Defining Grazing as a Management Tool: Project Description

Project Summary

This project is designed to address a growing set of concerns involving the use of managed grazing on restored landscapes in Iowa. While ecological research points to the benefits of the fire-grazing interaction in prairie landscapes, the necessity of multi-functioning landscapes and interest in using prescribed grazing as a management tool is growing, there are significant obstacles to successful implementation of prescribed grazing as a management tool.

WRC seeks to identify, discuss, and arrive at a consensus regarding managed grazing as a tool by working together with natural resource managers and cattle producers to determine the collective understanding and regard for managed grazing in restored natural grasslands, hosting a stakeholders summit *Grazing as a Management Tool* and publishing the summary findings as recommendations for landowners, managers, and producers.

*Defining Managed Grazing in Iowa i*s part of a larger project that WRC is currently developing in order to identify the optimum strategies for using prescribed grazing as a management tool in Iowa grasslands. WRC is currently seeking funding from the Leopold Center for Sustainable Agriculture to conduct *Defining the grazing season of restored natural landscapes,* an agronomic, on-farm study that quantifies the nutritional quality of native grassland forages.

Statement of Need

Background

Globally, grasslands are the least protected and the most in need of protection of any habitat on the planet (Green and Paine). Historically, Iowa was dominated by tallgrass prairies, but in the last 150 years, land conversion has decimated native prairies, and less than 0.1% of the historic vegetation cover remains (Smith 1998). Today, over 70% of the total land base of Iowa is devoted to row crops such as corn and soybeans (Schilling and Libra, 2003), resulting in a distinct loss in ecosystem functioning (Sulc and Tracy 2007). In recent decades, research has demonstrated the conservation value of targeted warm-season grass and diverse prairie plantings within the agricultural matrix in Iowa, on highly erodible (HE) soils, as buffers along streams and rivers, and on retired agricultural lands (Blackburn et al. 1991, Johnson 1995).

While targeted conservation plantings are beneficial to the ecological services of intensively farmed lands, the utilization of perennial grasslands to support domestic

livestock has been shown to provide superior economic and ecological goods and services (Boody et al. 2005) than intensive row cropland.

Research in the Upper Midwest and Great Plains has also shown that historically, fire and grazing by herbivores were important ecosystem processes that shaped the vast North American prairies (reviewed in Knapp, et al. 1998). And, recent ecological studies have characterized the benefits of using grazing and fire to manage remaining grasslands (Fuhlendorf and Engle 2001) to support on-farm economic and ecologic sustainability.

Grasslands and Management in Iowa

Since the 1985 Farm Bill, grasslands have been established through voluntary set-aside programs, such as the Conservation Reserve Program (CRP), Grassland Reserve Program (GRP), and Wetland Reserve Program (WRP) (FSA, Online, 2009). These set-aside lands have been successful at "protecting" vulnerable lands from soil erosion and have also evolved to more explicitly target the enhancement of wildlife habitat. In 2009, over 1.9 million acres of lands in Iowa are currently planted to perennial grass through these programs (USDA FSA 2009, pers. comm. Jim Phillips).

In addition, the United States Department of Agriculture's (USDA) Environmental Quality Incentives Program (EQIP) and Conservation Stewardship Program both offer incentives to landowners and producers for native grassland management with grazing. The EQIP currently offers cost-share assistance for cattle producers to plant warm-season grasses or interseed prairie plants into existing cool-season pastures through the *Pasture and Hay Planting* (Practice Code 512), and mechanically remove brush and trees from grassland and woodland areas used for pasture through *Brush Management* (Practice Code 314) (USDA NRCS online). Under the Conservation Security Program (CSP), landowners and producers are encouraged to maintain existing conservation practices as well as undertake additional activities, called Enhancement Activities, to improve conservation performance. Enhancement activities that will necessitate the creation of a written grazing plan include: Incorporate Native Grasses and Legumes into Forage Base (ANM03), Grazing Management to Improve Wildlife Habitat (ANM09), Patch burning to enhance wildlife habitat (ANM11), Silvopasture for Wildlife Habitat (ANM20), Restoration and Management of Rare or Declining Habitats (ANM22), Establish Pollinator Habitat (PLT01), Forest improvement (savanna restoration), Forest Stand Improvement Pre treating Vegetation and Fuels (PLT03), Biological Suppression and Other Non chemical Techniques to Manage Brush (WQL01).

Other federal, state, and local agencies and private organizations such as the US Fish and Wildlife Service (USFWS), Iowa Department of Natural Resources (IDNR), Pheasants Forever, and The Nature Conservancy, that also either fund or promote these same practices on both private set-aside and public lands owned by agencies, instead calling them *prairie restoration*, *prairie reconstruction* and *oak savanna/forest restoration* (LIP brochure, USFWS Private Lands). Increasingly, recommendations by these groups for management of these restored or reconstructed native lands on public and private include the use of prescribed grazing as well as prescribed fire for increased biodiversity and overall health. Also, prescribed grazing is already taking place on public and private levels,

and grazing management plans are being written by staff without any presence of consensus-based recommendations besides NRCS Prescribed Grazing Practice Standard 528.

As shown, there are many government programs and private organizations that either fund and/or promote the establishment of native grasslands, the restoration of native grasslands, and the management through prescribed fire and grazing of these native grasslands. However, there is very little consensus over the appropriate management protocols for grazing native grasslands on either private or public lands. This issue crosses over the boundaries between farming, agronomy, conservation, ecology, and landscape management to include on-farm sustainability, soil and water quality protection, wildlife habitat management, and environmental education.

Prescribed Grazing:

The NRCS defines prescribed grazing in Conservation Practice Standard 528 as "managing the harvest of vegetation with grazing and/or browsing animals." The US Fish and Wildlife Service defines it as "the application of domestic livestock grazing at a specified season and intensity to accomplish specific vegetation management goals." Heretofore, we will use a hybrid definition of prescribed (or managed) grazing as "*the planned and managed application of grazing animals to accomplish defined vegetation management and production goals*.

Across the Great Plains, the use of complementary grazing of native range and improved pastures to meet livestock nutritional needs is accepted as an effective and efficient way to feed livestock. In Iowa, the majority of native rangelands have been converted to row cropland in all of the primary landforms except for the Southern Iowa Drift Plain (Giglierano 1999). The presence of native grasslands in southern Iowa has also been documented by natural resource managers, land trusts, and the Iowa DNR (Casey Kohrt, pers. comm.). Likewise, the density of lands that have been set-aside through USDA programs (CRP, WRP, EWP, GRP) is the highest in southern Iowa, resulting the in landscape-scale grassland dominance.

Prescribed grazing is fast gaining acceptance as an optional tool for routine maintenance of native and restored grasslands in Southern Iowa (Regen 2009). In addition to being a useful disturbance, it has the added benefit of being a potential source of income for producers and landowners. While these benefits have been documented, managed grazing is viewed by many groups and agencies as a potentially dangerous tool because it includes economic returns and thus, is inherently rewarding to those who "abuse" grazing as a tool. Similarly, because the majority of Iowa prairie remnants are small and fragmented, there is a tendency for landowners and managers to "protect" these areas from "too much" disturbance. Nonetheless, interest in using prescribed grazing as a management tool is high enough that individuals, agencies, and organizations are pushing forward with implementation (Betts 2009, Loren Lown pers. comm.).

Because of this, producers and landowners and public land managers are starting to hear and read that grazing is acceptable on native/restored grasslands, but messaging is confusing and inconsistent: producers may run large animal health and land management

reputation risks if such a managed graze goes wrong, and landowners may not understand frequency of graze, what to expect during a graze, and what it should look like one month or one year after a graze and how it helps. Before the unguided use of prescribed grazing as a management tool in restored native grasslands becomes a problem, it is important to meet this issue head-on.

Institutional resources that promote sustainable grassland agriculture have generally been lacking in the state of Iowa, evidenced by the recent creation of the Leopold Center for Sustainable Agriculture's *Grass-Based Livestock Working Group* (GBLWG), the well-attended Iowa Grazing Lands Conservation Initiative's (GLCI) 2009 Conference: *Optimizing Grazing and Enhancing the Environment*, the creation of the Practical Farmers of Iowa (PFI) Grazing Clusters, the focus on public-private partnerships and grazing and fire as management tools on grasslands at the 2009 Iowa Prairie Conference, and the current research of Mae Rose Petrehn under the direction of Dr. John Tyndall of Iowa State University. However there are clear gaps and a wide range in the educational publications and recommendations made by natural resource managers to producers or land owners.

The absence of consistent management and policy recommendations concerning the management of grazing systems in restored natural landscapes is a testament to the complexity of the task. It is presumed that prescribed grazing is a planned out activity that executes management decisions required to accomplish a specific goals, usually one that aides in the protection and maintenance of a wealth of ecosystem services, including but not limited to: increased soil and water quality, reduced soil erosion, increased wildlife habitat, and overall biodiversity on the landscape, while concurrently protecting grazing lands and supporting farm income through diversified production. However, without consensus-building between natural resource managers, land owners and mangers and producers, the negative impacts of grazing on the landscape and/or the perception of its detriment will continue.

Only 15 years ago, the promotion of prescribed fire as a native grassland management tool in Iowa received negative reactions from land owners/managers and portions of the general public. While many valid fears were put forward, the underlying and unfounded negative perceptions of prescribed fire have been resolved through education and monitoring of application. While prescribed fire is accepted as a legitimate and necessary management tool, new issues have emerged regarding the direct impacts of prescribed fire on insect and small mammal populations. The emergence of prescribed grazing as a management tool has a lot of similarities with the historic struggle to legitimize and implement prescribed fire as a native grassland management tool. Through the *Defining Grazing as a Management Tool* project, WRC seeks to tackle the issue head-on in order to uncover issues that have not been realize yet and how to solve them.

This project encapsulates the examination of the overlapping communities of farmers/producers and land owners/managers, and how information sharing and education can benefit not only the environmental literacy of the seemingly disparate groups, but also benefit the ecological functioning of the state of Iowa. Likewise, education of producers and farmers and local land managers not only has the impact on the

individuals themselves, but on the greater communities, (town, church, school) or family groups that these individuals are a part of. Simply put, within Iowa's agricultural landscape, agro-ecological education and environmental education are one in the same.

Project Goals:

The increased interest in and need for the creation of multi-functioning agricultural landscapes in the state of Iowa has prompted WRC to develop this project as an initial step in creating landscape scale management strategies that benefit producers, environmental goals, and sustain agro-ecological functioning of our state's fertile lands. The overarching project goals include:

1. Connect all interested stakeholder groups in the grazing as a management tool discussion and provide a platform from which to develop overarching management recommendations.

2. Produce a consensus set of recommendations and language for use of grazing as a management tool in restored natural grasslands.

3. Publish consensus set of recommendations and language for use of grazing as a management tool in restored natural grasslands to land owners/managers, cattle producers, and natural resource managers throughout the state.

4. Expose the primary issues standing in the way of producers and land owners/managers using grazing as a management tool in restored natural grasslands.

Project Objectives and Activities:

1) *Determine primary issues regarding grazing as a management tool* through interviews with members of the Iowa Wildlife Action Plan Implementation Working Groups (Southern Iowa Habitat Management, Wildlife Management), the Grass-Based Livestock Working Group, PFI's Grazing Clusters, and the Grazing Land Conservation Initiative. From these interviews and meetings, WRC will develop agenda *Grazing as a Management Tool Summit.*

2) *Utilize Mae Rose Petrehn's* research, entitled *Mapping the Landscape of Grass-Based Livestock Production in Iowa: Understanding How Social, Economic and Environmental Factors Influence the Development of Grassland Agriculture,* which will be review of literature relevant to the four focus areas of the Grass-Based Livestock Working Group. These four focus areas were developed by members of the GBLWG, and they are *production* of grass-based livestock and forage, *marketing* of those products, the *ecological* implications of different grazing management strategies, and *policy and education* associated with the industry.

3) *Host a Grazing as a Management Tool summit (2 day meeting)* and subsequent discussion forum. Summit participants will include natural resource and conservation agency employees, cattle producers, agronomic, ecological, and sociological researchers, and produce a consensus set of recommendations for use of grazing as a management tool in restored natural grasslands. Recommendations will address grazing management to benefit wildlife, production-oriented information, and be accessible to land managers and owners. All summit participants will complete pre and post-summit surveys that question their (changing) perceptions of the consensus-based recommendation development utilized by this project to address grazing as a management tool.

4) *Determine the effective education/communication strategy* for use of grazing as a grassland management tool in Iowa.

5) *Compile a summary report of recommendations for use of grazing as a management tool* for land managers and owners that will be distributed to all Grazing as a Management Tool summit participants. Develop a bulletin publication and distribute to land managers/owners and producers that addresses consensus reached by summit and information about use of grazing as a management tool in restored native grasslands. Bulletin will be posted on partner websites and distributed to members and employees of partner organizations.