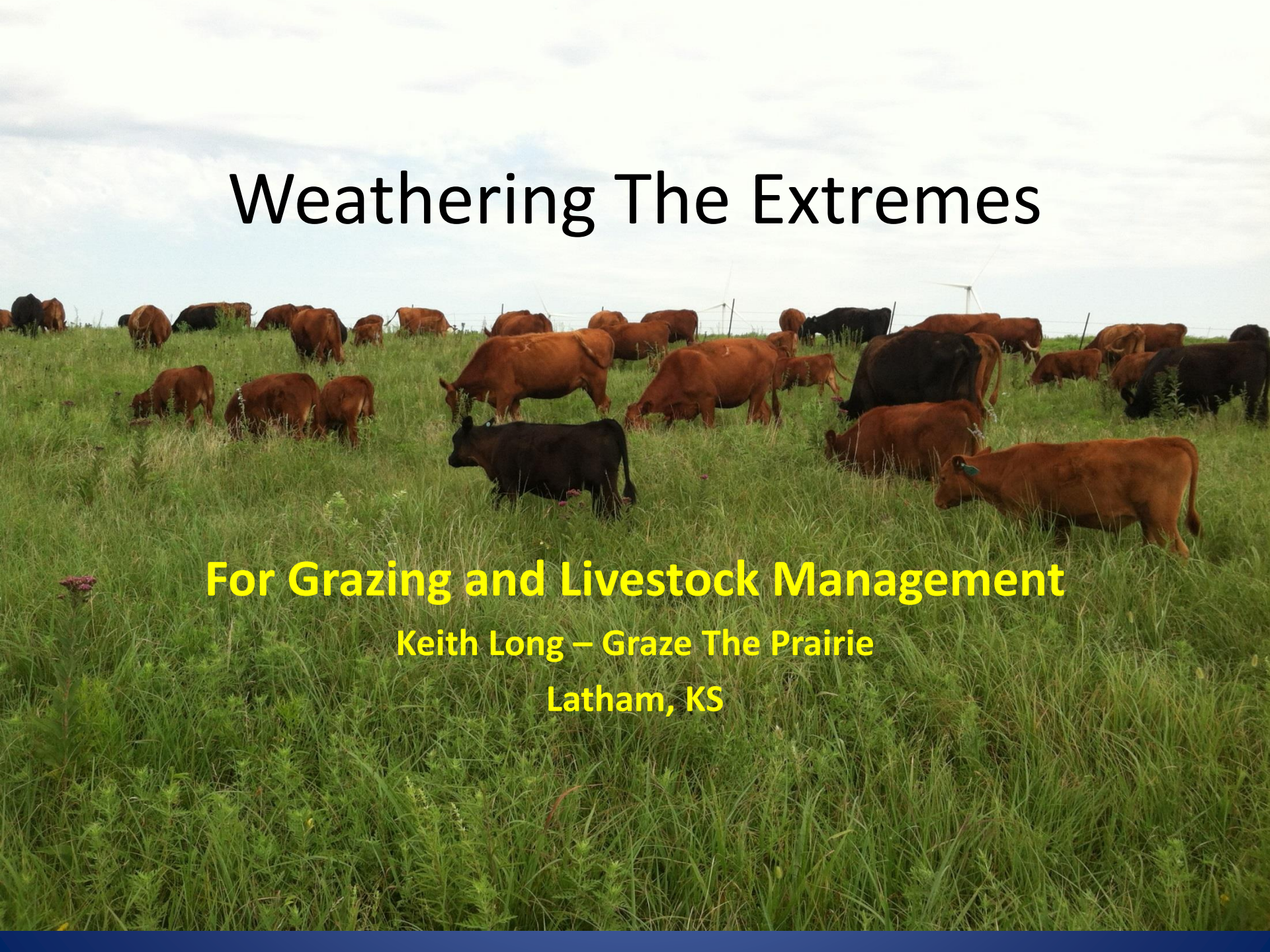
Weathering The Extremes



For Grazing and Livestock Management

Keith Long – Graze The Prairie

Latham, KS

Was 2019 Extreme?

- Avg annual precipitation = 38.57 inches.
- Total Year To date = 58.04 inches 150% of average).
- May and June = 28.12 inches.
- But July = 1.71 inches.
- 2011 = 24.72 inches (64% of normal)
- 2012 = 24.58 inches (also 64%)

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Is that a new normal?

- Maybe, but what year(s) do you choose?
- Averages are made with extremes as well as ‘normal’ years.
- Ok, so what can you do about it?

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Brittleness Scale

- Values from 1 – 10. 1 is arid and 10 is wet.
- But it is really based on humidity distrubtion throughout the year.
- The tropics are brittle even though they receive a lot of rain because they have a long dry spell as well.
- Southern England is not at all brittle even though rainfall is only around 25 inches because it is evenly distributed throughout the year.

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Major Grasslands of the World

- Evolved in moderate to very brittle environments.
- Use herbivores to recycle forage. More on this in a minute.

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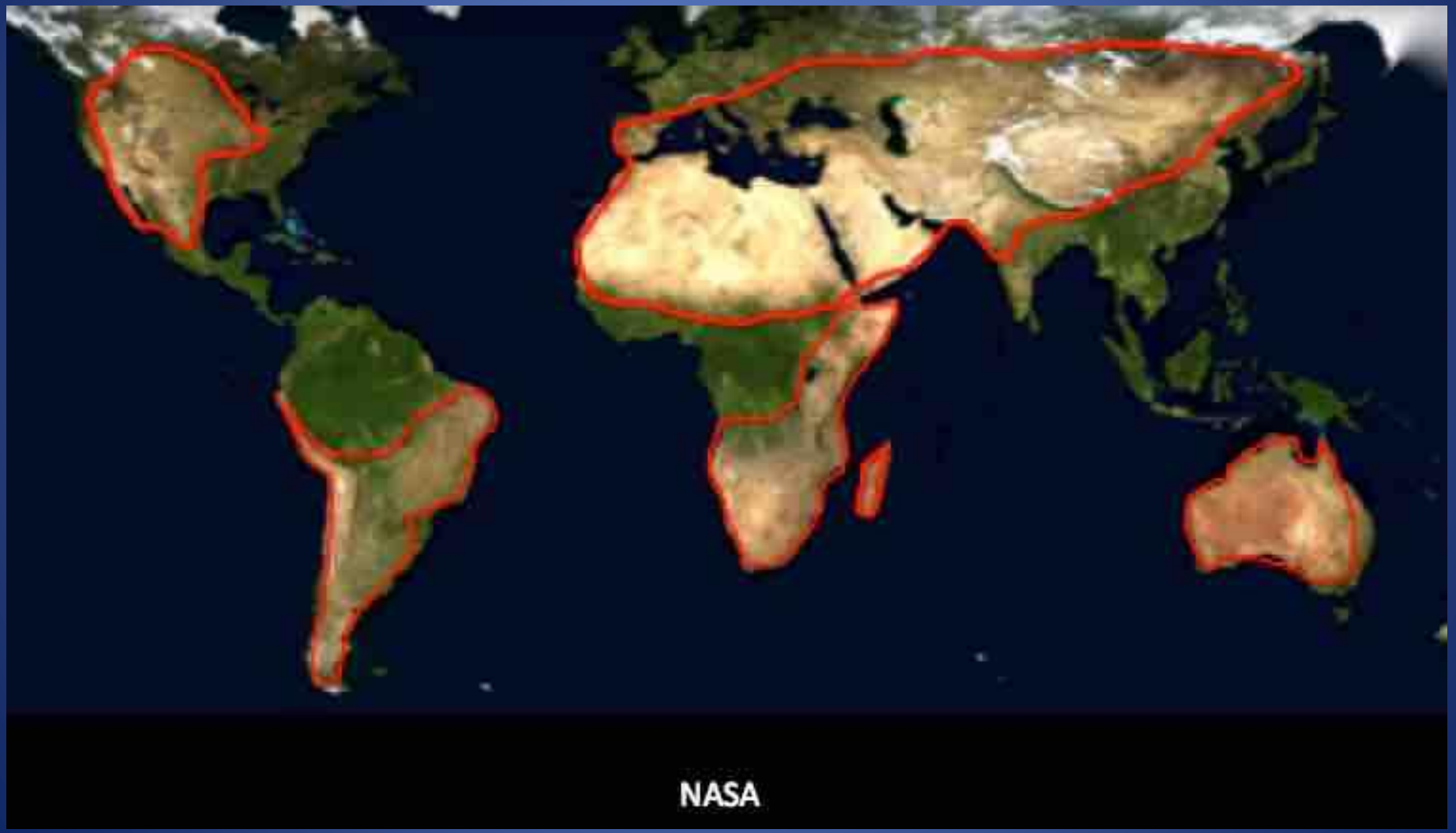
Map of Brittle Grasslands



Grazers Tools

- There are only 4 tools in the grazers tool box.
- 1. Grazing
- 2. Rest
- 3. Fire
- 4. Technology – mechanical tree removal, chemicals, etc.

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Rest

- Rest is the absence of grazing, not recovery from grazing. Rest is not the same as recovery.
- In a brittle environment, rest leads to wide plant spacing, decadent plants, erosion, tree/shrub invasion and desertification.
- In a non-brittle (humid year round), rest does not lead to bare ground due to the high number of insects and other life that recycle flora into the soil.

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Why Rest Causes Desertification in Grasslands

- Plants must be broken down and decayed during each growing cycle in order to remain healthy.
- In humid environments, there are plenty of insects and other species to do this, in brittle ones, large herbivores evolved to do this through the microflora in their rumens.

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Overgrazing

- Is a function of time, not numbers.
- Overgrazing happens at the plant level, not necessarily range-wide.
- It happens when a plant is re-grazed before it has completely recovered from a previous disturbance (usually grazing).
- So, to avoid overgrazing, keep animals moving.

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Grazing Management

- Many different names for the same or similar management.
  - MiG (management-intensive Grazing). Note that it is the management not the grazing that is intensive (although it may be as well).
  - Mob grazing – usually with high stock density.
  - Adaptive Multi Paddock Grazing
  - Holistic Planned Grazing (what we call it).

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Dormant Season Grazing

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Holistic Planned Grazing

- Using a grazing chart, I plan my grazing twice per year. Once for the growing season and once for the dormant.
- Plan your activities on the ranch first, like burning, calving, breeding and weaning, and where you want the cows at those times.
- Then plan backwards from those events.
- I also plan my winter stockpile paddocks.

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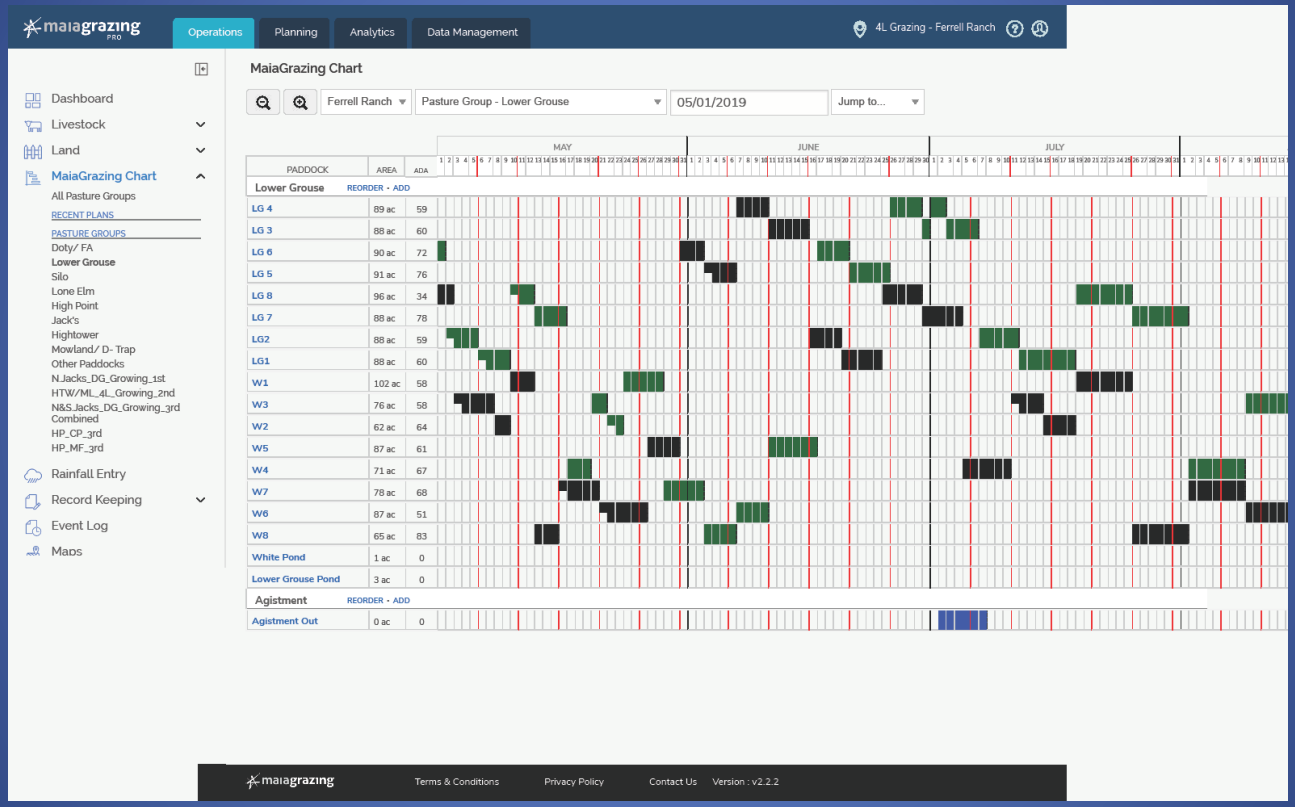
Maia Grazing Chart



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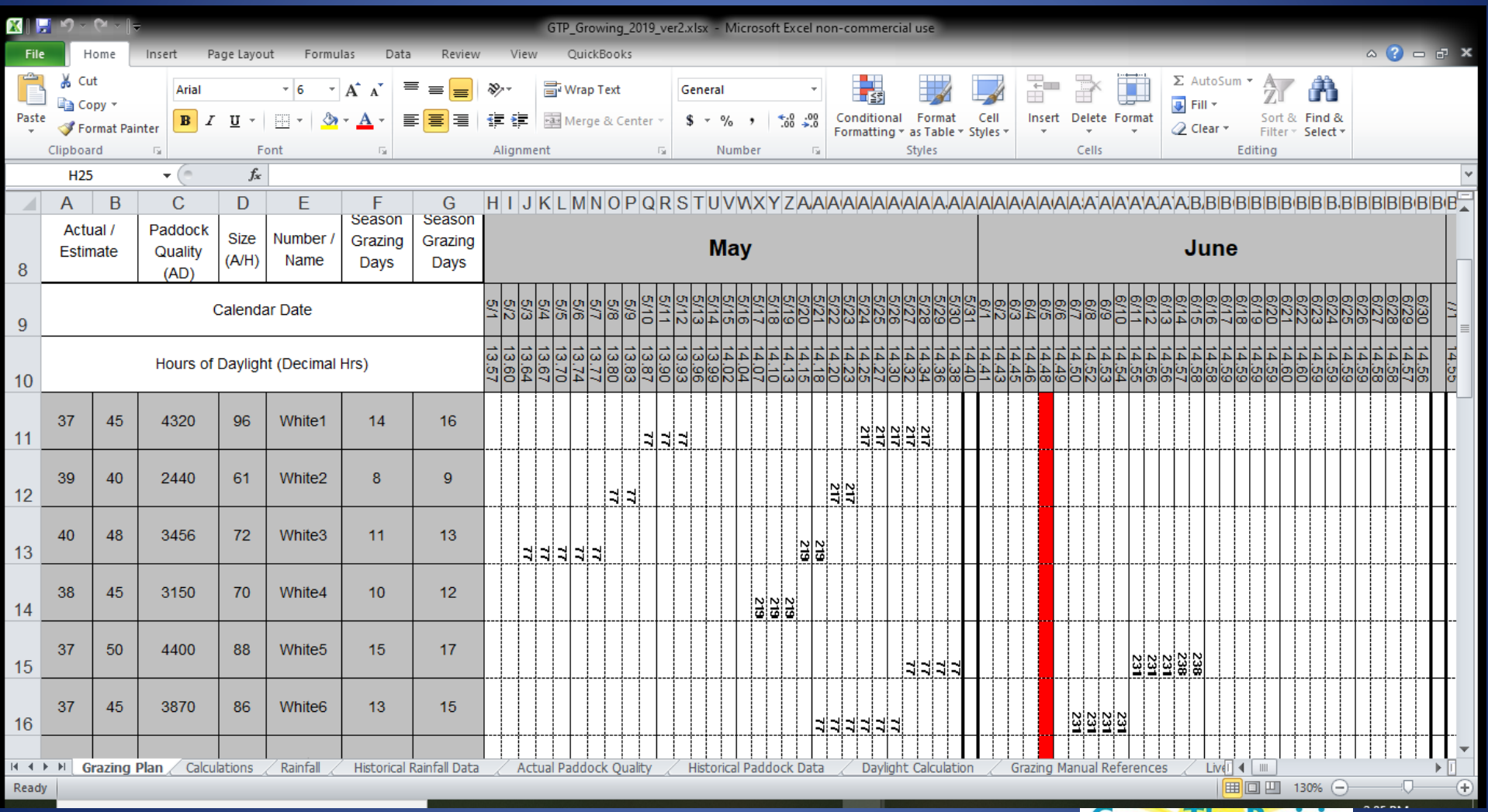
Excel Chart



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Calculating Carrying Capacity using Animal Days Per Acre

- We are running about 100 ADA on average. Have been as high as 104 some years.
- 100 ADAs x 1880 acres = 188,000 animal days available.
- Grazing Efficiency of 50% = 94,000 animal days.
- 94,000/ 365 = 257 animal units year long.

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How to Increase Carrying Capacity

- 1. Grow more grass through better pasture management which increases rainfall efficiency.
- 2. Increase grazing efficiency usually by increasing stock density in a paddock (more animals and/or smaller paddock). Stock density is lbs of live weight divided by paddock size.
- 3. Add a different class of animal, like sheep and goats.

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How to Weather Proof Your Ranch

- 1. Utilize time-limited grazing, but don't just move in lock step from one paddock to another.
- 2. Monitor your pastures often. Not just the paddocks ahead of the rotation, but behind as well to check for regrowth.
- 3. Make stock adjustments ASAP. With multi-paddock systems, you can predict when you will be out of grass.

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How to Weather Proof Your Ranch

- 4. Plan your recovery periods accordingly.
  - Early spring, move fast, summer and fall move slower.
  - It is ok to graze a paddock hard, but let it fully recover before grazing again.

5. Plan your dormant season grazing if grazing year round.

- Drop out paddocks after 1st spring rotation
- Or stockpile with the rotation still intact by moving very slowly.

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My Growing Season Grazing 2019

- 1360 acres divided into 16 permanent paddocks with high tensile electric fence.
- 298 animal units which is 298,000 lbs
- Over the whole grazing cell, the stock density then was 219 lbs/acre (298,000 / 1360)

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What I did cont'd

- Permanent paddocks are 60 to 95 acres. I divided them into 10 acre breaks, or a total of 136 paddocks over the 1360 acres.
- This raised the stock density to (298,000/10) = 29,800 lbs per acre.
- More importantly, it allowed for a 135 day recovery between graze periods. Recovery period = (number of paddocks – 1).

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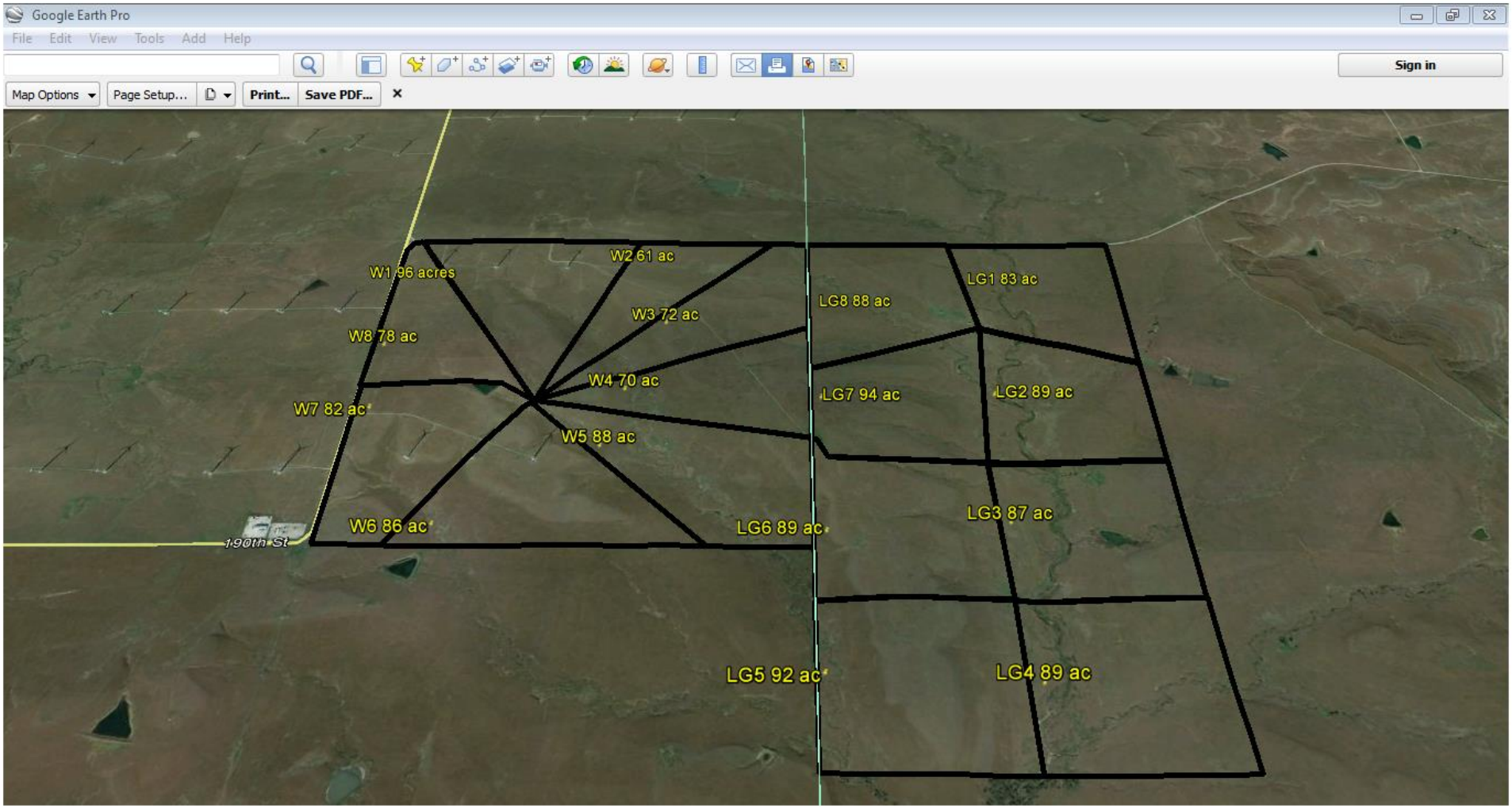

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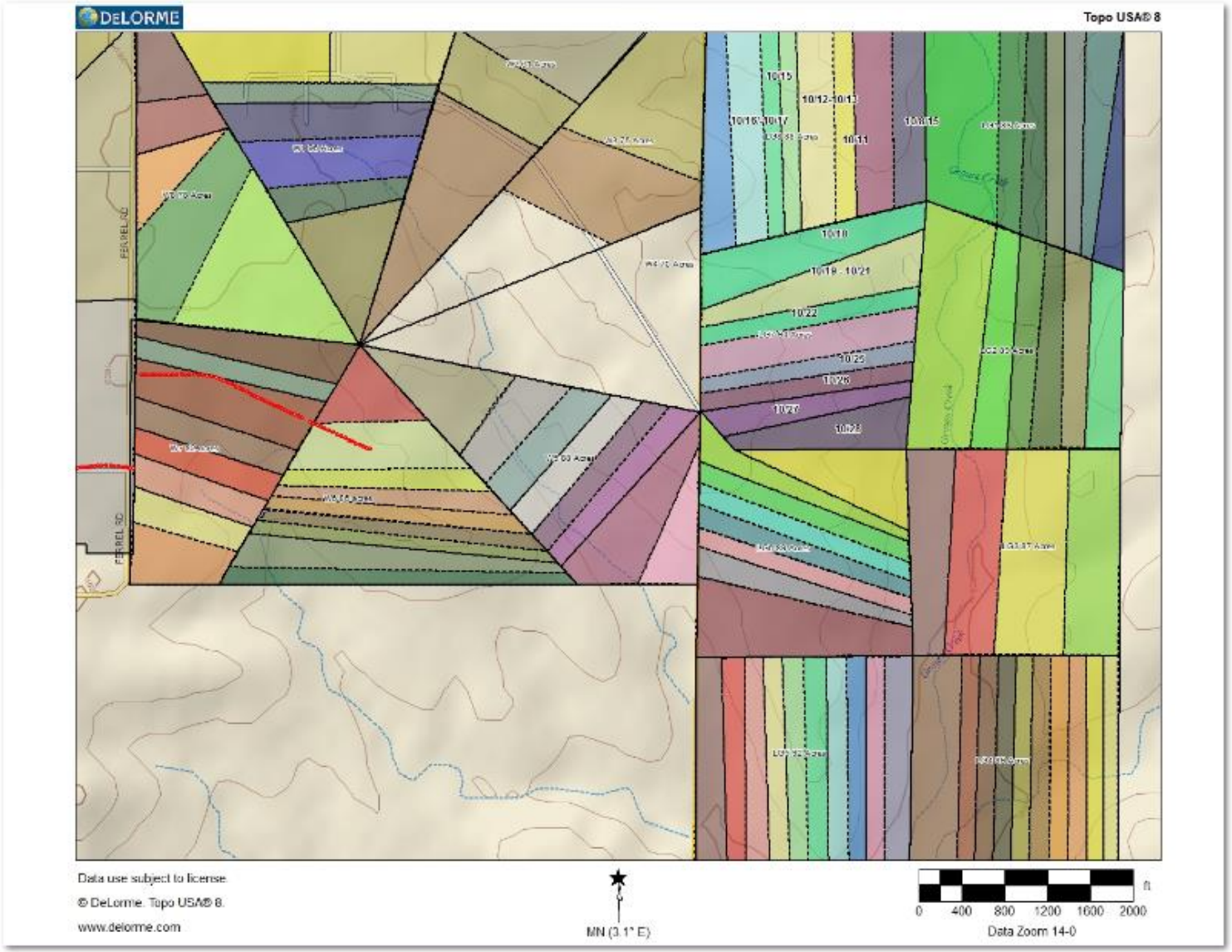
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Procedure

- Digital map on computer. I use Delorme Topo 9 and Google Earth Pro.
- In the office I put waypoints on the digital map so that the area between the points is 10 acres. Send those waypoints to my handheld GPS.
- Because I don’t have a Garmin GPS, I have to convert the Google Earth data to a .GPX file using GPS Babel. Then send that to my GPS.

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Procedure

- On ATV use poly wire and fiberglass posts to construct each break fence. Follow the GPS vectors to get fences in the right place
- I like to have 2 fences in front of the cattle at all times.
- Every morning, roll up one fence and let cows onto new paddock.
- Graze away from the water. No back fence, the first fence is always the closest to water.

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ES

Procedure

- Is 10 acres enough? Use forage stick to measure grass. 10 times per paddock.
- Average those measurements and multiply by 150 -250 depending on rainfall and growth.
- Calculate daily need. 298,000 lbs @ 2.8% BW consumption = 8344 lbs dry matter.
- Estimate grazing efficiency. I use 50% in growing season.

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Procedure

- Ok, now calculate supply. If the stick averages 10 inches @ 200 lbs/inch = 2000 lbs/acre.
- Times 50% grazing efficiency = 1000#/acre available.
- Supply = 10 acres x 1,000 lbs. = 10,000 lbs per paddock.
- Demand = 8344 lbs.
- If grass is really washy, might need to adjust paddock size..

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Animal Days Per Acre

- 1 cow for a day in a paddock is 1 cow day.
- Adjust for animal units. Yearling heifer is about .7 animal units.
- From above, we stared 2019 growing season with 298 AU. Therefore one 24 hour day is 298 animal unit days.

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Animal Days Per Acre

- From before, we saw demand in lbs of forage was 8344 lbs.
- If we use 30 lbs/animal unit/day, the 10 acre paddock will feed (20000/30 =) 666 cows for a day, if we eat it all.
- So that 10 acre paddock then has about 66 cows days per acre, we are eating 30 (298/10) and leaving 36.

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Animal Days Per Acre

- New Zealand research show you become pretty accurate with estimating ADA after 30 repetitions.
- I try to estimate at least 2-3 paddocks ahead of the cows.
- This is faster and easier than using the grazing stick, but I recommend doing both for awhile.

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Dormant Season Planning

- Measure stockpile at beginning of dormant season.
- Calculate animal days per acre as before.
- Plan how many days in each paddock.
- More temp fences = better performance and less supplemental feed.

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Winter Stockpile

Considerations

- Rule of thumb is one rotation for every ten inches of annual precipitation. We get 35 inches, so that means 3.5 rotations.
- Another rule of thumb is to move fast during fast growth and slowly during slow growth.
- Previously I have done one quick rotation in May and June, then one more from July 1 to October 31 (123 days), then 1 in the dormant season.

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Why Mob Graze?

- Less selective grazing. Cows eat a wider variety of species and don't overgraze the good stuff like big bluestem.
- Better manure/urine concentration.
- Longer recovery periods. More paddocks almost always means more recovery.
- Very quick to check your cows on 10 acres versus hundreds or thousands.

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Marketing The Product

- Our centerpiece is grass fed beef sold by the cut or the side.
- Started at Wichita farmer's markets and branched out to Emporia and Topeka.
- The first year we sold about 18 total animals.
- In 2019 we sold over 50 beef and 40 lambs, just takes time to get known and make people aware.

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Processing

- We still sell some cattle and lambs live to other grass fed beef suppliers, and culls that we feel won't make good grass fed meat. And for cash flow!
- The value of the animal cut up and sold by the cut is more than double the value live……
- But, you have extra costs associated with it. By the time you add all the processing costs it comes to around $.85/lb. or $425 for a 500 lb beef carcass, and about $100 for a 40 lb lamb.

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Economic

- Plus, the cattle are 24-30 months old at slaughter, so 2 winters and summers of expense.
- Then, there are farmer's market stall fees, supplies, fuel, advertizing, etc.
- With the strong cattle market over the past few years, live cattle more attractive, but now grass fed beef is about 15% better, or about $150 per head.

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Other Economic

- Not everyone can or wants to market meat direct to the consumer.
- Research has shown the biggest determinant of ranch profitability is cattle prices. No surprise there, but you can't do much about that in a commodity program.
- The next biggest determinant is stocking rate. More animals means more calves and more product to sell. Even if they are smaller, still more income to the producer.

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Summary

- 1. The future climate is a mystery.
- 2. Make changes now to avoid crises later.
- 3. Manage for high forage production by utilizing time-limited grazing.
- 4. Match numbers to forage supply, especially if in a drought.
- 5. Limit purchased feed, and hay.
- 6. Have some animals ready to market if prices increase.

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Grazing Chart

- You can download the chart for free on our website. http://www.grazetheprairie.com Click on grazing, then more info then grazing chart (bottom of page).
- Excel file.
- Charts are set for 2 seasons, growing and dormant. You can enter the date of the start of each and it updates automatically.
- Save a blank copy for future years.

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