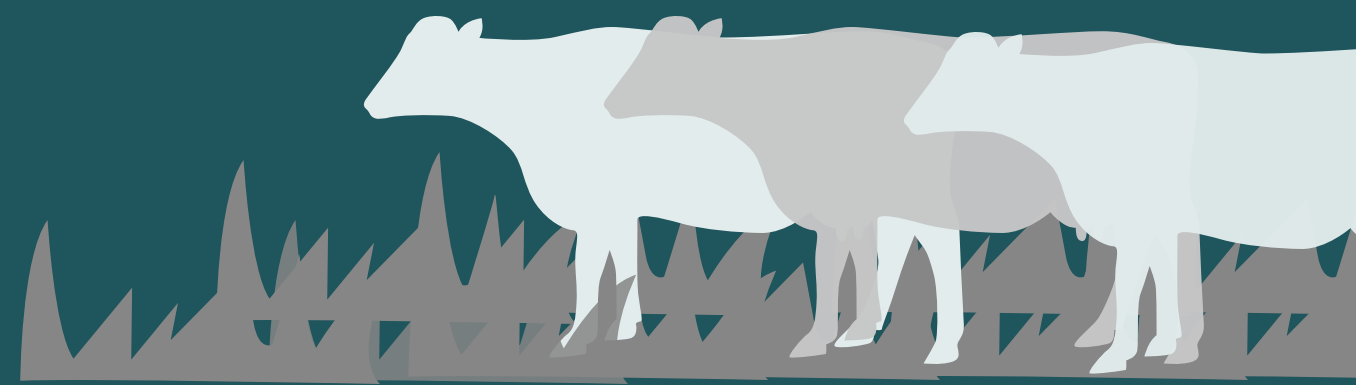
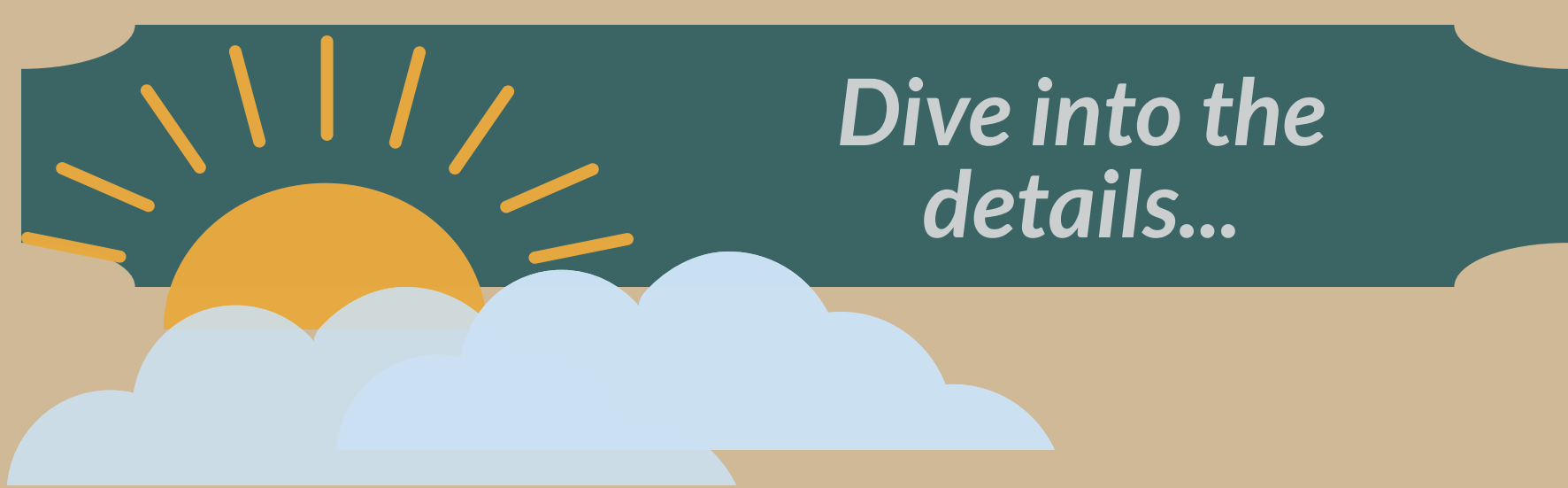


# Collaborative Adaptive Rangeland Management



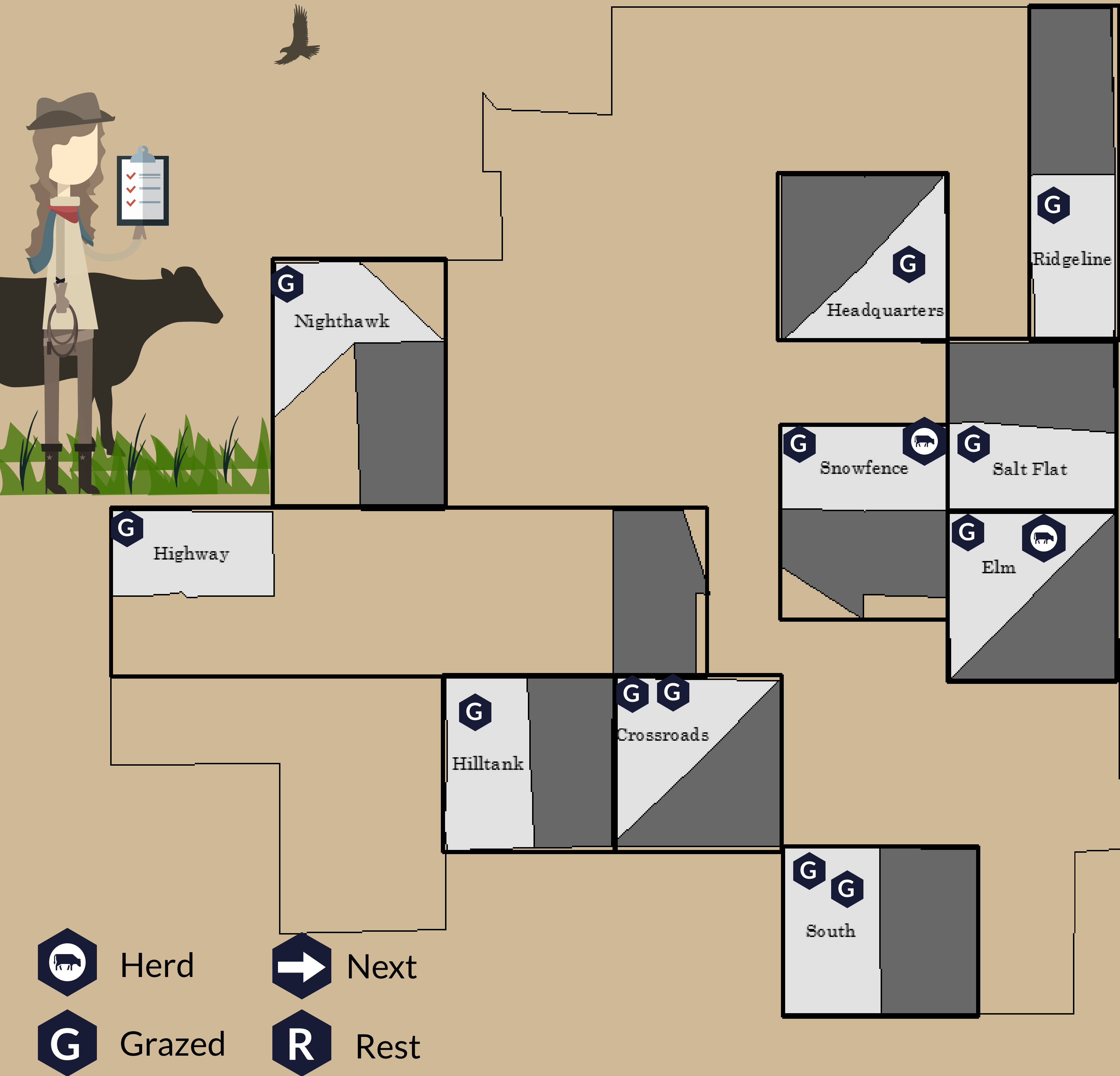
*Review where it all began*





Dive into the details...

CARM herds are in their final pastures.



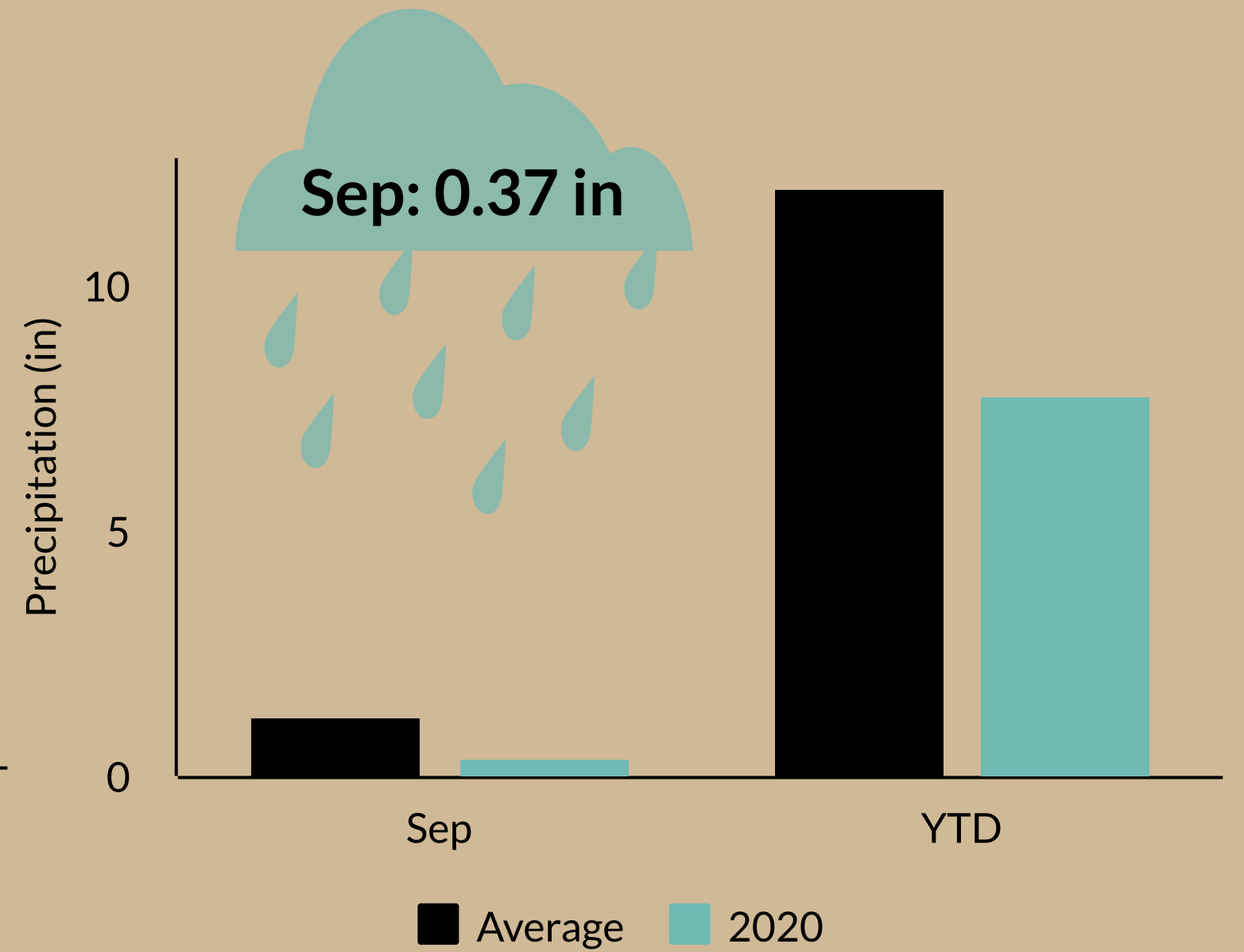
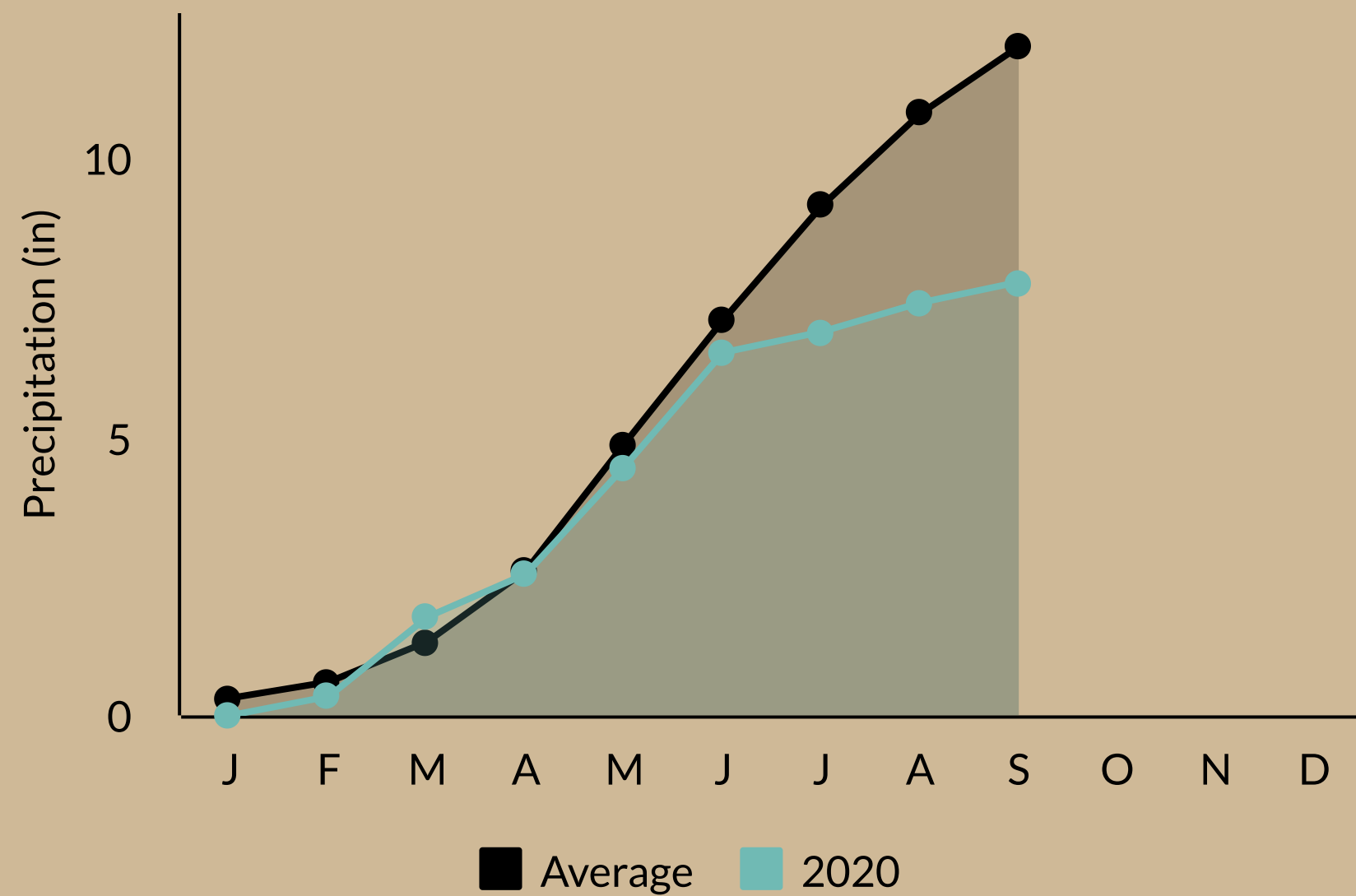
**Elm | Snowfence**

- Sandy Soils
- Cool Season Grasses
- Vegetation Threshold:
  - 450 pounds/acre
- Grazed Jun 4th - Jun 18th, regrazing

- Sandy Soils
- Cool Season Grasses
- Vegetation Threshold:
  - 450 pounds/acre
- Grazed May 15th - Jun 4th

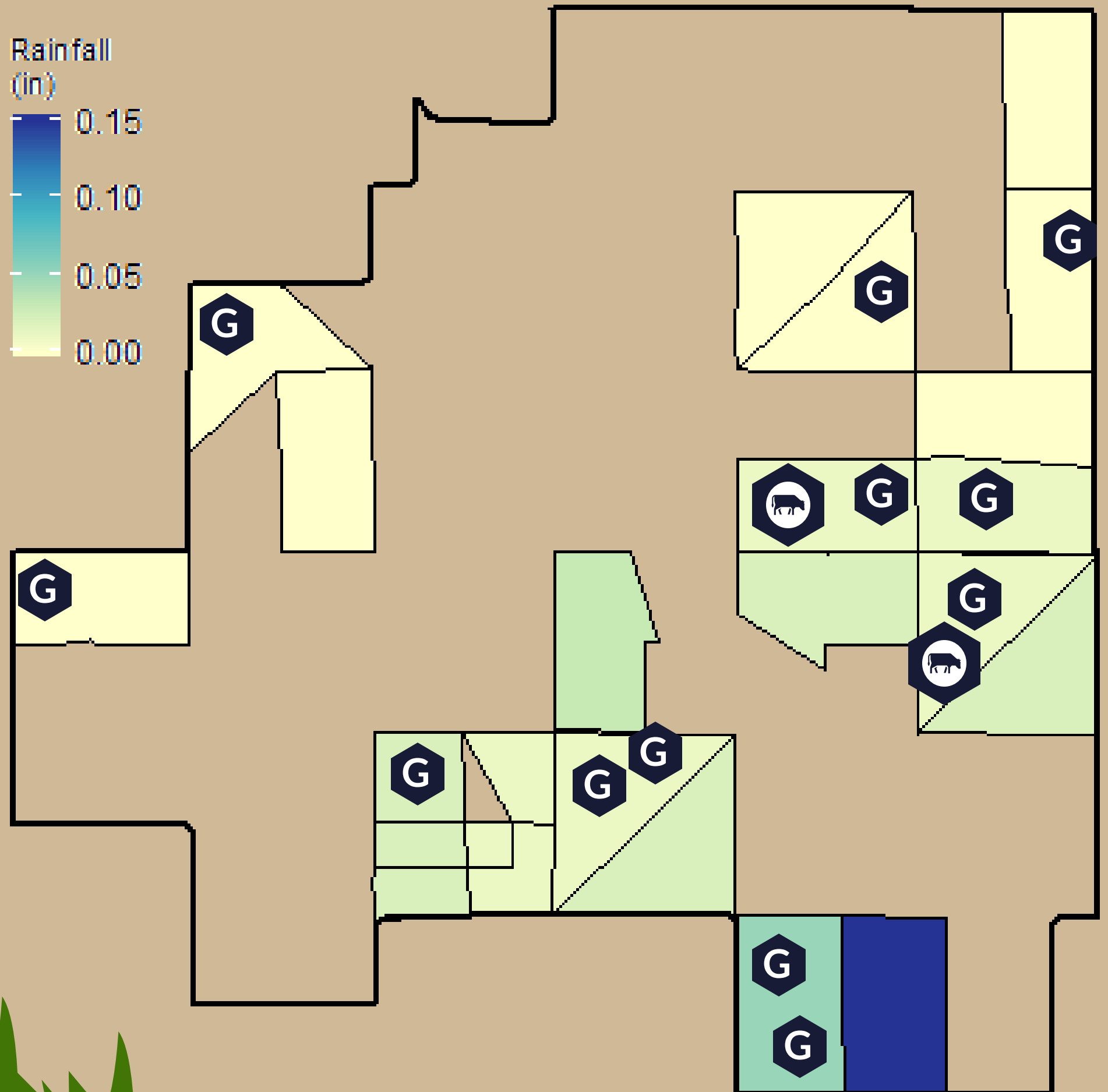
# Highlights of Happenings

## Rainfall Totals

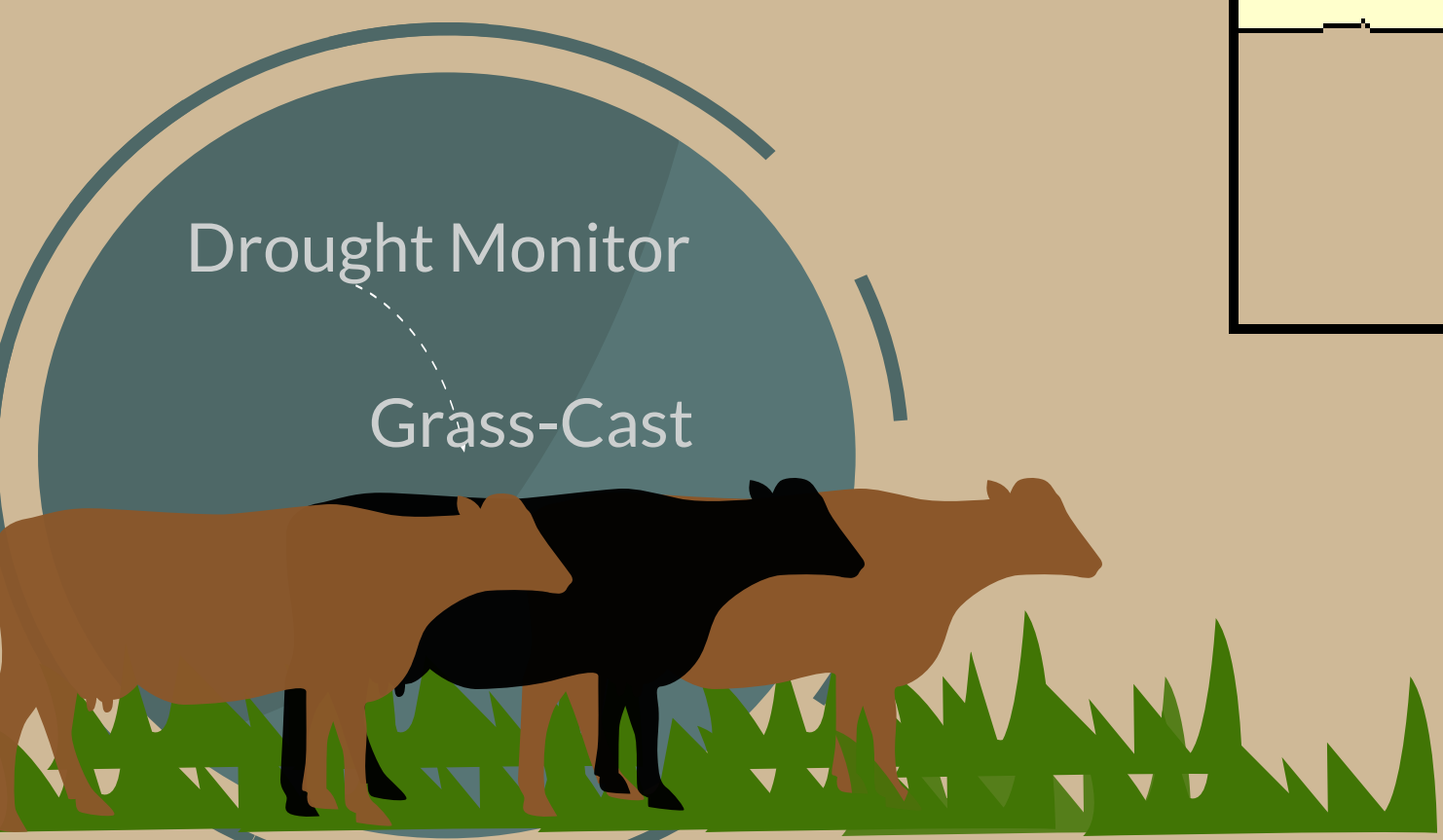


## Total Rainfall

2020-09-13 to 2020-09-20



## Rainfall Distribution



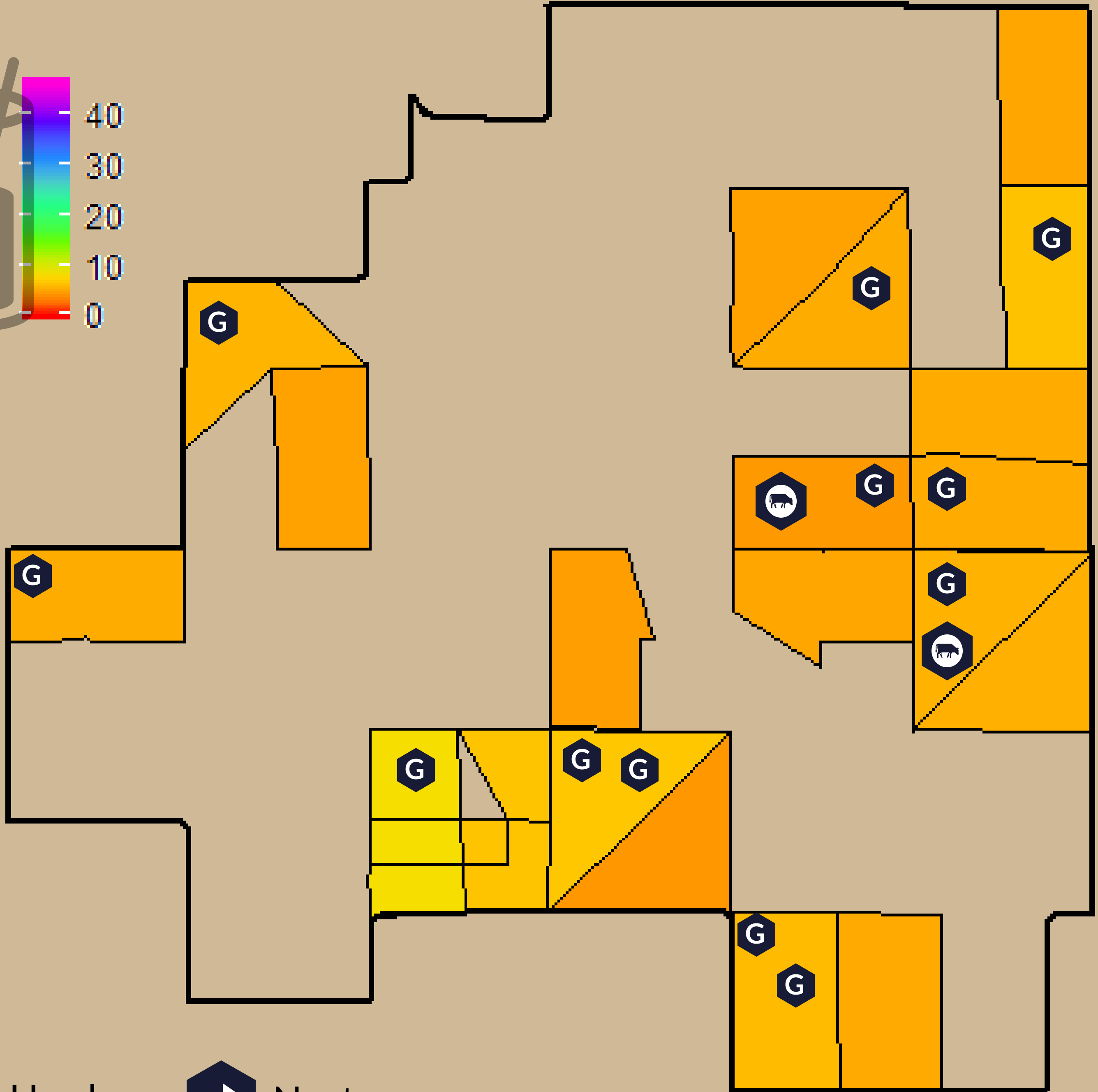
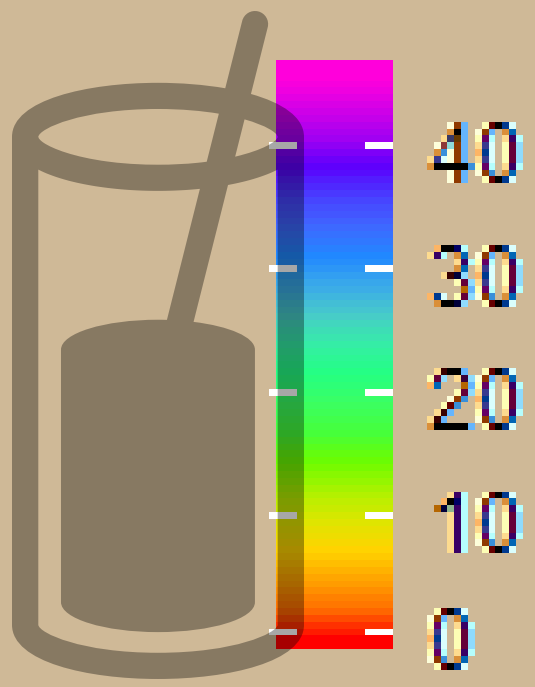
# Soil Moisture Distribution





What's in our cup?

*Nothing.*

## Current Soil Moisture

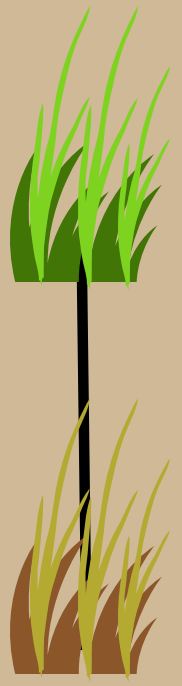
2020-09-20



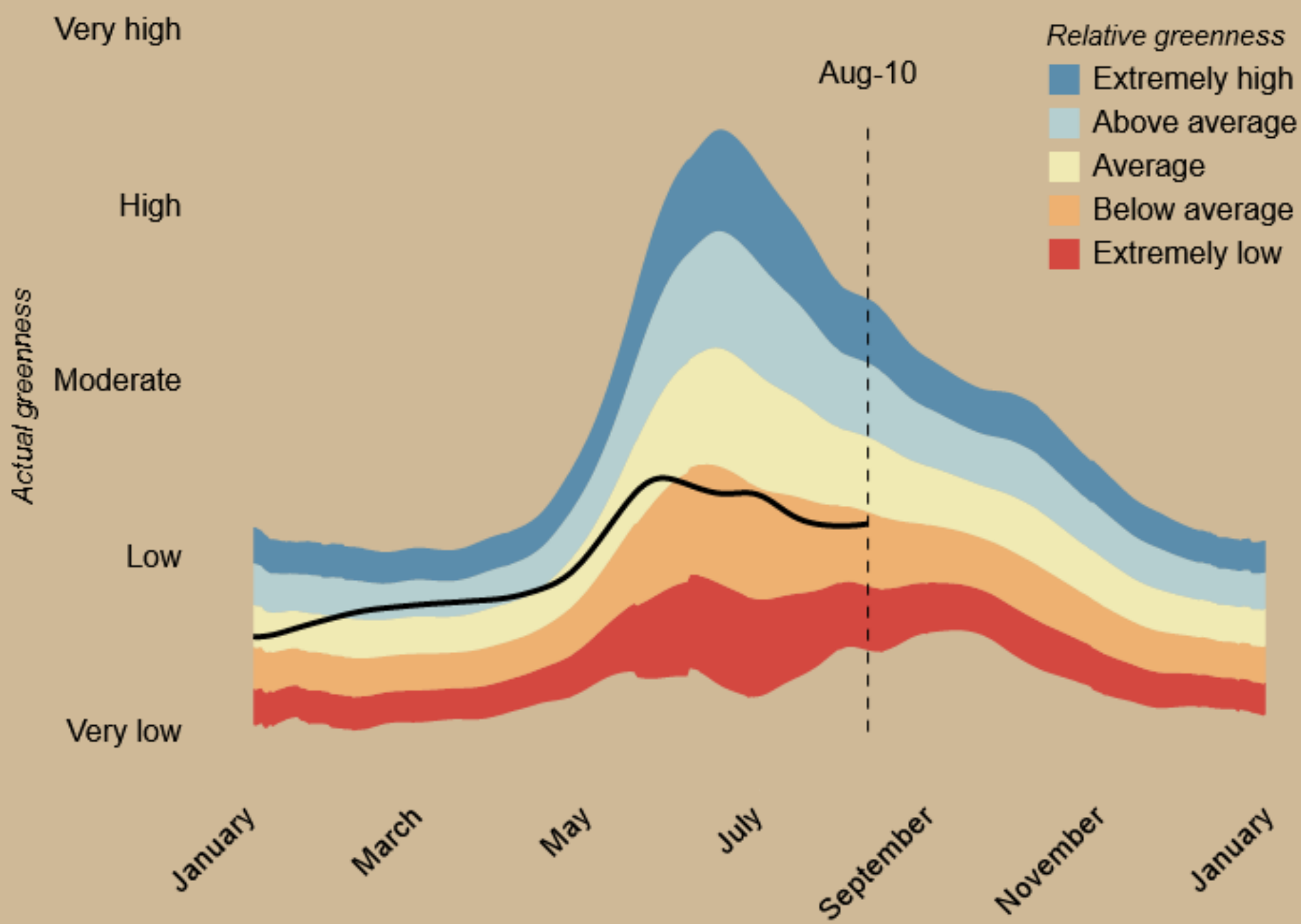
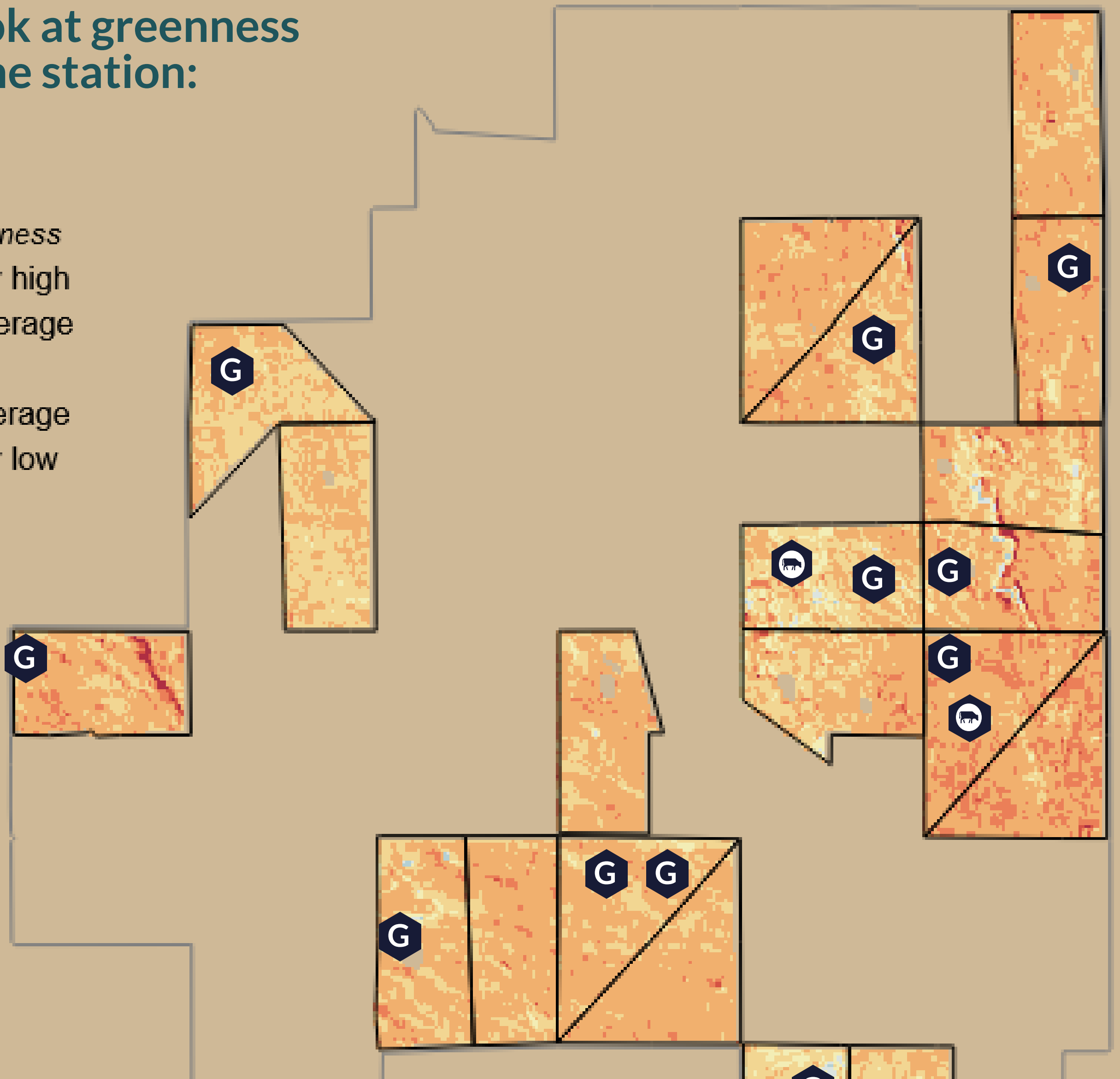
-  Herd
-  Next
-  Grazed
-  Rest



## A detailed look at greenness across the station:



- Relative greenness*
- Extremely high
  - Above average
  - Average
  - Below average
  - Extremely low



- Herd
- Next
- Grazed
- Rest



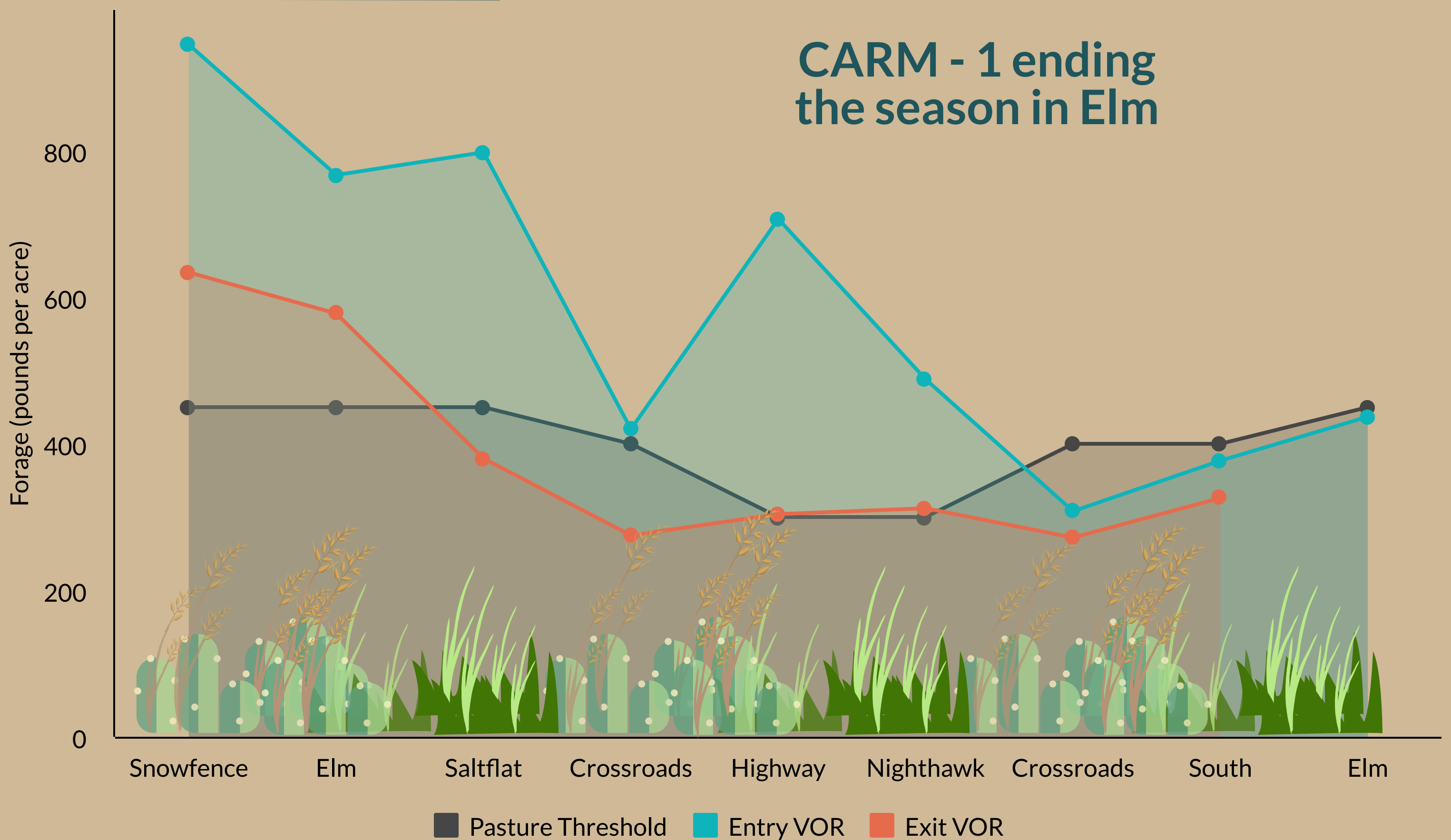
# CARM1

437 lbs/acre  
1.9 cm



Elm - Entry VOR  
Note: Regrazed.

## Let's track CARM-1 VOR





## Rotation planned:

- 1) Snowfence & Saltflat
- 2) Saltflat & Elm
- 3) Crossroads
- 4) Highway
- 5) Nighthawk



Headed to Elm.

## Rotation adaptations:

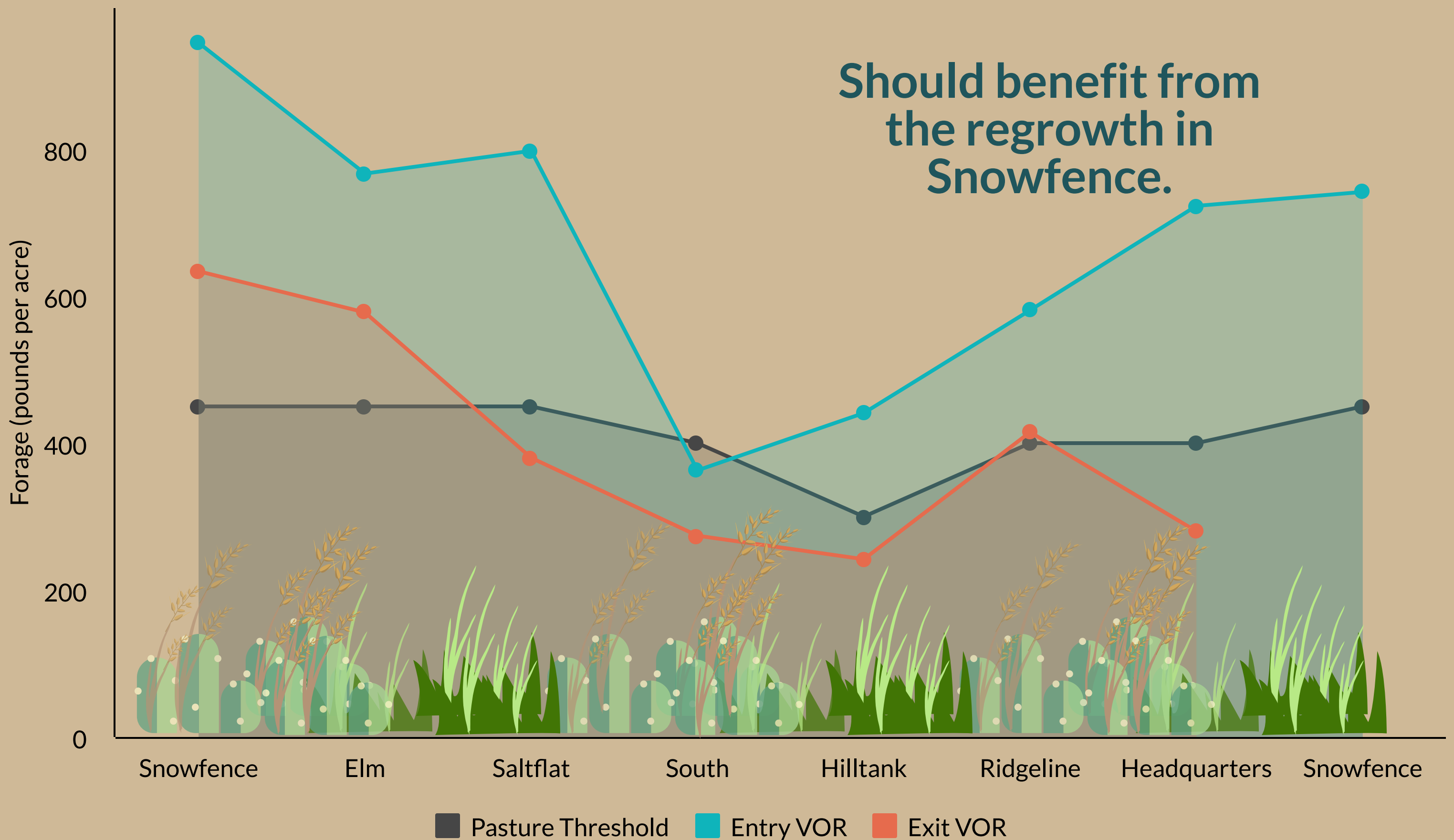
CARM 1	What actually happened					
Rotation	Pasture	Notes from April	Date In	Date Out	Trigger Used	Grazing Season
1	Snowfence & Saltflat	Gates open between, Shoot for 21-24 days, measure VOR separate & use average to gauge veg trigger, cattle gains, 5/15 - 6/8	15-May	4-Jun	Max Days	
2	Saltflat & Elm	Gates open between, Shoot for 21-24 days, measure VOR separate & use average to gauge veg trigger, cattle gains, 6/8 - 6/29	4-Jun	18-Jun	VOR Threshold	Left almost two weeks earlier than planned.
3	Crossroads	Reduce VO for MCLO (< 5cm) 6/29-8/10	18-Jun	1-Jul	VOR Threshold	Used drought threshold
4	Highway	Reduce VO for MCLO (< 5cm) 8/10 - 9/21	1-Jul	6-Aug	VOR Threshold	Used drought threshold
5	Nighthawk	9/21 - end of season	6-Aug	3-Sep	VOR Threshold	Used drought threshold
6	Crossroads		3-Sep	15-Sep	Days	Regrazed, entered below drought threshold
7	South		15-Sep	23-Sep	Max Days	Regrazed, entered below drought threshold
8	Elm		23-Sep			Regrazed, entered below drought threshold





**Snowfence - Entry VOR**  
Note: Regrazed.

## Let's track CARM-2 VOR





## Rotation planned:

- 1) Snowfence & Saltflat
- 2) Saltflat & Elm
- 3) South
- 4) Hilltank
- 5) Ridgeline



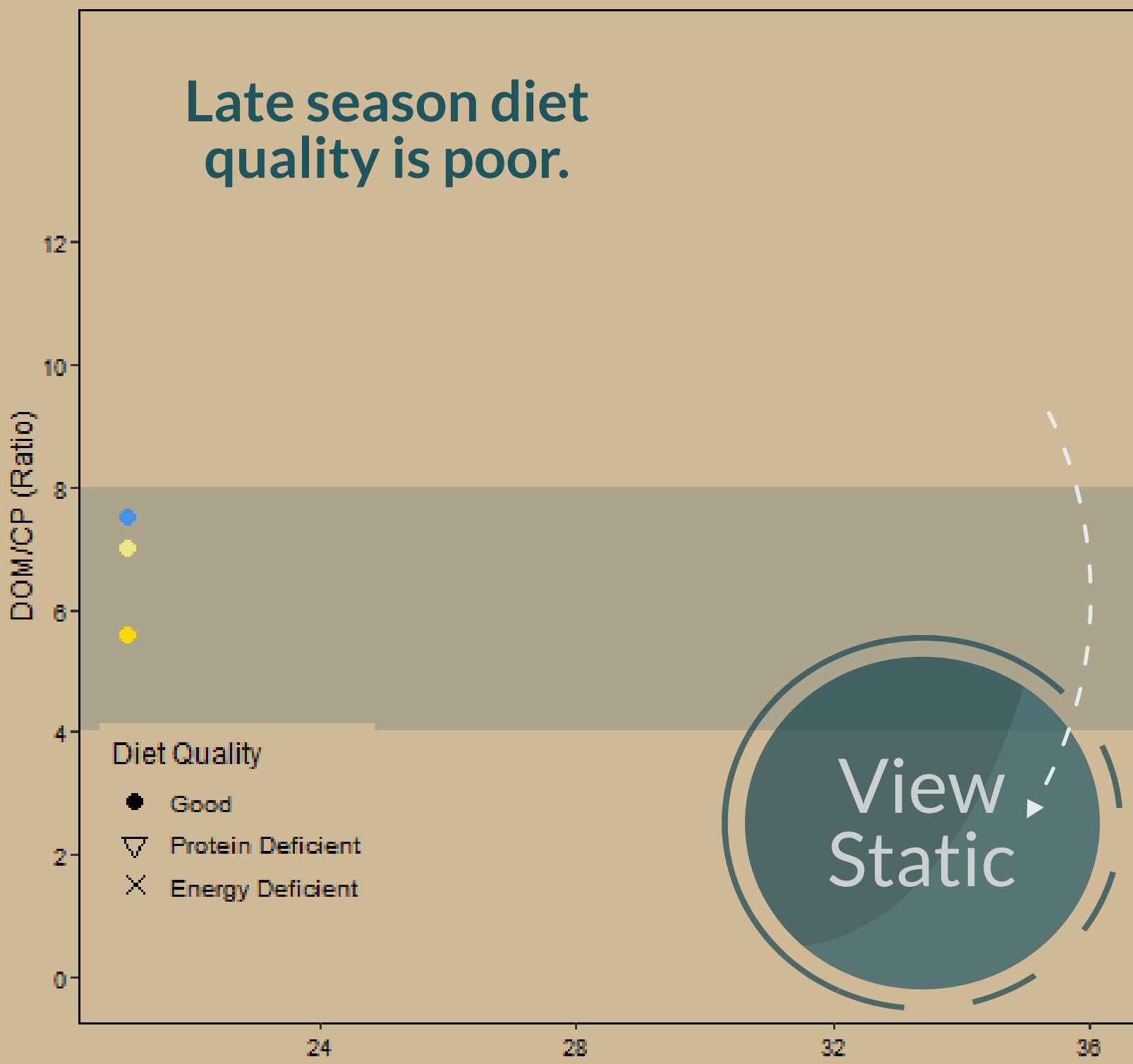
Saltbrush, a tasty snack this summer.

## Rotation adaptations:

CARM 2	What actually happened					
Rotation	Pasture	Notes from April	Date In	Date Out	Trigger Used	Notes
1	Snowfence & Saltflat	Gates open between, Shoot for 21-24 days, measure VOR separate & use average to gauge veg trigger, cattle gains, 5/15 - 6/8	15-May	4-Jun	Max Days	
2	Saltflat & Elm	Gates open between, Shoot for 21-24 days, measure VOR separate & use average to gauge veg trigger, cattle gains, 6/8 - 6/29	4-Jun	18-Jun	VOR Threshold	Left almost two weeks earlier than planned.
3	South	Reduce VO for MCLO (< 5cm) 6/29-8/10	18-Jun	1-Jul	VOR Threshold	Used drought threshold
4	Hilltank	MCLO 8/10 - 9/21	1-Jul	20-Jul	VOR Threshold	Used drought threshold
5	Ridgeline	9/21 - end of season	20-Jul	26-Aug	VOR Threshold	Used drought threshold
6	Headquarters	Rest	26-Aug	23-Sep	VOR Threshold	Used drought threshold
7	Snowfence		23-Sep			Regrazed

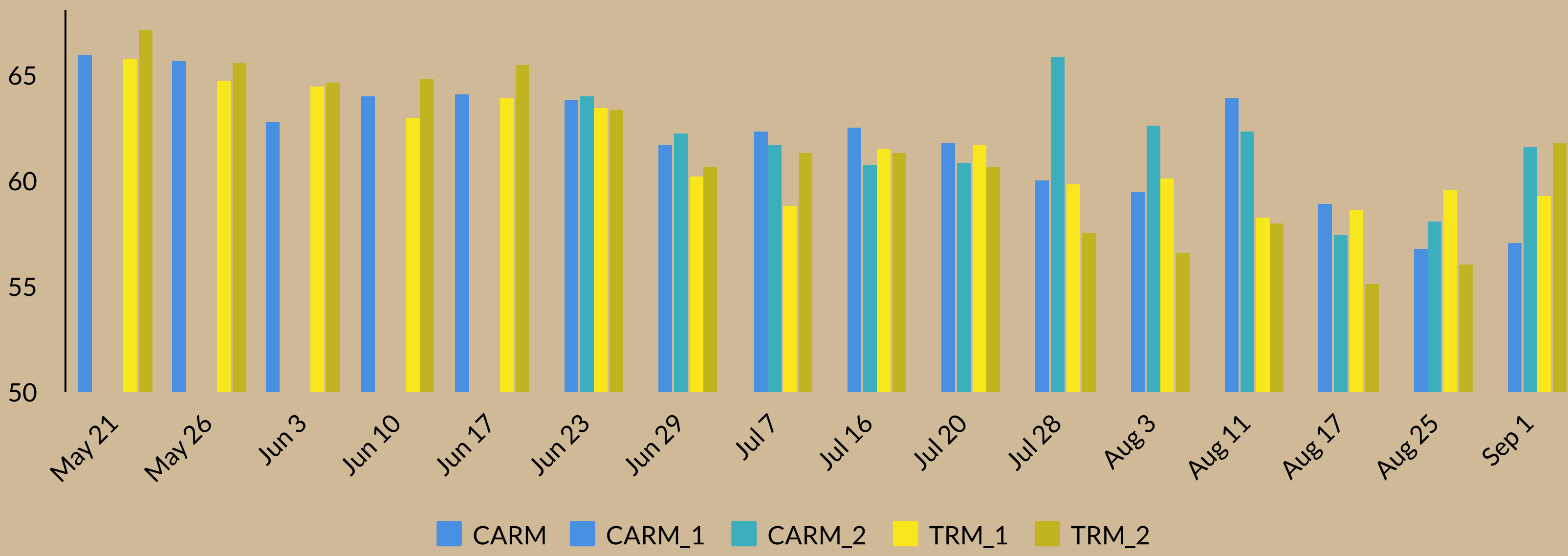


Late season diet quality is poor.

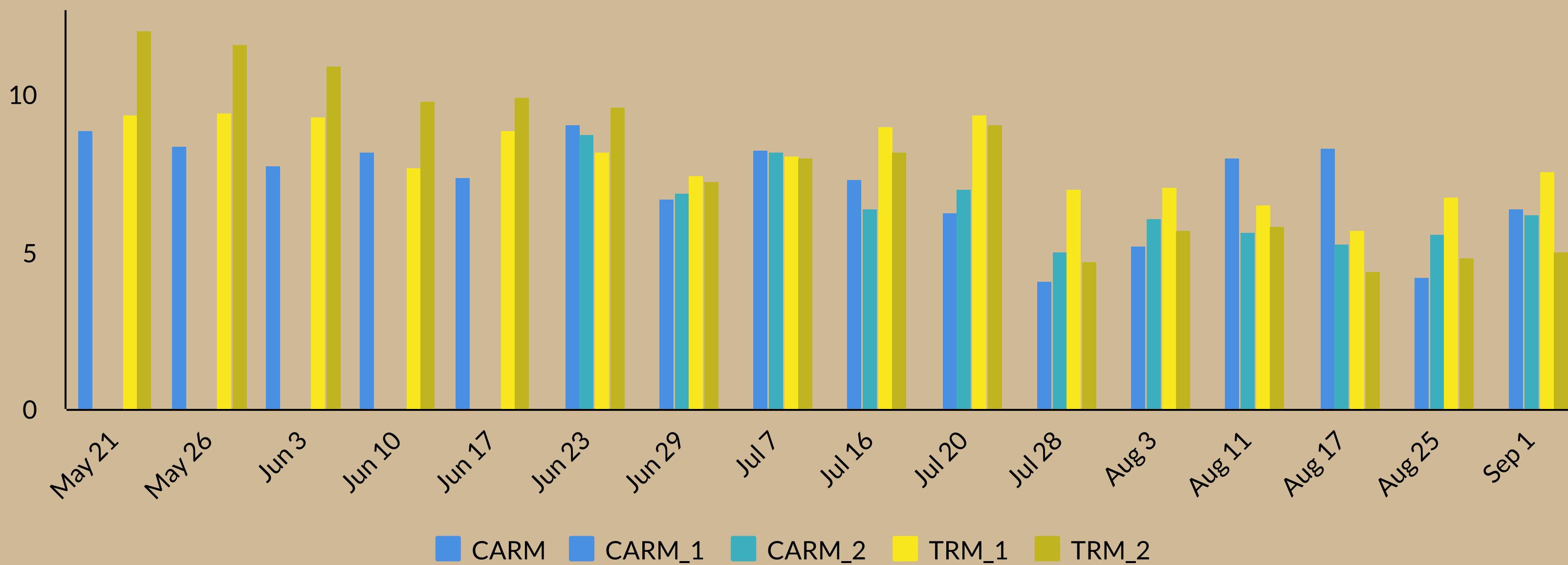


The Scoop on Poop

Digestible Organic Matter (%DOM)

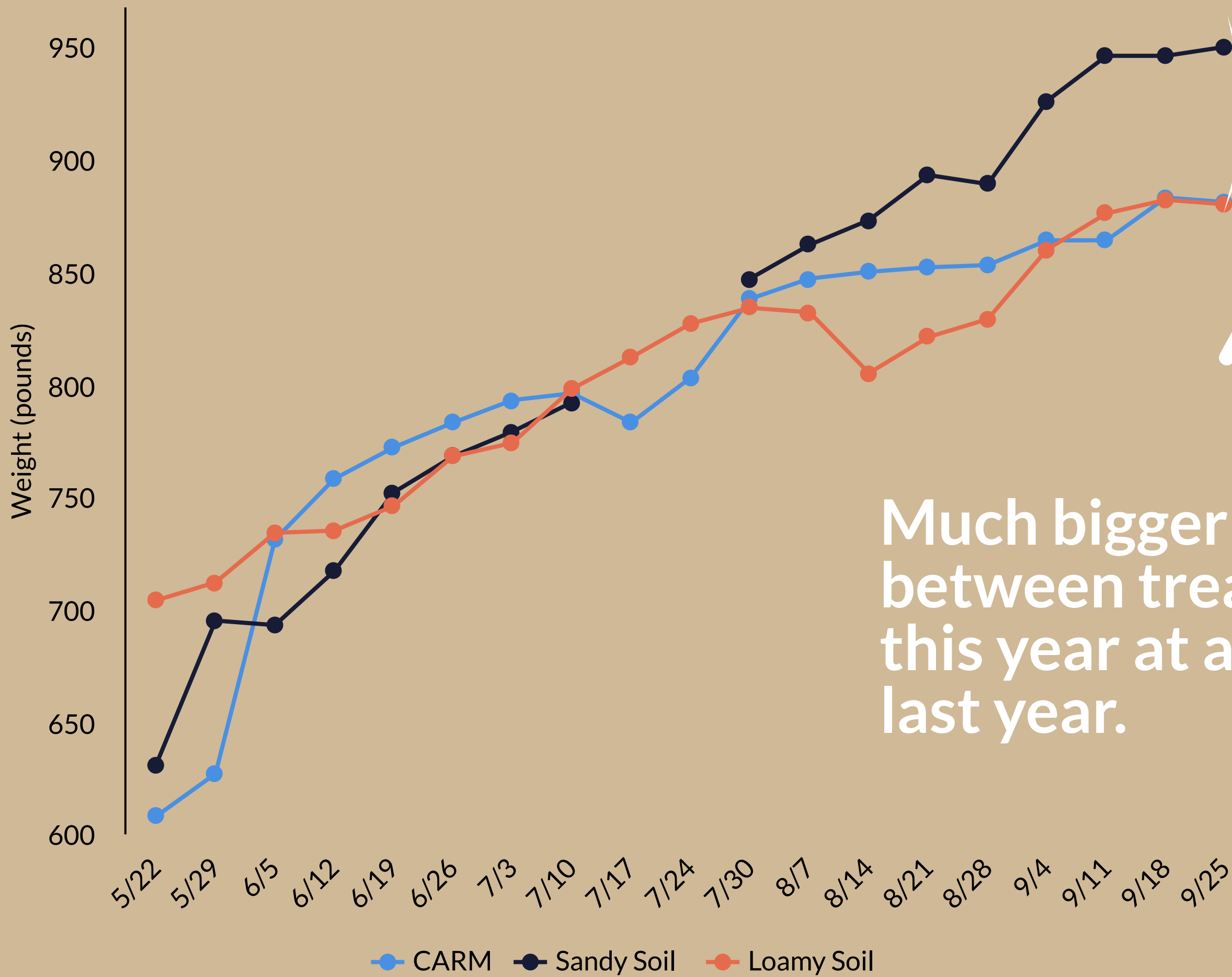


Crude Protein (%)

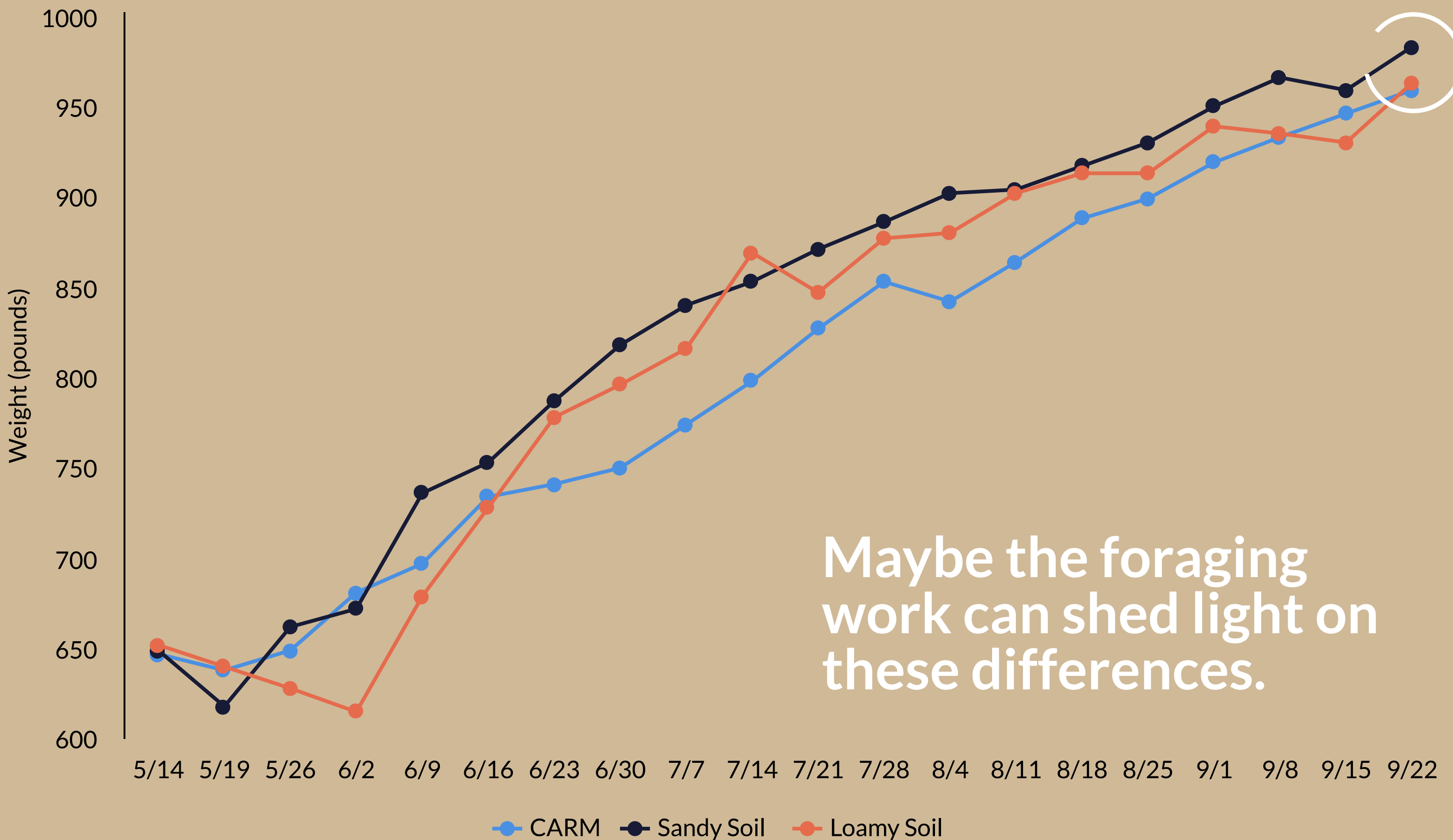




## Walk-over Weigh Scale Data



Much bigger gap between treatments this year at a glance to last year.



Maybe the foraging work can shed light on these differences.



# Review 2019 vs 2020



Treatment	2019	2020
Light stocking: 1 <sup>st</sup> 28 days	4.3	3.2
Moderate stocking: 1 <sup>st</sup> 28 days	3.8	3.0
Heavy stocking: 1 <sup>st</sup> 28 days	3.7	2.8
Light stocking: 2 <sup>nd</sup> 28 days	3.8	3.1
Moderate stocking: 2 <sup>nd</sup> 28 days	3.4	2.1
Heavy stocking: 2 <sup>nd</sup> 28 days	3.9	1.3
Light stocking: 3 <sup>rd</sup> 28 days	1.0	1.7
Moderate stocking: 3 <sup>rd</sup> 28 days	2.2	0.4
Heavy stocking: 3 <sup>rd</sup> 28 days	1.3	1.3
Light stocking: 4 <sup>th</sup> 28 days	2.3	3.0
Moderate stocking: 4 <sup>th</sup> 28 days	1.3	2.2
Heavy stocking: 4 <sup>th</sup> 28 days	1.7	0.6

Treatment	2019	2020
CARM: first third of grazing season (about 45 days)	3.4	2.4
CARM: second third of grazing season (about 45 days)	1.7	1.9
Low-High-Low: Low-stock density gains (about 80 days)	2.8	2.1
Low-High-Low: High-stock density gains (about 30 days)	1.8	0.7







Desktop  
Field View

## Up & Coming

- Oct 3rd/4th - Station Gather
- Oct 5-7th - Final season weigh
- Oct 15th - CARM meeting

On behalf of the USDA-ARS  
Rangeland Resources & Systems Research Unit,  
I thank you all  
for your continued participation  
in this project.

Happy Trails!



For detailed precipitation  
data, maps, last year's  
updates, Scientist bios, and  
CARM documents, see our  
website:



ALL access data!