Management Considerations for Grassbanks: Experiences from the Loess Hills Grassbank in Western Iowa

Agren, Inc., Carroll, Iowa
September 2008

Summary

This document is designed to provide essential information about livestock grazing and grassbanking for managers of conservation agencies and organizations, such as the Natural Resources Conservation Service, The Nature Conservancy, Department of Natural Resources, and County Conservation offices. Information contained herein will define a grassbank, describe the framework necessary for proper management, and identify important factors to consider before and during operation of a grassbank network. Much of the information represented here is based on actual experiences from operating a pilot grassbank project in western Iowa – the Loess Hills Grassbank (LHG).

What is a Grassbank?

Grassbank Description

A grassbank is one or more parcels of grassland - either publicly or privately owned - that are made available to local livestock producers for grazing purposes while the producers implement conservation practices on their own pastureland. The goal of a grassbank is to improve grassland conservation for the mutual benefit of both livestock producers and the grassbank owner. Ultimately, this restores and enhances both private and public grasslands.

Products & Services

A specific amount of forage on a private livestock producer's land (owned or rented) is exchanged for an equal amount of grass on grassbank land. In return, livestock producers make conservation improvements to their land and pay discounted grazing fees for the use of the grassbank while implementing the improvements. The products or benefits of a grassbank are threefold: 1) improved biodiversity on the grassbank land from the added ecological disturbance of grazing; 2) conservation of natural resources on surrounding private lands via producers making improvements to their land; 3) Improved profitability of grazing which may lead to the retention of grassland instead of the conversion to cropland; and 4) sustainable livestock grazing practices can be introduced to the region through educational meetings and demonstrations.

Management & Organization

A grassbank project should have positive outcomes for both the grassbank owner/manager and the local livestock producers. Management objectives should be clearly prioritized and plans should be made to achieve mutually-beneficial outcomes. For example, an objective to increase biodiversity through grazing on grassbank land also would need to meet the producer's objective of low-cost, low-maintenance supplemental pasture. Input from neighbors, local cattlemen, and other users of the grassbank property (hunters and those pursuing other recreational interests) should be gathered and considered.

A grassbank deals with complex natural resource ecology and management issues and should be administered by professional conservation managers. Specific operational issues such as

stocking rate, season of use, and vegetation management (brush control, invasive species, etc.) must be planned and evaluated by the grassbank manager.

The grassbank manager also may consider coordinating educational and/or public relations activities associated with the grassbank. Examples may include pasture walks, magazine and newspaper articles, on-site signage, and radio interviews.

Roles of the grassbank manager

- Determining proper management methods, e.g. stocking rate and season of use, monitoring results, and enforcing rules of use
- Constructing and/or upgrading fencing and watering systems
- Recruiting and contracting with local producers
- Conducting adult education, outreach, and/or public relations

Roles of the grassbank user

- Managing livestock on grassbank land, responding to problems as they arise, e.g. cattle escapes, and gathering and shipping livestock
- Reporting accurate livestock numbers and weights
- Using no more than the allotted animal numbers and days
- Maintaining and repairing fence and water systems
- Paying grazing fees (depending on manager)

Operational Considerations

There are many points to consider before and during implementation of a grassbank. In this section, we offer what we feel are the main considerations that a manager must address.

Site selection

Site selection may be the hardest step in setting up a grassbank. Considerations for selecting grassbank sites are categorized in the following paragraphs.

Grassbank land ownership
Grazing fees for using grassbank land are generally not sufficient to pay expenses associated with purchasing and owning land. This leaves only one option - using land owned independently for the grassbank, either public or private. However, each presents its own challenges. On the public side, the prospect of grazing public lands may require wading through bureaucracy and changing fundamental attitudes about grazing. Private lands may be available for grassbanking through people who purchased and/or own it for recreational purposes. However, they may need to be convinced of the value of grazing.

Area of interest
Identifying a specific geographic area, such as the Loess Hills, for the grassbank network minimizes the variation of management objectives due to ecological and social diversity. The location of the grassbank in relation to grazing cattle enterprises will be important. The cattleman using the site will want to be close enough to allow for frequent checking of the cattle, fences, and water supply. It is best to get a feel for how far cattlemen are willing to travel to monitor their herds. In some geographic areas, they are willing to travel 60 miles or more. In others, they are not willing to travel more than 20 miles.

Target size
To ensure there will be adequate forage, even in times of drought, careful attention should be given to stocking rates. Stocking rates most likely will be considerably lower than those used by

neighboring cattlemen. For this reason, a grassbank must have substantial size to accommodate conventional cattle herds for the full planned grazing period. Further, small pastures have higher fixed costs per acre than large pastures due to the high initial costs of building fencing and watering systems. Therefore, grassbank pastures should be of adequate size. In Iowa, pastures probably need to be at least 80 acres for cost effectiveness, unless adequate fencing and watering systems already exist.

Grazing effects

The effects of grazing, especially on public land, should be seriously considered before and during grassbank implementation. Grazing can significantly alter the height and cover of vegetation in the pasture, and over time, the composition of plant communities. In severe instances, grazing can remove almost all vegetative cover and expose the land to increased risk of soil erosion. Grazing also can affect wildlife cover and habitat within a pasture, either positively or negatively. And in the case of public land, the grazing effects or the presence of grazing animals could cause unfavorable reactions by public users, especially if stocking rates are heavy or severe. On the other hand, the effects of light or moderate grazing could increase the value of the land to public users in the form of less dense vegetation and increased wildlife diversity.

Stocking rate

Stocking rate has the greatest influence on all considerations, and therefore is the most important element to manage. Most negative impacts can be avoided and many positive benefits can be achieved through the use of light to moderate stocking rates. In fact, almost all negative perceptions about grazing are due to heavy to severe stocking rates. In Iowa, many pastures are stocked at rates high enough to cause severe and widespread negative consequences including increased soil erosion, reduced water quality, and degraded wildlife habitat.

Grassbank pastures stocked at a rate to achieve a light or moderate grazing level can yield desirable benefits such as increased conservation and biodiversity. Biodiversity is generally enhanced under moderate stocking rates because grazing is a key ecological disturbance in grassland ecosystems. As livestock selectively graze overbearing plant species, other less dominant species are able to respond and grow. This disturbance provides food sources and vegetative structures that are needed for many grassland obligate wildlife species to survive. Whole populations of grassland species are not able to survive in a landscape devoid of this process.

Some negative affects may occur even at light to moderate stocking rates. In all likelihood, though, the range and severity of negative impacts will be limited. An example of this is bare ground adjacent to livestock water sources. Usually there are methods to mitigate these affects. But keep in mind that bare ground is essential for some wildlife species.

See Appendix A for a stocking rate guide for unfertilized pastures in the Loess Hills of Iowa. For a general guide to rating pasture use, see Appendix B.

Trading for conservation

Grass not being grazed on the private livestock producer's land is exchanged for grass being grazed on grassbank land. This should be a direct 1:1 unit exchange. The unit can be measured in animal unit months (AUMs) or a similar standard measure of grass use. The typical "acre" unit is **inappropriate if** stocking rates are considerably less on the grassbank site. AUMs available for exchange are determined from the target stocking rate set for each grassbank site. The

planned stocking rate is estimated by the amount of forage available and the level of grazing you wish to achieve.

Example grass budget:

AUMs supplied from grassbank site: ..... +68 AUM supply

AUMs demanded from producer's herd:

10 Cow-calf pairs @ 1.3 animal unit equivalent (AUE) for 5 months: ..... -65 AUM

Bull @ 1.5 AUE for 2 months: ..... -3 AUM

Total AUMs demanded from herd: ..... -68 AUM demand

Grass surplus/deficit ..... 0 AUM surplus

The stocking rate for a pasture can be adjusted by changing the number of animals in the herd **or** the length of the grazing period.

Season of use

A pasture's season of use is the time period that it is grazed each year. In Iowa, most cattle producers generally stock their cattle on pastures for only about 5-5 ½ months during the spring, summer and fall. Although most parts of Iowa could be grazed longer, if not year-round, it is conventional for cattle producers to graze only during these months.

The grazing season for the Loess Hills Grassbank was set from May 1 to Oct 15. This period appeared to work well for grassbank users as it was similar to the period that they were accustomed to stocking cattle. Plus, not being in the winter months, this period avoided the need for users to check cattle daily to break ice or do other tasks that can be difficult in cold weather. This season also seemed to work well for LHG conservation land partners. Game hunting is allowed on much of the state-owned and county-owned land. The May 1 to Oct 15 grazing period misses most of the hunting seasons. This eliminates potential encounters between hunters and livestock.

Water for livestock

Water is usually provided to cattle artificially through either water troughs or man-made earthen dams. It also can be provided naturally through springs, creeks, rivers and lakes. The quality or purity of water is usually not an issue for cattle unless it is overly salty or overly muddy. Livestock production and gains can increase with different watering systems, but usually are not as important a consideration as the location of water and the economic and environmental costs of different watering systems. A few of the most common watering systems are as follows:

- Natural water bodies or water courses
- Ponds
- Water tanks fed by pressurized water (city water, rural water, or well water)
- Water tanks fed by gravity or windmills
- Developed springs
- Nose pumps

If access to water is not evenly distributed throughout the pasture, which it usually is not, then bare ground will probably exist near the water source, even at light stocking rates. This is

because livestock need to drink many times a day, and as a result, hoof traffic is much greater near the water source as animals return and depart frequently. There are ways, however, to anticipate these negative affects and minimize their impacts.

The first thing to consider here is, “Is some bare ground exposure acceptable? If so, how much can you accept?” If the answer is none, extreme measures may need to be taken to prevent bare ground. These measures are usually cost prohibitive and are not discussed here. On the other hand, if some bare ground is acceptable, then some simple measures can be taken to minimize the impacts of heavy hoof traffic. The first is acceptance of “sacrifice areas” near water. This certainly is the simplest and most cost-effective measure. Sacrifice areas may even be desirable in some respects as they provide a type of habitat for wildlife that is otherwise absent in the pasture. Such are the needs of birds like Killdeer and Upland Sandpipers. The next option to consider would be providing rock or gravel fill near the water source. This prevents depressions from forming in which water could collect, thereby reducing mud holes. Gravel or rock is relatively inexpensive. Other measures include concrete slabs and rotating water sources in the pastures, both of which can be expensive.

Grazing distribution

Grazing distribution is the dispersion of livestock within a pasture. It is primarily determined by decisions made by livestock, such as where to drink, eat and sleep. Generally, water proximity and topography have the greatest influence on the grazing animal’s decisions. For example, cattle will choose to graze more frequently in close proximity to water and will choose to graze less frequently on steep hill slopes as opposed to level ground. Other factors also may affect area selection by cattle, such as preference for shady areas during hot days, windy locations when biting flies are troublesome, and the relative quality and quantity of forage in different parts of the pasture.

Several tools exist to manage grazing distribution. The following selected tools are listed in order of their effectiveness in altering distribution patterns within pastures:

Water source location
Adding additional access points to water or rotating availability to access points is the most effective way to manage grazing distribution. Note, however, that adding additional water sources is usually very expensive and is probably the reason that it has not already been done. Making additions can be particularly expensive when the only available water source is ground water. Accessing ground water requires drilling a well and piping water through above or below ground pipes to access points.

Livestock kind/classes
Different classes of livestock will have different grazing preferences for areas within a pasture. For example, yearling heifers will be much more inclined to graze on steep hill slopes than older cows. To the same end, different species will also have different preferences. In general, sheep and goats will graze hill slopes much more readily than cattle. In fact, goats may even prefer hilly ground.

Animal densities
Stocking a pasture at high animal densities (number of animals per acre) will increase competition between animals, causing them to be less selective in what plants they eat and where in the pasture they graze. This has the affect of creating homogenous or even use of the pasture. On the other hand, lower densities will lessen animal competition, allowing more opportunity for animals to graze their favorite areas and plants. This results in creating more heterogeneous or uneven use of the pasture (more structural diversity).

Fences
Fence placement can be effective at keeping animals out of high preference areas. At times, fences are the only feasible way to change grazing distribution. However, like adding water sources, additional fencing can be very expensive and sometimes cost prohibitive.

Grazing system

A grazing system is the result of all the practices that are in place for managing grazing among a set of pastures. They can vary in complexity from very minimal, to extremely complex and labor intensive. For example, a continuous season-long grazing system requires much less time, management, and capital outlay than a highly-specialized rotational grazing system.

It is important to note that stocking rate has the greatest influence (by far) on the success of any grazing system. It is therefore more important to effectively manage stocking rate than to manage any other aspect of a grazing system.

A simple non-specialized grazing system for a grassbank provides numerous benefits. It can create greater biodiversity since this grazing method provides high heterogeneity or uneven use. In addition, such a system is simple and flexible enough for local cattle producers who, in some instances, would not be able to visit the pasture more than once a week. Continuous season-long grazing, with its characteristic low animal densities and ease of management, best fits these objectives for use in the Loess Hills Grassbank in western Iowa.

Participant selection

Considerations for selecting the livestock producers may include the integrity and reputation of the producer to ensure he/she will satisfy the requirements for use of the grassbank site and make the agreed upon improvements to their own pasture(s). Other considerations include the conservation benefits achieved via their planned pasture improvements and the proximity of their cattle operation to the grassbank.

Pricing considerations

A grassbank system requires cattle producers to idle or lessen the use of their own pastures while making improvements. A grassbank use fee is a cost to the cattleman, in addition to the pasture renovations. Consideration should be given to reducing the pasture rental rate below fair market value. A fair market value for grazing fees in the Loess Hills is approximately $28/AUM. By reducing this amount ($14/AUM as in the case of the LHG), it provides more incentive for the cattleman to take advantage of the pasture improvement program. Unfortunately, this will also reduce the income received from the grassbank and will hurt the income margin.

A grassbank is not designed to allow a cattle person to expand the herd by providing additional forage. It will allow cattle owners to move cattle off-site while making improvements to their own pasture.

Income & Expenses

The level of management, oversight and evaluation of the grassbank site can have a major impact on the expense of the project. It is important to consider the costs of establishing and operating a grassbank. The following costs outline only the structural costs of one 92-acre grassbank site near Pisgah, Iowa (about 78 AUMs):

Income and Expense Analysis		
Income		
Pasture rent ($14/AUM/year)	1,100	
Total annual income		**1,100**
Expenses – Structural*		
Fence (materials and installation)	9,200	
Water (materials and installation)	1,550	
Total structural expenses	10,750	
Total annual structural expenses, 10-year complete depreciation ($10,750 / 10 years)		**1,075**
Gross annual margin		**$25**

***** Note that expenses will vary significantly depending on the existing infrastructure in the pasture. i.e., existing fences and water sources.

Fencing
This 92-acre site had 2,600 feet of existing fence, requiring labor to repair but only nominal new fencing materials required. An additional 5,400 feet of exterior fence were installed. An interior enclosure was built to keep livestock out of the pond. No electricity was on site. Therefore a solar panel and electric fencer were purchased to power the electric fencer unit.

Watering
This site had a small pond that served as the water supply. Cattle were fenced out of the pond and nose pumps were installed to convey water to the cattle. Materials included two nose pumps, a wooden structure to secure the nose pumps, and hose for conveyance of water from the pond to the pumps.

Other Expenses
There are many other labor expenses that can be associated with a grassbank but will depend on the goals of the grassbank planner. If land is already available to use for the grassbank, the huge expense of locating it can be avoided. Similarly, if the grassbank owner chooses to work with neighboring cattlemen, there is virtually no cost in advertising for potential grassbank users or selecting participants.

A one-time expense of developing a proper legal contract will be incurred the first year, but this document can simply be modified in future years.

Monitoring expenses also can vary greatly. It can take the form of driving by the grassbank occasionally to verify that the pasture is not overgrazed. Or it can involve intensive vegetative and/or animal sampling (birds, mammals, etc.) to ensure desired results are being achieved.

Various levels of monitoring the cattleman's rested pasture should also be taken into account. Again, it can take the form of driving by the cattle producer's pasture to ensure the agreed-upon

pasture improvements are being made. Or it can involve intensive vegetative and/or animal sampling to ensure desired results are being achieved.

Responsibilities of Cattle Owner

Thought needs to be given to who will be responsible for the day-to-day management issues such as fence and water system maintenance. If there is a fee for using the grassbank, the owner/manager would likely be expected to ensure that adequate fence and water are in place. It also makes sense that cattleman be responsible for frequently checking their cattle for overall health. Since they will be on-site, they can also verify that the fences and water system are functioning properly. This will reduce the management costs of operating the grassbank. The responsibilities of both parties should be spelled out in the contract.

Herd Health Guidelines

Herd health guidelines are important for those grassbank sites receiving cattle from several sources. The intent is to make sure that all cattle herds are healthy and have received appropriate vaccinations in order to reduce disease transmission. None of the grassbank sites used in the LHG project were of sufficient size to warrant the mixing of herds. Disease transmission was not a concern.

Conclusions

Our experiences in managing the Loess Hills Grassbank in western Iowa leads us to believe that grazing can be a very effective tool for increasing biodiversity in a grassland landscape devoid of grazing. A grassbank can improve conservation in such a landscape by improving biodiversity conservation on the un-grazed grassbank site through introduction of grazing disturbances. It can also improve biodiversity on cattle producers' grasslands by providing rest on over-used land and by providing opportunities for pasture improvement practices in the absence of cattle. However, to apply this tool properly, many factors must be considered. The most important considerations are the effects of grazing on grassbank sites and how to manage for these effects most appropriately. Careful management of the stocking rate is the most important factor as it has the greatest influence on grassbank vegetation. Also important are the season of use and management of grazing distribution. Other important factors to consider are the organization and administration of a grassbank network, and the costs of implementing and operating it effectively.

Appendix A: Stocking Rate Guide

Stocking Rate Guide for Unfertilized Pastures in the Loess Hills of Iowa.

Vegetation Description	Stocking Rate Units	Stocking Rate[1]	
		Light to Moderate	Heavy to Severe
		Low -- High	*Low -- High*
Grassland consisting mostly of native prairie remnant(s) with regular distribution of tall-grass species that appear on average to not be affected by current or past over-utilization. No signs of current or past soil erosion.	Demand Days[2] per Acre	**25 -- 40**	**40 -- 80**
	Acres per Pair[3] per 5.5 mo. Season	**9 -- 5**	**5 -- 3**
Grassland consisting mostly of native prairie remnant(s) with irregular distribution of tall-grasses, and/or it appears that tall-grasses have been significantly affected or stunted by past or current over-utilization. Or, the grassland has a significant amount of woody cover due to encroaching woody species.	Demand Days per Acre	**10 -- 25**	**25 -- 50**
	Acres per Pair per 5.5 mo. Season	**22 -- 9**	**9 -- 4**
Grassland dominated by introduced species or native forbs or short to mid-grasses (no tall-grasses). Exhibits signs of past soil erosion or cropping history. Currently shows relatively good vegetation cover considering past overuse. Not nitrogen fertilized.	Demand Days per Acre	**15 -- 30**	**30 -- 60**
	Acres per Pair per 5.5 mo. Season	**14 -- 7**	**7 -- 4**
Grassland dominated by introduced species, or native forbs, or short to mid-grasses (no tall-grasses). Exhibits signs of current or past soil erosion or cropping history. Currently shows signs of heavy or severe grazing over multiple years with little or no rest. Not nitrogen fertilized.	Demand Days per Acre	**10 -- 20**	**20 -- 40**
	Acres per Pair per 5.5 mo. Season	**22 -- 11**	**11 -- 5**

[1] The annual stocking rate that generally results in a particular use category at the end of the growing season (light, moderate, heavy, or severe). Pasture use is in terms of animal grazing preference and nutrition. Stocking rate suggestions apply only to grassland vegetation cover, not the whole pasture (especially if woodland or cropland also has significant cover). Many factors may also affect stocking rate. Non-uniform grazing distribution due to steep topography, non-centralized water placements, and other factors will lower the suggested rate toward the bottom of the vegetation class's range, or even below it. These suggestions are based on actual stocking experiences by Austin Sewell and Agren, Inc. in pastures in the Loess Hills of Iowa. These suggestions are also supported by local clipping data from the Natural Resources Conservation Service (NRCS).

[2] A Demand Day (DD) is a standard unit of measure of forage demand by large domestic or wild herbivores. One Demand Day is equal to 12 megacalories per day (mCal/day) of metabolic energy intake by one or more of these animals. This is approximately the amount of forage that a 1,000 lb. domestic cow-calf pair less than 3 months postpartum would need to intake each day for typical body weight maintenance and gain.

[3] Pair equals 1.3 Demand Days – the estimated forage demand for one typical domestic cow-calf pair greater than 3 months postpartum.

Appendix B: Pasture use rating guide

This guide is to be applied to the current forage year's forage at the whole pasture level, not to individual plants or plots within a pasture. Note that this scale is in terms of animal nutrition and foraging preference, not simply plant residue biomass. As such, it considers both the quantity and quality of both forage plant species and their respective parts.

Class	Subclass[1]	PDR[2] Range (%)	Representative PDR Value[3] (%)	Description
None		0-10	**5**	Vegetation appears practically undisturbed when viewed from an angle or from a distance.
Light	**–**	10-16	**13**	• Preferred areas and high-choice[4] forage show moderate use. • Light use of primary[5] or low-choice[6] forage.
		16-34	**25**	
	+	34-40	**37**	
Moderate	**–**	40-44	**42**	• Most accessible forage shows use. • High-choice forage heavily used. • Primary forage is moderately grazed and supplying most of the demand. • Light use of low-choice forage.
		46-56	**50**	
	+	56-60	**58**	
Heavy	**–**	60-66	**63**	• High-choice forage completely used. • Primary forage is closely grazed over most of the area. • Moderate use of low-choice forage.
		66-84	**75**	
	+	84-90	**87**	
Severe		90-100	**95**	• Pasture appears stripped of forage. • Primary forage almost completely used. • Low-choice forage shows considerable use and is carrying the grazing load.

[1] In this rating system, the top and bottom fifth of the Light, Moderate and Heavy class ranges are each given a plus (+) and a minus (-) symbol, respectively. The middle three fifths of the ranges are grouped together and each given the class's name sake. To use this system, classify the pasture into a primary class, e.g., Light or Moderate. Use the class descriptions to make this judgment. Once a primary class is assigned, a subclass can be assigned as an option for added precision. This judgment should be based on your opinion of how strongly the pasture fits a class's description. If it is obvious that the pasture fits the description, then do not select a subclass. However, if it is a more difficult decision, make use of a subclass. For example, if a pasture fits the "Moderate" description best, but it is a weak fit or a difficult judgment between it and "Light", select the minus (-) subclass with the final classification being "Moderate (-)".

[2] **Pasture Demand Ratio (PDR)** is the cumulative amount of annual forage demand placed on the pasture vs. the cumulative amount of annual forage that is produced within the pasture at any time during the forage year. Units for both demand and production are Demand Days (intake of net energy for maintenance and gain). Note that units that only consider forage quantity, like Animal Unit Days (dry matter intake) do not work well for this model. Also note that this considers only forage that is produced or used within a twelve month forage year and does not consider forage from previous forage years.

[3] **Representative PDR Value** – PDR value to use for management purposes and/or for use with The Grazing Manager software application. Note that each value is the midpoint of each class or subclass range.

[4] **High-choice forage** – Plant species and plant parts that have high nutritive value and are preferred by grazing animals.

[5] **Primary forage** – Plant species and plant parts of moderate nutritive value and preference.

[6] **Low-choice forage** – Plant species and plant parts of low nutritive value. Preference for this forage is low, and it is not consumed in significant amounts when better quality forage is available.

Appendix C: Participant application form

Loess Hills Grassbank 2007

Cattlemen Application

– Return by April 2, 2007 –

Instructions: *Fill out this form and return to Agren, Inc. Please call 712-792-6248 and ask for Austin if you have any questions or need assistance.*

Your Contact Information

Name _____

Address _____

City/State/Zip _____

Phone _____

E-mail _____

Which improvements to your pasture(s) will you make?

Check all that apply. Improvements listed in order of their importance to the conservation of the Loess Hills. Please call if you have questions. (Please feel free to attach an additional sheet describing your improvement plans in more detail.)

☐ **Prescribed burn** -- removing cattle for doing burn or saving fuel for later burn

☐ **Other cedar removal** -- mechanical removal or chemical treatments

☐ **Other tree and brush removal**

☐ **Native prairie seeding** -- seeding current crop ground or non-native grazing pastures

☐ **Other grass seeding** -- seeding crop ground or other

☐ **Pasture rest** -- not grazing pasture for entire season

☐ **Lower stocking rate** -- for existing pastures by placing some cattle on grassbank

☐ **Other improvement(s)**. Please describe:

Comments:

Continue on reverse side…

Other questions about your pasture(s)…

	Yes	No
• Does the pasture (or pastures) you plan to improve contain native prairie vegetation?	☐	☐
• Do you already have cost-share funding to do this?	☐	☐
• Can or will the pasture improvement extend to your neighbor's property? (e.g., prescribed fire across fence lines)	☐	☐
• Do you have technical assistance to help you conduct or plan for the pasture improvement(s)?	☐	☐

Which grassbank pasture(s) would you like to use?

Check all that apply. You can apply for one or both pastures, but there's no guarantee that you'll be selected for either. Note that more animals can be stocked than below if they are lighter weight. Also, more animals can be stocked for less time than full season. Please call if you have questions.

☐ 90 acres near Pisgah – 12 cow-calf pairs for full season (5 months). Grazing fees approximately $1,100.

☐ 65 acres near Pisgah – 9 cow-calf pairs for full season (5 months). Grazing fees approximately $800.

☐ I would like to use both pastures.

☐ I would like to use either pasture.

Comments:

Which herd(s) do you plan to use?

Check which kind of animals are in the herd(s) you plan to use for the above pasture(s). Fill in the remaining information. You can graze up to 45 animals per pasture, but the number of months must be less when using more animals than above. Don't worry about being too precise here. Please call if you have questions or need assistance.

	Kind/Class	Brief Animal Description	No. Hd.[10]	No. Months[11]
Herd for 90 acres *- approx. 12 pairs (or equivalent) max for 5 months*				
☒	Cow-calf Pairs	-- Example-- 1100 lb cows, Feb. calves.	12	5
☐	Cow-calf Pairs			
☐	Bull(s)			
☐	Yearling Heifers			
☐	Other			

Comments:

Herd for 65 acres *- approx. 9 pairs (or equivalent) max for 5 months*

[10] Actual number of animals may need to be adjusted based on animal unit equivalents.
[11] Enter 5 months for full season or less if using more animals.

- ☐ Cow-calf Pairs
- ☐ Bull(s)
- ☐ Yearling Heifers
- ☐ Other

Comments:

Please return completed form to:

Agren, Inc.
1238 Heires Ave
Carroll, IA 51401
(712)792-6248

Appendix D: Grassbank administrator /livestock producer contract
Site: Machine Shed

GRAZING LEASE

This is a lease ("Lease") of real property for grazing purposes between Agren, Inc. (Agren), an Iowa Corporation, and _____ (Tenant) whose address is _____ _____.

A. Agren is conducting a grassbank pilot project to improve grazing land on private property and increase wildlife diversity on state-owned land through the use of limited grazing.

B. Agren is leasing land in Harrison, County, in the State of Iowa, from the Iowa Department of Natural Resources (IDNR).

C. Agren desires to sub-lease the IDNR land, consisting of approximately 63 acres, which is more particularly described in Exhibit A attached and made a part of this Lease (the "Property").

D. Agren desires to have a responsible local rancher for the Property who will use the Property in a manner compatible with Agren's objectives.

E. The Tenant desires to rent the Property for the purpose of grazing livestock and agrees to use the Property in a manner compatible with Agren's objectives.

NOW THEREFORE, Agren hereby leases the Property to the Tenant under the following terms and conditions:

1. TERM. This Agreement shall commence on the 10th day of July, 2006 and will continue through the 31st day of December, 2006. Grazing animals shall be removed from the Property no later than the 15th of October, 2006.

2. USE. The Tenant may use the Property to graze livestock provided, however, that the Tenant shall graze no more than 61 Animal Unit Months (AUMs) from July 10, 2006 through October 15, 2006. One (1) AUM is the grazing equivalent of a one-thousand (1,000) pound animal grazing for thirty (30) days. Refer to Exhibit B.

For purposes of this Lease, Agren and Tenant agree to the use of animal class, animal number, and AUM's as defined in Exhibit B.

Agren reserves the right to revise the stocking intensity established in this paragraph, at its discretion. This includes but is not limited to the right to revise the stocking rate due to excessive dry weather or if required by the IDNR. If the stocking rate is revised by Agren, the rent due under this Lease will be recalculated by Agren using the rate set forth in paragraph 3 of this Lease.

The Tenant may not conduct any activities on or use the Property in any manner which would, in the opinion of Agren, have an adverse effect on the Property or which would be incompatible with Agren's objectives.

3. RENT. The Tenant will pay Agren a total of $366.00 to lease the Property for the term set forth in paragraph 1 of this Lease. The first payment will be $183 and must be paid on or before July 15, 2006. The remaining balance of $183 will be paid no later than October 15, 2006.

Payments should be made to Agren and be mailed or hand-delivered to Agren at 1238 Heires Ave, Carroll, IA 51401.

This rent has been calculated at a rate of $6.00 per AUM authorized under the terms of this Lease. The entire rent is due, as specified above, whether or not the Tenant grazes the maximum AUMs authorized.

In the event that cattle are **not** removed from the Property on or before October 15, 2006, Tenant will pay a late fee in the amount of $500 per day for each additional day that any cattle remain on the Property. Agren's acceptance of this payment may not be viewed as consent to an extension of the Lease and Agren reserves the right to pursue any additional remedies available to it at law or in equity to address the Tenant's failure to remove the cattle in a timely fashion.

In addition, this pilot project requires that the Tenant defer grazing cattle from his own pasture containing approximately 32 acres and located in the _____, Sec. __, T____, R____ for the purpose of pasture renovation. All cattle shall be removed from this pasture prior to or on July 10, 2006 and the pasture shall not be grazed for the remainder of the calendar year. Failure to comply with this requirement shall result in a penalty in the amount of $2,500 for partial compensation of failure to meet the goals of the pilot project.

4. FENCES, WATER FACILITIES AND IMPROVEMENTS. The Tenant agrees to lease the Property as is. Agren has no obligation to make any repairs or improvements. Before bringing cattle on the Property, the Tenant must inspect all fences, watering facilities, and other improvements and make necessary repairs. The Tenant has responsibility for maintaining the water facilities, the fences in and around pastures used by the Tenant's livestock, and all other improvements on the Property in good working order and repair throughout the Lease Term.

The Tenant cannot construct any additional fences, water facilities, or other improvements on the Property without the written consent of Agren.

The Tenant is responsible for the costs of all maintenance, repairs and improvements. All fences, water facilities and other improvements on the Property are to remain the property of Agren.

No tillage, grass seeding, or significant dirt work shall be done on the property by or on behalf of tenant without written permission from Agren.

5. PASTURES. The Tenant is responsible for keeping all livestock on the Property and within the designated pasture. Tenant shall remove livestock that continue to break through fences.

6. TOXIC OR HAZARDOUS MATERIALS. Tenant may not (either with or without negligence) cause or permit the escape, disposal or release of any hazardous materials anywhere on or about the Property. Tenant shall not allow the storage or use of hazardous materials on the Property, nor allow materials or substances to be brought onto the Property, except with the prior written consent of Agren. The Tenant may not dump any ashes, trash, garbage or other offensive material on the Property.

7. PESTICIDES AND FERTILIZERS. The Tenant shall notify Agren of the existence and location of any known noxious weeds. Agren and IDNR are responsible for the control and destruction of noxious weeds. Tenant shall not apply pesticides or fertilizers without the prior written consent of Agren.

8. MOVEABLE PROPERTY. Salt and mineral block feeders, cattle catch pens, stock tanks, stock oilers and other such moveable property may be used by the Tenant, but only in a manner that will produce equitable and even range use. Tenant will change the locations of all stations whenever necessary to prevent excessive grazing around such stations. Salt and mineral stations and stock oilers will not be placed in the immediate drainage of watering stations or wetlands and must be at least 100 yards from any water to discourage livestock from abusing the watering stations. Moveable property shall be placed in a manner that does not cause excessive erosion. Tenant is responsible for providing loading and unloading facilities. Storage of equipment in prohibited.

9. HAY. The Tenant may not feed hay to livestock on the Property without the prior written consent of Agren.

10. MOTOR VEHICLES. Motor vehicle use by the Tenant is restricted to attending sick livestock and to otherwise meeting essential livestock requirements.

11. EARLY TERMINATION. One of the objectives of Agren's lease of this Property is the preservation of native prairie and riparian ecosystems. If, in the opinion of Agren, drought, fire, depletion of water for livestock or other conditions makes continuance of this Lease incompatible with Agren's objectives, this Lease may be terminated by Agren by giving ten days written notice to the Tenant.

If this Lease is terminated by Agren under this paragraph 11, Agren is not responsible for providing additional water or other pastures to the Tenant. However, rent due under this Lease will be prorated to reflect the AUMs actually grazed as of the date of termination, as calculated by Agren at the rate set forth in paragraph 3 of this Lease.

12. PARTICIPATION IN GOVERNMENT FARM PROGRAMS. The Tenant may not enroll the Property in any Farm Services Agency (FSA) program or other government farm program without the written consent of Agren. The Tenant is not authorized to use this Lease as an indication of Agren's consent to enrollment of the Property in a government farm program.

13. COMPLIANCE WITH LAWS. The Tenant shall comply with all applicable federal, state and local laws, regulations and requirements in connection with the Tenant's activities on the Property.

14. INSURANCE/LIABILITY. The Tenant agrees to maintain at its sole cost, a comprehensive general liability insurance policy throughout the term of the Lease with a reliable company covering the Tenant's activities on and use of the Property. The policy shall cover both injuries to persons and damages to property, and shall be in an amount of not less than

$1,000,000 coverage per person, $500,000 for property damage and $1,000,000 for each occurrence. The policy(ies) shall include Agren as an additional insured. The policy(ies) shall be primary and require no contribution from any insurance carried by Agren. At the start of the term of this lease, the Tenant must furnish Agren with a certificate or other evidence establishing that coverage is in force and providing for thirty (30) days written notice to Agren of any cancellation or material change in the policy.

The Tenant agrees to bear the full risk of any loss or damage to persons or property, including the loss or damage of the Tenant's property or livestock, occurring on the Property or as a result of the Tenant's use of or activity on the Property.

15. DEFAULTS, TERMINATION, REPOSSESSION AND RELETTING. If any Event of Default occurs, as defined below, Agren may terminate this Lease with written notice of termination to the Tenant. Whether or not Agren terminates this Lease, Agren may also enter upon and repossess the Property or any part thereof by summary proceeding, ejection or otherwise, and may remove Tenant and all other persons and any and all property therefrom. Agren will be under no liability for or by reason of any entry, repossession or removal. At any time after the repossession of the Property, Agren may (but will be under no obligation to) relet the Property or any part thereof, without notice to Tenant, for the term or terms and on the conditions and for the uses as Agren in its uncontrolled discretion, may determine and Agren may collect and receive the rents therefor. Agren is not responsible or liable for any failure to relet the Property or any part thereof for any failure to collect any rent due upon any reletting. Tenant shall reimburse Agren for all costs and expenses incurred by or on behalf of Agren (including, without limitation, attorneys' fees and expenses) occasioned by any default by Tenant under this lease.

The following events constitute a default under this Lease ("Events of Default"):

a. Failure to Pay Rent. Tenant fails to pay any rent when and as same becomes due and payable;

b. Failure to Comply with Other Terms of this Lease. Tenant fails to perform or comply with any of the other terms of this Lease, and the failure continues for more than ten (10) days after Agren gives the Tenant notice of default;

c. Threat of Irreparable Harm. Tenant causes or threatens to cause any irreparable harm to the Property;

d. Insolvency. Tenant either: (i) files a petition in bankruptcy; (ii) is adjudicated as bankrupt or insolvent; (iii) files a petition seeking any reorganization, arrangement, composition, readjustment, liquidation, dissolution or similar relief under any present or future statute, law or regulation; (iv) files an answer admitting, or fails seasonably to contest, the material allegations of a petition filed against Tenant in any bankruptcy or insolvency proceedings; (v) seeks, consents to, or acquiesces in the appointment of any trustee, receiver or liquidator of Tenant or any material part of its properties; or (vi) admits in writing the inability to pay debts as they become due.

e. Property Taken. This Lease or the Property or any part thereof may be taken upon execution or by other process of law directed against Tenant, or shall be taken upon or subject to any attachment at the instance of any creditor or claimant against Tenant, and said attachment shall not be discharged or disposed of within fifteen (15) days after the levy thereof;

f. Vacation; Abandonment. Tenant vacates or abandons the Property.

16. ASSIGNMENT/SUBLEASE. The Tenant may not sublet the Property or any part thereof or assign this Lease without in each case obtaining the prior written consent of Agren.

17. ACCESS AND INSPECTION. Agren and IDNR will have access to and use of the Property to carry out their responsibilities under this Lease and for any other purposes, which do not interfere with the Tenant's use of the Property for grazing. IDNR shall allow hunting on the Property without obtaining, or requiring the hunter to obtain, permission from the Tenant. Agren may also enter the Property at any time for inspection purposes and for the purpose of showing the Property to prospective tenants. Entry for the purposes specified herein does not constitute an eviction of Tenant nor termination of this Lease.

Tenant shall maintain accurate and complete records of its operations on the Property and make them available at any time for inspection and examination by Agren.

18. PUBLIC USE OF THE LAND. The property is subject to concurrent use for recreational purposes. The Tenant shall not inhibit any lawful use of the land under this agreement by the public, including but not limited to, use by the public for hunting and hiking.

19. NON-WARRANTY. Agren makes no statement or warranty concerning the safety, condition, or suitability of the Property, or of any building or structure or improvement on the Property, for any purpose.

20. SURRENDER. Upon expiration or termination of this Lease or Agren's repossession of the Property, the Tenant agrees to surrender and deliver the Property to Agren in as good condition as when the Tenant took possession of the Property. The Tenant is liable to Agren for any damages to the Property or to any structure or improvement on the Property.

21. NONRENEWABILITY. By granting this Lease Agren makes no expressed or implied commitment to renew the Lease after its termination or to grant the Tenant any future lease. The Tenant expressly acknowledges that this Lease terminates upon expiration of the term specified in paragraph 1, and the Tenant hereby waives any further right which the Tenant may have to written notice of this termination.

22. OBLIGATION. Neither party hereto shall pledge the credit of the other party hereto for any purpose whatsoever without the consent of the other party. Neither party shall be responsible for the debts or liabilities incurred or for damages caused by the other party.

23. RIGHTS OF AGENTS. Where this Lease grants rights to either Agren or the Tenant, these rights shall extend to the agents or representatives of each party.

24. NOTICE. Where this Lease requires written notice to be given to the Tenant, such notice shall be sufficient if it is hand-delivered to the Tenant or if it is mailed to the Tenant at the address set forth above. If notice is mailed, it is effective when deposited in the mail.

25. INQUIRIES. All inquiries concerning this Lease or property management should be addressed to Stan Buman of Agren, Inc. at 1238 Heires Ave, Carroll, IA 51401

26. EFFECTIVE DATE/BINDING EFFECT. This Lease is binding upon the parties upon execution by them.

27. OUTSTANDING RIGHTS. This Lease is made subject to all existing easements, licenses, and rights-of-way for ditches, levees, roads, highways, railroads, utilities pipelines and other purposes, whether recorded or unrecorded.

28. SALE. IDNR has the right to sell or dispose of the Property during the term of this Lease. Agren and Tenant shall comply with IDNR requirements related to the sale.

29. EXHIBITS. The following exhibits are attached hereto and incorporated by reference herein: Exhibit A — description of Property; Exhibit B — Animal Class Table.

30. COMPLETE AGREEMENT. This Lease constitutes the sole and complete agreement between the parties and cannot be changed except by written amendment. No representation or promise not included in this Lease or any written amendment shall be binding upon the parties.

IN TESTIMONY WHEREOF, the parties hereto have executed this instrument with the following signatures:

Agren, Inc

By:_____

Title: Vice President

Date:_____

Tenant

By: _____

Date:_____

EXHIBIT A TO CONTRACT

Legal Description: S1/2, NE ¼ Sec. 1 T80N, R40W

Approximately 63 acres in this quarter section will be available under this contract.

EXHIBIT B

Animal Class	AUE	Number	Days or Months (circle one)	AUM's (divide by 30 if Days)
Mature Cows, Open or Dry, & Cow-Calf Pairs Less Than 3 mo. Postpartum				
Average Cow Weight (lbs)				
900 – 1099	1.0			
1100 – 1199	1.1			
1200 – 1299	1.2			
1300 – 1499	1.3			
1500 and up	1.4			
Cow-Calf Pairs: Greater Than 3 mo. Postpartum				
Average Cow Weight (lbs)				
900 – 1099	1.3			
1100 – 1199	1.5			
1200 – 1299	1.6			
1300 – 1499	1.7			
1500 and up	1.9			
Breeding Bulls				
Breed & Age Class				
British, Juvenile	1.3			
British, Mature	1.6			
Continental & Exotic, Juvenile	1.5			
Continental & Exotic, Mature	1.8			
Weaned Calves & Yearlings (Steers & Heifers)				
Age Class (months)				
8 -- 12	0.6			
12 -- 24	0.8	48	48	61
Total				**61**