

Adaptive Grazing Management Stakeholder Meeting Agenda

4/18/2017

9 AM to 3 PM

Semi-arid Grassland Research Center

Contact on notes: Hailey.wilmer@ars.usda.gov

Project website: <https://www.ars.usda.gov/plains-area/fort-collins-co/center-for-agricultural-resources-research/rangeland-resources-systems-research/docs/range/adaptive-grazing-management/research/>

Attending:

David Augustine, ARS

Stephanie Magnuson, US FS

Ted Toombs, EDF

Angela Dwyer, BCR

Jeff Wahlert, *Crow Valley*

Steve Anderson, *Crow Valley*

Matt Pollart, State Land Board

Andy Lawrence, *Crow Valley*

Rachel Murph, NRCS

Terri Schulz, TNC

On Zoom Michelle Stewart; Maria Fernandez-

Gimenez CS

Leonard Ball- *Crow Valley*

Donald Schoderbek, CSU Extension

Dave Hoover, ARS

Lauren Porensky, ARS

Jessica Windh, UW

John Ritten, UW

Jeff Thomas, ARS

Jake Thomas, *Crow Valley*

Craig Lawrence, *Crow Valley*

Hailey Wilmer, Northern Plains Climate Hub

Justin Derner, ARS

1. **Welcome, Agenda Review and Update (Justin)**

- Weather and soil moisture, we did not conduct a spring burn, getting new scale (hopefully!), show photos of burn
 - **Weather:** currently abnormally dry, precip forecast is uncertain, but temperatures will be hotter than average.
 - **Soil Moisture:** boosted up in February, constant at 20%...would like to see this get higher, would like it to get to low 30s / high 20s. Decent shape in terms of soil moisture. This is good but not great...last year our deep soil moisture was much higher.
 - **Logistics:** same cattle behavior observations in TGM as paired AGM, fancy scale to measure weights each time a steer goes to water is coming at some point this summer....
 - **Spring (second) burn:** was not conducted this spring because soil moisture was not above average.
 - **Fall burn:** good green coming—4 inches on needle and thread (*Stipa*). Good growth—will get cattle on it early.
- Justin update on [Rustici Conference in California](#)
 - **Dana and Justin attended:** 225 ranchers, lots of interest in the project, invite to go to the Tri Societies Meeting (Agronomy Society of America, Crop Science, and Soil Science Society of America) Tampa Florida in end of October—how to involve producers in active research like this.

2. **Welcome new member:** Stephanie Magnuson, US Forest Service stakeholder

- **Stephanie Magnuson:** been with USFS for about 8 years in various capacities, work on Pawnee as Rangeland Specialist, just finished working on a detail assignment over the winter on Fort Collins district. Love the plains, has worked a lot with *Crow Valley*. Position is Rangeland Specialist. Vacancies in Range...also work with the East Side grazing association.
- **One year probation:** Angela and Matt are finishing their one year period—contact us before the next meeting if you have a problem, otherwise they will be accepted into the group at next meeting. Consensus on that as a process for acceptance.

3. Stakeholder Spotlight: Angela Dwyer, Bird Conservancy of the Rockies

- Overview of Angela's career and projects at BCR, grassland bird ecology, student and other projects. (See powerpoint posted online).

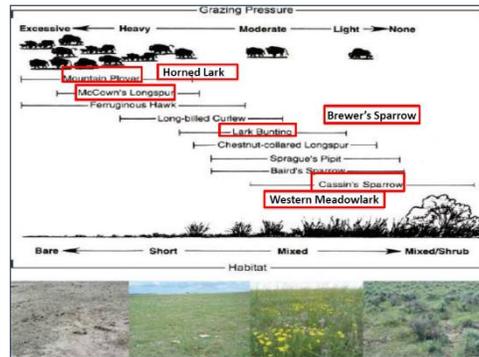


Figure 1 Conceptual diagram of grazing pressure/bird habitat relationships on shortgrass steppe

4. Decisions for 2017 Grazing season: Stocking rate, triggers for pasture movement and sequence of triggers

- **Group took a look at the grazing calculator**
 - Based on current sequence (drafted in January) we come up short on forage. This is assuming average precip and same assumptions as last year.
 - There must be more production in there than what we are assuming based on the calculator.
 - David adjusted the grazing calculator to better fit previous years. New assumptions for production: 700 lbs/acre in Loamy, 900 in mixed, 1100 in sandy.
 - **If drought** triggers go down. If 75% of long term mean precip on June 15 we switch to lower triggers. Makes cattle stay longer.
 - **Calc. assumes of mean cattle weight. Actual entry weights at the beginning of the season were:**
 - 2014: 633 lbs
 - 2015: 620 lbs
 - 2016: 643 lbs
- **Decision: Stocking rate for 2017 =244 steers**
 - Note: because of Crow Valley logistical constraints (number of cattle determined end of 2016) can only change by 5% now).
 - Full consensus of stakeholders to increase to 244 steers for 2017, 4.3% increase
 - Rationale: 244 steers would help work toward beef production goals, did not think increasing the stocking rate would have negative trade-offs in other goals.
- **Triggers for pasture movement and sequence of pastures**
 - **Trigger Info:** David A gave Background on triggers over the years in AGM. Current draft of grazing management plan includes side boards: 2 pastures for rest. Rotation of 1 herd. Discussed this a lot at last meeting. Alter timing grazing if we can. Incorporate understanding of ecological sites. Mid may-Oct. Stocking rates, can increase Oct, less in April. Triggers for cattle movement need to be quantitative and repeatable and communicated to other rangeland managers.
 - **Triggers we have used in the past:**
 1. Min veg biomass (VOR) based on grazing calc or set number

2. Cattle behavior checklist (pushing fence)
 3. Max days
 4. Biomass on burn (350 lbs/acre)
 5. days in last pasture
- 2014: VOR, Cattle behavior trialed, max days (grazing calculator used)
 2015: only VOR and cattle behavior
 2016: VOR, cattle behavior, max days + (10) days in last pasture
- **Discussion** of triggers included including or modifying the 24 day max trigger, either by changing number of days overall or by soil type (this was originally devised based on diet quality and behavior data), how to rotate into MCLC pastures on time for bird habitat engineering, how to best use cool season (needle and thread) grasses, and how to keep triggers “adaptive” e.g. not setting calendar date for rotation.
 - **Decisions:** The group had full consensus to add the following triggers for 2017 (see Tables 1 and 2):
 - Move out of Headquarters when need and thread heads out (when 50% of plants headed out)
 - Set Max days to 21 in all pastures
 - July 31: Move to (Hilltank) for longspur habitat automatically
 - Other triggers will stay the same from last year:
 - VOR
 - cattle behavior checklist
 - 10 days in last pasture
 - **Sequence of pastures info:** In January -stakeholders proposed to start in the burn pastures because there’s plenty of forage there (to capture the enhanced dietary quality). Then we said HQ because you thought there should be a burn, there was not a burn. We discussed grazing three pastures at the right time and low for McCowns Longspur (MCLC) habitat: Hilltank, Crossroads and South. Proposed final pasture was Saltflat. The idea was to graze previously grazed pastures in July, to graze short for longspur in late July early September, and to finish season in a fresh pasture near HQ. The only difference is that we did not burn in the spring.
 - **Stakeholders did not change sequence proposed in January (Table 2).**

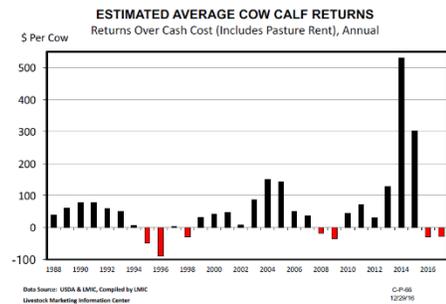
Dominant Ecological Site	Entry normal year (if precip > 75% normal 6/15) lbs/acre	Exit normal year lbs/acre	Entry dry year (if precip <=75% normal 6/15) lbs/acre	Exit dry year lbs/acre
Loamy	450	300	300	300
Mixed	500	400	400	400
Sandy	550	450	450	450

Table 2: Pasture sequence and special triggers for 2017		
Triggers that apply to all pastures:		
<ol style="list-style-type: none"> 1. VOR (see above) 2. Cattle behavior (see above) 3. Max of 21 days 		
Pasture order	Why	Notes/special triggers
1 Snowfence (Sandy)	Graze the burn for livestock quality	Leave pasture when 50% of HECO headed out
2 HQ (Mixed)	Because originally planned for Rx burn.	Leave when 50% heads out. Add something to behavior checklist to see when they're not eating needle and thread anymore. Use VOR measurements this year to determine when 50% of needle and thread has headed out. Note: Did not burn in 2017 because March 1 soil moisture was "below average" (Pasture could be skipped if 50% HECO headed out before entry opportunity).
3 Nighthawk (Loamy)	Rested in 2016 – high biomass	
4 Highway (Loamy)	Rested in 2016 – high biomass	
5 Hilltank (Loamy)	Targeted for McCowns Longspur habitat (short structure, later in summer) (MCLO)	Move here July 31 for MCLO habitat engineering
6 Crossroads (Mixed)	MCLO	
7 South (Mixed)	MCLO, high forage quality due to shrubs	
8 Salfat (Sandy)	High forage quality in late season	Spend last 10 days here to improve cattle weight before shipping
9 Rest- Elm (Sandy)	Drought reserve	
10 Rest-Ridgeline (Mixed)	Drought reserve and veg recovery after heavy grazing last year	

5. LUNCH- Sponsored by Center for Collaborative Conservation

6. Economics Presentation- John Ritten

- Overview of cattle cycles, ranch and feeder profits
- Jessica's future work on economics of AGM
- Feedback and discussion of what metrics would be useful to stakeholders vs. research.
- See full powerpoint online.



7. Objectives Revisions

- **Stakeholders first started to discuss revising or refining objectives in 2015.**
- Process for changing objectives: need 75% super majority to change the objectives (consensus on this process).
- **Decision: group voted to adopt the following social objectives: (consensus)**
 - "Apply new knowledge and CARM in new arenas"
 - This might occur out beyond 10 years, so how would it be measured
 - Can we measure this? Personal interviews? Maria says we can and we have!
 - Measure this via stakeholder and researcher examples of application outside the group?
 - Approved by consensus, provided the time scale over which this is measured is clarified
 - "Respect, understanding and trust increases among stakeholders and researchers"
Approved by consensus; need proposals on how to measure this
 - "Stakeholders and researchers co-produce new knowledge"
 - Need; need proposals on how to measure this
 - Essentially a measure of learning
 - Approved by consensus
- **Livestock objectives discussion**
 - Are objectives comparing AGM to TGM, AGM over time, or both? Need to clarify
 - Need to increase clarity of units and measurements of the objectives
 - Value of rested pastures needs to be considered
 - Maybe some of our objectives are about understanding trade-offs, learning about a topic or quantifying differences, not just reaching a management objective.
 - Operating costs: Need more info on operating costs but want to keep objective.
 - 1) Labor for checking AGM vs. TGM herds
 - 2) Water infrastructure costs for AGM vs. TGM
 - 3) Time spent on fencing maintenance
 - 4) Labor and time spent determining triggers
 - 5) Costs for installing fencing infrastructure needed for AGM
- **Vegetation objectives discussion**
 - Increase in C3 grasses due to weather only. Complete removal of grazing leads to this over long term. Should we remove an objective if outcomes are weather driven (No).
- **Stakeholders formed objectives revision sub-group. Lauren P, Terri, Rachel, Donald, David A, Ted and Andy. Items to clarify:**
 - Priority objectives to revise for next discussion
 - What time scales and metrics should be incorporated into objectives?
 - Need to clarify what we are comparing to: TGM vs AGM? Or just over time?

- Do all objectives pertain to all pastures? Or only to some pastures?
- Drop or add objectives?

8. Reminders:

- Objectives revision sub-group will meet this summer
- Save the Date: **June 27th Field Tour of AGM- register here**
<https://goo.gl/forms/mfitDTMxhJdW5BcD3>
- If you'd like to be part of the AGM outreach video, contact Hailey or Donald
- Do we want to schedule a Data Day for Summer 2017?
- Next meeting: Late Sept, 2017

Thank you to Jessica, Lauren, David Augustine, Dave Hoover and Michelle for taking notes!