

**Meeting Minutes for CMR Community Working Group Meeting
Thursday, April 17, 2014
McCone County Fairgrounds, Circle, MT**

Attendees: Steve Wanderaas, John Chase, Monty Billing, Jenifer Anderson, Kelsey Malloy, Kit Fischer, Karl Christians, Sylvan Walden, Reyer Rens, Geoff Beyersdorf, Mark Good, Cameron Sapp, Karla Christensen, Sue Fitzgerald, Tara Ostler, Arnie Dood, Rick Potts, Bridget Nielsen, Dean Rogge, Bill Milton, Mary Hendrix, Jeff Mosley, Dennis Jorgenson, Don Warner, Conner Elliot, Johnna Blankenship, Rod Colter, and Rachel Frost.

Facilitator Bill Milton opened the meeting up at 10:10 am by asking people in attendance to introduce themselves, state who they represent, and answer the grounding question – How many miles did you travel today and what are you thankful for? Most answered a long ways and that they were thankful for family, spring, and living in such a beautiful place.

Bill introduced Reyer Rens to provide an update on the Miles City BLM RMP. Reyer reported that the Miles City office is currently, working through comments on the draft RMP. He said that there were three main amendments to the RMPs to address sage grouse. The BLM is reviewing all plans for sage grouse, and working on developing cumulative impacts for sage grouse across the management areas. Miles City RMP– open comment meetings were held last Spring (2013) and the comment period ended in June. A total of 856 comments were received on a variety of topics.

Reyer was asked if there was going to be changes between the draft and final plans based on the comments, what was the biggest complication in the RMPs and how the different regions of the BLM were addressing sage grouse management in the RMPs.

Reyer responded that he could not provide specific details, but there are changes that will be incorporated that are based on the public comments. He also said that the deadline to make a decision on the listing of sage grouse was really tightening the timelines to have the RMPs produced. He said that the BLM management regions were collectively addressing how best to manage for sage grouse.

Geoff Beyersdorf from BLM provided a short update on the Lewistown RMP. The draft will be released in 2015.

The first speaker was delayed, so Bill asked the group for input on potential dates for the Field Day of the Monitoring Workshop Series. The last week in June, i.e the 26-27th, and the third week in July, i.e., the 21st through the 25th were suggested. It was decided that the monitoring committee would meet very soon following this meeting and would decide between these dates.

Meeting rotation – discussed star pattern of meeting rotation and that was the general consensus, i.e. alternating between north of the lake, then south of the lake.

Terry Heck, NRCS Resource Conservationist, Miles City – Plant Response to Grazing

Terry is recently relocated to Montana from South Dakota where he was a rangeland conservationist for many years.

Terry introduced the concept that grasslands are built to withstand disturbances and these happen at magnitudes beyond our comprehension at times. The best known example is the drought of the 1930's and the changes that happened in policy following that drought. We have only been collecting precipitation data for a short amount of time, relatively speaking. The 1930 drought was only the 7th worst drought in duration and magnitude as evidenced by tree ring analysis. This shows our limited frame of reference when it comes to climate. The worst drought in America was determined to occur in 1531. Droughts and wet periods probably changed the nature of grasslands beyond our comprehension in the past.

Dyrck – how big of an area did these droughts effect?

Terry - hard to tell with the limited availability of data, lack of trees in areas, and lack of trees in the same age range.

Bill – can they draw any conclusion about the amount of precipitation during those eras of drought and extreme wet?

Terry - Not really, the information is just based on the width between growth rings....tight rings meaning low growth, likely in response to low precipitation.

Terry explained the growth characteristics that grasses have developed in response to herbivore grazing.

– Lead Tiller Dominance – where a limited number of vegetative tillers are allowed to go through maturity and produce seedheads. This is the grass’s way of managing growth to ensure that the plant uses the limited resources to achieve reproduction to ensure survival of the species.

What happens when the lead tiller is damaged before it can complete inflorescence production? Damage to the lead tiller releases the plant from the hormonal control and the plant increases vegetative tillering production to get more photoreceptors. Primary reproduction in grasslands is vegetative, there are very few plants that actually generate from seed. Research in Dickenson showed that a very small number of plants actually reproduce from seeds.

Many of our grazing systems are designed around this lead tiller dominance and the vegetation reproduction. Timely removal of the reproductive tiller will cause more vegetative growth. “Timely” means between the 3-leaf stage and flowering.

Question - So, are grazing systems that use livestock to “plant” seeds valid, then?

Terry - Depends on which grazing specialist you ask and which plant species you are dealing with.

Terry also discussed the principle of “take ½, leave ½” which is the rule of thumb for utilization. This is grounded in science and clearly demonstrates that grasses can produce more biomass than they really need, given that the plant can survive even when ½ of the biomass is removed. Half of biomass does not equal half of the plant height because most of the weight of the plant is located at the base of the plant. If utilization rate exceeds 50%, you will begin to see reductions in root biomass as the plant has to make a decision on where to allocate resources. Generally the roots get sacrificed in order to produce more leaves, or more photosynthesis receptors.

Kelsy – if you graze above the 60% utilization for one year, then rest it the next year, can you overcome this reduction in root biomass?

Terry – Yes, the key is to manage the disturbances to allow for recovery.

Kit – what about fire? How does that impact roots?

Terry – Fire can have great reductions on root mass, so will need to plan for appropriate rest to allow recovery.

Terry went on to explain the effects of root biomass reduction on the soil. Continuous grazing results in loss of organic matter, breakdown of structure, and reduced infiltration rates. Rotational grazing results in much better infiltration, dark humus, and good structure. Continuous grazing results in overland flow, runoff, and the beginning of a desertification process.

Karl – DNRC has a rainfall simulator that they use for soil health and it is very interesting and visual. Sue has access to this trailer and may arrange to bring it out for one of the meetings. Can take soil samples from the

land and show what is actually happening on the land.

Dyrck – what can you do when you have soil damage from current grazing activity? Can you change the grazing management and bring the soil back?

Terry – It can be a long-term process to get that soil back to its best condition and there is an economic consideration that may not be able to allow for continual rest. So instead, managers should correct the stocking rate.

Kelsey – how do the stocking rates compare between those 2 pictures of the soil response?

Terry – the stocking rate might be the same, but the stock density and duration of grazing is different.

Arnie Dood – looks like it is a small window between 40 and 60% utilization, and it can be very subjective. How do you deal with that?

Terry – Management is the key, pay close attention to areas and try to partition out the disturbance so not concentrated in single area.

Arnie Dood – how about non-native plants, how do they respond to grazing pressure?

Terry – they do very well in wet situations and can handle a lot of disturbance.

Dyrck – How do you manage when you have a mix of bunch and vegetative grasses on a site? Don't the cows prefer the bunchgrasses and leave the wheatgrasses alone?

Terry – we will learn more about diet preference with the next speaker.

Terry went on to describe what happens between hayland and rangeland with the removal of biomass. Infiltration rate of hay much lower than rangeland because removing large amounts of biomass each year.

Hoof action – Terry showed photos of how hoof action incorporates the litter into the soil and removes the old biomass freeing up new growth. A lot of talk about mob grazing and the potential benefits of it, but there is also a need to do long-term monitoring to ensure not damaging soil or vegetation.

Dung beetles and insects can increase infiltration on rangeland. Dung beetles can sense manure from 10 miles away and hitch ride on herbivores. Department of Ag brought in dung beetles from Africa to augment native populations of dung beetles and their activities.

Kit – how do you define climate driven disturbances and climate in general?

Terry – climate is long-term. We see reactions in these plants, but their resiliency is incredible....so man-made climate changes won't devastate plant communities anytime soon. Terry then raised the question of whether the plant community changing from one community to another is always bad?

Dyrck – what assumptions can you make when a community is changing in response to drought? Would you have less bunchgrasses and more wheatgrass?

Terry – It depends on all the other factors at play in the area, soils, grazing, seed sources, etc.

Karl – what are your thoughts on removing grazing from public lands? Would an occasional fire provide the disturbance that is needed to sustain the community?

Terry – Brought up the example of CRP, those stands just don't look good without disturbance. Get old, full of litter and non-productive.

Bill Milton – it was a long time, 15 or more years, before people realized that CRP needed disturbance. Do

you think that the culture is ready to realize this?

Terry – when CRP was originated, it was under a different set of politics and economics based on commodity reduction, etc. Now CRP has a much greater wildlife focus and the purpose has changed.

Sue – removing the grazing disturbance was not good for maintaining the stand and now the program incorporates disturbance. This lesson was learned not only with tame species, but also with native species as well. Sue described a case study where the NRCS had monitoring cages on a producer's private land that were moved on a regular basis. The case study ended and the cages were left unmoved for 5 years. When she went back to retrieve the cages, inside 6 of those 7 cages it was solid cheatgrass. Demonstrates that these grasslands have evolved in disturbance and are dependent on it.

Bill – What are your thoughts on glaciation and how that impacted the grassland? After all, glaciation occurred a very short time ago relatively speaking (10,000 years). Did new species involve or did Southern species move north?

Terry – Has never looked into that, although very interesting thought.

Bridget – interesting study in Antarctica where they are looking at receding glaciers and they have found dormant grasses and mosses under the ice that are returning.

Dean – what about hail?

Terry -- Yes, very much a disturbance and rest is needed because of the damage.

Karl – it is important to keep the fuel load down because fire intensity is a huge factor in the ability of grasslands to recover.

Mark Good – so do grasslands need all these varieties of disturbances? What happens if you remove fire completely? Does that cause major problems?

Terry – The key is being able to change management and fix the known issues, then find a way to maintain the system once you have fixed it using whatever disturbance regime works the best.

Dean – with the sage grouse habitat issues, it looks like fire is out of the question in most areas because of the poor response of big sage brush to fire.

Dennis – WWF is interested in doing a study where use grazing to reduce fuel loads and then follow with fire that will burn between the sage brush plants.

Sue – How does fire affect the soil?

Terry – It depends on the fire intensity and the damage to the existing plants and soil parameters.

Bill – How do we minimize disturbance to dung beetles when using wormers, fly sprays, etc.?

Terry – most products used now are systemic that remains in the dung and then can harm the dung beetles. Suggested using rotations that break the cycle of the horn and face flies. Use holistic management to break that cycle.

Question – How far do you have to move cattle to break that cycle? Not sure, but it is manageable.

Dyrck – if dung beetles work properly then are horn flies gone because dung beetles remove the dung? Not known for sure, but possible that the dung beetles can remove the place for the horn flies to reproduce.

Jeff Mosley – Grazing Behavior of Livestock and Wildlife

Jeff commended everyone for their participation in the CMR CWG. He is a long supporter of collaborative management, and thinks this is a great approach for a working group to increase their knowledge on principles to help their decision making.

There have been tremendous advancements in animal behavior in the past few decades.

What is grazing management? –

Timing of grazing

Frequency of grazing

Severity – residual that remains after grazing. *That is what the plant really cares about, not necessarily how much is removed.*

Selectivity – how uniform is the grazing? *Grazing response depends on how selectively the animals graze.*

Stock Density – affects selectivity and impacts to the soil and other.

Plants not impacted as much if only a few of the tillers are used severely, but others left ungrazed. Plant response is dependent on how the plant is grazed, as much as how severe the plant is grazed.

What makes this so interesting is that all these factors are so important and interact so dramatically. For example, the same severity, frequency, and selectivity of grazing can produce very different results depending on when the timing of the grazing occurs. Range Science is not Rocket Science, it is much harder because the results are not nearly as linear or predictable. You can be frustrated by this or you can revel in this and the challenges that it produces.

As managers, we are relying on the animal's natural foraging behavior, wild or domestic, and using our understanding of that behavior to affect what happens on the landscape.

Are you actively driving or are you passively watching?

Rangeland Ungulates can be broken into broad categories based on their size and digestive anatomy and physiology. **Roughage feeders** (primarily grass diets), **Concentrate feeders** (primarily forb and shrub diets), and **Mixed feeders** (grass-forb-shrub diets). But these categories are all dependent on forage availability. Concentrate feeders will also eat grass if that is what is available.

Grazing behavior equals grazing decisions. As managers, we are trying to figure out why and how animals make these decisions so we can begin to manipulate that in some way. Animals are constantly making decisions and adapting. Jeff provided an example of a buffet and how our diet choices would change depending on the availability of certain food items and how choices are made relative to what else is available.

Why is an animal's diet dominated by 10 or so species, but there is also sampling of other plant species?
Variety, nutritional value, foraging costs in a spatial setting, sampling for palatability.

Interactive exercise that identifies factors that affect animal's decisions on how to choose habitat and diet:

Animal Features

Age

Size

Gender/Reproductive state

Habitat Features

Accessibility/Terrain and or

Distance to Water

Nutrient content of forage from the soil (Soil Type

Body condition
Digestion
Learned behavior
Genetics

Vegetation types (palatability productivity)
Elevation (season of use)
Snow depth
Shade/Shelter (especially in birthing season)
Latitude/temperature
Rubbing posts/flies and insects
Predators

Point is that there are lots of things that influence grazing behavior. There is danger in only looking at the averages. We can average the behavior of a group of animals, but the average is not the same as any one of the individuals.

Now, how can we harness this complexity to manage wildlife habitat? Aldo Leopold recognized the power of livestock to manage wildlife habitat when he described the 4 tools of habitat management: the cow, the plow, the axe and fire.

Habitat essentials of wildlife:

What actually causes competition? Two or more individuals that need the same limiting factor.

Animals need food, water, shelter and there is only competition when one of these factors or sub-factors (such as “protein” within “food”) is limited. We can improve hiding cover all we want, but if food is the limiting factor for our population of interest, we will never increase their population. Need a wildlife biologist to identify the limiting factor.

It is impossible to improve “wildlife” habitat because any changes to habitat improve for some species and degrade habitat for others, but only if you degrade the limiting factor.

Targeted livestock grazing to Enhance Wildlife Habitat:

Tell me what you want to improve, i.e. how you want to change the landscape and I can tell you how to use livestock grazing to accomplish those habitat goals.

Jeff presented numerous examples of how livestock grazing has been used to enhance wildlife habitat. These can be seen in the presentation files available on the web.

Dennis – how do you manage selectivity, is it a cultural thing?

Jeff – no not really, more about managing stock density and using livestock with decreased nutritional demands such as wethers (castrated male sheep). To avoid making value judgments, managers may try to maximize diversity and avoid putting one plant species at a higher order than others, so that there is “something for everyone”.

Take home messages:

Animals make decisions based on a variety of inputs that constantly vary. Tremendous challenge that we should revel in and enjoy.

Bill asked each person to expand on what they learned and what they thought the take-home message is:

Jenifer – shows that managing for a single species, like we often do because of the Endangered Species Act is not wise.

Monty – wildlife can pick and choose where they go, so we have to focus management efforts on the animals we can control.

John – Very complex

Steve – you have to get out on the land and pay attention.

Conner – look at all the factors and consider them.

Johnna – power in understanding behavior

Mark Good – If you are trying to make a living off the land, how is that piece of ground going to look compared to a wildlife refuge? In other words, what constraints are you under economically?

Jeff – probably won't look the same because your goals are very different.

Dean – need for adaptability, got good wildlife numbers then that shows I am doing the right thing...

Rick Potts – Jeff did a good job showing the need to create biodiversity, a menu of habitat that will be good for "wildlife". Appreciated the mention of Aldo Leopold, wildlife ecologist and wilderness advocate.

Bridget Nielsen – this talk validated a lot of what she has been thinking about the CMR and how we assign values to species.

Rod – Mother Nature is quite a factor in this and can change the best management plan in the world very quickly.

BG—limiting factor is the most important and identifying that is the biggest challenge; maybe nothing is the limiting factor here; maybe we, the people, are the most limiting factor.

Arnie—does not think it is unworkable and there is a lot of opportunity. Great to hear the barrel example and the implications for habitat management (limiting factor). We have to identify what is it that we are wanting on the landscape and don't be afraid to adapt.

Dyrck – decisions are made based on the goals of the 12 habitat units, each habitat called it management units, may have different goals.

Karla – appreciates reveling in the challenges.

Sue – this is complex isn't it? I should have been a rocket scientist...

Geoff – now thinks the range staff is really smart, some minds were open today as regards the complexity of the processes.

Reyer – competition only occurs when they overlap on the limiting factor. Things don't compete just because they are out there on the landscape at the same time.

Rachel – take advantage of the complexity and the resilience of the land and don't be afraid to use these tools and adapt. Don't be afraid of making a mistake; if you are watching, you can fix that mistake and learn from it without making a mess.

Dennis – diversity breeds resilience; a wreck isn't a complete wreck when there is diversity.

Bill Milton – thinks this is also a good example of how the group communicates, perhaps BG is correct in that the human population may be the most limiting factor and our ability to define what we want and how we might get there.

Monitoring discussion:

Bridget and Rachel provided an update on the progress of the monitoring committee and asked for any input on the people/methods that we were going to highlight at the field day.

Karl – make sure the method was applicable to the CMR region and climate.

Kit asked about habitat type, i.e. where do we want to work in, grassland, shrub, sagebrush?

Dyrck – if one of the goals is to get good public participation we need to get the date set and the location so we can put out a "Save the Date" notification.

Date – dependent on the speaker availability in either late June or July.

Location – recommendations:

Dean – Phillips County because long time since we have been there and the Rancher's Stewardship

Alliance could help with public participation.

Dyrck – top of the hill at 191, 5 land ownerships and somewhat centrally located.

Karl – that is an hour from everywhere

Sue – why do we need multiple landowners?

Dyrck – for the purpose of what we are doing, this location provides a place to have a get-together afterwards with restrooms, the location just makes sense. Top of the Hill after the Fred Robinson Bridge, on the Phillips County side. The multiple landowners provides a variety of habitat types.

Monty asked if any of the speakers had existing sites, etc. None that we know of.

Bill – it is going to be in Phillips County and the planning committee will set the site and date depending on the availability of the selected speakers.

Rachel provided the web addresses of the facebook page and the CMR CWG page on the MRCDC website.

Bill asked the group what other information do we want on the maps?

Dyrck – wants to create see-through graphs and facts that we can attach to the maps that shows some parameters.

Bill – think about what is important in each county and send those to Rachel to compile this list so we can think about how to plan.

Jenifer – declining county population can be used against small counties.

Dean – wildlife numbers by county.

Arnie – work done looking at Bozeman and the number of restaurants in the last 3 years. Actual number of permits has declined in the past 3 years. Demonstrates that the information shows a much different picture than what you think driving down the street.

Next meeting will be in Malta on June 19th.

What worked well, what didn't?

Presentations were great, information very valuable, addressing things that are valuable to all of us, nothing exclusive.

Sylvan – Jason Holt's book is out....www.edgewhen.com

Karl – great to be reminded of the big picture that we all play in land management.

Kit – would like to see more small group stuff, but time is always a factor

Jeni – diverse backgrounds interested in the same thing.

John – learned a lot

Steve – practical use of information that was presented today

Dean – give a lot of thought to what BG had for a comment about us being our own limiting factor.

Rick – Great representation on the agency's attendance, thank you for your willingness to come to the table, through communication we can avoid the shameful behavior seen in Nevada.

Jeff – Montana leads the way in collaborative conservation, complement people and encourage to keep going.

Wrap up

Announcements

The monitoring committee will meet asap and develop the agenda for the next meeting to continue providing background for "Monitorfest".

Next meeting will be June 19th in Malta with the Monitoring Committee determining the agenda.

******NOTE: Monitoring Committee has since met and changed the date to JUNE 17th in Malta******

Adjourned at 3:10 p.m.