

Draft Compatibility Determination

Title

Compatibility Determination for Cooperative haying and grazing at John W. and Louise Seier National Wildlife Refuge.

Refuge Use Category

Agriculture, Aquaculture, and Silviculture

Refuge Use Type(s)

Grazing (Cooperative)

Haying (Cooperative)

Refuge

John W. and Louise Seier National Wildlife Refuge

Refuge Purpose(s) and Establishing and Acquisition Authority(ies)

The refuge was established pursuant to the John W. and Louise Seier Living Trust. The primary purpose of the refuge is” ...for the development, advancement, management, conservation, and protection of fish and wildlife resources...” (16 United States [U.S.] Code a 724f[a][4]) and “... for the benefit of the United States fish and Wildlife Service, in performing its activities and services. Such acceptance may be subject to the terms of any restrictive or affirmative covenant, or condition of servitude” (16 U.S. Code a 724 f[b][1]).

National Wildlife Refuge System Mission

The mission of the National Wildlife Refuge System, otherwise known as Refuge System, is to administer a national network of lands and waters for the conservation, management, and where appropriate, restoration of the fish, wildlife, and plant resources and their habitats within the United States for the benefit of present and future generations of Americans (Pub. L. 105-57; 111 Stat. 1252).

Description of Use

Is this an existing use?

No

What is the use?

Cooperative Agriculture:

Grazing (Cooperative) – prescribed grazing for habitat restoration and management purposes on lands owned in fee title or managed through agreement by the National Wildlife Refuge System.

Haying (Cooperative) – cutting and removal of vegetation as directed and authorized by the Refuge for habitat restoration and management purposes on lands owned in fee title or managed through agreement by the National Wildlife Refuge System.

Is the use a priority public use?

No

Where would the use be conducted?

Grazing and haying would be conducted by third parties or Refuge staff primarily on grassland habitat within Seier National Wildlife Refuge. The entire refuge 2,400 acres would be open for both uses.

When would the use be conducted?

Grazing – Use would be ongoing. Use may take place any time of the year; primarily occurs from April through October. The time and frequency will depend on the desired outcome determined by objectives outlined in management plans based on the best available biological data.

Haying – Use would be ongoing. Use may take place any time of the year; primarily occurs from August through September. The time and frequency will depend on the desired outcome determined by objectives outlined in management plans based on the best available biological data. Haying activities will take 1-14 days per field.

How would the use be conducted?

These practices are only permissible when prescribed in plans developed to achieve habitat management objectives or refuge purposes. Grazing and haying will be administered under a Cooperative Agricultural Agreement (CAA) permit. This allows a person or entity to use agricultural practices on National Wildlife Refuge System lands in support of refuge management objectives.

A CAA will include a Commercial Special Use Permit and a Plan of Operations that details operation requirements. When substantial involvement between the Service and the agricultural cooperator is anticipated, the CAA will necessitate communication on a regular basis and annual reviews.

Grazing agreements will include location, AUM, dates, and specific guidelines related to grazing activities. Grazing will normally be conducted using cattle but other

livestock animals such as sheep, goats or bison may be used with appropriate fencing. The AUM per unit will be dependent upon grazing unit size, animal type, amount, and type of forage available and goals for the unit. Grazing units will be surrounded with appropriate fencing and may include cross-fencing. Watering facilities may or may not exist on a unit. If they do not exist, they may need to be installed or a rancher may need to deliver water to the site on a frequent basis. The use of mineral blocks may be used to supplement and to distribute animals throughout the unit to meet management objectives.

Haying agreements will cover the location, dates, and number of acres to be hayed. Haying will be accomplished using a swather or tractor with a variety of implements (mower, hay conditioner, rake, baler, and forks) as well as a truck or tractor with a flatbed trailer, hay trailer or stack mover to remove bales. Grass will be mowed at the appropriate time to meet unit objectives and removed by the date set in the agreement.

Why is this use being proposed or reevaluated?

Cooperative agricultural practices for wildlife and restoration of habitat on refuge lands include grazing and haying. When prescribed in a plan, these resource management activities are used to meet refuge goals and objectives; typically benefiting grassland health and the restoration of high-quality habitat for migratory birds, pollinators, and other wildlife. Cooperative agriculture is an indispensable management tool utilized to restore the ecological diversity and habitat quality of refuge lands.

Availability of Resources

Table 1. Costs to Administer and Manage [Name of Use]

Category and Itemization	One-time Cost	Recurring Annual Expenses
Develop Plan/NEPA document/opening package	\$5,000	
Staff time (LE, administration and management)	\$10,000	\$5,000
Maintenance	--	\$1,000
Monitoring	--	\$1,000
Total one-time expenses	\$15,000	

Total recurring annual expenses		\$7,000
Total expenses over 15 years	\$15,000	\$105,000

Anticipated Impacts of the Use

Potential impacts of a proposed use on the refuge's purpose(s) and the Refuge System mission

The mission of the Refuge System provided in the Refuge Improvement Act of 1997 states that “The mission of the [National Wildlife Refuge] System is to administer a national network of lands and waters for the conservation, management and where appropriate, restoration of the fish, wildlife, and plant resources and their habitats within the United States for the benefit of present and future generations of Americans.”

Conservation and management mean to sustain and, where appropriate, restore and enhance, healthy populations of fish, wildlife, and plants utilizing, in accordance with applicable Federal and State laws, methods and procedures associated with modern scientific resource programs. These definitions denote active management and are in keeping with the House report on the Act which states that the “Refuge System should stand as a monument to the science and practice of wildlife management.”

It thus follows that if an economic use of a natural resource is shown to be conservation and management as defined in the Act, it does contribute to the mission by the very definition of terms used. If a use contributes to the mission, it thus meets the standard or threshold established in 50 CFR 29.1. In accordance with 50 CFR 29.2, grazing, and haying, as described in this compatibility determination, significantly contributes to the mission, purposes, goals, and objectives of the refuge.

Refuge staff aims to provide diverse, heterogeneous nesting habitat that meets the habitat requirements for a diverse range of species. Management by cooperative grazing and haying have been used to mimic natural grassland pressures and processes for decades, and the body of research on these techniques continues to grow. Cooperative grazing and haying will be used to complete our priority management activities.

When threatened and endangered species are known or suspected to be on a site, the proper steps will be taken to determine how management activities will affect that species and the local FWS Ecological Services office will be consulted.

Short-term impacts

Grazing – Domestic livestock grazing removes and tramples much of the standing vegetation from a tract of grassland. In general, grazing will decrease vegetative heights and litter depths and affect plant composition. The measure of short-term impacts will depend upon the grazing timing (time of year), duration (length of graze), and utilization level (i.e., light, moderate, full, close, or severe) in addition to climactic factors like rainfall and temperature. Depending on the utilization level, hoof action may help to break up litter and increase its ground contact, thereby increasing the rate of litter decomposition. These actions open the ground for native plants to grow

and aid in nutrient cycling. Nutrient cycling is also naturally increased by the herbivory, digestion, and excrement of plants in a grassland. Areas around watering systems, along fence lines and at the location of mineral blocks may experience heavy trampling and compaction resulting in the mortality of perennial vegetation and the establishment of early successional species.

Bird species differ in their vegetation height preferences so typically the management goal is to provide a mosaic, with heterogeneity of vegetation heights across the landscape. Pollinators are similar in their need for a heterogeneity of heights and plant species. Following a graze, depending on the remaining vegetation height, a site will be more or less attractive for use by certain wildlife species during the respective growing season. Cattle do not always graze uniformly, and there is typically heterogeneity of height within a prescribed grazed site as compared to a prescribed hayed site. Birds that prefer shorter stature grasslands, such as upland sandpiper and savannah sparrow may benefit from the reduced vegetative height resulting from grazing while others such as mallards and bobolink, which typically require taller and dense nesting structure, may be negatively impacted by grazing in the short-term. Litter reduction and reduced vegetative structure resulting from grazing may create openings within wetlands “choked” by cattails and reed-canary grass, improving wetland habitat for breeding waterfowl pairs.

In situations where grazing utilizations are close or severe, it is possible that there will be less litter available for grassland nesting birds who utilize this material for nest construction. Kruse and Bowen (1996) found that grazing alone reduced nest densities during the grazing years, but the vegetation and ducks recovered quickly after grazing ended. Several studies have reported greater nesting success in grazed grasslands than in other habitats in the Prairie Pothole Region (Barker et al. 1990, Greenwood et al. 1995). However, grazed areas may attract fewer predators because of low densities of some types of prey, such as small mammals (Grant et al. 1982, Runge 2005); less cover for concealment; or both. Higher nesting success in grazed fields may occur because predators respond negatively to low prey density (Clark and Nudds 1991, Larivière and Messier 1998). If a site is completely devoid of litter prior to winter, certain pollinator larvae may lack the needed cover to survive for that year. High grass utilization rates late in the year can also reduce food and winter cover for resident species in the short term. It is likely that other large herbivores, such as white-tailed deer, will reduce their use of a unit due to grazing competition from domestic livestock and the associated disturbances as ranchers repair fence or check on and move livestock.

Haying –There will be disturbance during the process of cutting, baling and removing bales from the field. The grass must be cut and allowed to dry before it is raked (if used) and baled. A combination of tractors, rakes, balers, trucks, and trailers will be used during this process, and their use will cause disturbance for local wildlife. Depending on weather, this process can take a few days to a couple of weeks.

Grassland vegetation will be removed during the haying process, and it will no longer

be available for wildlife to use for food or cover. Removing the litter layer along with the standing vegetation will allow native or planted vegetation to grow with better access to sunlight. With the vegetation removed and heights of only a few inches remaining, winter habitat and early spring nesting habitat will be greatly reduced at that location until the next growing season. Haying in wetlands will reduce vegetative cover, opening choked wetland areas which may be used by spring migrating waterfowl and shorebirds.

If early haying (before August 1) is allowed, it may result in the destruction of waterfowl nests and nests of other grassland nesting bird species. Haying could also result in mortality of nesting hen ducks, ducklings and young grassland and upland birds such as ring-necked pheasant, bobolink, and sharp-tailed grouse.

When used as part of an integrated pest management program, haying can reduce or eliminate the need for herbicide applications which may positively impact plant species diversity. Haying can also improve the efficacy of herbicide applications aimed at noxious weeds. This potentially reduces overall herbicide use and impacts to non-target native plants.

Long-term impacts

Grazing – Properly prescribed, the effect of this removal of vegetation increases the vigor of the grassland by stimulating the tillering and growth of desired species of grasses and forbs and reducing the abundance of targeted species such as cool season exotic grasses, woody species, noxious weeds, invasive species, and/or cattails. During periods of normal precipitation, regrowth following grazing activities usually occurs within a single growing season. While typically small in relation to the larger grazing unit, areas with heavy livestock concentrations (e.g., watering areas, mineral block sites) may require 2-3 years to fully recover from the impacts of grazing. Over time, a strategic prescribed grazing program could effectively alter species composition and improve overall plant diversity. Disturbance of grassland habitats is essential to maintain plant vigor and reduce infestations of noxious weeds.

As vegetative heights recover following a grazing treatment, habitat conditions will favor birds which prefer denser nesting structure such as bobolinks and mallards and may become less favorable to species that prefer sparser vegetation such as upland sandpipers. Because of rapid regrowth of herbaceous vegetation, no long-term negative impacts are anticipated for waterfowl or other grassland nesting bird species, though positive impacts of increased diversity and heterogeneity are likely in the long-term.

Negative effects of grazing on a grassland and the associated wildlife may occur under scenarios where grazing occurs every year, at the same time, using the same utilization, or where there is season-long grazing that annually occurs. This has the potential to negatively affect the nutrient cycle, energy capture, and hydrologic cycle of a grassland. Also, the homogenous vegetation height and litter depths that would be created by this annual management scenario, will likely be attractive only to the

suite of birds that prefer this type of cover type. This scenario also favors weed species, such as Canada thistle, to thrive.

Haying - Haying will increase the vigor of grassland areas for several years following a treatment. Periodic removal of heavy litter layers within grasslands should improve grassland vigor and contribute to maintenance of plant diversity. Haying may reduce the need for herbicide use which could result in higher plant diversity and species richness. The rotation and periodic haying of areas also helps to create a mosaic and interspersed habitats that many species find attractive for feeding, breeding, and protection (Maxson and Riggs 1996).

The year following a haying treatment, vegetative height and structure will likely favor species such as savanna sparrow and upland sandpipers, which generally prefer shorter nesting structure. Species such as mallard and bobolink, which generally prefer taller and denser nesting structure, will prefer hayed areas 2+ years after haying.

Public Review and Comment

The draft compatibility determination will be available for public review and comment for 30 days from February 1, 2024, to March 1, 2024. The public will be made aware of this comment opportunity through postings at the refuge headquarters and on the refuge website, letters to potentially interested people such as adjacent landowners, States, and Tribes. State and Tribes have been asked to review and comment on the draft compatibility determination. A hard copy of this document will be available by request at Fort Niobrara NWR, 39983 Refuge Road Valentine, NE 69201. It will be made available electronically on the refuge [website](#). Concerns or comments can be sent by mail to 39983 Refuge Road Valentine, NE 69201 or by email at FortNiobrara@fws.gov.

Determination

Is the use compatible?

Yes

Stipulations Necessary to Ensure Compatibility

1. All activities will be conducted in accordance with the CAAs.
2. The criteria for evaluating the need for habitat management, including all uses described in this CD, will be determined during annual planning activities.
3. Activities must meet specific and articulated habitat and related wildlife objectives and contribute to the achievement of the purposes for which the refuge units were established. These objectives may be outlined in a Comprehensive Conservation Plan, a Habitat Management Plan, an Annual Work Plan, or in the Special Use Permit.

4. For grazing specific activities-
 - a. No insecticides may be used on refuge lands.
 - b. No supplemental feeding will be allowed on refuge lands.
 - c. Control and maintenance of the livestock will be the responsibility of the permittee.
 - d. Fencing, water supply, and other livestock management infrastructure needs and costs will be outlined on a site by site basis in the SUP.
5. For haying specific activities-
 - a. Any Special Use Permits and Cooperative Agricultural Agreements will be written consistent with 620 FW 2 Cooperative Agricultural Use Policy and Region 6 Cooperative Agricultural Program Guidance (2022).

Justification

Grazing - Prior to Euro-American settlement, grasslands and the associated wildlife in the Northern Great Plains thrived under periodic defoliation, primarily from fire and grazing. Notable grazing animals included bison, elk, small mammals, and even insects such as grasshoppers. Today, domestic livestock are used to mimic the defoliation once provided by bison and elk. It is well documented that grasslands devoid of grazing and burning over the long-term will deteriorate to a point where they no longer support the overall ecosystem functions. Excessive litter build-up occurs, which negatively affects the nutrient cycle, energy capture, and hydrologic cycle of a grassland. The latter may end up negatively affecting plant composition and causing increases in introduced cool-season grasses (i.e., Kentucky bluegrass and smooth brome grass), while decreasing the native plants. Certain butterflies are closely associated with native plants for larval food and nectaring. Additionally, not only does excessive litter build up negatively affect the overall health of the grassland, many bird species will also find the area less attractive over time. Instead of providing heterogeneity of thickness, only the suite of birds that prefer a thick litter and plant height will use the grassland. When incorporated into an integrated grassland management program and implemented over time, grazing can result in enhanced native plant diversity, structure, and overall improved grassland health.

Haying - Haying is an effective grassland management tool. While certain aspects of haying can have negative short-term impacts on wildlife, improved grassland vigor, potential of reduced herbicide use and structural diversity improvements linked to haying make this a beneficial use to meet refuge purposes and contribute to fulfilling the mission of the national wildlife refuge system. Without occasional disturbance, it is anticipated that grasslands would deteriorate in species richness and diversity negatively impacting plant and wildlife resources.

Signature of Determination

Refuge Manager Signature and Date

Signature of Concurrence

Assistant Regional Director Signature and Date

Mandatory Reevaluation Date

January 2024

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Figure(s)

