05-3172

Brookline Ranch
Ranch Management Plan

Introduction

This ranch is located in Cochise County, just west of the San Pedro River, about 5 miles east of Huachuca City. State Highway 82 divides the south pastures from the north pastures. The Babocomari River runs through the southern third of the largest pasture on the ranch.

The ranch is in Major Land Resource area (MLRA) 41-3, Southeastern Arizona Semi-desert Grasslands, 12-16 inch precipitation zone. Elevations range from a low of 3900 feet where the Babocomari River leaves the ranch to a high of 4250 feet on the west side of the ranch. The dominant ecological site is Limy Upland; however, there are several other important ecological sites. See Ecological Site map for details.

This livestock operation is a cow/calf operation with calves sold at weaning time and holding only replacement breeding stock. Under current management bulls are out year-long. The grazing leases are owned by Mike Hayhurst and his family - State Lease no. 05-3172, and BLM Lease no. 52080. The total acreage within the ranch boundary fence is estimated to be 12,936 acres. The State lands total 9,038 acres and the BLM lands total 1,816 acres, and the remaining 2,082 acres are privately owned. The Hayhurst family has 40 acres of deeded private land; some of the remaining private acres are under lease to the ranch. Of the remainder, most of it is grazed through informal use agreements between Mr. Hayhurst and the owners.

Mr. Hayhurst purchased this lease from Mr. Keeline in 1988. After he purchased the lease, the BLM acquired about 2 ¾ sections of land in an exchange with the Arizona State Land Department (ASLD) and the State of Arizona. The BLM agreed with the ASLD on all conditions in the State lease including the carrying capacity that was in effect prior to the exchange. The new lease with the BLM has a carrying capacity of 15 Animal Units (AU), or 180 AUM's. Included in the lease, a carryover from the original grazing lease with the ASLD, is an agreement to allow the cutting of wood for ranch maintenance use. The lease also has an agreement to use the access roads for ranch-related activities.

Since Mr. Hayhurst purchased the lease, the BLM uplands have improved to a good condition. The uplands on State Trust lands have an upward trend as determined both visually and by the 2 trend transects established in 2000.

Goals

The goal of the Brookline Ranch is to maintain a balance of cattle, vegetation, and wildlife on the land that allows each to thrive. Specific goals are:

1. To maintain a permanent, stable, and productive livestock operation which provides for efficient, sustained use of the forage crop.
2. To prevent any accelerated loss of soil, water, plant or animal resources.
3. To maintain or improve the condition of the soil, water, plant and animal resources on the ranch.
4. To maintain or improve the natural ecological processes.
5. To maintain or improve other human uses and quality of life on the ranch.

Objectives

General

1. Increase the forage diversity and production of the ranch
2. Continue the identified and measured upward trend of the upland ecological sites.
3. Maintain the economic viability of the ranch.
4. Maintain the calving percentage of the herd at 80-90%, and have replacement heifers calve at 2 years of age.
5. Through the ongoing management strategy, as outlined in this CRM plan, continue the documented improvement of the riparian corridor along the Babocomari River.

Specific

1. Vegetation Management
   a) Assure the physiological requirements for plant growth and reproduction are met for the following key forage plants:

Common Name	Scientific Name	Plant Symbol
Plains bristlegrass, slim tridens, sideoats grama	Setaria vulpiseta, Tridens mutica, Bouteloua curtipendula	SEVU2, TRMU, BOCU
Bush muhly, black grama, spike pappusgrass	Muhlenbergia porteri, Bouteloua eriopoda, Enneapogon desvauxii	MUPO2, BOER, ENDE
Big sacaton, alkali sacaton	Sporobolus wrightii, Sporobolus airoides	SPWR2, SPAI
Lehmann lovegrass	Eragrostis Lehmanniana	ERLE

   b) Limit the **average** utilization on key species to **50** percent of current year's growth.

Range Improvements

Current Range Improvements

Over the summer of 2000, Mr. Hayhurst completed several pasture fences that created his current pasture layout, and allowed him the flexibility to implement the grazing management that continues today.

Also, in the fall of 2000, 1344 acres of chemical brush management, aerially applied, were completed in parts of Pastures 3, 4, and 8. An additional 675 acres were completed in the spring of 2004 in Pasture 5.

In 2005 a new well plus solar pump, storage tank, and trough were completed in Pasture 5. This has allowed better distribution of grazing and more even utilization.

Proposed Range Improvements

An additional 750 acres of chemical brush management are planned for Pasture 1 in the spring of 2007. There is also a planned well for a new water source, along with water storage, a trough, and small wildlife-specific water.

Grazing Management

Numbers and Season of Use

Through the State, BLM, and private leases the base carrying capacity of the Brookline Ranch is **89** animal units (AU's), or **1063** animal unit months (AUM's). Although the informal use agreements with various private landowners are not a part of the official carrying capacity, there are an additional 13 AU's (156 AUM's) that are currently being utilized as part of the grazing strategy. As the ability to use these uncontrolled acres changes, these extra AUM's will be adjusted. The breakdown by land status is as follows:

STATE	**70**	**AU's**	**841**	**AUM's**
BLM	**15**	**AU's**	**180**	**AUM's**
PRIVATE	**0.5**	**AU's**	**6**	**AUM's**
PRIV. CONTROLLED	**3**	**AU's**	**36**	**AUM's**
PRIV. UNCONTROLLED	**13**	**AU's**	**156**	**AUM's**

As a comparison, the long-term **average** carrying capacity as calculated after a recent NRCS inventory of the ranch on an ecological site basis, is **106 AU (1277 AUM)** under present conditions. This is a result of several years of improvements, especially the brush treatments that have now had several years to develop. This inventory was completed in March 2006 and includes the private uncontrolled acres. When the proposed improvements are also in place and the remaining areas of brush management have also had a chance to fully respond and develop, the average carrying capacity estimate increases to **129 AU (1550AUM)**. This increase is based on extrapolating the documented long-term results of the 2000 brush treatments to both the 2004 treatment already in place, and the treatment planned for 2007.

Grazing System

General

The ranch is divided into eight pastures. A best-pasture, deferred rotation grazing system will be used. The operator will determine best pasture. Such variables as pasture ecological sites, pasture size, rainfall pattern, forage production and overall pasture readiness will influence where the cattle will be at any given time. Past and current season of use will also be accounted for when making next-best pasture decisions. Protection of the riparian and aquatic habitat of the Babocomari River will be given prime consideration, recognizing also the critical importance of the condition of the adjoining uplands. Typically, two pastures will

be grazed each year during the growing season (07/01-10/15), while the remaining pastures receive growing-season rest.

Specifics

- The Babocomari River runs through Pasture 6 (River Pasture). As part of the rotation, this pasture will be used at any time of the year; however, it will rarely be used from late May through mid-September. It will be grazed during some part of these months every 4th year or so.
- Pasture 7 (Northeast Pasture) is particularly well-suited to summer grazing. For the past 17 years, after summer growth is well-started, it has been grazed for much of the growing season for 2-3 years in succession and then rested completely for an entire summer. This pattern will continue.
- The remaining pastures, most of which contain the brush treatments, are rotated so that typically 1 or 2 of them are used during the spring and part of the summer growing seasons; occasionally a pasture will be grazed for the entire summer growing season as part of the changing of season of use.
- As conditions allow, 1 or sometimes 2 of these pastures is also given extended rest by being left out of the rotation. This management strategy allows Mr. Hayhurst to build a reserve of unused forage.

Salting / Supplemental Feeding

There is very little supplemental feeding, except during extended periods of dry forage as a result of poor precipitation. On occasion range protein block or tub molasses licks are made available. Salt blocks and supplements are put a minimum of ¼ mile from the waters, typically on the uplands and hills.

Management Flexibility during drought and/or other unforeseen circumstances

A conservative stocking rate, combined with management for a forage reserve, has allowed Mr. Hayhurst to comfortably get through 1-2 poor growing seasons. He reduces cow numbers and adjusts his typical numbers of heifer retention in response to extended drought conditions. At the end of each summer growing season the year's forage production is estimated and numbers are adjusted accordingly.

Monitoring Studies

Key Areas

There are 2 permanent pace-frequency monitoring transects that were established in 2000. Each of them is in one of the brush treatment areas; they were read for 4 years consecutively (2000-2003), and again in 2005. Data from these transects is used to make management decisions for several ranch pastures.

Mr. Hayhurst wants to establish similar monitoring in Pasture 6 (River Pasture), on the uplands out of the river corridor. This is scheduled for the fall of 2007. He also wants to establish photo-point monitoring locations in the river corridor itself, and in the sacaton swales in Pasture 7 (Northeast Pasture). The photo-points will also be established in 2007.

Key Species

For Transect 1, the key species are the native perennial grasses on the site; plains bristlegrass, bush muhly, spike dropseed, and spike pappusgrass. For Transect 2, they are plains bristlegrass, bush muhly, slim tridens, and spike pappusgrass.

When Transect 3 is established, the key species will also be the perennial native grasses; species such as sideoats grama, black grama, and slender grama can be expected.

Methods and Responsibilities

1. Actual Use
   The lessee will record actual use data throughout the year showing when, where, and how many livestock used the ranch during the grazing year.
2. Climate
   Rainfall records will be provided by producer. These records are gathered by a USDA remote sensing station at the ranch headquarters.
3. Utilization
   Utilization on key grass species will be measured using the grazed-class photo method. Utilization on shrub species will be measured using the same method. Utilization will be measured by the producer, with assistance from NRCS and the ASLD.
4. Trend
   Trend in rangeland condition will be measured using the Pace Frequency Method. Photographs will be taken at each trend location. General views of the site may serve as the appropriate photo recordation of trend. Trend data will be collected by NRCS, ASLD, BLM, and the producer (Agency personnel will participate as available).

Timetable for Data Collection

Transects 1 and 2 are already established and are on a cycle of reading them every 2 years. Normally they would be due for reading again in 2007, but the next reading has been re-scheduled for 2008. Transect 3 and the photo-points will be established in 2007 and read again in 2008 and 2009. Thereafter they will be read every 2 years. When this pattern is established, it will allow annual monitoring but not of all transects.

Specifically, the photo-points at Key Areas # 4 and # 5 will be photographed twice a year, as close to the same dates each year as possible so that the same points in the growing seasons are captured. The spring photograph period will be April 1-15 while the late summer photograph period will be September 1-15. The new pace frequency transect at KA # 3 will be established and subsequently read during the late summer-early fall period, typically between September 15 and November 1. This same time period will also apply to the transects already established

Location of Key Areas

KA	Pasture # and Name	Ecological Site	Location (UTM coordinates)
#1	#3 - Bull Trap	Limy Upland	0569770 e 3508903 n
#2	#4 - Highway	Limy Upland	0571206 e 3509659 n
#3	#6 - River	Shallow Upland	TBD
#4	#6 – River (photo-point)	Sandy Bottom, Sub-irrig.	TBD
#5	#7 – Northeast (photo-point)	TBD	TBD

Evaluation and Revision

A review of the plan will be conducted each year in cooperation with the rancher, the NRCS, the ASLD, and the BLM. This review will typically be at the time of monitoring in the fall of each year, and the records of actual use data and rainfall data will be updated. Data collected from the monitoring sites will be used to aid in management decisions.

Concurrence

Accepted by:

Producer — Date: 11/20/06

State Land Commissioner - ASLD — Date: 1/29/07

Range Resource Area Manager - ASLD — Date: 2-6-2007

NRCS Conservationist — Date: 16-Nov-2006

BLM Manager — Date: 12/4/06

APPENDIX AND LIST OF ATTACHMENTS

1. Selected ranch photographs
2. Conservation Plan map
3. Ecological Site map (topo and aerial photo views)
4. Grazing Distribution map
5. Monitoring report
6. NRCS carrying capacity calculations, by pasture (present and future conditions)
7. NRCS specification sheet for Prescribed Grazing

Customer(s): MIKE HAYHURST
BROOKLINE RANCH

Conservation Plan Map

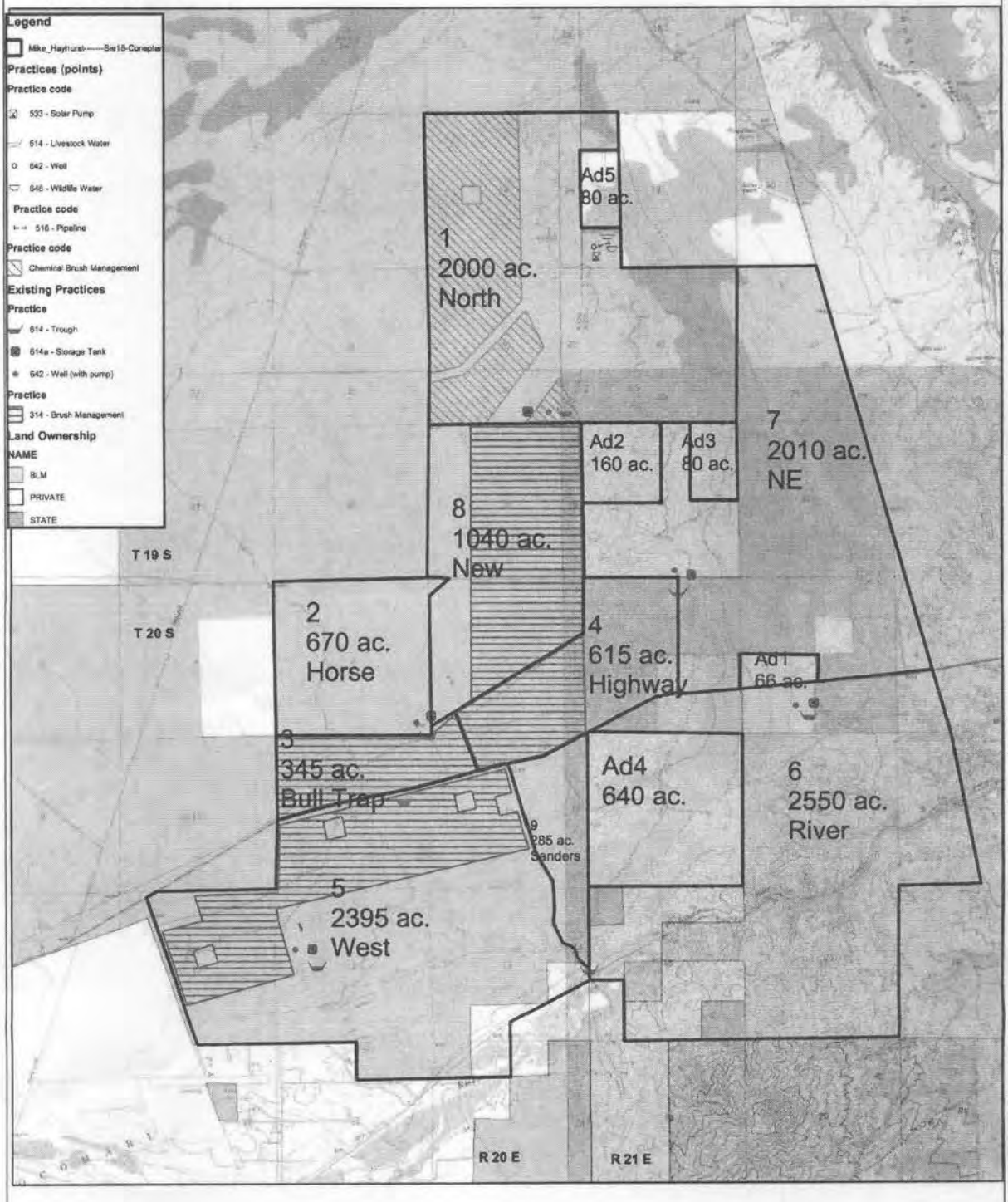
Agency: USDA-NRCS

District: HEREFORD NRCD

Field Office: DOUGLAS SERVICE CENTER

Approximate Acres: 11910

Assisted By: Art Meen



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