Pasture Management

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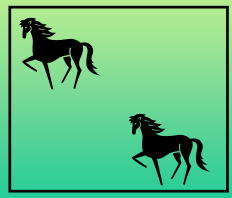
Pasture Management

- Stocking Rates
- Rotational Grazing; Controlled Grazing
- Grasses, Fertilizer, and Weed Control
- Sacrifice Areas
- Buffers
- Tree Protection
- Fencing Types
- Gates
- Water Trough Types

Stocking Rates

- How many horses/acre?
  - A *minimum* of 1 acre/horse of turnout (includes sacrifice area)
  - Depends on soils
    - Good soils = Better grass growth = Less acres/horse
    - Bad soils = Less grass growth = More acres/horse
    - Get a soil survey of your property!
- Too many horses = not enough grass = MUD!

Good!



Assume 3 acres on good soils

Too many horses!

This presentation is for general managing land use. Check with your county for additional restrictions on stocking rates. 2+ acres per horse is generally preferable, depending on soils.

Rotational Grazing

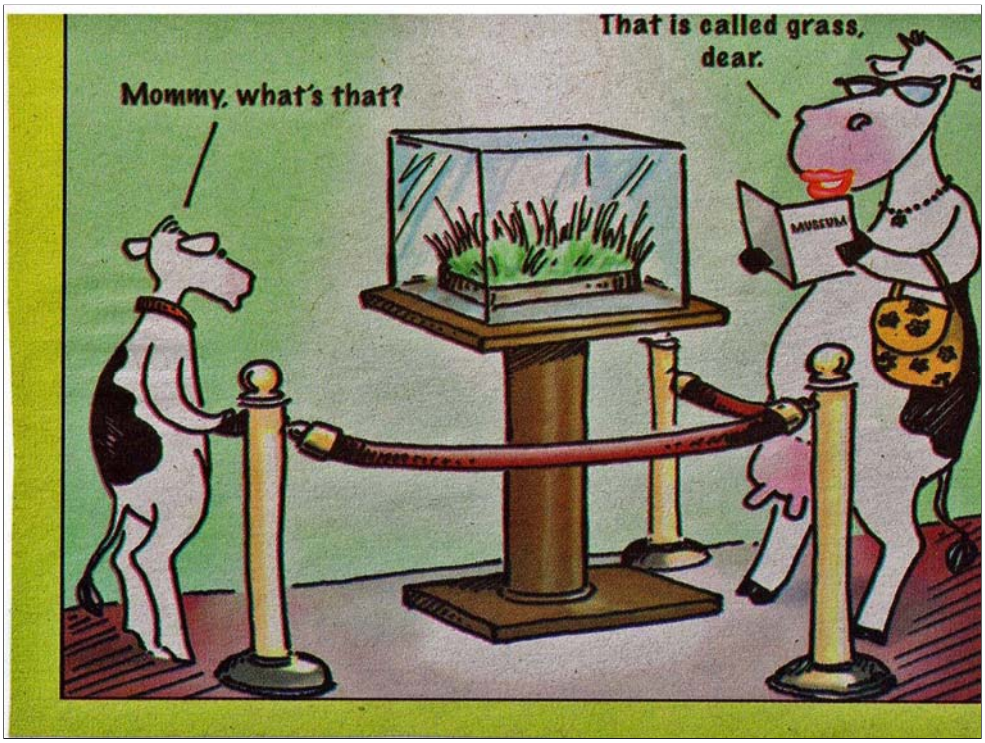
- More than one field of pasture
- Prevents grass from being overgrazed and dying
- Allows for regrowth of grasses

Rule of Thumb

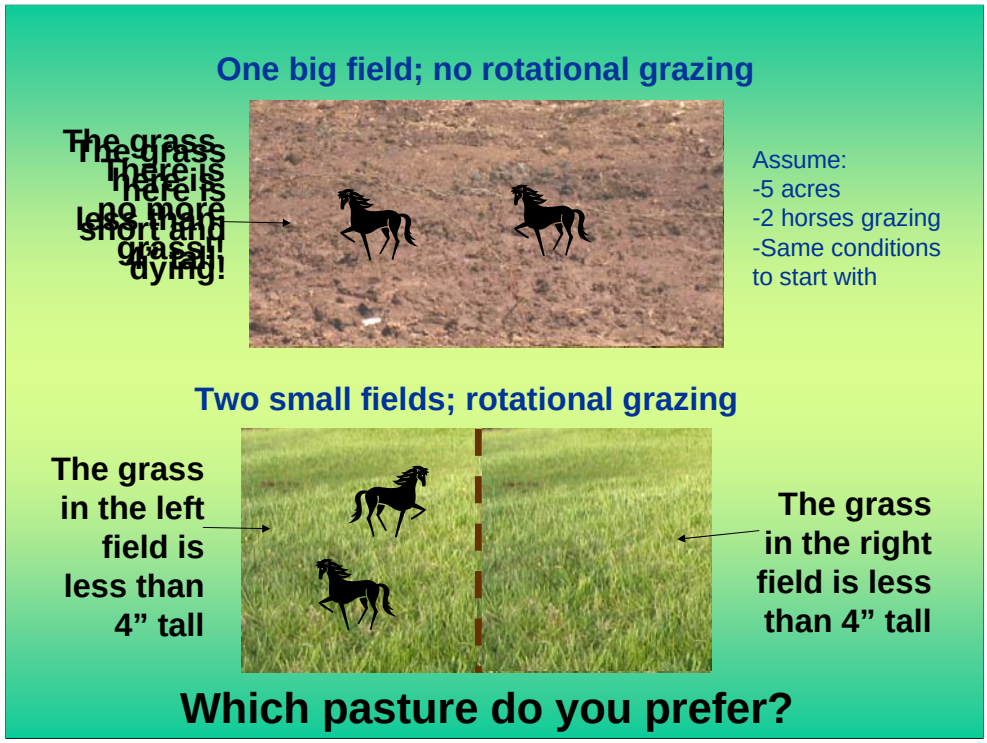
- If the majority of the grass in the field is less than 4" tall, take the horses off the field and let the field rest until the overall grasses are 6-12" tall.

Some grasses can be grazed lower than 4". See below slides on different grass types for more info. Do not use a separate field for each horse!!

If completely renovating a field, it can take 90-120 days of rest until the grass is tall enough for grazing (6-12")

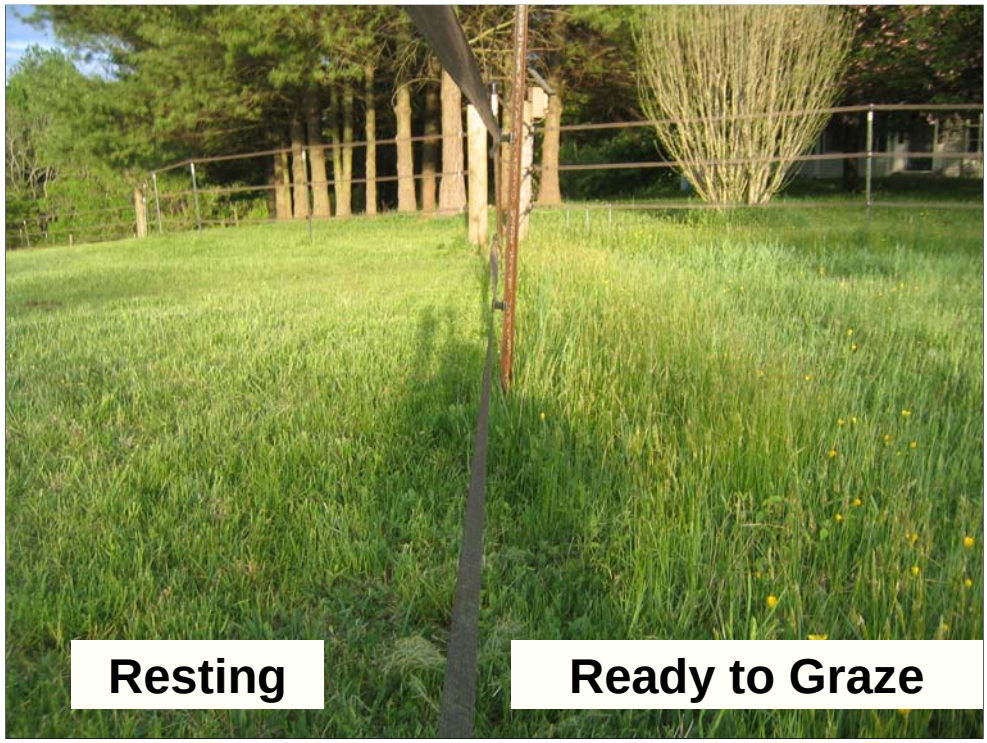


Don’t let your horses get in this type of situation! If you have, don’t worry. By the end of this presentation, you will know the right steps and tips in renovating your pastures and keeping them green.



To see pictures and animations, click on Slide Show.

Horses are abusive grazers. They will graze the grass down to little nubs. This can damage and potentially kill the grass. That is why 24/7 grazing in the same field constantly leads to mud.


Resting
Ready to Graze

Back field, now a sacrifice area. If this field were to be renovated, it would need 90-120 days of rest (plus seed etc.)

Back field.


Healthy
Pasture

Controlled Grazing

- Use interior fencing to subdivide pastures
  - Can be temporary/movable or permanent
- Horses are picky eaters
  - "Lawns" and "Roughs" are created
  - Like some grasses and clovers more than others
- Smaller, square/rectangle pastures are grazed more evenly
- Weather changes can trigger changes in plants that can lead to allergic reactions (hives) in some horses

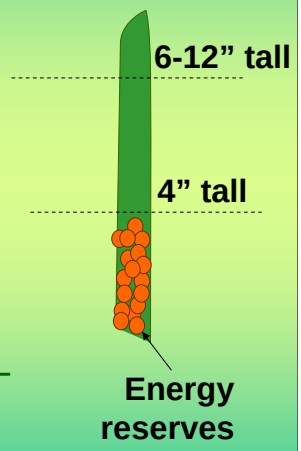
Lawns: Areas where the horses will graze. **Roughs**: Areas your horses use as their toilets. Horses think it's gross to graze in roughs. They will only do so if there is no other grass available. If you see your horses grazing in roughs, your pastures have been overgrazed and it's time for renovation!

If there is a drought, followed by lots of rain, new grass will grow. Horses can get hives from this new grass. Wait 3 days before letting your horses back on the pastures. Keep an eye out on your horses, and if they are starting to get hives, pull them off immediately.

Weather changes: Horses have sensitive guts. Whenever there is new grass, whether after a drought or in the spring, and the horses have been out of the pasture for months, slowly let them get use to the new grass shoots. Let them graze only a couple of hours, and every week or so extend the grazing time. This will allow your horses' guts to get use to the new grass.

Controlled Grazing

- Rotationally graze pastures
  - Start grazing at 6-12”
  - Stop grazing at 4”
- Rotate horses to another pasture when “lawns” are grazed to 4”
- Rotate to sacrifice area if all fields need to rest and regrow– or if it’s wet



If the majority of the grasses in a field are less than 4” tall, then let that field rest. This is a general rule of thumb. Orchardgrass cannot be grazed below 4” or the horse will eat its energy reserves and the grass will die. Fescue keeps its energy reserves closer to the ground, so it can be grazed to about 3”. If you don’t know when to let your pastures rest, take the horses off the field and let it rest. It is better to be safe than having to completely renovate your field.

Grasses, Fertilizer, and Weed Control

- What grass seed should I plant?
  - Kentucky 31 Tall Fescue
  - Kentucky Bluegrass
  - Orchardgrass
  - Bermudagrass
  - Rye Grass
  - Clover
- How much fertilizer do I put down?
  - Take a soil sample to find out! (Contact your local extension agent or soil and water conservation district)
- Do I need herbicides for my weeds?
  - Depends on weeds, type, and amount, and your goals; natural methods and prevention is always best

Select a grass that would be good for your area. Contact your local soil and water conservation district or cooperative extension for recommendations on what grasses to plant.

Plant Needs

- Rain
- Sunlight
- Healthy Soil
- Time to…GROW

Rain & Sunlight

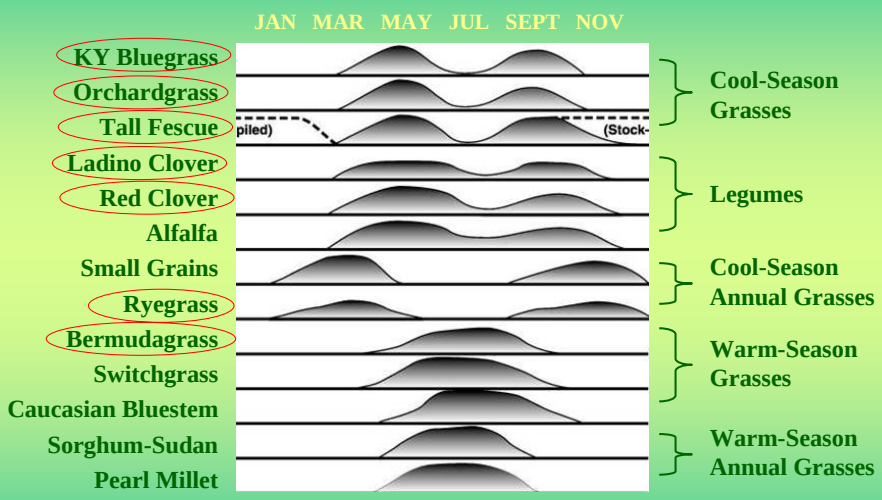
- Absolutely necessary but totally out of our control (unless you can irrigate your pastures)

Grasses

Common Grasses

- Kentucky 31 Tall Fescue
- Kentucky Bluegrass
- Orchardgrass
- Bermudagrass
- Rye Grass
- Clover
  - Red Clover
  - White (Dutch or Ladino)

Growth Curves for Common Forages



Adapted from Controlled Grazing of Virginia's Pastures, Publication 418-012

Common Grasses

- Kentucky 31 Tall Fescue
  - Cool-season Perennial
  - Aggressive
  - Inexpensive
  - Tolerates wet and drought conditions
  - Tolerates some mismanagement
  - Not suitable for broodmares in late pregnancy
    - Endophyte concentrated in seed head gives “super” qualities to grass but makes it bad for pregnant mares
    - Prolonged gestation, lack of milk production, thick placenta, difficult birth…(publications available)
    - Alternative Fescues are available, Select Fescue and Max-Q Fescue

  - Less palatable than other grasses except in fall

Perennial: Grasses that will reseed themselves (if properly managed) **Annual**: Grasses that need to replanted every year.

For more information on grasses for horse pastures in Virginia, visit http://pubs.ext.vt.edu/418/418-102/418-102.html.

Double click pictures and click on the ‘Web’ tab for © information on the picture.

Common Grasses

- Kentucky Bluegrass
  - Cool-season Perennial
  - Sod-forming grass
  - Palatable
  - Tolerates some over grazing
  - Does not tolerate summer heat or drought; goes dormant in heat but will revive if not overgrazed

Common Grasses

- Orchardgrass
  - Cool-season Perennial
  - Palatable
  - Bunch-grass
  - Will not tolerant over grazing
  - Considered a short-lived perennial grass- meaning it has to be re-established every few years

Common Grasses

- Annual Rye grass
  - Cool-season Annual
  - Extremely Palatable
  - Has Shiny, smooth leaves
  - Can grow to 2-3’ tall
  - Can be ready to be grazed after 45-60 days of planting
  - Needs to be planted annually

Common Grasses

- Bermudagrass
  - Warm-season Perennial
  - Can tolerate over grazing
  - Does not like wet soils or frost
  - Should be closely grazed 1-2” and rest until 4-8”
  - Can be invasive

This is one grass that can be overgrazed. However, be careful as overgrazing and 24/7 grazing can still hurt and potentially kill the plant.

Clovers (aka Legumes)

- Red clover
  - Cool-season perennial (same for white)
  - Makes some horses slobber

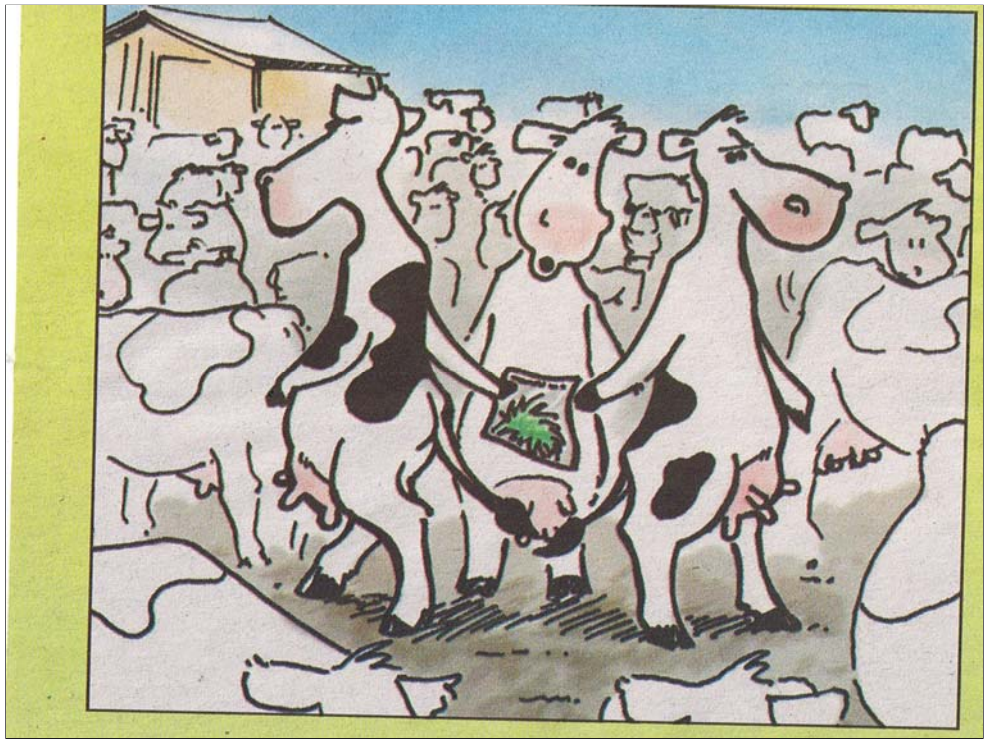
- White (Dutch or Ladino)
  - Too much is too rich; very palatable
  - If 25% of pasture forage is clover it will supply nitrogen (fertilizer) to plants
  - To take a pasture from 0 to 25% clover overseed 2-3 lbs. of seed per acre (seeds are tiny)

Clover takes nitrogen from the air and puts it in the soil. If 25% of your fields have clover, you do not need to apply nitrogen fertilizer.

The best time to plant clover is during the winter season when the land is continuously refreezing and re-thawing. This helps get the clover seeds deep into the ground. Because the seeds are so small, they should be spread by hand. If you use a seeder, you may wind up dumping the clover seeds in one spot!

Pasture Seeding Simplified

- Overseed 100 lbs of Kentucky 31 Tall Fescue per acre
- Wait 90-120 days to graze (when grass is 6-12” tall)
- Follow rules of good grazing
- Renovate/Overseed one pasture at a time
- Overseed clover during the winter season when the land is continuously refreezing and re-thawing, if clover is desired



Don’t let your Grass get Seed Heads!

- The life purpose of grass is to go to seed, repopulate, and die.
- Once grass goes to seed, its life is done and it will slow growing (easier for grazing to kill it)
- Mowing grass and preventing it from seeding will make the grass more aggressive
  - Thicker and healthier grass
  - More competitive against weeds

The picture is Orchardgrass gone to seed.

Fertilizer

- How much do you put down?
- Solution: Take a soil sample!
- Soil samples will tell you EXACTLY how much to put down, based on your soils
- The best time to fertilize:
  - After seeding, if establishing new grass
  - In the fall; cheaper, grass needs fertilizer to grow until winter

Fertilizer

- Fertilizers have three numbers
  - 10-10-10 (numbers vary)
  - N-P-K
  - Nitrogen-Phosphorus-Potassium
- Too little fertilizer: Grasses won't grow; waste of money
- Too much fertilizer: extra fertilizer washes off your property, pollutes local waterways, and wastes your money.

More is not always better!

Healthy Soil

- Apply fertilizers (commercial and/or manure/compost) according to soil test recommendations
- Add **lime**, if needed, to maintain pH of about 6.4
- Contact VA Cooperative Extension or your local Soil & Water Conservation District

Aerating the soil reduces compaction from hooves

Picture of aerator.

Weed Control

- Best weed control is healthy grass sod
- Kentucky 31 Fescue will outcompete most weeds
- After a grazing period, mow pastures to 4-6" to trim back mature, "stemmy," grasses and cut weeds before they produce seed
- As your pasture health improves, weeds will disappear

Common Chickweed
Picture from Virginia Tech

Mowing your fields while it's resting does two things. First, horses do not graze evenly. They pick their favorite spots depending on where their roughs are located, and what type of forage is available. Mowing helps even everything out. Mowing also helps make your grass more aggressive, as it is eager to get to seed.

Weed Control

- Pesticides can be used (most pesticides will kill clover)
- Seek expert assistance or reference tools
- Need to id the weed
- Apply the correct type and amount of chemical to be effective
- Read and follow label warnings for use
  - Grazing restrictions
  - Use near waterways, your well etc.

Selective Herbicides: Kills certain species (most herbicides will kill your clover!); usually safe for grass.

Non-selective Herbicides: Will kill everything, including your grass (i.e.: round-up).

Picture above is Southern States spraying the front field with herbicides. We did not spray the back field because we did not want to kill the clover. We chose to spray the front field because there were so many weeds, and we wanted to start from scratch. This spring we will be able to compare both fields and the different pasture management methods used.

Weed Control

- Plants must be actively growing to absorb pesticides
- No “recreational” pesticide use
  - usually occurs after weeds have produced seed, stopped growing, and will not absorb pesticide
  - wastes money

Putting it all Together on the Grant Farm

- Take a soil sample
- Choose seed
- Pesticides/herbicides
- Put down seed
  - No-till Drill
  - Disking (for compacted soils)
- Put down fertilizer (based on soil sample)
- 120 day waiting period before grazing

Front Field VS Back Field

- "Low-endophyte" Select Fescue
- Disking
- Herbicides applied
- Applied fall 2009

- Pasture Mix: Orchardgrass, Bluegrass, Fescue, Clover, Annual/Perennial Rye
- No-Till Drill
- No Herbicides
- Applied spring 2009

Pasture Mix: Kentucky 41 (endophyte-infected) Fescue, Orchardgrass, Bluegrass, Annual and Perennial Ryes, and Clover

Taking soil samples in back field with the auger.

Low-Endophyte Fescue

Tall Fescue alternative for the front field. Pasture mix used for back field; Pasture mix included: Kentucky 41 (endophyte-infected) Fescue, Orchardgrass, Bluegrass, Annual and Perennial Ryes, and Clover.

Applying **herbicides** in the front field. Herbicides were applied before seeding. No herbicides were applied for the back field.

Disking seed in the front field (ground too compact for No-till Drill) on Oct. 9, 2009.

Disking in the front field; look at the dust!

Front field after disking.

No-till Drill seeder in the back field.

No-till Drill seeder on the ground in back field.

Strips created by No-till Drill.

Seeding by hand (for bare/wet spots) in back field. Where there's bare soil, something will grow there. Make sure it's grass seed and not weeds!

Seeding in the buffer.

Broadcasting **fertilizer** and **lime** in the back field (after seeding). Same method used for front field.

When fertilizing, make sure you follow your soil test recommendations!

Be careful of fast acting lime. It is quicker to take effect, but it also wears off quickly, too.

Picture 1 (Before Seeding Before Fertilizer; 1/6/08): Back field before seeding on Jan. 6, 2008.

Picture 2 (After Seeding After Fertilizer; 5/14/09): Back field after seeding and after fertilizer on May 14, 2009.

Picture 3 (After Seeding After Fertilizer; 8/31/09): Back field after seeding and fertilizer on August 31, 2009 (about 110 days after fertilizer). Back field has weeds now due to seeds that did not grow and weed competition (weed seeds grew instead).

Picture 4: (3/1/10): Back field about one month after February 2010's big snow storm

Use a Sacrifice Area

- When plants need to rest and regrow from 4” to 6 -12” (with exception to Bermudagrass)
- When pastures are wet
- When reseeding a pasture (120 days) or applying fertilizer (until after rain)
- When horses are too fat
- Winter months – “If you’re not mowing, grass isn’t growing”


Sacrifice Area: Front

Sacrifice Area: Back

Even if your field is covered in snow, don't let your horses out. They can still dig through the snow and eat any grass shoots they can find. When the snow melts, your field will be nice and muddy!

If you planted annual rye grass, and the grass is clearly sticking out of the snow, you can graze, but be careful of overgrazing or the horses tearing up your grass.

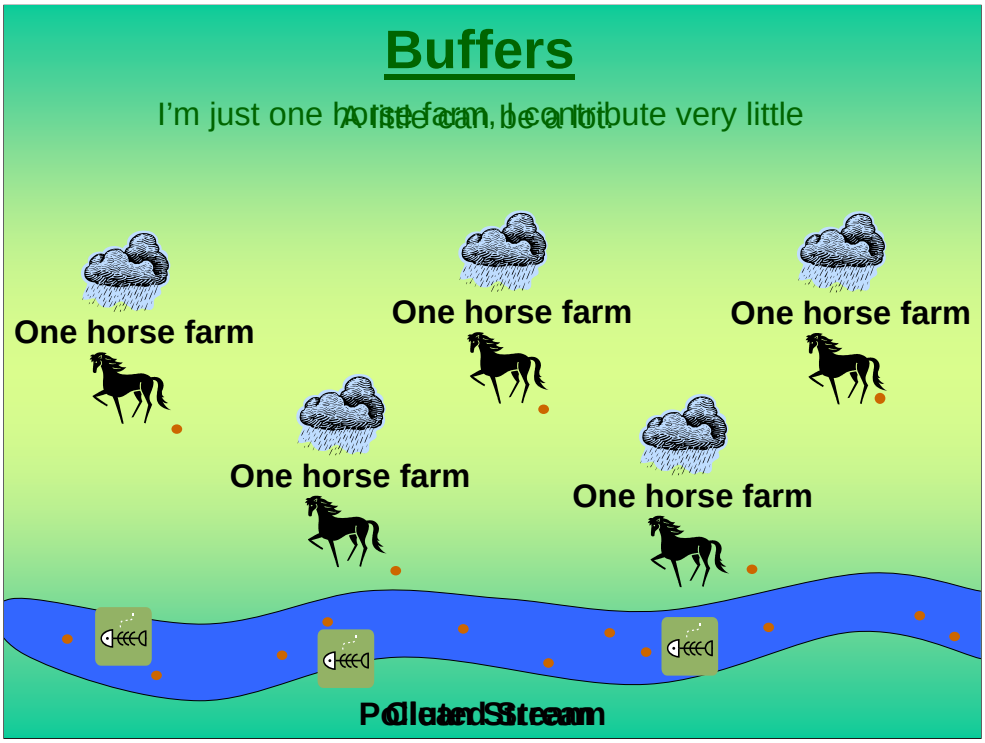
Buffers

- A buffer is strong vegetation surrounding a waterway
- Plants in the buffer absorb nutrients before they reach the waterway, decreasing pollution
- Pollution refers to an over abundance of nutrients from:
  - Horse manure
  - Erosion (Loose Soil)
  - Over-applying Fertilizer and/or Pesticides

Extra nutrients and sediments that make it to our waterways can choke aquatic animals living there. The sediments also cloud the water, preventing sunlight from reaching aquatic plants and killing them as well.

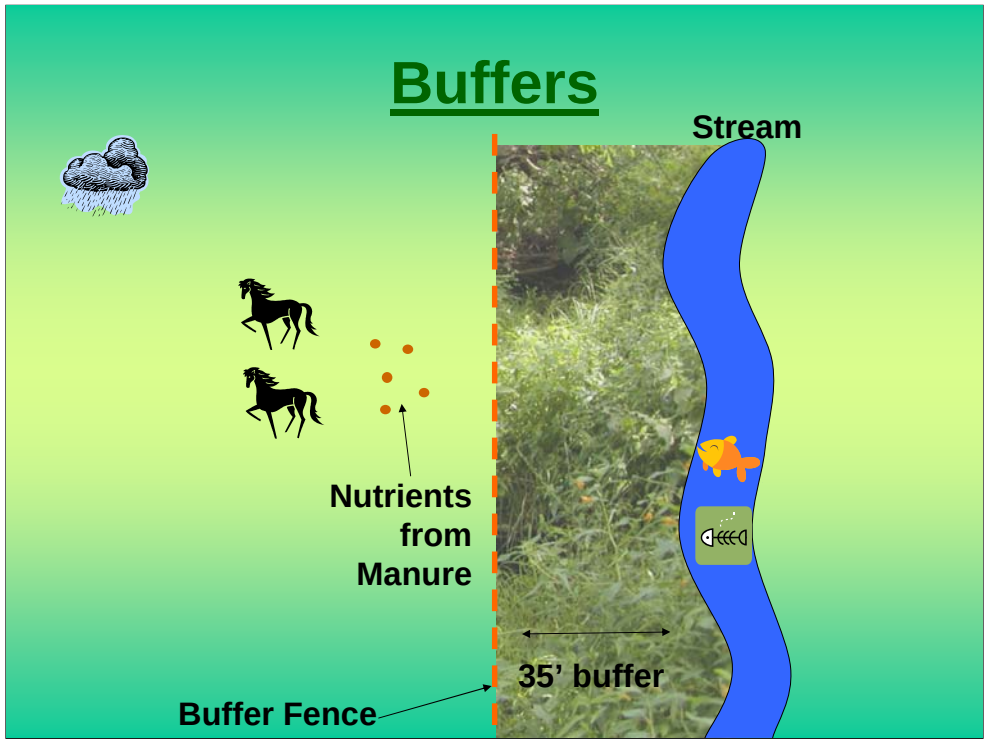
Buffers, an important component of you pasture system

- Horses alone can pollute a stream in many ways:
  - Defecating in or near the stream
  - Erosion from horses hooves
  - Overgrazing plants by stream
- A vegetated buffer helps prevent the above
- Horses must be fenced out of the buffer for it to be effective
- See next 2 slides for demonstrations



Every horse farm has an impact on our environment, whether you have a stream on your property or not. The little differences we make add up to larger positive changes to our environment!

Whether or not you have a waterway on/near your property, remember that nutrients from horse manure, fertilizer, and soil erosion that wash off your property goes somewhere, whether it's a stream, stormwater drain and towards a stream further away, or your neighbor's property/pond. Keep in mind that the decisions you make on your property can affect other peoples properties, and the environment, as well.



Buffer plants help absorb nutrients that wash off your property, decreasing the chances of these nutrients entering the waterway.

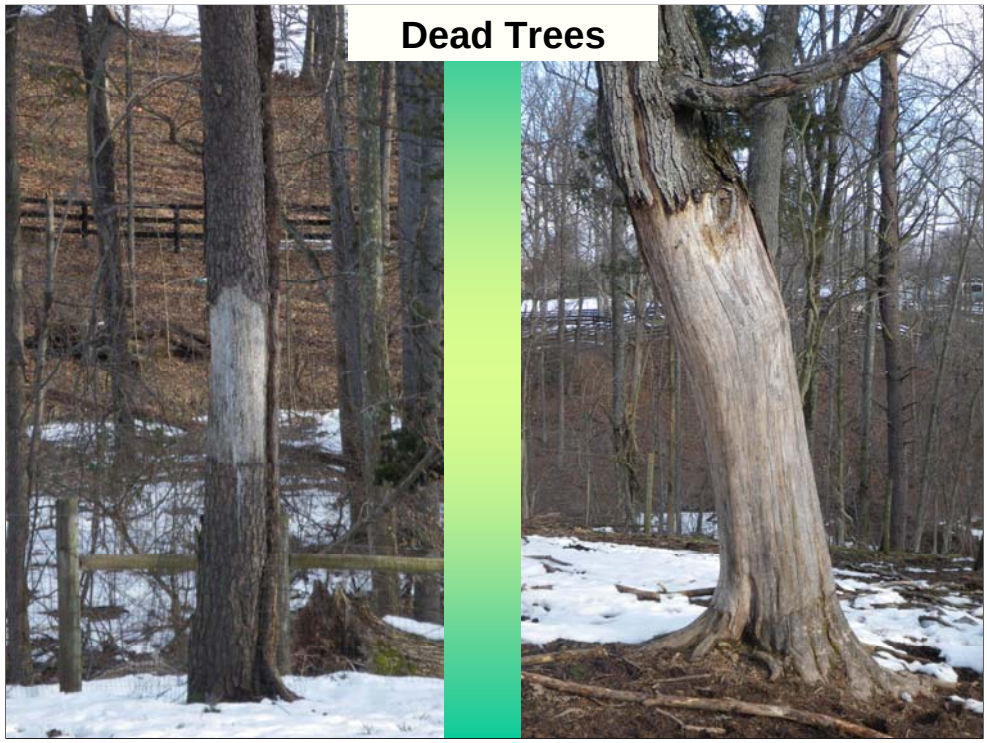
Keeping a strong vegetated buffer is important, but you must fence your horses outside of the buffer. Otherwise, the horses will graze down the buffer, making it ineffective. Do not mow the buffer! The thicker and stronger the buffer, the more nutrients will be absorbed. Only mow under your fence *if* you are preventing plants from grounding out your electric fence (*if* you have one); for more information on grounding, see below under ‘Fencing’.


Buffered
waterway

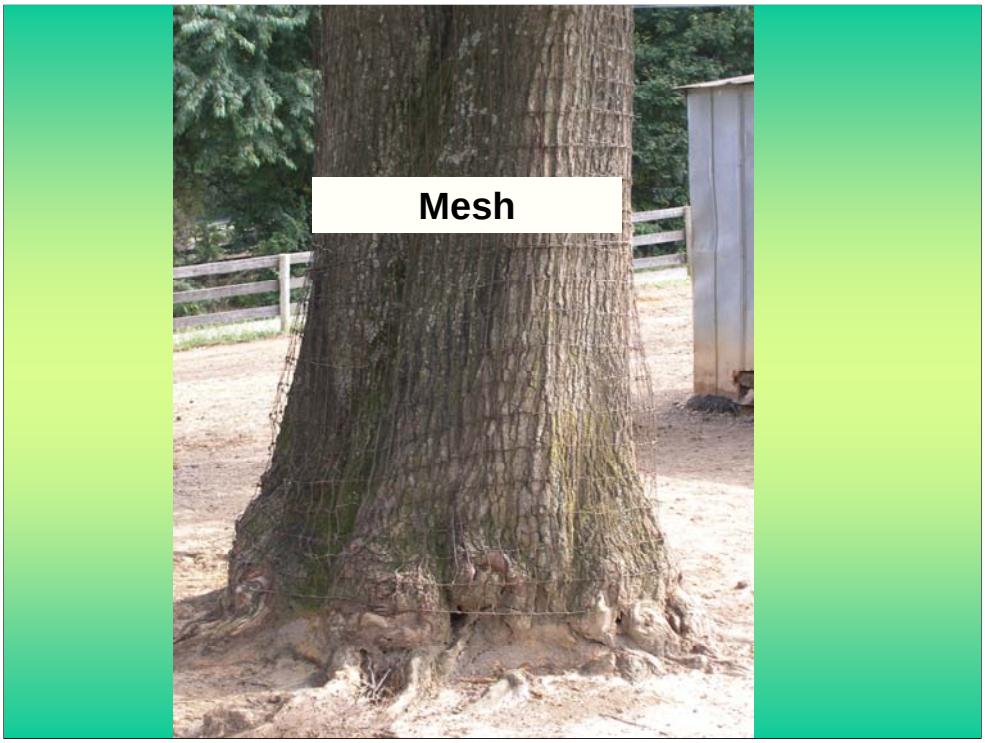
Tree Protection

- Protect your trees before your horses kill them!:
  - Bark stripping
  - Repeated trampling over roots
- Horses like to eat the barks of trees:
  - As a natural way to detoxify their bodies
  - Out of boredom

Dead Trees



The bark has been stripped by the horses, leaving the trees dying/dead.



The mesh protects the bark, but not the roots. In this picture, the roots are exposed (due to compaction of the horses and erosion; the horses have also been chewing at the bottom of the tree not covered by the mesh), and the tree can still die. You can put large rocks and stones around the tree to make a horse-safe border.

Notice the stones on the bottom left corner. This helps keep the horses away from the tree. Be careful about wires. Sometimes horses can scratch and injure themselves on them.

The fence on this tree should work fine due to the maturity of the tree and size of the field (it is a healthy pasture). However, if this tree was in a smaller field, or if the pasture was overgrazed, the horses could still trample its roots and severely damage, or kill, the tree. IF you have trees you want to protect, fence them out of your pastures.

Fencing Types

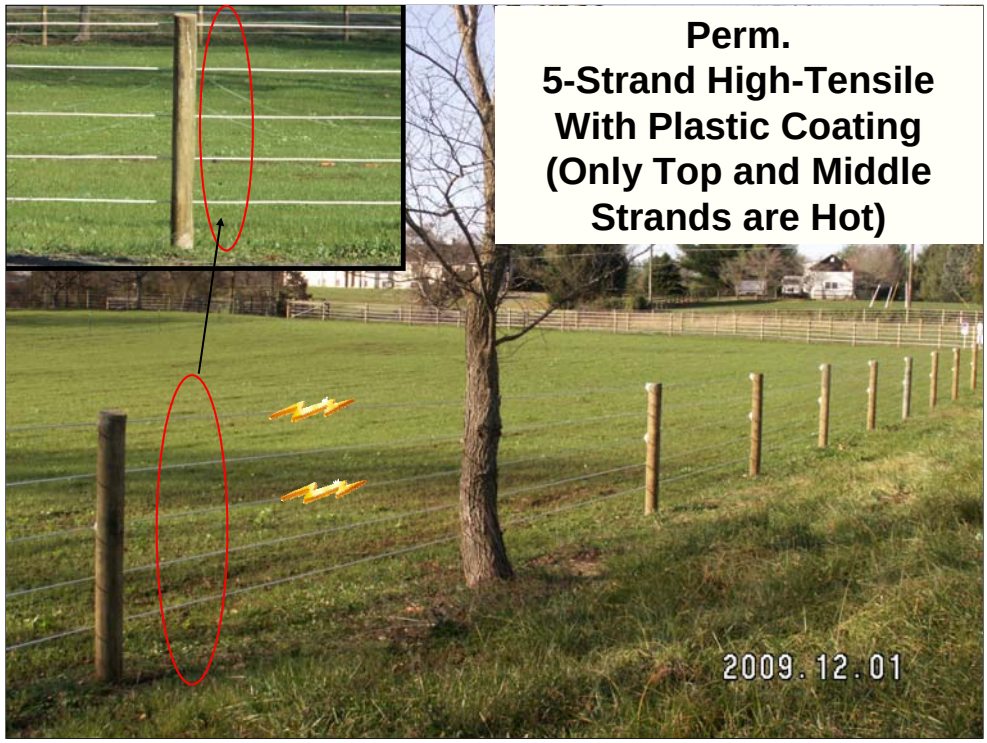
- Perimeter & Interior
  - –Perimeter defines outer boundaries
    - Usually permanent
  - –Interior defines individual grazing areas for rotational grazing
    - May be temporary or permanent

Permanent: Fencing that cannot easily be moved. This includes wood board fencing, and sometimes electric (if it cannot be moved). Permanent fencing should be used for perimeter fencing, buffer fencing, and sacrifice areas (permanent fencing for sacrifice areas are optional; depending on your property).

Temporary: Fencing that can be moved easily; most types of electric fencing are on posts that can be pulled out of the ground and moved without difficulty.

Original perimeter fencing for the grant farm.

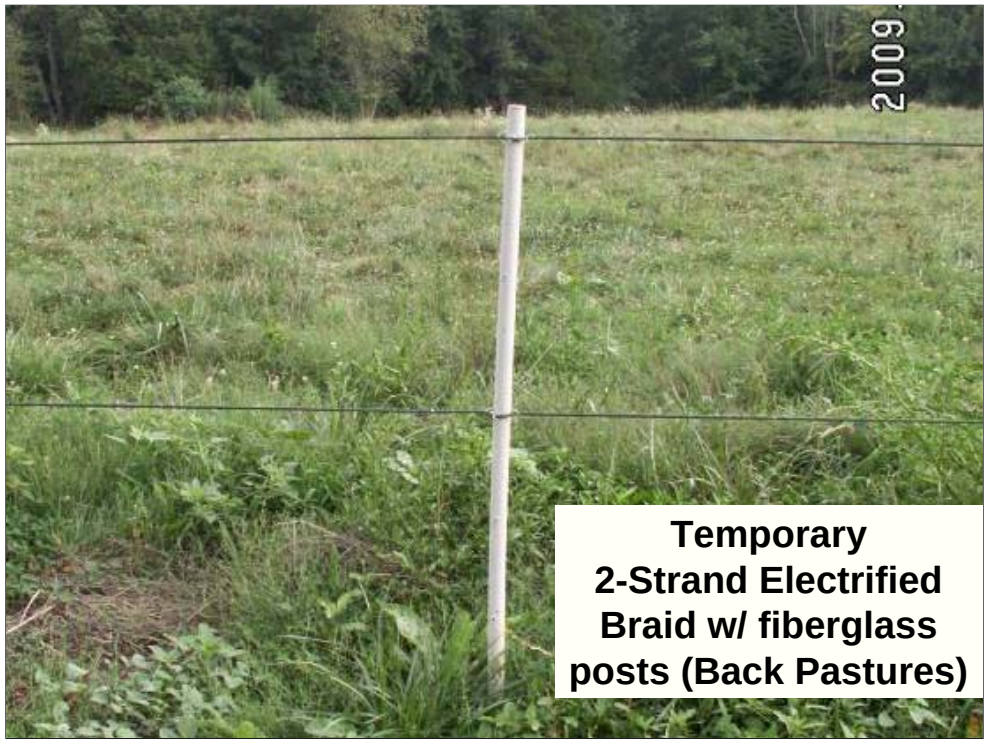
A strong fence keeps the horses in their sacrifice area with little concern of them escaping.



Not all the strands need to be hot. The top strand needs to be hot so the horses do not try to graze on the other side of the fence, and a middle strand to prevent the horses from trying to step through the fence.

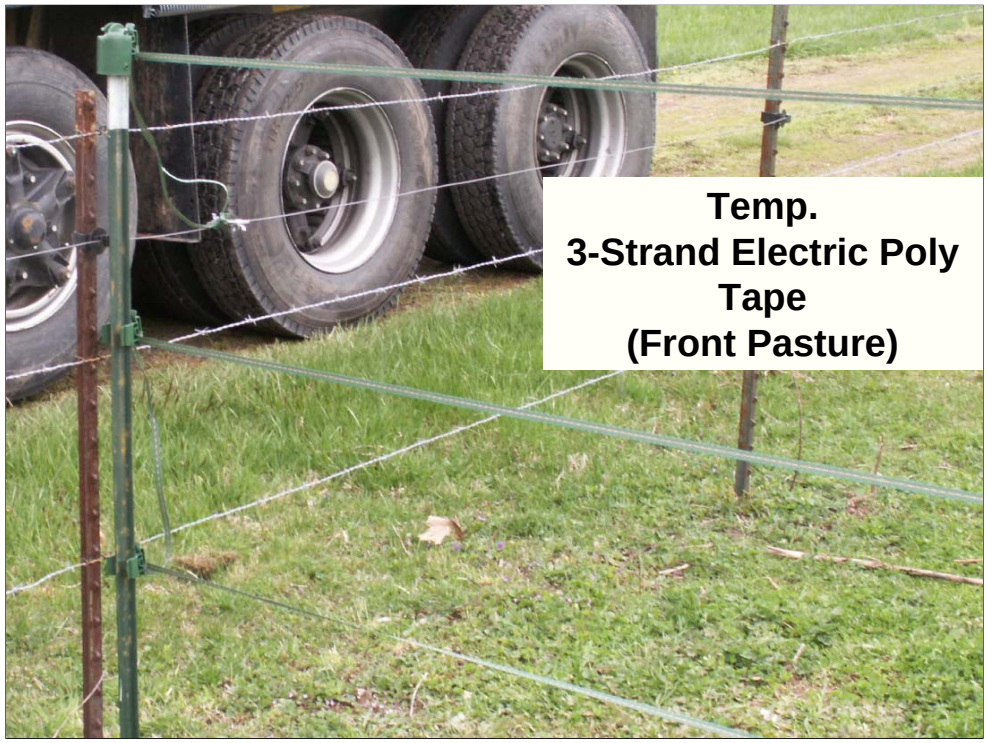
Perm.
Wood Board and 2-Strand Electrified Braid (Buffer)

This is a combination of different fencing. We do not want the horses to get in the buffer, so we need something strong to keep them out, but we want to be cost-effective as well. Wood board fencing is more expensive than electric fencing. Therefore, instead of using all wood-fencing we used part electric fencing as well. The board is a strong physical barrier to keep the horses out. The two strands of electrified braid is a mental barrier. The two strands of electrified braid are hot. The horses know that the fence is hot, and will avoid the fence.



This was three strands, but the grasses/weeds kept grounding out the electricity (see below for more information on ‘grounding’). Two strands work fine. Both strands are hot, so the horses know well enough to stay away from it.

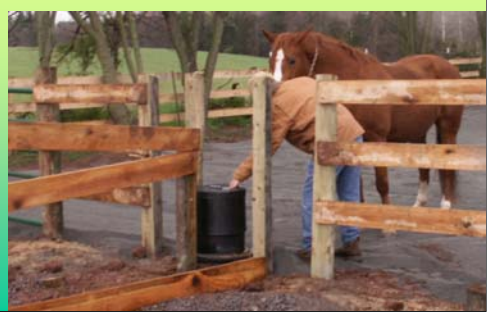
The posts are made of fiberglass. Fiberglass is flexible, so if the horses run into them, the fence will give a little. Unfortunately, they are hard to install because of their flexibility and the clayey soils. Notice in the picture the post is bending towards the right.



All three strands of poly-tape are hot. If a horse accidently gets caught up in the fence, the tape will break easily allowing the horse to get away with minimal harm. The tape is also easy to repair.

Walkthroughs

- A walkthrough is a space in the fence line big enough for a person, but not a horse
- Easy to install in fence line
- Less need to open up gates



It's easier to plan where you want your walkthroughs ahead of time, but you can make walkthroughs in an existing fence as well.

Picture to the left: Instead of having to open up this gate, a person can just go through the walkthrough.

Picture to the right: These two walkthroughs lead from the front sacrifice area to one of the two rotational grazing fields.

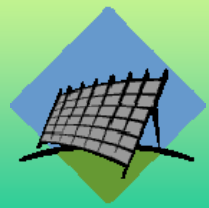
Electric fences are not physical barriers, but mental barriers. Once horses know the fence is hot, they will typically avoid it. At the same time, be careful of plants or other objects grounding out your electric fence. Anything that touches the ground and the fence at the same time will ground out the electricity. Therefore, the fence will not be as effective, as it no longer poses a threat to the horses. If the horses figure out the fence is no longer hot, you could have horses on the loose!

Chargers

- How do you keep the fences hot?
- Chargers of course!

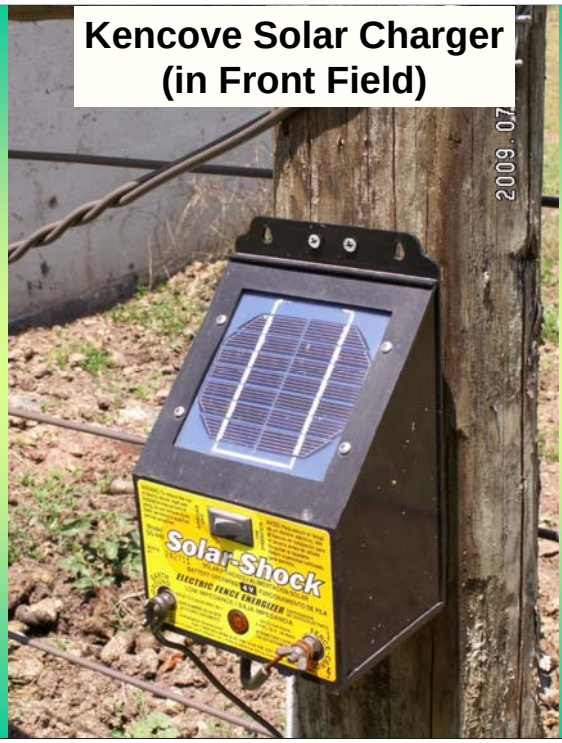
But not just any chargers…

Solar Chargers!



Solar panels are small, cost-effective, and fairly easy to set up. Keep the charger on so your fence stays on!

Kencove Solar Charger (in Front Field)



Southern States Solar Charger (Front field)

There are two solar chargers in the front field. Kencove is located by the barn and charges the perimeter and interior fencing in the front field. The Southern States charger is used for a section of pasture that is not connected to the main fence, and therefore needed a separate charger.

Gallagher
Solar Charger
(Back Field)

Chargers

- Make sure chargers are pointed towards the sun
- Do not have charger in the shade (less effective)
- Make sure chargers are on post securely

Your fence should still be hot on a cloudy day.

Gates

- **What Size? Where?**
- **Consider size; must be big enough (12-14'):**
  - **For hay delivery vehicle**
  - **Farrier vehicle**
  - **Manure removal vehicle lime/fert. trucks**
  - **Dump trucks (for adding or replenishing gravel in sacrifice area)**
- **Where to put it:**
  - **Near driveway/access roads**
  - **Between fields**
  - **By waterway (for human access or trail riding only (not for grazing!); can be substituted by a walkthrough)**

With electric interior fencing, you don't need a solid gate. The tape/rope can have hooks. If you want to cross to the other field, take the tape/rope off of the hooks, and you got an electric free walkway. Only do this if you are moving your horses, or if you need access to the other field (keep practicing rotational grazing!).

This is a huge truck! When considering size and placement of your gates, think about how these trucks will get through your gate, and how they will get back out. Don’t forget to make sure your gates are big enough!

Installing 14’ gate in back sacrifice area. Gate leads to driveway.

Gate in back field from sacrifice area to rotational grazing field.

Gates from front sacrifice area to front fields.

These gates in the front field can swing to form a chute so the horses can cross the driveway and into the field on the other side. (This pasture is not connected to the main pastures in the front field.) You can also move the gates so the driveway is open to vehicles. When installing a chute, make sure your gates can move in both directions!

Gate by buffer and stream channel. This gate is small because vehicles will not be going through it, and horses will not be going through it, either. This gate is for humans only!

Gate between front sacrifice area and driveway. One of the original gates on the property.

Be creative!

Water Trough Types

- Portable – can easily move
- Permanent
- Automatic Permanent

- **Not a waterway!!**

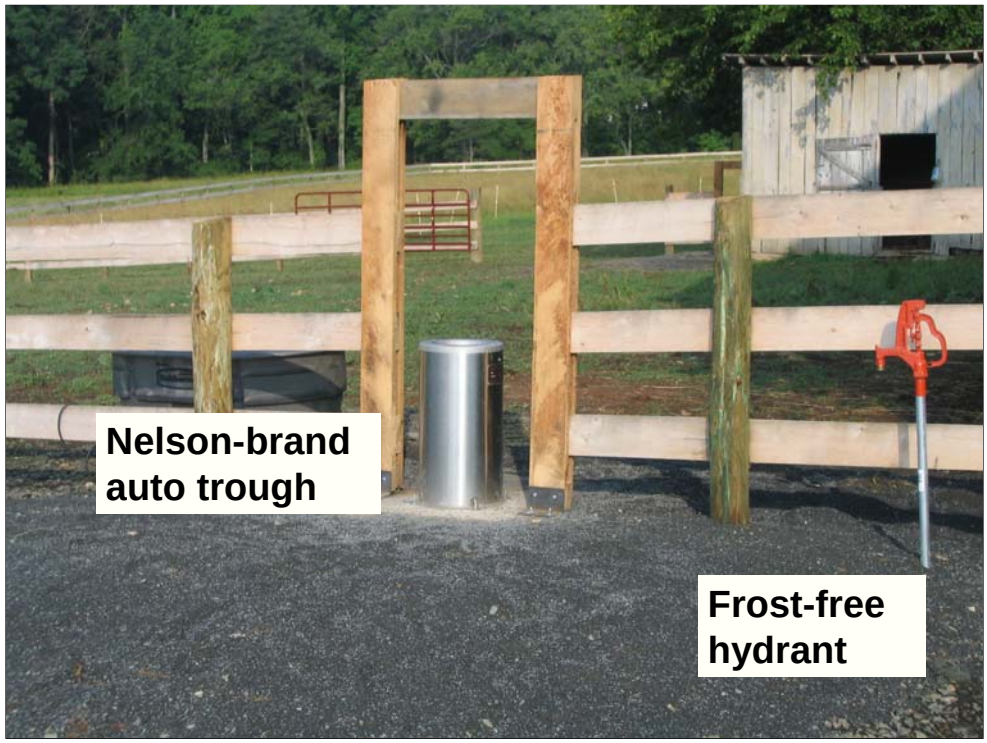
Make sure the hydrant is outside of the pasture, so your horses do not accidently hang themselves on it. If you do have a hydrant in your pasture, it's a good idea to have a post right next to it. The post can help protect the hydrant from the horses.

If you lose power, your water trough and hydrant will no longer work. This is because your trough/hydrant are dependent on your well, and your well pump is electric. No electricity means you'll have to water your horses manually, unless you have a generator for your well pump. Keep that in mind.

Good idea, but needs to be cleaned more regularly.

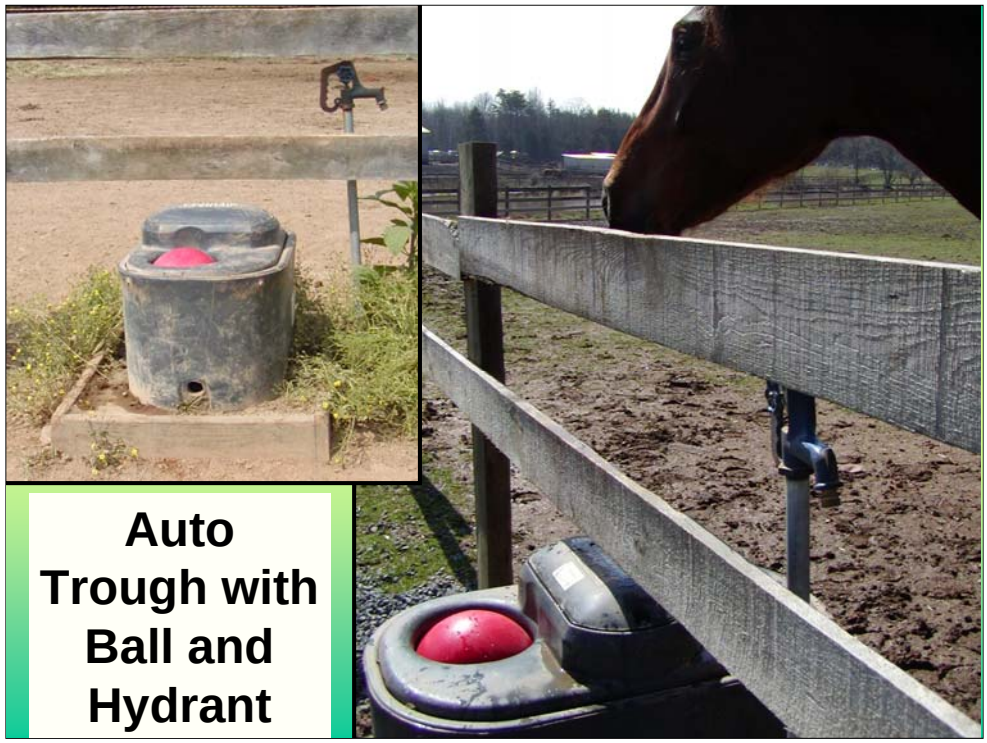
Bar-Bar-A in the snow

Bar-Bar-A is a good automatic trough to use if electricity is hard to access. It is also cheaper in the long run, as electricity does not need to be installed. This trough works on gravity. There is no sitting water in the bowl, so No Standing Water = No Mosquito Breeding Habitat! Water comes out when the horses push the pedal. Note that the water trough is in the fence line. This was chosen so that the horses have access to water no matter what field they are in, or if they are in the sacrifice area.



Nelson requires electricity. It is similar to Bar-Bar-A. Easy to clean the bowl. Notice the wood board above the trough. This helps prevent the horses from trying to step over the trough.

Works like a toilet bowl; automatically refills with water. Horses can drink from both sides. This model has been known to rust and is hard to clean. Can have mosquito problems due to sitting water. Ritchie's water troughs have been redesigned since this one was installed. You will need a concrete pad for Ritchie and Nelson water troughs (notice the concrete pad above).



Auto Trough with Ball and Hydrant

Horses push ball to get to water. The ball protects the water from insects and other small animals. If the water freezes, the horse can break the ice by pushing the ball down. This trough has a ball on both sides, so the horses have access no matter what side of the fence they are turned out on. Horses have been known to paw at the ball and get their hooves caught up in the trough, and breaking the ball when chewing on it.

This should not be your source of water! Not just from an environmental stand point, but this water is not clean and gives your horses a higher potential of picking up parasites.

Summary

- **Stocking Rates**: Do not have more horses than your land can handle. More horses = more time in the sacrifice area
- **Rotational Grazing; Control Grazing**: Have more than one field for your horses to graze; when grass is less than 4" tall, let fields rest for 90-120 days until grass is 6-12" tall. Mow fields.
- **Grasses, Fertilizer, and Weed Control**: Pick the right grass for you: Fescue, Bluegrass, Orchardgrass, Ladino Clover. Take soil samples. Identify weeds and find appropriate ways to control them.
- **Sacrifice Areas**: Use when fields are resting, grass isn't growing (winter time), and when the pastures are wet.
- **Buffers**: Protect your waterways!
- **Tree Protection**: Protect your trees from being abused/killed by your horses.
- **Fencing Types**: Pick a type that best meets your needs: Wood, High Tensile, or Electric Tape/Braid.
- **Gates**: Know the purpose of your gates, size you'll need, and location
- **Water Trough Types**: Pick a water trough that best meets your needs: Temporary, Permanent, and Permanent Automatic.

Questions?

Nelson checking out CC, who’s peaking through the door.