

## **Draft Compatibility Determination**

Draft Compatibility Determination for Farming, Seed Collection, Grazing, and Haying, Kirwin National Wildlife Refuge.

### **Refuge Use Category**

Agriculture, Aquaculture, and Silviculture

### **Refuge Use Type(s)**

Farming (cooperative)

Seed collection (cooperative)

Grazing (cooperative)

Haying or ensilage

### **Refuge**

Kirwin National Wildlife Refuge

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

Basic authority for the existence of Kirwin National Wildlife Refuge (NWR) stems from the Fish and Wildlife Coordination Act, which authorized the establishment of wildlife areas on federal water projects. The purpose of Kirwin NWR, "...shall be administered by him [Secretary of the Interior] directly or in accordance with cooperative agreements... and in accordance with such rules and regulations for the conservation, maintenance, and management of wildlife, resources thereof, and its habitat thereon, ...in behalf of the National Migratory Bird Management Program" 16 U.S.C. § 664 (Fish and Wildlife Coordination Act).

### **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?**

Yes

This compatibility determination reviews and replaces the CD for farming, grazing, and haying in the CCP for Kirwin National Wildlife Refuge (12/01/2006), as well as the CD for the use of glyphosate-tolerant soybeans and corn for habitat restoration and management on National Wildlife Refuge System owned or managed lands in Region 6 (03/28/2011).

**What is the use?**

Cooperative Agriculture:

*Farming* – The practice of agriculture involves mechanically disturbing the soil and artificially introducing seeds or other plant parts periodically to produce stands of plants, for use primarily as food by wildlife, domestic animals, or humans. Farming on the Refuge will be used on a limited basis for short-term (three years or less) durations to facilitate habitat restoration objectives. This activity may include water delivery, irrigation, and drainage, as well as the use of glyphosate-tolerant soybeans and corn for habitat restoration and management purposes owned in fee title or managed through agreement by the National Wildlife Refuge System.

*Seed Collection* – The collection and harvest of native grass and forb seed for habitat restoration and management purposes on lands owned in fee title or managed through agreement by the National Wildlife Refuge System.

*Grazing* – 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* – The 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?**

Farming, including the use of glyphosate-tolerant soybeans and corn, seed collection, grazing, and haying would be conducted by third parties primarily on upland and wetland habitats. There are approximately 5,276 upland acres and 4,993 wetland acres on the refuge. The figure for wetland acres includes the surface acreage of Kirwin Reservoir, which can vary dramatically both annually and seasonally. Not all upland and wetland acres are suitable for farming, seed collection, grazing, and haying as a management tool.

## **When would the use be conducted?**

*Farming* – Activities related to farming (field preparation, planting, weed control, and harvesting) take place from April 1 to November 30. Activities would take place 1-10 days a month on each field during the growing season, depending on size and complexity of the field. The use of glyphosate-tolerant soybeans and corn would be allowed as part of an integrated pest management program used to prepare a seedbed for habitat restoration and management and/or to control noxious and invasive vegetation. The use of glyphosate-tolerant soybeans and corn would only be used in accordance with the 2011 Environmental Assessment for the Use of Genetically Modified, Glyphosate-Tolerant Soybeans and Corn on National Wildlife Refuge Lands in the Mountain-Prairie Region.

*Seed Collection* – Use would be ongoing, but most actions would occur during the fall when seeds have matured over 1-7 days. The timing of collecting native species seed will depend on the physiology of the target species.

*Grazing* – Use would be ongoing. It may take place at any time of the year but primarily occurs from April through October. The duration 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. It may take place at any time of the year but primarily occurs from August through September. The duration 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. Farming, grazing, and haying will be administered under a Cooperative Agricultural Agreement (CAA) permit. This allows a person or entity to use agricultural practice 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, a CAA includes significant collaboration through communication on a regular basis, including daily communications, monthly status updates, and annual reviews.

*Farming* – Farming agreements will outline the crop(s), location, and number or acres to be planted. Farming agreements will be short-term in duration (typically three years or less). The cooperator is responsible for all equipment, fuel, seed, fertilizer, chemical, and labor. Farming will require the use of tractors, combines, implements, and grain trucks to plant, treat weeds, and harvest crops.

*Seed Collection* – Seed collection will require the use of combines or tractors, ATVs,

and implements. There may be multiple pieces of equipment in the field at a time to complete this activity. Hand-harvesting seed may also be utilized. Agreements and permits will outline the target species and dates for collection. The permit holder will provide all equipment and labor.

*Grazing* – Grazing agreements will include location, AUM, dates, and specific guidelines related to grazing activities. Grazing will normally be conducted using cattle but other animals such as sheep, goats, or bison may be used. The AUM per unit will be dependent upon 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 temporary interior fencing. Watering facilities may or may not exist on a unit. If they do not exist, they may need to be installed or a cooperator may need to deliver water to the site daily. The use of mineral blocks may be used to supplement and to distribute animals throughout the unit to meet management objectives.

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

### **Why is this use being proposed or reevaluated?**

Reevaluation is due per policy 603 FW 2.11 H. Except for uses specifically authorized for a period of longer than 10 years (such as rights-of-way), we will reevaluate compatibility determinations for all existing uses other than wildlife-dependent recreational uses when conditions under which the use is permitted change significantly, or if there is significant new information regarding the effects of the use, or at least every 10 years, whichever is earlier. Again, a refuge manager may always reevaluation the compatibility of a use at any time.

Cooperative agricultural practices for wildlife and restoration of habitat on Refuge lands include farming, seed collection, grazing, and haying. When prescribed in a plan, these resource management activities are used to meet Refuge goals and objectives; typically benefitting 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**

The need for staff time to develop and administer cooperative agriculture programs is already committed and available with current staffing levels. Most of the needed work to prepare for this use would be done as part of routine habitat management duties (this may include the maintenance staff). Habitat monitoring is already being done on the station as part of regular biological duties, so no extra effort will be required. Existing Refuge staff will monitor the Cooperative Agriculture Agreements

to ensure compatibility and compliance (this may include the station manager). Adequate resources may not be available with any reduction of current staffing levels. The cooperator is responsible for the cost of installation and/or the maintenance of all range improvements associated with these activities. The cooperator is also responsible for providing all equipment and labor associated with all activities. Facilities installed primarily for Refuge purposes are constructed or maintained at Refuge expense.

### **Anticipated Impacts of the Use**

According to the National Wildlife Refuge System Improvement Act of 1997 (Refuge Improvement Act), the mission of the 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 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 Refuge Improvement Act which states that the Refuge System should stand as a monument to the science and practice of wildlife management.

It therefore follows that if an economic use of a natural resource is shown to meet the definition of conservation and management as expressed in the Refuge Improvement Act, then it contributes to the mission of the National Wildlife Refuge System. And if a use contributes to the mission, then it meets the standard or threshold established in 50 CFR 29.1. In accordance with 50 CFR 29.2, cooperative agriculture (i.e., farming, seed collection, grazing, and haying) as described in this compatibility determination, significantly contributes to the mission, purposes, goals, and objectives of the station.

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

#### **Short-term impacts**

*Farming* – In preparation for farming, all habitat will be removed from the unit using a combination of mechanical and chemical methods. Many wildlife species, including pollinators, may be negatively affected during this process. Mobile wildlife will be displaced to surrounding areas. Field prep, planting, weed control, and harvesting will generally only cover a few days per month from April through October. During the remainder of the growing period disturbance will be minimal. After harvest, steps can be taken to improve habitat and soil health. Leaving residue standing and not tilling it under, or using cover crops, can provide food and cover for over-wintering wildlife, including micro-organisms. These practices promote soil health and ensure

that important nutrient cycling continues year-round. It is Service policy that the long-term productivity of the soil will not be jeopardized to meet wildlife objectives (601 FW3, 569 FW1).

The use of pesticides is a normal practice in farming. Pesticides can be beneficial in that they remove undesired species from the area. They also have negative impacts on non-target plant and wildlife species. To decrease these effects, only EPA registered pesticides that are approved through the Service's Pesticide Use Proposal (PUP) System will be used. All pesticide use must follow EPA guidelines and be applied according to the pesticide label. Application of pesticides must follow the Department of the Interior's Pesticide Use policy (517 DM 1) and the Service's Integrated Pest Management Policy (569 FW 1).

Wildlife observations will decrease initially when the area is prepped for farming, but once crops enter the early growing stages and then again after harvest, observations will increase for species such as deer, pheasants, and turkeys. Geese and ducks will use harvested fields for food during the fall and spring migration. Certain shorebird species will also use the open temporary wetlands during migration.

*Seed Collection* – Harvesting seed will take place over a couple of days or up to a week on a single unit per year. This activity can take place at any time during the growing season but usually occurs in the fall when most seeds have matured. In this case, nesting activities have finished for the year and most migratory birds have moved south. The use of tractors, ATVs, implements, combines, and grain carts are expected to assist in seed collection. The disturbance from this equipment will affect local wildlife that will be temporarily displaced. This activity will decrease the seed source initially, but it should not have a significant impact on the local plant community. The removal of seeds will cause a decrease in available food for certain wildlife species that rely on seeds as a food source.

*Grazing* – Grazing by domestic livestock removes and tramples some or 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, or severe). Depending on the utilization level, hoof action may help to break up litter thereby increasing the rate of litter decomposition, opening the ground for natives to express, and aiding in nutrient cycling. Areas around watering systems, along fence lines, and at mineral blocks may experience heavy trampling and compaction resulting in the mortality of perennial vegetation and the establishment of early successional species.

Varying bird species differ in their vegetation height preferences, so typically the management goal is to provide a heterogeneity of 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. 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 vegetation and a dense nesting structure, may be negatively impacted by grazing in the short-term. Litter reduction and decreased vegetative structure resulting from grazing may create openings within wetlands “choked” by cattails and reed-canary grass, improving wetland habitat for water birds.

In situations where grazing utilizations are close or severe, it is possible that there will be less litter available for grassland nesting birds that utilize this material for nest construction. However, grazed areas may attract fewer predators because of low densities of certain 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 that year.

*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 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.

Grass/habitat will be removed during the haying process, and it will no longer be available for wildlife to use for food or cover. Removing the duff layer along with the standing vegetation will allow native vegetation to express itself with less competition from undesired species. Because the grass will be removed, winter habitat and spring nesting habitat will not be available at that location until the next growing season. Haying in wetlands will reduce vegetative cover, opening choked wetland areas which may be utilized by spring migrating waterfowl and shorebirds.

In the event that early haying (before August 1) is allowed, it may result in the destruction of grassland nesting bird species. Haying could also result in mortality of young grassland and upland birds such as ring-necked pheasant and northern bobwhite quail.

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

### **Long-term impacts**

*Farming* – Depending on the condition of a unit prior to farming and the overall goals for the unit, this practice could run from 1-3 years. During this time, the area will not be available as habitat for most wildlife, especially grassland nesting birds and many

pollinators. Deer, pheasants, turkeys, and migrating waterfowl will take advantage of waste grain left in the field, so use by certain species may increase during farming practices.

Although pesticide use will be closely regulated during farming activities, local wildlife may be negatively affected by pesticide applications. Invertebrates that are a food source and perform important ecological processes such as pollination, may be eliminated and communities may shift. However, with the proper use of chemicals, most weed species will be eliminated from the area, allowing native plant species to have a better chance of survival when planted due to decreased competition.

Mechanical practices will break up the soil and negatively impact the micro-organisms present, and important nutrient cycling will slow or cease. Decomposition and subsequent production of organic material will be negatively affected. If the plan allows, leaving residue standing (no till) over the winter or incorporating cover crops into the farming plan will provide food and cover for migrating and wintering wildlife and soil micro-organisms.

*Seed Collection* – Due to the fact that all species are not typically abundant every year, most units will not be collected from on an annual basis. Plant species should recover from the lost seed sources quickly. Being able to distribute seeds from local native plants will allow the continuation of those species across the landscape over time.

*Grazing* – Properly prescribed, the effect of this removal of vegetation increases the vigor of the grassland by stimulating the growth of desired species of grasses and forbs and reducing the abundance of targeted species such as cool season exotic grasses, woody species, noxious species, and invasive species. 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 upland and wetland habitats are essential to maintain plant vigor and reduce infestations of noxious weeds.

Negative effects of grazing on a unit and the associated wildlife may occur under scenarios where grazing occurs every year, at the same time, using the same utilization. This has the potential to negatively affect the nutrient cycle, energy capture, and hydrologic function of the grassland. Grazing plans on the refuge will promote a rotational cycle that alternates grazing and resting periods.

*Haying* – Haying will increase the vigor of grassland areas for several years following a treatment. Periodic removal of heavy duff layers within grasslands should improve 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 create a mosaic and interspersed habitats that many species find attractive for feeding, breeding, and



protection (Maxson and Riggs 1996).

## **Public Review and Comment**

The draft compatibility determination was available for public comment for 14 days from December 5, 2023 to December 19, 2023. A hard copy of this document was posted at Refuge Headquarters at 702 E Xavier Rd, Kirwin, KS 67644.

It was made available electronically on the Refuge website at <http://www.fws.gov/refuge/kirwin>. Alternative forms of the document were available upon request. The Refuge did not receive any comments during the public review and comment period.

## **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 the 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 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 farming-specific activities:
  - a. All activities will adhere to general conditions for cooperative farming programs as listed in the Cooperative Agriculture Use Policy (620 FW 2).
  - b. All operations are to be carried out in accordance with the BMPs and soil conservation practices.

- c. Pesticide use is restricted by type and economic threshold limitation. Annually, all proposed pesticides must be submitted to and approved by the Refuge Manager or the Regional or National Integrated Pest Management (IPM) coordinator.
6. For haying-specific activities:
- a. Any Special Use Permits and Cooperative Agriculture Agreements will be written consistent with 620 FW 2 Cooperative Agriculture Use Policy and Region 6 Cooperative Agricultural Program Guidance (2018).
7. 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 (2018).

### **Justification**

*Farming* – It is well known by grassland practitioners that the best way to prepare a site for reconstruction is with a minimum of 2 years farming, preferably with soybeans as the final crop. Using mechanical and chemical means to clear the field and through regular farming practices, most, if not all unwanted plants, are terminated and the seed bed is cleaned. This makes the field a clean slate to work with when planting to native prairie. All these actions make it easier for native plants to flourish once planted due to reduced competition. This will save money for the station in the long run as they will not need to battle noxious and invasive plants during the establishment phase.

Refuge managers' experience combined with published literature indicates that use of glyphosate-tolerant soybeans and corn, which allows for the application of an herbicide containing the active ingredient glyphosate during the growing season, is very effective at killing invasive cool season grasses and other noxious and invasive species. This results in a weed-free seedbed used for habitat restoration purposes, which increases the possibility of successful habitat reconstruction efforts on System-managed and -owned lands.

The effective reconstruction of degraded and weed-infested habitats on System lands to native mixed-grass and tallgrass prairie, which can be managed through the historical ecological processes of prescribed fire and prescribed grazing, will cumulatively reduce needed expenditures of labor and funds for weed control efforts on System lands over the long term.

*Seed Collection* – Using local native seed ensures the best chance for a successful reconstruction. Using seeds from local sources gives a better chance that the species will flourish once planted and that they are the right species of plants required by local wildlife, especially pollinators.

*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, but 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**

2034

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