

Seven things I have learned about profitable ranching over the last 45 years



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Seven important concepts

- **Ranching is a land-based business & livestock are only incidental**



Some useful definitions:

Carrying Capacity vs Stocking Rate

- **Carrying Capacity:** The number of animals we can carry while making a profit and maintaining or improving our resource base

Carrying capacity is your measure of supply

- **Stocking rate:** The number of animals or animal live weight assigned to a grazing unit on a seasonal basis.

Stocking rate is your measure of demand



Why does stocking rate matter?

- A primary determinant of profitability
 - The more animals on the place, generally the higher the revenue stream
- A primary determinant of animal performance
 - Especially if optimal carrying capacity is exceeded
- As stocking rate increases:
 - Individual animal performance declines, after a point
 - Production per acre increases, up to a point



First rule of grazing management

- Do not allow stocking rate to exceed carrying capacity!



Keys to profitability:

Most of our costs are land-based

LAND-BASED ASSETS

- Land ownership
- Land lease
- Property taxes
- Equipment
- Seeding
- Fertilization
- Fencing
- Stock water
- Irrigation, weed control, etc.

LIVESTOCK-BASED ASSETS

- Livestock
- Stock trailers
- Corrals & Scales
- Feed storage
- Hay & grain feeders
- Mineral feeders
- Vet-Med



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- Equipment
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- Stock water
- Irrigation, weed control, etc.

On the typical ranch, value of land-based assets will be 3-5X greater than the value of livestock on that ranch!

We need to get more out of every acre!



Keys to Profitability:

According to Burke Teichert (Deseret)

- Carrying Capacity (*return/acre not return/head*)
- Grazed feed vs. Fed feed (*stockpile vs. hay*)
- Cows/person (*AU/FTE – Deseret 800-1200*)
- Increase gross margin (*>50%*)
- Reduce overheads (*<33% overhead ratio*)
- Debt : Equity ratio (*depends on your risk aversion*)
- Scale of Operation
 - There really are efficiencies of scale, up to a point!
 - *Small operations can be profitable if top 6 are right!*

None of these relate to individual animal performance!

“A herd of smaller cows will always produce more lbs of calf per acre that are worth more per pound than what a herd of larger cows on the same acreage will do” *Kit Pharo*



Keys to profitability: Animal output vs. Land output

- *Obsession with high individual animal performance is one of the greatest obstacles to profitable ranching!*
- *High individual performance almost always comes with higher costs*



Seven important concepts

- Ranching is a land-based business & livestock are only incidental
- You can never have too much grass or money, but you can easily have too many cattle



What I learned from Bud Williams: Three inventories to manage

- Available feed
 - You can't have too much of this



Available forage inventory

- A ranch with excess available forage always has opportunities
- An overstocked ranch always has challenges



What I learned from Bud Williams: Three inventories to manage

- Available feed
 - You can't have too much of this
- Capital
 - You can't have too much of this



Available capital gives you flexibility

- Buy more livestock
- Lease more land
- Buy in feed
- Go to Vegas



What I learned from Bud Williams:

Three inventories to manage

- Available feed
 - You can't have too much of this
- Capital
 - You can't have too much of this
- Livestock
 - You can sometimes have too many of these



Overstocked & going broke?



Producing 120-140 AUD/A



Producing 240-300 AUD/A



We don't necessarily need more cattle, what we need are more functional cattle

- Small to moderate frame
- Deep body
- Easy fleshing
- Fast to shed winter coat
- Natural fertility
- Natural pest resistance
- Longevity
- Good temperament



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- **Do not calve in the winter months**

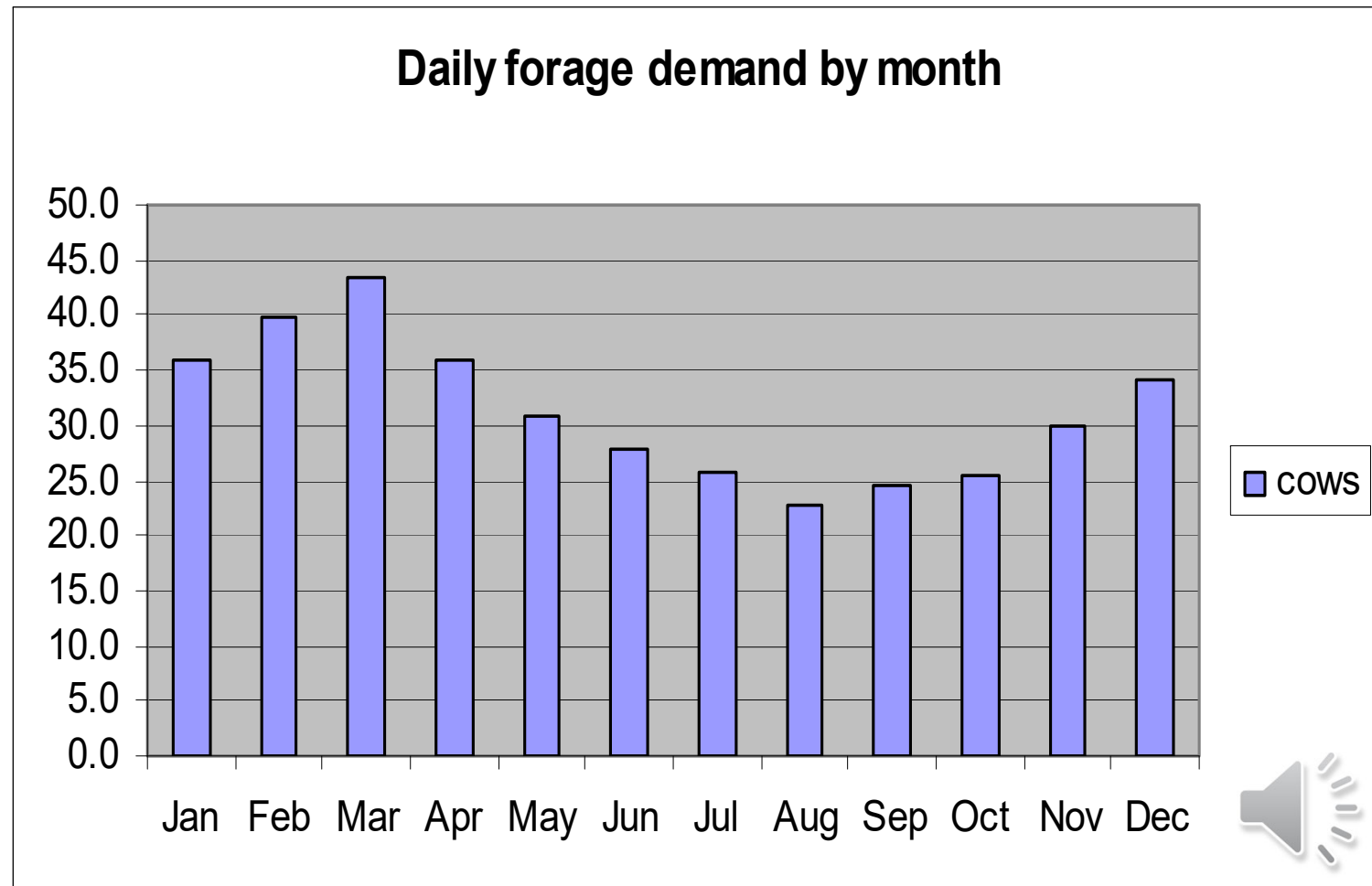


Nutrient requirement for breeding livestock is cyclical and predictable



Cow nutritional requirements are seasonal: January calving

- Energy demand is highest at peak lactation
- 30 to 90 days post-calving



Highest energy demand occurs from calving to rebreeding





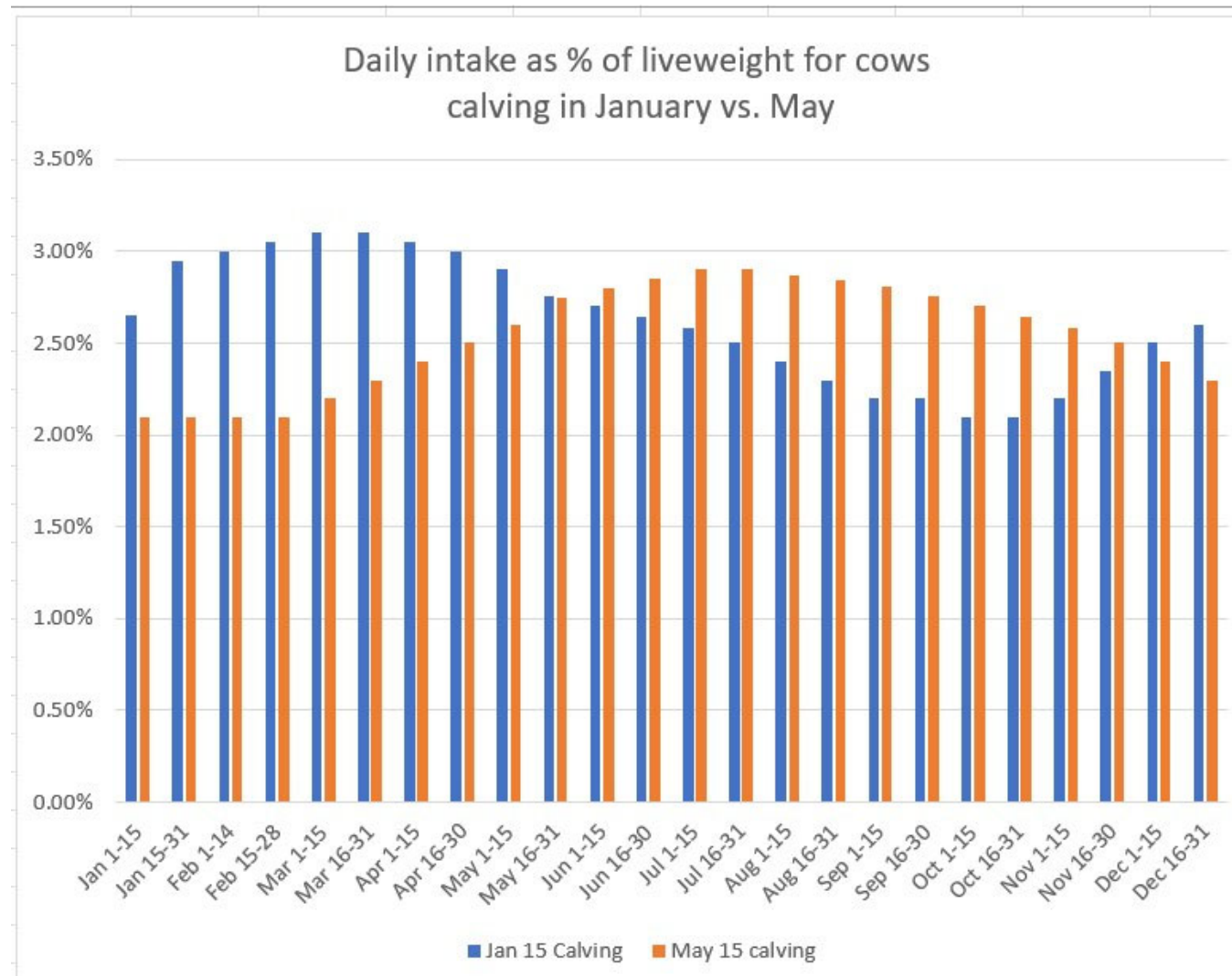
Peak lactation and breeding should coincide with peak nutritional supply



When is your feed least expensive & when is it most expensive?

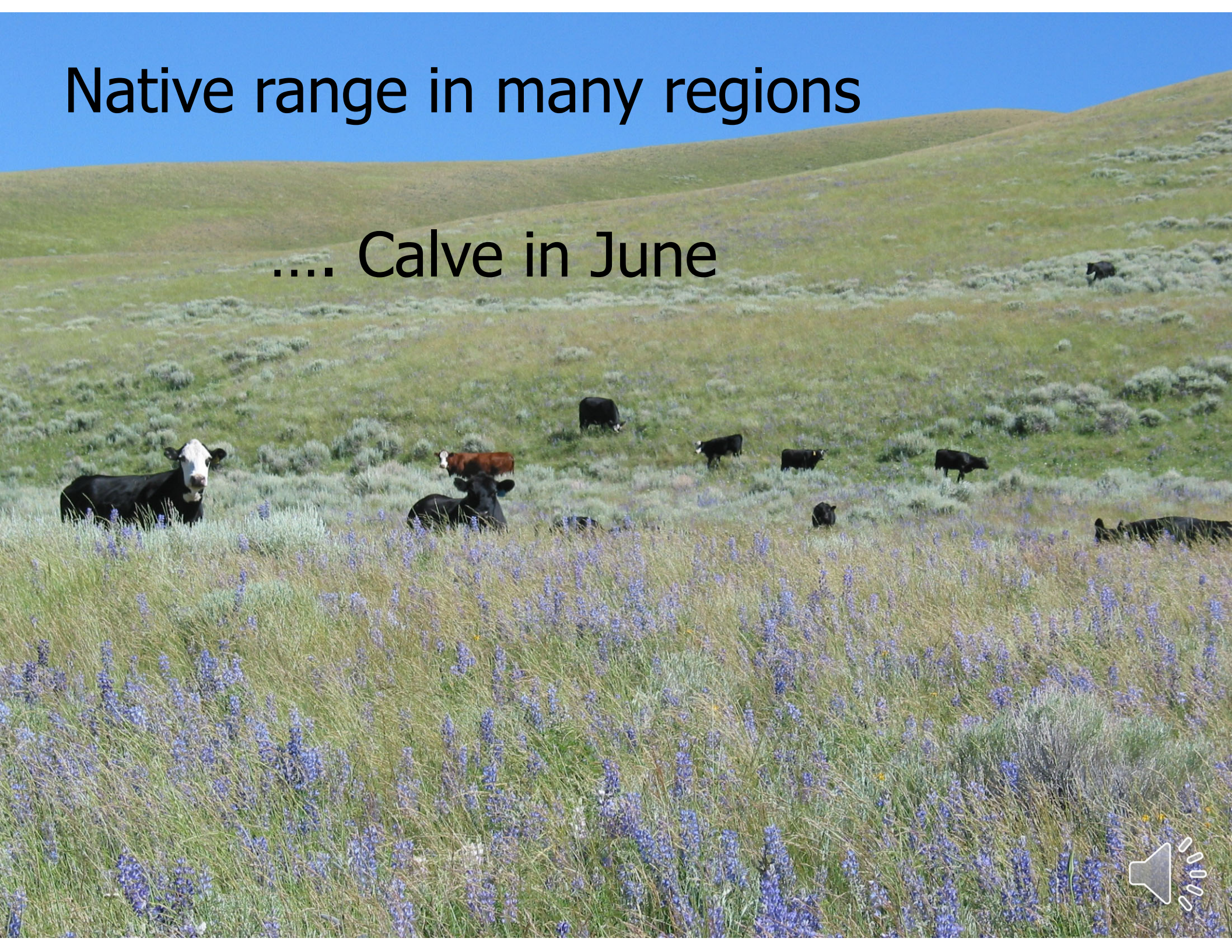
Winter calving has highest feed demand when feed is most expensive

Calving on green grass has highest feed demand when feed is least expensive



Native range in many regions

.... Calve in June



Endophyte infected

Stockpiled tall fescue in Missouri (Kentucky)

..... Calve in October



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- **Water makes grass grow**



Critical Concepts

■ Water makes grass grow!

Table 1. Standard table for estimating pasture dry matter yield and animal unit day carrying capacity based on effective precipitation in the 32° to 42° latitude range.

Precipitation range (inches/year)	Expected growth (lb/inch-H ₂ O)	Potential yield range (lb/acre/year)		Appropriate utilization for this moisture regime	Grazable forage at specified utilization (lb/acre)	Expected AUD/A	Expected AUD/ inch precip
< 10 "	50 - 100	200	1000	40%	240	9	0.92
10 - 15	100 - 150	1000	2250	45%	731	28	2.25
15 - 20	150 - 200	2250	4000	50%	1563	60	3.43
20 - 25	200 - 250	4000	6250	60%	3075	118	6.76
25 - 30	250 - 325	6250	9750	70%	5600	215	7.83
30 - 35	325 - 375	9750	13125	85%	9722	374	11.51
35 - 40	375 - 400	13125	16000	85%	12378	476	12.70
> 40"	Dry matter yield / inch of water begin to rapidly decline						



Critical Concepts

- Carrying capacity is determined by the combination of environment and management
 - Environment sets the upper limit of productivity
 - Your management determines what percentage of that potential is actually harvested



Building of organic matter

Managed grazing leads to more photosynthetic energy capture resulting in more organic matter created in the soil



- Long term pasture growth builds soil structure and increases water infiltration rate and soil water holding capacity



Evapotranspiration is the sum

water
TRANSPIRED
into the air
through plant
leaves

plus

water
EVAPORATED
from adjacent
soil
surfaces



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Building an effective water cycle

- Maintain vegetative cover
- Maintain appropriate litter layer on soil
- Balance use and recovery appropriate to that environment
- Build organic matter
- Avoid animal concentration points
- Avoid soil compaction



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- Time management matters more than spatial management



Seven important concepts

- Why time matters more than space



The grazing cycle

- Two periods of time make up each grazing cycle



The Grazing Period



The Recovery Period

Role of time in a grazing cycle:

Grazing Period: Mostly negative!

- Duration of time a piece of pasture is exposed to livestock
 - Photosynthesis is being diminished
 - Root system is contracting
 - Direct energy flow to soil microbes is reduced
 - Soil compaction from animal traffic
- Nutrients are returned to pasture via excretion
 - Urinary N & S are immediately available to plants
 - Immobile nutrients in feces are slowly released
- *The shorter the duration of the grazing period, the sooner the pasture begins recovery*



Role of time in the Grazing Cycle:

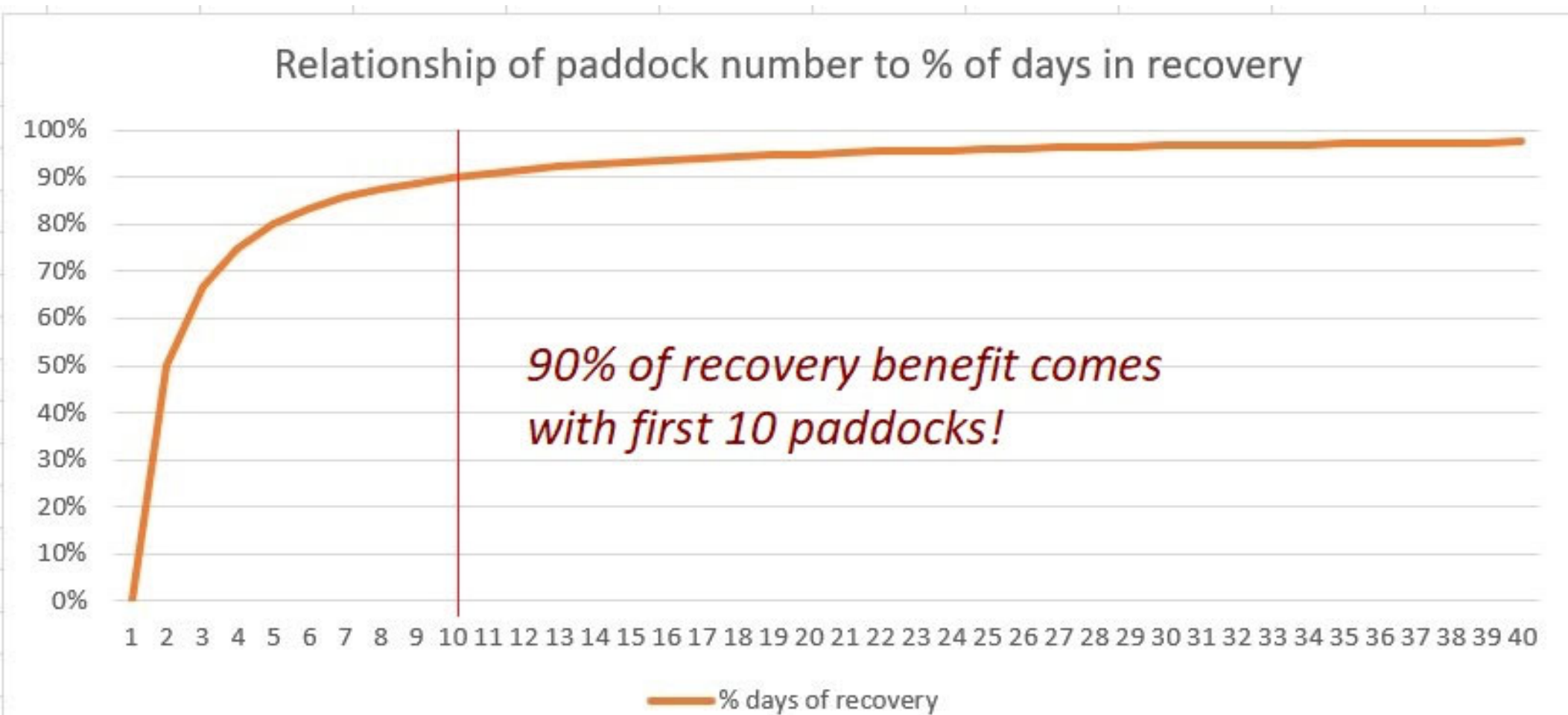
Recovery Period: Mostly positive!

- The time when pastures are not exposed to grazing animals during the growing season
 - Photosynthesis is increasing, up to a point
 - Root system is expanding, after a point
 - Direct energy flow to the soil microbes is resumed
 - Nutrients are being slowly released from feces
- Recovery periods may be too short or they might be too long

It is critical to adjust the length of recovery period as plant growth rate changes seasonally!



Relationship of number of paddocks to % days of pasture recovery.



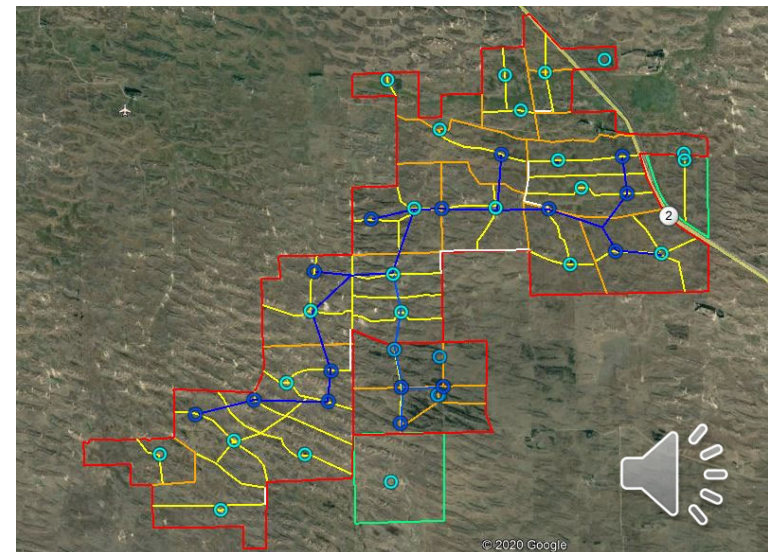
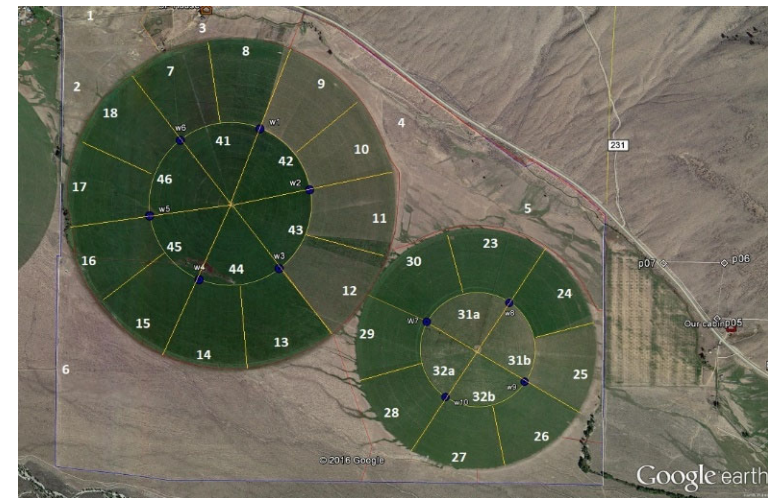
So why subdivide any more than 10 paddocks?



So why subdivide any more than 10 paddocks?

Shorter grazing periods provide

- Longer recovery periods
- More uniform grazing distribution
- More consistent utilization
- More consistent nutrient intake
- More consumption of less desirable plants
- More uniform manure distribution
-and much more including *increased carrying capacity*



Are overstocking & overgrazing the same thing?

- Overstocking is having more animals than the resource will bear
 - *Happens across the entire ranch*
- Overgrazing is allowing animals to bite a plant that is in a negative CHO balance
 - *Happens one plant at a time*

Overgrazing can occur on a pasture that is understocked!



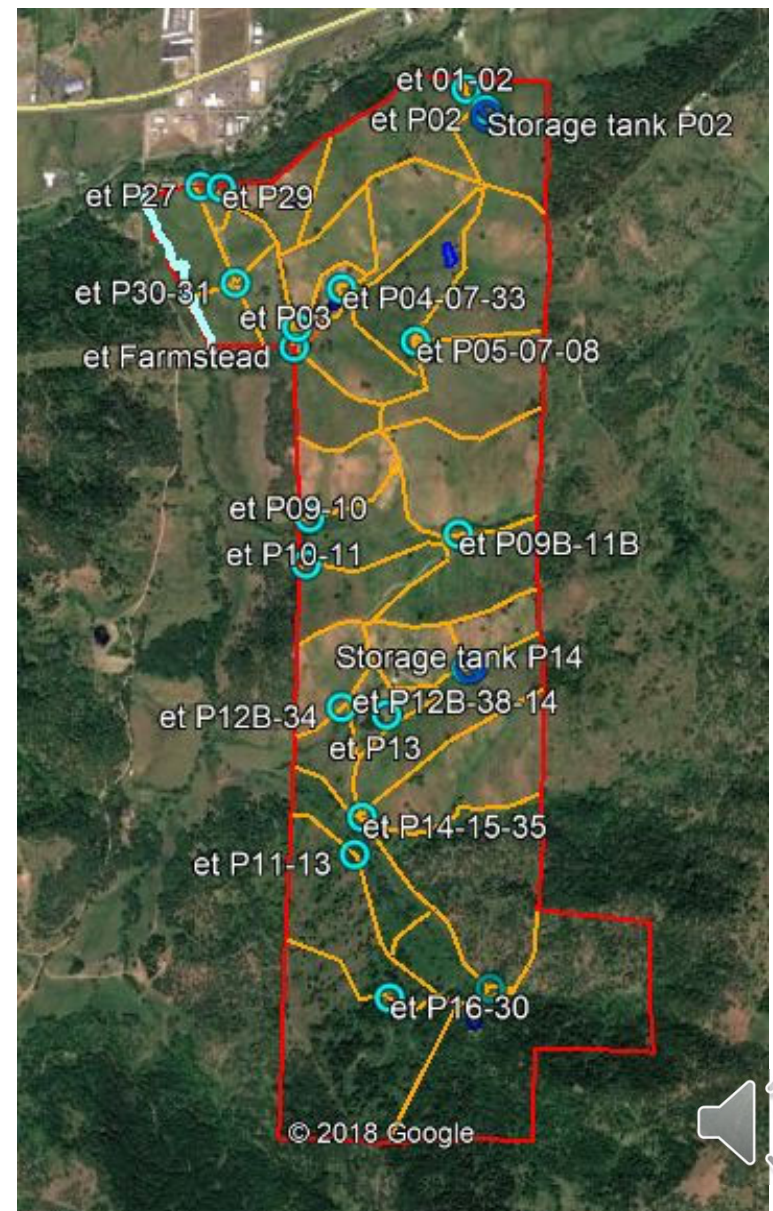
Overgrazing happens two ways: Both are TIME functions

- Staying on a pasture too long & allowing stock to graze regrowth coming from stored CHO
- Returning to a pasture before plants have reached a positive CHO balance



Think of pasture subdivision in terms of
creating smaller units of time

*Managing TIME is more
important to successful
grazing management
than is the management
of SPACE!*



Daily rotation impact on winter broomsedge utilization by dry cows

600 cows on about 8 acres for 24 hours



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- **Focus on what you can control**

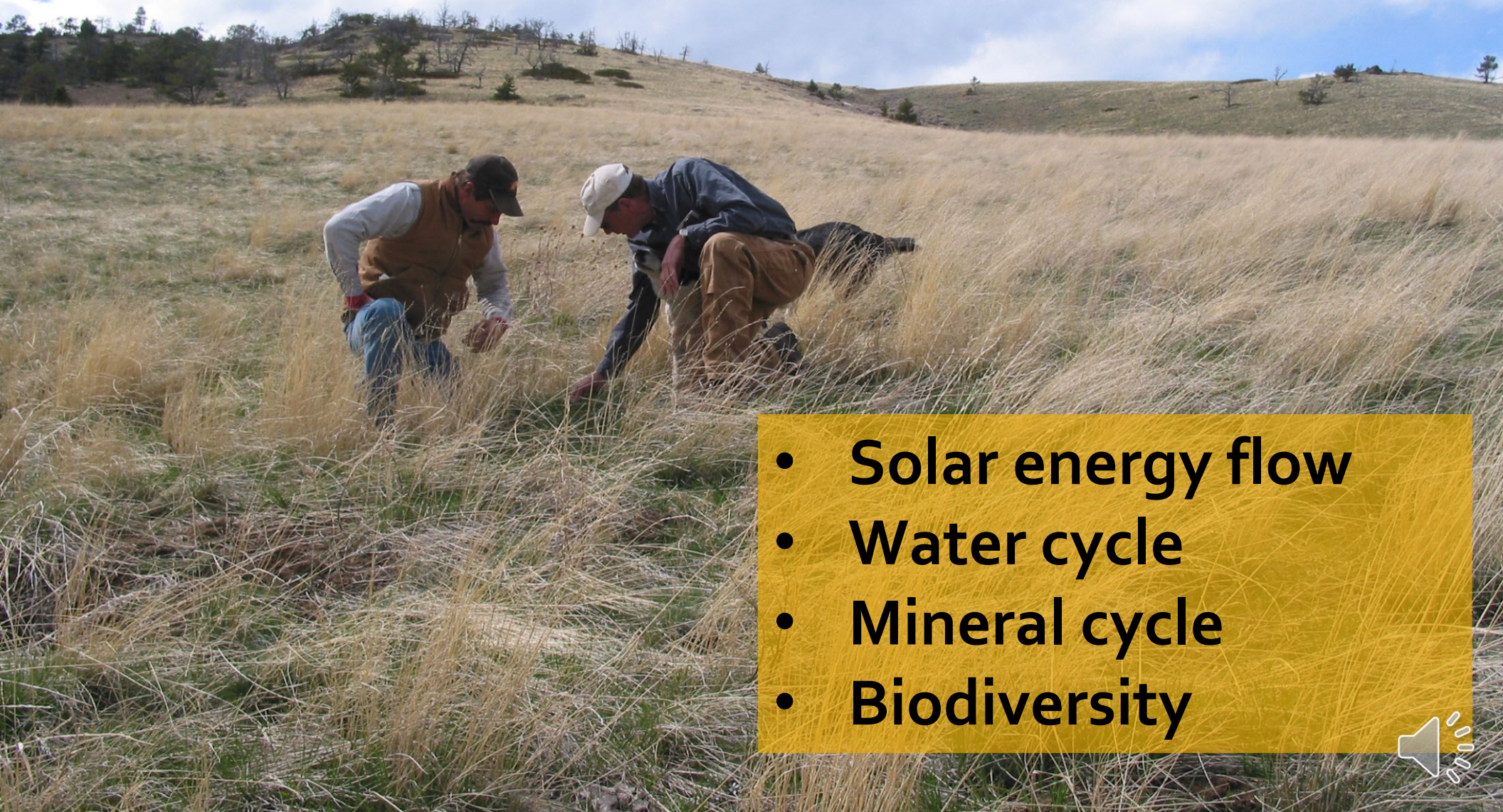


Only four necessary ingredients for making meat, milk, and fiber

- CO_2
- *Solar energy*
- *Water*
- *Soil minerals*

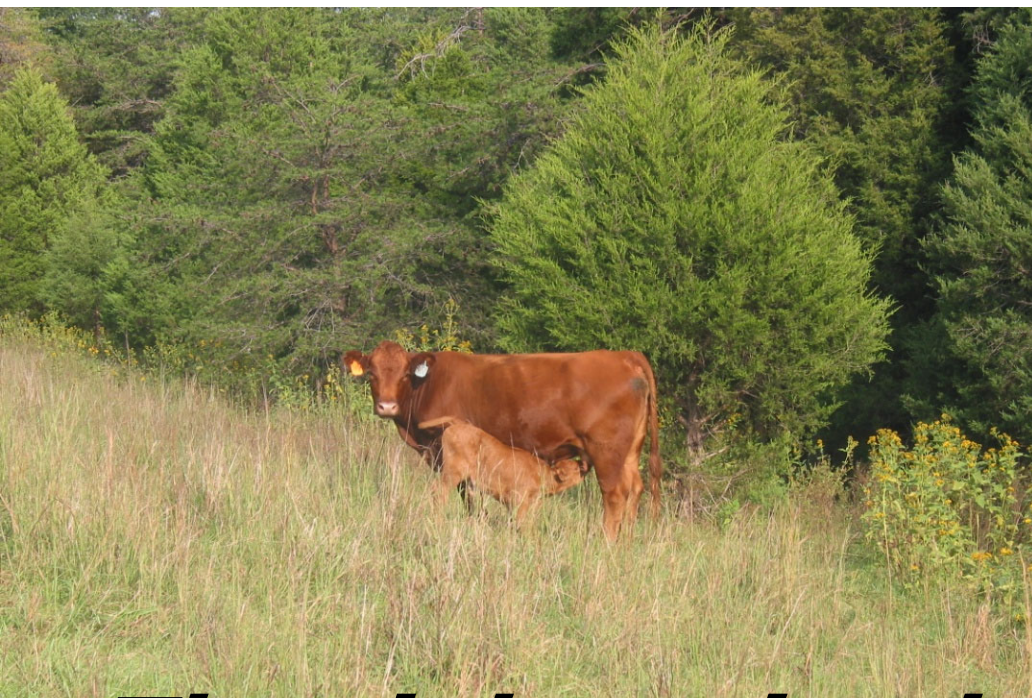


Grazing management should be about balancing ecosystem processes, not manipulating inputs



- **Solar energy flow**
- **Water cycle**
- **Mineral cycle**
- **Biodiversity**





The right animal to be the factory !



What is a cow's job description?



What is a cow's job description?

- Rustle her own grub
- Find the best bite of feed she can
- Deliver a live calf every 12 months
- Bring a live calf to the weaning pen
- Stay healthy without a lot of fuss
- Mow weeds, fertilize pastures.
Plant seeds, till ground, etc.
- Come to work with a positive attitude every day



What is the manager's role?

- Create a working environment where your employees can thrive
- Maintain ranch infrastructure
- Market ranch products
- Plan, Monitor, Adapt, Re-plan

How many calves does it take....

COWBOY COST- 1973

- Pay cowboy wage – 21 calves
- $\frac{3}{4}$ ton 4WD pickup – 20 calves
- Total annual cost to pay & equip a cowboy
 - 52 calves

COWBOY COST - 2023

- Pay cowboy wage – 49 calves
- $\frac{3}{4}$ ton 4WD pickup – 71 calves
- Total annual cost to pay & equip a cowboy
 - 138 calves

What I learned from Ranching for Profit: Three Keys for Profitability

- Improve gross margin
 - Work with nature, not against nature
 - Every critter on the place is a ranch employee
- Reduce overheads
 - Overcapitalization in equipment & facilities is a ranch killer
 - Low labor efficiency is common
- Accelerate turnover rate
 - Don't get married to your cows
 - Every day you didn't sell something, you bought it



Gross margin reminder

	Value of the product	\$ 1000
-	<u>Operating cost to produce product</u>	<u>- \$ 700</u>
	= Gross margin	\$ 300

Objective is to have gross margin > 50%

This ranch needs to focus on cost reduction, not increased production



Grazing is almost always lower cost per AUD compared to stored feed

■ Grazing

- Livestock do the harvesting
- Effectively managed grazing will outyield hay
- Grazing infrastructure is much cheaper than equipment ownership
- Efficient nutrient cycling
- No manure to haul

■ Hay or Silage

- Machinery does the harvesting – you cannot control cost of fuel, equipment, repairs & maintenance
- Every bite of feed has to be delivered to livestock
- Hauling feed out can be challenging in poor weather
- Poor nutrient cycling

Reduce Overheads

It takes animal product to pay for equipment

How many cows does it take to pay for a swather, a tractor, a baler, a rake, etc?



Cow-calf producers in....

Minnesota

Missouri

Mississippi...

All feed hay for about 130 days

WHY?



***We feed hay to the extent that
we can make hay***



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- **I will have no fear of wasting grass**



The fear of wasting grass

***...do we move them or do we
leave them ?***



Phase 2 residual

Good for the plants
Good for the soil
Good for the livestock

4 – 5" Residual



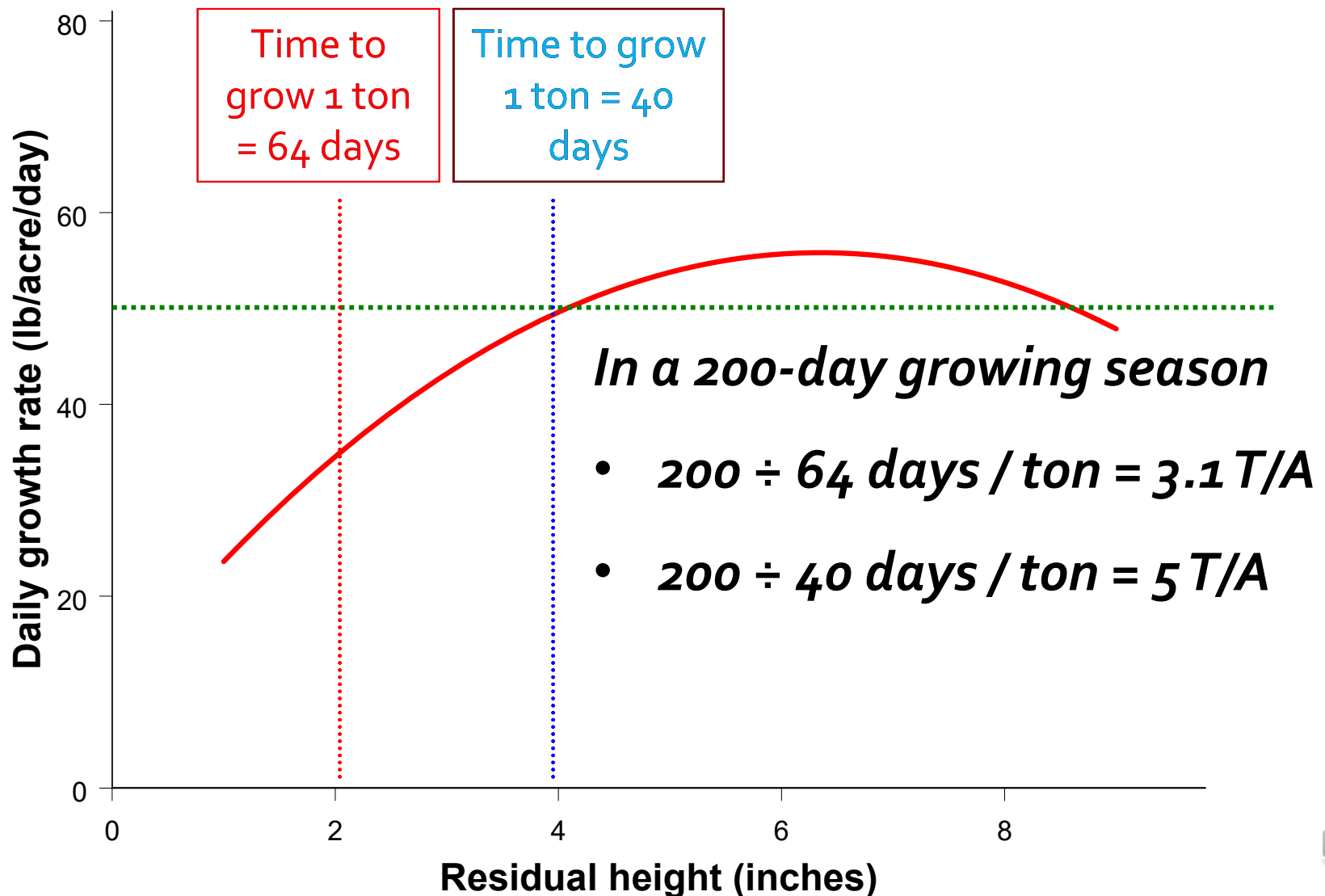
Phase 1 residual

Bad for the plants
Bad for the soil
Bad for the livestock

1 – 3" Residual



Effect of post-grazing residual on pasture daily growth rate (MU-FSRC)



The 1st Mantra of Grazing

It takes grass to grow grass



The 2nd Mantra of Grazing

*Grass feeds the grass,
Grass feeds the soil,
THEN, grass can feed the livestock*

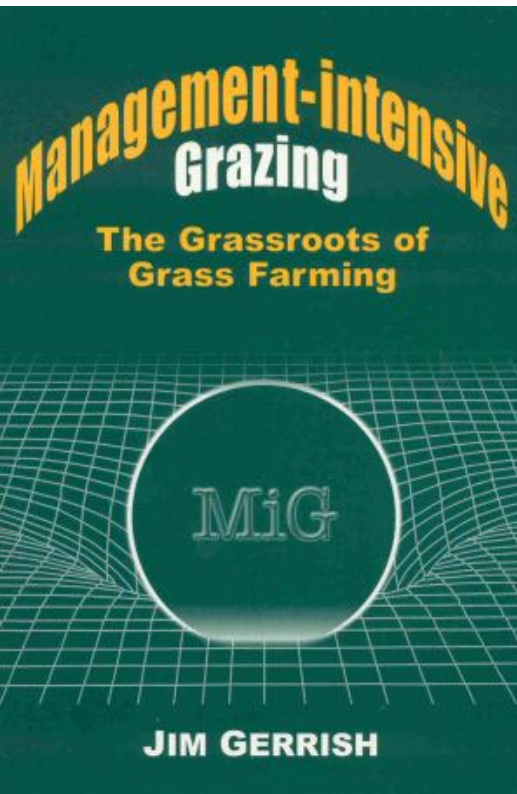


The 3rd Mantra of Grazing

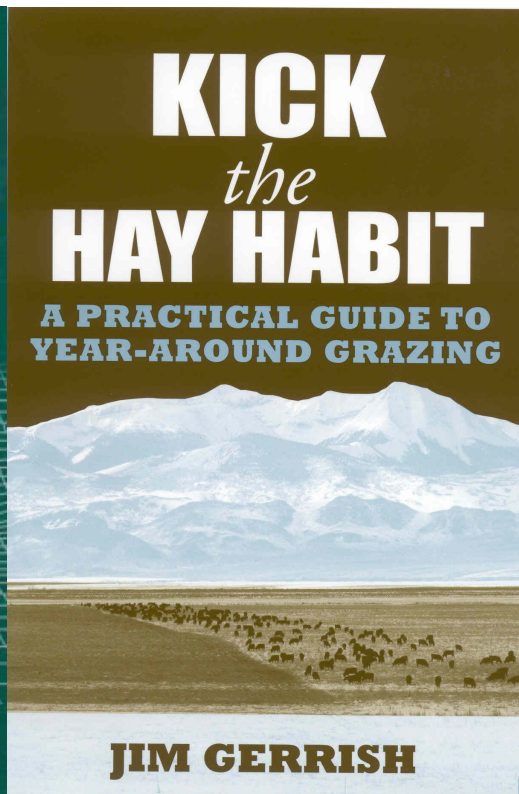
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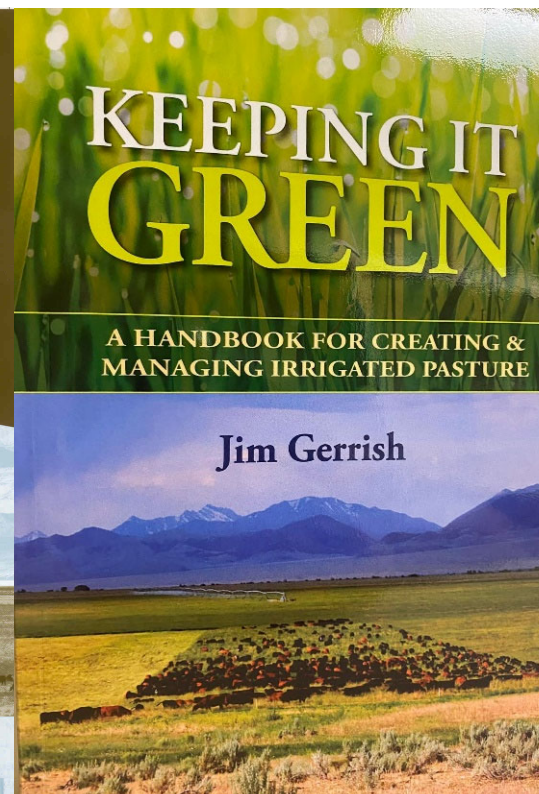
Books by Jim Gerrish



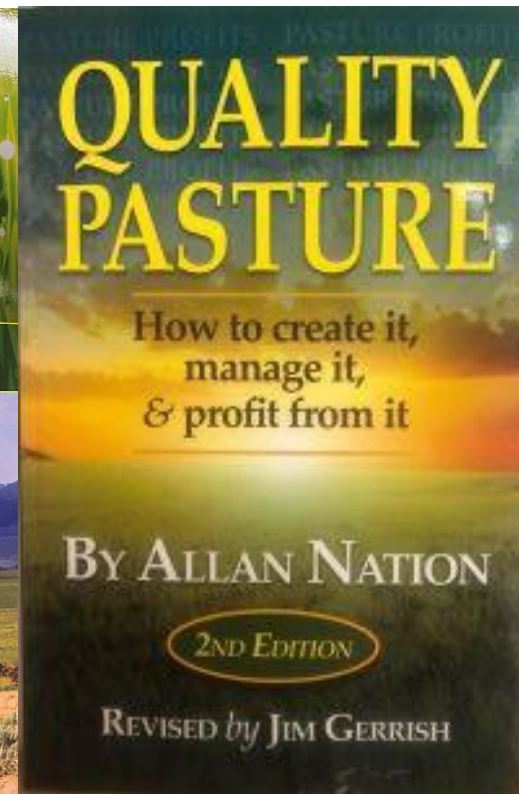
\$31



\$27



\$20



\$30

<https://www.americangrazinglands.com/collections/books-more>

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