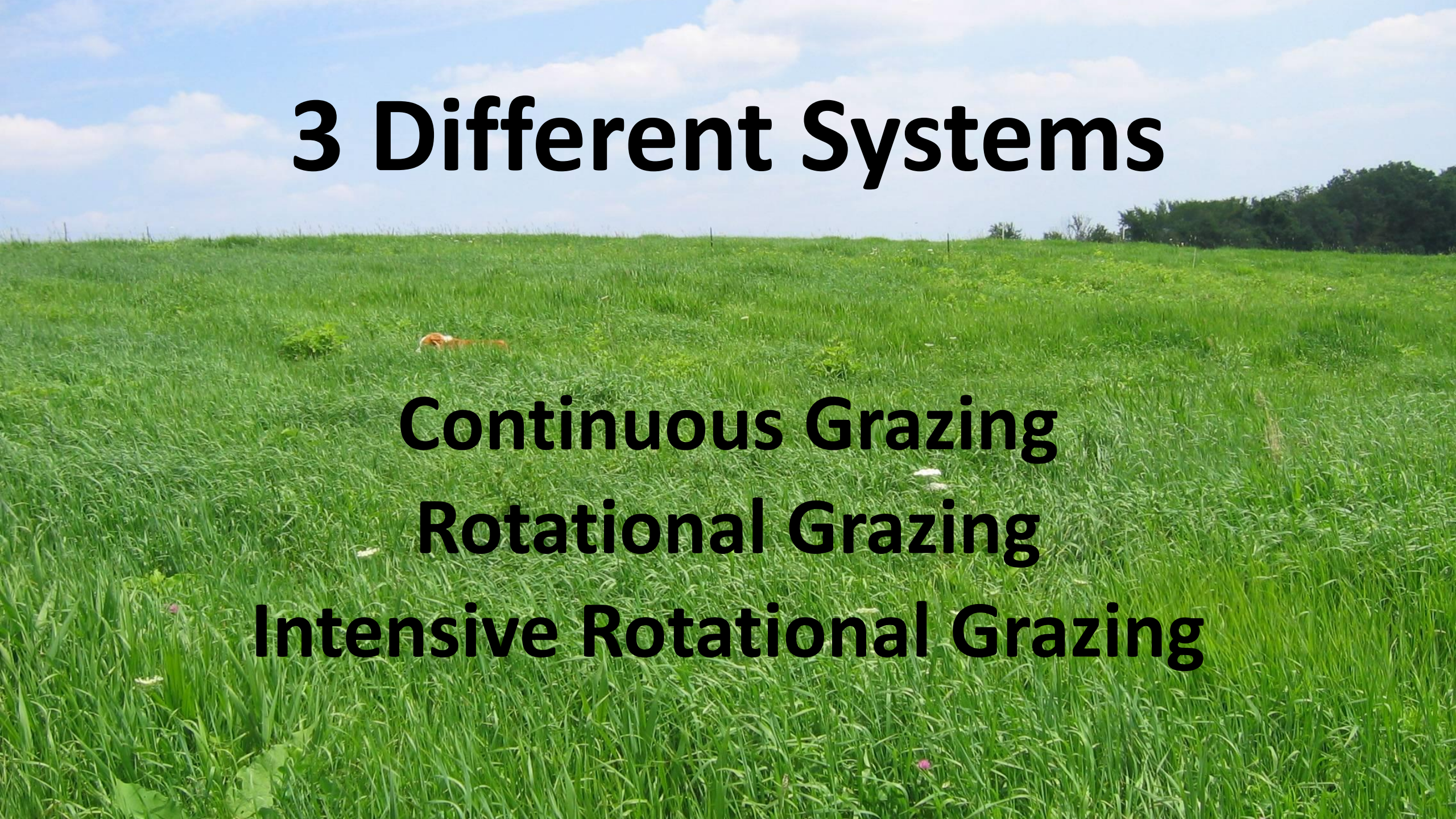
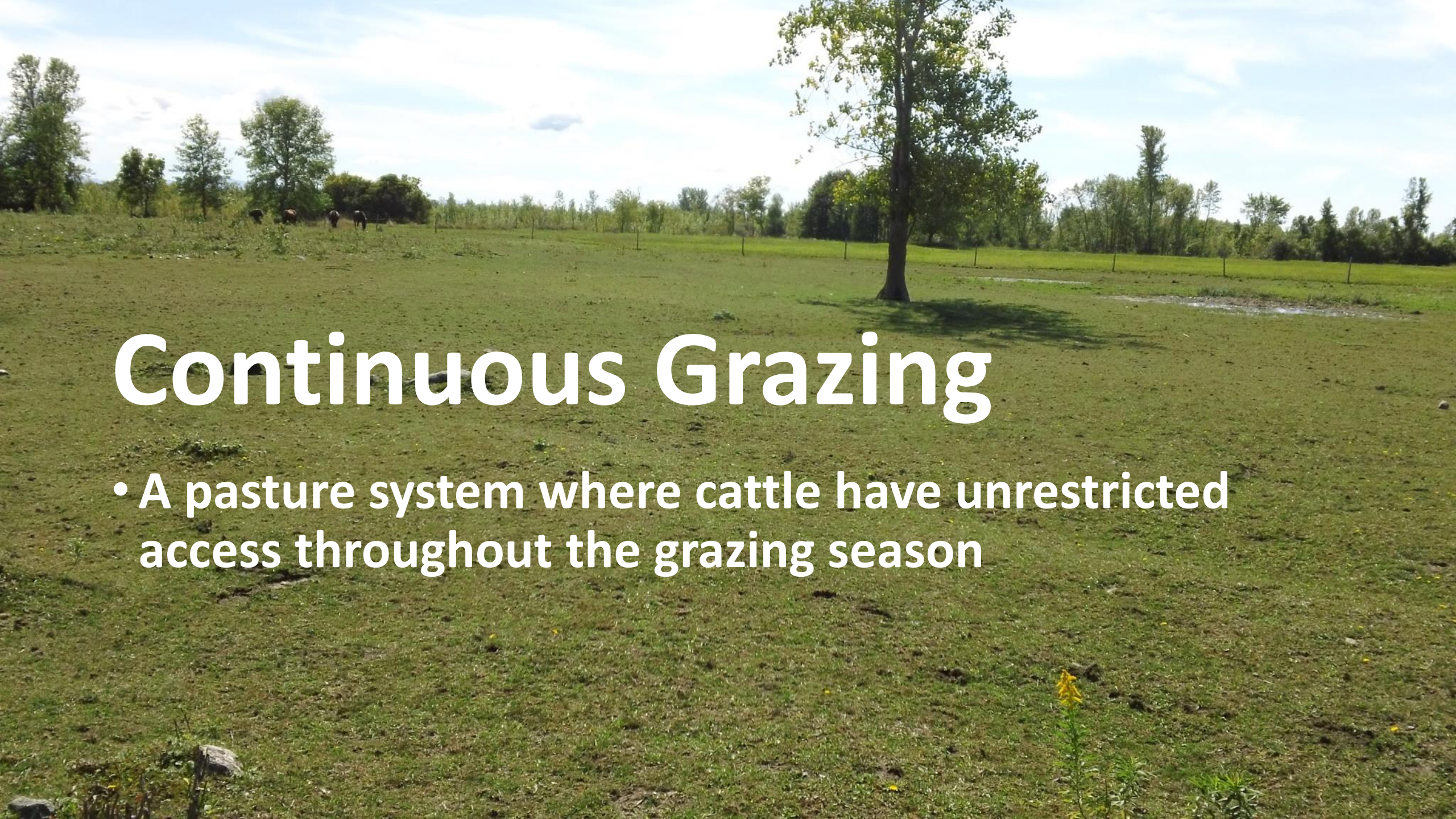
# Design and Layout of Pastures

Brian Pillsbury

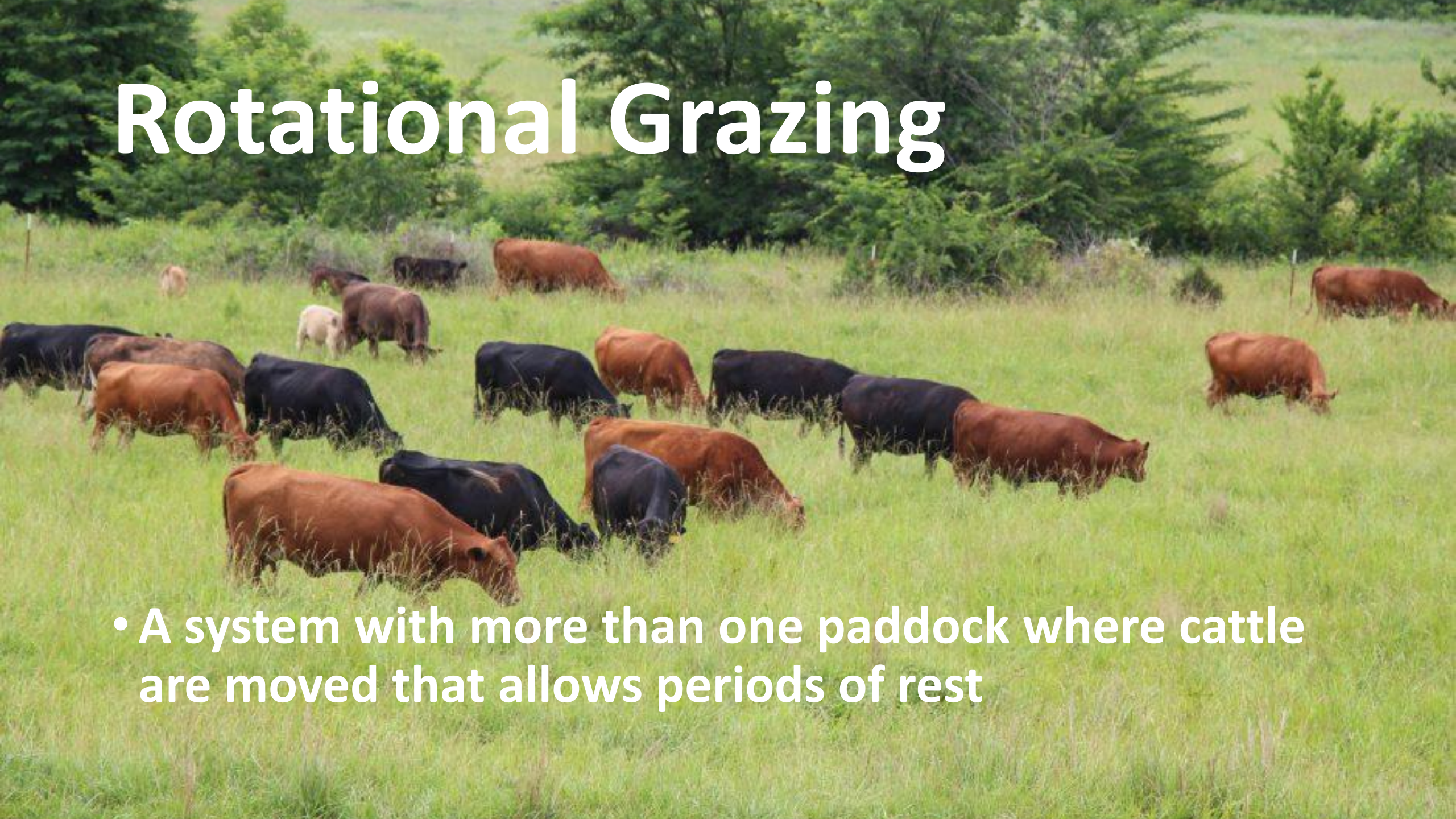

3 Different Systems
Continuous Grazing
Rotational Grazing
Intensive Rotational Grazing



# Continuous Grazing

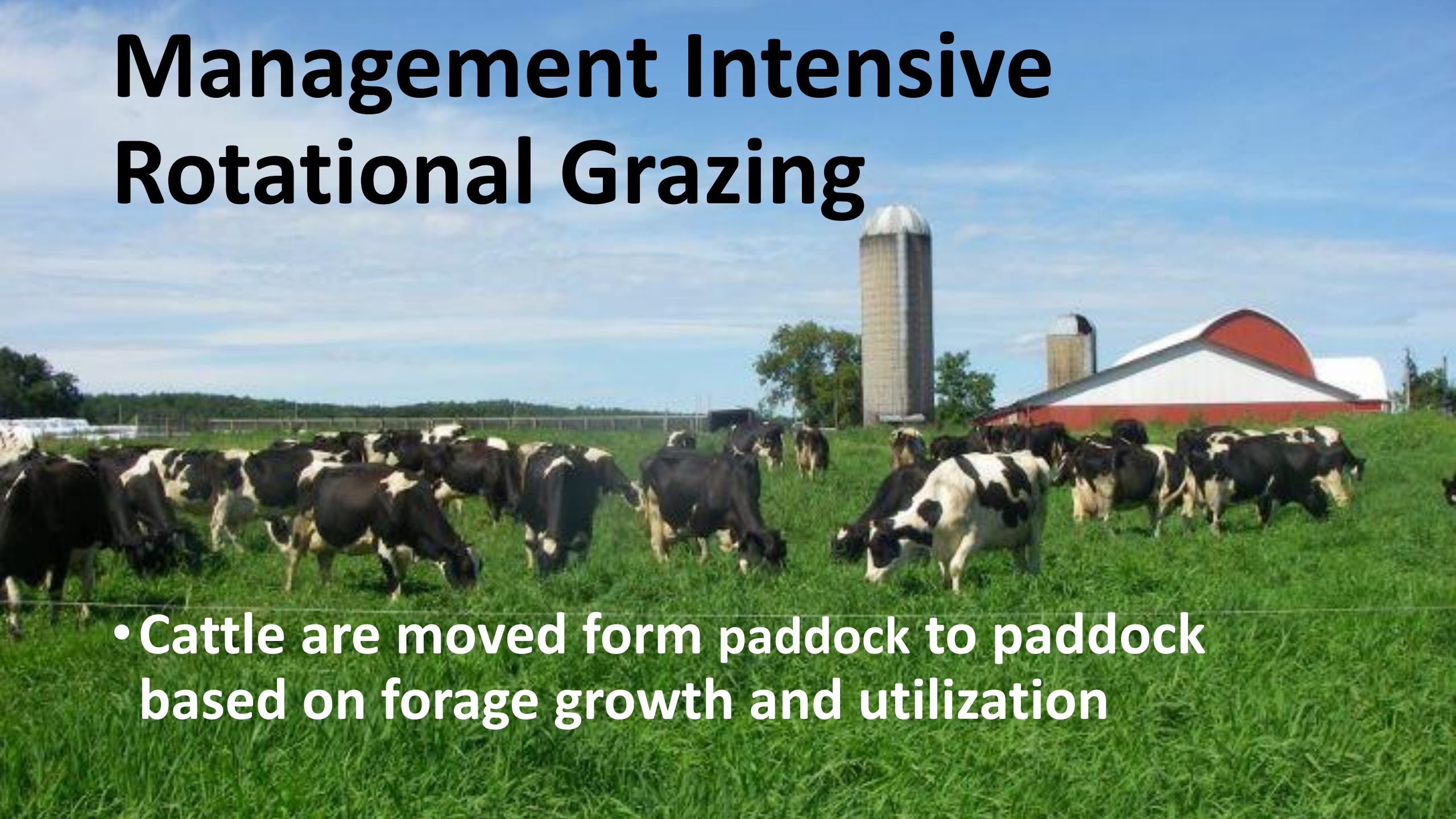
- A pasture system where cattle have unrestricted access throughout the grazing season

# Rotational Grazing

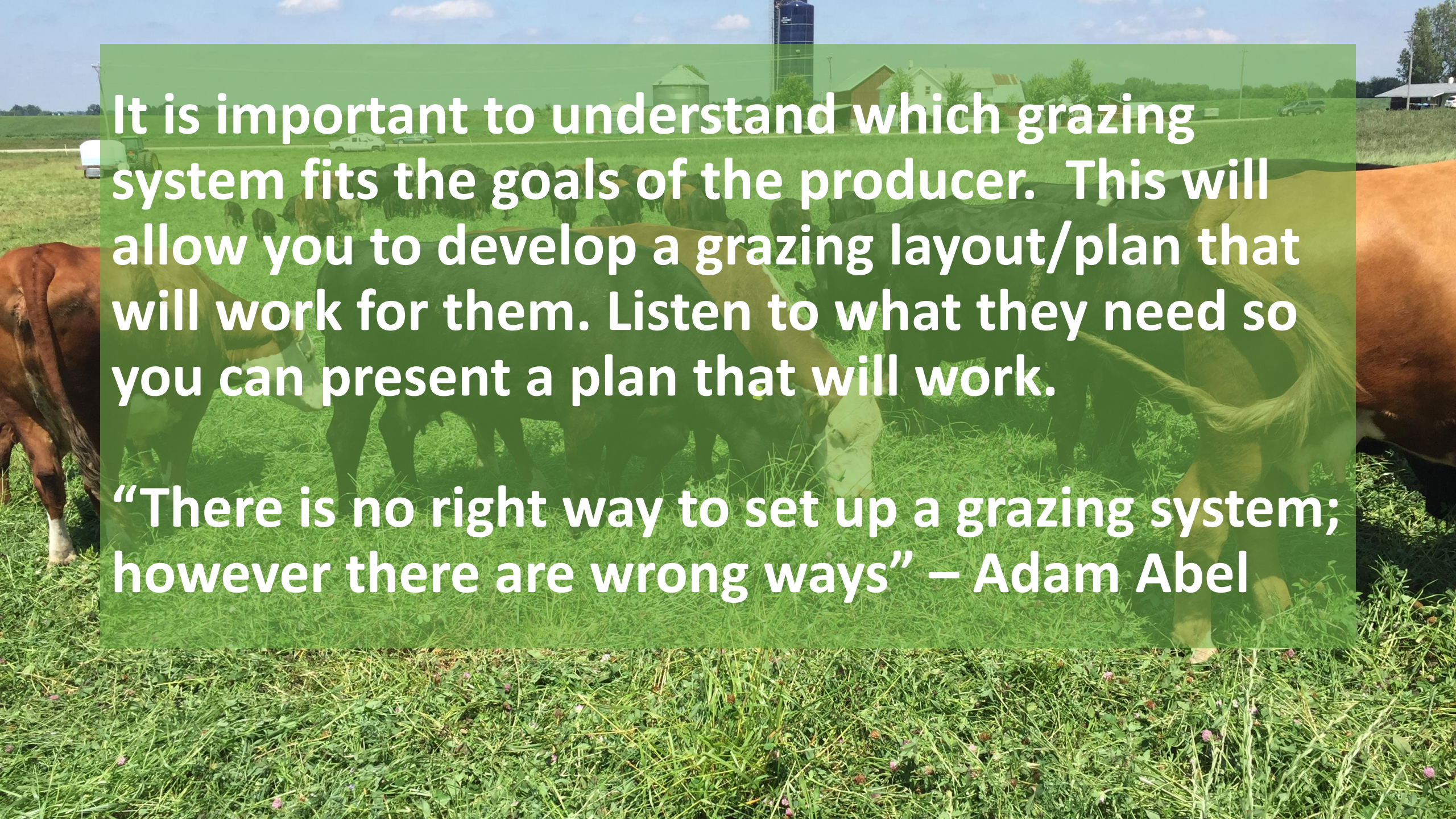


- A system with more than one paddock where cattle are moved that allows periods of rest

# Management Intensive Rotational Grazing



- Cattle are moved form paddock to paddock based on forage growth and utilization



It is important to understand which grazing system fits the goals of the producer.  This will allow you to develop a grazing layout/plan that will work for them. Listen to what they need so you can present a plan that will work.

“There is no right way to set up a grazing system; however there are wrong ways” – Adam Abel

# Goals

- **Goals will direct the development of the grazing plan**
- **They will be unique to each operation**
- **They can (and do) change**

***Example Goals:***

***-Increase livestock numbers***
***-Improve animal performance***
***-Reduce feed and labor costs***
***-Reduce soil erosion***
***-The list goes on….***

**As a planner It is important to recognize conflicting goals. You will need to work with the producer to develop the best alternative.**

***Example:*** ***A producer says that he/she wants to maximize forage production. However, he/she is not interested in sub-dividing paddocks.***

# So How are we going to accomplish the goal?

# Once You Know the Carrying Capacity

## *DESIGN THE SYSTEM ON PAPER FIRST !*

- **An aerial photo can be a real asset in helping to layout possible fence patterns with landscape features for the best livestock flow.**

# Resource Inventory -

- What owned and rented property is available for grazing?
- Is there a neighbor who wants cover crops grazed in the spring or fall?
- What are the soils within those boundaries?
- What is the productivity of the soils in the planned pasture acreage?
- Are there sensitive or critical areas?
- Are there buildings or a barnyard?
- Water supply and location – is there a well and pumphouse?

# Layouts Suggestions for Cool Season Pastures in Wisconsin

- Group similar soils – similar forage suitability groups
- Document on the ground all sensitive areas and critical areas call these areas out on a map – use them as considerations for permanent fence boundaries.
- Determine carrying capacity

# Soil and Soil Limitations

- Sandy soils – droughty
- Shallow to bedrock – root impediment
- Flood prone soils – can restrict growth and grazing duration
- Organic soil – limited accessibility and low traffic handling potential
- Extreme slopes and landscapes – hard to graze or fence

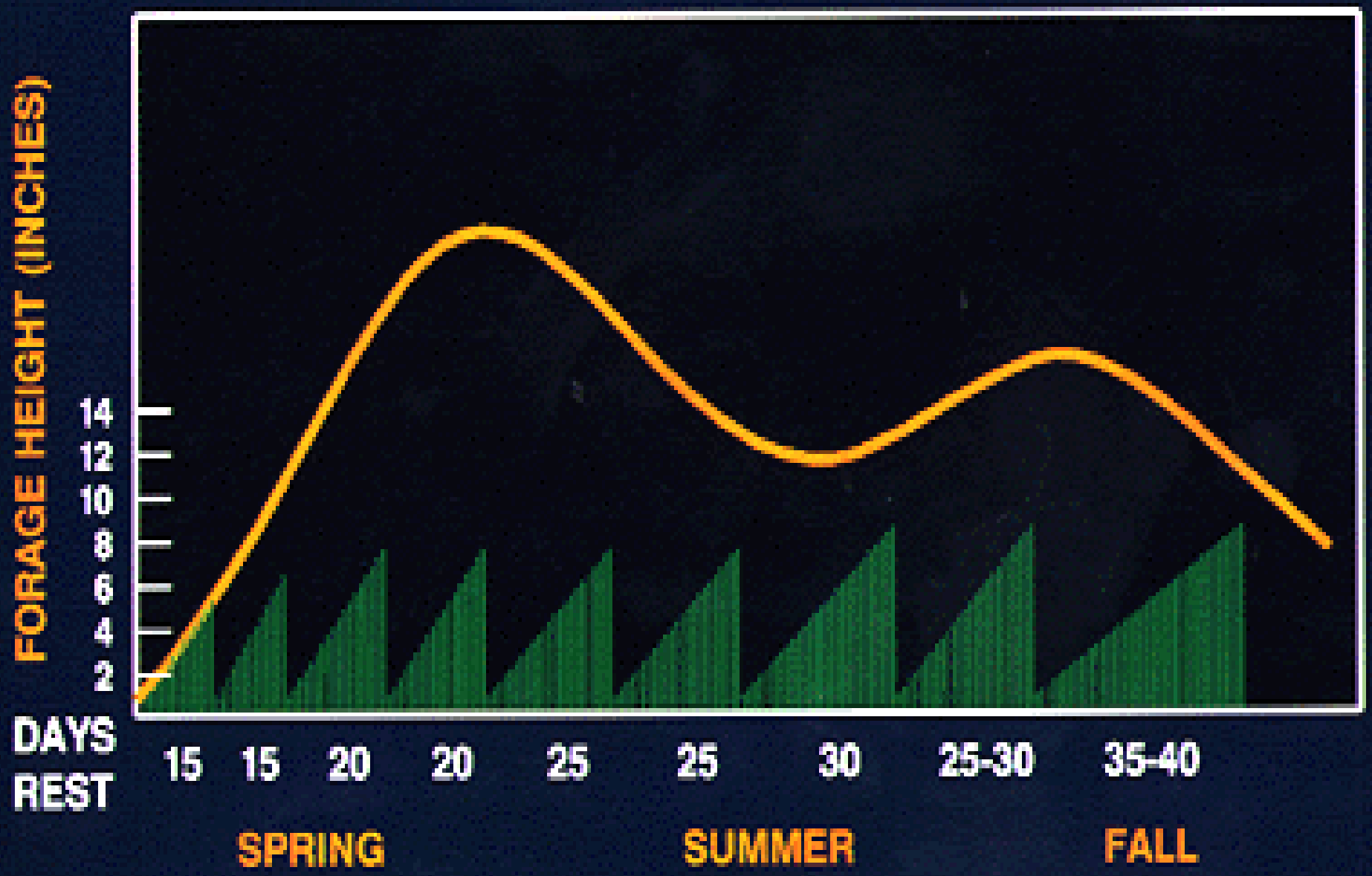
# Carrying Capacity

- Use the soil survey to break out similar map units
- Document dominant forage type or planned forage type
- Determine pasture dry matter yield per acre
- Estimate animal daily dry matter intake
- Estimate Grazing Days

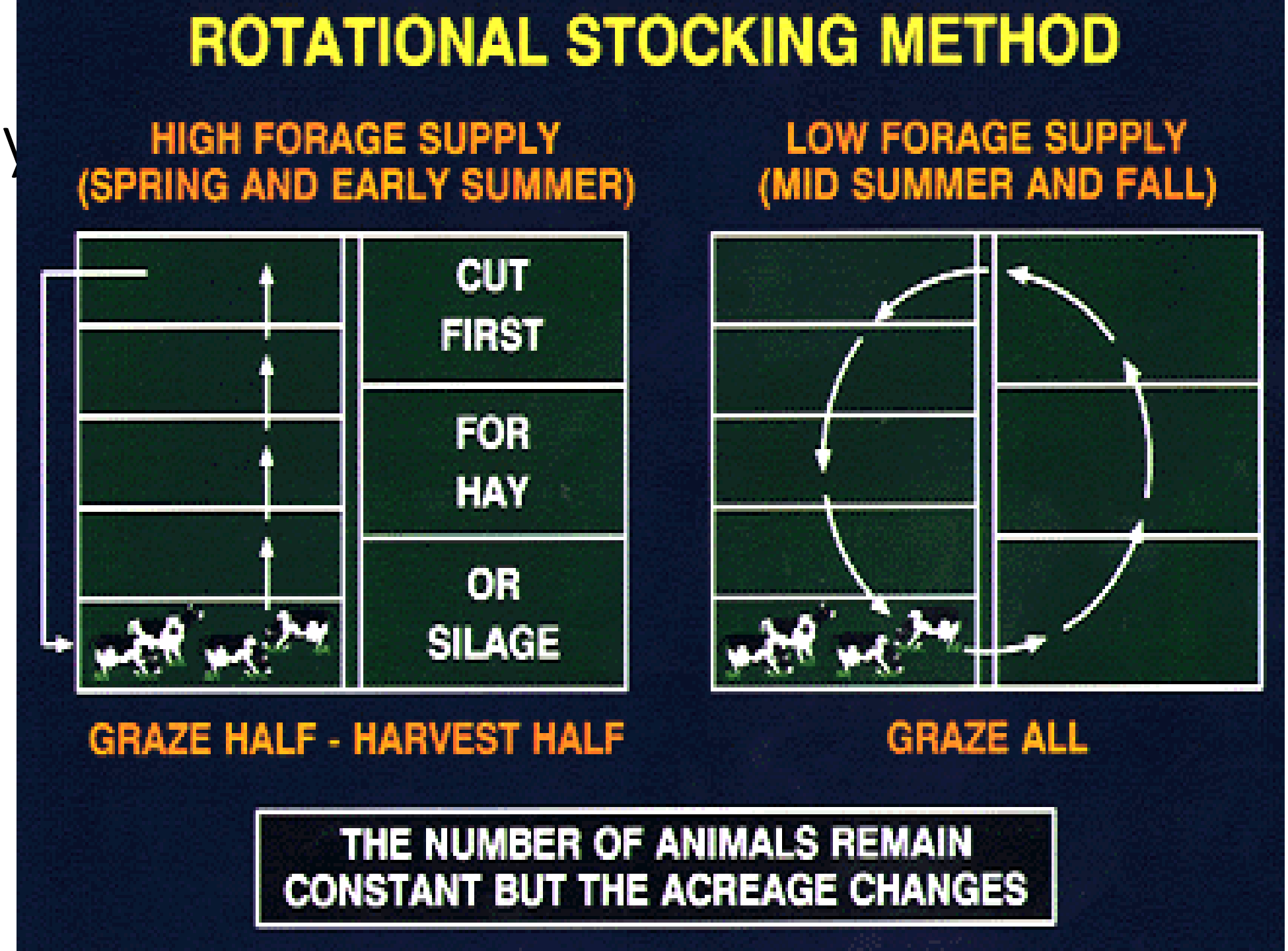
# Paddock Layout And Design

- Determine how long you want your livestock in a paddock
- Estimate your longest rest period
- Determine size and number of paddocks

# ROTATION LENGTHS BY TIME OF YEAR

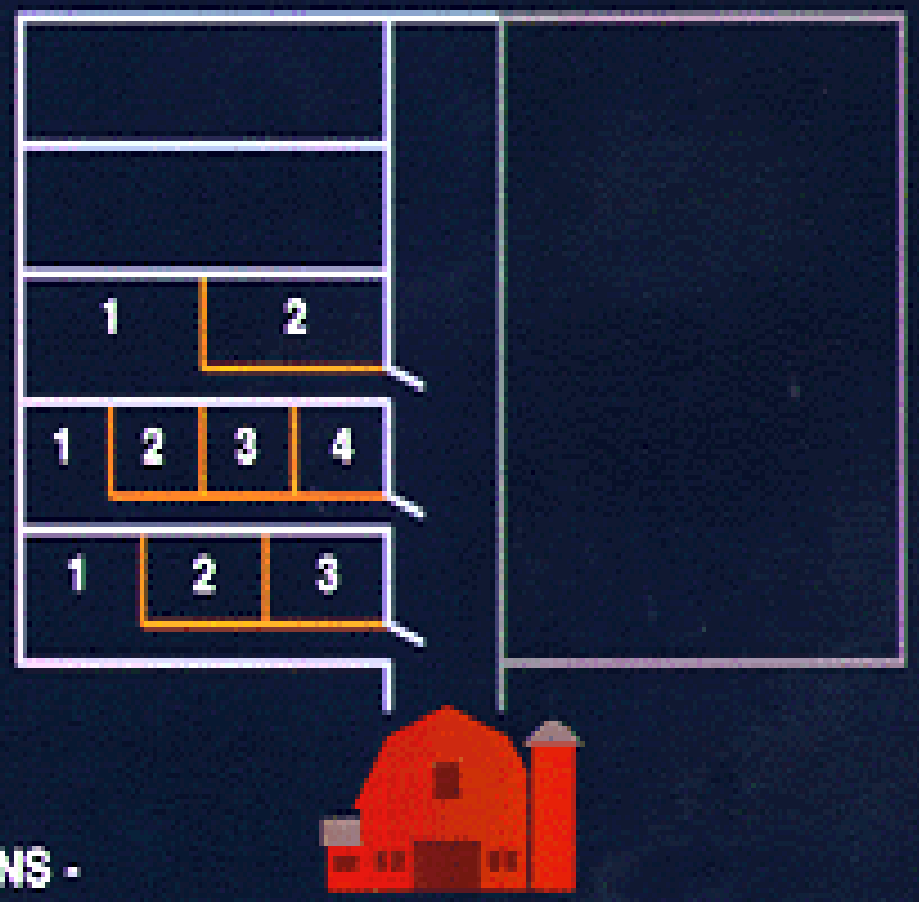


Lay


ROTATIONAL STOCKING METHOD
HIGH FORAGE SUPPLY
(SPRING AND EARLY SUMMER)
LOW FORAGE SUPPLY
(MID SUMMER AND FALL)
CUT
FIRST
FOR
HAY
OR
SILAGE
GRAZE HALF - HARVEST HALF
GRAZE ALL
THE NUMBER OF ANIMALS REMAIN
CONSTANT BUT THE ACREAGE CHANGES

# DESIGN PLAN - ROTATIONAL STOCKING METHOD

MANAGEMENT UNIT I
(PRIMARY PASTURE)




5 MAJOR SUBDIVISIONS -
CREATED WITH PERMANENT OR SEMI-PERMANENT STEEL WIRE (——).
EACH MAJOR SUBDIVISION IS PLANNED TO PROVIDE FORAGE FOR 3 DAYS OF GRAZING.
USE TEMPORARY WIRE (——) TO DIVIDE INTO SMALLER OR LARGER PADDOCKS
DEPENDING ON FORAGE AVAILABILITY

# Layouts Suggestions for Cool Season Pastures in Wisconsin

- Rule of Thumb - For the typical Wisconsin operator more than 250 ft wide pastures are a good starting point.
- Place pipeline down the center of every other field
- Space coupler 300ft or less apart to promote even grazing and manure distribution
- Lanes are lost acreage.  Plan the correct amount. More does not mean better

# Layouts Suggestions for Cool Season Pastures in Wisconsin

- **Gates at the ends of the field can be any size. Make them suitable for the planned size of equipment**
- **Place gates to facilitate cattle movement**
- **Rotate Cattle in a *figure 8* to avoid lanes – this rotation will always bring you back to the start**
- **Gates placed in the center of long runs can offer improved management for the operator**

# Layouts Suggestions for Cool Season Pastures in Wisconsin

- Make fields larger units that can be subdivided into paddock.  This gives the flexibility to still harvest with equipment.
- Shade paddocks…. Are they necessary…?...  If the producer has a woodlot, consider thinning part of it down to 30%.  This can provide shade for critical periods while still promoting good conservation.

Ecological Classification ID: Forage Suitability Groups—Calumet and Manitowoc Counties, Wisconsin


Map Scale: 1:4,510 if printed on A portrait (8.5" x 11") sheet.

Meters 0 50 100 200 300

Feet 0 200 400 800 1200

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 16N WGS84

Natural Resources Conservation Service

Web Soil Survey
National Cooperative Soil Survey

7/16/2021
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# Steve Woelfel Grazing Design

N
W E
S

**Legend**

Pipeline, 2974 feet

**Fence**

**Type**

1 Strand High Tensil Electric 2,855 feet

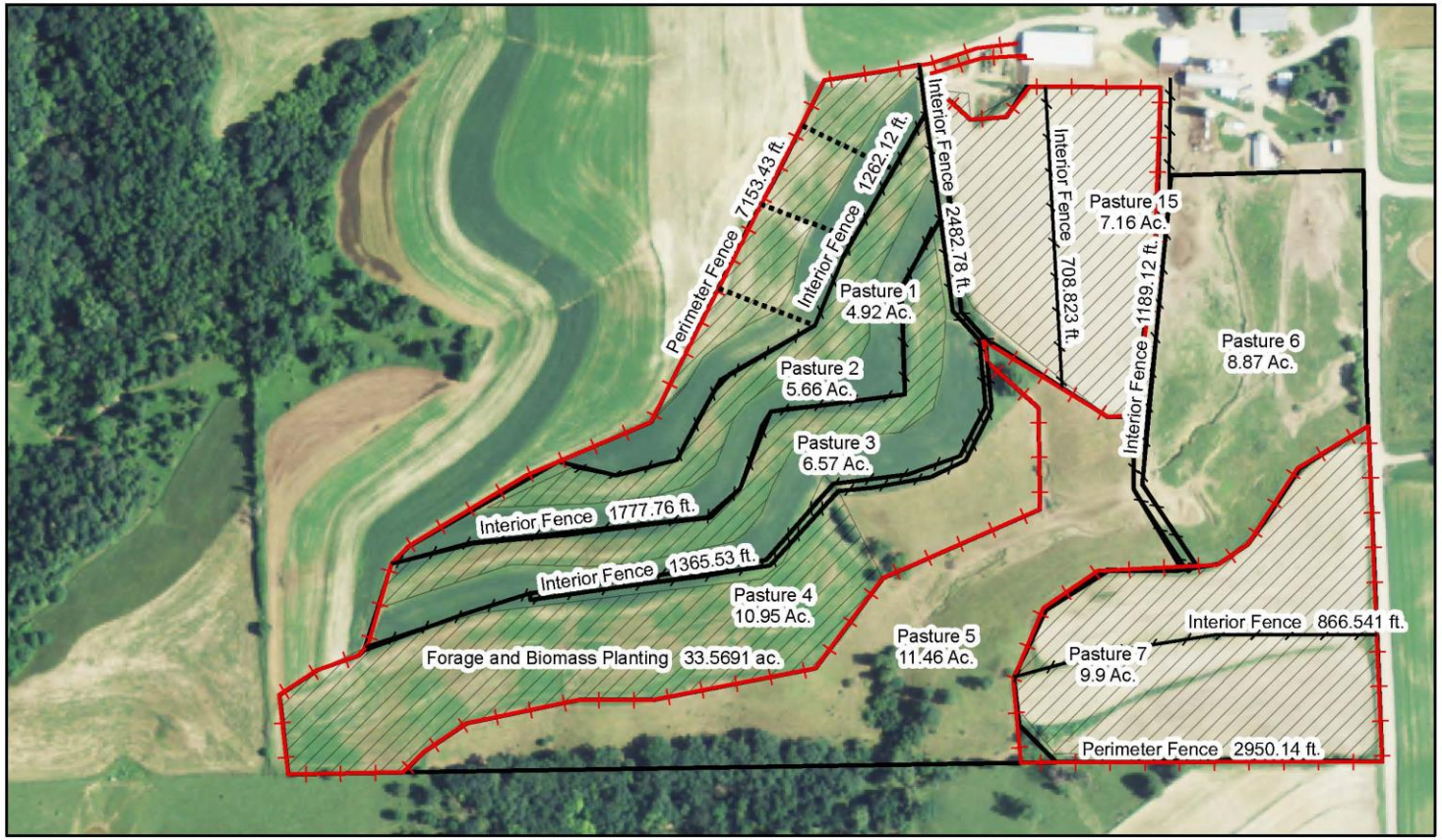
Existing Interior Fence

Existing Perimeter Fence

3 Strand High Tensil Electric, 3418 feet

Prescribed Grazing, 23 ac.

# Johnson Pasture Design




## Legend

### Johnson Line Practices

**Practice**

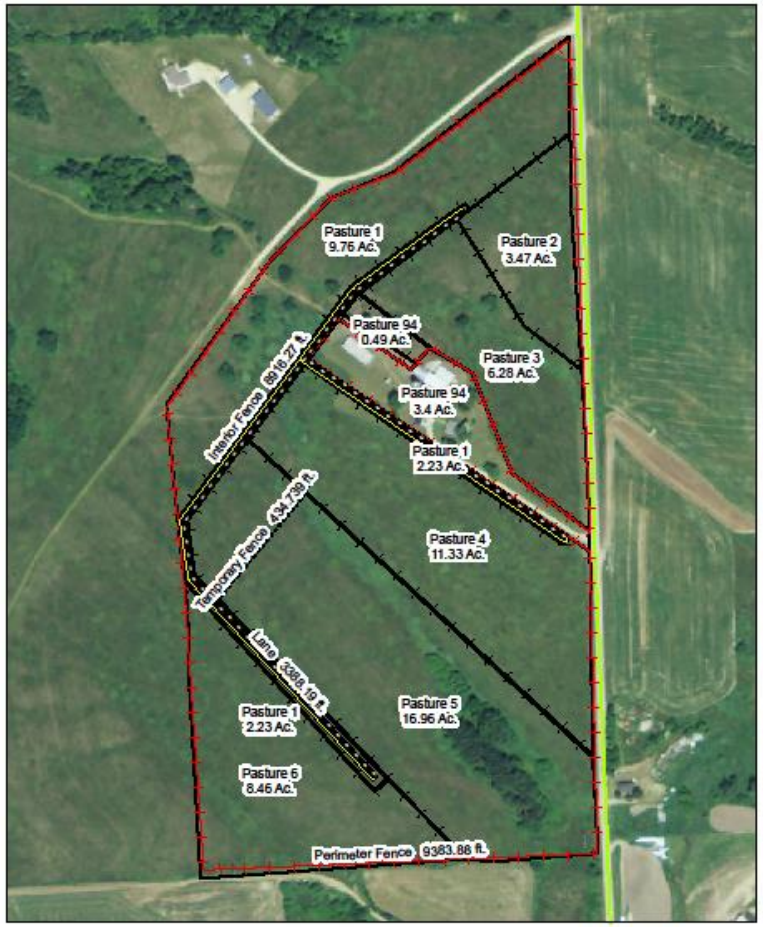
- Interior Fence, 1 Strand HT Electric- 9,653 ft.
- Perimeter Fence, 3 Strand HT Electric - 10,104 ft.
- Temporary Fence, 1 Strand Polywire, 1980 feet, 3 rolls

**Practice**

- Forage and Biomass Planting - 33.6 ac.

N

330 165 0 330 Feet




N

330 165 0 330 Feet

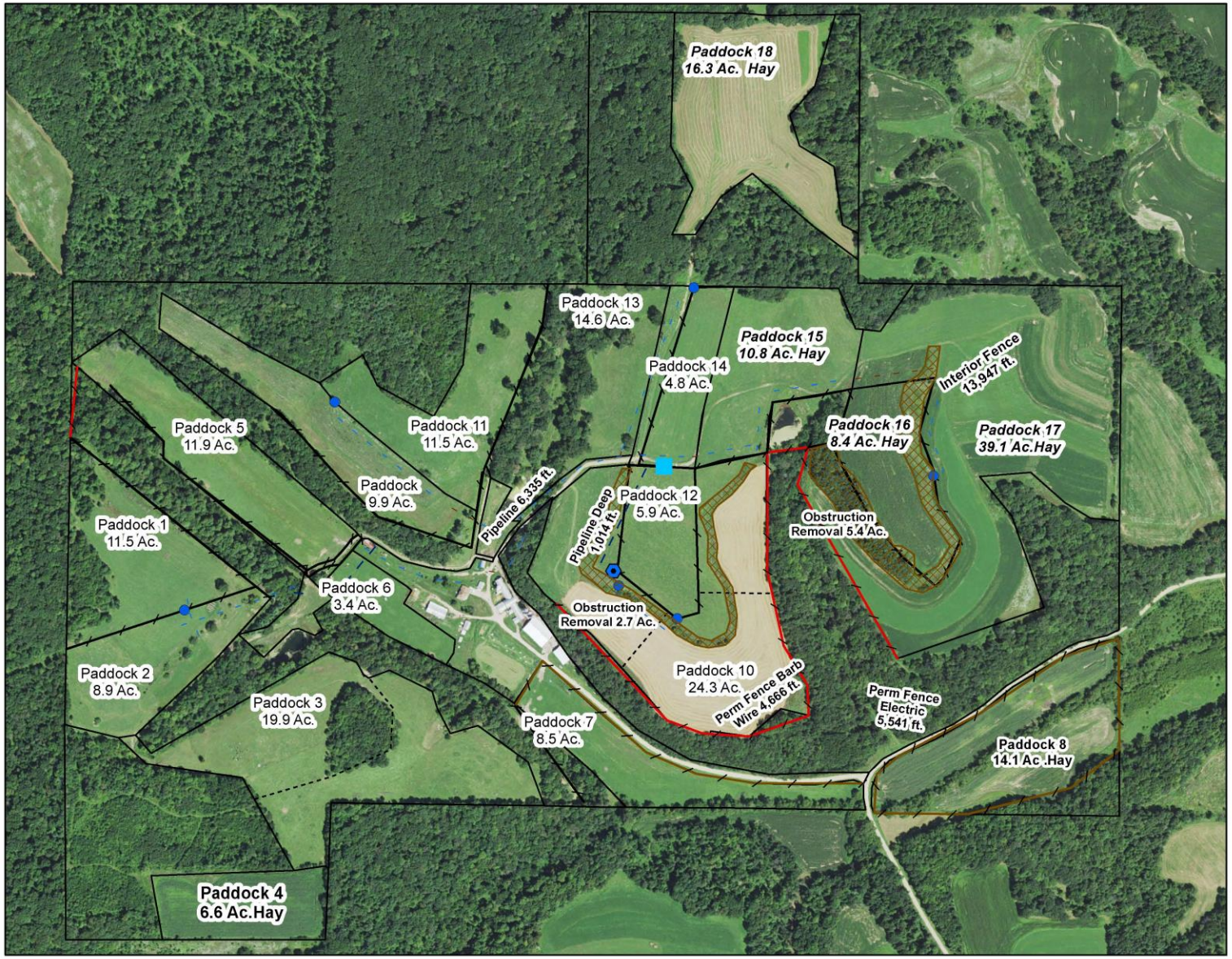
**Legend**

**Line_Practices**

**Practice**

- Interior Fence
- Lane
- Perimeter Fence
- Temporary Fence

# Leroy Rundhaugh Pasture Design with Planned Practices and Paddock Divisions and Acreage




## Legend

### Practice

Obstruction Removal

### Water Source

### Practice

Frost Free Waterer

Watering Tank

Well

### Pipeline and Fences

### Practice

Pipeline Deep - 1,014 ft.

Pipeline Shallow - 864 ft.

Perm Fence Barb Wire - 4,666 ft.

Perm Fence Electric - 5,541 ft.

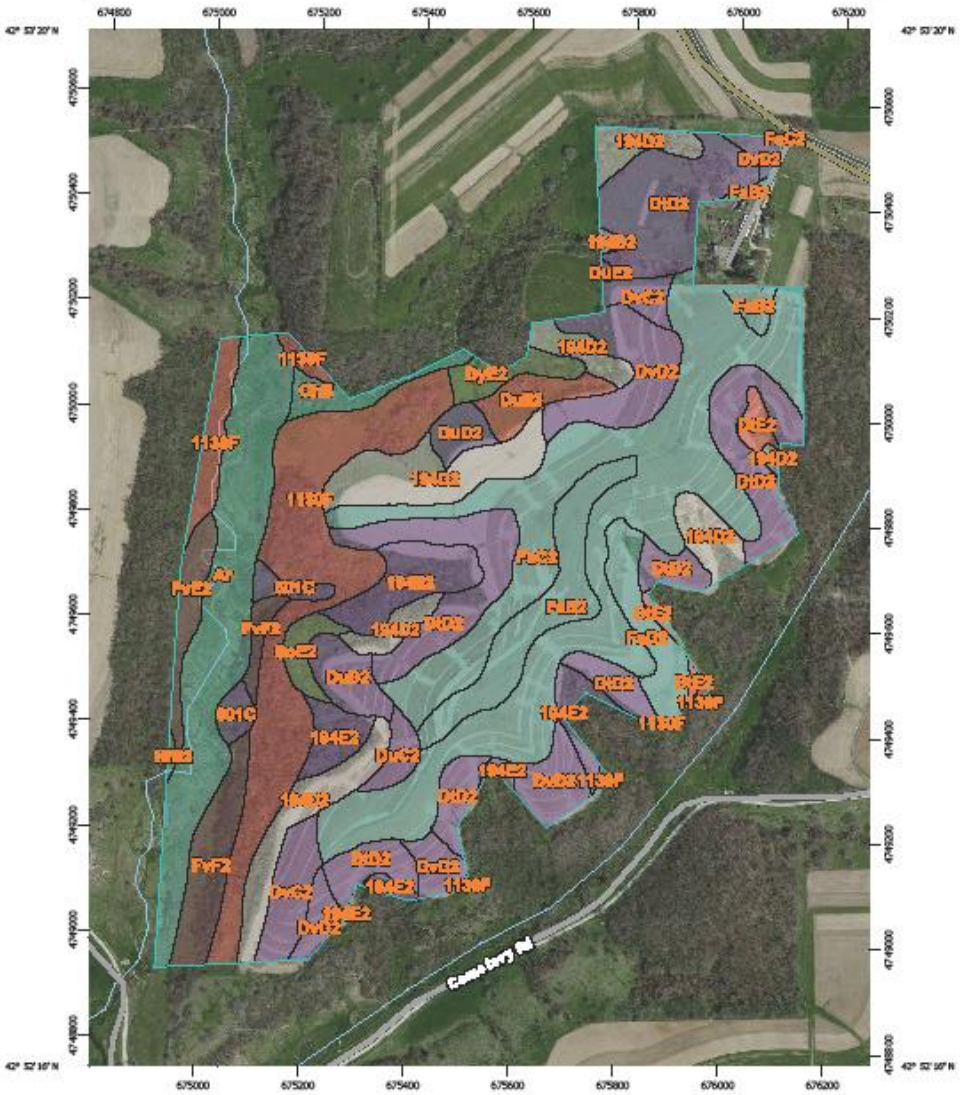
Temporary Fence

Pipeline - 6,335 ft.

Interior Fence - 13,947 ft.

Pasture Divisions

Ecological Site Name: Forage Suitability Groups—Grant County, Wisconsin
(James Kirschbaum)




Map Scale: 1:9,590 if printed on A portrait (8.5" x 11") sheet.

Meters 0 100 200 400 600

Feet 0 450 900 1800 2700

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 15N WGS84

Natural Resources Conservation Service

Web Soil Survey
National Cooperative Soil Survey

7/13/2015
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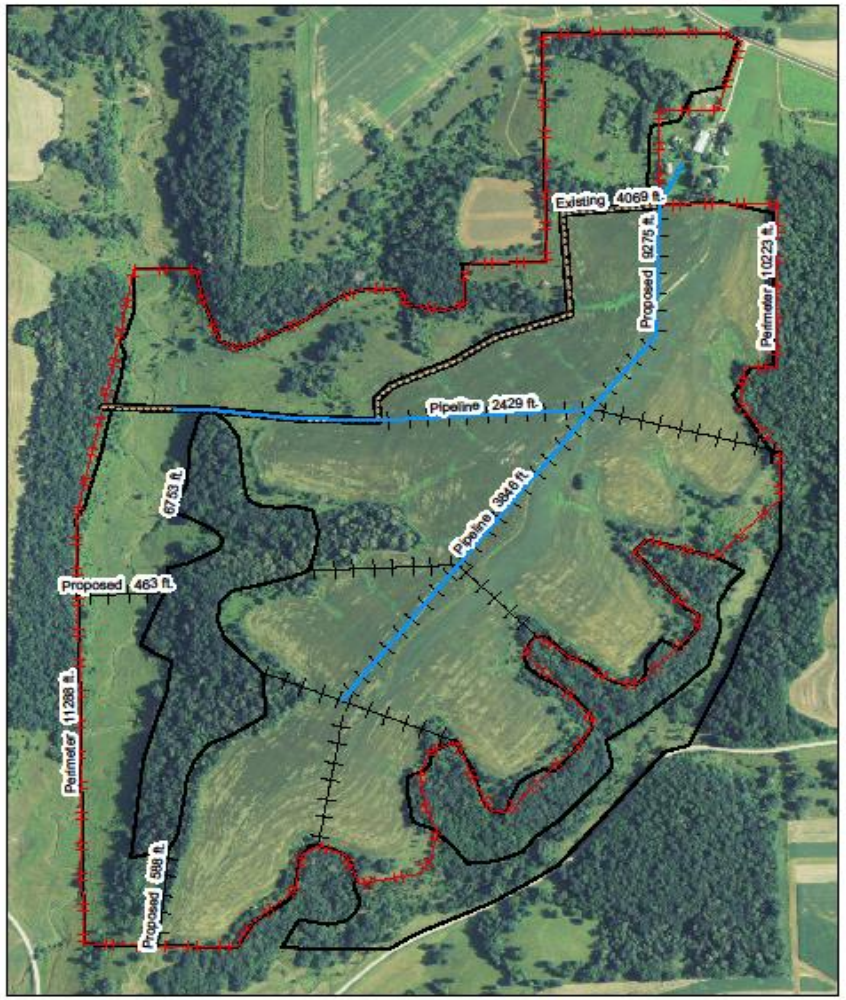
# Kirschbaum Senior EQIP Pasture Design




**Legend**

**Interior Fence and Pipeline**

**Type**

- Existing
- Pipeline
- Proposed
- Proposed Perimenter Fence

N W E S

660 330 0 660 Feet


Walker Rd
© 2012 Google
Image U.S. Geological Survey
34°38'39.48" N 82°37'41.64" W elev 832 ft
Google
Eye alt

# Layouts Suggestions for Cool Season Pastures in Wisconsin

- “WINTER IS COMING” consider winter management with the fence design
- Locate winter watering faculties on the high dry ground.  Take advantage of terrain
- Discuss “MUD SEASON” and plan for it.
- Bedded pack, barnyard windbreaks and  livestock shelters should all be discussed in the initial planning stage

We will look at some other example layouts and do one on our own.

Thank You