

Draft Compatibility Determination

Prescribed Grazing

Refuge Use Category

Agriculture, Aquaculture, and Silviculture

Refuge Use Type(s)

Grazing (Cooperative)

Refuge

Muleshoe National Wildlife Refuge

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

Muleshoe National Wildlife Refuge was established on October 24, 1935 by Executive Order 7214 for the purpose of acquisition “as a refuge and breeding ground for migratory birds and other wildlife.”

REFUGE PURPOSE(S):

1. Lands acquired under the Executive Order dated October 24, 1935 for the purpose of acquisition “as a refuge and breeding ground for migratory birds and other wildlife.”
2. Migratory Bird Conservation Act (16 U.S.C. Section 712d) established that the refuge is... “For use as an inviolate sanctuary...for any other management purposes... for migratory birds.”
3. Consolidated Farm & Rural Development Act ... “for conservation purposes...”(7 U.S.C.)

“For lands acquired under the Executive Order dated October 24, 1935, the purpose of the acquisition is, “as a refuge and breeding ground for migratory birds and other wildlife”.

For lands acquired under the Migratory Bird Conservation Act (16 U.S.C.,Section 715d) the purpose of the acquisition is” ...for use as an inviolate sanctuary, or for any other management purposes, for migratory birds.”

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. Grazing by cattle is an existing use on the refuge. This compatibility determination (CD) reviews and replaces the October 2018 CD for grazing on Muleshoe National Wildlife Refuge. What is the use?

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.

Is the use a priority public use?

No

Where would the use be conducted?

Grazing would be conducted on Muleshoe National Wildlife Refuge within the six designated grazing units. The current grazing units include 2,735 acres with units ranging from approximately 330 to 700 acres. Two of the existing grazing units would increase in size by an estimated 200 acres. Grazing units are established in areas that are suitable for this type of management and are delineated by barbed wire and electric fences.

When would the use be conducted?

Grazing- Primarily occurs from April through December. The frequency and duration of grazing will be based on site-specific evaluations of the grasslands under management and utilize the best available biological data.

How would the use be conducted?

Grazing will be administered under a Cooperative Agricultural Agreement (CAA). A CAA will include a commercial special use permit and details of operational requirements for grazing. A permittee would be selected through sealed bid. Successful bidder will be issued a special use permit for cooperative grazing. The refuge will determine Animal Units/cow herd size, and number of days per unit. Muleshoe would have six distinct grazing units, each delineated by barbed wire or electric fence. Each unit has stock tanks to provide a water source for cattle and wildlife. Grazing agreements will include location, Animal Unit Months (AUM), dates, and specific guidelines related to grazing. Grazing AUMs would not likely exceed 500 per year, some of which occurs in units that are also burned as another management tool. The (AUM) per grazing unit will be dependent on unit size, animal type, and type of forage available, as well as current management goals. An animal unit month is based on the age, class and size of livestock, and the amount of forage they will consume in one month. The refuge utilizes the Natural Resource Conservation Service's Web Soil Survey and past grazing efforts to help calculate the AUMs for each unit. Each unit has existing fence and watering facilities that are located within each unit. Fence and water maintenance during periods of grazing is the responsibility of the current cooperator.

Why is this use being proposed or reevaluated?

Grazing on Muleshoe is being reevaluated in order to add historically grazed areas back into the grazing program. Prior to 2004, approximately 4,466 acres were grazed periodically to maintain

vegetation levels. This reevaluation for the existing use of grazing includes the same number of grazing units. However, two of the units will be increasing in size to better manage grasslands on Muleshoe National Wildlife Refuge. This will provide the refuge with more flexibility in management options for the current grassland landscape.

We are planning to expand the Mulberry and Caswell Units. These units were established in 2004 under a Comprehensive Conservation Plan (CCP), which is under review, along with four other grazing units. Prior to the implementation of the CCP the entire refuge was grazed annually as a rotational grazing system. The CCP defined units as fire or grazing units to better manage the refuge grassland. Under the CCP grazing units could be burned under prescription, but fire units could only be burned, allowing for no grazing. During the 15 years of management under the CCP, the refuge staff noted that it appeared that the fire units' vegetation were degrading. The most apparent was that soils were loose and fewer desirable grasses and forbs were being observed. Soil compaction by hoof action is important to the succession of grasslands. Lands grazed can go without grazing for 5 to 7 years depending on conditions. Refuge staff monitor all units for management tools including prescribed grazing and fire. We are proposing to increase by 200 acres or about a 7 percent in total between the Mulberry and Caswell Units. Prescribed grazing and fire have shown to increase biodiversity when used in combination.

Cooperative agriculture is an indispensable management tool to restore the ecological diversity and habitat quality of refuge lands. These management activities are used to meet refuge goals and objectives that benefit grasslands health and restore habitat for migratory birds, pollinators, and other wildlife. Areas left unmanaged through rotational grazing can become dominated by single plant species and can lead to an overall lack of diverse plant species. Monotypic stands of alkali sacaton (*Sporobolus airoides*) or plains bristlegrass (*Setaria leucopila*) can outcompete other annual and perennial species of grasses and forbs.

Availability of Resources

Staff time is available for the development and administration of cooperative agricultural agreements (CAA) and commercial special use permits (SUP). Most of the work to prepare and plan will be done as part of routine habitat management and monitoring duties. Existing staff will monitor grazing activities to ensure compatibility and compliance. The cooperator is responsible for their own equipment, labor, and costs associated with managing their own livestock. Facilities installed primarily for refuge purposes are constructed or maintained at refuge expense if needed.

Table 1. Costs to Administer and Manage Prescribed Grazing

Category and Itemization	One-time Cost	Recurring Annual Expenses
Develop Plan/NEPA document/opening package	\$2,000	\$0
Construct facilities	\$0	\$0
Develop signage and brochures	\$400	\$400
Survey and post use area boundary	\$0	\$0

Category and Itemization	One-time Cost	Recurring Annual Expenses
Staff time (LE, administration and management)	\$500	\$800
Maintenance	\$0	\$500
Monitoring	\$0	\$500
Total one-time expenses	\$2,900	
Total recurring annual expenses		\$2,200
Offsetting revenues	-\$0	-\$0
Total expenses	\$2,900	\$2,200

Anticipated Impacts of the Use

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

The effects and impacts of the proposed use to refuge resources, whether adverse or beneficial, are those that are reasonably foreseeable and have a reasonably close causal relationship to the proposed use of cooperative grazing. This Compatibility Determination includes the written analyses of the environmental consequences on a resource only when the impacts on that resource could be more than negligible and therefore considered an “affected resource.” Resources that will not be more than negligibly impacted by the action, including geology, hydrology, air and water quality, threatened and endangered species, cultural resources, and socioeconomics have not been analyzed any further in this document.

Grazing is one of many tools used to meet the purposes of the refuge as well as the refuge system mission. This use can have both positive and negative effects on the surrounding ecosystem. Grazing can be used to create spatial heterogeneity in vegetation types, influence fire regimes, drive successional processes and control transitions of ecosystems between successional states (Hobbs 1996). To alleviate any negative impacts to the resource, grazing is administered through a rotational system to provide grazing units adequate rest before any more management is applied.

Short-term impacts

Grazing by domestic livestock has short-term impacts on grassland communities when managed correctly. Many of the impacts are desirable and designed to maintain the biological integrity of the grasslands. Impacts such as removal of standing vegetation and trampling of vegetation are necessary for grassland productivity and ecosystem health.

Grazing will decrease vegetative heights, litter depths, and affect plant composition. Short term impacts will depend upon the grazing timing (time of year), duration (length of graze), and the utilization level. Areas around watering systems, fence lines, and mineral blocks may experience heavy trampling and compaction of soil, which can result in mortality of perennial vegetation and establishment of early successional species. Overgrazing of wildlife habitat during drought conditions can normally be controlled seasonally by management practices such as minimizing cattle numbers, grazing rotation methods, or discontinuing grazing temporarily until conditions

improve. Sensitive wetland areas such as saline lakes and springs are excluded from the grazing program. Trails originated by livestock sometimes evolve into areas eroded by wind and water.

Grazing can also decrease migratory and resident bird species use of certain areas. Most bird species differ in their vegetative height preference, and some will temporarily avoid areas until they have adequately recovered. To mitigate these effects and promote a mosaic, with heterogeneity of vegetation species and height across the landscape, the refuge incorporates a rotational grazing program.

Long-term impacts

Continuing the current grazing program is projected to have positive benefits to uplands, threatened and endangered species, other wildlife and plant species, and socioeconomics. Grazing is not expected to have indirect or cumulative negative impacts to migratory birds, the viability of any fish, wildlife, plant populations, or other biological resources. Grazing is a part of this area's natural history needed to maintain biodiversity of grasslands (Collins 1998, Knapp 1999). If properly managed, grazing will not have any anticipated negative effects on the refuge.

The long-term effects of grazing on the refuge are minimized through a rotational grazing program. Grazing does not necessarily occur every year and not all units will be grazed at once. After a unit has been grazed it will likely not be grazed again for several years to allow for recovery and establishment of new plant communities that have been promoted by the disturbance. During periods of normal precipitation grazing units will recover to the same level or greater than before with new forb and grass species dominating the units. Disturbance of grassland habitats is essential to maintain plant vigor and reduce undesirable vegetation types.

Public Review and Comment

The draft compatibility determination will be available for public review and comment for 14 calendar days to provide comments following the day the notice is published. The public will be made aware of this comment opportunity through the Muleshoe NWR Webpage. A hard copy of this document will be posted at the Refuge Headquarters at 1531 County Road 1248 Muleshoe, TX 79347. It will be made available electronically on the refuge website www.fws.gov/refuge/muleshoe. Comments may be submitted electronically to r2_plancomments@fws.gov. 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 version.

Determination

Is the use compatible?

Yes

Stipulations Necessary to Ensure Compatibility

The refuge will implement the following stipulations to ensure that grazing remains a compatible use:

1. Grazing at the refuge will be managed in accordance with 620 FW 2, Cooperative Agricultural Use and the terms outlined in the Cooperative Agriculture Agreement
2. Evaluation of activities is conducted periodically to determine if impacts have become unacceptable, and if objectives are not being met.
3. The refuge conducts annual vegetation monitoring to determine the effects of the grazing program on grassland habitat and stocking rates. If evidence of unacceptable adverse impacts appears or objectives are not being met, the refuge manager reserves the right to modify stocking rates as necessary to meet refuge management objectives.

Justification

Numerous research studies have documented the beneficial impacts of carefully managed grazing on grassland habitat. Grazing by domestic livestock will directly benefit the refuge wildlife, plants, and their habitat long term through removal of standing vegetation. Grazing will help increase and maintain the biodiversity and integrity of the grassland ecosystem found on the refuge. The refuge will continue to monitor this use and adjust the program as necessary to protect and enhance refuge resources. The benefits of the grazing program, if implemented properly, are expected to outweigh associated impacts.

Therefore, through the compatibility determination process, the refuge has determined that grazing, in accordance with the stipulations provided above, is a compatible use that will not materially interfere with or detract from the fulfillment of the National Wildlife Refuge System mission or the purposes of Muleshoe National Wildlife Refuge.

Signature of Determination

Refuge Manager Signature and Date

Signature of Concurrence

Assistant Regional Director Signature and Date

Mandatory Reevaluation Date

2035

Literature Cited/References

Collins, S.L., A.K. Knapp, J.M. Briggs, J.M. Blair, and E.M. Steinauer. 1998. Modulation of diversity by grazing and mowing in native tallgrass prairie. *Science* 280:747-747.

Comprehensive Conservation Plan for Muleshoe and Grulla National Wildlife Refuges. July 2004.
<https://iris.fws.gov/APPS/ServCat/DownloadFile/1520>

Hobbs, N.T. 1996. Modification of ecosystems by ungulates. *Journal of Wildlife Management* 31:412-416.

Knapp, A.K., J.M. Blair, J.M. Briggs, S.L. Collins, D.C. Harnett, L. C. Johnson, and E.G. Towne. 1999. The keystone role of bison in North American tallgrass prairie. *BioScience* 49:39-50.

North Dakota State University NRCS Extension, 2018, November, Determining Carrying Capacity and Stocking Rates for Range and Pasture in North Dakota

USDA, National Resources Conservation Service, 2019, June *Web Soil Survey*.
<https://websoilsurvey.nrcs.usda.gov/app/>

Figure (1): Muleshoe NWR Grazing Units

