Grazing as a Management Tool in Iowa Summit refresher

Date: October 13 and 14, 2010
Site: Whiterock Conservancy

The meeting included some of the following baseline thoughts:

- Non-pasture grasslands, as well as pasture land, in Iowa are presently very vulnerable to conversion to non-perennial vegetative cover because of the prevailing commodity crop trends. This trend is detrimental to Iowa's environment and likely damaging to Iowa's livestock production economy.

- Non-pasture grasslands face critical economic pressures because of they offer comparatively low economic returns to row crops, and in some cases pastures. There is a need to find ecologically sustainable ways to enhance economic returns on non-pasture grasslands. Grazing is one of the potential tools available.

- Many of Iowa's non-pasture grassland acres are managed very well for ecological health; many are not due to management and/or perception constraints that have limited certain ecologically important disturbance regimes. Returning managed disturbances to these lands will enhance their ecological health. Fire is an established tool to achieve this goal, grazing could be another.

- Having more non-pasture grasslands available to grazing can improve the ecological health of pastures by adding options for longer grazing rest periods on pastures, leading to a net gain in environmental benefits from both pasture and non-pasture grasslands.

- By including managed grazing on more non-pasture grasslands the community of stakeholders interested in protecting Iowa's perennially vegetated landscape is increased by moving non-pasture grassland and pastures management systems from competing systems to complementary systems.

- We are collectively struggling with the realities of increased grazing opportunities on non-pasture grasslands; the actual production gains, economic gains, and ecological gains of making grazing more prevalent on non-pasture grasslands are highly localized and at times debatable.

Given this baseline as a starting point, the Grazing as a Management Tool meeting was attended by 18 of 25 invitees (see attached contact information) from a broad spectrum of stakeholders involved in land management, land and habitat restoration, cattle production, non-profit and state/federal agencies, private land owners, and the cattle production support industry.

The stated goal of the 2-day meeting was to use the power of diversity within the group to discuss the use of cattle as a "grassland" (CRP, restored and protected prairies and savanna, hunting land, etc)

management tool with the goal of identifying key benefits, pros, and cons of grazing on non-pasture grasslands from the perspectives of production, conservation and environment, and social considerations.

The first half of the day was dedicated to an overview presentation of Iowa's grasslands provided by Dr. Tom Rosburg of Drake University (the presentation is available on the WRC website) followed by a series of "perspectives" presentations provided by select participants. The perspectives portion of the meeting was geared at presenting opinions, whether scientifically based, experience based, or antidotal, on the prospects of grazing non-pasture lands from the individual or the presenter's associated group, or in some cases a combination of both.

Following the opening presentation and perspectives session, the group visited several sites on the Whiterock Conservancy (WRC) landscape where meeting participants could both continue the discussions from the first half of the day in the context of being "in the field" and to use specific on-site conditions to develop discussion points that were missed during the in-door session.

The first day wrapped up with a meal and a "critical issues" brain storm, where the group was provided the raw data responses from the morning survey and asked to review the responses, discuss key items, and add to the list critical items that did not surface during the survey.

Day two was devoted to sorting the survey responses into groups where overlap occurred and sorting them in order of highest priority. Our intended outcomes were to use the group and previous day of discussion and field exercises to build a list of issues related to barriers, pros, and cons facing grazing management on non-pasture lands that could be used to create a set of recommendations, literature research needs, or scientific research needs that would help guide the grazing management tool.

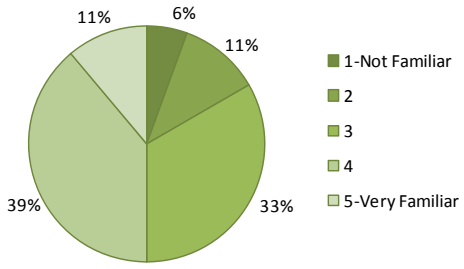
Pre-meeting Survey Results: The information below is a breakdown of the survey results from the meeting showing the question and associated responses in raw numbers and in graphic form.

Survey Synopsis, Questions 1-11

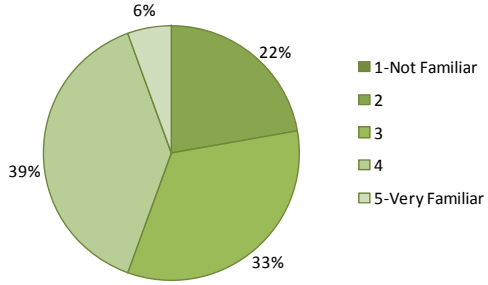
The survey group was fairly small and the survey was not designed to facilitate statistical analysis. The pre-meeting survey was designed to gauge the group's comfort with the grazing as a management tool topic in general, rank the group's perceptions on functional need for a higher presence of grazing on non-pasture grasslands, perceptions about the assumed ecological, production, and social outcomes of grazing non-pasture grasslands, and the prospects for using grazing as a means of increasing and/or maintaining Iowa's perennial grassland cover.

Group's Comfort with Grazing non-Pasture Grasslands: The group was generally comfortable with the topic of managed grazing from both a production and conservation standpoint, as suggested by answers to the first two questions, which were heavily weighted to the "familiar" to "very familiar" end of the spectrum. This suggests that the group already had a working knowledge of the topic. At the same time only a few respondents indicated that they were "very familiar" with the topic, suggesting that there remain numerous questions or unknown management outcomes associated with grazing non-pasture land from both the production and conservation perspectives.

1. How familiar are you with cattle grazing on non-pasture grasslands from a production standpoint.

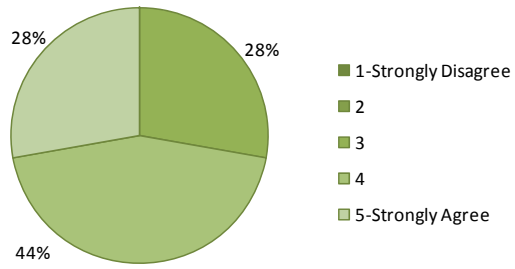


2. How familiar are you with cattle grazing on non-pasture grasslands from a habitat and wildlife perspective?

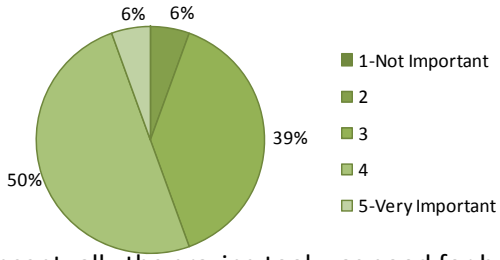


The Need for Grazing Disturbance: The group generally viewed grazing as a "needed disturbance tool" for non-pasture grasslands, as indicated by responses to questions three and four. However 28% of the group indicated some hesitance to classifying grazing as a need by choosing "3" on the 1-5 scale to question three, and in question four the need for grazing to manage these lands was viewed as important, but tended toward *less* necessary, when fire was routinely used. The responses suggest that in general grazing is viewed as favorable to the ecological health of non-pasture grasslands, however relative to fire there is a level of uncertainly surrounding grazing management outcomes related to ecological health.

3. Cattle grazing is an essential disturbance tool for maintaining and enhancing the ecological health of non-pasture grasslands.



4. How important is grazing to the ecological health of non-pasture grasslands when fire is routinely used as a disturbance tool?

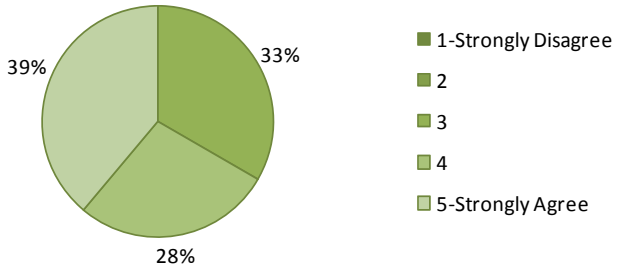


Perceptions of the Grazing Tool: The group indicated that conceptually the grazing tool was good for both the land's ecological health and the producer, although 33% of the participants neither agreed nor

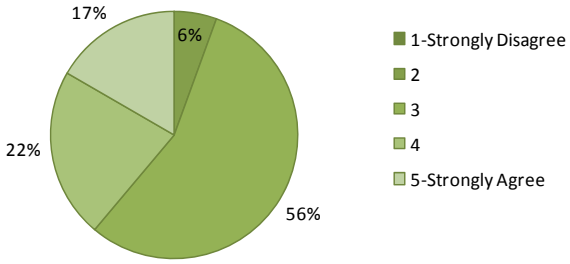
disagreed with the “win-win” scenario, as shown in the responses to question 5 below. During the discussion sessions a number of comments were made in reference to this question that suggest the participants felt that the “win-win” scenario was overly general, or as one participant stated, “whether grassland health or the producer wins, or both win, or both lose, depends so much on the grazing outcome in terms of ecological health, and how had to go into getting the forage from the production end of things. There are many variables at play that tip things one way or the other.” This statement on behalf of the group seems to be supported by the previous question (#3) and the results from the following three questions, #6-#8.

In question 6 the potential drawbacks of lacking infrastructure in many non-pasture landscapes, and the unknown forage quality factor highlighted in question 8, suggested a general lack of consensus about the cost-benefit of grazing from the production standpoint. The results from question 7 draw a quick line to one of the main barriers to grazing non-pasture grasslands, a general agreement that those managing primarily for cattle production, and those managing for other purposes, simply do not view the grassland resource with a jointly held management outcome in mind, even if it is in the context of “non-pasture grasslands”.

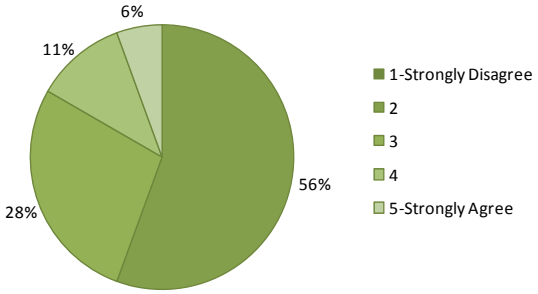
5. Grazing non-pasture grasslands is conceptually a "win-win" for producers and the non-pasture grasslands receiving the grazing treatment.



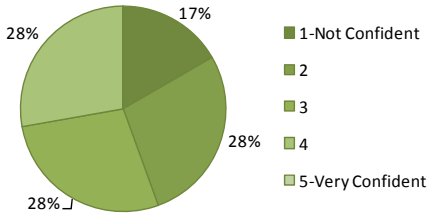
6. The potential economic returns of grazing non-pasture grasslands outgain the potential production constraints involved (installing temporary fence, hauling water, moving cattle, etc).



7. Producers and non-pasture grassland managers have the same end result in mind when we talk about "using grazing as a management tool" on these lands.

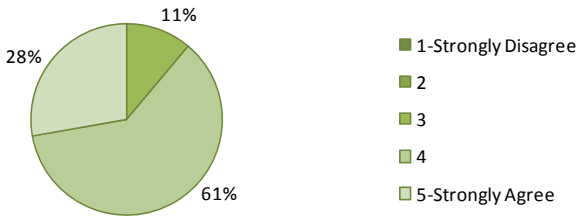


8. Rank your confidence in understanding the forage nutrient content, probable stocking rate, potential production problems like toxic plants or pink eye, when considering grazing cattle on non-pasture grasslands.

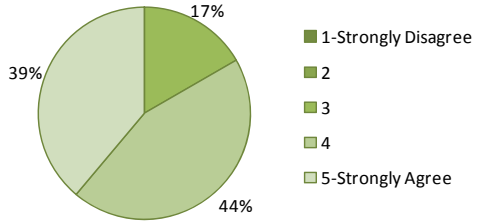


Grazing as a Land Protection Tool: Finally, the group indicated in question #9-#11 that grazing could be considered a viable tool for protecting grasslands and other open space due to its economic potential for drawing some level in income from the land while concurrently fostering ecological health, and ultimately having a positive impact on the local economy in general because of the cascading local economic impacts that vibrant and sustainable cattle operations generally have.

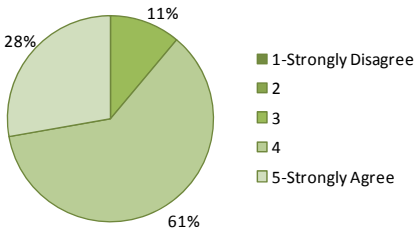
9. Cattle grazing can be a tool for protecting non-pasture grasslands from land conversion (to row crops, housing development, etc) by the addition of production-based income on traditionally "low return" acres.



10. More, and ecologically healthier, non-pasture grassland will be present on the Iowa landscape if Iowa can better integrate grazing onto the non-pasture grassland landscape.



11. Rural economies will benefit from an increased presence of cattle on non-pasture grasslands.



Survey Synopsis, Questions 12-14

Questions 12-14 were open ended responses asking participants to list their questions. On day two of the October meeting the group went over these questions, grouped them into similar "themes" which were created by combining responses which had significant overlap in their topic content. The group prioritized, by show-of-hand votes, the top five responses in order of most significant to the question's topic. The results from the day-two sort and prioritize exercise are found below; the raw data responses are found in the appendix section. The group did not prioritize question 15.

Provided below are the top five priorities for each of the response/response "themes" for questions 12-14, as sorted and voted on by the meeting participants.

Question 12: List five, or fewer, opportunities/benefits to grazing on non-pasture grasslands

1. Grazing can promote vegetative diversity (species presence and community structure diversity) as well as wildlife diversity.

2. Grazing these lands can provide rest periods and renovation options for producer's regularly grazed pastures when non-pasture grasslands are incorporated into the grazing rotation helping to address overgrazing issues at the "home pastures" and concurrently avoiding routine grazing on the non-pasture grasslands.

3. Grazing non-pasture grasslands can promote soil health on both the non-pasture and regular pastures by increasing soil organic matter and carbon cycling on both and by reducing fertilizer on the pastures.

4. Grazing can add income streams to non-pasture grasslands (especially important if the land is not enrolled in CRP or other such programs) and help to support the economic health of rural communities by supporting livestock businesses.
5. Grazing non-pasture grasslands can help to controls tree establishment and noxious weed infestation (particularly important where fire is difficult to implement…for weed control grazing has to be done "right").

Question 13: List five, or fewer, challenges to grazing on non-pasture grasslands

1. Infrastructure development & costs (water, fence, hauling cattle to site) are major obstacles to grazing non-pasture grasslands because they are typically CRP or expired CRP that was enrolled because of its HEL cropland status (generally wasn't pasture in the first place) or it was pasture many years ago and the infrastructure was neglected/removed.

2. Differing ideas of what the grazing end result should "look like" between the producer and landowner is a challenge. Defining, agreeing upon, and ending up with a satisfactory grazing outcome between producer and landowner that meets both party's needs and desired outcomes hinges on many different variables.

3. Government policy and agency unwillingness to allow cattle grazing on land where it has control of this management option is a challenge…CRP rules, maintaining public lands to achieve public perception approval, etc.

4. Lack of "how to" knowledge is a barrier. Using cattle as a management tool will require changes in grazing management strategies, time and labor investment changes, production system flexibility, etc. on the part of the producer…non-producer landowners who may know what outcome they want may not entirely understand the process, time line, start-to-finish aesthetics of the grazing tool on their land.

5. Reaching & involving absentee landowners and encouraging long term leases/partnerships to make grazing feasible on some non-pasture grasslands is a challenge. Land owners do not always live near land, many own land with idea that it is not intended for agricultural production (hunting land, prairie restoration land, etc.). Also, there is a tendency to use annual leases, which presents problems for planning out grazing systems on the part of the producer.

Question 14: List five, or fewer, questions to grazing on non-pasture grasslands (Note: the prioritization session did not successfully bring forward a distinct set of five top priority questions. The items below are all of the questions that received votes; in general each received two or three overall votes.)

1. What level of Disturbance is needed?
2. What is a fair rental rate and how is it determined?
3. Who pays for the additional fencing needed?
4. How do we balance managed grazing & grazing for disturbances?
5. What is the best stocking rate and what kind of stock density works well?
6. Will the public be satisfied if CRP becomes over grazed; How can you graze CRP?
7. Why is it so difficult to implement a basic system to get CRP acres back to productivity?
8. What is the nutritional value of non-pasture forage & what classes of animals fit nutrients available?
9. What is the process to evaluate grazing impacts and what are the ecological tradeoffs?

Activities and events since the October meeting at Whiterock Conservancy:

Since the meeting in October the project coordination team has developed a second survey designed to further engage more stakeholders in this topic. The survey has, to date, not been widely distributed but we've been making plans to see that it does in the months to follow.

Although not a direct outcome of this meeting, yet very much topic-related, Dr. Jim Russell of ISU and a team of partners secured a grant to study the impacts and effectiveness of strategic applications of mob grazing to improve forage, habitat, water sequestration and water infiltration in pasture systems. Although not directly related to grazing on non-pasture lands Dr. Russell's study will add considerable information to the concept of using cattle as a grassland management tool for non-production based outcomes.

Whiterock Conservancy, in partnership with ISU, is continuing to study the nutrient quality of prairie forage and use this information to develop a calendar that will feature a three way overlay of peak forage nutrient availability, cattle nutritional needs, and key environmental sensitivity windows that will hopefully begin filling in some of the questions related to the feed value and when it is at its peak in prairies, how well that peak correlates with a set of herd nutrition needs, and how those two factors come together on the land with respect to the grazing when potential damage to the ecological quality of the prairie is minimized.

Whiterock Conservancy, the Iowa State University, and the Iowa Cattleman's Association have brought together a group of stakeholders to continue elements of our project's discussions, using some of the October meeting outcomes, to focus on developing some policy recommendations for the upcoming federal Farm Bill regarding grazing and publicly managed and eased grasslands. Many of you have been a part of these meetings.

Next steps:

The REAP-CEP project will be over at the end of March, 2011, but WRC will continue to work on this topic past the deadline of this particular project, highlighted by the summit. Once the post meeting surveys have been collected we will once again circle back with you to with the project's final report. In the original grant proposal one of the deliverables was to create and distribute a small publication including recommendations for how to successfully implement a managed grazing episode on non-pasturelands. Judging from the outcome of the October meeting it seems unlikely that we will be able to come up with a set of management recommendations and rather, as set of "things to consider" that can be used by both producers and non-producer landowners interested in this topic that could be used to guide communications and address the need for developing a jointly held outcomes goal. We will begin developing this immediately and circulate it with you, and other partners, for your thoughts and feedback.

Clearly much work is left to be done, and although we had hoped to truly generate a set of concrete recommendations there are no clear-cut solutions or answers to the concerns, and although the benefits of using grazing as a management tool are certainly well established, how well these benefits perform after the grazing episode depends highly on the site-specific conditions, communications, resource constraints, and ability to articulate and manage for a specific ecological goal.

Appendix:

Raw Survey Results, Questions 1 - 11

1. How familiar are you with cattle grazing on non-pasture grasslands from a production standpoint.

	1-Not Familiar	2	3	4	5-Very Familiar	Total
Actual Reponses	1	2	6	7	2	18
Responses By Percent	6%	11%	33%	39%	11%	100%

2. How familiar are you with cattle grazing on non-pasture grasslands from a habitat and wildlife perspective?

	1-Not Familiar	2	3	4	5-Very Familiar	Total
Actual Reponses	0	4	6	7	1	18
Responses By Percent	0%	22%	33%	39%	6%	100%

3. Cattle grazing is an essential disturbance tool for maintaining and enhancing the ecological health of non-pasture grasslands.

	1-Strongly Disagree	2	3	4	5-Strongly Agree	Total
Actual Reponses	0	0	5	8	5	18
Responses By Percent	0%	0%	28%	44%	28%	100%

4. How important is grazing to the ecological health of non-pasture grasslands when fire is routinely used as a disturbance tool?

	1-Not Important	2	3	4	5-Very Important	Total
Actual Reponses	0	1	7	9	1	18
Responses By Percent	0%	6%	39%	50%	6%	100%

5. Grazing non-pasture grasslands is conceptually a "win-win" for producers and the non-pasture grasslands receiving the grazing treatment.

	1-Strongly Disagree	2	3	4	5-Strongly Agree	Total
Actual Reponses	0	0	6	5	7	18
Responses By Percent	0%	0%	33%	28%	39%	100%

6. The potential economic returns of grazing non-pasture grasslands outgain the potential production constraints involved (installing temporary fence, hauling water, moving cattle, etc).

	1-Strongly Disagree	2	3	4	5-Strongly Agree	Total
Actual Reponses	0	1	10	4	3	18
Responses By Percent	0%	6%	56%	22%	17%	100%

Raw Survey Results, Questions 1 – 11 (continued)

7. Producers and non-pasture grassland managers have the same end result in mind when we talk about "using grazing as a management tool" on these lands.

	1-Strongly Disagree	2	3	4	5-Strongly Agree	Total
Actual Reponses	0	10	5	2	1	18
Responses By Percent	0%	56%	28%	11%	6%	100%

8. Rank your confidence in understanding the forage nutrient content, probable stocking rate, potential production problems like toxic plants or pink eye, when considering grazing cattle on non-pasture grasslands.

	1-Not Confident	2	3	4	5-Very Confident	Total
Actual Reponses	3	5	5	5	0	18
Responses By Percent	17%	28%	28%	28%	0%	100%

9. Cattle grazing can be a tool for protecting non-pasture grasslands from land conversion (to row crops, housing development, etc) by the addition of production-based income on traditionally "low return" acres.

	1-Strongly Disagree	2	3	4	5-Strongly Agree	Total
Actual Reponses	0	0	2	11	5	18
Responses By Percent	0%	0%	11%	61%	28%	100%

10. More, and ecologically healthier, non-pasture grassland will be present on the Iowa landscape if Iowa can better integrate grazing onto the non-pasture grassland landscape.

	1-Strongly Disagree	2	3	4	5-Strongly Agree	Total
Actual Reponses	0	0	3	8	7	18
Responses By Percent	0%	0%	17%	44%	39%	100%

11. Rural economies will benefit from an increased presence of cattle on non-pasture grasslands.

	1-Strongly Disagree	2	3	4	5-Strongly Agree	Total
Actual Reponses	0	0	2	11	5	18
Responses By Percent	0%	0%	11%	61%	28%	100%

Raw Survey Results, Questions 12-15

Question 12:

Opportunities/Benefits to grazing on non-pasture grasslands

Increase Plant/Structural Diversity	Economic Diversity
Add Disturbance	Litter Removal
Added Income	Allows Time to Renovate Pastures
Educational Value	Wildlife Diversity
Allow Pastures to Rest & Time for Renovation	Controls Tree Establishment
Control of Noxious Weeds	Erosion Control
Increased Forage Quantity so better production	Rural Economic Development
Cooperation & better communication btw Producer & Landowner	Better Seed Germination
Habitat Diversity for Wildlife	Less Commercial Fertilizer Input
Encourages Healthy Soil	Stabilizes Yield at Different Times (warm & cool season)
Healthier Cattle (non-confined, less disease)	Lower Public Cost of Managing Public Land
Stimulates Carbon Cycling in Grassland	Can provide shade/shelter to grazing animals
More Acres Available to Producers	

Raw Survey Results, Questions 12-15 (continued)

Question 13:

Challenges to grazing non-pasture grasslands

Infrastructure Development & Costs (water & fence)	Harm to Sensitive Species & Habitat
Increased Management / Labor / Time	Perception (ie. Hunter Biases)
Differing Goals of Producer & Land Owner	Weeds Introduced by Cattle
Government Policy/Agency Unwillingness	Exposure to Toxic Plants
Low Nutrition Value	Educating Others
Lack of "How To" Knowledge	Encouraging Development of Long Term Leases/Partnerships
Liability Issues (ie. Public Access)	Agreeing on Restoration Tools
Balancing Diversity with Production	Patience for Doing Additional Research
Shift in Management Strategy	Producers Understanding Conservation Grazing
Reaching & Involving Absentee Landowners	Greater exposure to cattle by pests (face flies)
May Sacrifice Income	

Question 14:

Questions regarding grazing on non-pasture grasslands

What plant species will cows eat? Shouldn't eat?	Will cattle gain fast enough to make economical sense?
How do we educate others (ie. Private recreational landowners)?	Will the public be satisfied if CRP becomes over grazed?
How do we balance managed grazing & grazing for disturbance?	Why is it so difficult to implement a basic system to get CRP acres back to productivity?
What is the nutritional value of non-pasture forage?	What are the liability/insurance issues to owners and producers?
How do we change our management to non-confined livestock?	How do we get the "experts" to back off long enough to let it happen?
What are the economics of flash grazing- for both producer & landowner?	Can we partner with feedlots who want cattle backgrounded for a season for cheap?
What is the best stocking rate?	What are the RFU Values?
What is a fair rental rate?	Will current grass species support spring calves?
What level of disturbance is needed?	What are the ecological tradeoffs?
What are profit margins?	Is the demand present?
What classes of animals fit nutrients available?	How can you graze CRP?
How is rental rate determined?	Who is working on suitable genetics in Iowa?
What time of year is best?	Is everyone involved that needs to be?
Who pays for fencing?	Where do I get the resources to implement this?
How can we provide incentive?	What is the process to evaluate grazing impacts?
What kind of stock density works well?	

Question 15:

Assumptions regarding grazing non-pasture grasslands

Disturbance leads to increase plant diversity	This strategy results in too little income
Most private landowners will not adopt the concept	Grassland managers will encourage native plant and animal diversity
Producers and owners will not agree	Livestock producers will only focus on animal health and productivity
Low nutritional quality	General public will view this as negative
Cattle will not eat the food	Oversight will be hard
Grazing leads to overgrazing	Top cattlemen will manage forage height
Supplementation may be required on mature native grasslands	Some land will stay in prairie/timber
Grazing is not a tool to be used in all situations	Grazing cattle will accomplish the same thing as elk/bison
There will always be managed grazing on introduced cool season pastures	Grazing is superior to haying as a tool (cost/income/ecological impacts)
Grazing will negatively impact bird populations	Grazing is bad for the prairie
Grazing contributes to soil erosion	Cattle and prairies don't mix
Cattle in water sources do not affect water quality	Grazing non-pasture grasslands is beneficial
Most cattlemen will not adopt the concept	This is a profitable solution
Bureaucracies will not change	Higher density and fast rotations with long recovery are essential
Experts will not risk endorsing this	Monocultures are desirable for fattening/finishing opportunities
This strategy requires too much work	