

Dry Camp Ranch

Coordinated Resource Management Plan

Agency Cooperators:

USDI – Bureau of Land Management (USDI-BLM)

USDA – Natural Resource Conservation Service (USDA-NRCS)

Introduction

Dry Camp Ranch is located approximately 8 miles northwest of Klondyke on the north side of Aravaipa Canyon. The ranch is bordered on the north by the San Carlos Indian Reservation and by the Trails End Ranch on the west. The BLM Hellhole Allotment #4528 and the Cross F Ranch (BLM Aravaipa and Aravaipa South Allotments #4522 and #4521) bound Dry Camp Ranch on the south and east respectively. Elevation on the ranch varies from 3600 feet in the eastern portion to 4600 feet in the north. Four major canyons, Horse Camp, Booger, Paisano and Hell Hole, dissect the ranch and drain into Aravaipa Canyon. Hilly ridges between these drainages end in bluffs that make up the northern canyon walls of Aravaipa Canyon.

The ranch is in Major Land Resource Area (MLRA) 38, Mogollon Transition, Land Resource Unit (LRU) 38-1 Arizona Interior Chaparral, and 41-3, Southeastern Arizona Basin and Range, both are within a 12-16 inch precipitation zone. The dominant ecological site is Volcanic/Metamorphic Hills with its characteristically diverse mixture of desert trees, shrubs, succulents, forbs, and grasses. Other ecological sites are present playing a role in hydrology, vegetation, and livestock production on the ranch. See the Ecological Site Map for details.

This livestock operation is a cow/calf operation with calves sold at weaning time and replacement breeding stock held back. The livestock herd is slowly being increased from very low, drought impacted numbers. Herd numbers are still below what is needed for the ranch economically. Under current management, breeding season is April through October, calving begins in January, and weaning and shipping occur in October. The rancher currently uses a next-best pasture grazing scheme. The total acreage within the ranch boundary fence is estimated to be 12,839 acres (12,759 acres permitted from the BLM, and 80 acres deeded). Kathy Sergent took over ownership and management of the Dry Camp Ranch in 2004. See Appendix A for the complete ranch history overview.

Coordinated Plan Participants

Dry Camp Ranch –	Kathy Sergent (Ranch owner)
USDA-NRCS Safford Field Office –	Wilma Renken, Rangeland Management Specialist
USDI – BLM Safford District –	Amy Humphrey, Rangeland Management Specialist
Mark Pater – Fire ecologist	Lathe Evans – AFMO – Safford Field Office
Dan Quintana – Fuels Mgt Spec.	RJ Estes – Engine foreman

Goals & Objectives

The overall goal for Dry Camp Ranch is to improve or maintain current condition of rangelands while providing an economically sustainable resource for the livestock operator. Issue specific goals and their objectives are discussed below. Goals and their resultant objectives were designed to balance desired future condition of rangelands with economic sustainability for the ranching operation.

1. **Issue:** **Brush encroachment** - White thorn, cholla and prickly pear have become problem species on approximately 300 acres in the Paisano Pasture and about 150 acres in Chet and Big Tank Pastures. Prior livestock management and drought weather conditions transitioned the vegetation community toward domination by shrub and cactus species. Due to the present ecological state of these areas, a management "push" is needed to bring about a reduction in the high shrub and cactus density. Present livestock management is not currently adding to brush domination on these sites. Livestock use in the Paisano Pasture is winter-use only and the Chet and Big Tank pasture brush encroachment areas are near waters with historically heavy livestock use. Measures to control livestock use at these waters are addressed in Issue 2 below.

Goal: Increase the perennial grass component and decrease the shrub and cactus component on identified sites.

Objective to reach Goal: Implement a coordinated (BLM, NRCS, and rancher) chemical brush management project to control cholla, prickly pear and white-thorn acacia on 450 acres in Paisano, Chet and Big Tank Pastures. NEPA for chemical treatment along with a Pesticide Use Plan (PUP) for the BLM Safford Field Office as a whole is in development. In addition, BLM is in the process of developing a prescribed burn plan for the Aravaipa area as a whole. When fuel loads are adequate as a result of winter precipitation and/or the resultant conditions of chemical treatment, fire will be used as a brush management tool. Development of the prescribed fire plan will allow for the allotment to be burned in portions on a "loose" schedule that will be dependent on current weather conditions and past precipitation variables. The NEPA, PUP and burn plan will be attached to this plan in Appendix B. for sign off upon completion. Implementation of this objective should take place in 2009 and 2010.

1. **Issue:** **Watering facilities** - currently all pastures on the ranch have viable year-long sources of water. However, disparate livestock use patterns in Black Canyon, Big, Windmill, Chet and Paisano Pastures show areas of non-use while native perennial grasses in areas around livestock waters are historically overused. A wildlife – human interaction is unavoidable at the headquarters because bighorn sheep regularly water in the horse corral; this interaction may put the bighorn at risk of contracting domestic animal disease. In order to make the best use of these pastures, to facilitate recovery of heavily used areas and reduce wildlife-human interaction, development of new waters and fencing of existing waters is needed.

Goal: Develop and maintain livestock watering facilities (pipelines, storages, troughs) to provide water sources in currently un-watered areas and control livestock access to existing waters.

Objectives to reach goal:

- Construction of a solar pumping plant in the Windmill Pasture along with a pipeline, 5,000 gallon storage tank and three drinkers was completed in 2007. These new facilities provided permanent alternate water sources in Windmill, Chet and Big Tank Pastures.
- Construct fence-line around selected dirt tanks (Jackson, Haught, Big, and Double) to control livestock use levels during the grazing period. Livestock can be driven to less used areas of the pasture with an alternate water source when utilization levels reach the threshold (60% - to be determined by ocular methods). Fences around the water lots will be constructed to wildlife friendly specifications so wildlife will have free access to waters at all times, regardless of livestock management needs. When livestock are not in the pasture, water lot gates will be opened. This objective will be implemented in the fall of 2008.
- Water will be developed in the Black Canyon Pasture. Currently livestock and wildlife are dependent on water from developed springs in this pasture and waters at the headquarters. A well will be drilled on private lands and piped to a storage and drinker on BLM lands in Hell Hole Canyon. In addition, a big horn sheep drinker will be installed on the private lands above the headquarters. Currently big horn sheep water at the cattle and horse troughs near the house. This water will reduce big horn sheep/human interaction and provide them with a permanent water source close to their preferred habitat. This project is currently delayed from lack of a well driller. Probably implementation in 2009.
- See Conservation Plan Map for locations of existing and planned watering facilities. The BLM NEPA document for fencing of waters and installation of new waters can be found in Appendix B.

2. Issue: Herd Management – portions of interior and boundary fence on the allotment are in a state of disrepair. In order to manage livestock effectively fences obviously need to be in working order. In addition, a new pasture is needed in the lower portion of the ranch to manage the herd effectively. Currently, livestock tend to congregate in “favorite” areas in the Paisano Pasture. Creation of a new pasture (Twin Tanks Pasture) will force livestock to use areas that are currently lightly used or not used at all. This new pasture will also aid in achievement of the goal for Issue 1 above by allowing one lower pasture to receive year-long rest once every two years facilitating brush control treatment measures.

Perhaps the most important component of a good working CRM plan is the portion developed for herd management. Development of a threshold driven herd management plan is essential for success in achieving both the economic and multiple resource goals for the ranch.

Goal: Create a timeline to replace or repair all fences on the ranch that are integral to livestock herd management. Build fence to split the Paisano Pasture into two units.

Objectives to reach goal:

- Replace the downed fence line between Paisano and Twin Tanks Pastures. Most of the fence will be 4 strand barbed-wire fence with 3-strand electric fence constructed within the Wilderness boundary.
- Methodically replace boundary and interior pasture fences so the livestock herd can be effectively managed. Financial assistance will be sought from NRCS Environmental Quality Improvement Program (EQIP) and BLM (8100 funds) for

the interior pasture fences and the Arizona Dept of Agriculture – Livestock & Crop Conservation Grant Program (LCCGP) for the boundary fences.

- Implement a prescribed grazing schedule (traditional deferred-rotation) for 3 years (2009-11). Livestock actual use record keeping, vegetation monitoring (utilization in June, trend in October), and rainfall record keeping will be implemented and maintained. Yearly analysis of these records will assist in making future management decisions regarding ranch management, especially in applying a “flexible herd number” drought strategy.

Ranch Inventory

Soils

Soils were mapped in the “Eastern Pinal and Southern Gila Counties, Arizona” soil survey (AZ661) and Graham County, Arizona, Southwestern Part (AZ673). Currently the survey AZ661 mapping is in the final review and will be publicly available next year. Survey AZ673 is available.

Soil site stability (rangeland health attribute) is a concern across the ranch with exposed bare areas, rills, water flow patterns and terracettes being more prevalent than expected on most ecological sites. Erosion areas of concern are largely associated with roads. These areas near Chet Tank and Big Tank express increased rill development. *The BLM will address these areas using small rock dams when labor and money is available.*

Water

Most of the ranch is watered by dirt tanks (all pastures) and springs (Black Canyon Pasture). During one flood event in 2007, most dams breached. The rancher was able to use NRCS and BLM assistance to acquire emergency funding to rent a dozer for dam repair on Double, Big, Jacks, Chet, Trap, Jackson and Haught tanks. In 2008, the water diversion for Big Tank was cleaned out and repaired and the last breached dam at Dirt Tank was repaired.

New construction of a solar pumping plant (Windmill Pasture), pipeline, 5K gallon storage tank, and 3 drinkers was completed in 2007. These new watering facilities provided a reliable water in Windmill, Chet Tank, and Big Tank Pastures.

A planned water improvement project is located in Black Canyon Pasture (see #2 in the Goals and Objectives section above). This project is currently delayed because of the availability of a well driller.

See Conservation Plan Map for locations of existing and planned watering facilities.

Air

Air quality and/or quantity are not problems on the Dry Camp Ranch.

Plant

The ecological sites on the Dry Camp Ranch were initially mapped using ecological site correlation to the soils mapped in the "Graham County, Arizona, Southwestern Part" soil survey (AZ673) for the eastern third of the ranch. Ecological sites for the remainder of the ranch were field mapped and verified by comparison to draft soil survey information. Vegetation production for each ecological site was estimated (ocular) in an area representative of the site; rangeland health (ver. 4) was evaluated within the same area. Production estimates (#/acre by species) were used to calculate a Similarity Index (SI), how closely current species richness and productivity relates to a Historic Climax Plant Community. Data sheets and Ecological Site maps are presented within the plan folder. See Appendix.

Animal

Installing additional water sources and implementing a grazing system will benefit the animal component by supplying the water needed to spread grazing pressure out over pastures and allow livestock to graze the ranch more efficiently. Changes in management will rehabilitate historic livestock overuse areas in addition to making more forage available to livestock. Installing wildlife friendly watering facilities in these pastures will also provide reliable year round water sources to mule and white tail deer, javelina, mountain lions, bears, bats, birds and other wildlife.

The current grazing system is a next best pasture system. With this system, pastures are used as needed. Under this grazing system some pastures may get used more than others as rainfall or forage conditions warrant.

Human

Economically, the Dry Camp Ranch is not meeting its goal. The mid 2000's drought dramatically affected rangelands in the area. In 2003, 2004 and 2005 Dry Camp Ranch livestock numbers were severely cut due to drought. The ranch has been gradually restocked since 2006 under favorable precipitation conditions but is still not at permitted numbers. Monitoring and grazing management goals in this plan will help the coordinating partners arrive at a correct "drought stocking rate" for this ranch that will help the ranch achieve its economic goals.

Human activity in Southeastern Arizona is well-documented. Cultural resources (isolated objects and/or archeological sites) on the ranch are sparsely scattered. All soil-disturbing practices will be surveyed prior to installation and sites will be avoided as necessary. (see EA)

Resource Concerns

Table 1. Resource concerns identified on Dry Camp Ranch, 2008.

(summarized from "Arizona Resource Concerns & Quality Criteria Assessment" worksheet, Field Office Technical Guide, Section III, USDA-NRCS, February 2006.)

Resource Concern	Description
1 Soil Condition - Rangeland Site Stability	Moderate – Extreme departure from expected in areas in Paisano and Big Tank Pastures.
2 Water Quantity - Rangeland Hydrologic Cycle	Moderate departure from expected in Paisano, Chet, and Big Tank Pastures.
3 Plant Condition - Productivity, health and vigor	Similarity Index is below 40 in Chet, Big Tank, and Paisano Pastures.
4 Plant Condition – Noxious and invasive plants	Cholla and catclaw dominate vegetative community in Paisano Chet and Big Tank Pastures
5 Fish and Wildlife - Inadequate Food	Cholla and acacia dominance of plant communities within Chet, Paisano, and Big Tank Pastures reduces wildlife food. See BLM NEPA
6 Fish and Wildlife - Inadequate Cover / Shelter	Cholla and acacia dominance of plant communities within Chet, Paisano, and Big Tank Pastures reduces wildlife cover. See BLM NEPA
8 Fish and Wildlife - Inadequate Water	Water for wildlife is limited. See BLM NEPA
9 Domestic Animals - Inadequate Stock Water	Water distribution on ranch is inadequate. Partially solved with EQIP07 contract.

Alternatives and Decisions

Table 2. Alternatives, descriptions and estimated costs proposed to address the Identified Resource Concerns.

Alternative	Description	Estimated Project Cost

Prescribed grazing & fence	Prescribed grazing (PG*) using control of water to move cattle within large pastures. Fence will be constructed around selected stock tanks (Double, Haught, Jackson, Big). Fence line replacement of old, expired fences needs to be scheduled for long-term success of grazing management. *PG options = agreed upon livestock #'s and rotation schedule, rainfall record keeping, livestock actual use records, utilization records, annual frequency monitoring	PG = up to \$ 10K/ ac (labor costs mgt) Fence 4 strand barbed = \$4 / ft Fence electric wire = \$1.50 / ft
Grade Stabilization (Rock Check Dams)	Areas around Big and Chet's Tanks have active rill / gully erosion. Rock dams constructed at designed intervals will slow flowing water to control erosion. Areas within Paisano Pasture were also identified. All areas of persistent erosion are associated with roads.	\$60 / cu.yd
Prescribed burning	Catclaw acacia, Cholla, and prickly pear and dominance in Paisano, Chet and Big Tanks Pastures would be controlled by returning fire to ecosystem. BLM would prescribe and manage fire scheduled hopefully for 2009, 2010.	BLM
Brush Management	Chemical brush management - to control catclaw acacia, cholla and prickly pear in Paisano, Chet and Big Tank Pastures.	\$55 / ac Consult with certified chemical applicator / representative for specific chemical treatment method.

Table 3. Alternatives proposed, resource concerns they address, and decisions made

ALTERNATIVE	Prescribed grazing & Fence	Grade Stabilization (Rock Dams)	Prescribed Burning	Brush Management - Chemical
CHECK IF SELECTED / Year?	<input checked="" type="checkbox"/> 2009	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> 2009-11
Practice type*	Practice & Facilitating	Practice & Practice	Practice	Practice
Ranch Resource Concerns	(Checked boxes indicate that the practice solves at least one resource concern)			
Soil Condition - Rangeland Site Stability	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Water Quantity - Rangeland Hydrologic Cycle	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Plant Condition - Productivity, health and vigor	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Plant Condition - Noxious and Invasive Plants	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Domestic Animals - Inadequate Stock Water	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Planned Grazing Management

Grazing System

See Appendix D – Prescribed Grazing Alternatives.

Herd Health Management

Salt (mineral) and protein supplementations will be placed in areas away from corrals, tanks and troughs. The rancher will use these supplements as a tool to spread grazing distribution away from these areas.

The rancher vaccinates and maintains her own pest management regime. Calves are vaccinated ("7-way") during branding. Insects and skin infestations are treated as needed.

Drought Strategy

The rancher is currently implementing a drought strategy of herd reduction. The ranch is currently stocked at a conservative level, herd numbers have been increased as conditions have allowed.

Participants in this plan will use rainfall data and past utilization levels (see below) to determine a need and timing for changes in herd number. For example, when managing a constant herd size and grazing period, utilization levels reflect annual rainfall / forage production; during high rainfall years, use will be light and during low rainfall use will be heavy. Comparatively the goal is to maintain a fairly consistent harvest of forage at a moderate level. An indicator of a need to reduce numbers will be two consecutive years of heavy use *regardless of current rainfall* (a 3rd consecutive year will have detrimental effects on perennial grasses); conversely, two years of light use may be an indicator to increase herd size. These decisions will be supported by long term monitoring studies.

Monitoring Studies

General

A multi-faceted monitoring approach will be used to evaluate grazing management effects over time. Key areas, paired with rangeland monitoring methods, will evaluate changes on the ground. Rainfall and livestock-use record keeping will support analysis of rangeland monitoring.

A very important task will be the establishment of short-term and long-term management goals for each key area. For example, "at Key Area 1 the management goal is to increase litter cover by 3% in 5 years" or "at Key Area 1 the management goal is to decrease fetch by 2 inches in 5 years". These Key Area Objectives will be developed on-site, WRITTEN DOWN, and evaluated during fall monitoring.

Key Areas

Key grazing areas, sites about the size of a football field that encompass a single ecological site will be selected in the main herd pastures (1 per pasture) to represent the dominant ecological site within a pasture. These areas will be chosen as being representative of the forage base (ie. species, production) in the pasture as a whole. Other key areas, but not necessarily key for changes across the pasture, will be selected as desired to evaluate changes in:

- 1) changes in livestock use after watering facilities are installed
- 2) changes in areas with no livestock use after waters are installed
- 3) Areas impacted by outside events such as the pipelines or flood events

Objective: select relatively small areas that reflect land management

Key Species

Key forage species for each monitoring method will be identified and evaluated as needed, key species for monitoring will be determined on site.

Methods, Objectives and Responsibilities

1. Planned Use (AUMs available) & Actual Use (AUMs harvested)

The rancher will record actual use data. For each pasture used, data recorded will show livestock number and kind (bulls, cows, calves) and dates the pasture was grazed. Actual use information will then be compared to the planned use for each pasture. Production clipping ($10 \times 0.1 \text{ ft}^2$ frame or $5 \times 9.6 \text{ ft}^2$ frame) will be made during fall monitoring to achieve a broad estimate of AUMs available.

Purpose: Balance forage harvest with production.

2. Rainfall

Rain-gauges will be installed at Key Grazing Areas and read at least 4 times each year (suggested timing would be during solstices and equinoxes). Quarterly recordation provides a record of seasonal rainfall amounts. Rainfall records will be used to support or dispute drought management decisions and trend data.

Purpose: Support decisions using short- and long-term precipitation records.

3. Utilization

Understanding utilization levels (slight, moderate, heavy, etc) is useful in making decisions regarding the management of a livestock – forage balance. Repeated heavy use on key forage species will lead to a decline in those species' vigor and production.

Utilization levels will be estimated either when the livestock are soon to be removed from a pasture or from all main herd pastures at the end of the grazing year (ie. June). Utilization will NOT be evaluated during the summer growing season but rather general estimates may be made for livestock move decisions. Utilization will be estimated using a step-point, key species method by the livestock producer along with NRCS and BLM personnel.

Purpose: Support decisions using short- and long-term records.

4. Trend

Trend in rangeland condition will be measured using the Point Cover, Pace Frequency, Dry Weight Rank and repeat photography. Additional methods such as FETCH may be paired with pace frequency as supporting data. Trend monitoring data will be collected in the fall at the time of peak standing biomass (Rancher, NRCS, and BLM).

Purpose: Data collected will analyze whether Key Area Objectives are being met and will support management decisions.

Current Study Locations* (Pace Frequency only):

Plot 1 – T.5S., R.19E., Sec. 31, SE $\frac{1}{4}$ SW $\frac{1}{4}$

Plot 2 – T.6S., R.18E., Sec. 2, NE $\frac{1}{4}$ SE $\frac{1}{4}$

Plot 3 – T.5S., R.18E., Sec. 35, NW $\frac{1}{4}$ NW $\frac{1}{4}$

Plot 4 – T.6S., R.18E., Sec. 9, NW $\frac{1}{4}$ SE $\frac{1}{4}$

*These trend plot locations were established in the 1980's when the ranch was managed under a "Savory System". Pictures will continue to be taken at these locations but these Key Area locations are not adequate for the changed management on the ranch. New Key Areas will be established in Fall/Winter of 2008.

Table 4. Responsibility and Timeline for Monitoring Methods, Dry Camp Ranch

	Responsible			Timeline		
	Rancher	NRCS	BLM	Initial	Quarterly	Annual
Use Records	X				X	
Key Area	X	X	X	X		
Utilization	X	X	X			X
Rainfall	X				X	
Trend	X	X	X			X

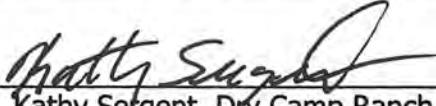
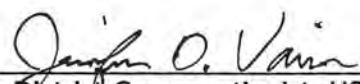
Table 5. Suggested timeline for pace-frequency monitoring in main herd grazing pastures, Dry Camp Ranch. 2008. Note: ranch review or other methodologies may be applied during years that pace frequency is not applied.

Transect	Year													
	'08	'09	'10	'11	'12	'13	'14	'15	'16	'17	'18	'19	'20	'21
1	X	X	X				X			X			X	
2	X	X	X				X			X			X	
3				X	X	X			X			X		
4				X	X	X			X			X		

Evaluation and Revision

A review of the plan will be conducted each year in cooperation with the producer. Data collected from the monitoring sites will be written up in report form and will be used to aid in management decisions.

Concurrence

 Kathy Sargent, Dry Camp Ranch	<u>11/14/08</u> Date
 Rangeland Management Specialist, USDA-NRCS	<u>11/14/08</u> Date
 Rangeland Management Specialist, USDI-BLM	<u>11/14/08</u> Date
 Official BLM Signer, USDI-BLM Asst Field Manager Renewable Resources	<u>11/14/08</u> Date
 District Conservationist, USDA-NRCS	<u>11/26/08</u> Date

APPENDIX A: Ranch History Overview

Prior to European settlement, in what is now Southeastern Arizona, cattle brought into Mexico by the Spaniards may have either migrated north to the San Pedro-Aravaipa area or been introduced through Indian trading networks. Documented incidents during the 18th century indicate cattle were trailed to the Aravaipa area by Apaches. Although cattle numbers are speculation, there were probably several thousand head spread throughout the Aravaipa and San Pedro Valleys during this time period.

The end of the Mexican Period (1821-1854) marked a period of expansion and settlement by Anglo-Americans. During this time the most northerly documented sightings of wild cattle were near the Tres Alamos Empresario Grant, several miles south of Aravaipa Creek on the San Pedro. After this period, during the years between the Gadsen Purchase in 1854 and the end of the Civil War, Apaches hindered Mexican and Anglo attempts to establish a cattle industry. As a result area ranges remained largely un-stocked. This situation changed in the mid 1800's when the U.S. Army established 13 new posts in Arizona (1863 – 1870). Along with protection from the Indian threat came a large demand for beef from the newly established Army posts. There was also an added need for beef from Indian Reservations that were being established both during and after this time period. Beef was supplied to the Army and the reservations by beef contractors who shipped cattle into the area. But by the early 1870s, army beef contractors and area residents began to establish breeding herds. Early ranches operated according to an open range system in which a rancher purchased or homesteaded small pieces of private land to acquire grazing access to the surrounding public domain. Under the open range system, cattle "managed themselves", travelling at will to wherever the rain had fallen, the feed was best and there was available water. By unspoken agreement, the rancher who controlled the water sources held the right to graze his cattle on the adjacent range. Arizona Department of Water Resources records indicate that many springs in the Aravaipa area claimed priority use from before 1900. As early as 1884, ranchers had pre-empted every permanent water spot in southern Arizona. During this time ranchers focused on cattle quantity over quality, selling cattle by the head rather than the pound. Ranchers never sold calves, almost never sold yearlings and frequently held steers over until three or four so they would range fatten and bring higher prices paid for cattle over 800 pounds.

Dan Ming was an army scout, chief of police at San Carlos and beef contractor turned rancher. He and his half brother Elias Jones established the T-Rail Ranch which encompassed what is now the Dry Camp Ranch. At its height, the T Rail was a huge livestock operation, extending from Klondyke to the San Pedro River and from the Mineral Strip to the Galiuro Mountains. Within T-Rail domain were dozens of small homesteads, with many of the homesteaders working for T-Rail at least on a part time basis. Elmer Gardendeizer, who homesteaded the Dry Camp Ranch, was a T Rail cowboy. Cattle numbers on the T-Rail varied from 2,000 to 5,000 head, fluctuating with the ranch's different owners, range conditions and market prices. Ming and Jones sold the ranch at the turn of the century to Joe Pencil, Bras Wooten and J.N. Porter. They were followed by Owen and Drew Wilson, who lost large numbers of livestock in the 1918-1921 drought. The Wilsons lost then lost ranch in the subsequent recession and

slump in cattle prices. In 1925, C.C. Albright of Los Angeles bought the ranch in a sheriff's sale. In 1927, E.L. Campbell, an associate of Albright's bought the ranch. While all of the previous ranch owners had filed water rights claims, Campbell was particularly active. Claiming rights prior to 1905 or "from first time of settlement", Campbell filed on a number of widely dispersed water sources including many on Dry Camp and surrounding ranches. By filing on the various water sources he established the "official" T-Rail right to use the adjacent range. In 1929 the T-Rail ranch was broken up. Campbell advertised in the newspaper that portions of the deeded land, lease lands and range rights were for sale, "at a price that cattle or goat men should not overlook". At the time of the T-Rail sale, foreman Sam White was placed in charge of gathering approximately 5,000 head of T-Rail cattle. The T-Rail land sale gave local Aravaipa ranchers the opportunity to buy larger land parcels, enabling many of them to stay in business for another 40 years. Prior to the sale date, area ranchers held a meeting to determine the T-Rail division, with each rancher attempting to purchase the portion nearest his home ranch. Jim and John Sanford bought the Dry Camp Ranch, Ed Haskins bought the west end, which eventually became Joe Flieger's Painted Cave Ranch; the Claridges bought the east end; Fred Upshaw bought the north portions, Lupe Salazar the south end; and Wyley Morgan bought the portion in Four Mile Canyon.

In 1923 Jim and John Sanford bought grazing rights to Dry Camp for \$150.00. The brothers were the first individuals with recorded grazing rights in this area. With the breakup of the T Rail Ranch, Jim and John obtained the water rights for the area. They also purchased some land from Toad Haggard on the Mineral Strip. Their interest in this land was returned to the Indian Reservation in 1969. In 1948 Duard Sanford acquired a 1/2 interest in the Dry Camp Ranch. With the death of his parents in 1972, Duard acquired the other 1/2 interest. During the period the Sanfords had the ranch, they ran approximately 250 head of Hereford cattle with pure bred Hereford bulls and carried over the calves until they were yearlings and sold them in the spring. In the dry years they hauled cotton trash from Safford to supplement the cattle.

In 1976 Duard sold the ranch to Johannes VonTrapp who quickly sold to Wells and Cal Allred from Willcox. In 1984, a 10 pasture cell was installed on the majority of the ranch. In 1986 a land exchange between the State of Arizona and the Bureau of Land Management occurred and with the exception of 80 private land acres, the ranch became entirely public land.

Fred Decker bought the ranch from Calvin in 1990. He realized he could not sustain the 400 head herd that Calvin had, and the BLM cut the permit to 300 head year round. Fred abandoned the savory system in 1994, and began a rest-rotation program with five pastures instead of ten. He also replaced the electric fences with standard barbed-wire fence. After several years of drought the permitted number of head was reduced to 233 head year-round. Fred died on the ranch in 2003. Kathy Sergent, Fred's widow and lion tracker, became the ranch owner / manager in 2004.

During the period of open-range ranching (which is defined as the period from early Anglo-American ranch development through the range reform period when ranges were fenced and the Taylor Grazing Act was implemented and state and national forest policies were instated) three episodes of drought (1885-1890 intermittently until 1903; 1918-1921; and 1933-1934) had a significant impact on the area's rangelands. Drought

years ranked from worst to least are: 1955-1964; 1896-1905; 1942-1951; 1994-2003; 1968-1977.

APPENDIX B: NEPA - ATTACHED

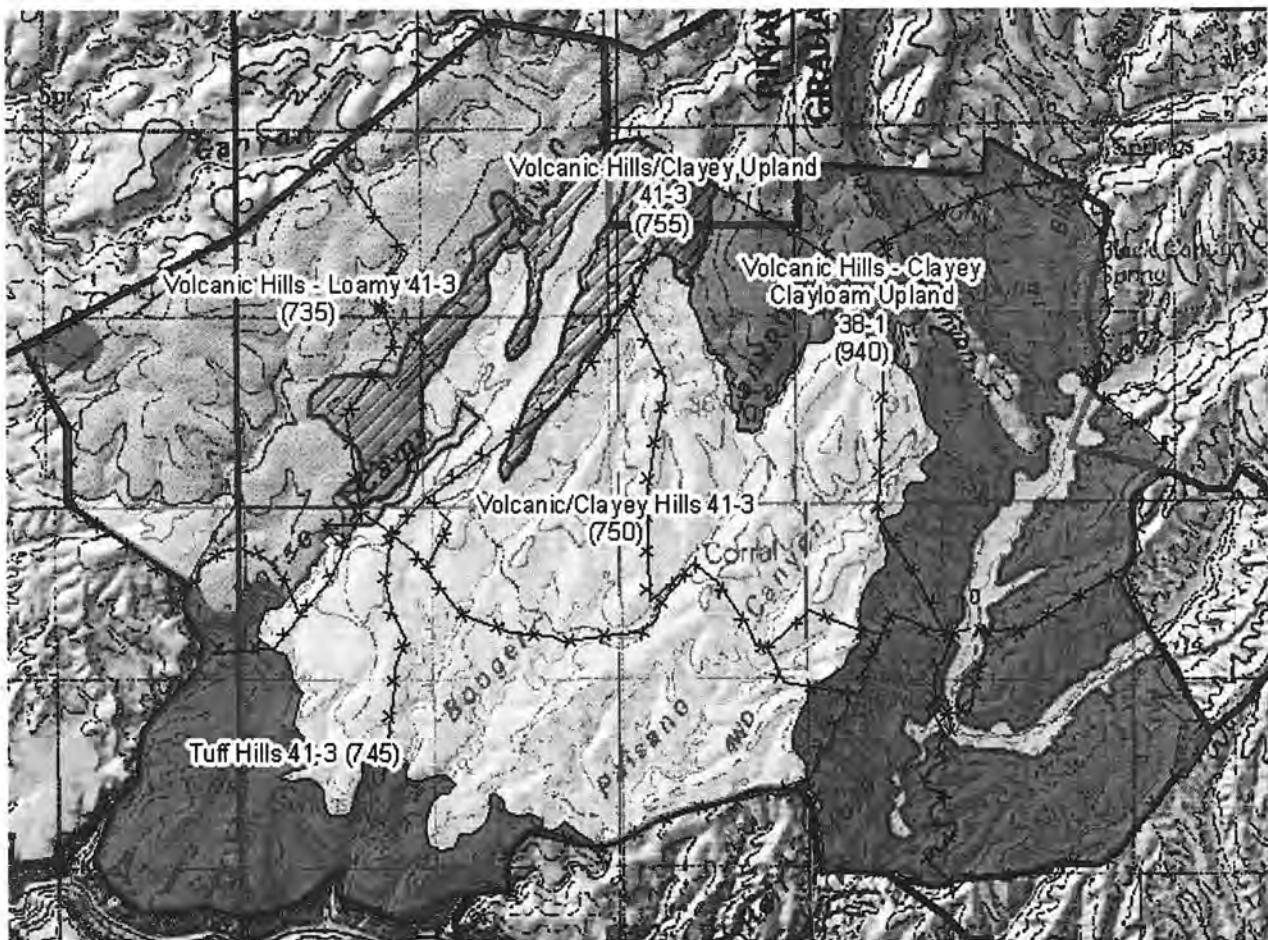
APPENDIX C: Range Inventory (Ecological Sites and Structural Improvements)

Range Inventory is the systematic analysis of an area, which is needed to describe, characterize, or quantify a plant community. A range inventory taken at a point in time can be referred to in order to show apparent range trend by plant composition. In the range inventory process ecological sites are delineated ,annual production and vegetation composition are estimated. NRCS uses a Similarity Index to compare existing plant communities to the plant communities described here. Similarity index is determined by comparing the production and composition of a plant community to the production and composition of a plant community described in this site description. To determine Similarity index, compare the production (air dry weight) of each species to that shown in the plant community description. For each species, count no more than the maximum amount shown for the species, and for each group, count no more than the maximum amount shown for that group. Divide the resulting total by the total normal year production shown in the plant community description. If the rainfall has been significantly above or below normal, use the total production shown for above or below normal years. If field data is not collected at the end of the summer growing season, then the field data must be corrected to the end of the year production before comparing it to the site description. The growth curve can be used as a guide for estimating production at the end of the summer growing season.

The historic native state includes the native plant communities that occur on the site, including the historic climax plant community. This state includes other plant communities that naturally occupy the site following fire, drought, flooding, herbivores, and other natural disturbances. The historic climax plant community represents the natural climax community that may eventually reoccupy the site with proper management. *These inventory points are not permanent sites that are used to monitor vegetation year after year.*

Inventory site information, Dry Camp Ranch. 2008.

Inventory Point – Pasture	Soil Series – Associate Eco Site	Similarity Index / Current Production (lb per acre)
T1 Paisano Pasture	Volcanic Hills, 41-3	15 / 500
T2 Twin Tanks Pasture	Volcanic Hills, 41-3	65 / 750



Existing Range Improvements (information from BLM case file, information is to be completed during plan implementation)

Name	Project Number	Location	O&M Respons.	Condition
Johns Spring	0236			
Juniper Spring	0237			
Cottonwood Spring	0240			
Oak Spring	0243			
Black Canyon Spring	0245			

Haught Tank	5001			
Big Tank	5002			
Chet Tank	5003			
Chet Tank Pipeline	5004			
Double Tank	5005			
Cement Tank	5006			
Pipeline Troughs	5007			
Dirt Tank	5008			
Middle Corral and Trough	5009			
Second Mill	5010			
Jacks Tank	5011			
Twin Tank	5012			
Frank Allen Tank	5013			
TrapTank	5014			
Trap Tank Fence	5015			
Jick Tank	5016			
Silt Tank	5017			
Deer Creek Well and Storage	5018			
Deer Creek Pipeline	5019			
Sand Tanks	5020			
Cement Tanks Corrals	5021			
Cement Tank	5022			
Sand Trap	5023			

Jackson Tank	4833			
Horse Canyon Dams	5024			
Coal Spring	5025			
Mine Spring	5026			
Boundary Fence	5027 (4520-4522)			
Boundary Fence	5028 (4520-4529)			
Boundary Fence	5029 (4520-4528)			
Boundary Fence	5030 (4520-4518)			
Sheep Pasture Fence	5042			
AZ Canyon Pipeline**	4726			
AZ Canyon Fence				
Horse Canyon Fence				
Deer Creek Storage				
Deer Creek Fence				
Double Tank Water Lot				
Association Tank Fence				

APPENDIX C

ENVIRONMENTAL ASSESSMENT Dry Camp Project

EA Number: AZ410-2007-006

Project Name: Dry Camp Project

Lease/Serial/Case File No.: 45200

Applicant: Permittee

BLM Contact Person: Amy Humphrey

BLM Office: Safford Field Office

Location of Proposed Action:

Jack's Well Pipeline:

T.5S., R.19E., Sections 25 and 26.

See maps embedded in document.

Dirt Tank Water Lots:

1. Big: 548688.6958 3646287.1353
2. Double: 548980.5658 3645040.6072
3. Jackson: 548852.8726 3648801.4736
4. Haught: 548363.9904 3647782.9690

See maps embedded in document.

I. INTRODUCTION

Background, Purpose and Need for the Proposal:

The Dry Camp Allotment is located on the north side of Aravaipa Canyon, approximately 8 air miles west of Klondyke, AZ. The allotment encompasses approximately 12,500 acres of federal land. In September of 2006, the permittee entered into the planning phases for the development of a Coordinated Resource Management (CRM) plan with the Natural Resource Conservation Service (NRCS), BLM and the University of Arizona.

As a result of the planning process, projects that would improve resources on the allotment from a multiple use perspective were identified and the permittee was awarded an Environmental Quality Incentive Program (EQIP) grant through NRCS in February, 2007. The background, purpose and need for each proposed project is outlined below.

Jack's Well Pipeline:

Currently there are limited sources of permanent waters in the Jack's Tank and Big Tank Pastures. Under the proposed action, approximately a mile of pipeline will be installed from Jack's Tank Windmill to a storage and drinker on the slopes above Booger Canyon (see Figures 1 and 2). The purpose of this pipeline is to provide an additional source of permanent water in the Jacks Tank and Big Tank Pastures. An additional water source in these pastures will allow for the livestock to use areas that were previously lightly used or altogether inaccessible because of the lack of water. As a result of implementing the proposed action, grazing pressure around existing waters will be less concentrated and livestock distribution will improve. Wildlife will also benefit from the addition of permanent water sources in these pastures. Wildlife species likely to be affected are: javalina, whitetail and mule deer, and various bird species.

Dirt Tank Water Lots:

Currently there are 4 large dirt tanks on the Dry Camp Allotment that are reliable sources of year round water. Under the proposed action, fences will be constructed around these dirt tanks (see Figure 3 and 4). In combination with the above Jack's Tank Pipeline

project, construction of the fences will allow the permittee to control livestock by manipulating the availability of water within specific pastures. Due to the location of existing waters, there are some areas on the allotment that have historically received consistent overuse. Construction of the proposed action will allow for these areas to receive rest during the time that the pasture is being used. The Proposed Action water lot fences will be built according to BLM specifications so that water in the dirt tanks will still be accessible to wildlife.

Conformance with Land Use Plan:

The proposed action is subject to the Safford Resource Management Plan

Date Approved: Safford District RMP Approved Record of Decision (ROD) Part I, 9/1992, and Part II, 7/1994.

This proposed action has been reviewed to determine if it conforms to applicable land use plan as required by 43 CFR 1610.5, BLM MS 1617.3.

The **Safford Field Office RMP** incorporated the Upper Gila/San Simon Grazing EIS, 9/1978. The following applies:

Remarks: "Construction of range improvements would be necessary to implement and operate the various types of grazing management included in the proposal. Construction of adequate water facilities, for example, would be necessary in areas designated for livestock grazing." Upper Gila – San Simon Final EIS, Page 1-25.

GM01 – The Upper Gila San Simon Grazing Environmental Impact Statement was completed in 1978 and its decisions have been implemented since then. Monitoring studies are in place and analysis indicates that rangeland condition is improving under the present management. Present management has the flexibility to modify grazing levels and seasons where necessary. In addition, the Eastern Arizona Grazing Environmental Impact Statement was completed in 1987 and the decisions made in that document are beginning to be implemented. The grazing decisions are incorporated by reference. RMP page 12 (ROD page 1).

GM57 - The Upper Gila San Simon Grazing ES page 1-29 states in part, "Water developments will be located to provide adequate distribution of water for livestock and big game wildlife species. Specifications for these developments are found on page 1-29 of the Final EIS and are summarized as follows: ... 4) Where possible , water catchments and pipelines will be located to take advantage of screening topography and vegetation, ... 7) Storage tanks and troughs will be painted to blend with the surrounding natural earth and vegetation colors.".

II. PROPOSED ACTION AND ALTERNATIVES

Description of the Proposed Action:

Jack's Tank Pipeline:

The proposed action pipeline would be installed along the footprint of an existing two track road from Jack's Tank Windmill to the ridge-top above Booger Canyon to an area where Jack's, Chet and Big Tank Pastures come together (see Figure 1).



Figure 1. Waterline from Jack's Tank Windmill.

Approximately 5675 feet of 1 ¼ inch high density 200 psi, polyethylene pipeline will be installed mechanically using a bulldozer to a depth of 12 to 18 inches along the route. Two troughs (1,000 gallons each) and a storage tank (5,000 gallons) will be installed at the end of the pipeline (see Figure 2).

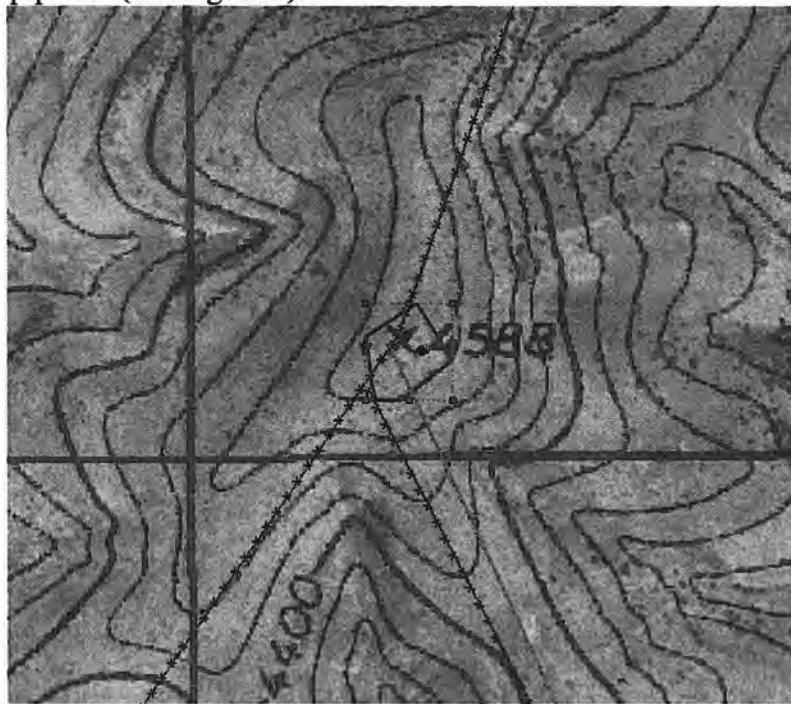


Figure 2. Detail of Storage tank and associated drinkers.

Slight leveling at the pipeline end-point will be necessary for installation of the storage tank and at each trough location. Approximately .5 acres of vegetation will be disturbed with the installation of this portion of the proposed action. As per BLM regulations, the water troughs will be no higher than 24" tall, no larger than 1,000 gallons and will have wildlife escape ladders installed.

There will be minimal disturbance associated with the implementation of the proposed action pipeline, as it will be installed along an existing two track road. Disturbances will include: installation of the storage tank and drinking troughs, ingress and egress to the sites with leveling equipment and removal of some herbaceous vegetation (grasses and forbs). Less than an acre will be impacted. There are no wildlife sensitive time constraint impacts to consider for project installation at this location.

Water Lots:

Under the proposed action, approximately 7554.4 foot of wire fence will be installed around 4 dirt tanks on the Dry Camp Allotment (Figures 3 and 4).



Figure 3. Water lot locations around Jackson Tank (uppermost red line) and Haught Tank (lower red line).



Figure 4. Water lot locations for Big and Chet Tanks.

Fences will be built according to BLM specifications for big horn sheep and deer, and the dirt tanks will remain accessible to wildlife year-round. Fence specification illustration is attached to this document. A four strand fence will be used with the bottom wire being smooth and 16" above the ground. Barbed wire will be used for the remaining 3 strands which will be spaced 5", 5" and 12" inches above the bottom wire, respectively. Minimal disturbance will be associated with the installation of this portion of the Proposed Action. Fencing materials will be brought in along the existing roads that service the four dirt tanks.

No Action Alternative:

Under the No Action Alternative, no new range improvements would be constructed and livestock management will not change. Without additional permanent water locations and fences to better control livestock distribution, overall resource conditions would not improve. During drought conditions, the permittee would have to reduce livestock numbers drastically to ensure current livestock grazing practices don't result in over grazing. This alternative does not meet the overall goal to improve resource conditions through better livestock management. Without attempts to improve livestock management on the Dry Camp allotment resource conditions could begin a downward trend.

III. AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

Determine Scope of the Assessment: The Safford Office NEPA team completed an interdisciplinary review of the proposed action April through the first of May 2007.

Field Visits:

10/03/2006: Amy Humphrey (RMS) and Amy Sobiech visited each of the dirt tanks and did the cultural clearance.

03/12/2007: Ed Holloway RMS and para-archeologist with the NRCS along with Amy Humphrey conducted a field visit and completed the archeology clearance for the Jack Tank Pipeline portion of the EA.

Issues Identified

1. Environmental Justice and Socio-economics:
 - a. Affect of the proposed action and the no action alternative on the livestock operation/operator.
2. Nonnative/Invasive Plants:
 - a. Spread of invasive species by machinery used to implement Proposed Action.
3. Hydrology:
 - a. Water quality in the ephemeral drainages associated with the Proposed Action..
4. Wildlife:
 - a. Disturbance of wildlife habitat and vegetation during proposed implementation.
 - b. Availability and accessibility of year-round water to wildlife.
5. Fisheries
 - a. Impact on native fish populations in Aravaipa Canyon and surrounding environs.
6. Range
 - a. Availability of water to livestock.
 - b. Livestock distribution and utilization levels.

Critical Elements, as well as each of the elements under which issues were identified during scoping are discussed below in the Description of Impacts section. Critical Elements which are addressed as required by law, are identified with an *.

Description of Impacts:

Impacts of the Proposed Action:

Air Quality*: There would be a small amount of dust entering the air during project implementation. Also dust would enter the air during maintenance activities. This will not cause a shift in air quality for the area.

ACEC*: This critical element will not be affected by the proposed action or alternatives because there are not ACECs within or adjacent to the proposed use area.

Cultural Resources*: Although there are both historic and prehistoric resources in the general area of the proposed action, there are no cultural concerns in the immediate vicinity given the nature of the sites. The sites are located in drainages that have been shaped by sedimentation and erosion events and are not conducive to archeological sites;

or are located along slopes ridge tops that have been shaped by erosion events. Any artifacts found would be incidental given the nature of the sites.

Environmental Justice (Social Economics)*: The implementation of the Proposed Action will enable the permittee and the BLM to better manage the public lands encompassed within the Dry Camp Allotment. Range and livestock condition should improve with this action as additional sources of forage that were hitherto inaccessible will be used and historically overused areas will be rested. Using livestock accessibility to water to control livestock movements is a more economically feasible and environmentally sound practice than changing management with the installation of fences to divide pastures. Furthermore, with the Proposed Action practices in place, reduction of cattle numbers during drought should not have to be as drastic as before. During times of drought all waters can be made accessible and livestock can be dispersed throughout the allotment.

Floodplains*: This project does not affect floodplains as defined by the Executive Order 11988 (1977).

Wastes (Hazardous or Solid)*: This critical element will not be affected by the proposed action or alternatives.

Invasive and Nonnative Species*: There is potential for the spread of noxious and invasive weeds from construction equipment used for implementation of the proposed action either from contamination with weed seed and/or biomass. To reduce this potential, the Safford field office BLM requires the following measures be taken: Contractor will thoroughly power wash and remove all vegetative material and soil before transporting equipment to the construction site to help minimize the threat of spreading noxious and invasive weeds. This includes trucks, trailers, and all other machinery. Any reclamation efforts requiring seeding will be done with certified, weed-free native seed.

Native American Religious Concerns*: This critical element will not be affected by the proposed action or alternatives

Prime Farmland*: This critical element will not be affected by the proposed action or alternatives because there are no Prime Farmland areas within or adjacent to the proposed action area.

Threatened and Endangered Species*: This critical element will not be affected by the proposed action, there are no T&E species in the area of the proposed action.

VRM*: The location of the Proposed Action is in a Class IV Visual Resource Management Area.

Water Quality (Surface, Ground, Drinking)*: Installation of the Jack's Tank Pipeline could improve the condition and water quality of the ephemeral drainage, Booger Canyon. The addition of an alternate water source will move cattle impacts from Booger Canyon for part of the season of livestock use in the Jacks Tank Pasture. This action could decrease the impacts of grazing to the stream channel by lowering the potential for streambank trampling. Streambank trampling causes the streambanks to be less stable and therefore more prone to erosion during flow events. Decreasing the grazing pressure around the current watering site in the ephemeral drainage Booger Canyon will allow for increased vegetation along streambanks and within the channel itself. Decreased streambank trampling and increased vegetation will reduce current turbidity and or sediment (bedload or suspended) concentrations and help slow overland

flow during precipitation events. Therefore, the changes in grazing management under the proposed action could improve water quality from flow events within Booger Canyon.

Installation of the pipeline will occur along a current two-track road and should not disturb undisturbed ground. After installation of the piping, waterbars or other forms of water breaks should be installed where necessary to deter potential soil erosion from rain events until grass is established. Water dispersion mechanisms installed along the newly installed pipeline will deter soil erosion and help deter the formation of rills and gullies.

The proposed fencing of the dirt tanks, Jackson, Haught, Big and Chet Tanks into water lots could benefit the water quality of the ephemeral drainages that feed them. Shorter duration of livestock use during the period of time the cattle are in these pastures will allow for increased vegetation growth along ephemeral streambanks and decreased bank trampling. In turn, this will decrease the potential erosion that occurs at these sites and improve water quality.

Wetlands/Riparian Zones*: This critical element will not be affected by the proposed action as there are no wetlands or riparian zones in the area of the proposed action. However, stock tanks should not be stocked with non-native fishes as all of the waters have the potential to flow into Aravaipa Creek during precipitation events and any aquatic organisms residing in the livestock/wildlife waters could end up in Aravaipa Creek and negatively affect the native fishery.

Wild and Scenic Rivers*: This critical element will not be affected by the proposed action because there are no wild and scenic rivers in the area.

Wilderness*: This critical element will not be affected by the proposed action or alternatives because there is not a wilderness in the area.

Wildlife: Under the proposed action, additional water sources will be available to wildlife on this allotment. The proposed fences around Jackson, Haught, Big and Chet Tanks will be built to BLM specifications. See attached illustration for fencing specs. Fences will be built with 4 strands of wire, with the bottom wire being smooth and the remainder barbed. The smooth bottom wire will be 16" above ground, the 2nd wire 5" above the smooth, the 3rd 5" above the 2nd, and the top wire 10" above the 2nd. The fence design will allow for access to water for deer and bighorn sheep with the least possible danger of them becoming entangled when crossing it.

Fisheries: Stocking of the dirt tanks and other livestock watering facilities with non-native fish is strictly prohibited so that potential for invasion by undesirable species into Aravaipa Creek is nonexistent from these sources. This is extremely important since all of the waters have the potential to flow into Aravaipa Creek during precipitation events and any aquatic organisms residing in the livestock/wildlife waters could likely end up in Aravaipa Creek and negatively affect the native fishery. The mainstream of Aravaipa Creek currently supports 7 native fish species, two of which are federally listed. Both listed species, loach minnow (*Tiaroga cobitis*) and spinedace (*Meda fulgida*) have declined statewide due to the invasion and spread of non-native fish and frog species. Currently, many of the tributaries that drain into Aravaipa Creek support non-native fish species that likely came from livestock waters located in the uplands. Fishery biologist comments attached to this EA.

Range: The addition of permanent watering locations in the Dry Camp Allotment will improve distribution of livestock in the Jacks and Chet Tank Pastures. In addition, the fencing of Haught, Jackson, Big and Chet Tanks to create water lots will allow the permittee to better manage the forage use in the pastures these dirt tanks are located in. Range and livestock condition should improve with this action as additional sources of forage that were hitherto inaccessible will be used and historically overused areas will be rested. During times of drought all waters can be made accessible and livestock can be dispersed throughout the allotment. Better forage management will improve rangeland health. The installation of the pipeline and troughs would create short term impacts to top soil and vegetation. The pipeline will be trenched in along an existing two track road to a depth of 12 to 18 inches. Vegetation would be permanently removed at the water trough locations, less than a $\frac{1}{4}$ acre total. During construction and maintenance, disturbance would be kept to the minimum necessary. Livestock grazing has been identified as an appropriate use in this area. Utilization and other livestock/forage objectives have been established through the Arizona Standards for Rangeland Health, Guidelines for Grazing Administration and the Safford District RMP to aid livestock management. Both the short and long term impacts on soil and vegetation would not keep the resources from meeting these objectives. With the addition of new water sources and the fencing of the dirt tanks, livestock would use this allotment more effectively. Any impacts associated with this project would be minimal. The permittee will be responsible for the continued maintenance of this project.

Impacts of No Action Alternative:

Air Quality*: This critical element will not be affected under the No Action Alternative.

ACEC*: This critical element will not be affected by the proposed action or alternatives because there is not an ACEC within or adjacent to the proposed use area.

Cultural Resources*: This critical element would not be impacted with the No Action Alternative.

Environmental Justice (Social Economics)*: Under the No Action Alternative, management on the Dry Camp Allotment will stay the same. Range and livestock condition will be static, as additional sources of forage will not be used and historically overused places will continue to be used. Significant reduction in cattle numbers during times of drought will be probable which will negatively affect the livestock operation considerably.

Floodplain*: This project does not affect floodplains as defined by the Executive Order 11988 (1977).

Wastes (Hazardous or Solid)*: This critical element would not be affected under the No Action Alternative.

Invasive and Nonnative Species*: This critical element would not be affected under the No Action Alternative.

Native American Religious Concerns*: This critical element will not be affected by the No Action Alternative.

Prime Farmland*: This critical element would not be affected under the No Action Alternative.

Threatened and Endangered Species*: This critical element will not be affected by the proposed action or alternatives because there are no T&E species in area of proposed action.

VRM*: This critical element would not be affected under the No Action Alternative.

Water Quality (Surface, Ground, Drinking)*: Water quality will stay the same as present under the No Action Alternative. There would be no possible improvement in water quality in Booger Canyon and the ephemeral drainages around the 4 dirt tanks by decreased livestock grazing pressure.

Wetlands/Riparian Zones*: This critical element will not be impacted as there are no Wetlands or Riparian areas affected.

Wild and Scenic Rivers*: This critical element would not be affected under the No Action Alternative as there are no Wild and Scenic Rivers in the area.

Wilderness*: This critical element would not be affected under the No Action Alternative.

Wildlife: Under the No Action Alternative, additional water sources for wildlife would not be available.

Fisheries: Stocking of the dirt tanks and other livestock watering facilities with non-native fish is strictly prohibited so that potential for invasion by undesirable species into Aravaipa Creek is nonexistent from these sources. This is extremely important since all of the waters have the potential to flow into Aravaipa Creek during precipitation events and any aquatic organisms residing in the livestock/wildlife waters could likely end up in Aravaipa Creek and negatively affect the native fishery. The mainstream of Aravaipa Creek currently supports 7 native fish species, two of which are federally listed. Both listed species, loach minnow (*Tiaroga cobitis*) and spinedace (*Meda fulgida*) have declined statewide due to the invasion and spread of non-native fish and frog species. Currently, many of the tributaries that drain into Aravaipa Creek support non-native fish species that likely came from livestock waters located in the uplands. Fishery biologist comments attached to this EA.

Range: Under the No Action Alternative livestock forage use patterns will remain the same. Better management of the allotment will not be realized. Range and livestock condition will be static, as additional sources of forage will not be used and historically overused places will continue to be used.

Cumulative impacts:

ACEC: This critical element will not be affected by the proposed action or alternatives because there are not ACECs within or adjacent to the proposed use area.

Air Quality: There is no expected cumulative effect for air quality from all the past and present management activities

Threatened and Endangered Species: This critical element will not be affected as there are no T&E species in the area.

Floodplain: Cumulative effects analysis is bound to the small watershed for the affected area. Cattle grazing, range improvements, and road maintenance are the main past and present management activities within this watershed. These activities will continue at current levels in the future.

Cultural Resources: There will be no long term cumulative impacts to the cultural resources in the proposed action area. Possible short term impacts to cultural resources will be mitigated by supervisory action during the implementation portion of the proposed action. Location of the drinker associated with the proposed action is such that there will be no long term impacts to the resources. Further, there are no other cultural concerns in the immediate vicinity given the nature of the site. The site is located on a hill slope shaped by sedimentation and erosion events and is not conducive to prehistoric archeological sites. Any artifacts found would be incidental given the nature of the site.

Native American Religious Concerns: This critical element will not be affected by the proposed action or alternatives.

Wetlands/Riparian Zones: This critical element will not be affected by the proposed action or alternatives as there are no Riparian area or wetland in the area.

Wild and Scenic Rivers: This critical element will not be affected by the proposed action as there is no Wild and Scenic River in the area.

Wastes (Hazardous or Solid): This critical element will not be affected by the proposed action.

Water Quality (Surface, Ground, Drinking): The proposed action will not affect this critical element.

Prime Farmland: This critical element will not be affected by the proposed action.

Wilderness: This critical element will not be affected by the proposed action as there is no wilderness in the area.

Invasive and Nonnative Species: There is potential for the spread of noxious and invasive weeds from construction equipment used for implementation of the proposed action either from contamination with weed seed and/or biomass. To reduce this potential, the Safford field office BLM requires the following measures be taken: Contractor will thoroughly power wash and remove all vegetative material and soil before transporting equipment to the construction site to help minimize the threat of spreading noxious and invasive weeds. This includes trucks, trailers, and all other machinery. Any reclamation efforts requiring seeding will be done with certified, weed-free native seed.

Environmental Justice (Social Economics): Cumulative impacts from the Proposed Action will be better economic returns from the ranching operation on the Dry Camp Allotment.

National Energy Policy: This critical element will not be impacted by the Proposed Action.

Hydrology: Cattle grazing, range improvements, and road maintenance are the main past and present management activities within this watershed. However, under the Proposed Action Alternative, cumulative livestock impacts will be more dispersed than in the past.

Wildlife: Under the Proposed Action Alternative, wildlife in the area will have an additional source of water in the Jacks and Chet Tank Pastures. The fences around the 4 dirt tanks could redistribute wildlife use in the area temporarily until they become familiar with them.

Range: Over the long term, the Proposed Action will have positive impacts on the Dry Camp Allotment. With the addition of new water sources and the fencing of the dirt tanks, livestock would use this allotment more effectively and range condition should improve. Livestock grazing has been identified as an appropriate use in this area. Utilization and other livestock/forage objectives have been established through the Arizona Standards for Rangeland Health, Guidelines for Grazing Administration and the Safford District RMP to aid livestock management. Both the short and long term impacts on soil and vegetation would not keep the resources from meeting these objectives. Vegetation would be permanently removed at the water trough locations, less than a $\frac{1}{4}$ acre total. Any impacts associated with this project would be minimal. The permittee will be responsible for the continued maintenance of this project.

Description of Mitigation Measures:

Cultural:

- Any archeological or historical artifacts or remains, or vertebrate fossils discovered during operations shall be left intact and undisturbed; all work in the area shall stop immediately; and the authorized officer shall be notified immediately. Commencement of operations shall be allowed upon clearance by the Assistant Field manager

Invasive and Nonnative Species:

- There is potential for the spread of noxious and invasive weeds from construction equipment used for implementation of the proposed action either from contamination with weed seed and/or biomass. To reduce this potential, the Safford field office BLM requires the following measures be taken: Contractor will thoroughly power wash and remove all vegetative material and soil before transporting equipment to the construction site to help minimize the threat of spreading noxious and invasive weeds. This includes trucks, trailers, and all other machinery. Any reclamation efforts requiring seeding will be done with certified, weed-free native seed.

Hydrology:

- Construction one or two water diversion features (eg. water bar or rolling dip) on the road the Jack's Tank Pipeline will be installed on.

Fisheries:

- Stocking of the dirt tanks with non-native fish is strictly prohibited so that potential for invasion by undesirable species is nonexistent from these sources.

Wildlife:

- See attached fencing specifications.

Range:

- Monitoring locations will be set up cooperatively with the permittee, NRCS, BLM and the University of Arizona to monitor the success of the project and rangeland condition in general on the allotment.

Proposed Action:

Implement Dry Camp Project

No Action:

Do not implement the Dry Camp Project

Compliance and Monitoring:

Range Management Specialist will be on hand during implementation of the Proposed Action to ensure mitigation measures are complied with. The well site will be inventoried after project completion by the BLM hydrologist.

Persons/Agencies Consulted:

Dry Camp Permittee
NRCS – Ed Holloway Rangeland Management Specialist
BLM Interdisciplinary NEPA team

List of Preparers:

Amy Humphrey – Range Management Specialist – Lead Preparer
Amy Sobiech – Archeologist
James Barnes - Archeologist
Melissa Amentt – Hydrologist
Tim Goodman – Wildlife Biologist
Richard White – Range Management Specialist
Heidi Blasius – Fisheries Biologist

Date: 05/06/2007

APPENDIX C
-ADDITIONAL INFO.

Soils on Dry Camp Allotment #4522

Soil series include 705, 735, 745, 750, 755, 940

705 – Bodecker Soils and Riverwash (0 to 5% slope)

Active flood plain width 20 to 2,000 feet, intermittent stream, flows seasonally w/ rainfall events – dynamic system of interbraided components that aggrade and degrade seasonally.

Bodecker Soils: Sandy Bottom 12-16" precip in 41-3 MLRA

Present vegetation: AZ cottontop, bush muhly, catclaw acacia, mesquite, plains bristlegrass, sideoats grama, desert hackberry, prickly pear, cholla, spike dropseed, threeawn, yucca, barrel cactus, burrobush, giant sacaton, snakeweed.

Riverwash Soils: very deep, excessively drained, stratified sands, gravels and cobbles from numerous. Material is not stable and is subject to shifting and sorting. It is usually dry but can be transformed into a temporary water course or a short-lived torrent after a heavy rain within the watershed. This material does not support vegetation due to the constant scouring and shifting.

735—Pantak-Rock outcrop-Lampshire complex, 5 to 60 percent slopes

Pantak and similar soils: 45 percent

(VOLCANIC HILLS, LOAMY 41-3)

Rock outcrop, andesite: 35 percent

Lampshire and similar soils: 15 percent

Minor Components: Eskiminzin, Lampshire soils with less than 35 percent Rock fragments

Pantak soils

Taxonomic classification: Loamy-skeletal, mixed, superactive, thermic Lithic Ustic Haplargids

Geomorphic position: generally on crests, sideslopes, mountain tops and mountain flanks

Parent material: slope alluvium and/or residuum weathered from andesite

Slope: 5 to 45 percent

Ecological site name: Volcanic Hills 12-16" p.z. Loamy

Ecological site number: R041XC323AZ

Present vegetation: sideoats grama, Emory oak, sacahuista, oneseed juniper, hairy grama, shrubby buckwheat, mesquite, purple grama, plains lovegrass, bullgrass, pricklypear and cholla

Rock outcrop, andesite

Rock outcrop consists of barren rock that occurs as ledges and nearly vertical cliffs of andesite and other volcanic bedrocks. Rock outcrop also includes areas where the depth to bedrock is less than four inches. The higher percentage of rock outcrop is in areas near the mountain tops.

Lampshire soils

Taxonomic classification: Loamy-skeletal, mixed, superactive, nonacid, thermic Lithic Ustic Torriorthents

Geomorphic position: generally on crests, sideslopes, mountain tops and mountain flanks

Parent material: slope alluvium and/or residuum weathered from andesite

Slope: 5 to 60 percent

Ecological site name: Volcanic Hills 12-16" p.z. Loamy

Ecological site number: R041XC323AZ

Present vegetation: shrubby buckwheat, mesquite, beggartick threeawn, Emory oak, hairy grama, sideoats grama, sotol, oneseed juniper, pricklypear and cholla, mimosa

745 – Rock Outcrop – Lampshire complex, 5 to 90% slopes

Rock outcrop – Tuff: 55%

Lampshire and similar soils: 30%

Minor components: Eloma, Boss, Sontag, Eskiminzin, Lampshire soils with calcium carbonate accumulations

Lampshire soils

Taxonomic classification: Loamy-skeletal, mixed, superactive, nonacid, thermic Lithic Ustic Torriorthents

Geomorphic position: generally on crests, sideslopes, mountain tops and mountain flanks

Parent material: slope alluvium and/or residuum weathered from weathered tuff and /or residuum weathered from welded tuff.

Slope: 5 to 80 percent

Ecological site name: Tuff Hills 12-16" p.z. Loamy

Ecological site number: R041XC329AZ

Present vegetation: agave, englemann hedgehog cactus, whitethorn, bush muhly, mesquite, cholla, ocotillo, pricklypear and cholla, purple threeawn, range ratany and red brome.

750 – Eskiminzin-Rock outcrop- Sontag complex, tuff, 5 to 45% slopes

Eskiminzin, tuff and similar soils: 35%

Rock outcrop, tuff: 30 percent

Sontag, tuff and similar soils: 20%

Minor Components: Boss, Eloma, Lampshire, Riverwash, Pantak, Mabray

Eskiminzin soils

Taxonomic classification: Clayey-skeletal, smectitic, thermic Lithic Ustic Haplargids

Parent material: slope alluvium derived from welded tuff and/or residuum weathered from welded tuff.

Slope: 5 to 45 percent

Ecological site name: Volcanic Hills 12-16" p.z. fine Volcanic Hills Clayey

Ecological site number: R041XC330AZ

Present vegetation: eriastrum, annual grasses, banana yucca, catclaw acacia, curly mesquite, mesquite, oneseed juniper, prickly pear and cholla, shrubby buckwheat, sideoats grama

Rock outcrop, tuff

Slope: 5 to 45%

Rock outcrop consists of barren rock that occurs as ledges and shelves of tuff and volcanic breccias.

Rock outcrop also includes areas where the depth to bedrock is less than four inches.

Sontag soils, tuff

Taxonomic classification: Fine, smectitic, thermic Ustertic Haplargids

Parent material: slope alluvium derived from welded tuff and/or residuum weathered from welded tuff

Slope: 5 to 25 percent

Ecological site name: Clayey Hills 12-16" p.z. -Clayey Slopes -

Ecological site number: R041XC303AZ

Present vegetation: eriastrum, catclaw acacia, curly mesquite, little barley, mesquite, oneseed juniper, prickly pear and cholla, sideoats grama, threeawn.

755 – Eskiminzin- Sontag - Rock outcrop 2 to 45% slopes

Eskiminzin, basalt and similar soils: 40%

Sontag, basalt and similar soils: 30%

Rock Outcrop, basalt: 20%

Minor Components: Graham, Pantak, Riverwash

Eskiminzin, basalt soils

Taxonomic classification: Clayey-skeletal, smectitic, thermic Lithic Ustic Haplargids

Parent material: residuum weathered from basalt.

Slope: 10 to 45 percent

Ecological site name: Volcanic Hills 12-16" p.z. fine

Ecological site number: R041XC330AZ

Present vegetation: blue paloverde, buckhorn cholla, cane bluestem, catclaw acacia, curly mesquite, jojoba, ocotillo, shrubby buckwheat, sideoats grama.

Sontag soils, basalt

Taxonomic classification: Fine, smectitic, thermic Ustertic Haplargids

Parent material: slope alluvium derived from basalt and/or residuum weathered from basalt

Slope: 2 to 30 percent

Ecological site name: Clayey Upland 12-16" p.z.

Ecological site number: R041XC304AZ

Present vegetation: Arizona cottontop, blue paloverde, buckhorncholla, curly mesquite, globemallow, green sprangletop, jojoba, mesquite, spidergrass.

Rock outcrop, basalt:

Slope: 1 to 90%

Rock outcrop consists of barren rock that occurs as ledges and nearly vertical cliffs of basalt and some andesite. Rock outcrop also includes areas where the depth to bedrock is less than four inches. The higher percentage of rock outcrop is in areas near the hilltops.

940 – Beaumain- Rock Outcrop – Cherrycow complex, 5 to 60 percent slopes

(38-2)

Beaumain and similar soils: 55 percent

Rock Outcrop, volcanic: 20 percent

Cherrycow and similar soils: 15 percent

Minor Components: loamy soils that are moderately deep to bedrock

Beaumain Soils

Taxonomic classification: Clayey-skeletal, smectitic, thermic Ardic Lithic Argiustolls

Geomorphic Position: generally on crests, sideslopes, mountaintops and mountain flanks

Parent material: Alluvium and/or residuum weathered from volcanic and metamorphic rock

Slope: 5 to 60 percent

Ecological site name: Volcanic Hills 16-20" p.z. Clayey

Ecological site number: R038XC215AZ

Present vegetation: turbinella oak, Utah juniper, skunkbush sumac, singleleaf pinon, mormon tea, jojoba, sideoats grama, canotia, cane beardgrass, mesa threeawn.

Rock outcrop, volcanic:

Slope: 5 to 60 percent

Rock outcrop consists of barren rock that occurs as ledges and nearly vertical cliffs of basalt and some andesite. Rock outcrop also includes areas where the depth to bedrock is less than four inches. The higher percentage of rock outcrop is in areas near the mountaintops

Cherrycow soils

Taxonomic classification: Fine, smectitic, Ardic Argiustolls

Parent material: alluvium and /or residuum weathered from volcanic and metamorphic rock

Geomorphic position: generally on crests, sideslopes, mountaintops and mountain flanks.

Slope: 5 to 35 percent

Ecological site name: Clay Loam Upland 16-20" p.z.

Ecological site number: R038XC203AZ

Present vegetation: curly mesquite, snakeweed, catclaw acacia, oneseed juniper, mesquite, singleleaf pinyon, turbinella oak, yerba de pasmo

SELECTED

APPENDIX D

Prescribed Grazing Alternatives - DRY CAMP RANCH

Alternative #1 - Rest Rotation using Paisano&TwinTanks Nov-Mar

Benefits: 3 year schedule; maximize recovery in Paisano&TT

Drawbacks: any?

Pasture	AUM	Available AUM's and Planned Percent Use							
		Planned				Sched. AUM's			
		Yr1	Yr2	Yr3	Yr4	Yr1	Yr2	Yr3	Yr4
Paisano	435	467	467	467	467	107	107	107	107
Twin Tanks	294	298	298	298	298	101	101	101	101
Haught	460	468	425	467	468	102	92	102	102
Big Tank	434	424	425	383	424	98	98	88	98
Windmill	412	383	425	383	93	103	103	93	

Practice Design

Planned Forage Production and Harvest By Pasture

Pasture	Acres	Planned Annual Forage (lbs/acre)	Planned Pasture Distribution (%)	Planned % Utilization	Planned AUMs Available
Paisano	1814	480	100%	50%	435
Twin Tanks	1225	480	100%	50%	294
Haught	1916	480	100%	50%	460
Big Tank	1807	480	100%	50%	434
Windmill	1715	480	100%	50%	412
Total Planned Animal Unit Year Long Forage Capacity					170

Planned Animal Units

Total Planned Animal Units Year Long

170

Animal	AUE	Number	Months	AUYL	Animal	AUE	Number	Months	AUYL
Cow (Dry)	0.92				Sheep	0.20			
Cow w/ Calf	1.00	135	12	135	Goat	0.15			
Cattle 1 Yr	0.60	15	12	9	Antelope	0.20			
Cattle 2 Yr	0.80	15	12	12	Elk	0.60			
Bull	1.35	10	12	14	Mule Deer	0.20			
Horse	1.25				Whitetail	0.15			

Summary of Planned Grazing Use By Pasture - All Years

Pasture	Acres	Available AUMs/Yr	Planned Years	Planned Avail AUMs	2008	2009	2010	2011	2012	2013	Scheduled AUMs	% of Available
Paisano	1814	435	6	2612	467	467	467	467	467	467	2802	107%
Twin Tanks	1225	294	6	1764	298	298	298	298	298	298	1788	101%
Haught	1916	460	6	2759	468	425	467	468	425	467	2720	99%
Big Tank	1807	434	6	2602	424	425	383	424	425	383	2464	95%
Windmill	1715	412	6	2470	383	425	425	383	425	425	2466	100%

Contingency Plan for Drought or Fire

Planned vegetation treatments can be scheduled for 2 growing seasons rest after treatment without interrupting schedule. Drought strategy has to lie in flexible numbers (have a culling strategy in place to act during 3rd year of adverse rainfall).

Planned Grazing Schedule

(Primary growing season months are shaded)

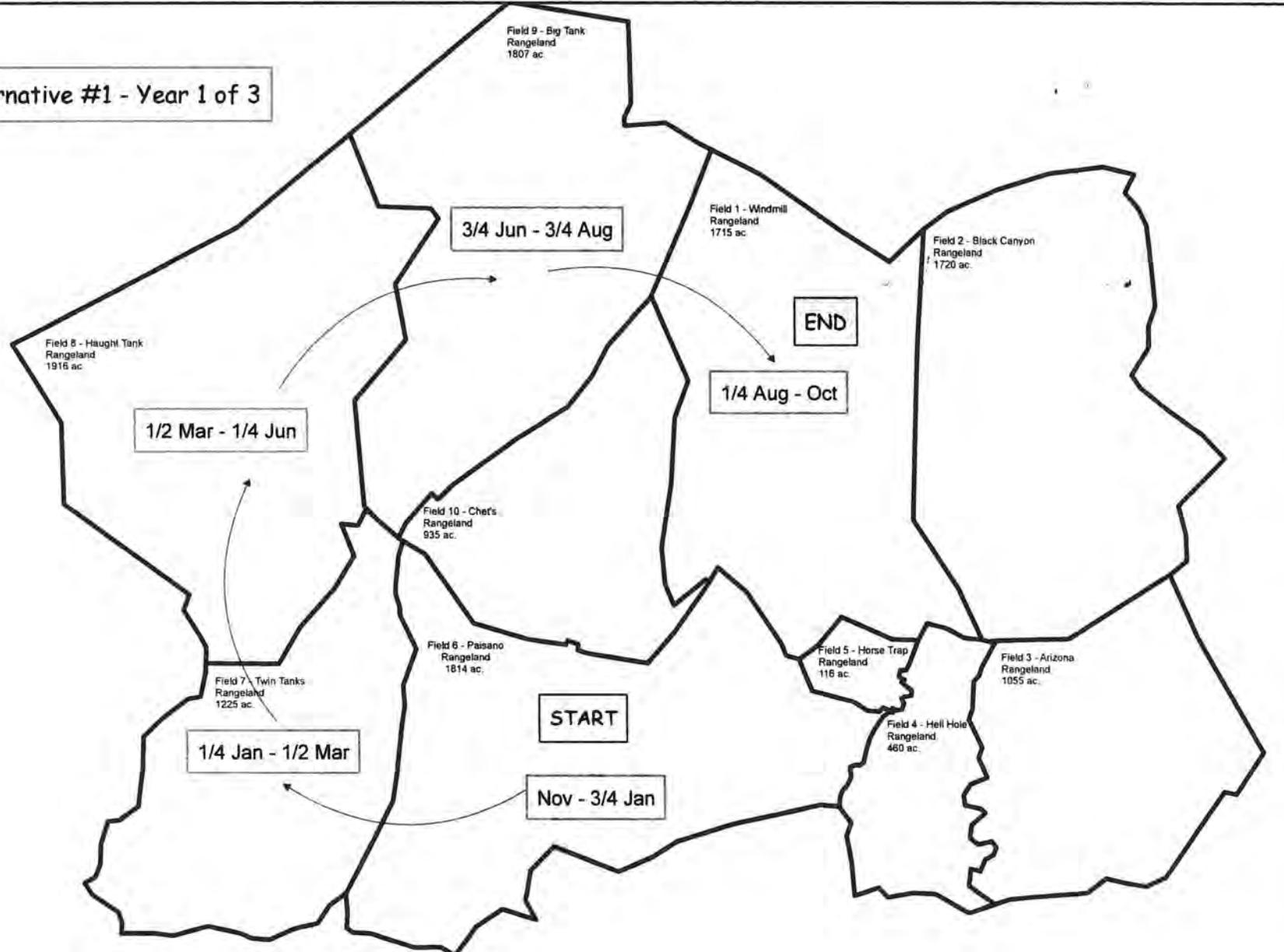
Year	2008		Scheduled Number of Animal Unit Equivalents by Month.												
Pasture	Acres	Available AUMs	Sched AUMs	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
Paisano	1814	435	467	170	170	127									
Twin Tanks	1225	294	298			43	170	85							
Haught	1916	460	468					85	170	170	43				
Big Tank	1807	434	424								127	170	127		
Windmill	1715	412	383									43	170	170	
Year	2009		Scheduled Number of Animal Unit Equivalents by Month.												
Pasture	Acres	Available AUMs	Sched AUMs	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
Paisano	1814	435	467	170	170	127									
Twin Tanks	1225	294	298			43	170	85						85	170
Haught	1916	460	425											170	170
Big Tank	1807	434	425					85	170	170					
Windmill	1715	412	425								170	170	85		
Year	2010		Scheduled Number of Animal Unit Equivalents by Month.												
Pasture	Acres	Available AUMs	Sched AUMs	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
Paisano	1814	435	467	170	170	127									
Twin Tanks	1225	294	298			43	170	85							
Haught	1916	460	467									170	170	127	
Big Tank	1807	434	383										43	170	170
Windmill	1715	412	425					85	170	170					
Year	2011		Scheduled Number of Animal Unit Equivalents by Month.												
Pasture	Acres	Available AUMs	Sched AUMs	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
Paisano	1814	435	467	170	170	127									
Twin Tanks	1225	294	298			43	170	85							
Haught	1916	460	468					85	170	170	43				
Big Tank	1807	434	424									127	170	127	
Windmill	1715	412	383										43	170	170
Year	2012		Scheduled Number of Animal Unit Equivalents by Month.												
Pasture	Acres	Available AUMs	Sched AUMs	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
Paisano	1814	435	467	170	170	127									
Twin Tanks	1225	294	298			43	170	85							
Haught	1916	460	425										85	170	170
Big Tank	1807	434	425					85	170	170					
Windmill	1715	412	425									170	170	85	
Year	2013		Scheduled Number of Animal Unit Equivalents by Month.												
Pasture	Acres	Available AUMs	Sched AUMs	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
Paisano	1814	435	467	170	170	127									
Twin Tanks	1225	294	298			43	170	85							
Haught	1916	460	467									170	170	127	
Big Tank	1807	434	383										43	170	170
Windmill	1715	412	425					85	170	170					

Prescribed Grazing Alternatives - Dry Camp Ranch

Customer(s): KATHY SERGENT
District: GILA VALLEY NATURAL RESOURCES CONSERVATION DISTRICT

Date: 7/24/2008
Field Office: SAFFORD SERVICE CENTER
Agency: NRCS
Assisted By: Wilma Renken

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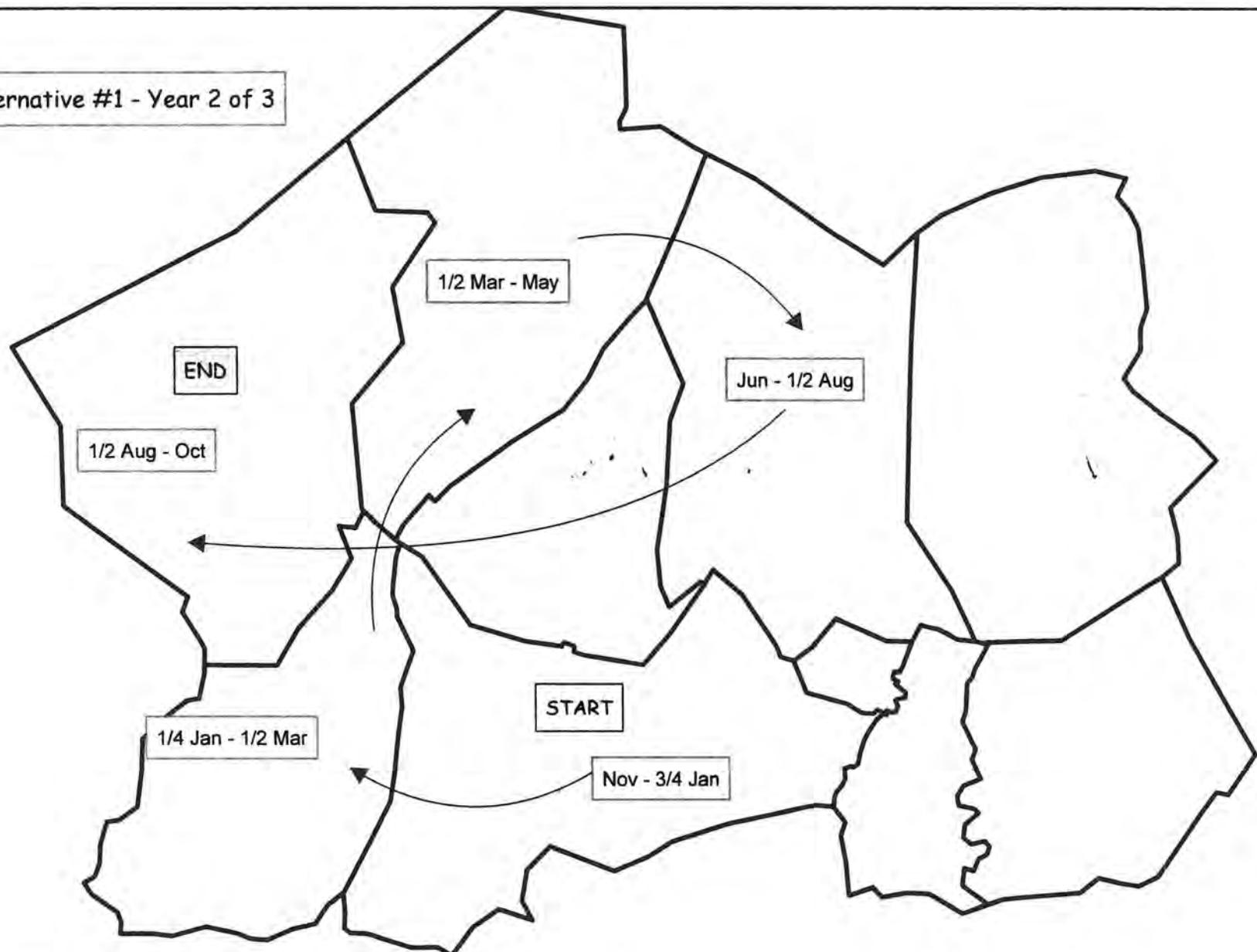
Prescribed Grazing Alternatives - Dry Camp Ranch

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Alternative #1 - Year 2 of 3



Prescribed Grazing Alternatives - Dry Camp Ranch

Customer(s): KATHY SERGENT
District: GILA VALLEY NATURAL RESOURCES CONSERVATION DISTRICT

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