

## **Healthy pastures are healthier for horses**

- \*Overgrazed plants may have higher % fructans, sugar and starch and are lower in fiber**
- \* Horse owners fear “lush” pastures**
- \* Overgrazed pastures allow weeds and toxic plants to establish**



To maintain healthy pastures with unlimited turnout generally requires \_\_\_\_\_ acres per horse.



< 1.5 acre per horse = exercise lot

> 1.5 acre per horse = pasture

## Grazing “Guidelines”

Under “normal conditions” one horse can be maintained on:

- ½ acre of pasture, if turnout time = < than 3 hr/d
- 1 acre of pasture, if turnout time = 3 to 8 hr/d
- 1 ½ acre of pasture, if turnout time = 8 to 12 hr/d
- > 2 acres = unlimited turnout time

*Mowing, irrigating, fertilizing, over-seeding, and rotating pastures can allow higher animal densities while still maintaining proper vegetative cover. Adverse environmental conditions, poor soil health, and lack of management will reduce recommended grazing time.*

# How can we keep horses from overgrazing pastures? What practices can we employ?



Keep them in the barn  
or??????????



Keep them in a barnyard

## Managing pastures on high density farms

- \* Select forages that are appropriate for horses and that can better handle grazing pressure
- \* Utilize rotational grazing
- \* Manage turnout time using sacrifice areas

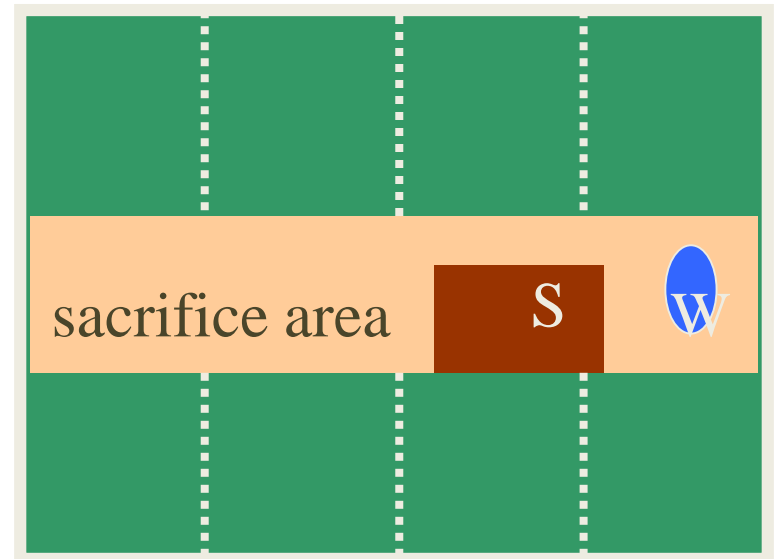
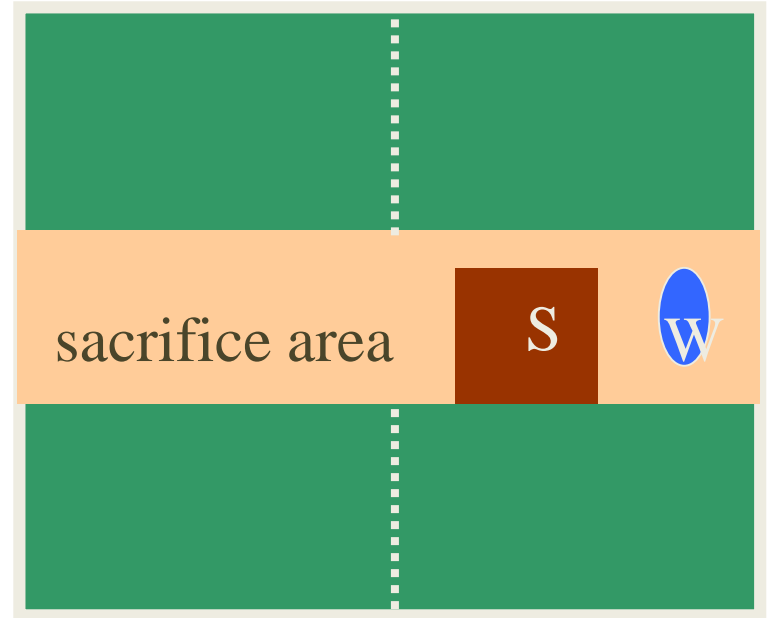
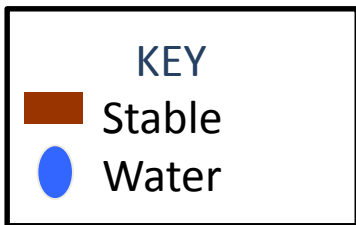
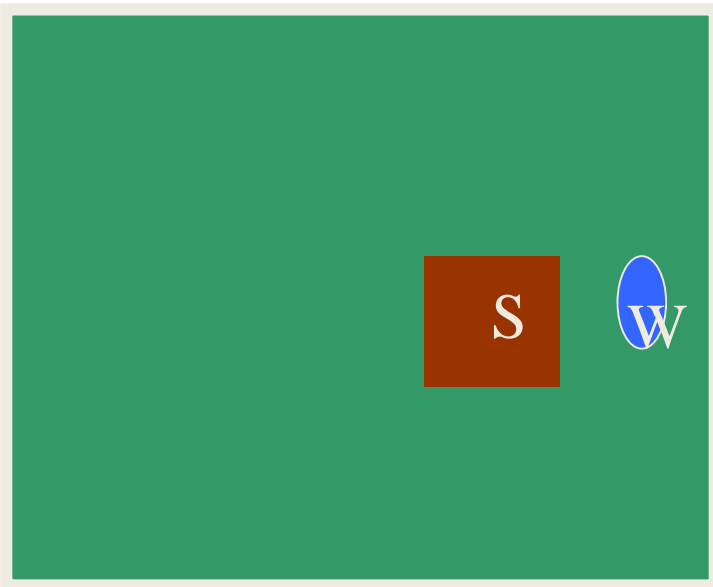


# Rotational grazing

- ✓ What is rotational grazing?
- ✓ How do you know how long to keep horses on a pasture before moving them?



# Rotational Grazing Paddock layout



# Animal Concentration Areas (ACAs)





## Sacrifice Area (ACA, Stress Lot)

- \* Small enclosure - paddock or corral
- \* Generally has no vegetation
- \* Small area is sacrificed to benefit the rest of the pastures.

*When should horses be confined to a sacrifice area?*



## **Obstacles to using stalls, stress lots, and small rotational paddocks**

- ✓ **Movement is critically important to equine health and well-being.**
- ✓ **Can't change food rapidly – must gradually introduce to pastures.**
- ✓ **Strong herd hierarchy – alpha animal dominates food and shelters.**
- ✓ **Can't combine horses of all age groups and sexes.**
- ✓ **Some horses just don't get along.**

## **Sacrifice Area Size**

- ✓ **Highly variable**
- ✓ **Based on number of horses, ages, and behavior**
- ✓ **Often need separate sacrifice areas for different age groups**
- ✓ **Need larger areas for younger horses**
- ✓ **Need larger areas if horse population is constantly changing due to challenges to herd hierarchy**
- ✓ **20' x 20' for one animal; 20 x 100' allows several animals to exercise**



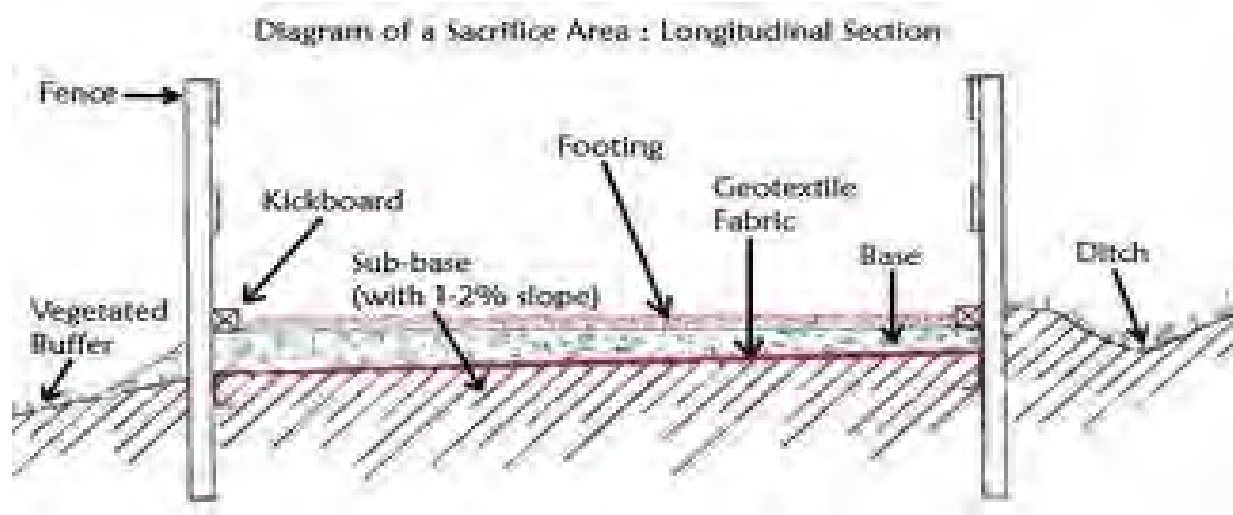
# Sacrifice Area Construction

- ✓ Remove top soil.
- ✓ Slightly slope the area so that water runs off of the stress lot.
- ✓ Cover the area with a layer of stone aggregate topped with a minimum of 2-3 inches of finer stone dust.



# Top of the Line-Sacrifice Lot Design

- ✓ Geotextile can be used to separate layers.
- ✓ Cover geotextile with 4 to 6 inches of crushed rock (1/4 to 1 1/2") and a minimum of 2 to 3 inches of stone dust.



## Surface Options

No concrete

Sand / gravel

- ✓ Do not feed on sand- ingested sand causes repeated colic

Wood chips / sawdust

- ✓ Avoid Black Walnut and Cherry, etc.
- ✓ Higher maintenance - wood chips breaking down and making mud.





Penn State **Extension**

# Pasture Weed Management





# What is a weed?

- A plant out of place
- A plant growing where it is not wanted
- A plant whose virtues have not yet been discovered
- Plants that are competitive, persistent, and interfere negatively with human activity

# Weed Benefits

- Stabilize soil - reduce erosion
- Absorb excess nutrients
- Provide habitat and food for wildlife
- Provide nectar for bees
- Serve as a genetic reservoir
- Can serve as a source of nutrition
- Employment opportunities

# Seed Production for Some Common Weeds

<b>Grass/grass-like</b>	<b>Life cycle</b>	<b>No.</b>	<b>Broadleaves</b>	<b>Life Cycle</b>	<b>No.</b>
Downy brome	Annual	700	Canada thistle	Perennial	680
Shattercane	Annual	6500	Cocklebur	Annual	900
Yellow nutsedge	Perennial	2400	Common ragweed	Annual	3400
Barnyardgrass	Annual	7000	Curly dock	Perennial	30,000
Green foxtail	Annual	34,000	Dandelion	Perennial	15,000
Yellow foxtail	Annual	6,420	E. black nightshade	Annual	178,000
Witchgrass	Annual	11,500	Lambsquarters	Annual	72,000
Wild oats	Annual	250	PA smartweed	Annual	19,500
			Redroot pigweed	Annual	117,000
			Shepherdspurse	Annual	38,500
			Velvetleaf	Annual	7,761

# Weed Seed Longevity in Soil

<u>Weed</u>	<u>Longevity (yrs)</u>
• Common lambsquarters	39
• Shepherdspurse	35
• Common ragweed	39
• Dandelion	6
• Redroot pigweed	10
• Green foxtail	39

# Movement of Weeds into New Areas

- Weed seeds can be in manure and hay.
- Weed seeds can contaminate crop seeds (buy certified seed).





**Burcucumber**



**Cacklebur**

# Common Milkweed



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**Bittersweet  
Nightshade**



**The best defense against weeds is maintaining a thick stand of healthy plants that can suppress weeds.**



A photograph of a pasture that has been overgrazed. The ground is covered with sparse, low-growing green plants and weeds, with significant areas of bare, brown soil visible. The overall appearance is one of a degraded and less productive pasture.

**When pastures are overgrazed and forages are eliminated, weeds fill in the bare areas and thrive.**

- **If weed pressure is high, it is best to develop a management plan to improve the survival and health of pasture grasses before choosing to eliminate weeds.**
- **Proper soil fertility and grazing management will eliminate, or greatly reduce, the need to control weeds.**

- **If weed pressure is high and management changes warrant control of existing weeds, weed management techniques should be considered.**
- **However before determining the best weed control approach, it is important to identify the weeds that you wish to control and understand their life cycle.**

## **Weeds occur as:**

- **Winter annuals**
- **Summer annuals**
- **Biennials**
- **Perennials**



- **Summer annual weeds tend to proliferate in horse pastures**
- **Seedlings are growing in early summer when forage growth is slowing**
- **Pastures should be rested or rotated to allow grasses to grow so that they can compete with weeds**
- **Weeds should be mowed to reduce seed production**