

A photograph of a lush green prairie with numerous yellow wildflowers. Three brown cows are grazing in the field; two are on the left and one is on the right. The scene is framed by a dark blue border.

Integrating Native Prairie Pastures in Grazing Systems

(or: You Can Have Your Prairie and Eat It Too)



**Prairies: seral plant communities
that need active management to
remain seral communities**

Typical Maintenance & Restoration Processes:

Invasive Species Control & Site Preparation

- Burning
- Mowing
- Strategic use of herbicide
- Hand pulling
- Soil amendments



Maintenance & Restoration Processes

What do these all have in common?

- People & equipment
 - both are expensive
- Equipment, burning & many herbicides
 - are not selective for species
 - burning & herbicides not always available as tools
- Prairie Restoration is not a single event
 - holding prairies at an early successional stage takes a constant input of resources (time & \$\$\$!)



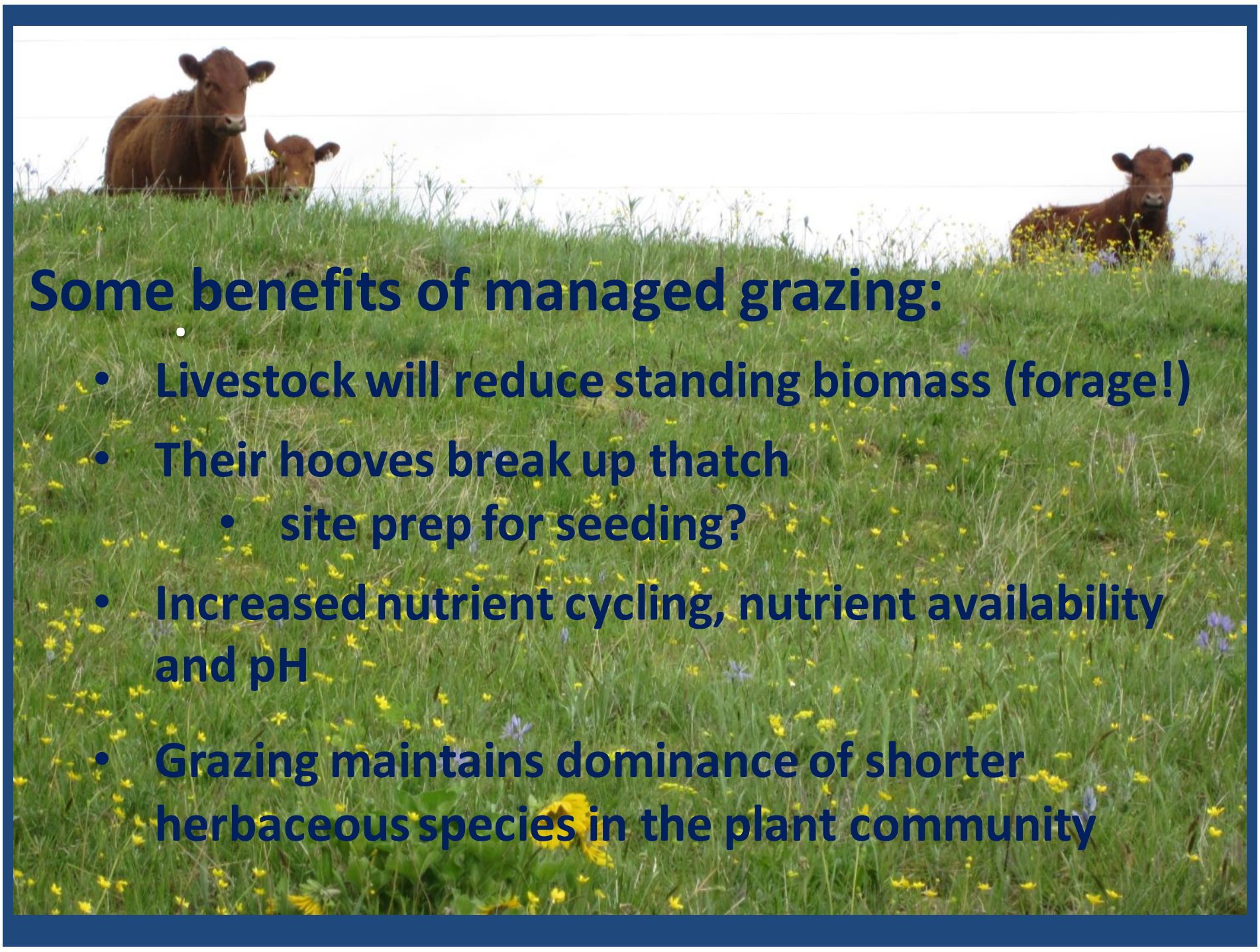
A photograph of three brown cows in a lush green field. Two cows are on the left, one slightly behind the other, both looking towards the camera. A third cow is on the right, also looking towards the camera. The field is filled with tall green grass and numerous small yellow wildflowers. The sky is a pale, overcast blue.

Another tool is MANAGED grazing

- **using a specific grazing prescription**

A photograph of a prairie landscape. In the foreground, there is a dense field of green grass interspersed with numerous small yellow wildflowers and a few purple ones. A large, bright yellow flower is prominent in the lower center. In the middle ground, three brown cows are visible. Two are on the left, one adult and one calf, both looking towards the camera. Another adult cow is on the right, also looking towards the camera. The background is a flat, open field under a pale, overcast sky.

**Why is managed
livestock grazing good
for prairies?**

A photograph of three brown cows in a lush green field with yellow wildflowers. Two cows are on the left, one adult and one calf, and one cow is on the right. The field is filled with tall green grass and numerous small yellow flowers. The sky is overcast and grey.

Some benefits of managed grazing:

- Livestock will reduce standing biomass (forage!)
- Their hooves break up thatch
 - site prep for seeding?
- Increased nutrient cycling, nutrient availability and pH
- Grazing maintains dominance of shorter herbaceous species in the plant community

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Another benefit of managed grazing:

Livestock are very selective as to what they eat

- **Different species & different classes of livestock prefer different types of vegetation**

Livestock Anatomy and Behavior 101

Livestock Differences:

Livestock differ in how they use a site. These differences need to be taken into account for a successful grazing plan to be developed.

Major factors include:

- Species**
- Class of Livestock**
- Familiarity with site**

Livestock Differences:

- **Species – different species have different:**
 - **behavior patterns**
 - **forage preferences**
 - **different tooth patterns & biting ability**
 - **different grazing patterns**

Livestock Differences:

- **Class of livestock – The age or category of livestock can make a difference**
 - **Young vs mature**
 - **Cow-calf pairs vs yearlings**

Livestock Differences:

- Are the animals familiar with the site?
 - Advantages:
 - They will:
 - Know what is safe to eat
 - Know where to find it
 - Teach new herdmates these skills
 - Disadvantages:
 - They can:
 - Pass on bad habits as well

Forage Preferences:

Percent of Grasses, Broadleaves and Browse consumed by different animal species if a varied forage diet is presented

Diet Preference Animal Species	Type of Diet		
	Grasses	Broadleaf weeds and legumes	Browse ¹
Cattle	65 – 75	20 – 30	5 – 10
Horses	70 – 80	15 – 25	0 – 5
Sheep	45 – 55	30 – 40	10 - 20
Goats	20 – 30	10 – 30	40 – 60
White-tail deer	10 – 30	30 – 50	30 – 50
Elk, red, and fallow deer	30 – 60	40 – 50	10 - 30

¹ Shrubs or trees

SOURCE: D. Forbes and G.W. Evers, Texas A&M Univ.; D.I. Bransby, Auburn Univ.; M.A. McCann, Virginia Tech Univ.; and W>R> Getz, Fort Valley State Univ. in Southern Forages 3rd Edition.

https://uknowledge.uky.edu/cgi/viewcontent.cgi?referer=&httpsredir=1&article=1025&context=ky_grazing

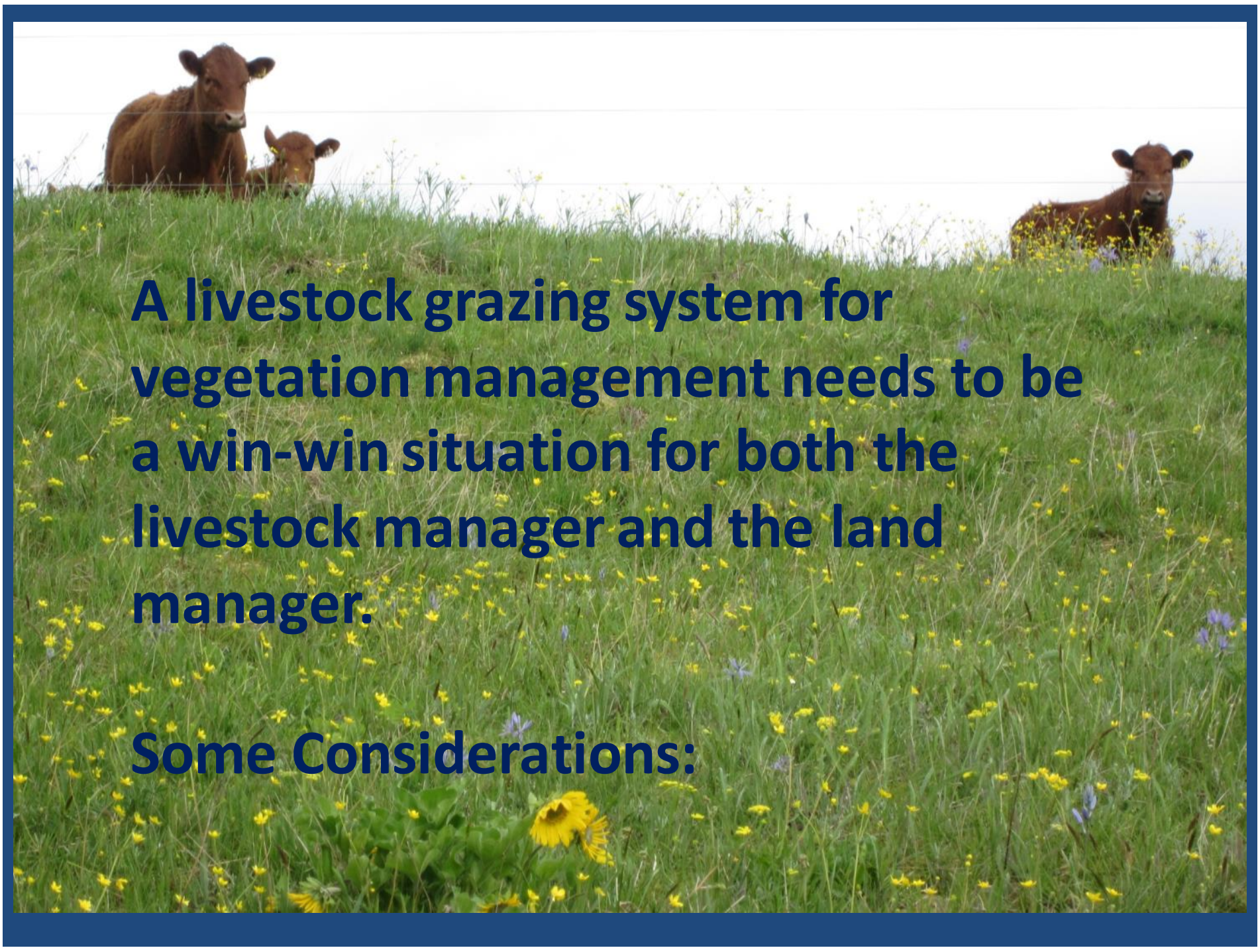
Some results:



Palatability & learning



Timing



A livestock grazing system for vegetation management needs to be a win-win situation for both the livestock manager and the land manager.

Some Considerations:

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**An initial critical question: Are there
easement or management plan
restrictions that limit livestock grazing
options?**

**.....Something to consider when developing
new properties as well**

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Does the proposed grazing season fit in with the existing livestock management regime?

- **Calving season**
- **Breeding season**
- **Weaning**
- **Marketing periods**
- **etc.**



Infrastructure is critical:

Good boundary fences

Internal fencing – often temporary electric

Drinking water for livestock

A photograph of a grassy hill with three brown cows. Two cows are on the left, one adult and one calf, and one cow is on the right. A wire fence runs across the top of the hill. The foreground is filled with green grass and yellow wildflowers. The text "Infrastructure" is overlaid in the center-left.

Infrastructure

Fences in good repair

Boundary fences

This?



Or this?



Internal fence systems



A photograph of three brown cows in a lush green field. Two cows are on the left, one slightly behind the other, both looking towards the camera. A third cow is on the right, also looking towards the camera. The field is filled with tall green grass and numerous small yellow and purple wildflowers. The sky is a pale, overcast blue.

Infrastructure:

Is livestock drinking water available?

Watering systems & Water source





Infrastructure:

Is the site secure?

- **Or is it isolated from easy observation?**
- **Does it have frequent public access?**
- **Can visitors & livestock be kept separate?**

Security:
Strong fences,
gates and locks





Infrastructure Maintenance

Who is responsible for installation or repair?
– the landowner or the livestock producer?

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Forage Quantity, Quality & Accessibility: - the “grazing plan”

- **Species inventory**
- **Season of use**
- **Access from the “home farm”**

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Forage Quantity, Quality & Accessibility

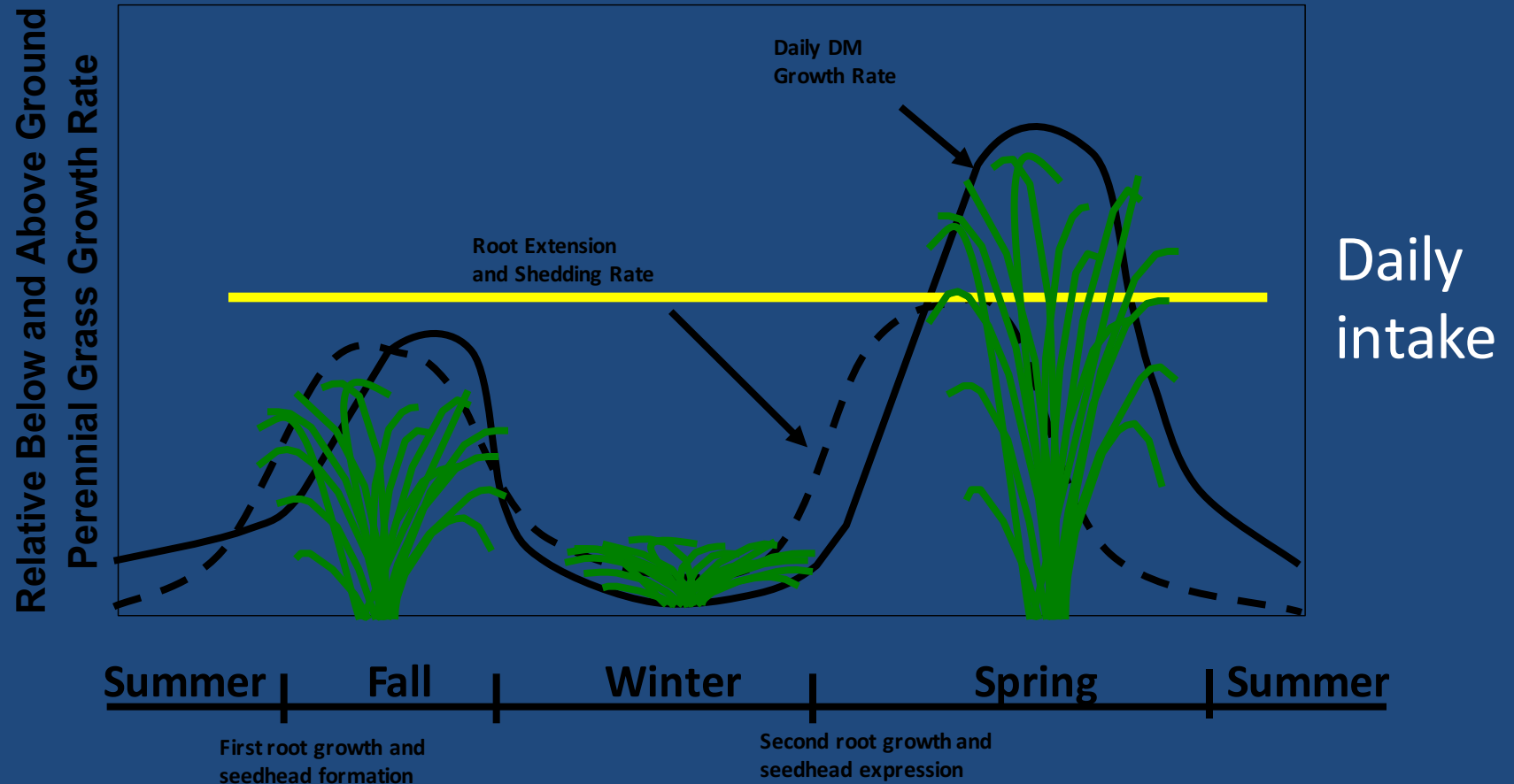
- **Species**
 - **Forage species**
 - **Weed species**
 - **Different from home farm?**
 - **Novel poison plants?**

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Forage Quantity, Quality & Accessibility

- **Season of use – biological & mgmt**
 - **When are the forage species growing?**
 - **Dry site or wet site?**
 - **When are any required deferment periods and are there alternate grazing sites or feed available?**

Seasonal Pasture Production & Forage Needs



Quantity & quality of feed are both important

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Forage Quantity, Quality & Accessibility

- **Grazing Season & Deferments**
 - One continuous period or several short periods requiring multiple livestock transport events?

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Forage Quantity, Quality & Accessibility

- **Access from the “home farm”**
 - **Adjacent, or trucking required?**
 - **Multiple moves on & off the site?**

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Financial:

Annual rental cost or in-kind agreement?

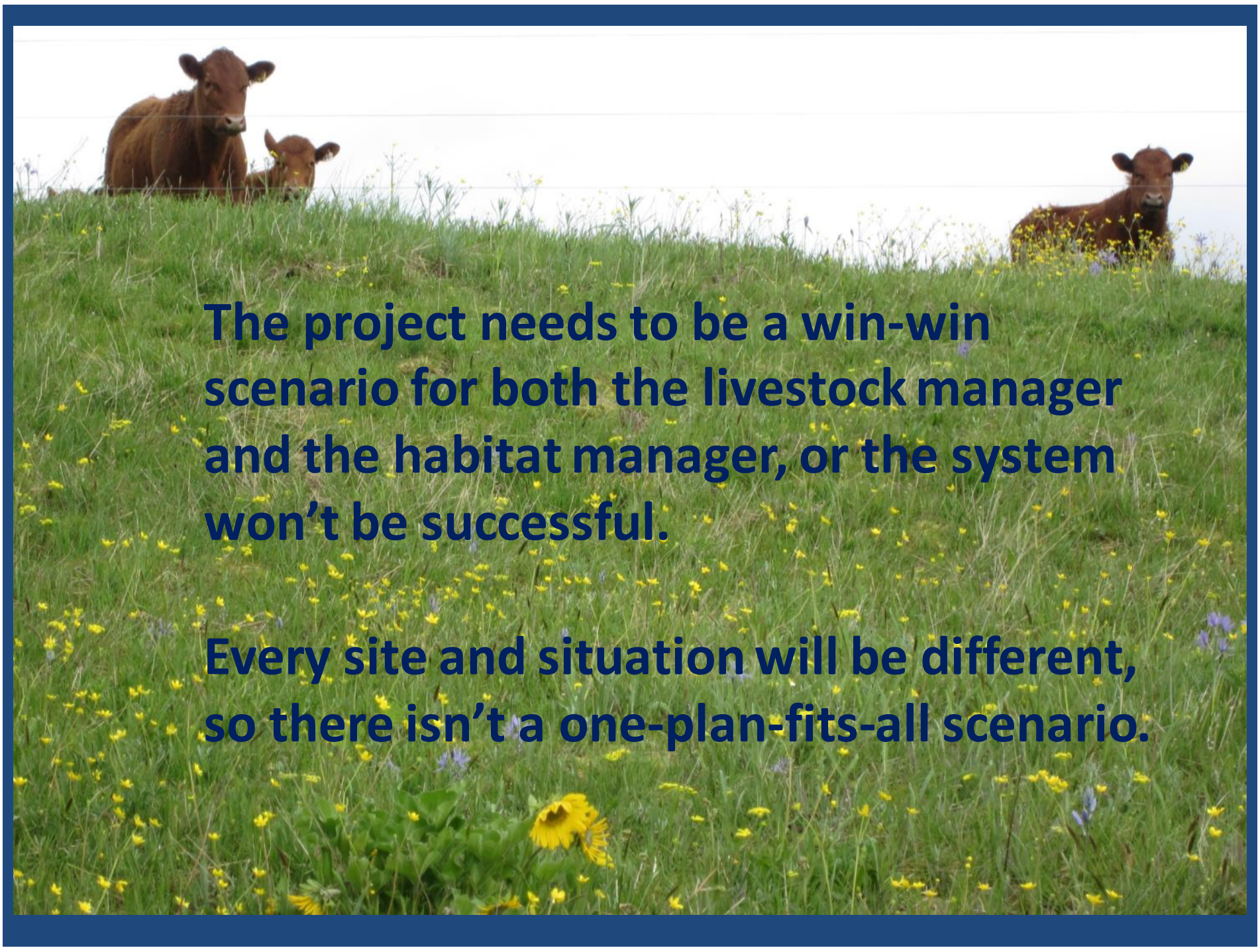
Is there a lease or agreement?

- **A multiple year lease can give the producer more:**
 - **livestock management stability**
 - **economic stability**
 - **incentive to invest materials or labor**

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**Adaptive management is critical –
it's important to keep track of what was
done each year, and how it worked, or
didn't work.**

**Try new things on a small scale and
keep improving the system.**

A photograph of three brown cows in a lush green field filled with yellow wildflowers. Two cows are on the left, one adult and one calf, and another cow is on the right. The field is a mix of tall green grass and numerous small yellow flowers. The sky is a pale, overcast blue.

The project needs to be a win-win scenario for both the livestock manager and the habitat manager, or the system won't be successful.

Every site and situation will be different, so there isn't a one-plan-fits-all scenario.

