

**ARIZONA GAME AND FISH DEPARTMENT  
HABITAT PARTNERSHIP PROGRAM  
HABITAT ENHANCEMENT AND WILDLIFE MANAGEMENT PROPOSAL**

<b>PROJECT INFORMATION</b>	
<b>Project Title:</b> Buckskin Mountain Mule Deer Habitat Improvement	<b>Project No.</b> 07-220
<b>Region/GMU:</b> AGFD Region II, Unit 12B	<b>HPC:</b>
<b>Project Type:</b> Mechanical Treatment	
<b>Project Description:</b> This project will improve winter mule deer habitat in the Buckskins by establishing important browse species. The BLM will be treating a 2,000-acre area of pinyon and juniper in unit 12B starting as early as Fall 08 and continuing in Fall 09. This will be a mechanical treatment (chaining) in which the design will have wildlife (specifically mule deer) in mind. This type of treatment has been shown to be very effective for improving mule deer habitat. This proposal is to request funding to purchase a variety of important winter browse species to be incorporated into the treatment. It is also to request the development and construction of 2 seed dribblers in which to plant the shrub seed adequately.	
<b>Wildlife Species to Benefit:</b> Mule deer	
<b>Possible Funding Partners:</b>	
<b>Implementation Schedule:</b> <b>Beginning:</b> 06/2008 <b>Completed:</b> 12/2009 Implementation of project will likely take place in the Fall of 2008 and be completed in the fall of 2009. Procuring seeds and equipment however, will take several summer seasons.	<b>NEPA Compliance:</b> (if applicable) <b>Completed:</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> <b>Projected Completion Date:</b> Two Categorical Exclusions were completed on this project in 2007, Archaeology surveys are to begin Spring of 08.
<b>PROJECT FUNDING</b>	
<b>SBG Funds Requested:</b> \$ 80,000	
<b>Cost Share Funds:</b> \$ 110,000 on the ground + \$60,000 in NEPA clearances = \$170,000	
<b>Total Project Costs:</b> \$ \$250,000	
<b>PARTICIPANT INFORMATION</b>	
<b>Applicant:</b> Andi Rogers (please print) <b>Telephone:</b> (928) 214-1251	<b>Address:</b> 3500 S. Lake Mary Road Flagstaff, AZ 86001
<b>AGFD Contact and Phone No.</b> Andi Rogers, Habitat Specialist, Region II (928) 214-1251 <b>(If applicant is not AGFD personnel)</b>	
<b>Coordinated with:</b> BLM (AZ Strip District), Mike Disney and Sophia Fong (AGFD), Mark Spencer (Permittee) and the Arizona Deer Association (Rich Leightner)	<b>Date:</b> 08-09/2007
<b>Applicant's signature:</b>	<b>Date:</b>

(revised 7-02-

**SEND COMPLETED APPLICATIONS TO:**

**Game Branch**

**2221 W. Greenway Rd.**

**Phoenix, AZ 85023**

**mdisney@azgfd.gov**

**WAS PROJECT PRESENTED TO THE LOCAL HPC? YES  X  NO**

I have been in contact with Rich Leightner from the Arizona Deer Association (Buckskin Chapter). I have discussed the project with Rich and he is interested in hearing more. He and the president (Walt Corn) from the ADA will be joining AGFD and the BLM Strip District for a field visit of the area on September 4<sup>th</sup>, 2007.

**HAS PROJECT BEEN SUBMITTED IN PREVIOUS YEARS? IF SO WAS IT FUNDED?**

No

**NEED STATEMENT/PROBLEM ANALYSIS:**

The Buckskin Mountains are an important wintering area for the Utah Paunsaugant herd and for a portion of the North Kaibab deer herd. Disturbances such as suppression of fire, livestock grazing, and invasive species have caused pinyon and juniper vegetation communities to move toward a mid to late successional stage in this area. This stage results ultimately in a lack understory growth of shrubs, such as cliffrose and sagebrush, which are important for wintering deer. (See attached photos)

The BLM proposes to use mechanical treatment (chaining) on 2,000 acres within the Buckskin Mountains. These areas are within the Buck pasture of the Fuller Road Allotment and the Pine Hollow pasture of the Coyote Allotment (See attached maps). Due to landscape scale wildfire reseeding across the west, the price of seed continues to grow each year. Because of price and availability of shrub seed, the BLM's current seed mix for mechanical treatment has few winter browse species present. While the BLM seed mix will certainly benefit mule deer by decreasing non-native species and increasing overall plant biodiversity, adding additional winter browse species will emphasis the mule deer habitat component of the project.

BLM has been actively trying to find funding for seed purchase for the Pine Hollow and Buck Pasture Canyon treatment areas. However, due to the price of seed the BLM will not be able to fund all purchases for shrub seed.

**PROJECT OBJECTIVES:**

- Obtain funds for the purchase of winter browse species. Depending on price and availability, this shrub seed would be either wildland collected from the Buckskin Mountains, and/or purchased from areas with similar ecotypes.
- Improve pinyon and juniper habitat for wintering deer by seeding winter browse species through the use of two Hanson's seed dribblers. The seed dribblers attach to each Caterpillar™ and create a good seed bed for large-seeded species such as most browse plants.

**PROJECT STRATEGIES:**

- Chain 2,000 acres in a mosaic pattern, keeping in mind natural corridors and water sources. Implement the use of the seed dribblers, which adequately plant browse species. Chaining is most beneficial in mid-seral dense pinyon/juniper woodlands, with little to no understory, and declining watershed conditions. Much of the project area within the Buckskin Mountains is described as meeting these conditions and we

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expect the chaining to greatly enhance mule deer habitat. Benefits of chaining are as follows:

- Several studies have shown benefits from chaining for reestablishing winter range and watershed protection (Short et al. 1977, Skousen et al. 1989, Farmer et al 1999).
- Farmer et al. 1999 reported that unchained plots produced 5.8 times more runoff and 9.2 times more sediment than unchained plots. They also reported that ground cover and litter values in chained areas were 27.1% and 22.6% respectively in 1991, and increased to 41.3% and 51.5% in 1995. With respect to ungulate use, data showed significantly more pellet groups on chained areas when compared to control area.
- Skousen et al. (1989) found that understory production increased from as much as 22kg per hectare to 1,912kg per hectare on chained sites.

Farmer, M.E. 1995. The effect of anchor chaining pinyon-juniper woodland on watershed values and big game animals in central Utah. Provo, UT: Brigham Young University. 46p. Thesis.

Skousen, J.G., Davis, J.N., Brotherson, J.D., 1989. Pinyon-juniper chaining and seeding for big game in central Utah. *Journal of Range Management* 43(2).

Short, H.L., W. Evans, and E.L. Boeker. 1977. The use of natural and modified pinyon-juniper woodlands by deer and elk. *Journal of Wildlife Management*. 41:543-559

#### **PROJECT LOCATION:**

The Buckskin project is located in portions of T 41, 42 N R 2 E Sections 4, 5, 6, 7, 8, 9, 22, 23, 26, 27, 28, 33, 34 and 35. The project is within GMU 12 B on the Arizona Strip District of the BLM.

**LAND OWNERSHIP AT PROJECT SITE (Please state specifically if PRIVATE PROPERTY and provide landowner's name):** The Buckskin Mountains project is located primarily on BLM lands within the Arizona Strip District. There is also one section of State Trust Land within the project.

**IF PRIVATE PROPERTY, IS THERE A STEWARDSHIP AGREEMENT BETWEEN THE LANDOWNER AND THE DEPARTMENT?**

N/A

#### **HABITAT DESCRIPTION:**

The project area within the Buckskin Mountains is best described as a pinyon (*Pinus edulis*) and juniper (*Juniperus osteosperma*) woodland. Elevation is approximately 6,500 ft with annual precipitation at 12-16 inches/year. Trees within the project are mostly mature climax seral stage, with some immature young saplings interspersed throughout. Trees are non-sprouting, multi-stem and single stem trees, with average density of approximately 150 trees per acre with 75% juniper to 25% pinyon.

Due to the dense, mid-late seral stage of the woodland, understory plants are limited in many areas. Where shrubs do exist, species such as cliffrose (*Cowania mexicana*), antelope bitterbrush (*Purshia tridentata*), and sage species (*Artemisia spp.*) provide the deer with forage in winter. Lack of understory has caused erosion issues in several areas. Slopes are gentle and undulating, however rills and gullies are present on the approximately 8%

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slopes in the Ravines. The Ravines are limited but have rock outcrops in places. Soils are loams.

Within the Buck Pasture there are two wildlife catchments. Arizona #1 is located in Section 27 in the NE corner of the road. This is a coop catchment that just had the apron redone last fall and is away from the more heavily used roads during hunting season. Deer use this area heavily as a corridor in the fall/spring, migrating up from Buck Pasture Canyon from the northwest. BLM wildlife catchment, Buckskin #1 is located just off of the Winter Rd in Section 35 on the western edge of the section. Although this is just off of one of the main roads, the small two-track road to it remains fairly hidden. Deer regularly cross at the junction of the Winter Rd and BLM 1024 (Section 35), which leads to FS land.

In the Pine Hollow pasture, the Pine Hollow WLC (redeveloped this summer) is located in the center of Section 4 at the top of North Larkum Canyon just inside the proposed treatment area. This area where Larkum, North Larkum and Pine Hollow Canyon meet is a heavily used by deer. Many hunters regularly use the Pine Hollow WLC (and are successful ) to set up tree stands and blinds on the WLC and surrounding corridors.

**ITEMIZED USE OF FUNDS:**

**\$ 75,000** for winter browse species (shrub seed varies from \$10.00 to \$40.00/lb and average seeding rates are 3-5 lbs/acre per species)

**\$5,000** for development and construction of two seed dribblers.

**LIST COOPERATORS AND DESCRIBE POTENTIAL PARTICIPATION:**

BLM Strip District will be doing (and/or contracting) the chaining and aerial application of seed. The livestock permittee has also been involved with this project and is actively seeking funding for seed.

**PROJECT MONITORING PLAN:**

The BLM will be establishing key areas within the project area and collecting pace frequency trend data. These data will be collected annually for the first three years and subsequently every 5 years.

**PROJECT MAINTENANCE:**

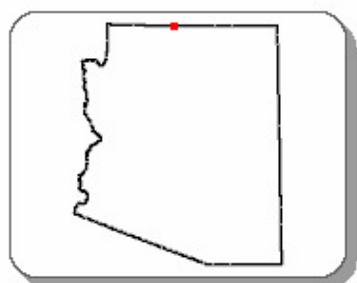
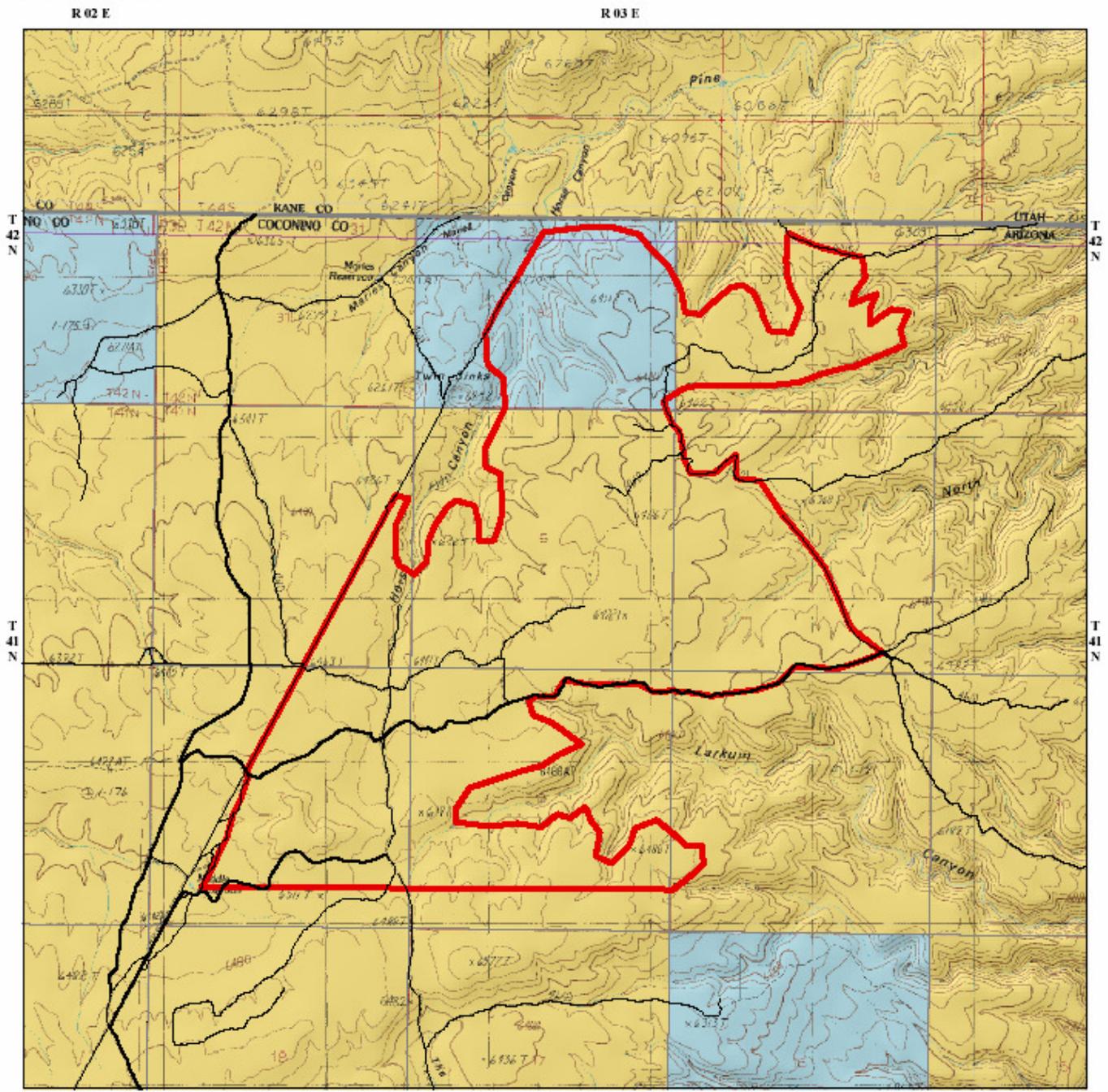
N/A

**PROJECT COMPLETION REPORT TO BE FILED BY:**

Andi Rogers  
Habitat Specialist, Region II  
Flagstaff, AZ 86001

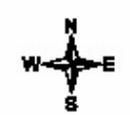
Pine Hollow Proposed Chaining  
 Project Area - 2,078 Acres  
 Chaining Area - 1,000 Acres

State of Arizona



- Proposed Chaining Boundary
- Township-Range-Sections
- BLM Offices
- State Boundary
- Bureau of Land Management
- State
- Secondary Road Unpaved
- Tertiary Road Unpaved

1:35,000



**CAUTION:**  
 Land ownership data is derived from less accurate data than the 1:24,000 scale base map. Therefore, land ownership may not be shown for parcels smaller than 40 acres, and land ownership lines may have plotting errors due to source data.

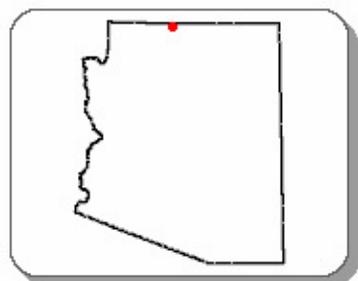
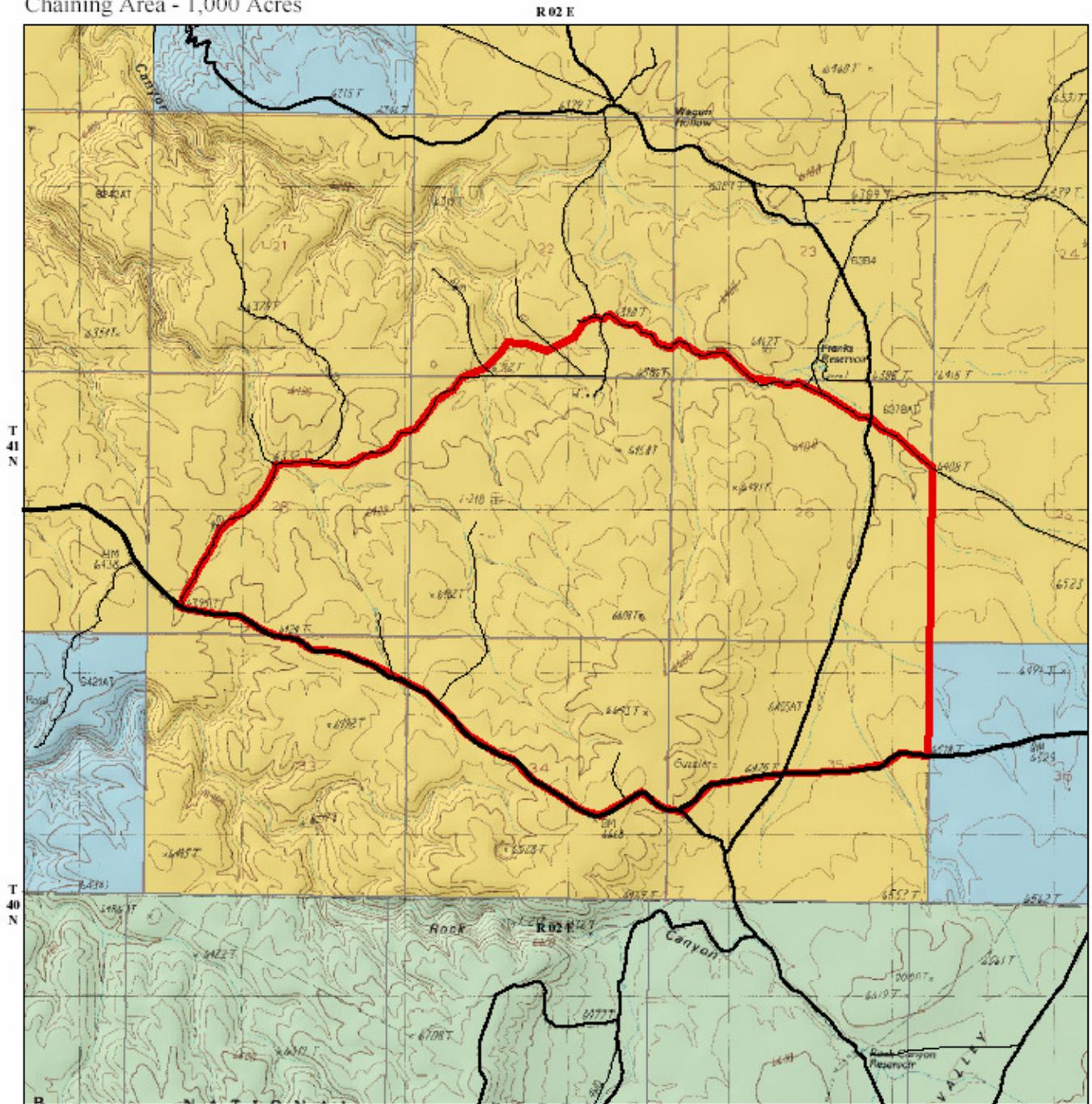
No warranty is made by the Bureau of Land Management for the use of the data for purposes not intended by the BLM.



United States Department of the Interior  
 Bureau of Land Management  
 Arizona Strip Field Office  
 Map created on Feb 16, 2007

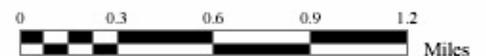
Buck Pasture Canyon Proposed Chaining  
 Project Area - 2,279 Acres  
 Chaining Area - 1,000 Acres

State of Arizona



- Primary Road Unpaved
- Secondary Road Unpaved
- Tertiary Road Unpaved
- Proposed Chaining Boundary
- Township-Range-Sections
- Bureau of Land Management
- State
- US Forest Service

1:35,000



United States Department of the Interior  
 Bureau of Land Management  
 Arizona Strip Field Office

Map created on Feb 16, 2007



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Existing conditions in the Buckskin Treatment Area: Notice the lack of understory.

