Draft Compatibility Determination

Draft Compatibility Determination for Farming, Seed Collection, Haying and Prescribed Grazing for Rainwater Basin Wetland Management District.

Refuge Use Category

Agriculture, Aquaculture, and Silviculture

Refuge Use Type(s)

Farming (Cooperative)

Seed Collection (Cooperative)

Grazing (Cooperative)

Haying

Refuge

Rainwater Basin Wetland Management District

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

System lands are managed consistent with a number of federal statutes, regulations, policies, and other guidance. The National Wildlife Refuge System Administration Act of 1966, as amended (16 United States Code [U.S.C.] 668dd–668ee) (Administration Act) is the core statute guiding management of the System.

The National Wildlife Refuge System Improvement Act of 1997 (Public Law [P.L.] 105-57) made important amendments to the Administration Act, one of which was the mandate that a comprehensive conservation plan be completed for every unit of the System. Among other things, comprehensive conservation planning has required field stations to assess their current farming program and establish objectives for the future.

... as Waterfowl Production Areas subject to "... all of the provisions of such Act [Migratory Bird Conservation Act] ... except the inviolate sanctuary provisions ..." 16 U.S.C. 718(c) (Migratory Bird Hunting and Conservation Stamp)

"... for any other management purpose, for migratory birds."16 U.S.C. § 715d (Migratory Bird Conservation Act)

"... for conservation purposes ..." 7 U.S.C. § 2002 (Consolidated Farm and Rural Development Act)

Additional Authorities include the following: North American Wetlands Conservation Act, and the Emergency Wetlands Resources 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 Grazing, Haying and Farming in the CCP dated 08/22/2007.

What is the use?

Cooperative Agriculture:

Farming (Cooperative) – 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 District 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 and the use of glyphosate-tolerant corn and soybeans for habitat restoration and management purposes on lands owned in fee title or managed through agreement by the National Wildlife Refuge System.

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

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 – 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, Grazing, Haying, and Seed Collection would be conducted by third parties

primarily on upland/wetland habitat types within the District. There are approximately 11,117 wetland acres and 13,102 upland acres within the District, however, not all of these acres are suitable for Farming, Grazing, Haying, or Seed Collection as a management tool.

When would the use be conducted?

Farming - Activities related to farming (field preparation, planting, weed control, 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 will happen in the fall when seeds have matured over 1-7 days. Although, the timing of collecting native species seed will depend on the physiology of the target plant species.

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. Farming, 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, a CAA includes significant collaboration with communication on a regular basis, including daily communications, monthly status updates, and annual reviews.

Farming agreements will outline the crop(s), location and amount of acreage 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 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. Seed collection by 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 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 on a daily 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 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 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(2). Except for uses specifically authorized for a period 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 reevaluate the compatibility of a use at any time.

Cooperative agricultural practices for wildlife and restoration of habitat on refuge lands include grazing, haying, farming and seed collection. 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

The need for staff time for the development and administration of cooperative agriculture programs is already committed and available. 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 needed. Existing refuge staff will monitor the CAAs to ensure compatibility and compliance (this may include the station manager). The Cooperator is responsible for the cost of installation and/or maintenance of all range improvements associated with these activities. The cooperator is also responsible for providing all equipment and labor associated to all activities. Facilities installed primarily for Refuge purposes are constructed or maintained at Refuge expense.

Anticipated Impacts of the Use

The missions 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 for the conservation, management and, where appropriate, restoration of fish, wildlife, and plant resources, and their habitats with the United States for the benefit of present and future generations of Americans (emphasis added).

Conservation and management means to sustain and, where appropriate, restore and enhance, healthy populations of fish, wildlife, and plants utilizing, in accordance with applicable Federal and Sates laws, methods and procedures associated with modern scientific resource programs. These definitions denote active management and is 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, cooperative farming, haying, grazing and seed collection 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 on a site, the proper steps will be taken to determine how any management activities will affect that species and the local FWS Ecological Services office will be consulted.

Short-term impacts

Farming – In preparations 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 soil micro-organisms, it promotes soil health and it ensures 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 used during farming. Pesticides can be beneficial in that they remove undesired species from the area. They also have negative impacts on non-targeted plants 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 following label guidelines. Application of pesticides must follow the Department of 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 are in the beginning growing stages and then again after harvest, observations will increase for species such as deer, pheasants and turkey. 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 up to a week on a single unit per year. This activity can take place at any time during the growing season but usually happens in the fall when most seeds have matured. When this is the case, nesting activities are completed for the year and most migratory birds have moved south. The use of tractors, ATVs, implements, combines and grain cart is expected during this activity. The disturbance from this equipment will affect local wildlife that will temporarily be 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 for 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, full, close, or severe). Depending on the latter of the three factors, hoof action may help to break up litter thereby increasing the rate of litter decomposition, opening up the ground for natives to express and aiding in nutrient cycling. 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.

Varying bird species differ in their vegetation height preferences so typically the management goal is to provide a 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. 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 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 who utilize this material for nest construction. 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, Lariviére 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.

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 non-desired 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 positively 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 overall goals for the unit, this practice could run from 1-3 years. During this time, this 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 some of these species may increase during farming practices.

Although pesticide use will be closely regulated during farming activities, local wildlife may be negatively affected by this. Invertebrates that are a food source and used for 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 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 in the soil and important nutrient cycling will slow or cease. Decomposition and subsequent building of organic material will be negatively affected. If the plan allows, leaving residue standing (no-till) over-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 usually not abundant all years, 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 to prosper 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 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 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 cycle of a grassland. Grazing plans on the District 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 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 interspersion of habitats that many species find attractive for feeding, breeding, and protection (Maxson and Riggs 1996).

Public Review and Comment

The draft compatibility determination will be available for public review and comment for 14 days from June 1, 2022 to June 14, 2022. The public will be made aware of this comment opportunity through (select all that apply: newspapers, radio, television, postings at local libraries, letters to potentially interested people such asadjacent landowners, states, and tribes, public meetings, federal register, or other places/media outlets). State and Tribes have been asked to review and comment on the draft compatibility determination (note for some uses this is required and in Alaska this is true of all uses). A hard copy of this document will be posted at the Refuge Headquarters (73746 V Road, Funk NE 68940). It will be made available electronically on the refuge website (insert refuge web address). Please let us know if you need the documents in an alternative format. Concerns expressed during the public comment period will be addressed in the final document.

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 farming specific activities-
    a. All activities will adhere to general condition 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 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 of 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.

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, 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

Delete this text and insert year for reevaluation

Literature Cited/References

Barker, W.T.; Sedivec, K.K.; Messmer, T.A.; Higgins, K.F.; Hertel, D.R. 1990. Effects of specialized grazing systems on waterfowl production in south central North Dakota. Transactions of the 55th North American Wildlife and Natural Resources Conference 55:462–74.

Clark, R.G.; Nudds, T.D. 1991. Habitat patch size and duck nesting success: the crucial experiments have not been performed. Wildlife Society Bulletin 19:534–43.

Grant, W.E.; Birney, E.C.; French, N.R.; Swift, D.M. 1982. Structure and productivity of grassland small mammal communities related to grazing-induced changes in vegetative cover. Journal of Mammology 63:248–60.

Greenwood, R.J.; Sargeant, A.B.; Johnson, D.H.; Cowardin, L.M.; Shaffer, T.L. 1995. Factors associated with duck nest success in the Prairie Pothole Region of Canada. Wildlife Monographs 128:1–57.

Kruse, A.D.; Bowen, B.S. 1996. Effects of grazing and burning on densities and habitats of breeding ducks in North Dakota. Journal of Wildlife Management 60:233–46.

Lariviére, S.; Messier, F. 1998. Effect of density and nearest neighbours on simulated waterfowl nests: can predators recognize high-density nesting patches? Oikos 83:12–20.

Maxson, Stephen J. and Riggs, Michael R. 1996. Nest Habitat Selection and Nest Success of Greater Sandhill Cranes in Northwestern Minnesota. Conservation Biology Research Grants Program, Nongame Wildlife Program. Wetland Wildlife Populations and Research Group. Division of Ecological Services. Minnesota Department of Natural Resources. 24 pp.

Murphy, R.K.; Grant, T.A. 2005. Land management history and floristics in mixed-grass prairie, North Dakota, USA. Natural Areas Journal 25:351–58.

Naugle, D.E.; Bakker, K.K.; Higgins, K.F. 2000. A synthesis of the effects of upland management practices on waterfowl and other birds in the northern great plains of

the U.S. and Canada. Wildlife Technical Report 1. 28 p.

Runge, J.P. 2005. Spatial population dynamics of Microtus in grazed and ungrazed grasslands. [Ph.D. dissertation]. Missoula, MT: University of Montana.