
Wilson Land & Cattle Co.


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1/16/2021


More Pasture
Less Inputs

Wilson Land & Cattle Co.

is 220-acre small family farm w/130 acres owned and 15 acres leased pastured with multi-
species of livestock (Cattle, Sheep, Goats, Equine, Hogs and Custom Grazing). Using adaptive management. Keeping livestock on pasture more than 300 days per year. We are a low input farm, using innovative farming techniques, reducing inputs by utilizing our livestock, and keeping soil covered year around to keep livestock, forages, and below ground livestock healthy.

Low Input requires higher level of Management

SET GOALS !!!!!

KEEP IT SIMPLE !!!!!!

PLANNING

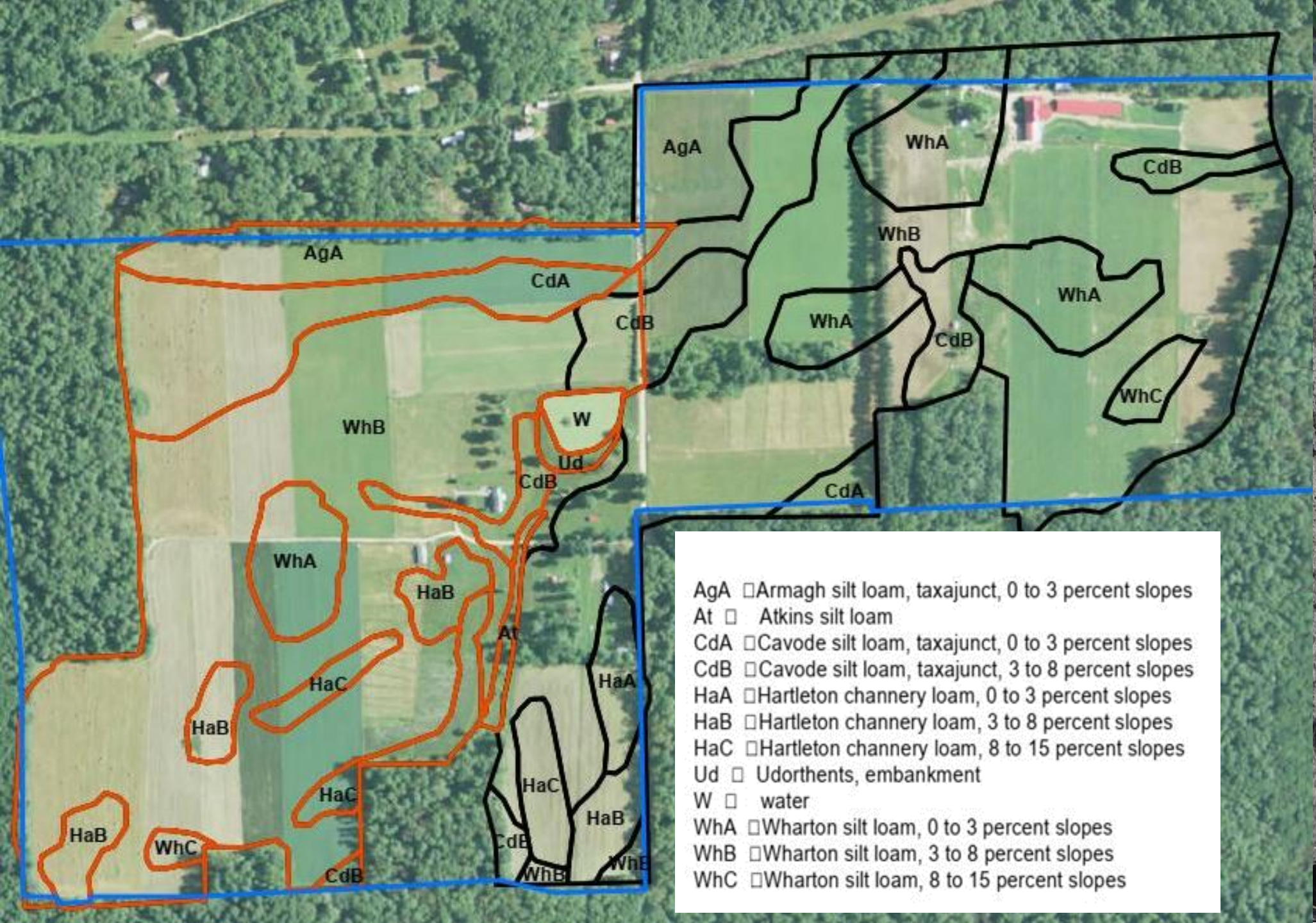
GOOD RECORD KEEPING

LOW STRESS

Improving soil health and profitability with grazing

Principles

Adapt Livestock to their environment



AgA Armagh silt loam, taxajunct, 0 to 3 percent slopes
At Atkins silt loam
CdA Cavode silt loam, taxajunct, 0 to 3 percent slopes
CdB Cavode silt loam, taxajunct, 3 to 8 percent slopes
HaA Hartleton channery loam, 0 to 3 percent slopes
HaB Hartleton channery loam, 3 to 8 percent slopes
HaC Hartleton channery loam, 8 to 15 percent slopes
Ud Udorthents, embankment
W water
WhA Wharton silt loam, 0 to 3 percent slopes
WhB Wharton silt loam, 3 to 8 percent slopes
WhC Wharton silt loam, 8 to 15 percent slopes

Wilson Land and Cattle West

Farm: 150 Tract: 147

Customer: Wilson Land and Cattle
Agency: USDA NRCS
Office: Clarion Field Office
Created On: 2/22/2017
Created By: Gregory Cain

0 125 250 500 750 1,000 Feet

USDA

Wilson Land and Cattle East

Farm: 150 Tract: 147

Customer: Wilson Land and Cattle
Agency: USDA NRCS
Office: Clarion Field Office
Created On: 12/22/2016
Created By: Gregory Cain

0 125 250 500 750 1,000 Feet

USDA

Wilson Land and Cattle East

Farm: 150 Tract: 147

Customer: Wilson Land and Cattle
Agency: USDA NRCS
Office: Clarion Field Office
Created On: 12/22/2016
Created By: Gregory Cain

0 125 250 500 750 1,000 Feet

USDA

Wilson Land and Cattle West

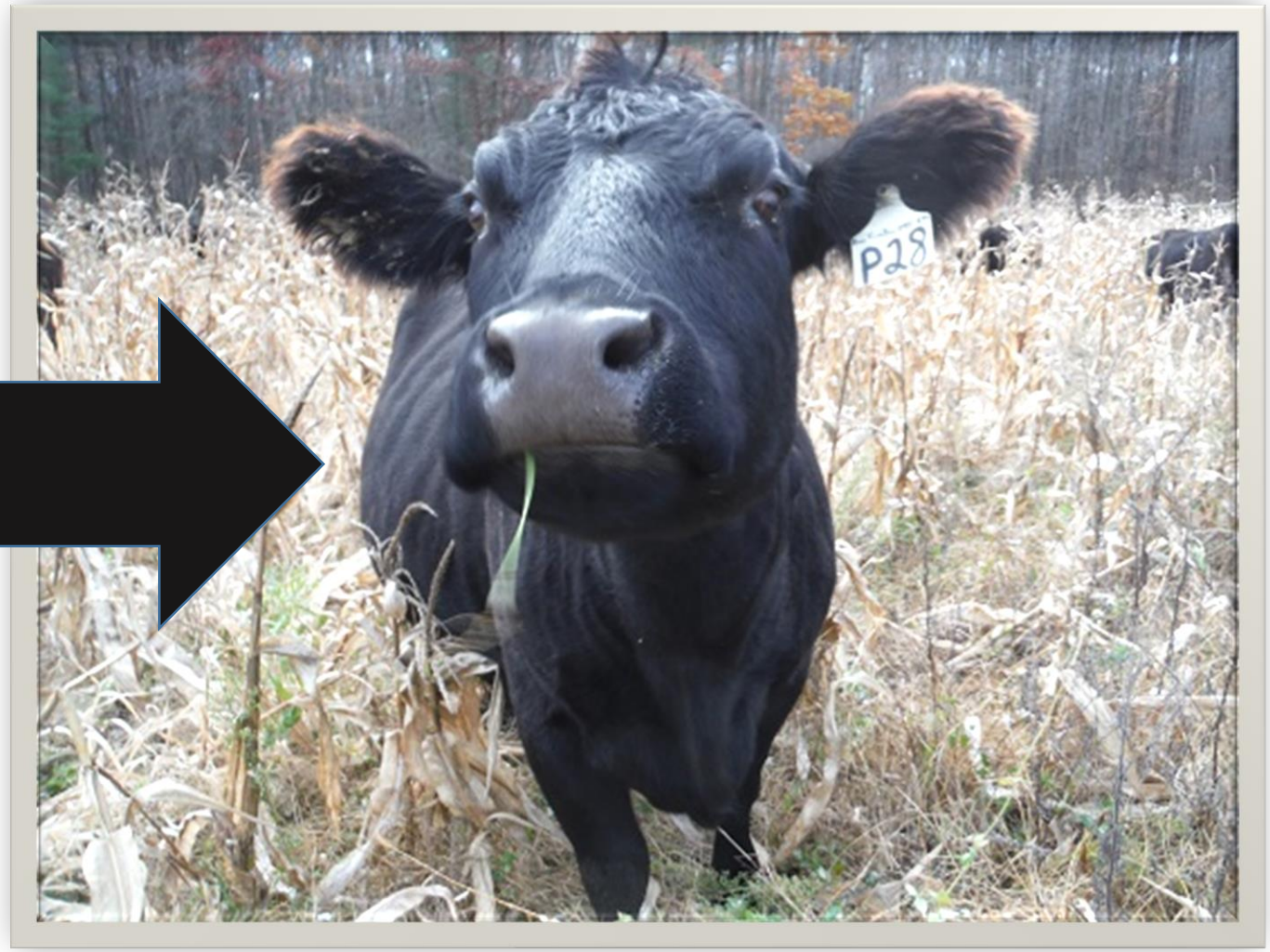
Farm: 150 Tract: 147

Lease Farm 1 ½ miles

Management

1. 180 days of grass growing season
2. 185 days of non-growing season

She is not the manager!



2012

Cow-Calf Operation Inputs

1. **Stored Feed Cost 52.2%**
2. **Depreciation Cost 12.2%**
3. **Operating Cost 5.1%**
4. **Calf Price 3.2%**
5. **Calf Weight 2.4%**
6. **Capital Charge 1.4%**
7. **Weaning Percentage 1.2%**
8. **Herd Size 1.7%**
9. **All Others Combined 20.6%**

Source: 2001 Beef Research Report – Iowa State University

WLC Grazing Calendar Runs 4/1 - 3/31

2011	120 grazing days	7-14 day rotation	**45 animal units**
2013	212 grazing days	1 day rotation	60 animal units
2014	297 grazing days	2-4 times per day	70 animal units
2015	267 grazing days	2-10 times per day	110 animal units
2016	294 grazing days	2-9 times per day	**90 animal units**
2017	317 grazing days	1-10 times per day	75 animal units
2018	**343** grazing days	4days-10 per day	75 animal units
2019	331 grazing days	4 days -10 per day	80 animal units
2020	307 grazing days	1 day -10 per day	85 animal units

Seven-year average 308 Days

WLC Grazing Calendar Runs 4/1 - 3/31

2011 120 grazing days 7-14 day rotation

45 animal units

- 3500 gallon diesel fuel
- $2400 1 pallet plastic wrap
- $26,000 Fertilizer

2016 294 grazing days 2-9 times per day

90 animal units

- **200 gallon diesel fuel**

Fertility Removed by Grazing vs. Haying

		Pounds of nutrients removed per acre		
		Nitrogen	Phosphorous	Potassium
By **Grazing** when	125 lbs*	4.5	2.2	0.3
pounds of beef/acre	250 lbs	9.0	4.5	0.7
removed	500 lbs	18.0	9.0	1.0
By **Haying** when tons	2 Tons*	100	20	80
of hay/acre removed	4 Ton	200	40	160
	8 Ton	400	80	320

* Approximately, 125 lbs beef/acre removed = 2 Tons/acre of hay removed when;

daily gain = 1.8 lb/ day, intake = 3% of body weight/day and grazing efficiency = 30-35%.

Source USDA-NRCS Soil & Pasture Health Guide

Wilson Land & Cattle Co.

Carbohydrates and Plant Growth

Carbohydrates:

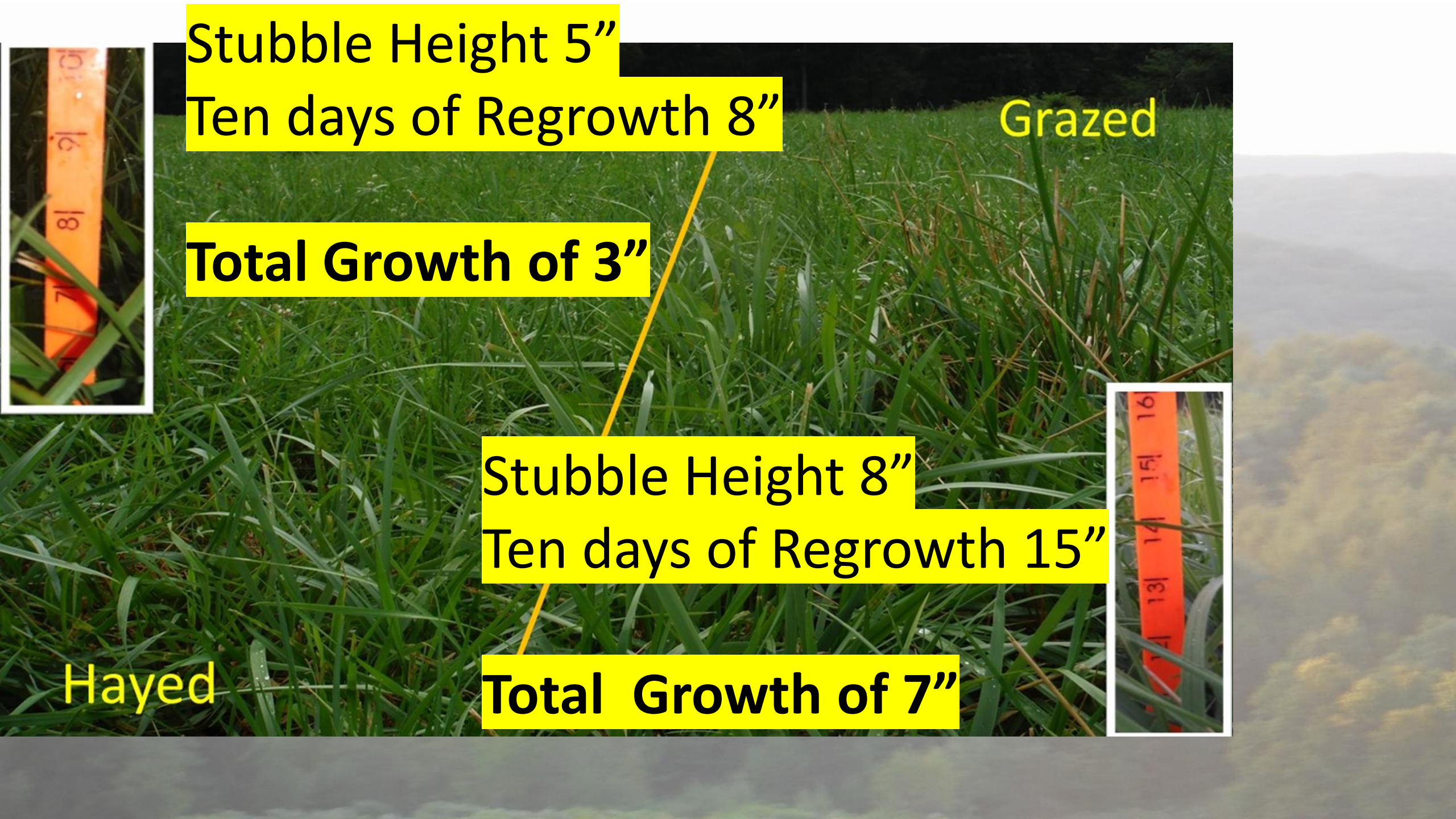
- energy - sugars and starches;
  structural-proteins, lipids, cellulose & lignin.

Used for:

- - Growth of leaves, stems and seeds
- - Root growth and replacement
- - Bud formation – precursor to new shoots
- - Respiration during dormancy and at night

For the plant to remain productive, **photosynthesis must first to feed the plant** before it can feed livestock


Grazed
Hayed


Stubble Height 5”
Ten days of Regrowth 8”
Grazed
Total Growth of 3”
Stubble Height 8”
Ten days of Regrowth 15”
Hayed
Total Growth of 7”

It takes Grass

To make Grass

Take Half

Leave Half

Consider that the plant is denser at the base

Leaf Defoliation and Root Growth Stoppage

Percent leaf Volume removed	Percent root Growth stopped
10%	0%
20%	0%
30%	0%
40%	0%
50%	2-4%
60%	50%
70%	78%
80%	100%
90%	100%

Fig. 4. Root growth of bunchgrass plants clipped at to target heights to simulate grazing (http://managingwholes.com/new-topsoil.htm).

The classic table of leaf defoliation and root growth stoppage

Source: Crider, 1955

• High Stock Density Rotational Grazing

- A smaller amount of living system disturbance
- Faster nutrient recycling
- Reduced amount of erosion
- Less time caring for livestock
- Livestock are healthier

Why use High Stock Density Rotational Grazing?

We mimic nature by keeping the livestock moving

Soil Nutrient Recycling


Soil Nutrient Recycling
800,000 pounds pre acre


300,000 lb. Stock
Density
Per Acre
6/25/2015 13:53

High Stock Density Grazing

Livestock compete for the available forages

Forage Tests

Species	Sample Date	Crude Protein	ADF	RFQ
Alfalfa Hay half bloom	Grade 2	14-16	36-40	124-103
New England Aster	9/16/16	24.5	25.1	205
Grass Leaf Golden Rod	9/2/16	19.9	29.9	137
Shallow Sedge	8/19/16	17.8	34.6	117
Deer Tongue	7/18/16	24	30.2	126
Velvet Grass	5/07/13	32.8	24.7	179

Wild Bergamot Pollinator

Multi-functional Native Pasture Mix

A collaborative effort of

Wilson Land & Cattle Co.

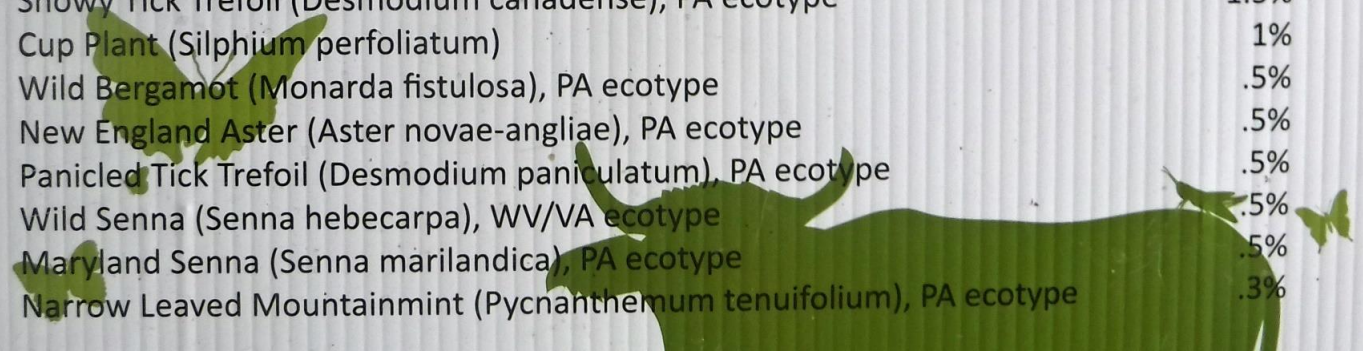
and

Ernst Conservation Seeds

This experimental test plot has a goal of balancing livestock pasture & forage needs with improvement of soil health and pollinator forage/habitat improvement. Many of the native forbs in the mix have a proven value to pollinators; while the addition of forage-proven native grasses and forbs is expected to bring a viable livestock pasture function into a productive system.

Following is a list of species components, and their respective percentages:

Big Bluestem (Andropogon gerardii), "Niagara" variety	20%
Big Bluestem (Andropogon gerardii), "Prairie View" variety	20%
Virginia Wildrye (Elymus virginicus), PA ecotype	15%
Switchgrass (Panicum virgatum), "Shawnee" variety	14.5%
Coastal Panicgrass (Panicum amarum), "Atlantic" variety	10%
Indiangrass (Sorghastrum nutans), PA ecotype	10%
Partridge Pea (Chamaecrista fasciculate), PA ecotype	3%
Ox-Eye Sunflower (Heliopsis helianthoides), PA ecotype	2.2%
Showy Tick Trefoil (Desmodium canadense), PA ecotype	1.5%
Cup Plant (Silphium perfoliatum)	1%
Wild Bergamot (Monarda fistulosa), PA ecotype	.5%
New England Aster (Aster novae-angliae), PA ecotype	.5%
Panicled Tick Trefoil (Desmodium paniculatum), PA ecotype	.5%
Wild Senna (Senna hebecarpa), WV/VA ecotype	.5%
Maryland Senna (Senna marilandica), PA ecotype	.5%
Narrow Leaved Mountainmint (Pycnanthemum tenuifolium), PA ecotype	.3%



1st Graze

2 tons Dry Matter

2nd Graze

4.5 tons Dry Matter

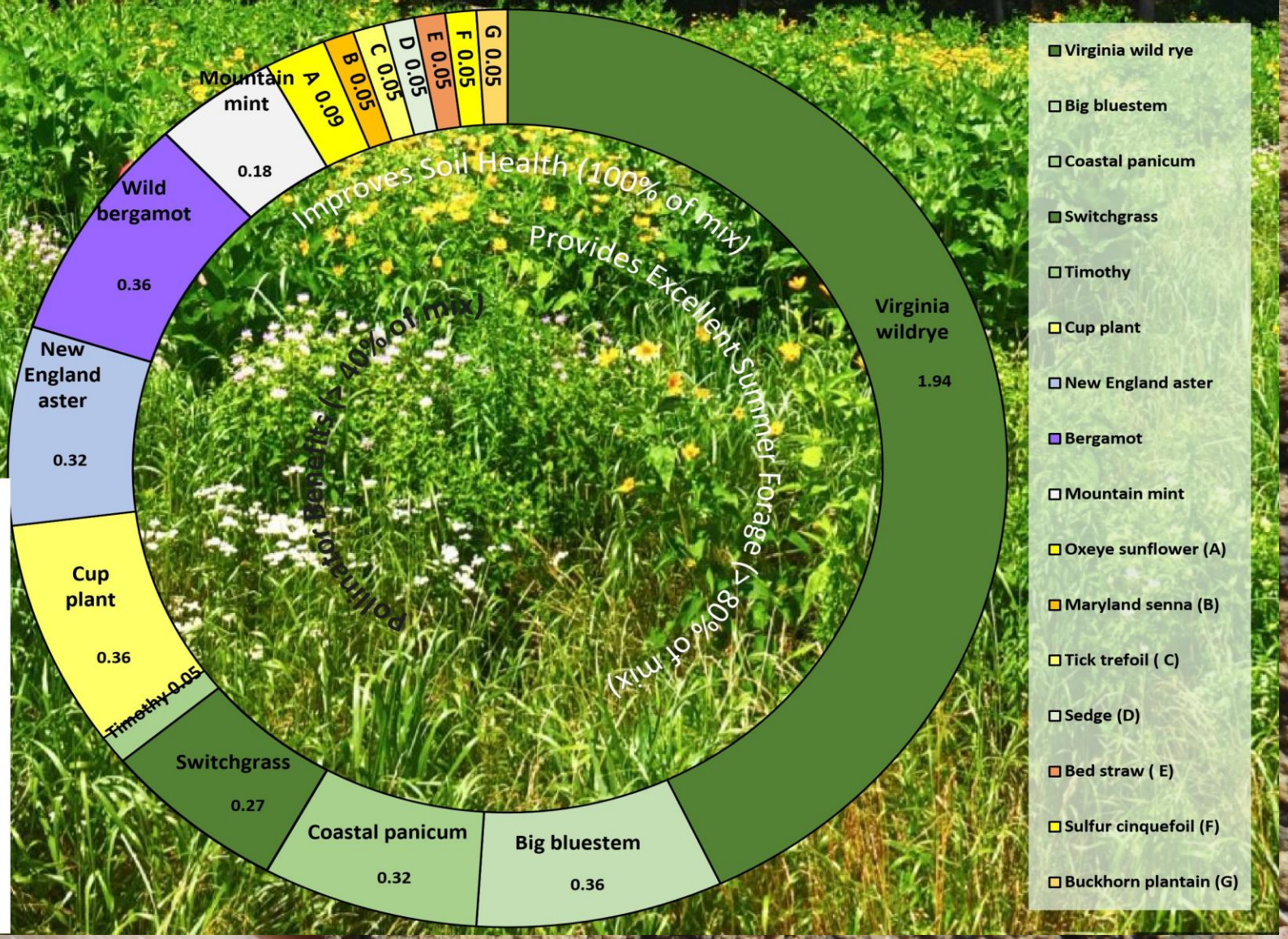
3rd Graze

3 tons Dry matter

9.5 tons total dry matter

Established Plant Composition of Mixed Forage Pasture

From transect on 7/12/18 (estimated 4.52 tons of Dry Matter per acre)



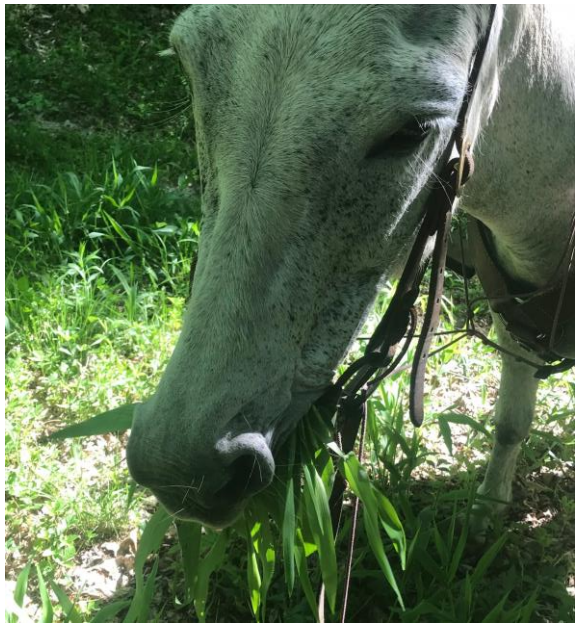
SEEDING MIX
Big Bluestem 40%
VA Wildrye 15%
Switchgrass 14.5%
Coastal Panicgrass 10%
Ox-Eye Sunflower 2.2%
Indiangrass 10%
Partridge Pea 3%
Showy Tick Trefoil 1.5%
Cup Plant 1%
Wild Bergamont .5%
New England Aster .5%
Panicled Tick Trefoil .5%
Wild Senna .5%
Maryland Senna .5%
Narrow Leaved – Mountainmint .3%

- Virginia wild rye
- Big bluestem
- Coastal panicum
- Switchgrass
- Timothy
- Cup plant
- New England aster
- Bergamot
- Mountain mint
- Oxeye sunflower (A)
- Maryland senna (B)
- Tick trefoil (C)
- Sedge (D)
- Bed straw (E)
- Sulfur cinquefoil (F)
- Buckhorn plantain (G)

Weeds

Deertongue

Grows in pH as low as 3.8
Crude Protein 24
Relative Feed Quality 126



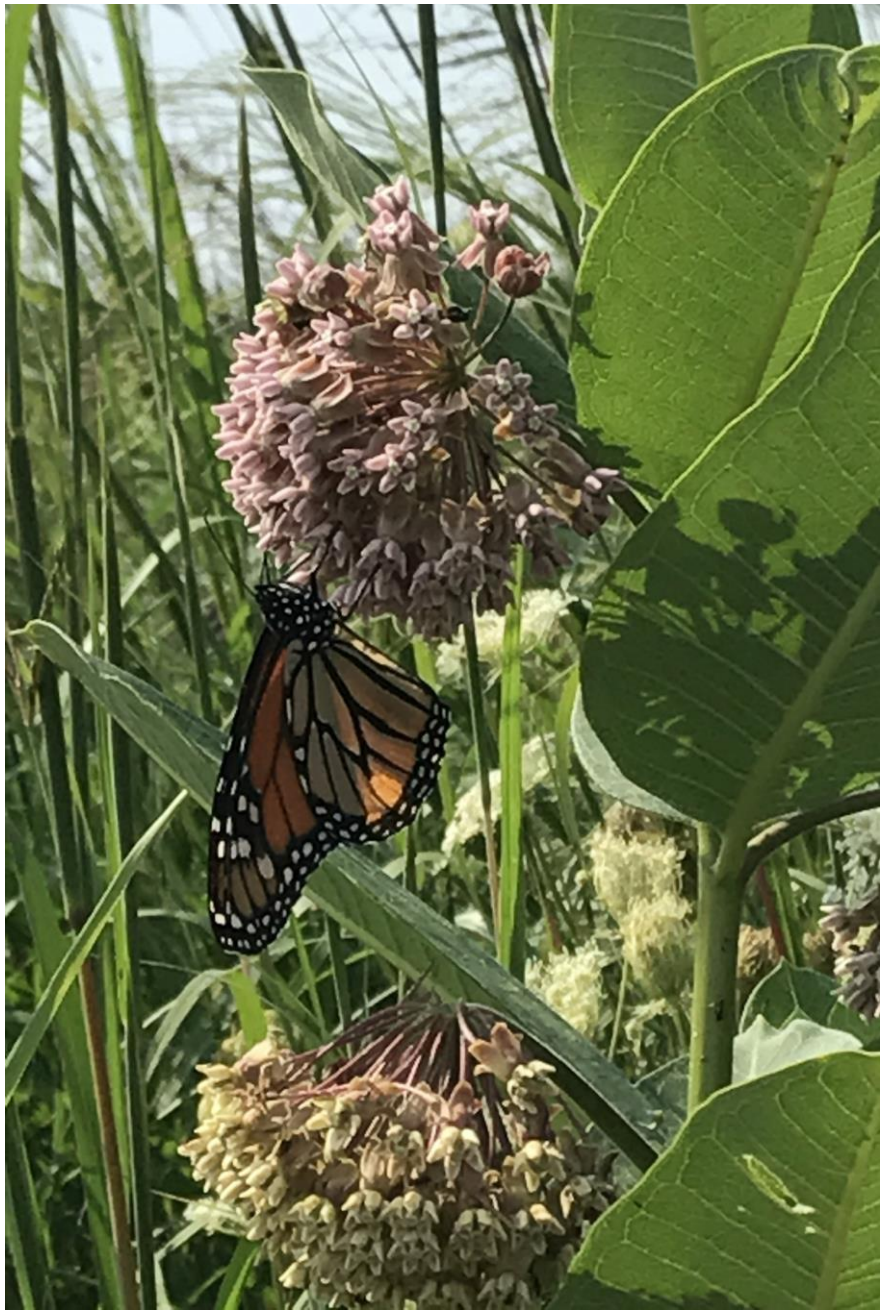
New England Aster

Grows in a PH low as 5.1
Crude Protein 24.5
Relative feed quality 205


Canadian Thistle

Grazed

2 Years Later



Milk Weed

Milk Weed

Bio Diversity


Microbes
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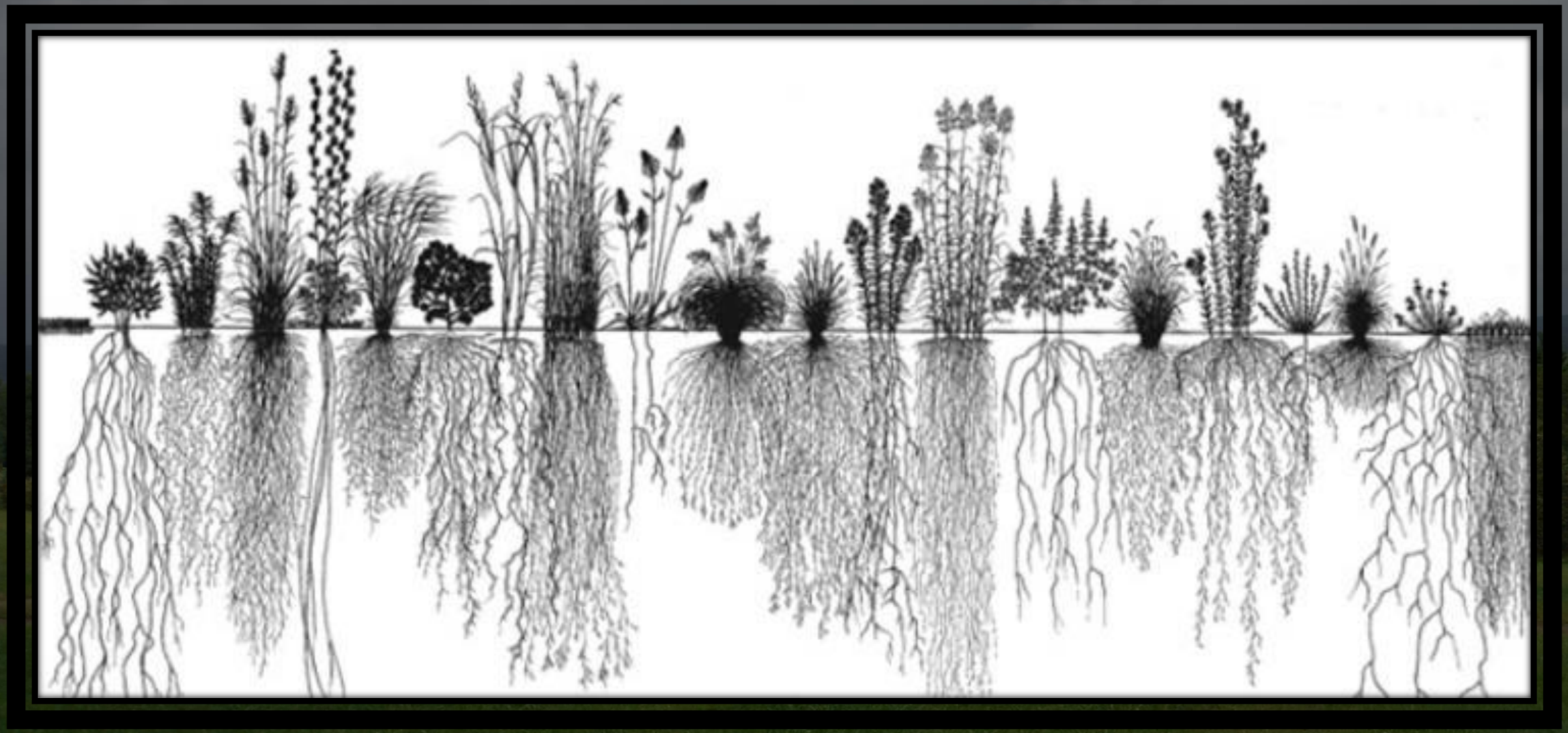


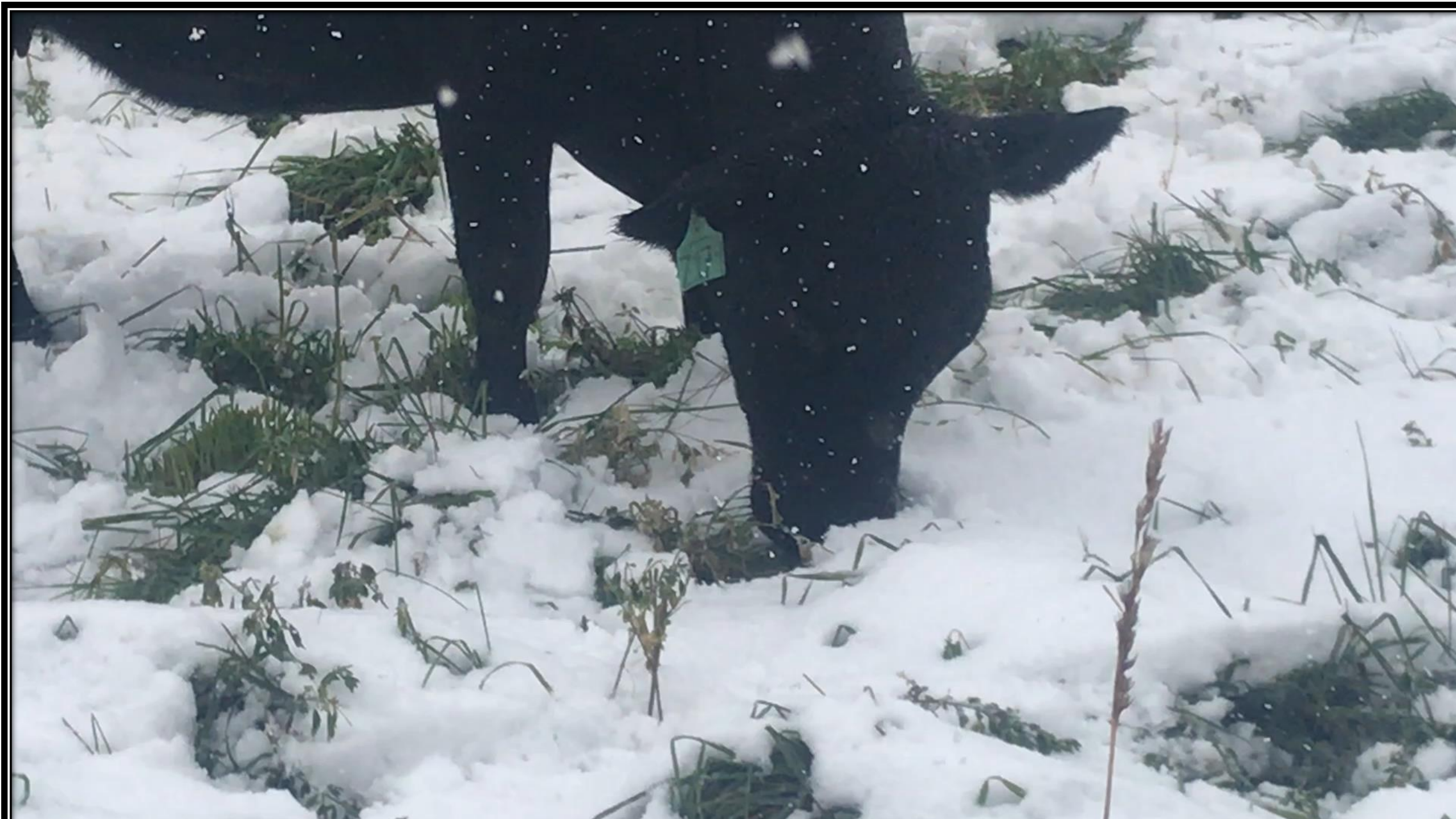
Diversity of Root System, Type and Distribution

Balance can be upset

1. **When there is not enough food**
2. **To much food is consumed**
3. **Idle nutrients are not returned to the soil**

Winter Stockpile

Ideal winter grazing for us is 10 degrees and 24”of snow




With freed up time can make things more streamlined


Solutions
to Annoying
Problems

Affordable Fencing

$0.17 per foot

$0.05 per foot

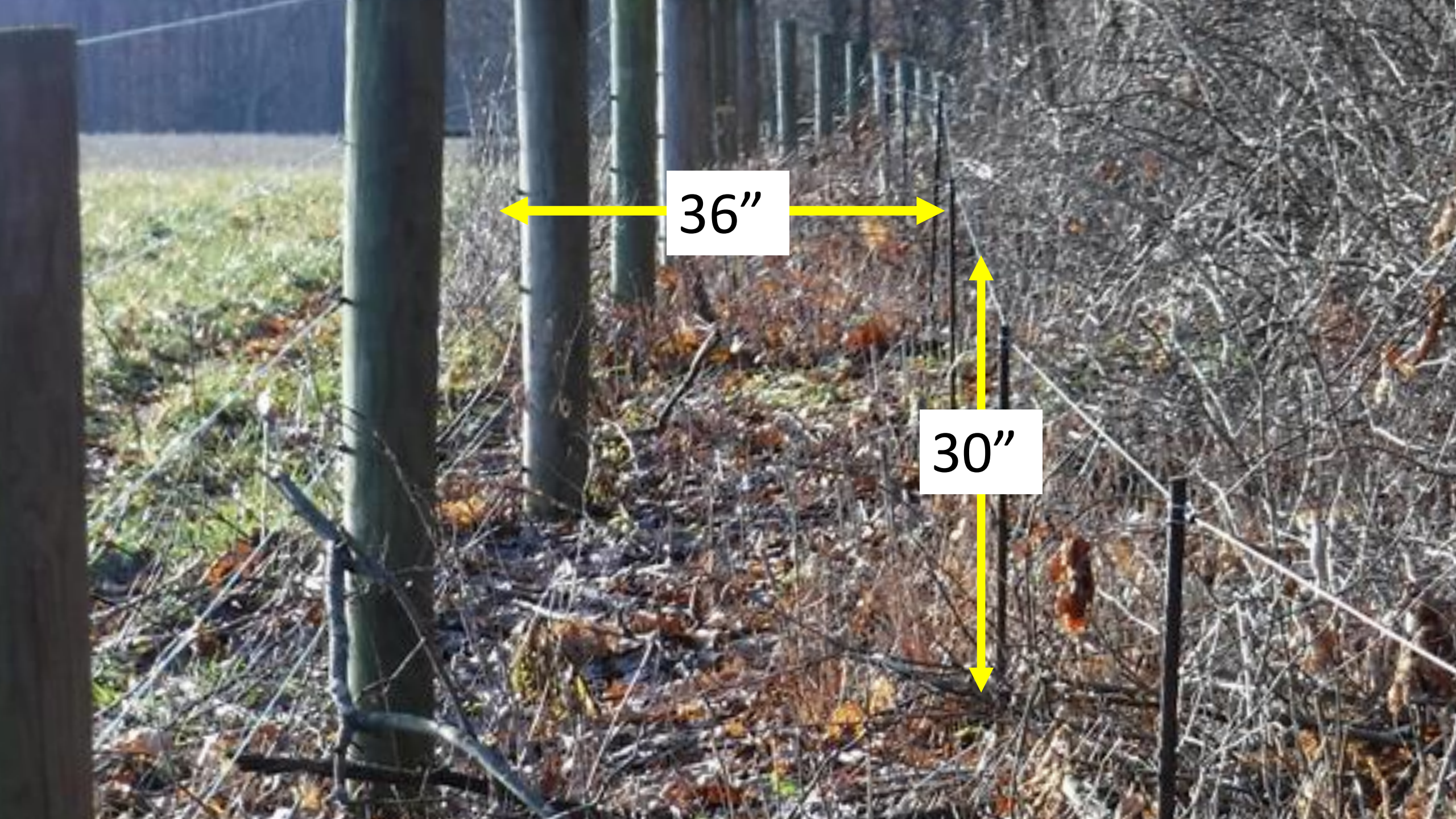
Longevity
In service
24 years

Post Ideas

Tied 4 inch fin tube insulator

3D Fencing

Manitoba Co-operator
North Carolina Wildlife Resources Commission


36”
30”

Applied to crop land, garden, food plot, orchard, or pasture land


MOULTRIE
54°F
09/06/2018 11:14PM MYCAMERA

Portable windbreaks

Wilson Land & Cattle Co.

Source: Government of Saskatchewan Canada


27. 1. 2019 7:28

30% Porosity

32°F

Tiny Water Tanks

9°F

Semi-Frost Free Tub

“It always seems impossible until it’s done”

Nelson Mandela

Portable Frost Free Water Tub

Tested to -17º

Our Best winter stock tank setup

The best stock tank summer setup

Summary

EXTENDED GRAZING SEASON

INCREASE SOIL STRUCTURE

WATER HOLDING CAPACITY AND INFILTRATION

WEED CONTROL

BREAK INSECT AND PARASITE CYCLES

SEQUESTER SOIL NUTRIENTS

HIGHER FINANCIAL GAIN

MORE FREE TIME

Essentially, all life depends upon the soil

Charles Kellogg

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www.youtube.com/RussWilson

Social media