

A photograph of a well-maintained green lawn. In the background, there is a house with a white picket fence, a blue car, and various garden plants including yellow and purple flowers.

Proper Care for Healthy Lawn

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Benefits of Playing in the Dirt

- Dirt can make you feel happy.
- Early exposure to dirt can boost a child's immune system
- Playing outside can decrease a child's chances of depression, obesity, and attention disorders
- Lower blood pressure & stress levels.

Not Typical Residential



Not Realistic for Real Lawn Areas

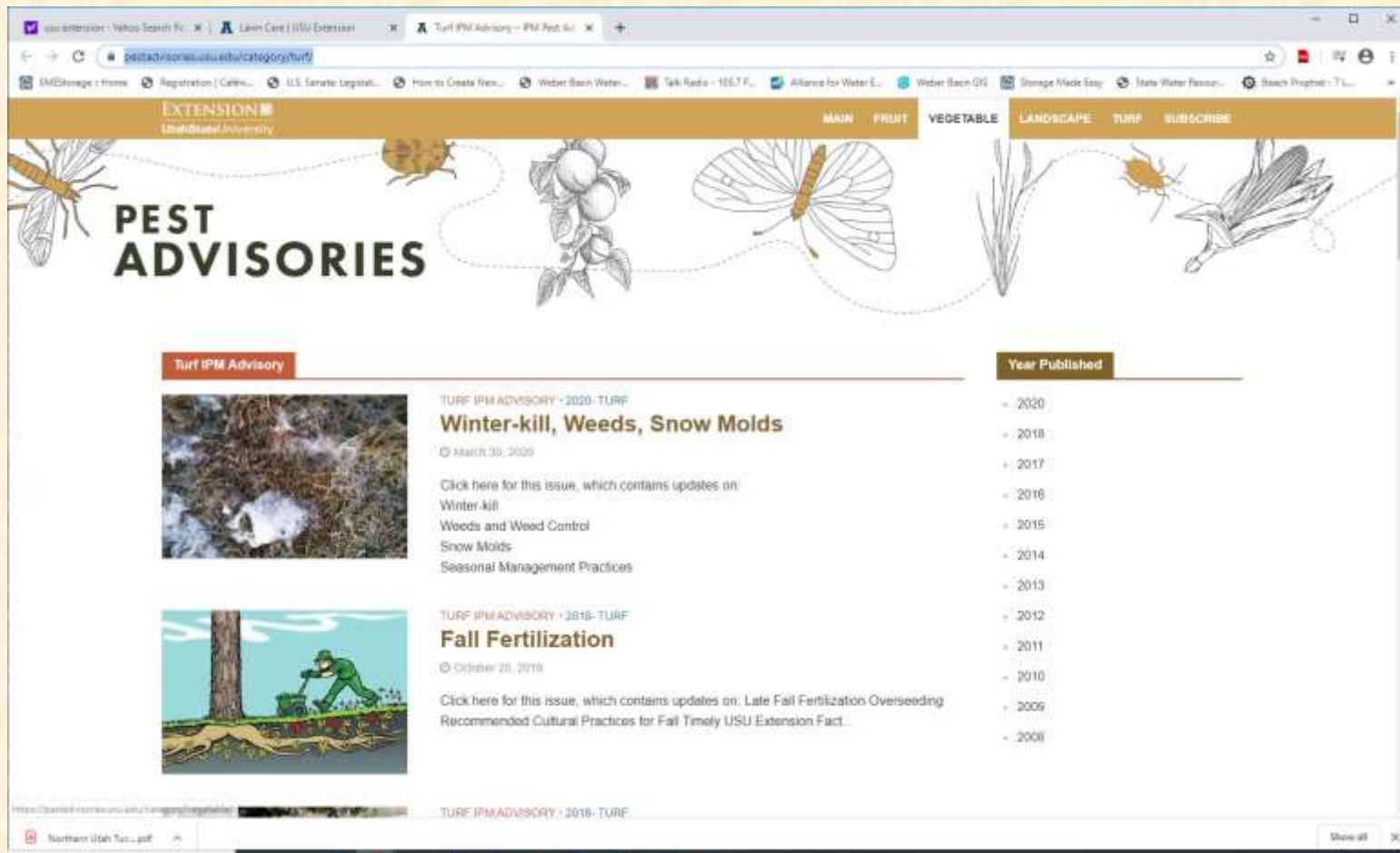


What is the Issue? A Quiz



DAVE MINNER
IOWA STATE UNIVERSITY
DEPARTMENT OF HORTICULTURE

Figure out the problem



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



















Turf Types

- **Cool Season:** Kentucky Blue Grass, Perennial Rye and Fescue (Tall and Fine)
 - Primary active growth occurs spring and fall
 - Will go dormant (brown) if drought stressed
- **Warm Season:** Buffalo Grass, Blue Grama, 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

**Rhizomatous
Tall
Fescue**

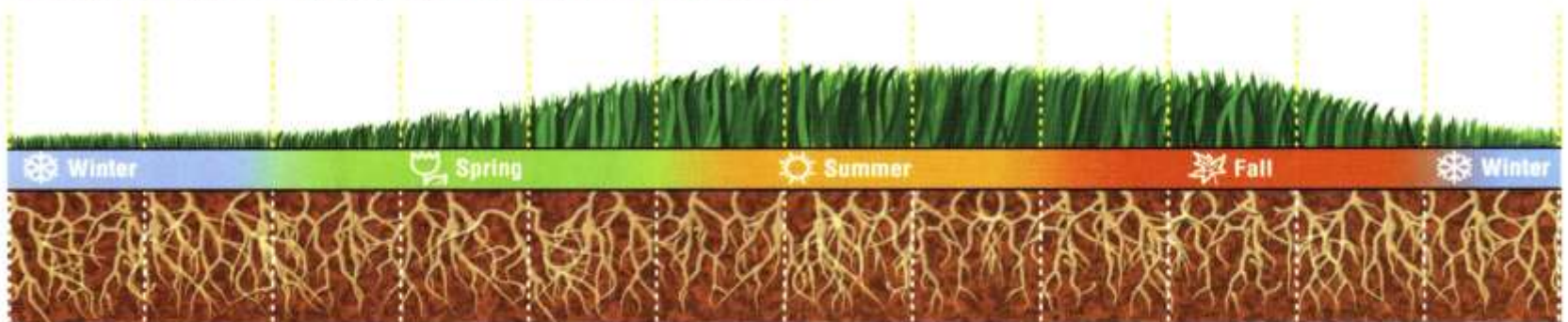
**Kentucky
Bluegrass**

Perennial Rye

**Artificial
Turf**

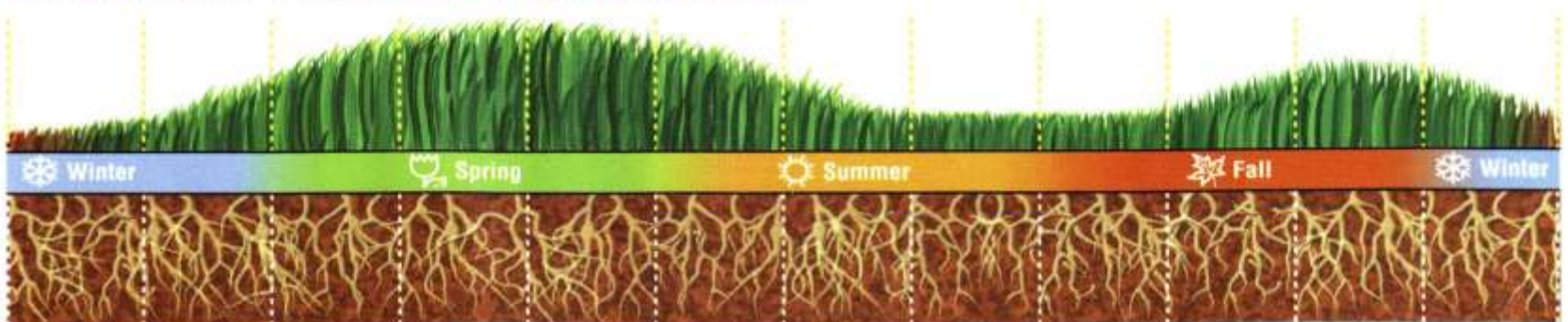
Grass Growth Cycle

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.

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



Fescue

- Bunchgrass
- Not rhizomatous
- Drought Resistant if soil is prepared properly before installation
- Develop deep roots naturally if soils allow it (no compaction)



Rye

- Non rhizomatous bunch grass
- Can stay green longer in the winter
- Is drought resistant if installed on proper soil bed
- Usually mixed with other grasses for better more uniform stand
- (Perennial Rye)



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 of Bluegrass, with rye and fescue depending on site.



Lawn care practices do help create more drought tolerance.

- Mowing
- Fertilization
- 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 at one time (no scalping)
 - Mulch clippings and leave on the lawn (will not create thatch)
 - Taller Grass means deeper roots
 - Keep blades sharp to reduce impact of cutting



Fertilization



HELPING TO GROW THE



THINGS YOU LOVE®

4STEP

Fertilizer Program



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

N, P, K (Nitrogen, Phosphate, Potash) 16-16-16 (16% of each by weight)
N- top growth and foliage
P- Rooting, flower blooms and fruiting
K- strong cells, plant tissues (helps with disease, stress, pests, etc.)

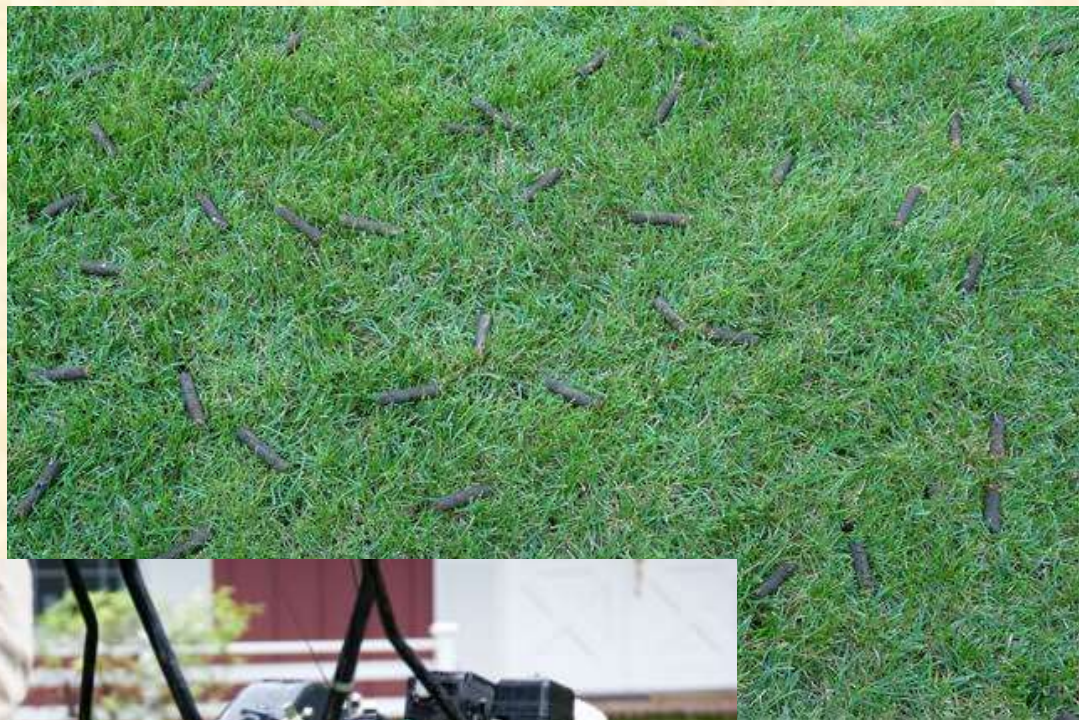


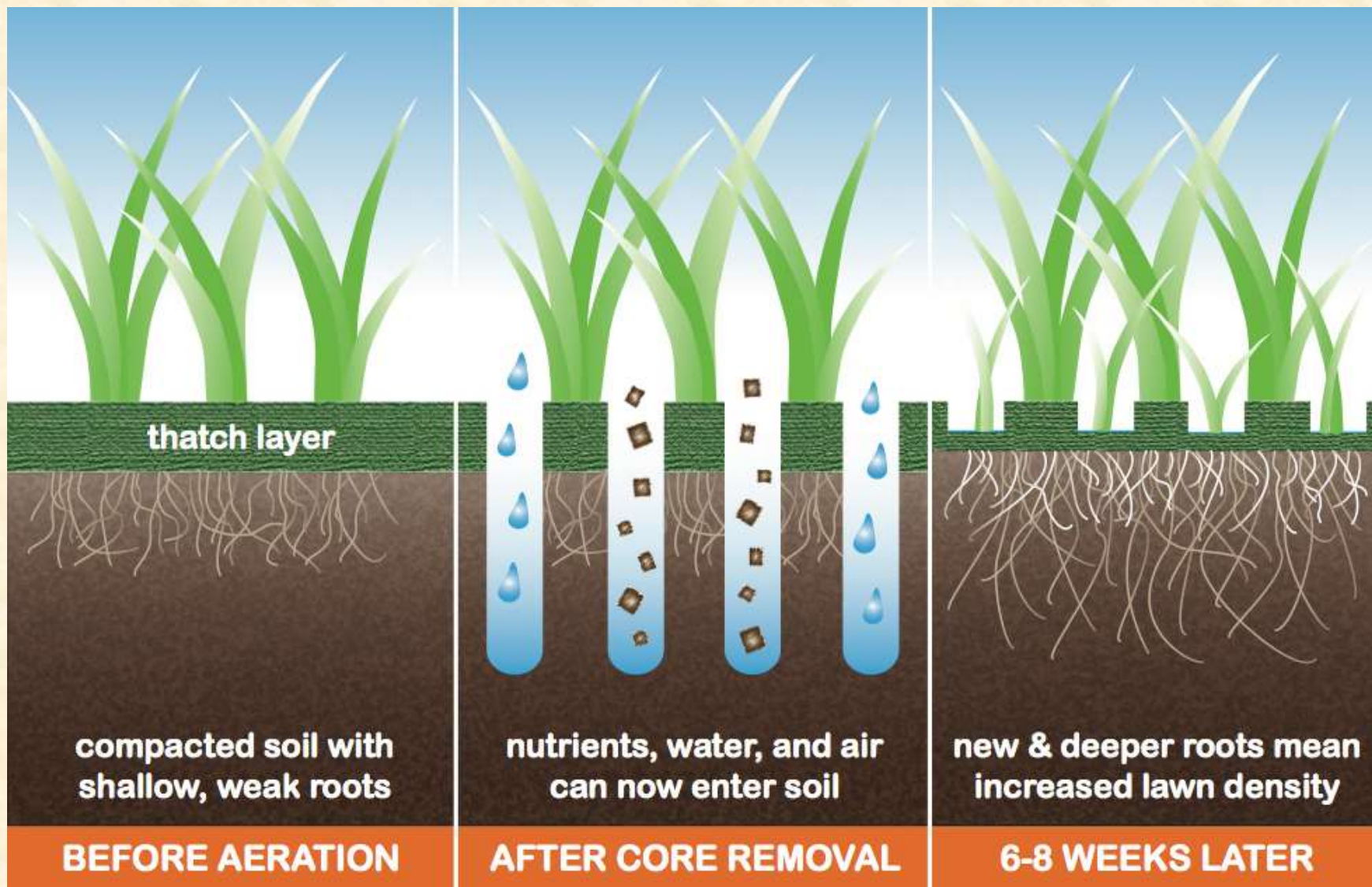
Fertilizing

- 2-5 lbs/per 1000 ft² nitrogen per year (average need)
- Balanced Weed and Feed - Memorial Day
- **Optional**-Nitrogen Fertilizer --Independence Day
- **Optional**-Nitrogen Fertilizer - Labor Day
- Winterizer - after Halloween (this is the most important fertilization of the year!)



Aeration





Weed Control in Lawn



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 for only a few weeds.
- Grassy weeds in lawn have to be physically removed or you must kill a whole spot including your lawn grass (Glyphosate).

Weeds and Pest Control



Dandelions

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



Prickly Lettuce

- Biennial weed:
- Pull or dig out
- Broadleaf post-emergent herbicides can be applied in late fall or late spring
- Best control is probably pre-emergent and Physical removal



Black Medic

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



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



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



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





Cutworm/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.

Fairy Ring and Mushrooms

- Fungus is caused by prolonged wet weather and lack of fertility.
- Control by aerating around the edges, adding nitrogen, and mowing frequently

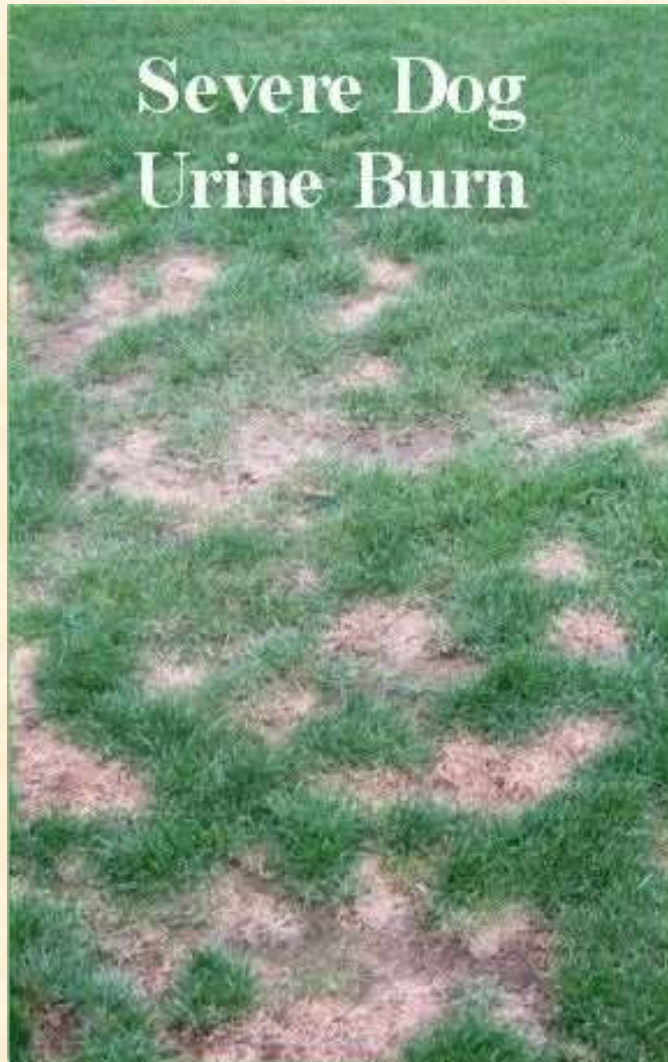


Necrotic Ring Spot

- 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



Dog Urine Spots

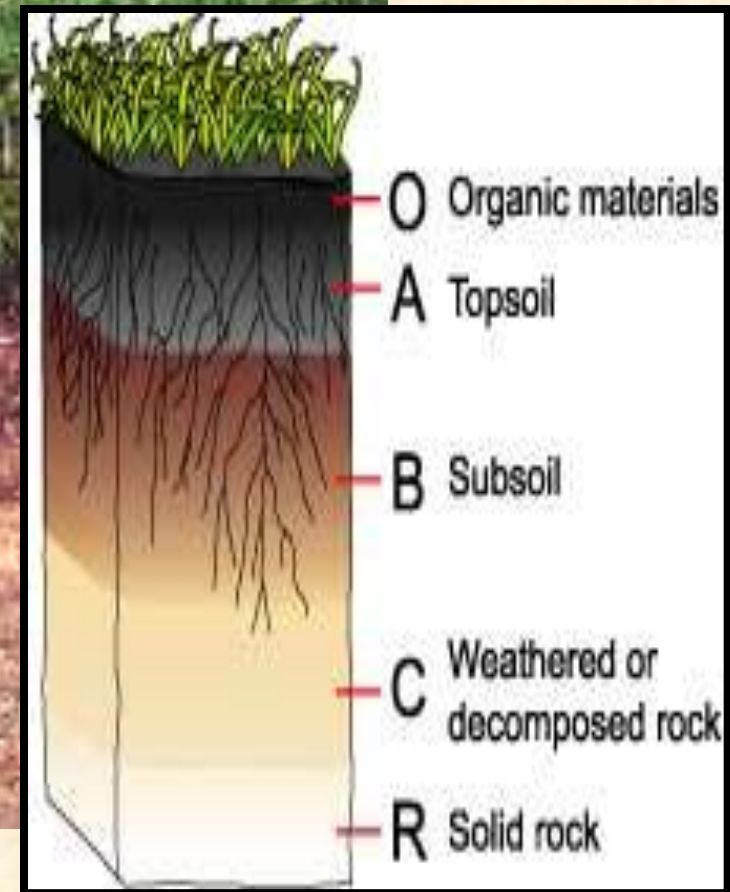


Other Factors You Need to Know About

- Soils
- Soil/Water Movement
- Irrigation Practices



Soils



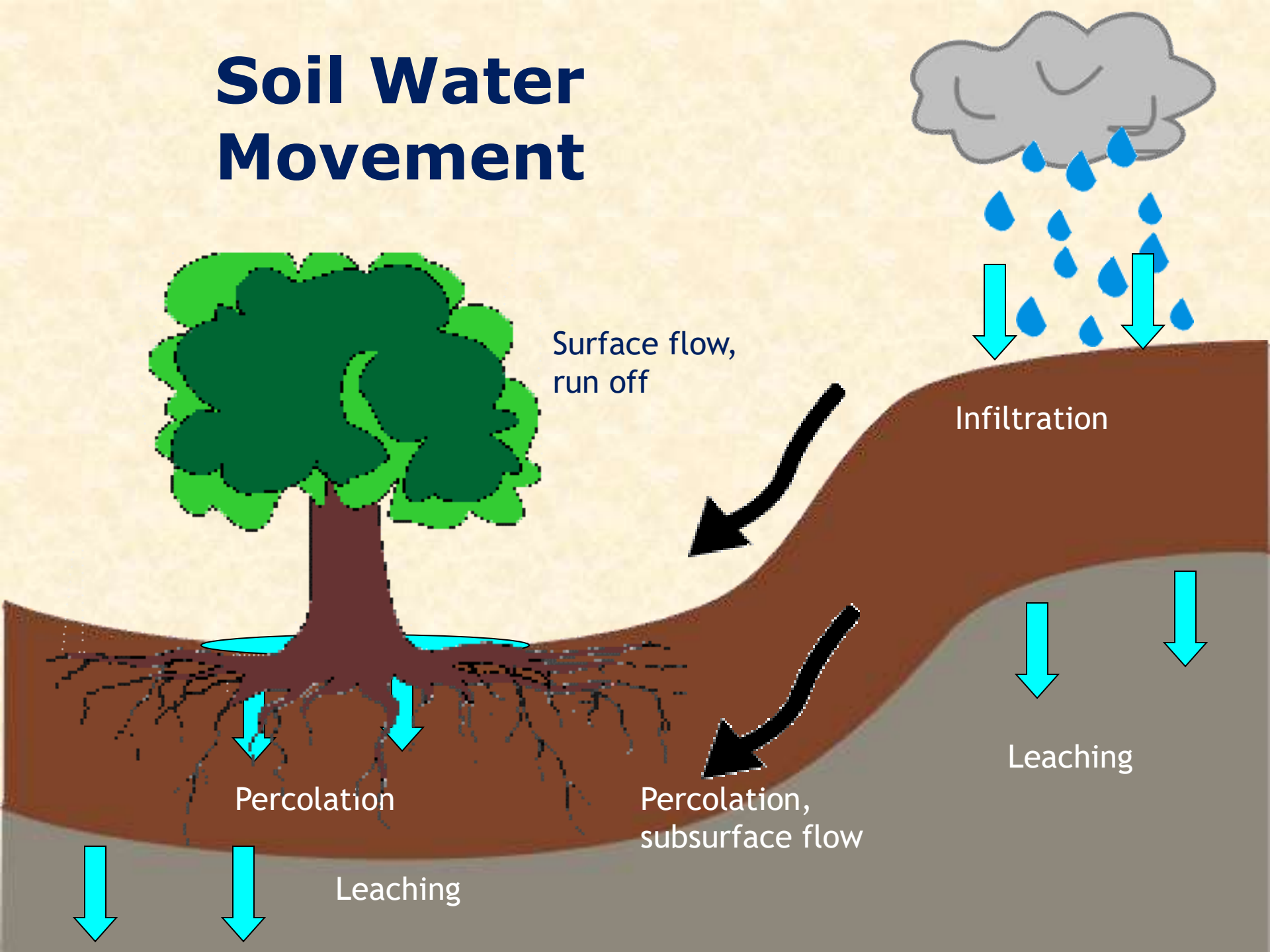
Soil Profiles

- Sandy Loam – Best at filling water table
- Sand – Loses water too quickly.
Shorter, more frequent watering cycles are necessary
- Clay – Compacts easily. Water pools.
Less frequent irrigation necessary, but short cycles to avoid run off.

Soil Water Movement

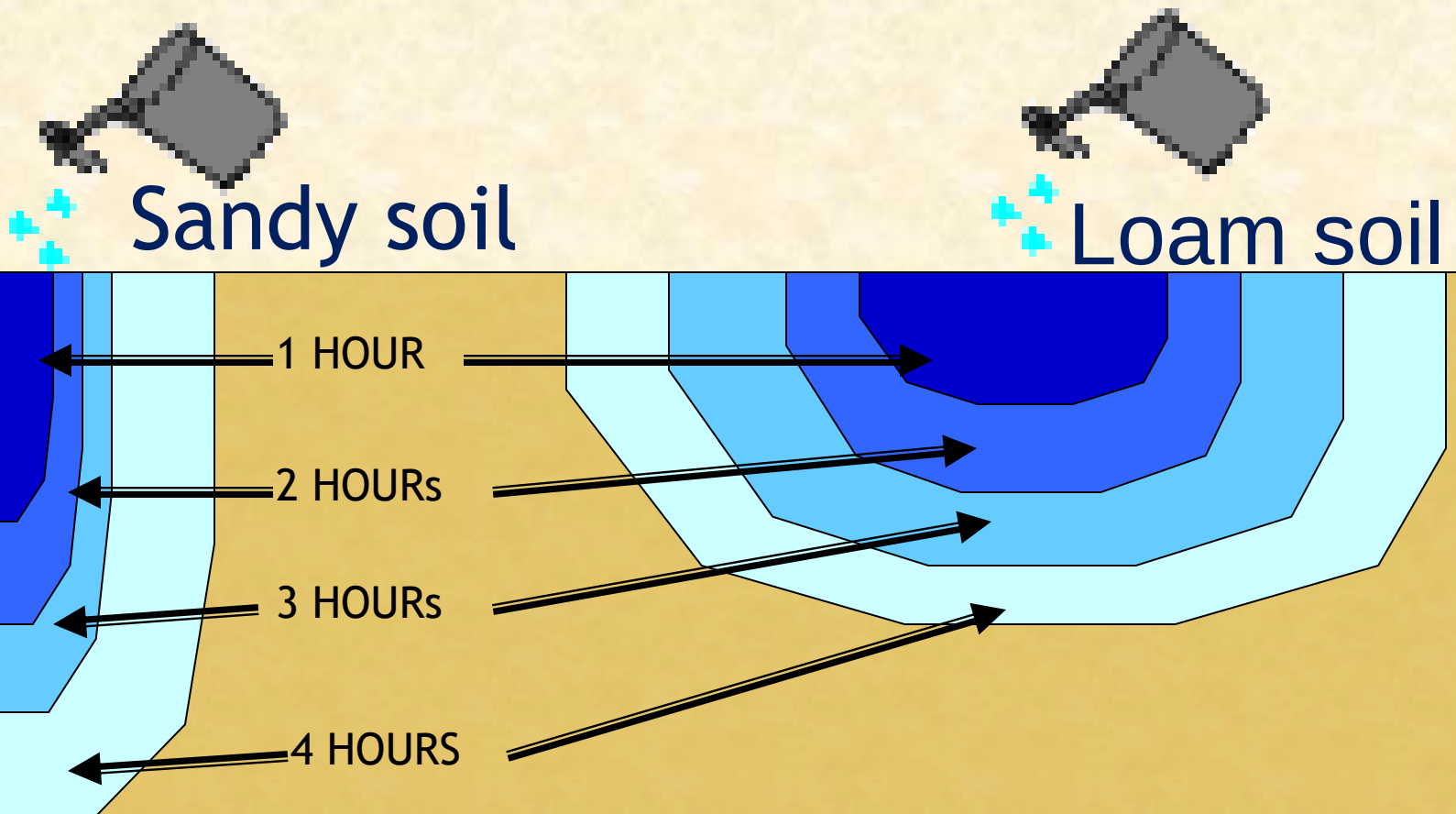
- Water moves in response to two driving forces
- Gravity pulls water downward through macropores
 - **Infiltration**: moving into soil
 - **Percolation**: moving through soil
 - **Leaching**: moving beneath plant roots
- Magnetic charge of surfaces from micropores holding water against gravity: capillarity

Soil Water Movement



Soil Water Movement

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

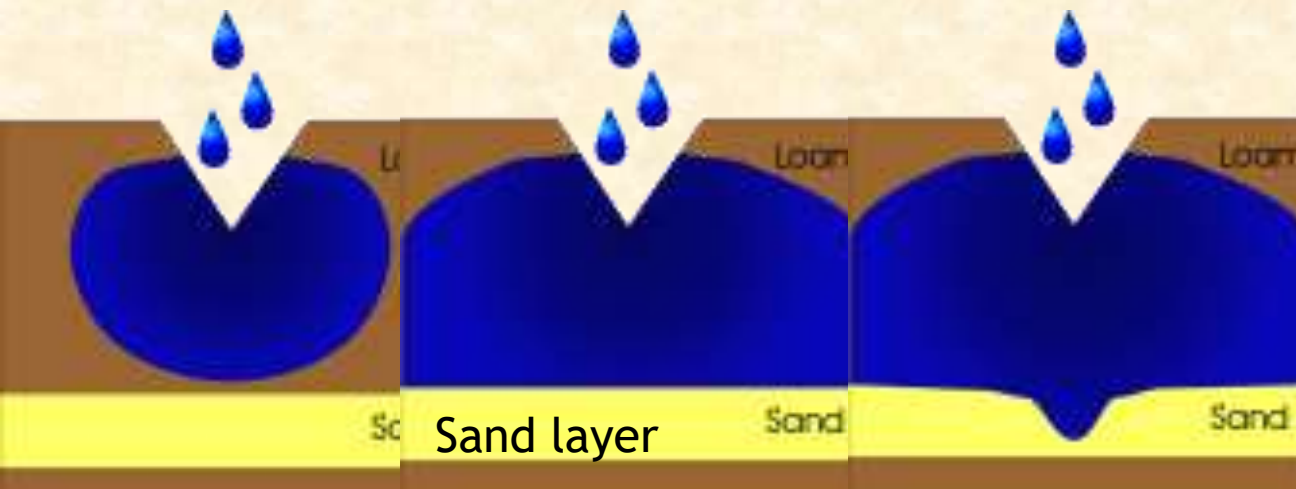


Soil Water Movement

- 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 or dish soap) high in sodium to disperse clay particles



Efficient Irrigation Practices



Why Irrigate?

- When a plant can't get enough water from the environment
- Four irrigation situations
 - Temporary: after transplanting
 - Temporary: during drought
 - Permanent: Using plants not adapted to available moisture conditions (Turf in our climate)
 - Permanent: in areas that have no natural water source (Pots and indoors)
- Irrigation systems
 - Sprinkler versus drip/low volume



Irrigation Hydro-zoning

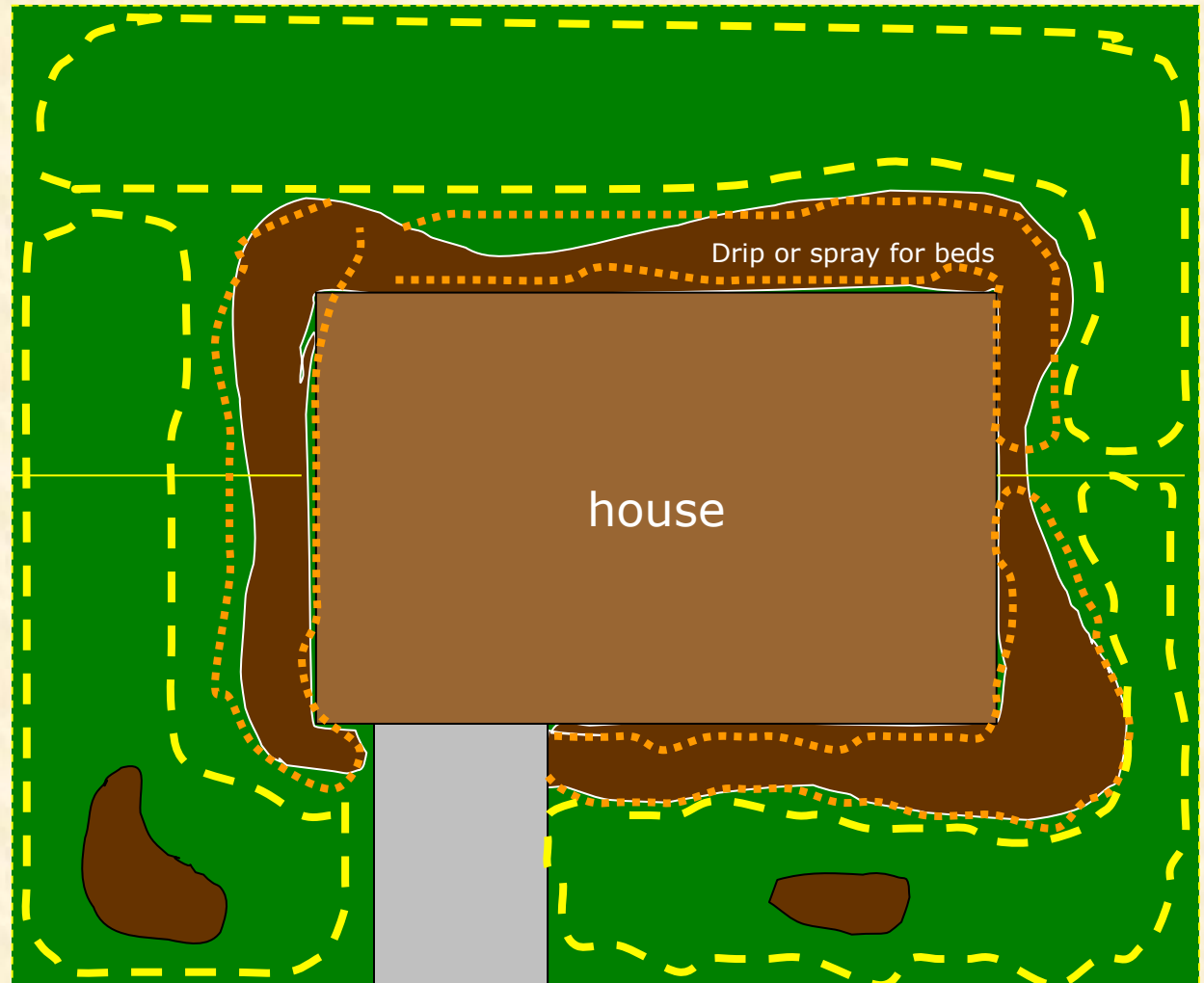
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Separate irrigation zones should be based on:

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

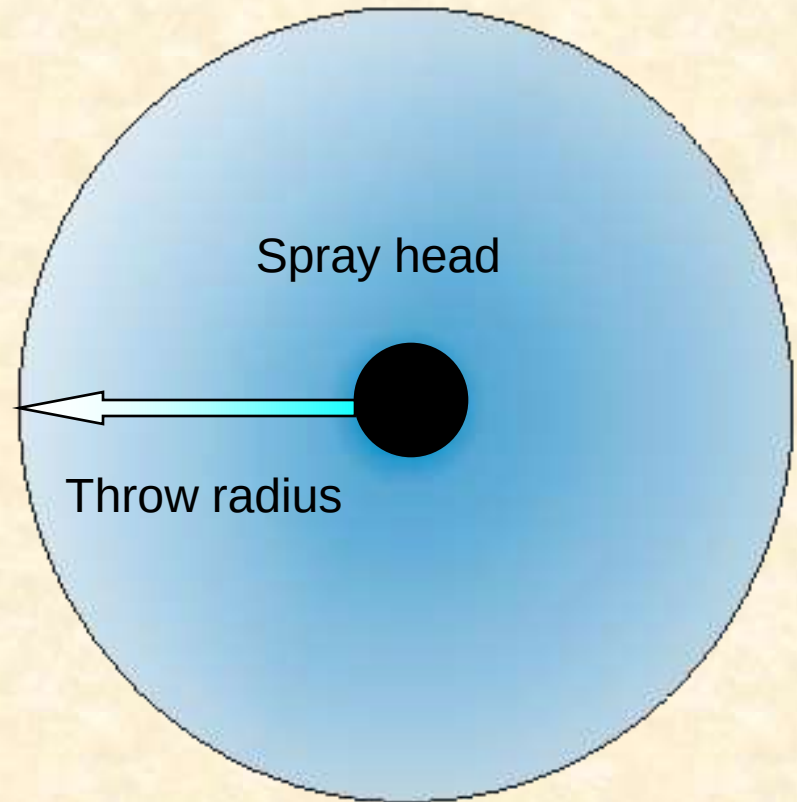
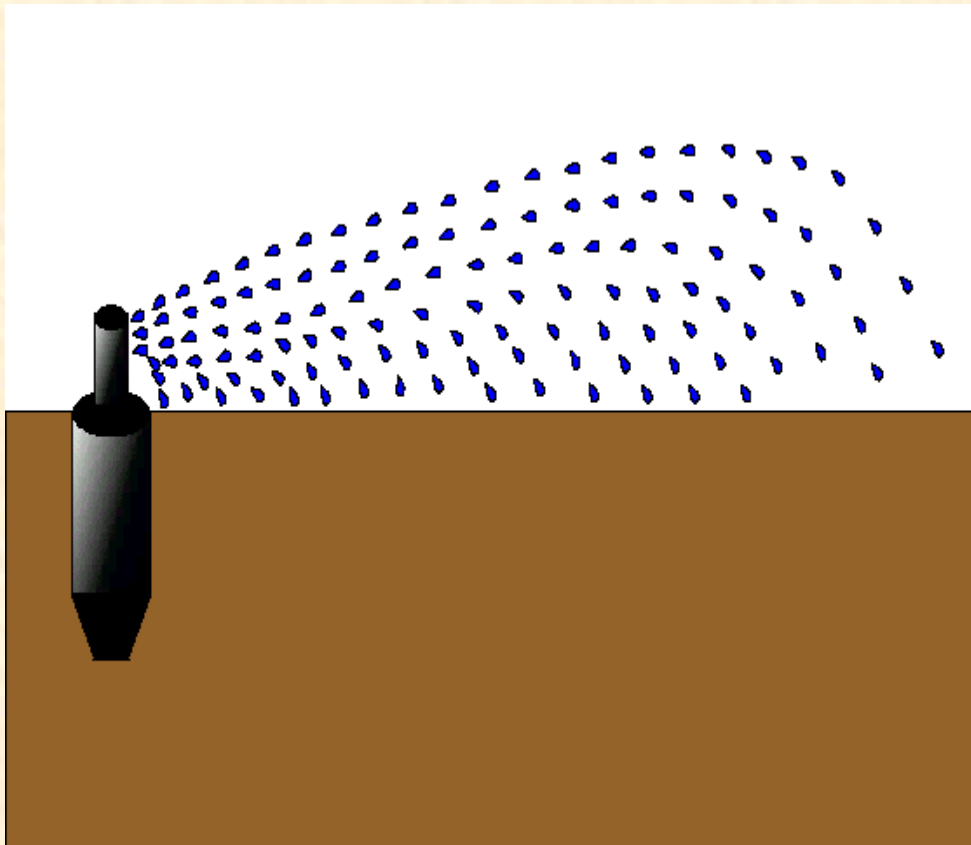
Run time is based on:

- **Seasonal changes in temperature.**



Irrigation Design

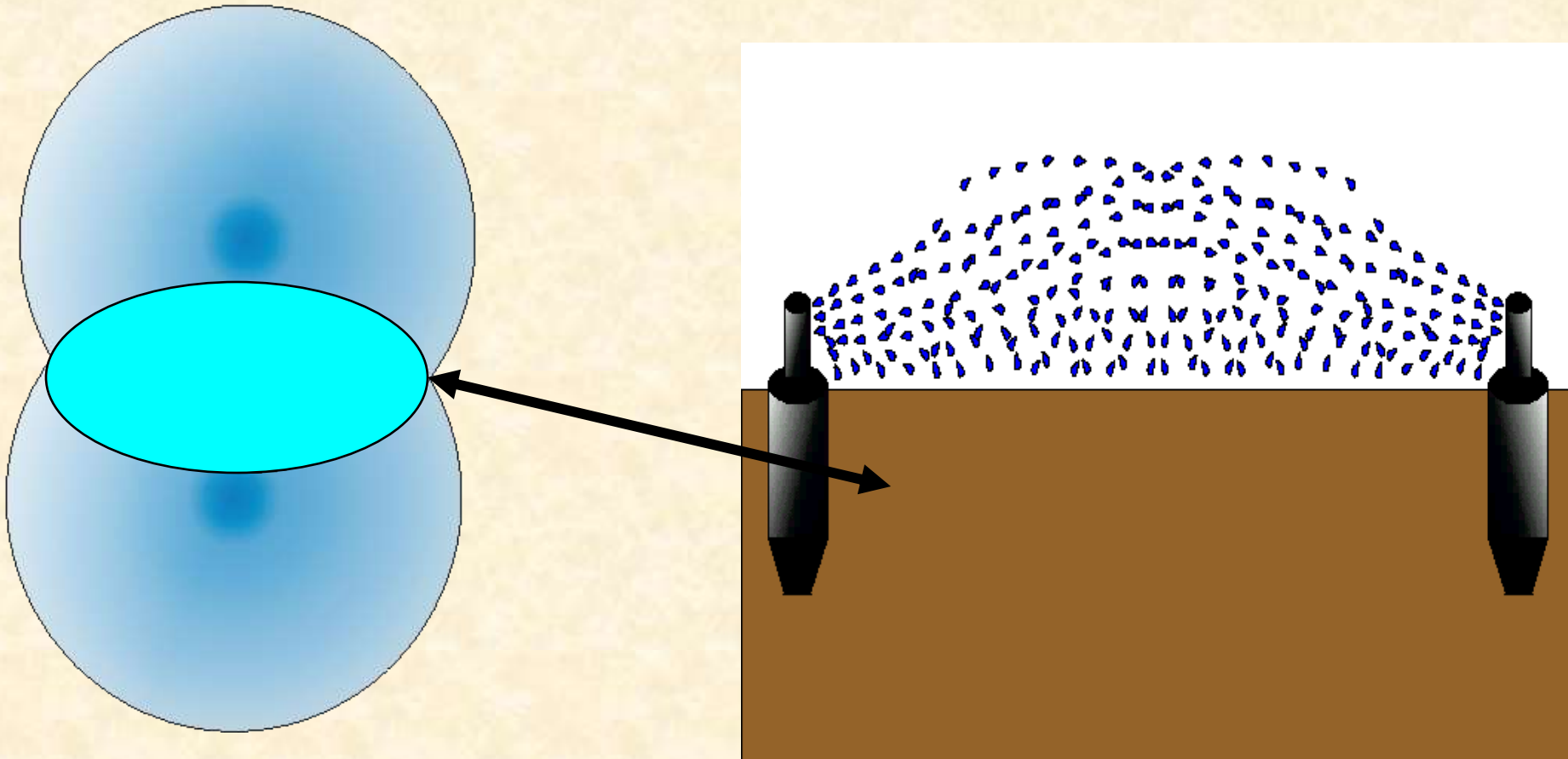
- Single sprinkler heads have non-uniform coverage
- Spray heads apply less water the farther away from the head



Irrigation Design

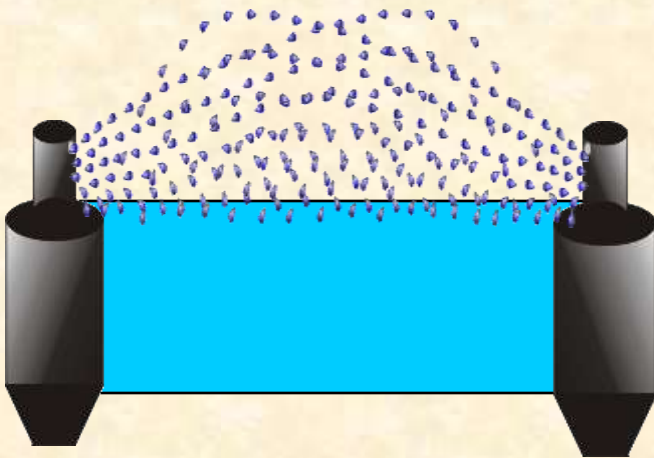
- Sprinklers: need to achieve overlap coverage to simulate rainfall

Precipitation (application) rate calculated from spray overlapped area

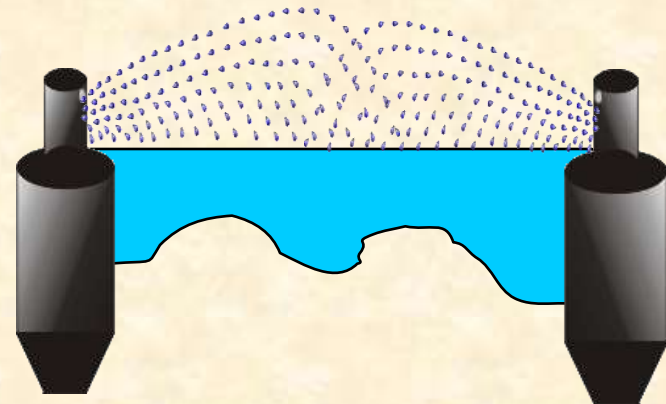


Irrigation Design

- Pressure below the specified range results in poor coverage



Coverage within
specified pressure range



Coverage when below
specified pressure range

Determine Watering Practices By Watching Your Lawn

- Try to apply needed water in 1 application (soil dependent)
- If you get run-off or puddling break up into cycles on same day
 - Cycle and Soak
 - Total run time divided by 2 or 3 events spread out over a few hours.
Ex. 15 minutes total; 3 cycles of 5 minutes each 30 minutes to 1 hour apart.

Watering New Sod

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 Tips

- Avoid watering in the wind
- Water at night or early in the morning
- Water deep and less frequently if soils allow it.
- Stressing your lawn by going longer between watering will create a healthier, more drought tolerant lawn (healthy, deep roots)

Reading Your Lawn

Usually an area of the lawn will turn a blue-gray color before the rest of the lawn when it is starting to show signs of needing water.

When this happens apply 1/2 inch for your irrigation cycle. (smart controllers now adjusting schedules for you)



Summer Dormancy

- Dormancy is acceptable in established bluegrass lawns
- When temperatures exceed 90 degrees bluegrass growth slows and the lawn can go into dormancy.
 - A slowing and drying of top blade growth. Crown is still alive

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 yard 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. (head placement or nozzle type)

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 apply $\frac{1}{2}$ inch of water, then only adjust the frequency of irrigation needed to maintain the lawn.
- Example: it takes 20 minutes to apply $\frac{1}{2}$ 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.

Landscape Spectrum

Localscapes Range



Traditional Lawn-Dominant Landscape



Yard typical to many Utahns



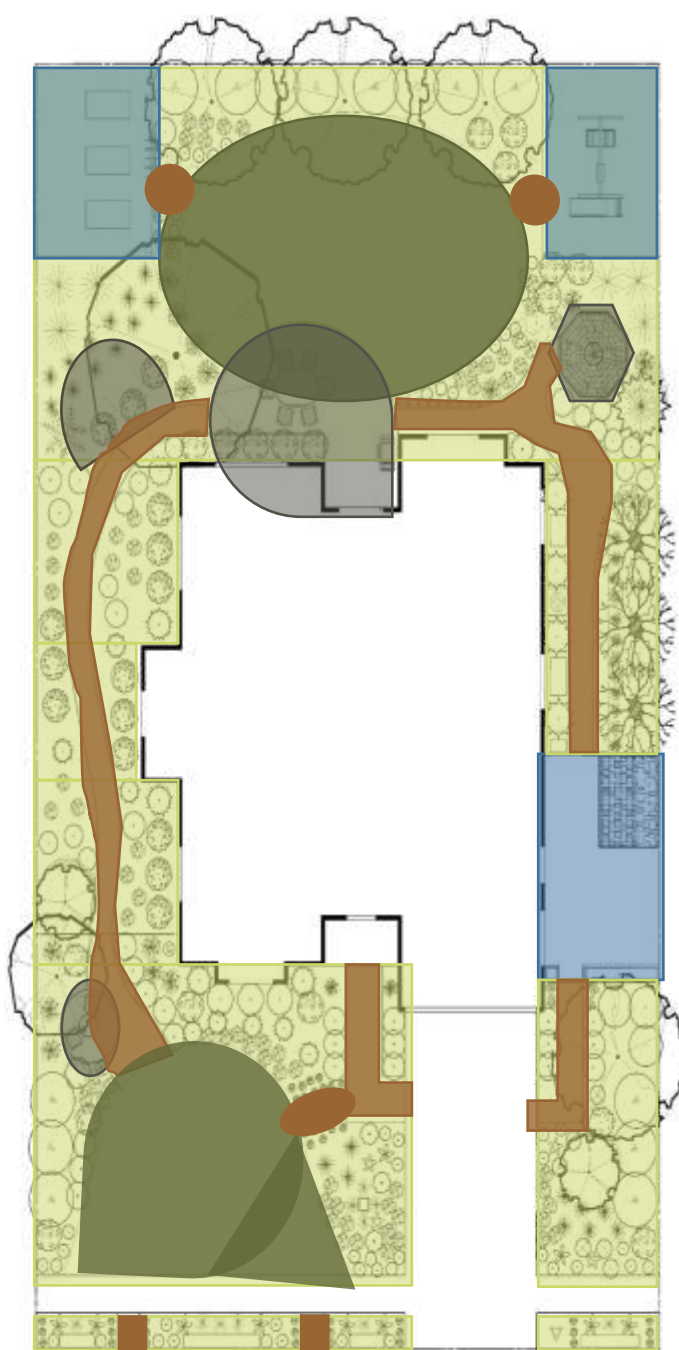
Moderate approach advocated by
Localscapes

“Zeroscape”



Yard type many Utahns are **afraid** they'll be told to have





5- Steps of a Localscape

Localscape "Pattern Pieces"

1. Central
Open Shape

2. Gathering
Areas

3. Activity
Zones

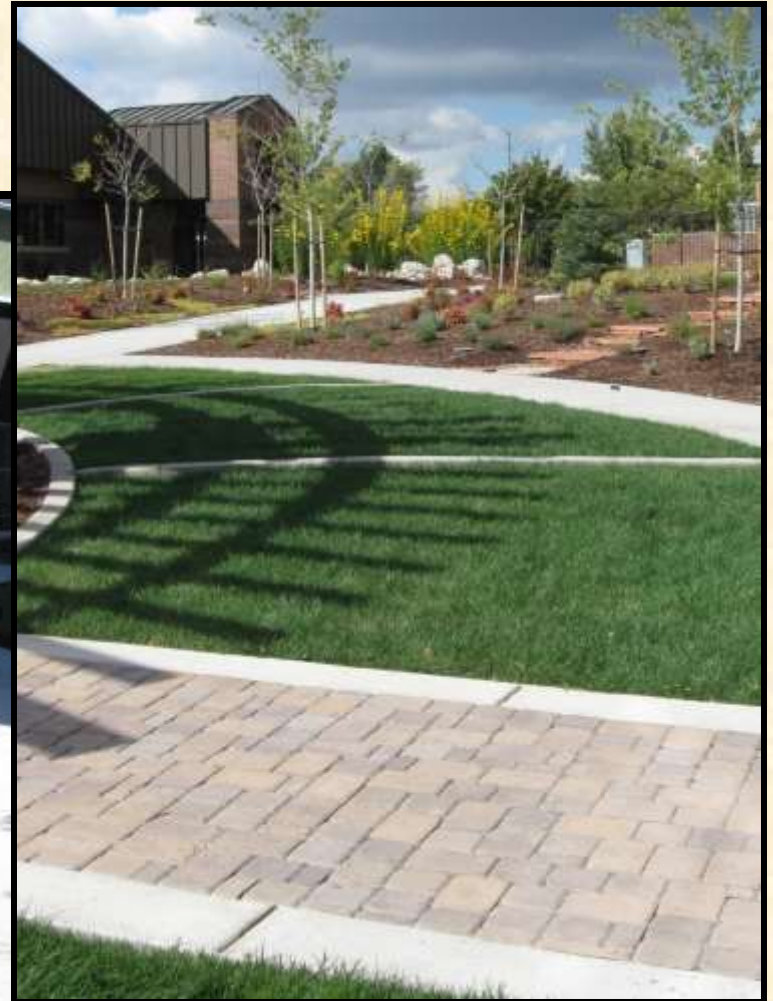
4. Paths

5. Plantings

Watering Chart

North/Central Utah	
April	No irrigation recommended, unless needed under extremely dry periods
May	1 inch every 7-10 days (1/2 inch each 4+ days)
June	1 inch every 4-7 days (1/2 inch each 3+ days)
July	1 inch every 3-5 days (1/2 inch each 2-3 days)
August	1 inch every 3-6 days (1/2 inch each 2-3 days)
September	1 inch every 7-10 days (1/2 inch each 3-4 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

Create Practical Turf Areas



Questions ??

Thanks for participating today, please join us for our next online class on **Herbs** on Wed. April 22 at 2:00 pm. Other classes are in the works for more topics and different times. For all of April they are on Wednesdays at 2:00 pm. Sign up for classes at **www.weberbasin.com**

Resources

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