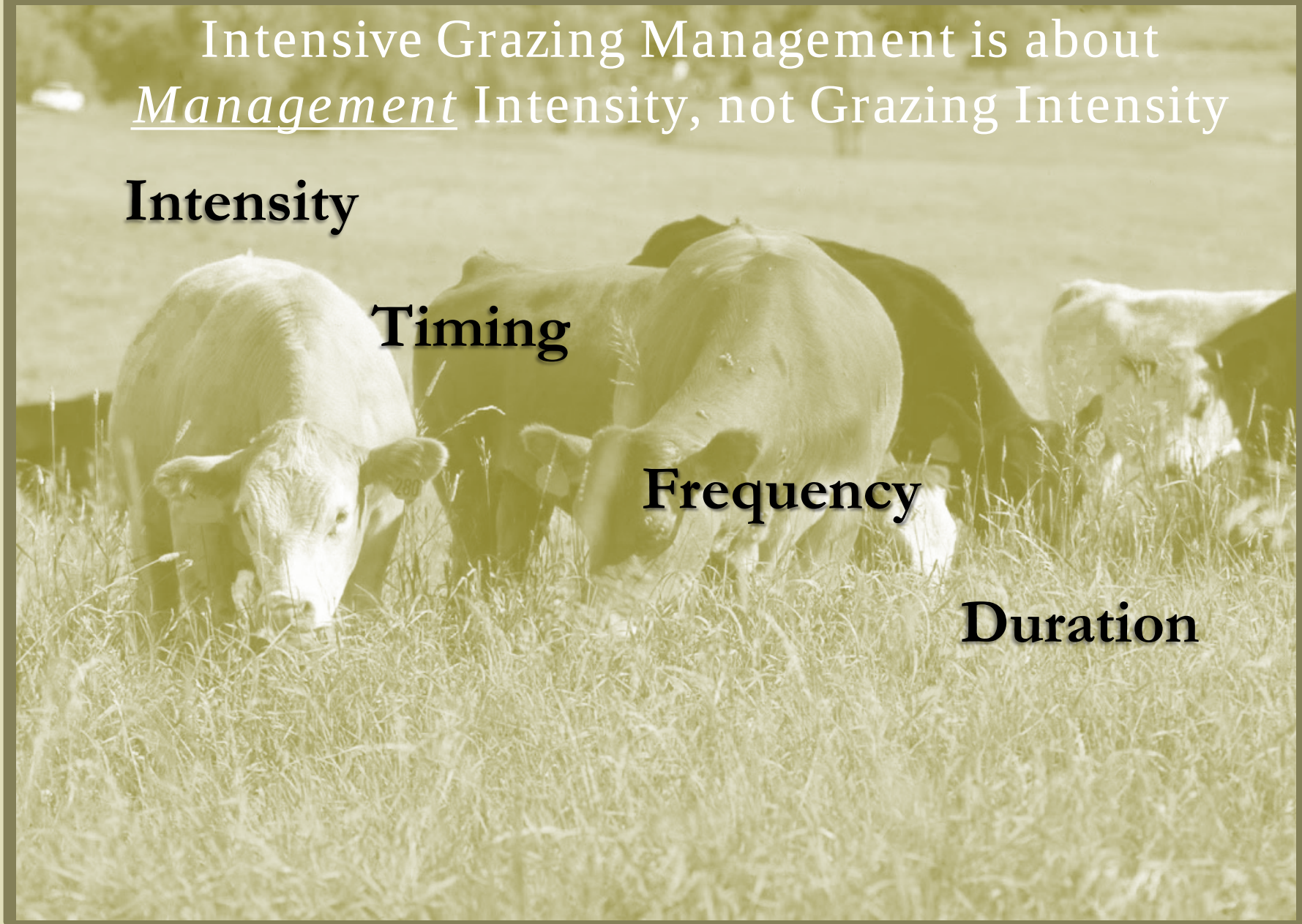
Working with Producers to Apply Intensive Grazing Management

Shane Green, NRCS Utah State Rangeland Specialist



Intensive Grazing Management is about *Management* Intensity, not Grazing Intensity

Intensity

Timing

Frequency

Duration

Plant Requirements

- Provide adequate rest to plants for recovery from grazing
- Reduce re-biting of individual plants
- Minimize the effects of grazing forage plants during their most vulnerable growth stage
- Increase opportunities for seed production
- Decrease selective grazing

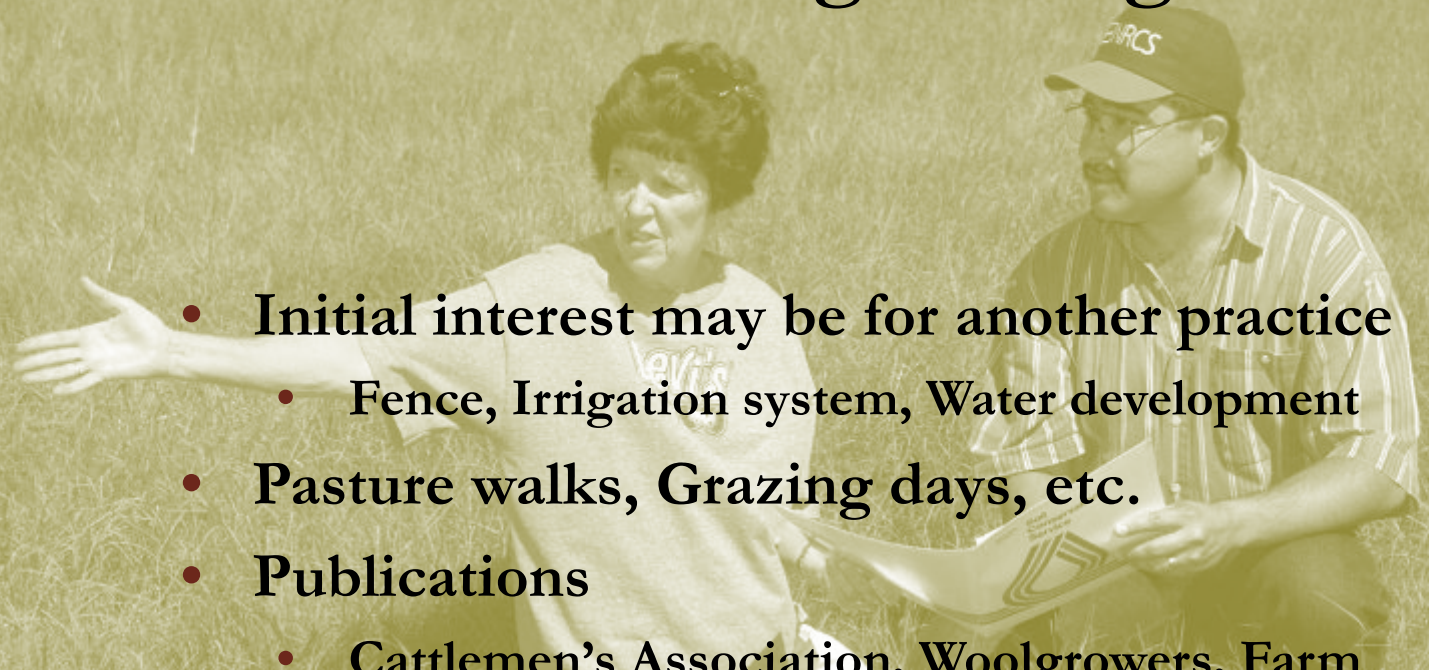
Environmental Considerations

- Maintain the hydrologic cycle
- Improve riparian areas
- Maintain or increase pollinators
- Accommodate and enhance wildlife habitat requirements
- Soil Health

Human Considerations

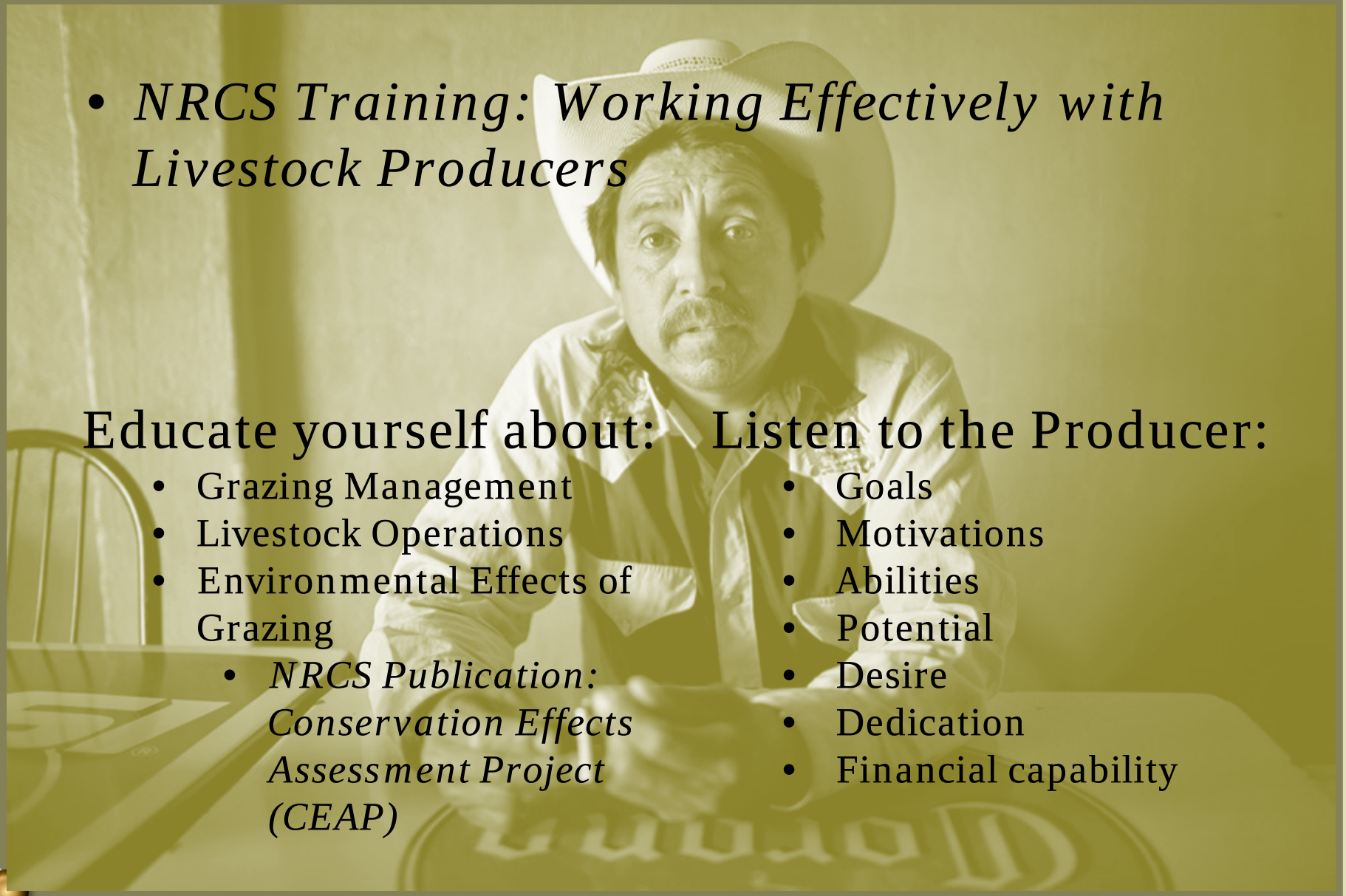
- Accommodate animal husbandry practices and the logistics of ranching
- Fit within time and labor constraints
- Be economically viable
- Be socially acceptable

Why do producers get interested in Intensive Grazing Management?



- Initial interest may be for another practice
  - Fence, Irrigation system, Water development
- Pasture walks, Grazing days, etc.
- Publications
  - Cattlemen's Association, Woolgrowers, Farm Bureau
- Internet Research
  - YouTube, Facebook groups, etc.
- Neighbors – looking over the fence

Communication is the Key



- *NRCS Training: Working Effectively with Livestock Producers*

Educate yourself about:

- Grazing Management
- Livestock Operations
- Environmental Effects of Grazing
  - *NRCS Publication: Conservation Effects Assessment Project (CEAP)*

Listen to the Producer:

- Goals
- Motivations
- Abilities
- Potential
- Desire
- Dedication
- Financial capability

Get to Know the Producers Operation

Types of Livestock Enterprises

- Beef
  - Cow/calf (commercial)
  - Stocker
  - Bred Heifer
  - Purebred (breeding stock)
- Dairy
  - Grazing dairy
  - 'Heifer development'
- Sheep
  - Commercial flock
  - Purebred (rams)
- Custom Grazing
- Horses
  - Boarding
  - Breeding
  - Personal use
- Specialty
  - Llamas
  - Alpacas
  - Goats

First Conversations

When discussing grazing management with producers, make sure you determine early in the conversation:

- Expectations
  - Animal performance (gain, milk, breeding success, etc.)
  - Herd size (desire to increase or maintain?)
  - Longer grazing season (reduce feed, supplements, etc)
  - Marketing preferences (grass fed, organic, etc.)
  - Environmental benefits (wildlife, pollinators, water quality, etc.)

First Conversations

When discussing grazing management with producers, make sure you determine early in the conversation:

- Amount of time and effort they are willing to invest
  - Daily, Weekly, etc
  - Consider travel time and distance between home and pasture(s)
- Existing infrastructure and equipment
  - Location and condition of all roads, fence, watering facilities, livestock handling facilities, etc.

Ask Questions

Breeding

- When is calving (or breeding) season? Use your knowledge of gestation periods to calendar the ranch's annual cycle.
- Do you AI?
- Where do you calve? Where do you 'bull up'? Why there?
- Are there separate herds for breeding purposes?

Nutrition

- Do you raise your own replacements?
  - Do you treat them differently?
- Do you feed supplements while grazing?

Livestock Health

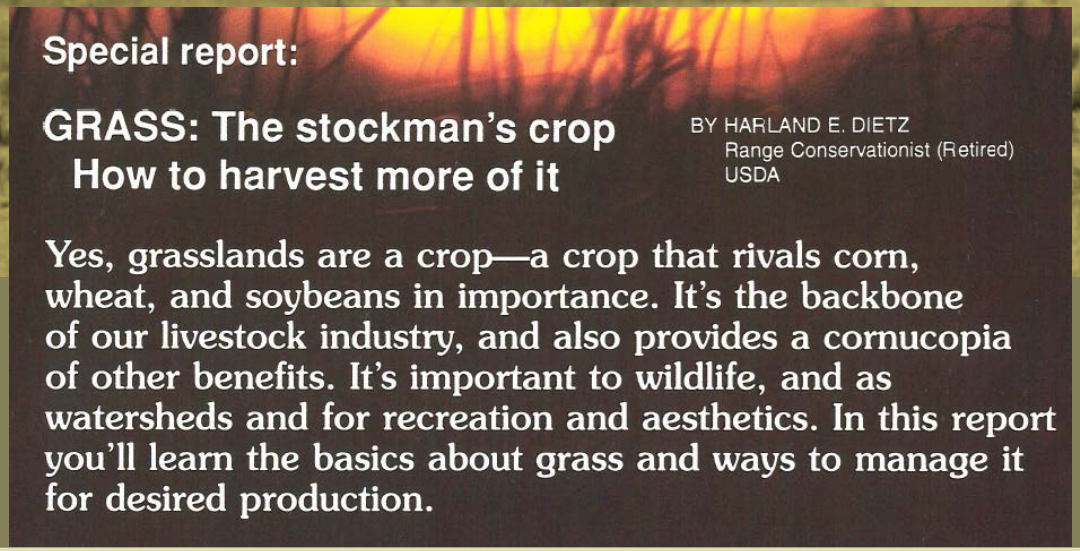
- Do you raise your own hay (or other crops)
- Do you graze crop aftermath?
- Have you had parasite problems?
- Have you had poisonous plant problems?

How to Discuss Intensive Grazing Management

Key Concepts to Convey

✓ Why is it important?

- Warm and Cool Season
- Annual and Perennial
- 'Solar Panel' analogy
- Grass anatomy
- Energy Storage
- Growth Point
- Stages of Growth
  - Nutritional Value
- Grazing Effects
  - Root Growth
  - Growth Point Removal



Special report:

GRASS: The stockman's crop
How to harvest more of it

BY HARLAND E. DIETZ
Range Conservationist (Retired)
USDA

Yes, grasslands are a crop—a crop that rivals corn, wheat, and soybeans in importance. It's the backbone of our livestock industry, and also provides a cornucopia of other benefits. It's important to wildlife, and as watersheds and for recreation and aesthetics. In this report you'll learn the basics about grass and ways to manage it for desired production.

How to Discuss Intensive Grazing Management

Use of Visual Aids

- Brochures
- Pasture Stick
- Use a Shovel
- Videos
- Grazing Cages

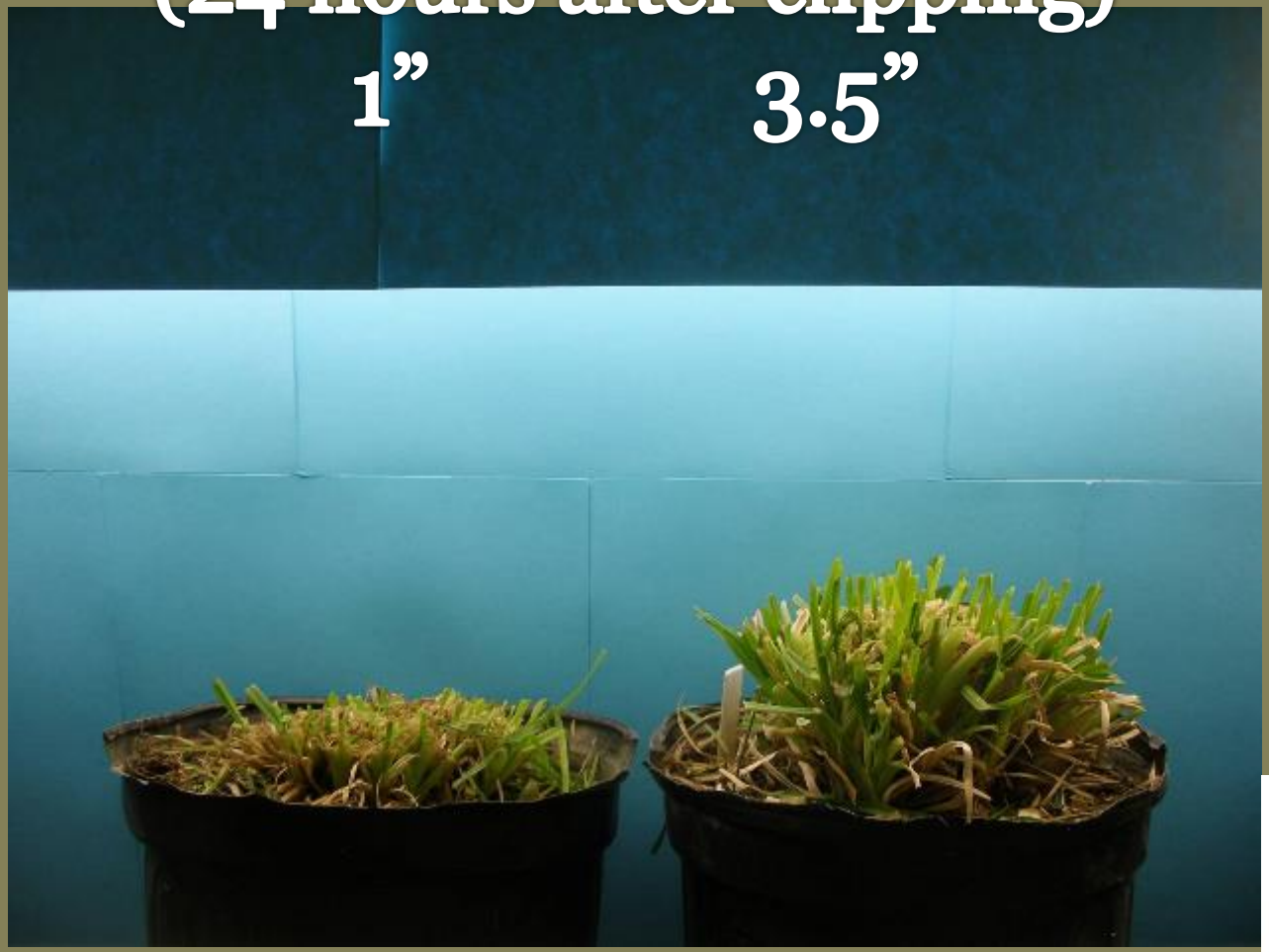
Percent leaf volume removed	Percent root growth stoppage
10%	0%
20%	0%
30%	0%
40%	0%
50%	2-4%
60%	50%
70%	78%
80%	100%
90%	100%

How grazing affects root growth

This table illustrates the truth in the old saying: "Take half and leave half." Notice that as you graze off up to half the leaves of your grass that root growth continues unimpaired. But, just look at what happens when you try to sneak in another ten percent "harvest": Half the root growth is stopped. At 80 percent root growth stops completely—and at least 30 percent is needed annually to replace roots naturally pruned. Removing 80 percent of the leaves also stops root growth for 12 days. Taking off 90 percent of the leaves stops root growth completely for 18 days. *Adapted from Crider.*

Day 1
(24 hours after clipping)

1” 3.5”



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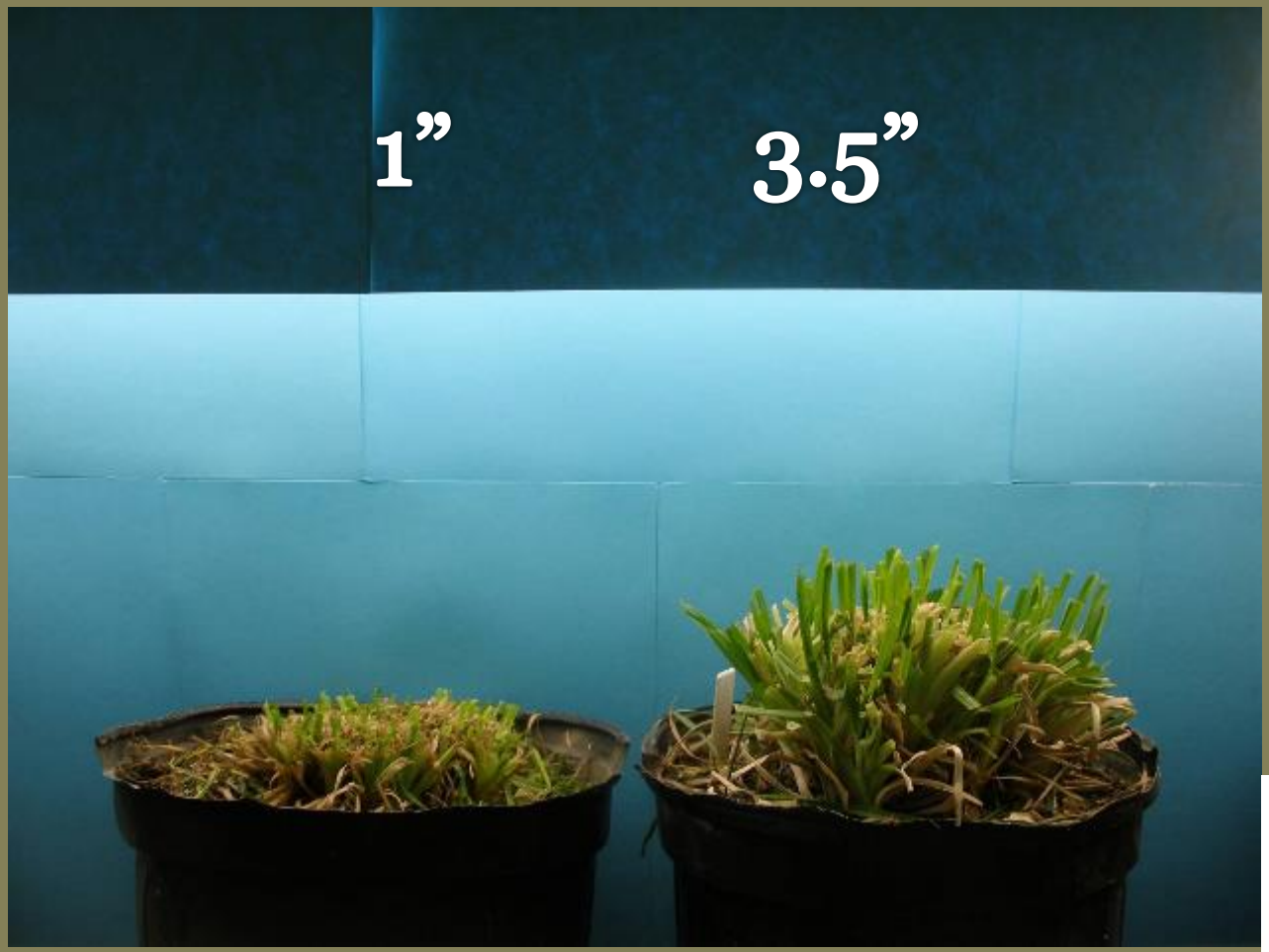
Day 2



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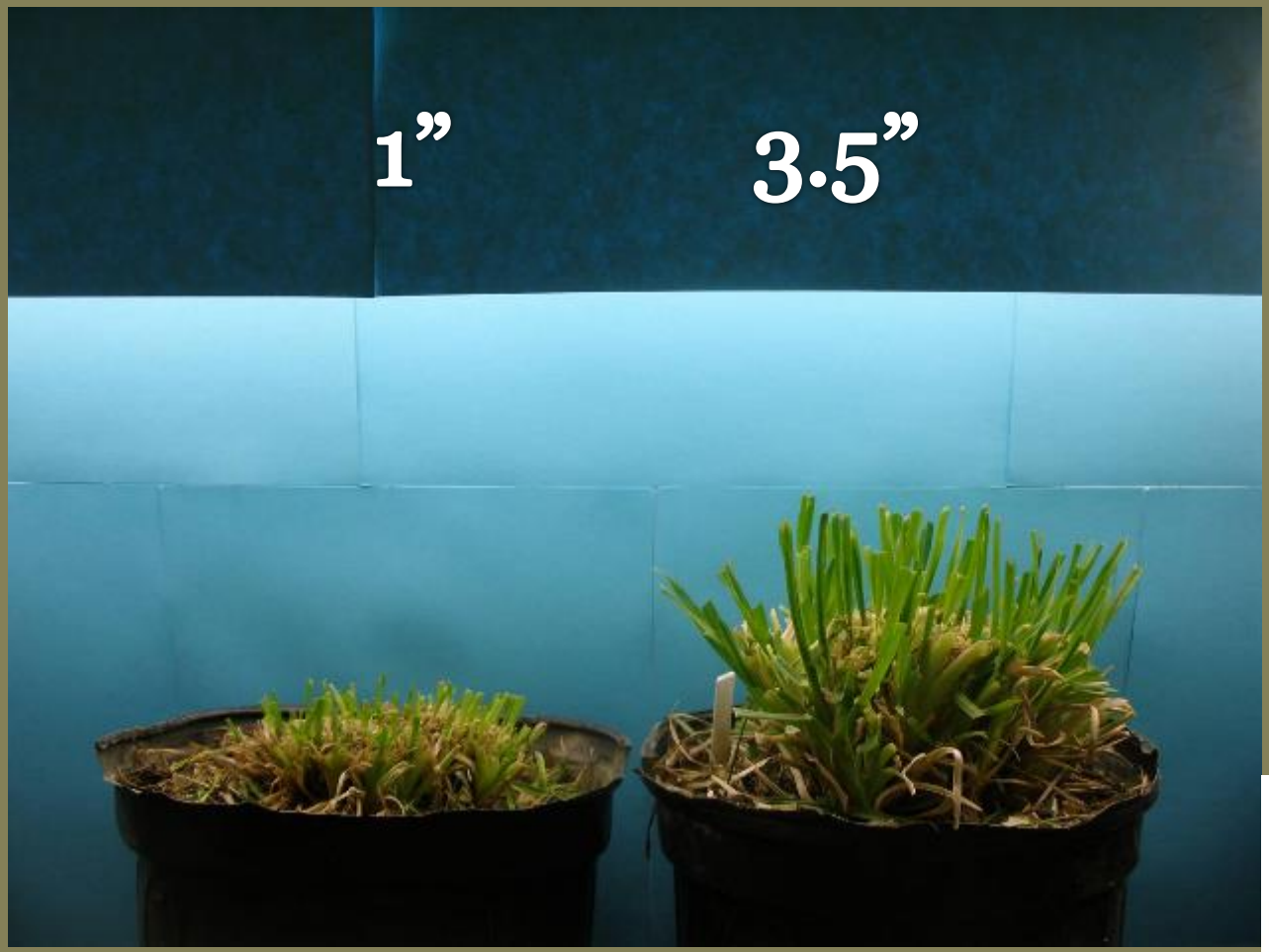

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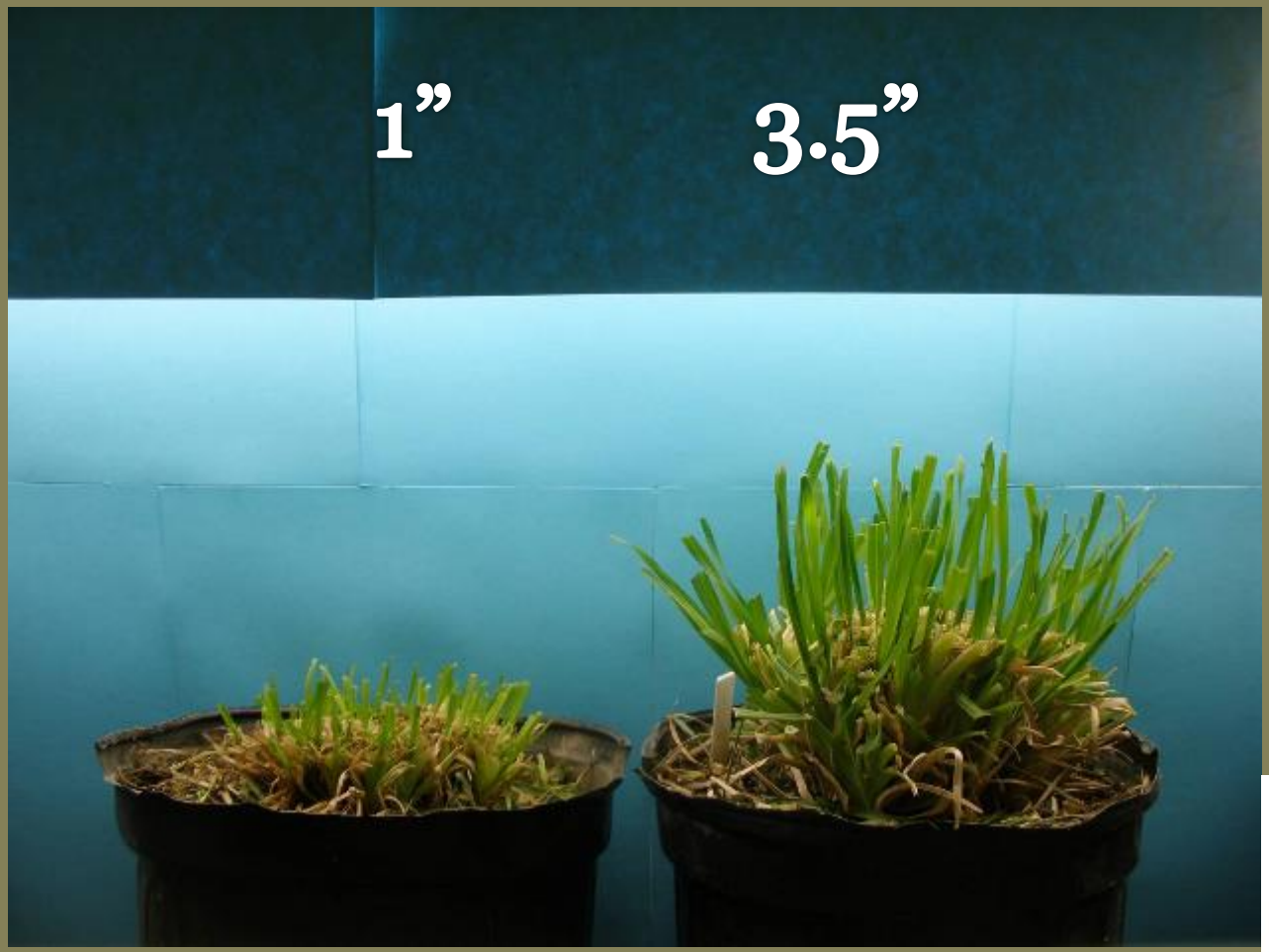

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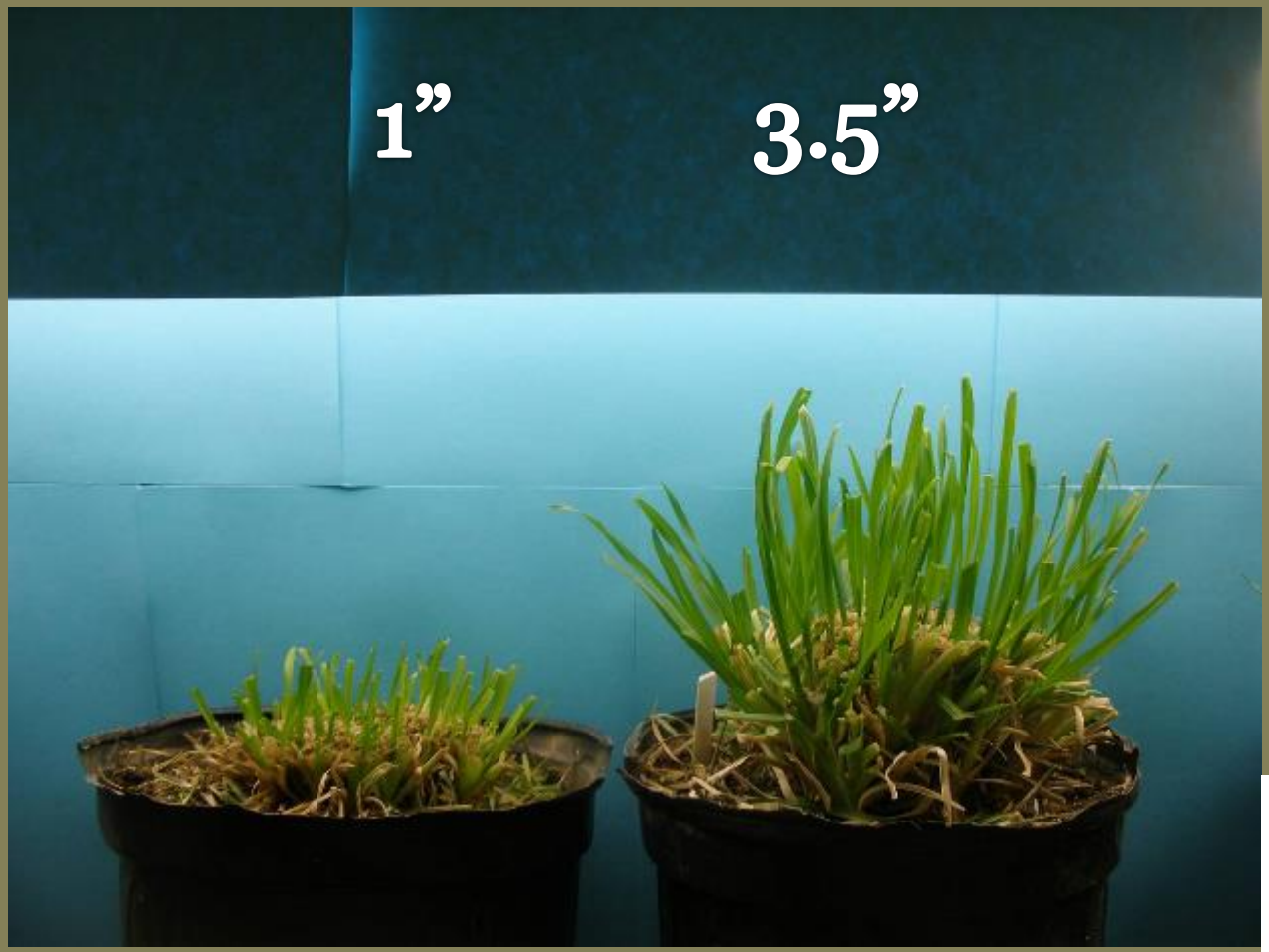

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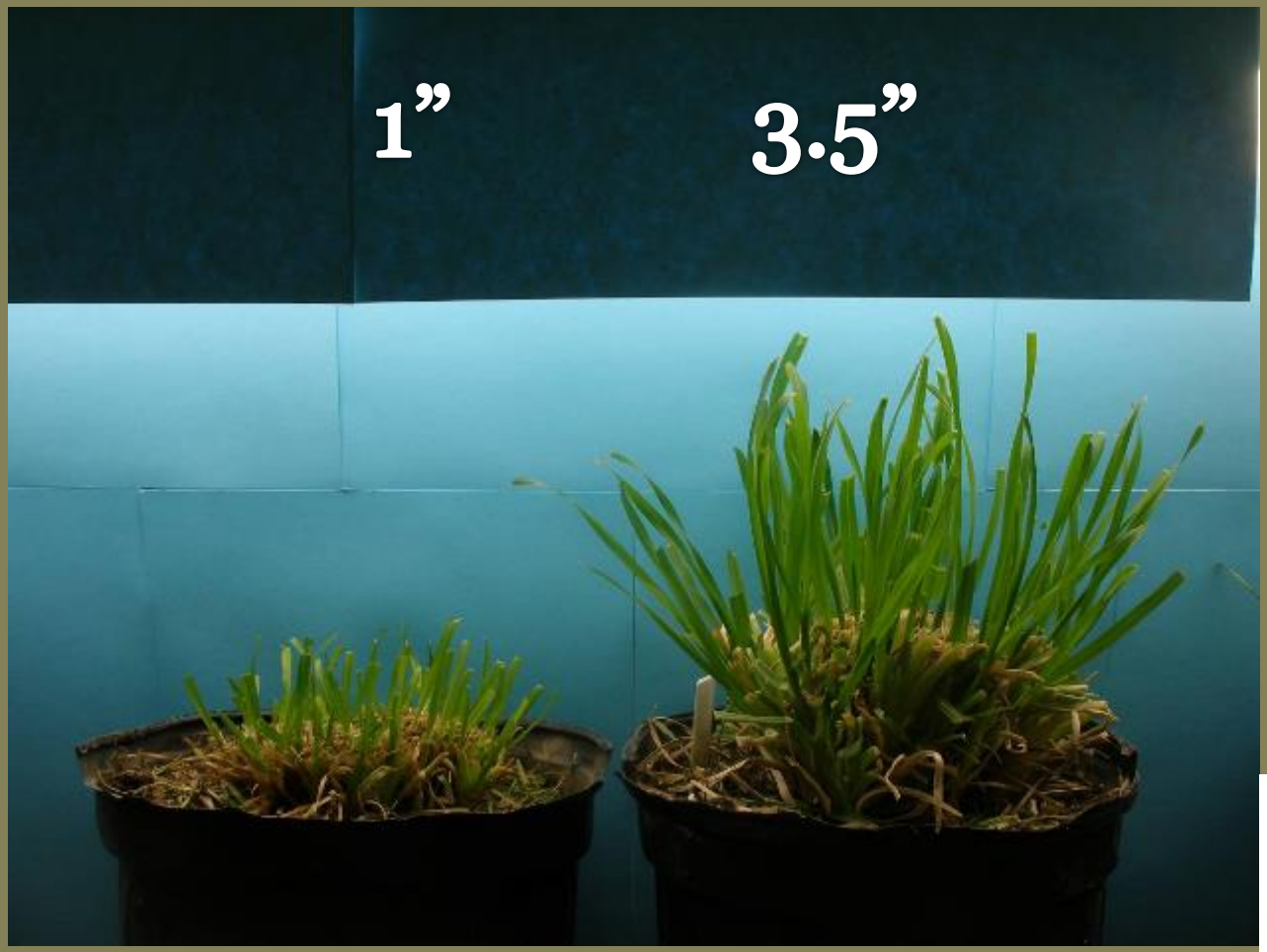

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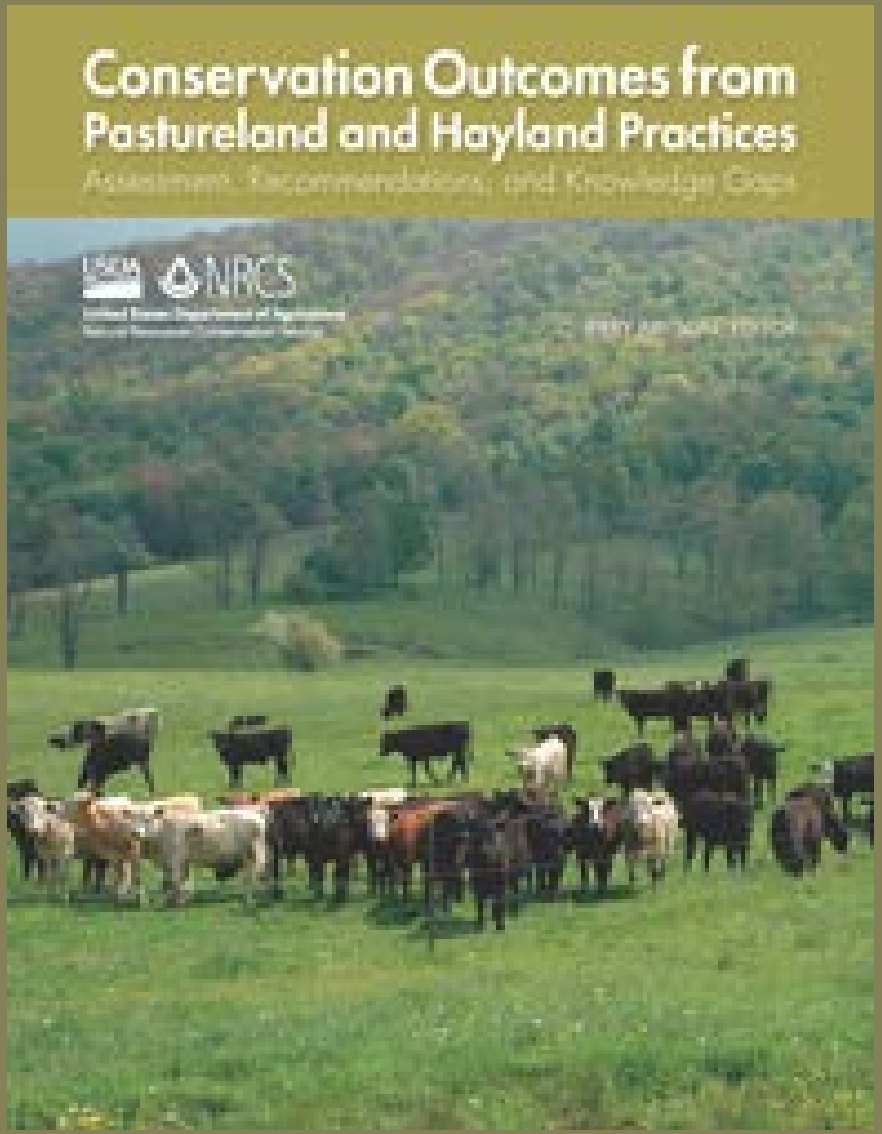
How to Discuss Intensive Grazing Management

Benefits

<u>More Forage</u>

A review of 27 research papers on both rotational and continuous grazing systems showed eighty-five percent reporting greater forage quantity resulting from the rotational grazing. The average *forage production advantage was thirty percent!* Grazing efficiency improved as well.

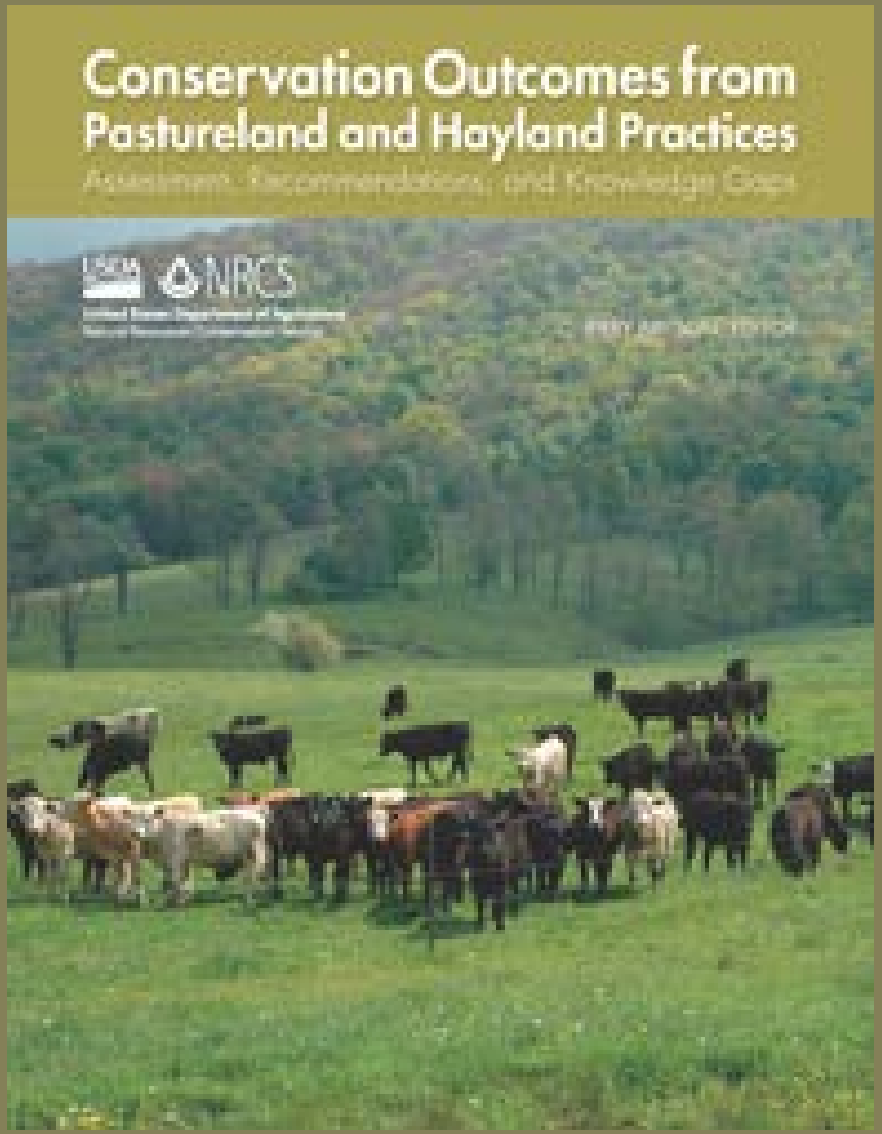


How to Discuss Intensive Grazing Management

Benefits

<u>More pasture plant diversity</u>

A better diet offered by a mixture of grasses, forbs, and woody species can improve livestock performance. Intensive management allows many of the preferred forages to recover between grazing cycles. When legumes are not eliminated by continuous overgrazing, nitrogen is “fixed” for use by the grasses; and the animals benefit from the increased protein and digestibility of the legumes

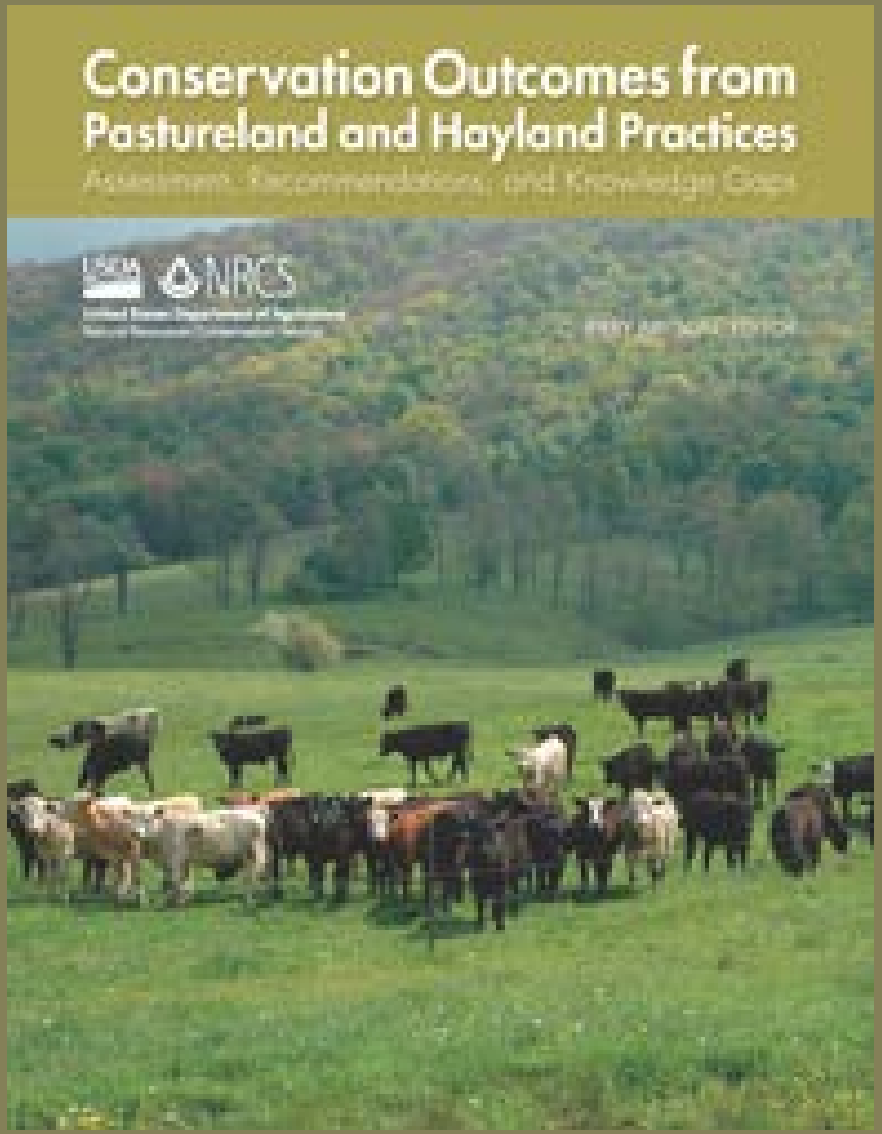


How to Discuss Intensive Grazing Management

Benefits

<u>Superior persistence of desirable forage plants</u>

Rotational grazing allows the desirable plants to grow more "above ground" vegetation. The chlorophyll in the additional leaf tissue produces additional roots for a healthier plant. The more robust root system can, in turn, provide the water and nutrients from deeper in the soil profile, resulting in a **more "drought-proofed"** pasture. In this way, the desirable plants can persist while the invading weeds cannot easily gain a foothold.



Considerations and Constraints to Applying Intensive Grazing Management

In order for the grazing plan to actually be applied it must be practical. It must fit in with all other aspects of the ranch operation. There is much more to this than simply assuring adequate stock water and fencing exists.

Livestock Reproduction

Many ranchers prefer not to move livestock during the calving season, or to move individual cows onto an adjacent pasture as they calve out. A calving pasture should provide a warm, sheltered, and easily accessible location where cows can be observed in case of dystocia. Some shelter may be desirable for protection from wind and rain.

Livestock Nutrition

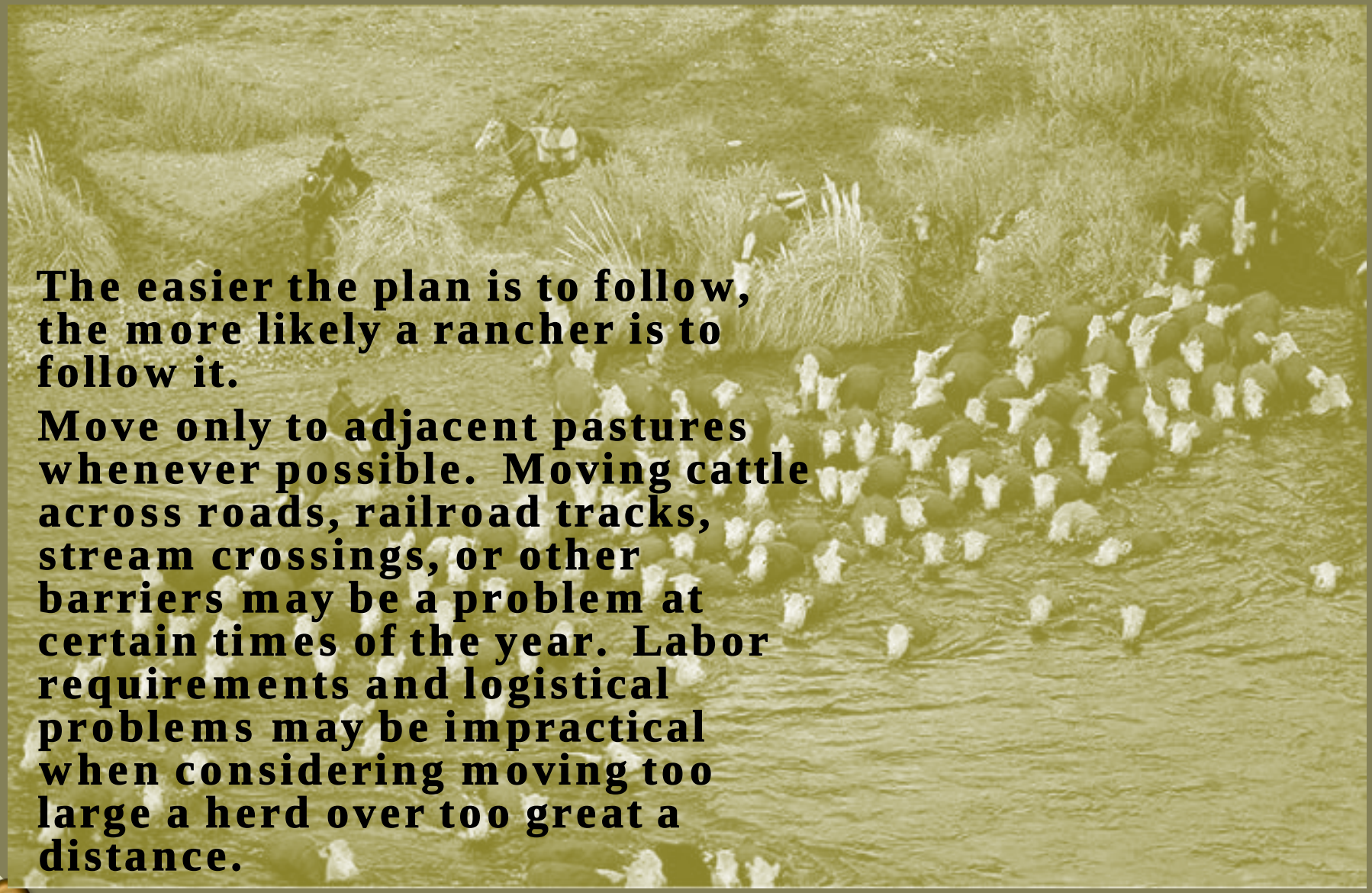
Replacement heifers have additional nutritional requirements for growth in addition to the brood cows' requirements for maintenance, and reproduction. Whether these animals are separated from the brood cows or not, care should be taken to supply adequate nutrition to the replacements during critical periods. Alternatives could be separate pastures, a rotation with brood cows following replacements, or a high level of nutrition provided for all animals in the same pasture.

Livestock Health

Grazing alfalfa or other crop aftermath is a common practice in the fall. However, it should be grazed following the first hard frost (with the plants wilted and drying) if bloat is a concern.

Bloat can be a concern when moving cattle from dormant range onto a large supply of lush legume forage, such as hay aftermath that has had a chance to regrow.

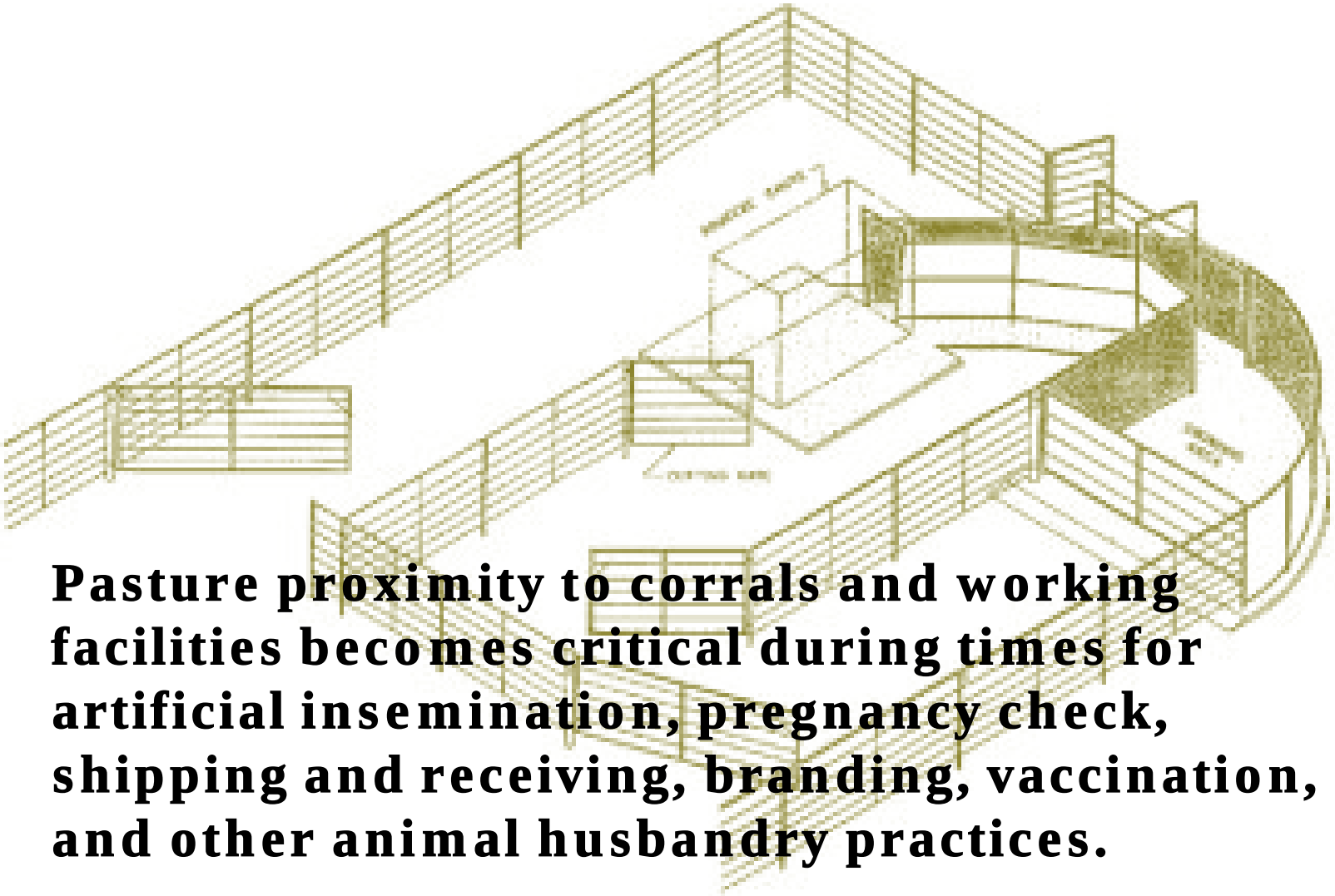
Facilities and Infrastructure



The easier the plan is to follow, the more likely a rancher is to follow it.

Move only to adjacent pastures whenever possible. Moving cattle across roads, railroad tracks, stream crossings, or other barriers may be a problem at certain times of the year. Labor requirements and logistical problems may be impractical when considering moving too large a herd over too great a distance.

Facilities and Infrastructure



Pasture proximity to corrals and working facilities becomes critical during times for artificial insemination, pregnancy check, shipping and receiving, branding, vaccination, and other animal husbandry practices.

Lifestyle Constraints

Livestock producers are a diverse group including full time, part time, absentee owners, etc. Too many pastures and moving dates in a grazing season may not be feasible to a producer with time or labor constraints.

The End

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USDA

United States Department of Agriculture

Soil Health Division

Natural Resources Conservation Service

Working with landowners on intensive grazing management systems

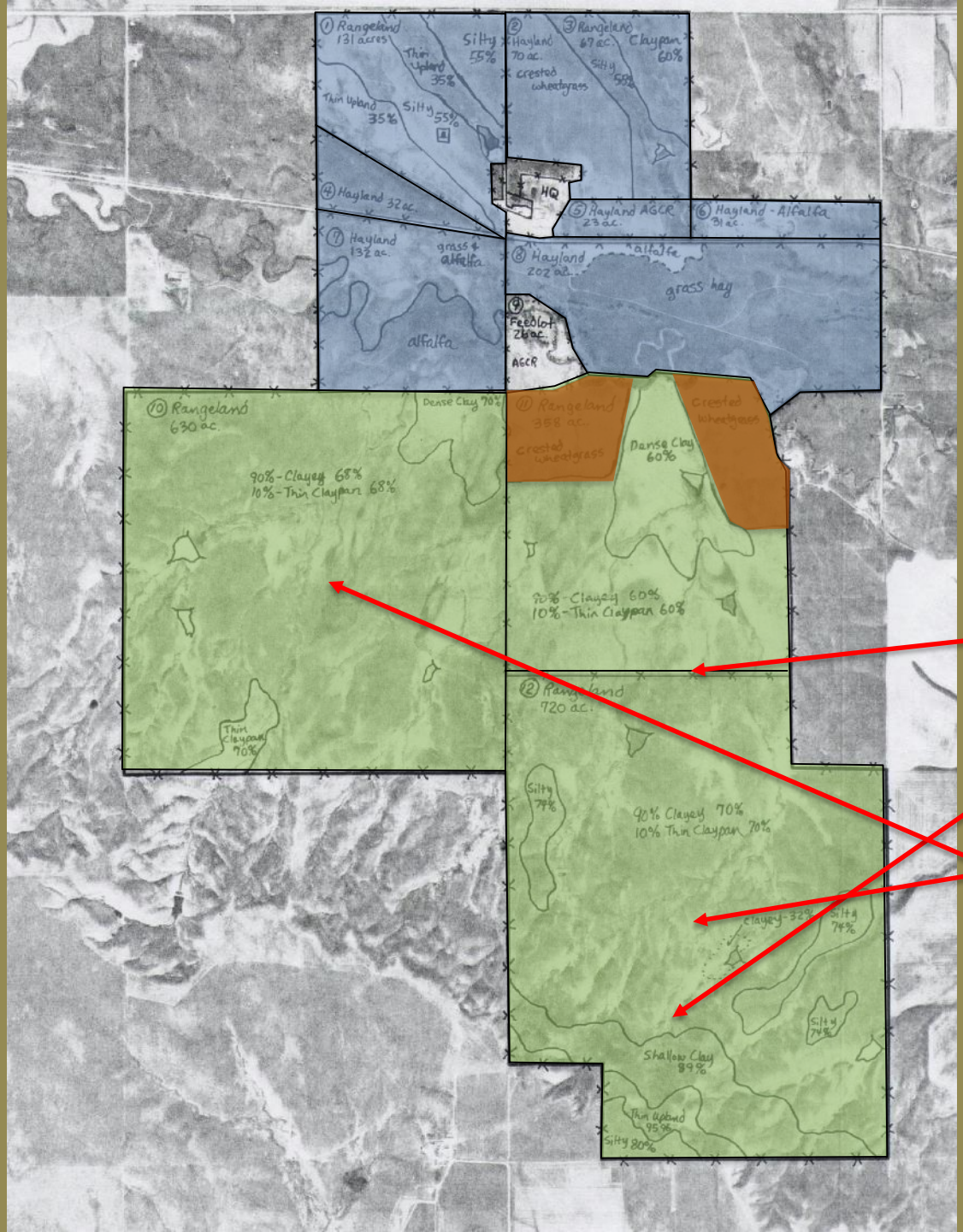
November 28, 2017 | Stan Boltz

Natural Resources Conservation Service

nrcs.usda.gov/

Getting started

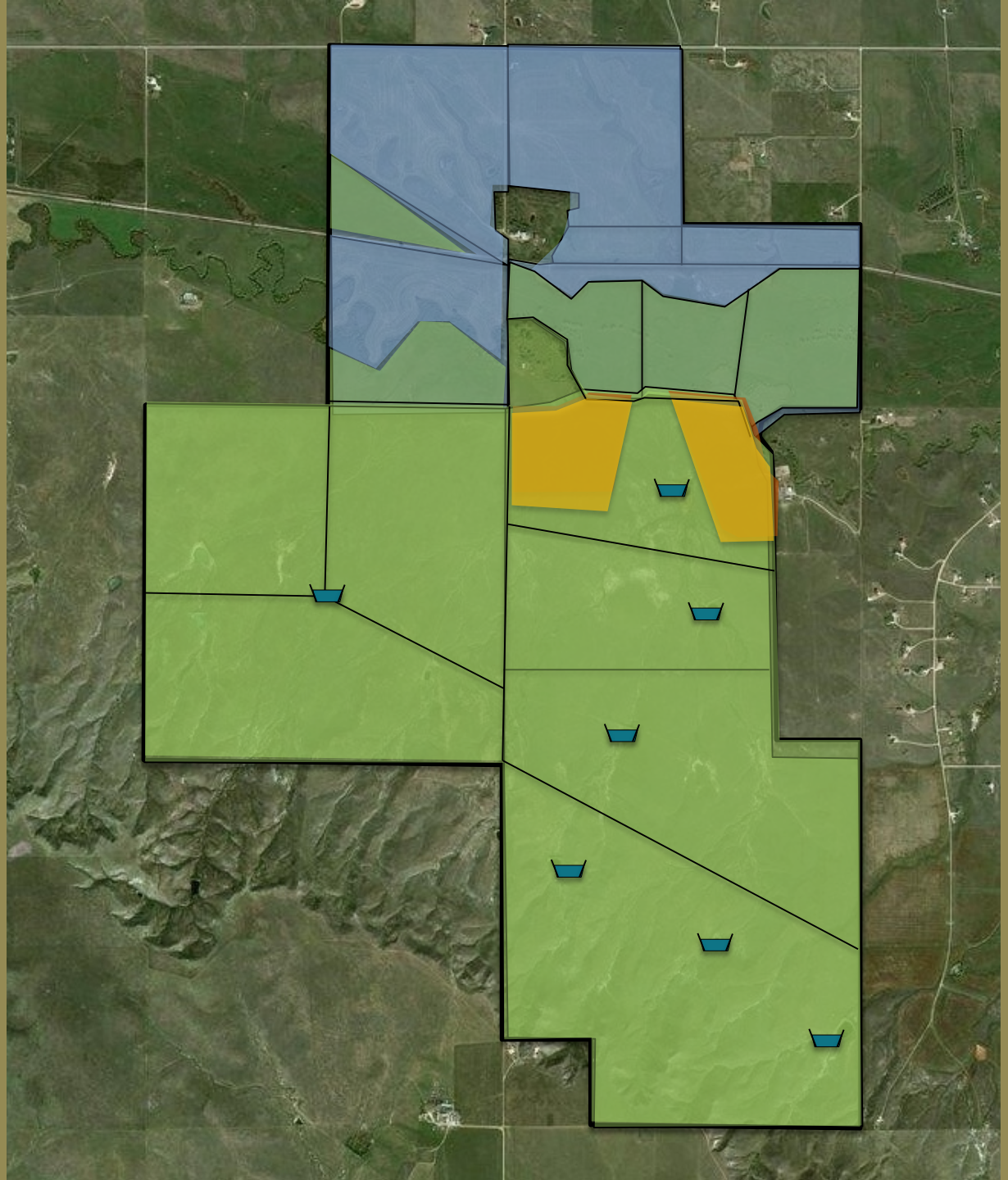
- Trying to do too much too quickly can cause problems.
- The first split will give you the biggest bang for the buck, and will likely “sell it” to the producer.
- Example of rest in a 180 day grazing season:
  - 1 paddock: 0 days
  - 2 paddocks: 90 days
  - 3 paddocks: 120 days
  - 4 paddocks: 135 days



Ranch purchased in 1996.

Observations:

- ✓ Putting up too much hay.
- ✓ Crested wheatgrass overutilized.
- ✓ Fence not in good location.
- ✓ Steep terrain underutilized.
- ✓ Uneven distribution in large paddocks, and couldn't stay ahead of sweetclover.



Locating fence:

- ✓ Topography
- ✓ Forage types and production.
- ✓ Realistic movements.
- ✓ Water locations must be verified.

Seeing results

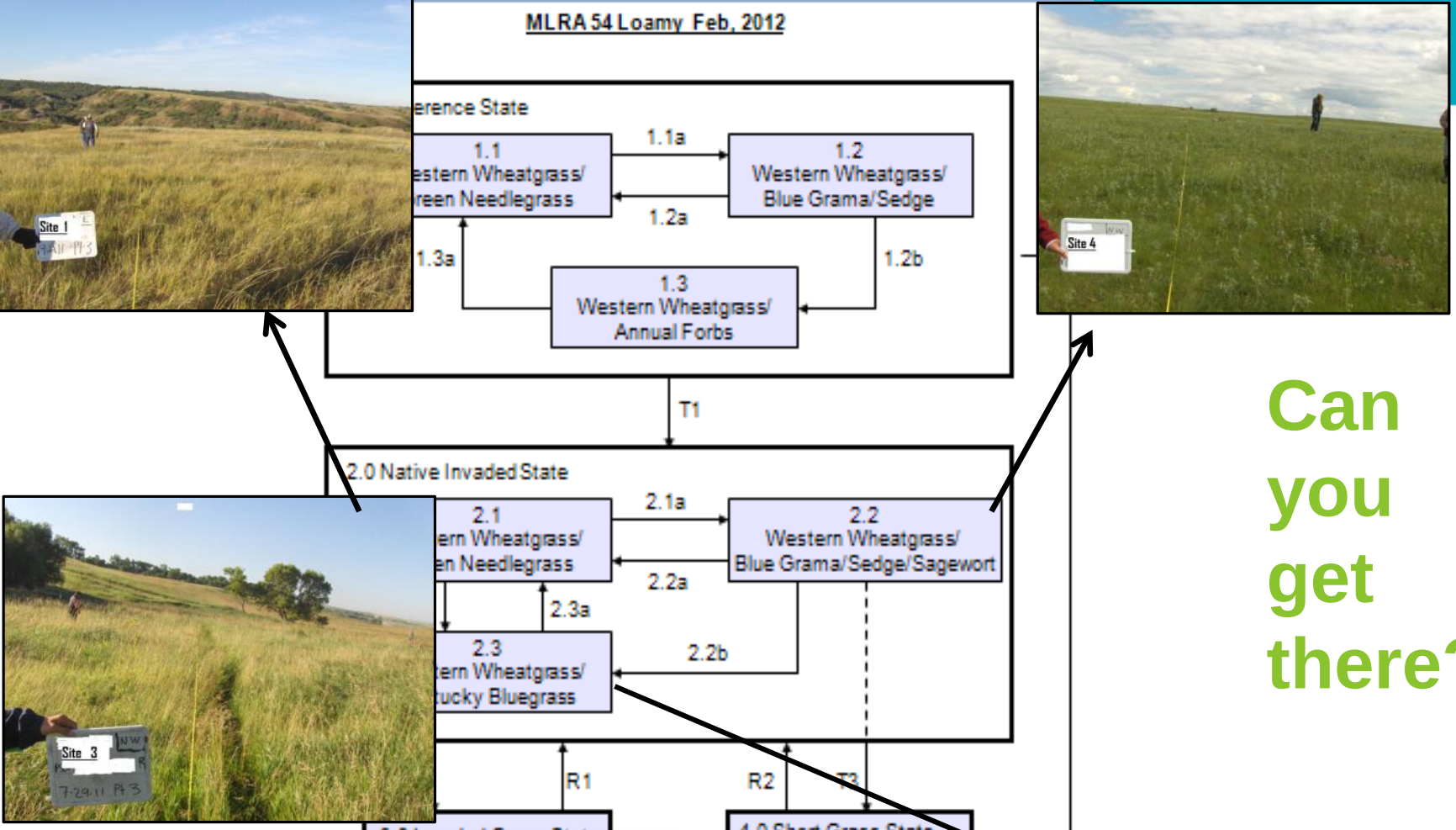
Changes in management will often be accompanied by changes in:

- **Animal performance**
- **Production and/or vigor of plants**
- **In time, shift in plant composition**

But is it where you intended or want to go?

A vision of the landscape

- Almost every raindrop should infiltrate where it falls
- Water cycle to be very efficient to minimize erosion
- Maximum diversity of native plant species
- Nutrient cycling to be high with minimum losses to leaching or runoff
- Energy flow to be high and sustained
- Living non-eroding soil with high complexity of life and high organic matter content
- Almost all nutrients supplied by soil, life and atmosphere
- Efficient use of the forage base while promoting healthy range conditions



Can you get there?

“There” may not be where you wanted to go…

Seeing results

“If you can’t measure it, you can’t manage it”. – Calvin Adams, Rancher, Barnard, Kansas

“Use what you’ve got, manage for what you want.” – Jim Faulstich, Rancher, Highmore, South Dakota

“When you can measure what you are speaking about, and express it in numbers, you know something about it, when you cannot express it in numbers, your knowledge is of a meager and unsatisfactory kind…” Lord Kelvin

Managing and measuring by objective

If you are going to know whether you're succeeding in reaching your objectives, you'll need to measure the results of your management changes.

***"If you aim at nothing, you're sure to hit it."* – Zig Ziglar**

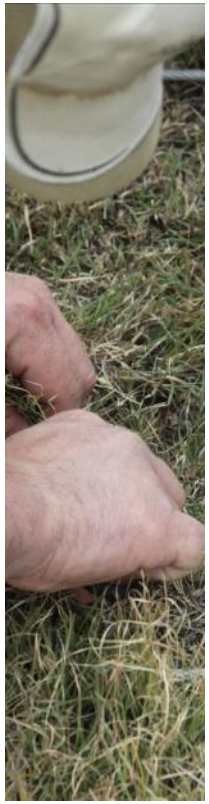
Managing and measuring by objective

Monitoring Method	Landowner Objective								
	Riparian Condition	Increase Forage Production	Increase Ground Cover	Improve Plant Vigor	Change Plant Species Composition	Wildlife Cover and Habitat	Improve Livestock Distribution	Time Required	Monitoring Method Term
Photo Point	✓	✓	✓	✓	✓	✓	✓	Low or Medium	Short and Long
Use-Zone Mapping							✓	Medium	Short
Grazing Exclosure							✓	Low or Medium	Short
Landscape Appearance/ Key Species							✓	Medium	Short
Paired Plot							✓	Medium	Short
Cover Pole	✓					✓		Medium	Short and Long
Plant Production		✓		✓	✓			Medium or High	Long
Similarity Index					✓			High	Long
Line-Point Intercept	✓		✓		✓			Medium	Long
Frequency					✓			Medium	Long
Modified Frequency		✓			✓	✓		Medium	Long
Dry-Weight Rank					✓			Medium	Long
Modified Dry-Weight Rank		✓			✓			High	Long
Comparative Yield		✓		✓	✓			Medium	Long
Cover Board	✓					✓		Medium	Long
Belt Transect	✓		✓		✓	✓		Medium	Long
Line Intercept			✓	✓	✓	✓		Medium	Long

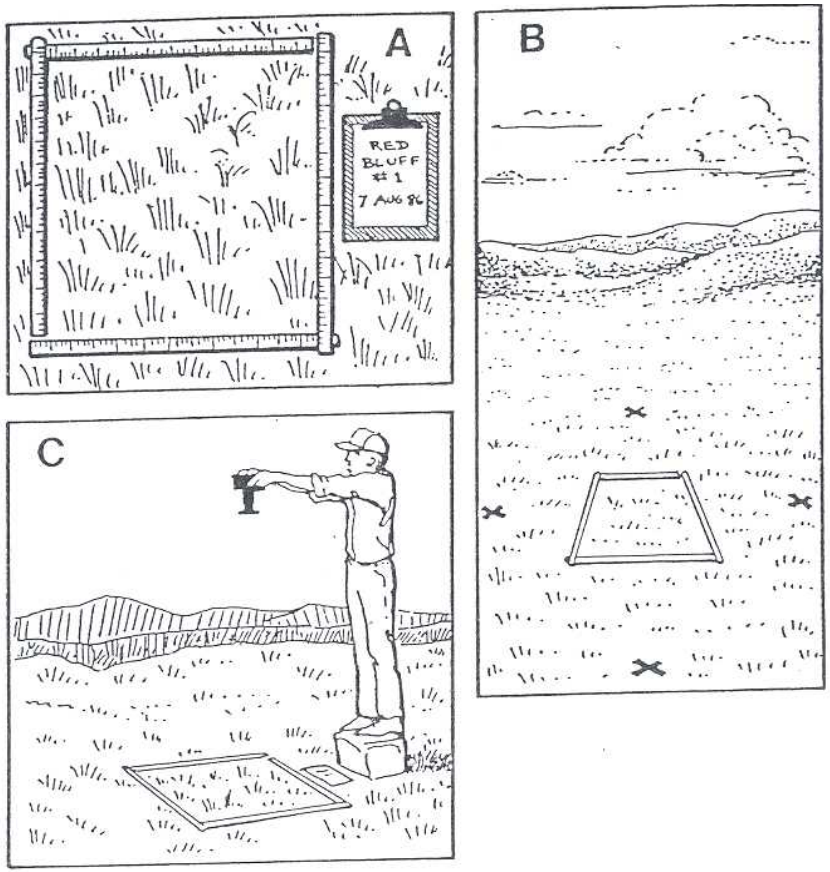
Selecting inventory/monitoring methods

Select methods that:

- ✓ **Are relatively simple to complete as much as possible**
- ✓ **Tell you something about the objective you are trying to reach**
- ✓ **Serve multiple purposes or give you more than one piece of information**

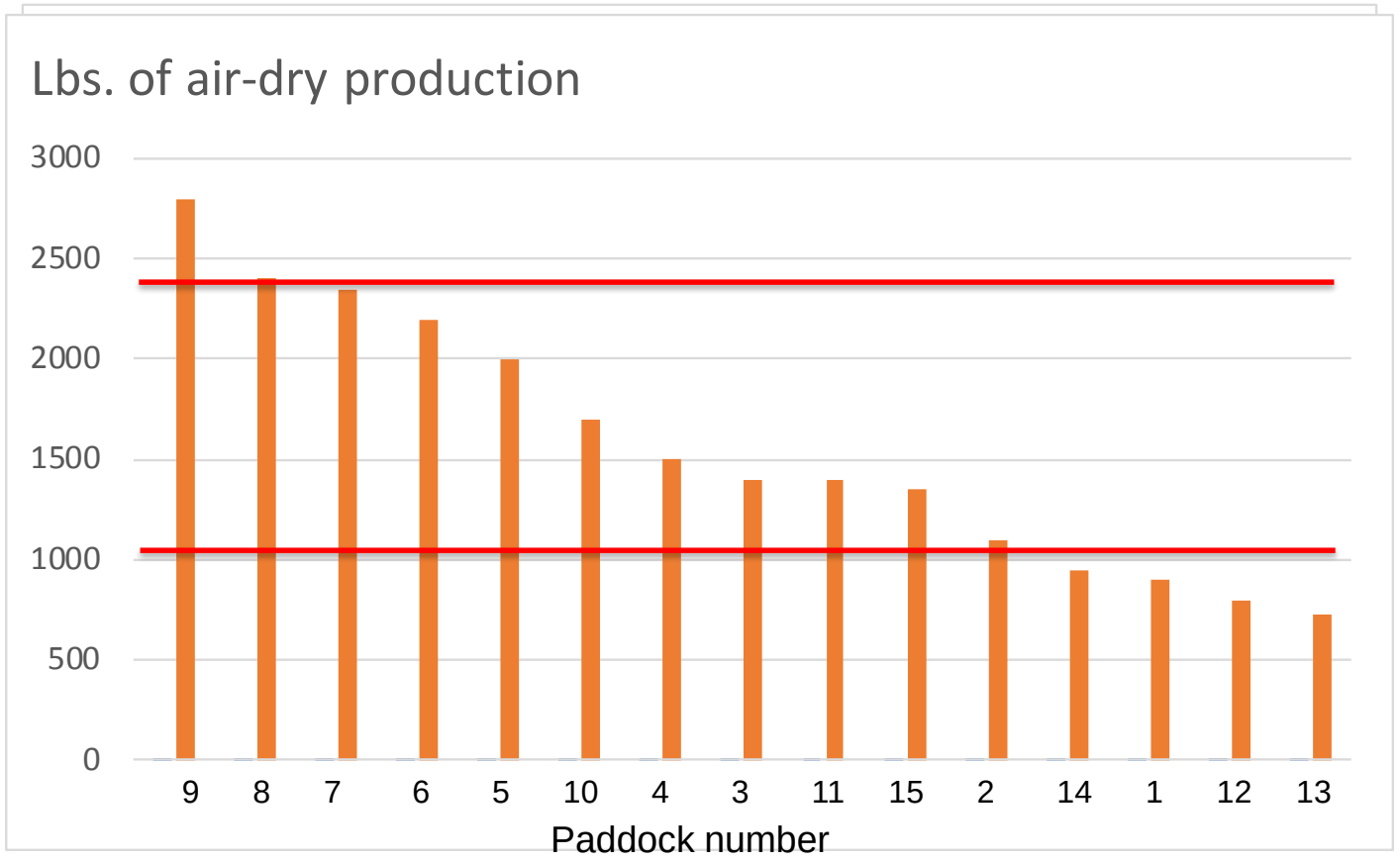


Photos



- Provide information for multiple objectives
- Easy to do
- GrassSnap – a smart phone app

Grazing wedge



Other methods

- **Management/record keeping tools**
  - SD Grazing Tool, ND Grass Tool, C-Graze, other state tools, and GRAS
- **Animal performance**
  - Weights on/off
  - Body condition scoring
- **Cover, plant height, production, etc.**
  - Monitoring Manual for Grassland, Shrubland and Savannah Ecosystems, SD Monitoring Tool
- **Soil health related**
  - Soil organic matter, aggregate stability, infiltration, etc.
  - Range Health Assessment

Using the information

- Are objectives being reached?
- Are we moving towards or away from a threshold?
- Are we optimizing resource potentials?
- Is the intensive management improving production as intended?

This information can help with adaptive management

gh	AUM/ac.	Pasture
3100	0.63	39(
2200	0.47	27(
4500	0.96	
4400	0.99	56!
4300	0.96	59!
4200	0.96	25!
3400	0.69	30(
3400	0.69	35!
2900	0.60	23(
2100	0.44	22(
3400	0.66	51(
6000	1.37	56!
1300	0.27	
2300	0.47	
2400	0.52	28(
1700	0.33	
7500	1.64	
5500	1.23	66(
7400	1.75	
2800	0.60	27(
0	0.00	
7100	1.70	
7000	1.64	
6400	1.40	59!
5500	1.23	62!
4800	1.10	59!
4300	0.96	
3600	0.77	27(
3500	0.77	38(
3600	0.77	51(
3400	0.71	41(
3200	0.66	38(
2800	0.55	28(
2600	0.52	22(
1800	0.36	
1800	0.38	

Year	Rotation Type	Actual Stocking Rate (AUM/ac.)	Seasonal Utilization	Average Daily Gain	Lbs. Beef per Acre	% increase over season long
1995	season long	0.75	65%	1.7	55	
1997	rotational	1.08	45%	1.6	74	34%
1998	rotational	1.12	40%	1.7	82	49%
1999	MIG	1.03	35%	2.0	90	64%
2000	MIG	0.91	50%	1.88	78	42%
2001	MIG	1.22	45%	2.7	105	91%
2002	MIG	0.9	45%	1.9	64	17%
2003	MIG	1.1	50%	1.75	68	24%
2004	MIG	0.3	35%	1.87	45	-18%
2005	MIG	0.91	45%	unk	unk	unk
2006	MIG	0.84	50%	unk	unk	unk
2007	MIG	1.14	45%	1.57	68	24%
2008	MIG	1.36	45%	1.83	72	31%
2009	MIG	1.02	35%	2.4	105	91%
2010	MIG	1.42	40%	2.19	82	49%
2011	MIG	1.23	35%	2.3	96	74%
2012	MIG	0.74	55%	2.1	90	64%
2013	MIG	0.91	40%	2.0	80	45%
2014	MIG	1.18	55%	1.77	77	39%
2015	MIG	1.15	50%	1.54	68	24%

Year	% OM
1998	1.4
2000	3.0
2003	4.1
2005	3.4
2008	3.7
2010	5.1
2012	3.8

Effects on other aspects of operation

Operation dynamics

- **Resources**
- **Family**
- **Financial**

Hay & Grass Costs	
(interest & taxes)	
hay cost / ton	$11.33
grazing cost/hd/mo.	$5.55

Return on assets	6.6%
Return on investment	30.0%

Pounds beef per acre	
(w grass, hay & grain)	163
(grass)	104

You don’t know where you’re going until you know where you’ve been.

Questions?