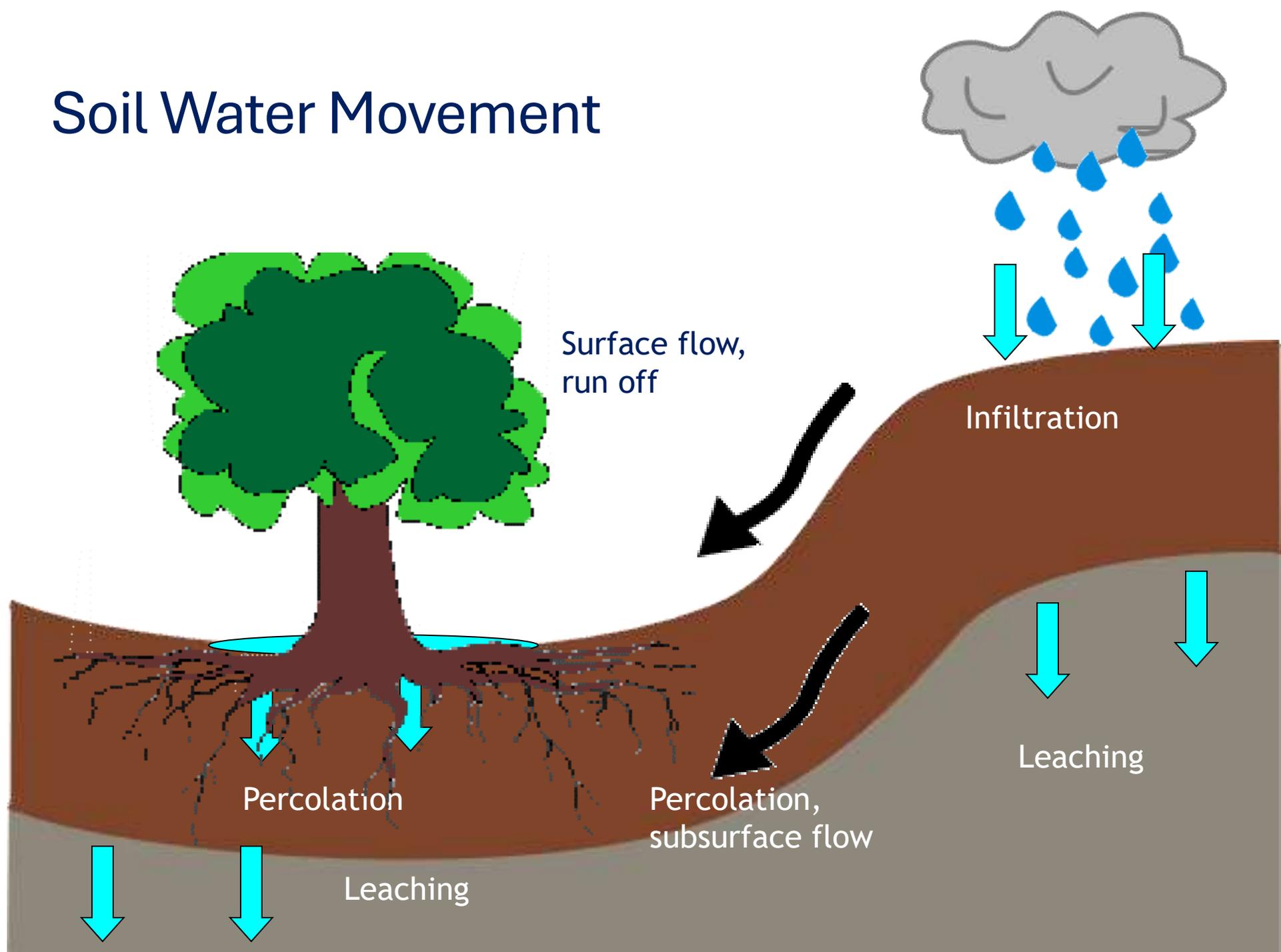
Soil Profiles

- Sandy Loam – Best at filling water table
- Sand – Loses water quickly. Shorter more frequent watering necessary
- Clay – Compacts easily. Water pools. Shorter cycles necessary.

Soil Water Movement

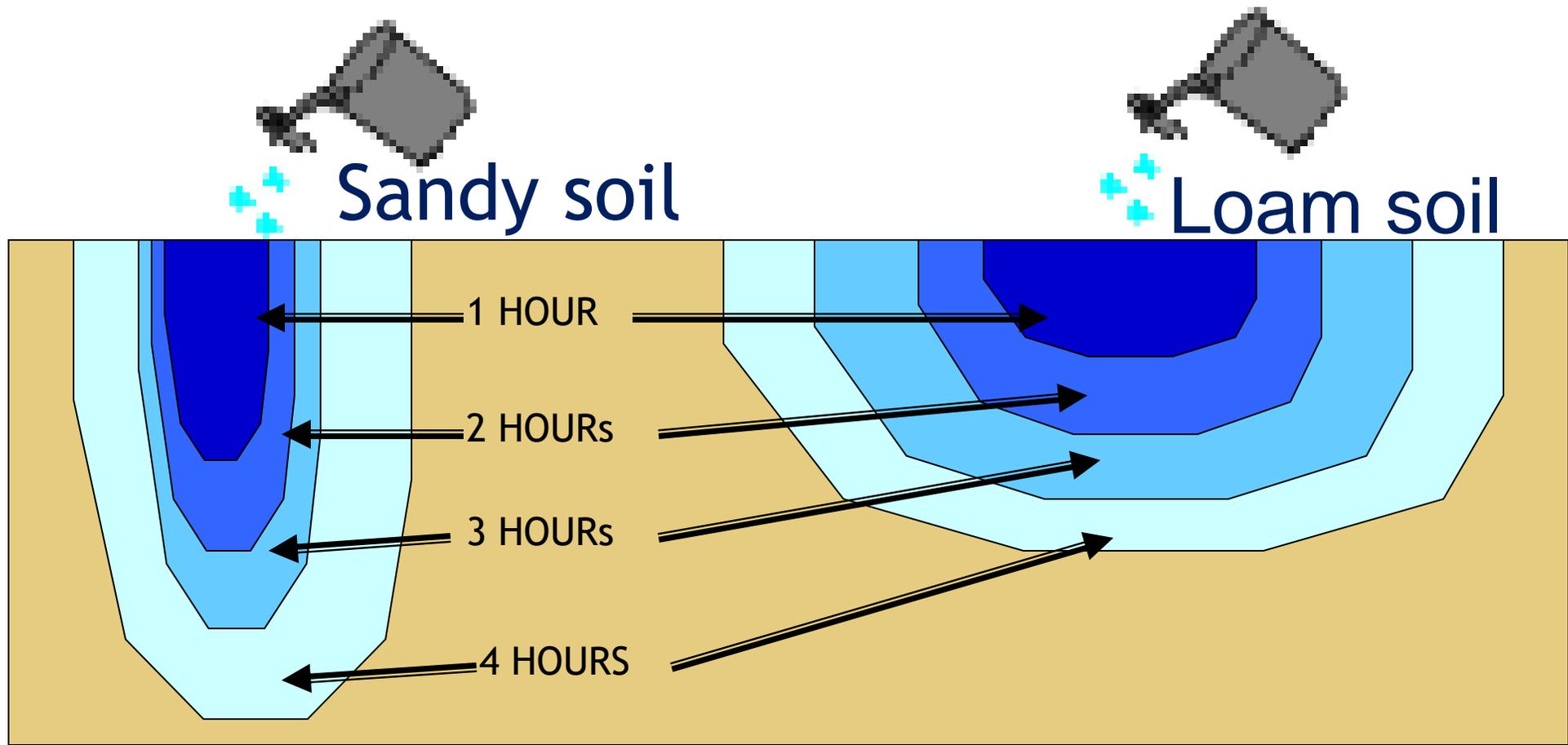
- Water moves in response to two driving forces
- Gravity pulls water downward through macropores
 - **Infiltration:** moving into soil
 - **Percolation:** moving through soil
 - **Leaching:** moving beneath plant roots
- Magnetic charge of surfaces from micropores holding water against gravity: capillarity

Soil Water Movement



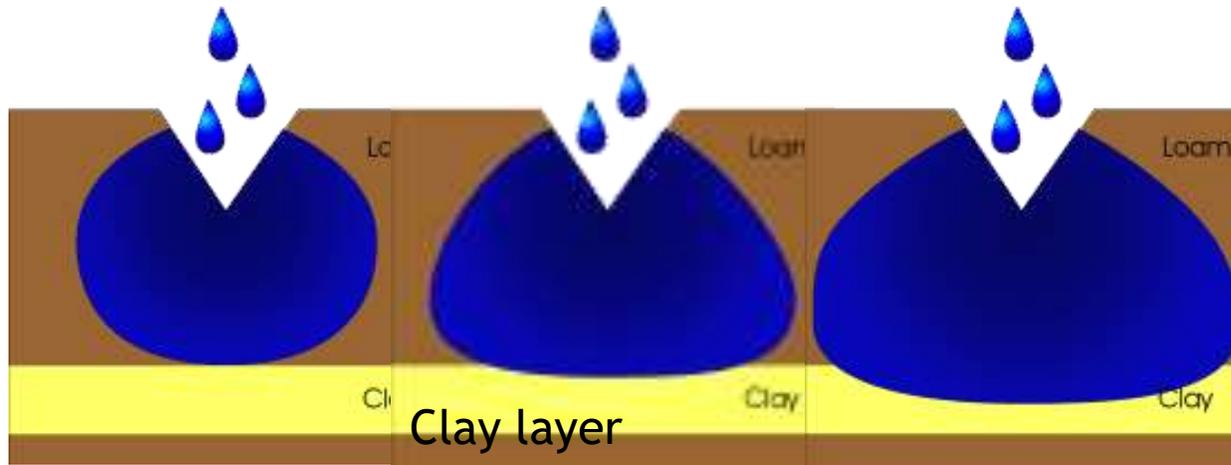
Soil Water Movement

- Percolation a function of soil texture/ structure, and changes in texture (impermeable interfaces)

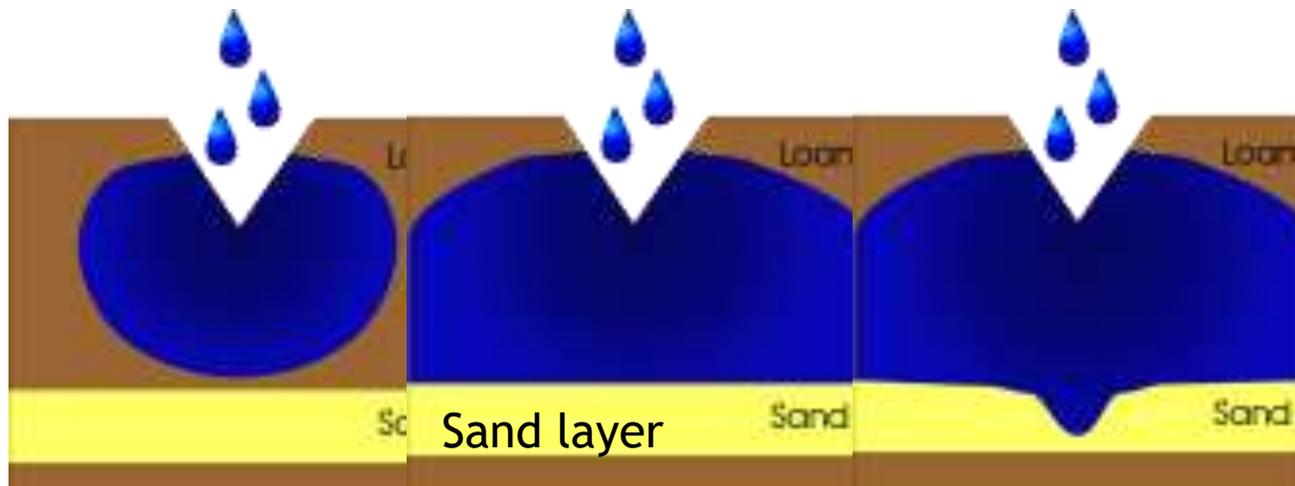


Soil Water Movement

- Any change in texture or density can impede water percolation through soil



A clay, or compacted layer creates saturated or perched water layer



A sand layer impedes water movement until overlying layer is saturated

Soil Water Capacity: Texture

- Can determine soil texture by
 - Lab analysis: practical if accuracy (rarely) needed
 - Settling in jar:
 - Fine particles, clay, fully settled out after 24 hours

▣ Intermediate particles, silt, settle within 1 hour

▣ Coarser particles settle out first; sand falls out within a minute

- Need to add compound (such as Calgon) high in sodium to disperse clay particles



Reading Your Lawn

Usually an area of the lawn will turn a blue-gray color before the rest of the lawn.

When this happens apply 1/2 inch for your irrigation cycle.



Summer Dormancy

- Dormancy is acceptable in established bluegrass lawns
- When temperatures exceed 90 degrees bluegrass growth slows and the lawn can go into dormancy.



Weed and Pest Control

- Weed and Feed Fertilizer; good pre-emergent or post-emergents that will take care of many weeds. Apply early in Spring- early summer for the summer weeds.
- Hand weeding is the most effective form of weed control in most cases.

Summary Turf Maintenance Basics

- Fertilize spring and fall (Nitrogen or Blend)
- Mow long, 2-3 inches, except for the last mowing in the fall.
- Aerate compacted and heavy soils once per year.
- Don't over water, water deep to develop deep healthy root system.
- Don't use turf as the cover all- mix it up and beautify your year with perennials, shrubs and trees. (Localscape)

Turf Water Needs

Don't over water the entire lawn just to cover one dry spot. Do some hand watering, or spot watering and try to fix irrigation system problems which are causing the poor coverage in uniformity.

Efficiency and conservation require us to be involved in what we are doing. This isn't really a "Set it and Forget it" situation.

Turf Water Needs

- Determine how long it takes you to put down $\frac{1}{2}$ inch of water, then only adjust the frequency of irrigation needed to maintain the lawn.
- Example: it takes 20 minutes to put down $\frac{1}{2}$ inch, so I should set the timer for 20 min. and only change the days of the week or the number of days to skip as the water needs change through the season.

Weeds and Pest Control



Dandelions

- Perennial weeds:
- Pull or dig out
- Broadleaf post-emergent herbicides can be applied in late fall or late spring





Black Medic

- Annual weed
- Usually grows in compacted soils (indicator of soil issues)
- Controlled by good aeration
- Can be controlled with broadleaf herbicide.

Spurge

- Summer annual weed
- Thrives in the heat
- Proper fertilization and healthy lawn will outcompete spurge
- One plant can produce thousands of seeds
- Use broadleaf herbicide for kill





Clover

- Perennial weed
- Thrives when lawns are undernourished (it produces its own nitrogen)
- Control by proper fertilization & proper mow height
- Kill with broadleaf herbicide or hand dig

Tall Fescue as a weed

- Cool Season perennial grass
- Course and clump forming
- Planted for pasture or for grass hay
- Control by digging them out then reseed or sod
- Kill by using non-selective herbicide



Crab Grass

- Annual Grassy Weed
- Removing by hand is most effective but must also remove and replace soil.
- Apply pre-emergent in late winter or early spring or a post-emergent once it has germinated



Goosegrass

- Annual Grassy Weed
- Remove by hand if you can get at least $\frac{3}{4}$ of the root
- Selective pre-emergent herbicide if necessary



Redstem Filaree

- Annual or biennial broadleaf weed
- Hand weeding is the best way to eliminate
- Broadleaf weed herbicide can be used



Bluegrass going to seed

- Caused by overly stressed lawn and lack of fertilization
- Cut lawn and bag clippings 2 to 3 times
- Fertilize with high nitrogen content fertilizer



Billbug

- Damage appears as a small circular pattern that turns yellow-brown as the Billbugs feed on the grass.
- Billbugs can be controlled by a pesticide designed for Billbugs.
- Pesticides are generally not very selective. They kill good bugs too.





Cutworms/Grubs





- Cutworms and Grubs leave small patches of brown grass, usually one to two inches wide.
- Cutworms can be controlled by a pesticide designed for cutworms.

Cutworm/Grubs

Fairy Ring and Mushrooms

- Fungus is caused by prolonged wet weather and lack of fertility. Some rings form where other plants once grew (decomposing wood and roots)
- Control by aerating around the edges, adding nitrogen, and mowing frequently



Necrotic Ring Spot

- https://digitalcommons.usu.edu/extension_curall/924/
- Fungal Disease that affects the roots of primarily Kentucky Bluegrass
- Difficult to treat, use the above fact sheet



Resources

- <https://extension.usu.edu/yardandgarden/lawns>

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