



United States Department of the Interior



BUREAU OF LAND MANAGEMENT

Las Cruces District Office
1800 Marquess
Las Cruces, New Mexico 88005
www.blm.gov/nm

In Reply Refer To:

(LLNML03220) 1745

July 28, 2009

Dear Interested Public:

This unsigned Environmental Assessment (EA) is being prepared to analyze the potential environmental *impacts* associated with a proposal by the New Mexico Department of Game and Fish to release approximately twenty bighorn sheep in the Caballo Mountains near Truth or Consequences, New Mexico. This release would augment a small self-starting herd that has pioneered into the Caballo Mountains from the Fra Cristobal Mountain range to the north.

The EA (DOI-BLM-NM-L000-2009-0145-EA) has been prepared and is available for public review and comment at the Las Cruces District Office website address at:
http://www.blm.gov/nm/st/en/fo/Las_Cruces_District_Office.2.html.

Public comments will be considered to prepare the final EA, FONSI, and Decision Record. Questions regarding the proposal may be directed to Ray Lister, Supervisory Natural Resource Specialist at (575)525-4367 or by email at Ray_Lister@nm.blm.gov. Please submit comments by August 28, 2009. Comments may be provided via e-mail or in writing to the following address:

Ray Lister
Bureau of Land Management
Las Cruces District Office
1800 Marquess Street
Las Cruces, NM 88005

Sincerely,

/S/ Jim McCormick

Assistant District Manager

FINDING OF NO SIGNIFICANT IMPACT DOI-BLM-NM-L000-2009-0145-EA

Summary of Environmental Consequences

The proposed action would allow for the augmentation of the existing self-starting herd of desert bighorn sheep in the Caballo Mountains. Current bighorn sheep numbers are estimated to be 25-30 and an additional 20 are proposed for release by the New Mexico Department of Game and Fish (NMDGF). A minimum of at least 100 individuals within the Fra Cristobal-Caballo metapopulation together with a state-wide population of 500 is required in order to remove the desert bighorn sheep from the New Mexico threatened species list. Based on the current population structure of ewes and rams, the NMDGF has predicted that without augmenting the existing herd, it would take 21 years to reach a total population of 100 sheep at a 10% annual growth increase and up to 39 years with a 5% annual growth rate. With the proposed augmentation of 13 ewes and 7 rams, it would take approximately 11 and 19 years to reach a total population of 100 sheep at a 10% and 5% annual growth rate, respectively. The environmental assessment has also determined that bighorn sheep would not compete with wild ungulates or existing livestock use in the Caballo Mountains. Mountain lion control actions by the NMDGF to facilitate bighorn sheep management would not eliminate the presence of lions in the Caballos and is expected to benefit existing low mule deer numbers and livestock operations in the area.

Based on the analysis presented in EA number DOI-BLM-NM-L000-2009-0145-EA, bighorn sheep use is expected to be dispersed across a large potential habitat area. Therefore, the proposed action does not result in any undue or unnecessary environmental degradation and conforms to the Mimbres Resource Management Plan (approved December, 1993) and the White Sands Resource Management Plan (approved October 1986). The proposed action is also consistent with the recovery goals and actions outlined in the *NMDGF Plan for the Recovery of Desert Bighorn Sheep in New Mexico 2003-2013*.

Based on the analysis of potential environmental impacts contained in the attached EA, I have determined that impacts on the human environment are not expected to be significant and an environmental impact statement is not required.

Assistant District Manager
Renewable Resources

Date

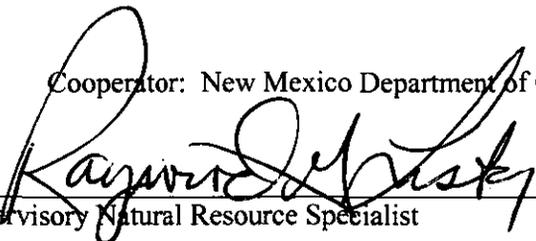
**United States Department of the Interior
Bureau of Land Management
Las Cruces District Office
1800 Marquess
Las Cruces, NM 88005**

**ENVIRONMENTAL ASSESSMENT
for
Caballo Mountain Bighorn Sheep Augmentation**

**T 18 S, R 3W, sections 9, 10, and 16 (state land)
T 18 S, R 3 W, sections 1, 2 (state land), and 5
T 17 S, R 3 W, sections 27, 28, and 32 (state land)**

Cooperator: New Mexico Department of Game and Fish

Prepared by:


Supervisory Natural Resource Specialist

7/23/09
Date

Reviewed by:


EA Coordinator

7/24/09
Date

NEPA Log Number:

DOI-BLM-NM-L000-2009-0145-EA

1 INTRODUCTION AND NEED FOR THE PROPOSED ACTION

1.1 Purpose and Need for Proposed Action

In 1992, the New Mexico Department of Game and Fish (NMDGF) hosted a public meeting in Truth or Consequences (T or C), NM to present a proposal to reestablish desert bighorn into the Caballo Mountains (Caballos). The NMDGF also presented several land management restrictions (i.e. road closures, mineral development, oil and gas development, OHV use) that would, in their view, be necessary to successfully reestablish bighorn sheep in this area. These proposed restrictions were received with significant opposition from the public. As a result, NMDGF postponed their proposal to release bighorns in the Caballos and released bighorn on BLM lands in the Ladron Mountains instead. Bighorns were released in the Fra Cristoba Mountains in 1995.

The NMDGF *Plan for the Recovery of Desert Bighorn Sheep in New Mexico 2003-2013* (NMDGF, 2003) (Recovery Plan) identifies the Caballos as a potential transplant area with no resident bighorn populations. It also states that “previous public opposition [is an issue that] would need to be addressed” prior to any future reestablishment effort. The Fra Cristobals and Caballos are identified as a metapopulation with an objective of 135-220 sheep.

In December, 2006, the NMDGF hosted a public meeting in T or C, NM to present the current implementation status of their statewide desert bighorn recovery plan. The history of the proposed Caballo release was discussed and the NMDGF explained how they did not think that land use restrictions as proposed in 1992 would be necessary to manage the area for bighorns. The NMDGF further explained that in 2002 they began to document a decrease in the Fra Cristobal bighorn population and began receiving reliable reports of a few rams in the Caballos. NMDGF confirmed their presence in the Caballos in 2006 and placed one radio collar on a ewe. Because bighorns had pioneered into the Caballos, NMDGF stated they wished to explore the possibility of augmenting the herd.

In November, 2007 the NMDGF conducted a helicopter capture and placed three additional radio collars in the herd. Shortly after the 2007 radio collaring event, it was documented that one of the radio collared rams travelled to the Fra Cristobals, and subsequently returned to the Caballos. This was the first confirmed movement between the two mountain ranges.

Based on the initial sightings, NMDGF estimated a minimum of 12 bighorns were occupying habitat in the Caballos. A spring 2008 ground survey estimated 25-30 bighorn (six ewes, one yearling ewe, four lambs, and 14 rams observed). A fall 2008 helicopter survey estimated a population of 25-35 (six ewes, two yearling ewes, three lambs, and 11 rams observed) in the southern Caballos near Redhouse Mountain.

Desert bighorn were listed as state endangered in 1980, and downlisted to threatened status in 2008. The Recovery Plan requires a minimum state-wide population of 500 with at least 100 individuals in each of three populations or metapopulations for de-listing. The Fra Cristobal-Caballo metapopulation currently has an estimated 120-135 individuals. In an effort to further secure the Caballos population, and hence the metapopulation of >100 animals, the NMDGF has proposed to augment the existing Caballo population with a release of 20-30 bighorn sheep in October, 2009.

1.2 Conformance with Land Use Plan

The proposed release site near Redhouse Mountain is located in Dona Ana County. However, suitable bighorn habitat within the Caballos (as identified in the NMDGF Bighorn Recovery Plan) is located in both Sierra and Dona Ana Counties (Map 2). Public land management within Dona Ana County is currently governed by the Record of Decision for the Mimbres Resource Management Plan (MRMP) (BLM, 1993). The MRMP specifically identifies management objectives for bighorn sheep within Grant and Hidalgo Counties (the Big/Little Hatchet and Peloncillo Habitat Management Plan areas). Although the MRMP does not specifically identify management objectives for bighorn sheep in the Caballos, the continuing management guidance for special status species (i.e. federal listed, state listed, BLM sensitive species) states:

“BLM policy, as described in Manual 6840.06 for the endangered species program is to give priority to the protection and management of habitat for known populations of Federal or State listed species, to prevent the listing of Federal candidates, and to assist in recovery of listed species.”

Most of the suitable bighorn sheep habitat in the Caballo Mountains is located in Sierra County. Public land management for Sierra County is governed by the Record of Decision for the White Sands RMP (WSRMP) (BLM, 1986). The WSRMP does not specifically identify management objectives for bighorn sheep or address the reestablishment or augmentation of bighorn sheep in the Caballos. However, bighorn sheep were identified in the list of “special status species” that could potentially occur within the planning area. The continuing management guidance for special status species (i.e. federal listed, state listed, BLM sensitive species) outlined in the WSRMP states:

“Management activities in habitat for threatened, endangered, or sensitive species will be designed to benefit those species, or at least minimize any potential adverse influence of the activity on the species. ...”

The desert bighorn is currently listed as state threatened and BLM sensitive species. BLM policy states that sensitive and candidate species will be managed to ensure that actions authorized, funded, or carried out by the BLM do not contribute to the need to list those species. Bighorn sheep have pioneered into the Caballos from the nearby Fra Critobal Mountains and have established a “self starting” population. The Caballos are identified as potentially suitable habitat in the NMDGF *Plan for the Recovery of Desert Bighorn Sheep in New Mexico 2003-2013* (NMDGF 2003). While the White Sands and Mimbres RMPs do not specifically address a release or augmentation of bighorn sheep in the Caballos, augmentation of this self-starting population is clearly within the intent of the continuing management guidance and BLM policy for the management of this special status species.

1.3 Scoping and Public Involvement Issues

In November, 2008 the NMDGF hosted another public meeting in Truth or Consequences, NM to discuss the current status of the statewide desert bighorn sheep recovery effort and their proposal to augment the Caballo “self starting herd”. BLM was present at that meeting to answer questions related to consistency with existing land use plan decisions and the Tri-County Resource Management Plan Amendment currently being prepared for public review and comment. NMDGF and BLM explained how existing and future land use restrictions such as road closures are not being proposed to manage for bighorn sheep in

the Caballos. While a few individuals expressed concerns about augmenting bighorn, the public was generally supportive of the action.

The NMDGF intends to host another public meeting in T or C prior to any release of bighorns in the Caballos

2 DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES

2.1 Proposed Action

The NMDGF proposes to release 20-30 desert bighorn sheep in the southern portion of the Caballo Mountains to augment an existing "self-starting" herd of approximately 25-30 sheep. The proposed release would be as close to Redhouse Mountain as possible using existing roads. Bighorns would be captured from the NMDGF Redrock Bighorn Sheep rearing facility north of Lordsburg, NM, transported via horse trailers and/or crates in the back of a pickup truck, and released on public or state lands in the southern end of the Caballos near Redhouse Mountain. All travel to the release site would be on existing roads.

Road conditions would be monitored prior to the release to determine the most appropriate (i.e. accessible) release site. Because road conditions may change between now and when the release would occur, alternate release locations have been identified as follows (Map 1):

Preferred Release Site A	T 18 S, R 3W, sections 9, 10, and 16 (state land)
Alternate Release Site B	T 18 S, R 3 W, sections 1, 2 (state land), and 5
Alternative Release Site C	T 17 S, R 3 W, sections 27, 28, and 32 (state land)

NMDGF has secured approval from the State Land Office to release on state lands in the event it is required.

If necessary, road maintenance would be performed to facilitate vehicle access and the release of bighorns as close to the Redhouse Mountain as possible. No new roads would be constructed. Only those portions of existing roads would be improved as necessary to allow for passage of pickups and horse trailers to and from the release site.

2.2 No Action Alternatives

Under the no action alternative, the augmentation of the existing desert bighorn sheep population on Caballo Mountain would not occur on BLM lands. Increases in bighorn sheep numbers would occur naturally without augmentation.

3 AFFECTED ENVIRONMENT

Historical and present use of the Caballo Mountain area is predominately livestock grazing, mining, dispersed recreational use, and seasonal hunting. Caballo Mountain is bordered on the north by State Highway 51 connecting Truth or Consequences and Engle, NM. The Jornada del Muerto basin and the Camino Real Trail border Caballo Mountain to the east and connect to Interstate 25 and the Rio Grande River on the south end which border Caballo Mountain to the west. Caballo Reservoir and Caballo Lake State Park are located along the Rio Grande River to the west. Las Cruces is located approximately 35 miles to the southwest. The Fra Cristobal Mountains are located approximately 10 miles north and the San Andres Mountains are located approximately 25 miles to the east.

The critical elements of Prime or Unique Farmlands, Floodplains, Native American Religious Concerns, Hazardous or Solid Wastes, Wetland and Riparian Zones, Wild and Scenic Rivers, Wilderness, and Low Income/Minority Populations, are not present within the Caballo Mountain bighorn sheep habitat area and would not be affected.

3.1 Vegetation

Ecological sites within the project area are in the Southern Desertic Basins, Plains and Mountains-42 Major Land Resource Area. The ecological sites are in the SD-2 Sub Resource Areas. Ecological sites for the Jornada basin watershed, extending from the Caballo Mountains east to the San Andres Mountains are comprised of gravelly, gravelly loam, gravelly sand, loamy, limestone hills, sandy, and shallow sandy ecological sites. More detailed descriptions may be obtained from NRCS Ecological Site Descriptions website; (<http://www.nm.nrcs.usda.gov/technical/fotg/section-2/esd.html>).

The Caballo Mountains are comprised mostly of Limestone Hills site which intergrade with gravelly and hills sites. This site tends to occur at or approaching transitions to higher-elevation land resource units (e.g. CP-4) so plant community composition may grade continuously across relatively short distances. The most common historic plant community type of the limestone hills site is dominated by black grama, bush muhly, and sideoats grama. The Limestone Hills also contain pinyon, juniper and oakbrush. Tobosa may be abundant on heavier soils or in areas receiving run-in water. Shrubs and succulents are common, especially on south-facing slopes. South-facing slopes often exhibit low grass cover, even when adjacent north-facing slope are grass-covered. Limestone hills sites often exhibit less shrub cover and more grass cover than adjacent hills sites, indicating the favorable properties of rocky, limestone-derived soils for grasses. The Limestone Hills site is resistant to grass loss compared with other sites in SD-2, perhaps due to the presence of a rough, stony surface that 1) retards sheet flow velocity and erosional soil loss and 2) protects the crowns of grasses from herbivory by livestock. Furthermore, fissures forming in limestone rocks may facilitate infiltration and rock cover retards evaporative water loss relative to other soils.

Vegetation of the Gravelly ecological site at potential is a grassland comprising up to 12% cover of grasses with dominants of black grama and bush muhly. Creosotebush is an integral, but not dominant, part of the community. Retrogression is indicated by increased bare ground and increased size of bare ground patches with change in grass species dominance. The shrub-dominated state is creosotebush with some grass cover of bush muhly and black grama. The shrubland state is generally devoid of grasses and exhibits soil erosion and truncation.

The Gravelly Loam site has a grassland aspect, characterized by short and mid-grasses and dominated by black grama. Yucca, sotol, and agave are highly noticeable components of the landscape. Forbs are least noticeable, except when such plants as desert bailey are in flower.

At present, there are no known noxious weed populations within the project area designated as potential bighorn sheep habitat.

3.2 Soil/Water/Air

The Caballo Mountain area is composed of Rock Outcrop-Torriorthents Courthouse soils. These soil areas are mainly rock outcrop, and shallow to deep, well drained, moderately undulating to extremely steep soils on piedmonts, hills, low mountains, ridges, ledges and escarpments. Detailed descriptions of these soils can be found in the Soil Survey of Sierra County Area, published by the Soil Conservation Service (1981).

Perennial surface waters within the upper elevations of the Caballo Mountains are limited to a few spring sites west of Timber Mountain about mid elevation above Caballo Reservoir. Several earthen impoundments (tanks) are located within ephemeral drainages along the lower foothills surrounding Caballo Mountain. The length of time these earthen tanks hold water varies from 3-12 months, providing water for livestock and wildlife. Several stock water wells are also located along the lower foothills and are currently used to water livestock and wildlife.

The air quality of the area of the proposed action is considered good and is designated a Class II air quality area. A Class II area allows for moderate amounts of air quality degradation. The primary source of air pollution is pm10 (dust) generated off-site during high wind events, common during the spring months in southern New Mexico.

3.3 Wildlife

The Caballo Mountain area is characterized by Chihuahuan desert scrub and semi-desert grassland biotic communities. Wildlife species composition expected to occur within the bighorn sheep release area is characteristic of the Chihuahuan desert. The Caballo Mountains provide habitat for approximately 10 species of amphibians, 56 species of reptiles, 77 species of mammals, and 291 species of birds.

Standard Habitat Sites (SHS) are ecological sites with similar components such as vegetation, soil, landform, and climate, forming suitable habitat for specific wildlife species. SHS descriptions are available from the LCDO. The SHS that occur within the Caballo Mountain bighorn sheep project area include:

- Creosote rolling hills
- Creosote rolling uplands
- Creosote breaks
- Grass mountain
- Grass rolling hills

- Mixed shrub mountain
- Mixed shrub hills
- Mixed desert shrub
- Mixed desert shrub rolling hills
- Mesquite rolling uplands
- Pinon/Juniper grass mountain

Vertebrate species lists for each SHS are available from the Integrated Habitat Inventory Classification System (IHICS) database on file in the LCDO. The IHICS database is a companion product to the inventory mapping completed for the District Office in the late 1970's and provides a listing of species use and occurrence in various habitats. Tables of wildlife, by habitat type, have also been developed utilizing the Biota Information System of New Mexico (BISON-M) <http://www.bison-m.org/databasequery.aspx>.

3.4 Special Status Species

Special Status Species (SSS) are: Federally Endangered, Threatened, Proposed, Candidate, Critical Habitat Designated, Species of Concern, New Mexico Endangered, New Mexico Threatened, and BLM Sensitive.

3.4.1 Special Status Species Plants

Presence of special status plant species and their habitats in Dona Ana County was considered using LCDO species occurrence/habitat records and New Mexico Natural Heritage species records. Species descriptions and distributions were derived from LCDO office records and New Mexico Rare Plant Technical Council [NMRPTC. 1999. New Mexico Rare Plants. Albuquerque, NM: New Mexico Rare Plants Home Page. <http://nmrareplants.unm.edu> (Latest update: 18 January 2006)].

Based on evaluation of the above information, 35 special status plant species potentially occur in Dona Ana and Sierra Counties. Of the 35 species listed, only four potentially occur or have habitat present within potential or occupied bighorn sheep habitat in the Caballo Mountains, as shown below.

TABLE 1 SPECIAL STATUS PLANTS POTENTIALLY OCCURRING OR HAVING HABITAT PRESENT

Species	Scientific Name	Status
Night Blooming Cereus Cactus	<i>Peniocereus greggii</i> var. <i>greggii</i>	NM Endangered, BLM Sensitive
New Mexico Rock Daisy	<i>Perityle staurophylla</i> var. <i>staurophylla</i>	BLM Sensitive
Castetter's Milkvetch	<i>Astragalus castetteri</i>	NM Sensitive

Nodding Rock Daisy	<i>Perityle cernua</i>	Federal Species of Concern, NM Sensitive, BLM Sensitive
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Night-blooming cereus This cactus species is a widespread but rare species in the Chihuahuan desert. The cactus often occurs in the canopy of supporting creosote bush or mesquite plants, but may occur in open spaces. Potential habitat for the night-blooming cereus occurs in creosote rolling upland, mesquite-rolling upland, half-shrub rolling upland, and mixed shrub rolling upland standard habitat sites. Soils are typically silty to sandy grading into rocky igneous or limestone substrates. There are no known occurrences of this species near the Caballo or Redhouse Mountains.

New Mexico Rock Daisy This species occurs on the cliff sides of several small desert mountain ranges including the Caballo Mountains. It is located in the crevices of limestone cliffs and boulders, usually on protected north and east exposures at 4,900-7,000 ft of elevation. The cliffside habitats of this endemic plant offer a great deal of protection from human impacts.

Castetter's Milkvetch This is a rhizomatous perennial with 10-20 spreading or declined pea-like flowers. It is found on dry, rocky slopes in montane scrub and open juniper woodland from 5,000-7,050 ft. elevation. This plant occupies rocky slopes in remote desert mountain ranges where it occasionally colonizes road cuts and hardrock mine spoils. Current land uses pose little threat to this species. This species is known to occur in the Caballo Mountains.

Nodding Cliff Daisy This species occurs on igneous cliffs, primarily on rhyolite, occasionally on andesite at 5,000-8,800 ft. elevation. This is a cliff dwelling species and, therefore, its habitats are relatively inaccessible. Hot fires up the canyons are a potential threat to habitats with high fuel loads.

3.4.2 Special Status Animals

Special Status animal species lists for Dona Ana and Sierra were compiled from: www.wildlife.state.nm.us/conservation/threatened_endangered_species/index.htm and www.fws.gov/. There are 92 special status animal species known to occur or could potentially within Dona Ana and Sierra Counties. Based on an analysis of known geographic distribution and habitat requirements for each species in comparison with habitat types within the Caballo Mountains bighorn sheep area, only 11 species are known to occur or could potentially occur as shown in the table below.

Special Status Species with potential to occur within the Caballo Mtn. potential bighorn sheep habitat area.

TABLE 2 SPECIAL STATUS ANIMALS WITH POTENTIAL TO OCCUR WITHIN THE CABALLO MOUNTAIN BIGHORN SHEEP RELEASE AREA

Common Name	Scientific Name	Status
Texas Horned Lizard	<i>Phrynosoma cornutum</i>	NM Sensitive, BLM Sensitive

Varied Bunting	<i>Passerina versicolor</i>	NM Threatened
Bald Eagle	<i>Haliaeetus leucocephalus</i>	ESA Delisted, NM Threatened
Common Ground-Dove	<i>Columbina passerina</i>	NM Endangered
Loggerhead Shrike	<i>Lanius ludovicianus</i>	NM Sensitive, BLM Sensitive
Townsend's Pale Big-eared Bat	<i>Corynorhinus townsendii pallescens</i>	Federal Species of Concern, NM Sensitive, BLM Sensitive
Fringed Myotis Bat	<i>Myotis thysanodes thysanodes</i>	NM Sensitive, BLM Sensitive
Long-legged Myotis Bat	<i>Myotis volans interior</i>	NM Sensitive, BLM Sensitive
W. Small-footed Myotis Bat	<i>Myotis ciliolabrum</i>	NM Sensitive, BLM Sensitive
Desert Pocket Gopher	<i>Geomys arenarius arenarius</i>	Federal Species of Concern, NM Sensitive, BLM Sensitive
Desert Bighorn Sheep	<i>Ovis canadensis mexicana</i>	NM Threatened, BLM Sensitive

Habitat descriptions for these special status wildlife species are available from the Bureau of Land Management, LCDO and can be found at www.wildlife.state.nm.us/conservation/threatened_endangered_species/index.htm.

Desert bighorn sheep were a state-listed endangered species in New Mexico 1980 to 2008, at which time they were downlisted to threatened status. Bighorn are identified as a Species of Greatest Conservation Need in the Comprehensive Wildlife Conservation Strategy for New Mexico (NMDGF 2006).

3.4.3 Cultural

Several linear and block cultural resource surveys have been conducted within the Caballo Mountain area. Information recorded from archaeological sites indicate that dates of occupation range from BC 9500 to present. There is high potential for cultural sites, features, or artifacts to be located within the Caballo Mountain project area given the large number of sites already recorded. Additionally, Caballo Mountain is bordered on the east by the Camino Real Trail and a historic railroad grade, on the west by the Rio Grande, and large drainages are located throughout the mountain range.

3.5 Visual/Recreation/Wilderness

The Caballo Mountain area is categorized as Visual Resource Management Area (VRM) Class III and Class IV. Class III areas allow that contrasts to the basic elements caused by a management activity may be evident and begin to attract attention in the landscape. The changes, however, should remain subordinate in the existing landscape. The description of the Class IV is to provide for management

activities which require major modification of the existing landscape. The level of change to the characteristic landscape can be high. These management activities can dominate the landscape and be the major focus of viewer attention; however, every attempt should be made to minimize the impact of these activities through careful location, minimal disturbance, and repeating the basic elements.

The Caballo Mountains are utilized by the public for dispersed recreational activities such as hiking, wildlife viewing and seasonal hunting.

There are no Wilderness Study Areas in the Caballo Mountains.

3.6 Special Management Areas

There are no Special Management Area designations within the Caballo Mountain potential bighorn sheep habitat area. However, the 840 acre Rincon Petroglyph Area of Critical Environmental Concern (ACEC) is located in the southern end of the Caballo Mountains (Map 3). ACECs are defined as "areas within the public land where special management attention is required (when such areas are developed or used or where no development is required) to protect and prevent irreparable damage to important historic, cultural, or scenic values."

According to the Mimbres RMP, the Rincon ACEC was designated because it meets the BLM's relevance criteria as a significant cultural resource, and the area contains a fragile, sensitive, rare, irreplaceable, endangered, threatened, and vulnerable cultural resource. The ACEC is managed to protect the cultural values, which consist of numerous petroglyphs pecked onto large boulders. Due to the rugged terrain and complexity of the area, a detailed survey of the entire ACEC has not been carried out to record the location and condition of the petroglyphs.

Planned actions in this ACEC include: 1) retaining all public lands 2) limiting vehicle use to designated roads and trails 3) managing for semi-primitive nonmotorized class; and 4) excluding new right-of way authorizations outside existing sites.

The area is closed to mineral material sales outside the existing rock quarry and is designated No Surface Occupancy for mineral leasing within 100 feet of the petroglyph site.

The ACEC is managed as Visual Resource Management (VRM) Class II. Activities within this class must retain the existing characteristic of the landscape. The level of change to the character of the landscape should be low. Management activities may be seen, but should not attract the attention of the casual observer. Any changes must repeat the basic elements of form, line, color, and texture found in the predominant natural features of the characteristic landscape.

Two ACECs have been nominated by the New Mexico Wilderness Alliance within the Caballo Mountains. The 17,000 acre Caballo Mountains ACEC is nominated for its scenic values. The 24,000 acre Southern Caballo Mountains ACEC is nominated for its cultural resources values.

To be considered as a potential ACEC and analyzed in RMP alternatives, an area must meet the criteria of relevance and importance listed in 43 CFR §1610.7-2. A description of the BLM planning and ACEC designation process can be found in BLM Handbook 1610-1.

A BLM interdisciplinary review team has completed an assessment of the proposed ACECs and has determined that the nominated lands meet the relevance and importance criteria. Based on this analysis, the BLM Las Cruces District concludes that this nomination warrants further consideration as an ACEC. Until such time as the nomination is addressed in a future Resource Management Plan amendment or revision, the area nominated shall be managed under interim guidance in BLM Handbook 1601-1 that maintains the values for which the ACEC was nominated.

3.7 Livestock Grazing

There are portions of 12 grazing allotments within potential bighorn sheep habitat identified by the NMDGF recovery plan for Caballo Mountain as follows (Map 4):

TABLE 3 GRAZING ALLOTMENTS IN THE BIGHORN SHEEP AUGMENTATION AREA

Allotment Name	Allotment Number	Permitted Use (kind of livestock/season of use)*	AUMs
Mescal Spring Ranch	16067	270 CYL, 2 HYL	2677
Putnam Draw	06149	173 CYL	1391
L 7 Ranch	16044	18 CYL	216
Apache Gap	16018	275 CYL	2475
Apache Canyon	16023	111 CYL	1079
Flat Lake	16053	633 CYL, 10 HYL	7002
Green Canyon	06110	143 CYL	1527
Garfield	03061	37 CYL	444
Palma Park	03058	160 CYL	1555
Rincon	03067	89 CYL	918
Longbottom Canyon	16049	244 CYL, 3 HYL	2697
Palomas Gap Ranch	16089	312 CYL	3665

*CYL=cattle yearlong, HYL=horses yearlong

Wildlife management actions outlined in the MRMP include "grazing of domestic sheep and goats will not be allowed in bighorn sheep habitat areas. Existing guidance also addresses buffer areas for grazing of domestic sheep." The WSRMP did not include a specific wildlife or grazing management decision or describe continuing management guidance addressing grazing by domestic sheep and/or goats within bighorn sheep habitat areas.

Guidelines for Management of Domestic Sheep and Goats In Native Wild Sheep Habitats are outlined in BLM policy guidance (IM-98-140 revised). These guidelines reflect a balanced approach for management of domestic sheep and free-ranging goats in native wild sheep habitats, including whenever reintroductions, transplants, or augmentations of wild sheep populations, or proposed changes in a livestock grazing permit on BLM administered lands are being considered.

For desert bighorn sheep,, the following guidelines are recommended:

- a. No domestic sheep or goat grazing should be allowed within buffer strips less than 13.5 kilometers (nine miles) surrounding desert bighorn habitat, except where topographic features or other barriers prevent physical contact.
- b. Domestic sheep or goats trailed and grazed outside the 13.5 kilometers (nine mile) buffer and in the vicinity of desert bighorn ranges should be closely managed and carefully herded.
- c. Unless a cooperative agreement has been reached to the contrary, domestic sheep or goats should be trucked rather than trailed, when trailing would bring domestic sheep or goats closer than 13.5 kilometers (nine miles) to occupied desert bighorn sheep ranges, especially when domestic ewes or nannies are in estrus.

Domestic sheep and/or goats are not permitted to graze on public lands within nine miles of potential or occupied bighorn sheep habitat in the Caballo Mountains. Domestic sheep and/or goats may, however, graze private and/or state lands within this 9 mile buffer. Grazing of domestic sheep and/or goats on private and/or state lands is not controlled by the BLM.

4 ENVIRONMENTAL EFFECTS

4.1 Vegetation

4.1.1 Proposed Action

Bighorn sheep would be expected to occupy habitat in steeper high elevation areas of the Caballos. Competition with other ungulates such as mule deer and/or livestock (i.e. cattle) for available forage, and subsequent impacts to vegetation resources, would be minimal due to sheep habitat preferences. Additionally, impacts to vegetation will be minimal in the short-term due to the low numbers of bighorn sheep released into the area. Over the long-term, indicators of habitat health (i.e. vegetation conditions) may become apparent as recruitment in numbers of lambs increases or decreases annually. For example, a low lamb survival rate could be indicative of insufficient available forage. However, other factor such as predators and disease will also impact overall bighorn sheep numbers. The NMDGF (2003) *Plan for the Recovery of Desert Bighorn Sheep in New Mexico 2003-2013* identifies a potential population estimate for the Caballo Mountains of 35-70 bighorns. However, given the size of the Caballo Mountain potential habitat and the fact bighorns are expected to migrate between the adjacent Fra Cristobals and/or

San Andres Mountains, numbers could be higher or lower at any given time. The long term vegetation impacts from bighorns at this approximate population level are expected to be minimal.

4.1.2 No Action Alternative

Under the no action alternative, the NMDGF would not augment the current population of 25-30 bighorns occupying habitat near Redhouse Mountain. Bighorn sheep numbers would be allowed to increase naturally. At current population levels and structure (only 8 of the current 25-30 bighorns are ewes), increases to potential population estimates as described in the recovery plan would require a much longer period of time to achieve. In addition, when bighorn populations are at low numbers, they are much more vulnerable to stochastic events such as disease, which have been known to eliminate entire herds. Therefore, under the no action alternative, bighorn numbers are expected to remain low for several years. Therefore, impacts to vegetation resources would be expected to remain minimal.

4.2 Soil/Water/Air

4.2.1 Proposed Action

The soils within the potential bighorn habitat area are mainly rock outcrop, and shallow to deep, well drained, moderately undulating to extremely steep soils on piedmonts, hills, low mountains, ridges, ledges and escarpments. The impacts from dispersed bighorn sheep use within these soil types is expected to be minimal.

Very few perennial water sources exist in the Caballo Mountains. Bighorns are expected to utilize existing earthen impoundments (dirt tanks) and wildlife catchments for water. These are seasonal water sources holding water for differing lengths of time throughout the year, depending on location. Therefore, utilization by bighorn sheep is expected to be variable, depending on vegetation conditions surrounding existing seasonal water sources and the length of time each dirt tank or guzzler holds water. In addition to these seasonal water sources, livestock wells and pipelines will also provide water sources for bighorn sheep when water is being pumped for livestock. All these water sources currently provide water for existing wildlife in the Caballo Mountains, including mule deer. Mule deer numbers have declined dramatically in the Caballo Mountains over the past decade. Usage of existing waters in the Caballos by bighorn sheep, even at estimated potential population levels, would be far less than overall historic use by mule deer. Therefore, impacts to existing water sources is expected to be minimal.

Dispersed use by bighorn sheep on Caballo Mountain would have no affect on current air quality.

4.2.2 No Action Alternative

Under the no action alternative, bighorn numbers would be expected to increase naturally over a much longer period of time. Impacts to soil, water, and air resources under the no action alternative would be the same as the proposed action.

4.3 Wildlife

4.3.1 Proposed Action

There are only eight ewes in the current self-starting bighorn sheep population in the Caballos. The NMDGF proposes to release approximately 20 sheep to augment this population. They estimate that there would be approximately 13 ewes and seven rams released, although the number may vary slightly depending on the number of bighorn captured for transplant. Utilizing a simple population model based on observations from various New Mexico bighorn sheep herds over the last eight years, the NMDGF has predicted that given the existing population structure of ewes and rams, it would take approximately 21 years to reach a total population of 100 sheep at a 10% annual growth increase and up to 39 years with a 5% annual growth rate. With the proposed augmentation of 13 ewes and seven rams, it would take approximately 11 and 19 years to reach a total population of 100 sheep at a 10% and 5% annual growth rate, respectively. This predictive model does not account for the higher risk of a stochastic event causing a smaller population to go extinct (Goldstein, 2009).

Bighorn sheep are not expected to compete with existing wild ungulates in the Caballo Mountains. Although bighorn sheep and mule deer habitat may overlap to a certain degree, overall differences in dietary preferences and use of steeper terrain and open slope habitats by bighorn sheep will limit competition. An increase in bighorn sheep numbers to the estimated population level is not expected to affect or alter existing vegetation or habitat conditions to any measurable degree.

In 2001 the statewide desert bighorn population had declined to less than 170. Between 1996 and 2002 the number of wild populations declined from 7 to 4. Beginning in 1999, the NMDGF initiated mountain lion control actions to mitigate high levels of mortality to remaining bighorn sheep populations in four mountain ranges to prevent possible extinction. The *Plan for the Recovery of Desert Bighorn Sheep in New Mexico 2003-2013* (NMDGF 2003) identified mitigating excessive lion predation as a recovery strategy. The statewide bighorn population increased to over 400 in 2007 from a combination of increased survival and translocation (Rominger and Goldstein 2008).

Small populations of wild ungulates have been determined more vulnerable to the impacts of predation. Therefore, NMDGF has implemented predator control actions in the short term until bighorn populations recover or reach levels where predator control is no longer required or less aggressive control actions are necessary.

Mountain lion control actions by NMDGF have not eliminated the presence of lions within bighorn sheep herd areas (Goldstein and Rominger 2007). Such actions have simply reduced the influence of predators on low bighorn numbers, allowing for population increases to levels that are less vulnerable to predation. Since implementation of the mountain lion control program, statewide mortality rates on desert bighorn have declined from 0.23 to 0.10. Cause specific mortality rates from mountain lion predation have declined from 0.17 to 0.05 (Rominger and Goldstein 2008). These decreased mortality rates have greatly reduced extinction risk for the herds (Fisher et al. 1999). The statewide population increased from <170 to approximately 450 during this time period (Goldstein, 2009).

Mountain lion control actions by NMDGF began in the Caballo Mountains in 2008. It is expected that these predator control efforts will also benefit current low numbers of mule deer in the Caballo Mountains. On average, <3 lions per year are removed per mountain range, and to date only one lion has been removed from the Caballos (Goldstein, 2009). In 2006, NMDGF established a mountain lion management matrix which put forth the maximum lion mortality allowed per management zone due to all human activities in order to maintain sustainable lion populations throughout the state (NMDGF 2008). This incorporated mortality from sport harvest, depredation, road-kills, illegal take, private land kills, bighorn sheep protection, etc. The number of mountain lion killed in the Caballos would not negatively impact the stability of the lion population as the number would not exceed those defined in the mountain lion management matrix. Aside from the short term impacts to mountain lion populations as a result of predator control activities, an increase in bighorn sheep numbers in the Caballo Mountains is not expected to impact existing habitat conditions or other wildlife populations.

4.3.2 No Action Alternative

Under the no action alternative, bighorn numbers would be allowed to increase naturally, requiring a much longer period of time to achieve recovery goals. Impacts to wildlife resources would be the same as the proposed action. However, because bighorn populations would remain low and more vulnerable to the influences of predators for a longer period of time, predator control activities affecting mountain lion in the Caballos would most likely take place over a longer period of time. No long term indirect impacts to mountain lion populations would be expected.

Additionally, under the no action alternative, bighorn numbers in the Caballos would most likely remain low for a longer period of time. This would leave the small self-starting herd more vulnerable to the influences of predation, drought, disease, and the possibility of extinction.

4.4 Special Status Species

4.4.1 Proposed Action Plants

There are no known occurrences of Night-blooming cereus near the Caballo or Redhouse Mountains. Increasing bighorn sheep numbers is not expected to impact this species. The New Mexico Rock Daisy, Castetter's Milkvetch, and Nodding Cliff Daisy occur in cliffside habitats and rocky steep slopes. Although these habitat types may be accessible to bighorn sheep, increased numbers of bighorn sheep in the Caballo Mountains are not expected to impact these species due to low overall bighorn numbers in relation to overall available habitat and expected dispersed use patterns.

4.4.2 Proposed Action Animals

Augmentation of the existing self-starting bighorn sheep population in the Caballos would essentially double the current population. An augmentation would bolster the current low bighorn numbers, rendering the population more resistant to environmental influences such as drought, predation and disease. Achieving potential population estimates for the Caballo-Fra Cristobal metapopulation as

described in the NMDGF recovery plan would assist in meeting overall recovery goals. This could potentially result in removal from the state endangered species list.

Bighorn sheep use is expected to be dispersed, utilizing a wide diversity of standard habitat sites that exist in the Caballo Mountains. Increased bighorn sheep numbers is not expected to alter the condition of these habitat sites. Therefore, an increase in bighorn sheep numbers within potential habitat is not expected to impact other special status species animals that are known to occur or could potentially occur in the Caballos.

4.4.3 No Action Alternative Plants

Under the no action alternative, bighorn sheep numbers would be required to increase naturally over a longer period of time. Therefore, impacts to special status species animals and their habitats would be similar to the proposed action.

4.4.4 No Action Alternative Animals

Impacts would be the same as for special status species plants. As discussed under the no action alternative for wildlife, bighorn numbers in the Caballos would most likely remain low for a longer period of time under the no action alternative. This would leave the small self-starting herd more vulnerable to the influences of predation, drought and disease and the possibility of total elimination. Such an event would adversely impact NMDGF efforts to achieve stated recovery goals and remove the desert bighorn sheep from the state endangered species list.

4.5 Cultural

4.5.1 Proposed Action

Overall bighorn sheep numbers will be low in relation to the size of potential habitat. Bighorn use patterns are expected to be dispersed (similar to other existing wildlife populations such as mule deer), concentrating mainly in steep rocky slope areas of the mountain which are less likely to contain cultural sites. Therefore, it is expected that increasing bighorn sheep populations in the Caballo Mountains through augmentation of existing numbers would have no impact on cultural resources.

To facilitate the release of bighorns, minor road maintenance may be necessary. An inventory of proposed ground disturbance areas would ensure there is no impact to cultural resources.

4.5.2 No Action Alternative

Under the no action alternative, a bighorn release would not take place. Therefore, road maintenance to facilitate access by pickup trucks and horse trailers would not be required. Bighorn sheep numbers would

increase naturally over a longer period of time. Therefore, impacts to cultural resources from bighorn sheep occupation of the Caballos would be similar to the proposed action.

4.6 Visual/Recreation/Wilderness

4.6.1 Proposed Action

There would be an indirect positive impact to recreation as a result of increased wildlife viewing and potential bighorn hunting opportunities.

The proposed action would not result in ground disturbing activities that would alter visual resources. Therefore, there would be no impacts to visual resources resulting from an increase in bighorn numbers.

There are no wilderness study areas in the Caballos, therefore, there would be no impacts to wilderness values as a result of the proposed action.

4.6.2 No Action Alternative

Under the no action alternative, bighorn numbers would be allowed to increase naturally, over a much longer period of time. Therefore, impacts to visual/recreation/wilderness resources would be the same as the proposed action. However, positive recreational benefits from wildlife viewing or hunting opportunities would take much longer to be realized.

4.7 Special Management Areas

4.7.1 Proposed Action

There are no existing ACECs or other special management areas with the Caballo Mountain potential bighorn sheep habitat area. However, the Rincon Petroglyph Area ACEC is located south and adjacent to the potential bighorn habitat. The proposed action to augment the existing bighorn population would not impact the Rincon Petroglyph Area ACEC. The proposed action would not impact the special resource values for the nominated Caballo Mountain ACEC (scenic values) or the Southern Caballo Mountains ACEC (cultural). Maintaining these resource values until these nominated ACECs are addressed in a future RMP amendment or revision or implementing management guidelines to protect these values should they be designated an ACEC would provide secondary benefits to bighorn sheep by limiting habitat disturbance.

4.7.2 No Action Alternative

Under the no action alternative, the existing bighorn sheep population would not be augmented, leaving numbers to increase naturally. Impacts to special management areas would be the same as the proposed action.

4.8 Livestock Grazing

4.8.1 Proposed Action

Bighorn are more sensitive to diseases and parasites than other native ungulates such as mule deer and elk. They are particularly susceptible to diseases carried by domestic sheep. Domestic sheep grazing does not occur on BLM lands within the Caballo Mountains or on public lands within nine miles of the release area or potential habitat. Therefore, existing permitted livestock grazing is consistent with BLM policy Guidelines for Management of Domestic Sheep and Goats in Native Wild Sheep Habitats. No impacts to permittees on BLM lands will occur as a result of the proposed action.

All bighorns used for transplants are inspected for the presence of parasites, physical abnormalities prior to introduction into new habitats. Bighorn health is also analyzed using blood samples. This procedure precludes any probable transmission of diseases or parasites to ungulates already occurring in the area.

Predator control actions conducted by NMDGF as part of their bighorn sheep recovery efforts, provides a secondary benefit to livestock operators in the area. Controlling mountain lions in the Caballo Mountain bighorn sheep area will also reduce potential predator impacts on existing livestock operations.

4.8.2 No Action Alternative

Under the no action alternative, a release of bighorn sheep to augment the existing self-starting population would not occur. The existing bighorn sheep population would increase naturally over a longer period of time. Because bighorn sheep currently exist in the Caballos and no domestic sheep or goat grazing is permitted on public lands in the Caballo Mountain potential bighorn sheep habitat area, impacts to livestock grazing would be the same as the proposed action.

5 MITIGATING MEASURES

- a. A cultural inventory will be completed prior to any surface disturbance and road maintenance activities.
- b. Access to and from the release site will be via existing roads and trails.

6 CUMULATIVE IMPACTS

Cumulative impacts to vegetation resources could occur as bighorn sheep add to overall herbivory levels (which include livestock and mule deer). However, this is expected to be minimal given current low numbers of mule deer as compared to historic levels, and differences in habitat and dietary preferences.

Cumulative impacts from increased recreational use could occur as opportunities for wildlife viewing and additional hunting opportunities are created in the future. Current hunting opportunities include mule deer and small game. Mule deer numbers are currently less than historic levels with fewer hunting tags issues by NMDGF. Bighorn sheep hunting opportunities would not materialize until the herd has stabilized and become large enough to sustain limited hunting. Predator control actions by NMDGF to facilitate bighorn sheep populations will have secondary positive benefits to mule deer populations in the area. Increases in mule deer numbers could increase hunting opportunities in the long term. Increased recreational opportunities would result in positive economic benefits to the local community. Increased predator control in the Caballo Mountain area for bighorn sheep management would also benefit livestock operations in the area. This could also result in a positive economic benefit to livestock operations. Augmenting the self-starting bighorn population in the Caballos is additive to the on-going bighorn sheep management conducted by the NMDGF in the Fra Cristobal and San Andres Mountains. Population objectives for the Fra Cristobal-Caballo metapopulation and the San Andres-Organ-Oscuro metapopulation have been identified in the NMDGF recovery plan as goals for de-listing the species.

Bighorn sheep in the Caballos have been documented moving to and from the Fra Cristobals. It is anticipated bighorns will also move between the Caballos and the San Andres Mountains. The increase in bighorn numbers in the Caballos and their subsequent movement between adjacent populations will have a cumulative effect of increasing overall population levels and diversity within the two meta-populations. Achieving recovery goals will result in the overall positive benefits of removing the desert bighorn sheep from the state endangered species list as discussed in this analysis.

7 INDIVIDUALS, ORGANIZATIONS, OR AGENCIES CONSULTED

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John Coniff, Rincon Allotment
Michael Chavez, Garfield Allotment
Ed Schmitdt, Apache Gap Allotment
Duane Woods, Apache Canyon Allotment
Elma Grantham, Longbottom Canyon Allotment
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Map 1
Proposed Caballo Mountain
Bighorn Sheep Release Site

T 16

Occupied
Bighorn
Habitat

Alternate
Release
Area C

Alternate
Release
Area B

Preferred
Release
Area A

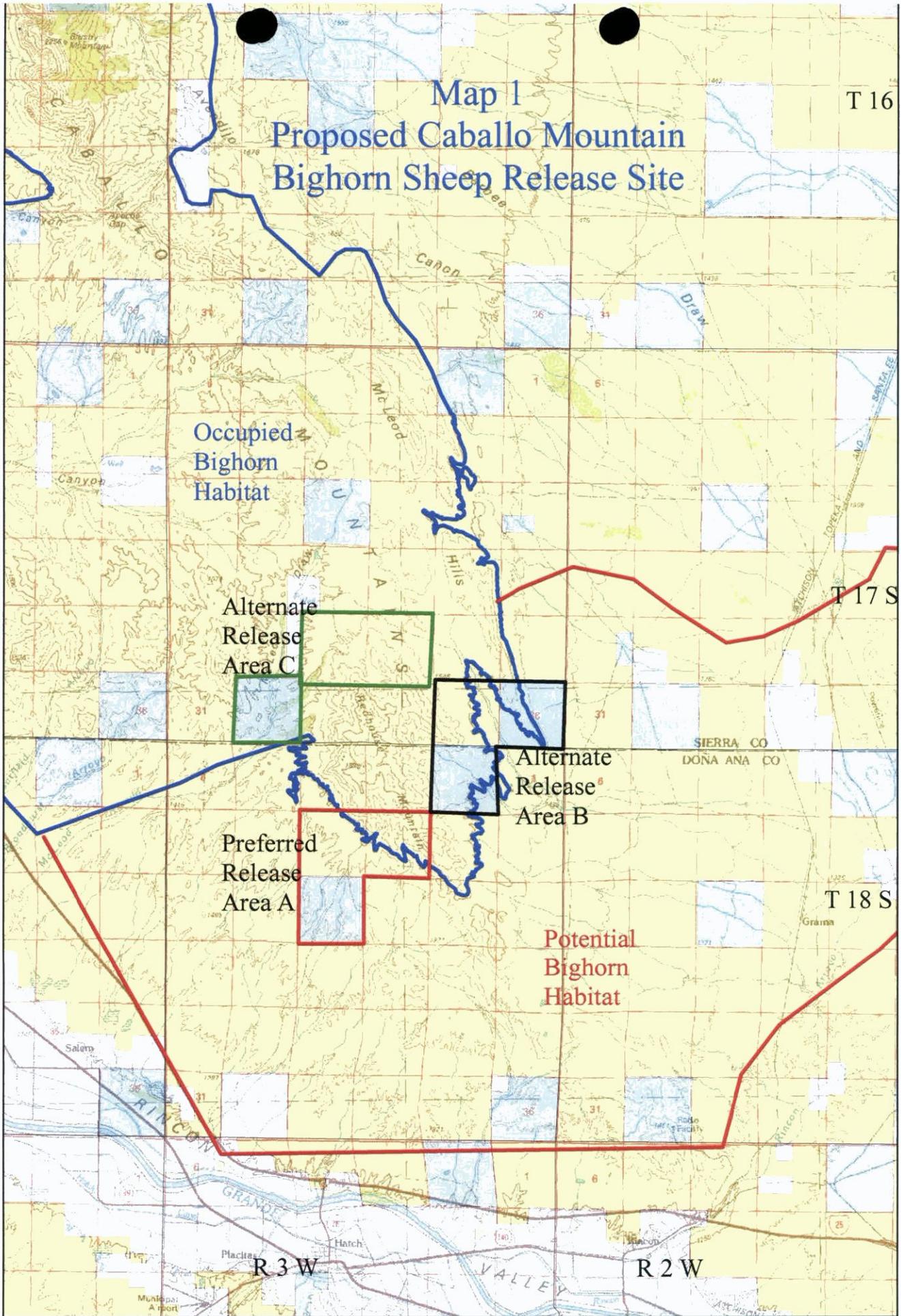
Potential
Bighorn
Habitat

T 17 S

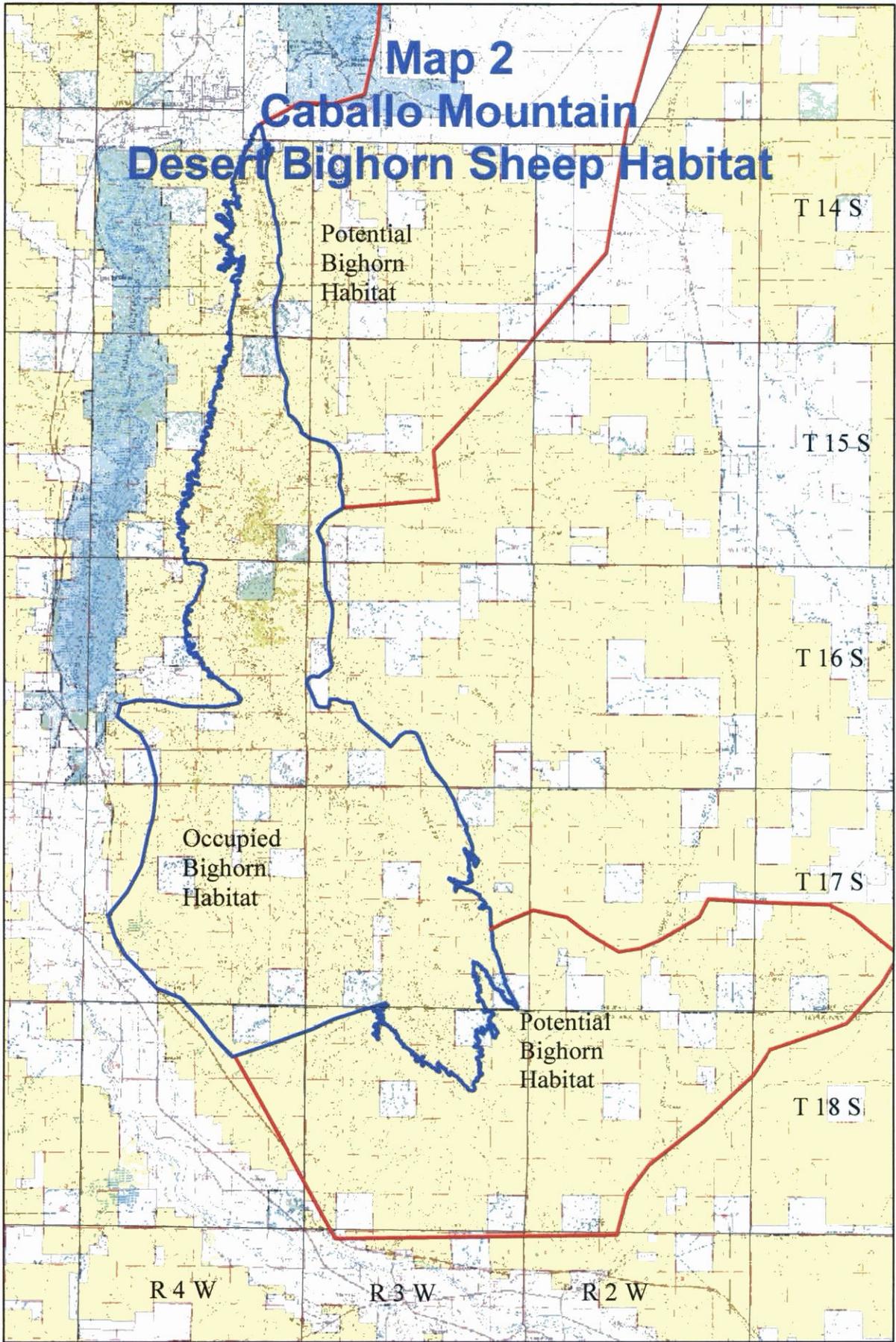
T 18 S

R 3 W

R 2 W



Map 2 Caballe Mountain Desert Bighorn Sheep Habitat



Potential
Bighorn
Habitat

T 14 S

T 15 S

T 16 S

Occupied
Bighorn
Habitat

T 17 S

Potential
Bighorn
Habitat

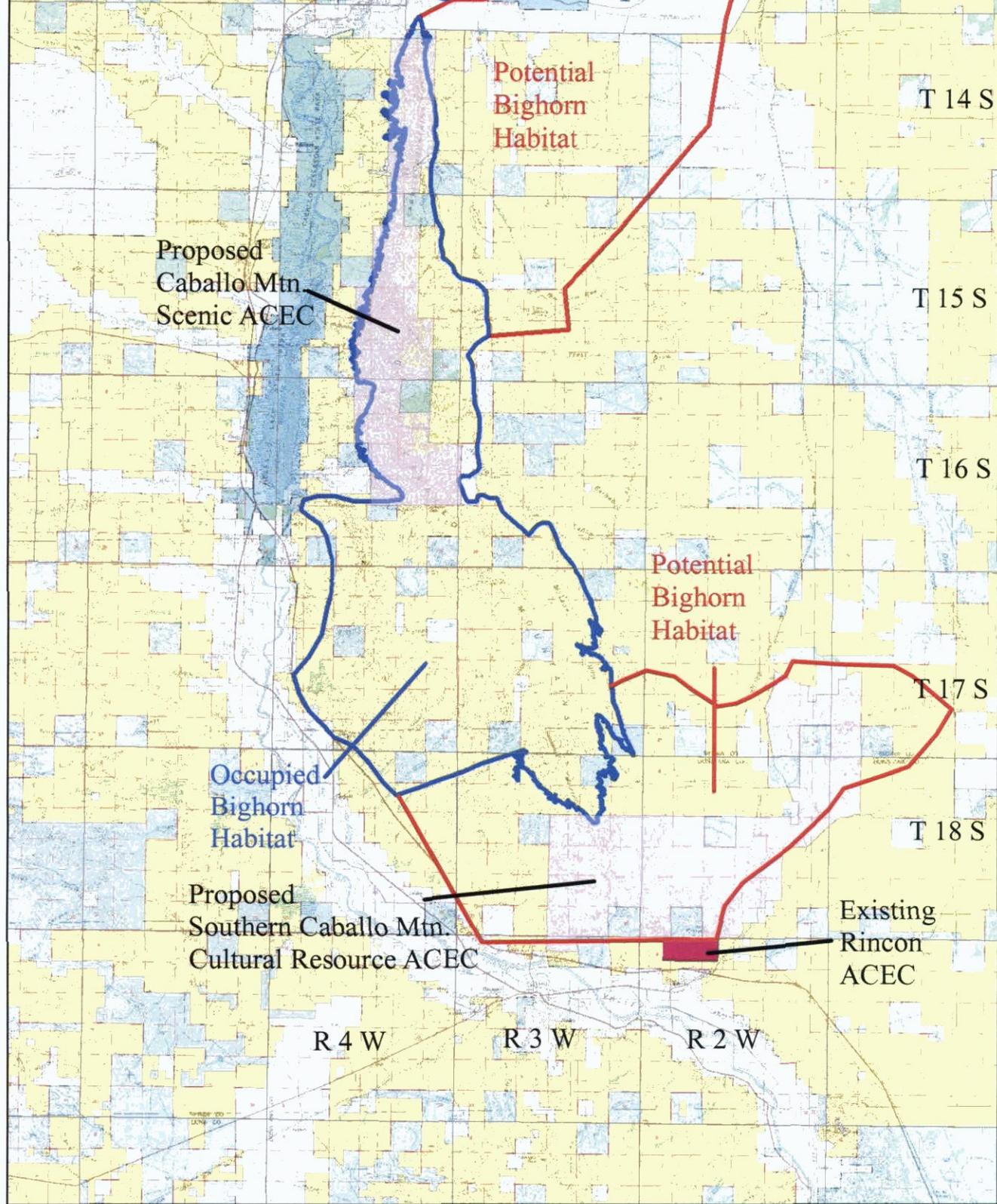
T 18 S

R 4 W

R 3 W

R 2 W

Map 3
Existing and Proposed ACECs
within the Caballo Mountain
Desert Bighorn Sheep Habitat



T 14 S

T 15 S

T 16 S

T 17 S

T 18 S

R 4 W

R 3 W

R 2 W

Proposed
Caballo Mtn.
Scenic ACEC

Occupied
Bighorn
Habitat

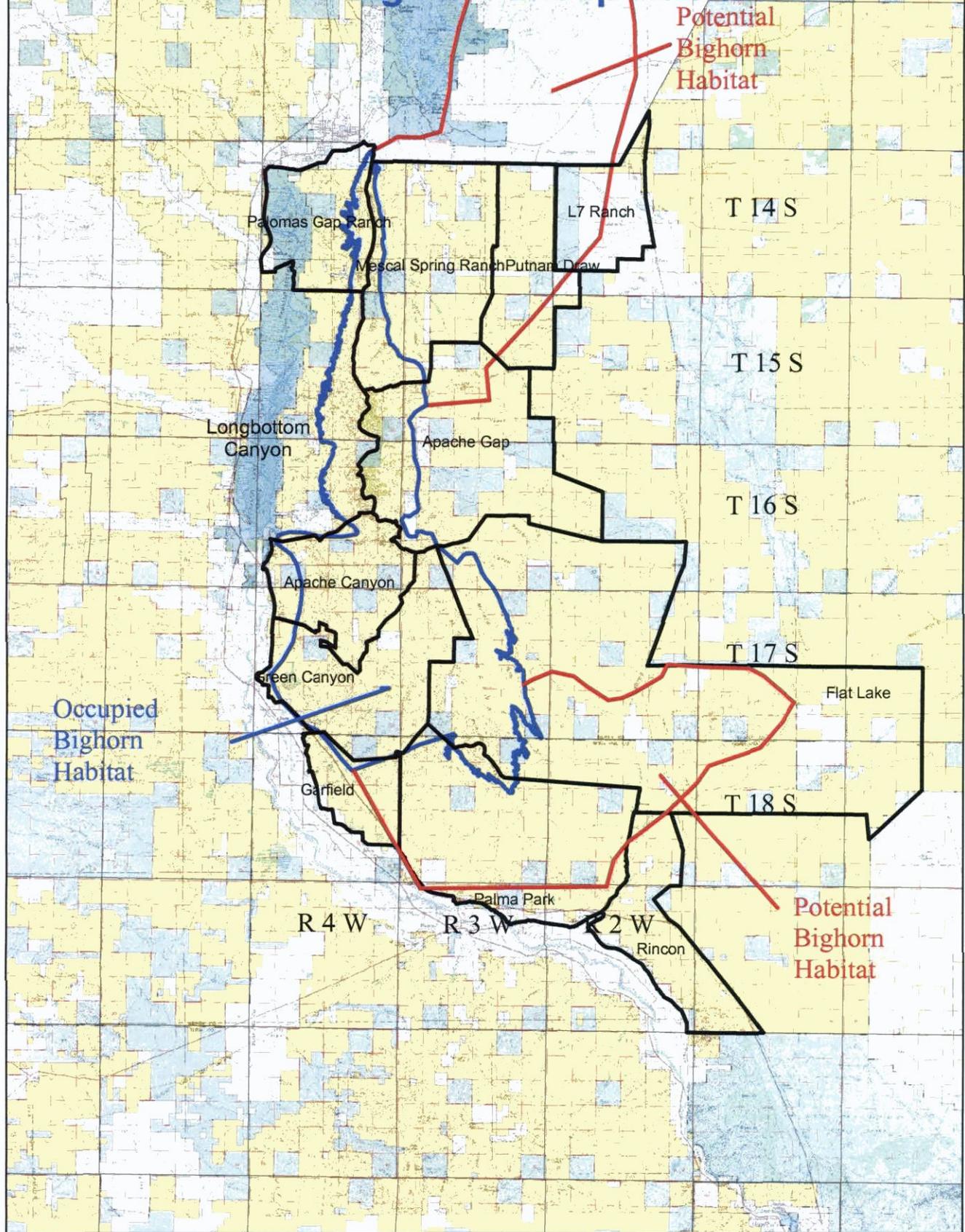
Proposed
Southern Caballo Mtn.
Cultural Resource ACEC

Potential
Bighorn
Habitat

Potential
Bighorn
Habitat

Existing
Rincon
ACEC

Map 4 Grazing Allotments within Caballo Mountain Desert Bighorn Sheep Habitat



Potential
Bighorn
Habitat

Occupied
Bighorn
Habitat

Potential
Bighorn
Habitat

