

TWO GOATS PROJECT PROPOSED ACTION DESCRIPTION

Purpose and Need

The Sacramento Ranger District interdisciplinary (ID) team has reviewed existing conditions in the Two Goats project area and identified opportunities to treat vegetation to reduce current high fuel hazards. Pinyon/Juniper/Oak and ponderosa pine stands are overly dense and could lead to high intensity wildfires that would be difficult to control and protect adjacent private lands and property. This project purpose and need would meet direction as described in and adopted by the Lincoln National Forest Land and Resource Management Plan as amended (Forest Plan) and the Otero County Community Wildfire Protection Plan.

The project area includes approximately 5,350 acres and is located in Otero County south of the High Rolls community from the private/Forest Service (FS) boundary, then bounded on the west by Westside Road, then bounded on the east by Karr Canyon road and bounded on the south by private lands containing Alamo Canyon municipal watershed tanks and then to Alamo Peak. The project area is within the Dry Canyon, Alamo Canyon and Fresnal Canyon watersheds and is within T15S, T16S and R11E.

See attached project location map and the proposed action map. In addition, a large-format color map (1:24,000 scale) of the proposed action is available on the Lincoln National Forest website for viewing or download at: <http://www.fs.fed.us/r3/lincoln/projects/index.shtml>.

Table 1 lists the Forest Plan Management Areas that provide management direction for the Two Goats project area.

Table 1. Lincoln NF Management Areas for the Two Goats Project.

Management Area Name	Primary Emphasis	Acres
2B	Range	2,965
2E	Developed and dispersed recreation, wildlife habitat management and timber management.	252
2F	Developed and dispersed recreation, wildlife habitat management and timber management.	2,037



The purpose and need and objectives for the Two Goats project were identified in a project initiation letter from the Sacramento District Ranger to the ID team and noted the following direction:

- Implement activities to move towards reintroducing fire into fire adapted ecosystems.
- Reduce hazardous fuels in Wildland Urban Interface (WUI) treatment areas to provide for defensible space adjacent to private property.
- Improve wildlife habitat for mule deer and other species.
- Improve timber stands to increase resiliency to fire, insects and disease.

The overall project treatment objectives are to:

- Implement activities to move toward reintroducing fire into fire adapted ecosystems.
- Reduce hazardous fuels in WUI treatment areas to provide for defensible space adjacent to private property.
- Defense Zone Buffer (DZB) fuel breaks would be established to facilitate community protection and provide fire fighting forces strategic locations to conduct suppression tactics.
- Provide for timber stand improvement and improvement of wildlife habitat, specifically mule deer by creating openings in dense pinon/juniper stands.

Proposed Action Description

The proposed action is designed to meet the project objectives and treatment activities are proposed that would:

- Implement mastication using a roller-chopper on track or rubber tires on acres near the private land and improvements.
- Implement mechanical thinning using chainsaws, and/or other mechanized equipment such as bobcats, mowers etc. with track or rubber tires.
- Implement hand thinning, piling and burning where other methods are not available.
- Implement broadcast, pile and or jackpot burning.
- Provide opportunities for personal and commercial firewood.
- Create wildlife habitat openings for mule deer as noted below:
 - The purpose of the wildlife opening treatments is intended to increase distribution of small openings in thick woodlands of pinon and juniper to increase vigor and availability of browse and forbs in areas where it is either deteriorated wildlife habitat or non existent. These openings benefit a whole variety of wildlife species but are focused for mule deer habitat improvement.
 - This prescription proposes to mechanically create approximately 5-acre wildlife openings¹ within the pinon/juniper woodlands within the project area. Within the 5-acre wildlife openings, four to five of the largest trees per acre would be retained. A buffer area of 50 to 200 feet between the wildlife openings would be retained. The exact buffer size would be determined during implementation.
 - Slash and trees would be left on the ground at a minimum of two years prior to any future prescribed fire. The downed material helps carry prescribed fire, prevents soil movement and serves as protection to seedling browse and forb species. If the wildlife openings can be reached by vehicles they may be fuel-wooded either by commercial or personal use sales.

Detailed discussions of the specific proposed actions by treatment block areas are below. The project area was broken into smaller treatment blocks to allow for different treatments in specific areas and to create treatment blocks of a size that would be easier to manage during implementation. See attached proposed action map. A summary table (See Table 2) of treatment blocks with acres and miles is included on page 11 of this document.

¹ An estimated total of 700 acres of “wildlife openings” could be created within the noted treatment blocks. The exact locations of these openings are not determined and are not presented on the project maps.

Treatment Block A (North WUI Area – High Rolls Subdivision)



Figure 1. High Rolls area to north of FS boundary.

This is the north end of project area and is bounded by FS Trail #132 to south and the FS/Private boundary to north in the High Rolls subdivision area. The High Rolls area contains numerous structures and homes adjacent to the national forest. This area would have a mix of masticator/and mechanical / hand-thin / pile and burn treatments. Treatments may have to be repeated over several seasons in order to accomplish treatments on the acres in this block.

Mastication could occur on slopes up to 40 percent and could create a “defense zone buffer”(DZB) from the FS/private boundary of up to 500 feet onto FS lands. In addition, within Treatment Block A (outside of the DBZ

of up to 500 feet), mastication and mechanical / hand-thin / pile and burn treatments and prescribed fire could occur on slopes up to 40 percent as practicable. Total acres in Treatment Block A, including the DZB, is approximately 922 acres. The total length of the DZB is approximately 5.5 miles and the total acres are approximately 306 acres. Mastication treatments within the DZB could occur on approximately 271 acres. Mechanical or hand-thin, pile/burn / Rx fire treatments could occur on approximately 35 acres within the DZB.

Internally within Treatment Block A, and outside of the DZB, approximately 497 acres could be treated using mastication, and mechanical / hand-thin / pile and burn /Rx fire treatments could occur on approximately 119 acres.

No mechanical wildlife opening prescriptions in pinon/juniper woodlands would be implemented in this treatment block. However, the mechanical / hand thin, pile and burn treatments in association with hazardous fuels reduction would improve wildlife habitat by decreasing thick woodland and in return increasing the vigor and availability of browse and forb species.

Treatment limitations in Block A include:

- No post-mastication fuels burning would occur in areas treated by mastication. This is to protect soils and to not start a smoldering fire in dense wood chips.
- Where mastication occurs, limit the accumulation of shredded wood to an average maximum of 4-inches deep in a discontinuous pattern over each treated unit. This would allow for grasses and other ground vegetation to grow up through the shredded woody mulch.
- Mechanical mixing of masticator debris with soils would occur only on soils that are determined by the Soils Scientist to have a depth to allow this without adverse impacts to the soils or the equipment.

Treatment Block Aa (FS Trail #132)

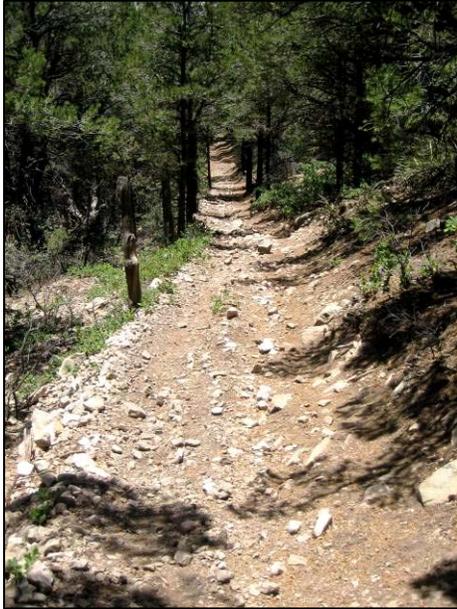


Figure 2. FS Trail #132

This is specific for FS Trail #132 for the entire length from east at Karr Canyon road and then to west at FS road #5573- Westside Road, through the project area and divides Treatment Block A from Treatment Blocks B and C. This treatment would create a fuel break buffer of up to 300-feet on each side of FS Trail #132 and could be done using a mix of mastication treatments on slopes < 40 percent and then mechanical / hand-thin / pile and burn treatments and prescribed fire in the remaining area. Treatments may have to be repeated over several seasons in order to accomplish treatments on the acres in this block.

There are approximately 132 acres total in this treatment block. Mastication treatments could occur on approximately 79 acres and mechanical / hand-thin / pile/burn / Rx fire treatments could occur on approximately 53 acres. The total length of FS Trail #132 Treatment Block is approximately 2.0 miles.

No mechanical wildlife opening prescriptions in pinon/juniper woodlands would be implemented in this treatment block. However, the mechanical / hand thin, pile and burn treatments in association with hazardous fuels reduction would improve

wildlife habitat by decreasing thick woodland and in return increasing the vigor and availability of browse and forb species.

Treatment limitations in this area include:

- A buffer of trees or shrubs would be left on either side of the trail 2-5 feet on slopes that are less than 30 percent to keep motorized use on the trail so new trails are not created by users. In areas with steep slopes and areas that the topography of the land would prohibit cross-country motorized travel, no tree buffer will be necessary.
- Mechanical mixing of masticator debris with soils would occur only on soils that are determined by the Soils Scientist to have a depth to allow this without adverse impacts to the soils or the equipment
- Karr Canyon riparian area would be buffered up to 50-feet and left untreated to retain shade for riparian values and recreation. Goat Springs would also be buffered up to 50-feet and left untreated. This is also to protect the downstream Fresno Canyon Municipal Watershed.

Treatment Block B (Main Ridge)

This is a logical block of area that would be treated using broadcast burning either by aerial ignition or hand ignition, or both. Treatments may have to be repeated over several seasons in order to accomplish treatments on the acres in this block. A hand line² of a width determined by the burn boss may be constructed along the summit ridgelines that separate the main ridge treatment blocks. Treatments could occur on approximately 300 acres.

². Typical handline widths for this application are approximately 2-4 feet wide. The actual width of any hand line would be determined at the time by the project burn boss. Note that some treatment blocks may be sub-divided into smaller broadcast burning blocks at the time of implementation, and may require additional lengths of handline construction.

No mechanical wildlife opening prescriptions in pinon/juniper woodlands would be implemented in this treatment block. However, the mechanical / hand thin, pile and burn treatments in association with hazardous fuels reduction would improve wildlife habitat by decreasing thick woodland and in return increasing the vigor and availability of browse and forb species.

Treatment limitations in this area include:

- Karr Canyon main riparian areas would be buffered up to 50-feet and left untreated to retain shade for riparian values and recreation. This is also to protect the downstream Fresno Canyon municipal watershed.

Treatment Block C (Main Ridge)

This is a logical block of area that would be treated using broadcast burning either by aerial ignition or hand ignition or both. Treatments may have to be repeated over several seasons in order to accomplish treatments on the acres in this block. A hand line of a width determined by the burn boss may be constructed along the summit ridgelines that separate the main ridge treatment blocks. Treatments could occur on approximately 838 acres.

Within this treatment block, mechanical cutting approximately 5-acre wildlife openings within the pinon/juniper woodlands are proposed. Within the 5-acre wildlife openings, four to five of the largest trees per acre would be retained. A buffer area of 50 to 200 feet between the wildlife openings would be retained. The exact buffer size would be determined during implementation. Slash and trees would be left on the ground at a minimum of two years prior to any future prescribed fire. The downed material helps carry prescribed fire, prevents soil movement and serves as protection to seedling browse and forb species. If the wildlife openings can be reached by vehicles they may be fuel-wooded either by commercial or personal use sales. The broadcast burning by hand or aerial ignition would improve habitat for a whole variety of plants and animals by opening the stands and releasing nutrients back into the soil. .

Treatment Block D (Main Ridge)

This is a logical block of area that would be treated using broadcast burning either by aerial ignition or hand ignition or both. Treatments may have to be repeated over several seasons in order to accomplish treatments on the acres in this block. A hand line of a width determined by the burn boss may be constructed along the summit ridgelines that separate the main ridge treatment blocks. Treatments could occur on approximately 354 acres.

No mechanical wildlife opening prescriptions in pinon/juniper woodlands would be implemented in this treatment block. However, the mechanical / hand thin, pile and burn treatments in association with hazardous fuels reduction would improve wildlife habitat by decreasing thick woodland and in return increasing the vigor and availability of browse and forb species.

Treatment limitations in this area include:

- Karr Canyon main riparian areas would be buffered up to 50-feet and left untreated to retain shade for riparian values and recreation. This is also to protect the downstream Fresno Canyon municipal watershed.

Treatment Block E (Main Ridge)



Figure 3. Main Ridge Treatment Block E view from Westside Road.

This is a logical block of area that would be treated using broadcast burning either by aerial ignition or hand ignition, or both. Treatments may have to be repeated over several seasons in order to accomplish treatments on the acres in this block. A hand line of a width determined by the burn boss may be constructed along the summit ridgelines that separate the main ridge treatment blocks. Treatments could occur on approximately 398 acres.

Within this treatment block, mechanical cutting approximately 5-acre wildlife openings within the pinon/juniper woodlands are proposed. Within the 5-acre wildlife openings, four to five of the largest trees per acre would be retained. A buffer area of 50 to 200 feet between the wildlife openings would be retained. The exact buffer

size would be determined during implementation. Slash and trees would be left on the ground at a minimum of two years prior to any future prescribed fire. The downed material helps carry prescribed fire, prevents soil movement and serves as protection to seedling browse and forb species. If the wildlife openings can be reached by vehicles they may be fuel-wooded either by commercial or personal use sales. The broadcast burning by hand or aerial ignition would improve habitat for a whole variety of plants and animals by opening the stands and releasing nutrients back into the soil.

Treatment Block F (Main Ridge)

This is a logical block of area that would be treated using broadcast burning either by aerial ignition or hand ignition, or both. Treatments may have to be repeated over several seasons in order to accomplish treatments on the acres in this block. A hand line of a width determined by the burn boss may be constructed along the summit ridgelines that separate the main ridge treatment blocks. Treatments could occur on approximately 1,323 acres.

Within this treatment block, mechanical cutting approximately 5-acre wildlife openings within the pinon/juniper woodlands are proposed. Within the 5-acre wildlife openings, four to five of the largest trees per acre would be retained. A buffer area of 50 to 200 feet between the wildlife openings would be retained. The exact buffer size would be determined during implementation. Slash and trees would be left on the ground at a minimum of two years prior to any future prescribed fire. The downed material helps carry prescribed fire, prevents soil movement and serves as protection to seedling browse and forb species. If the wildlife openings can be reached by vehicles they may be fuel-wooded either by commercial or personal use sales. The broadcast burning by hand or aerial ignition would improve habitat for a whole variety of plants and animals by opening the stands and releasing nutrients back into the soil.

Treatment limitations in this area include:

- Municipal watershed collection boxes, streams, springs and other wetland areas would be buffered up to 50-feet and not treated. This is to protect the water quality for this portion of the Alamo Canyon municipal watershed and the existing water collection boxes.

Treatment Block Ff (Caballero Canyon)

This is a logical block of area that would be treated using hand-thin, pile and burn only. This treatment block has a focus on protection of municipal watershed collection boxes and springs. Treatments may have to be repeated over several seasons in order to accomplish treatments on the acres in this block. Treatments could occur on approximately 30 acres.

Treatment limitations in this area include:

- Municipal watershed collection boxes, streams, springs and other wetland areas would be also buffered up to 50-feet and not treated. This is to protect the water quality for this Caballero Canyon portion of the larger Alamo Canyon municipal watershed and the existing water collection boxes.

Treatment Block G (Alamo Canyon Municipal Watershed Area)

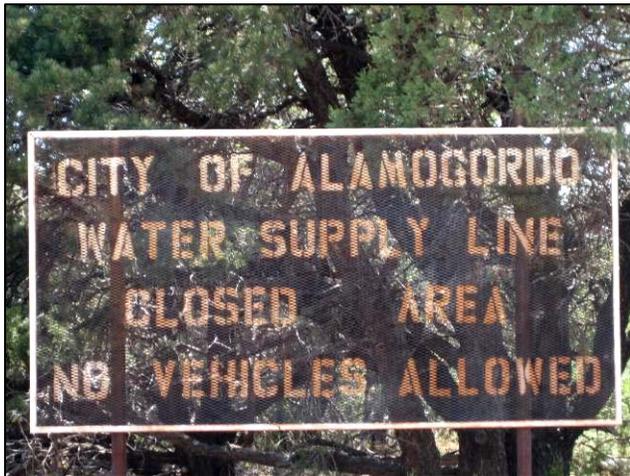


Figure 4. City of Alamogordo Water Supply sign on private lands south of Treatment Block G.

This treatment would occur on slopes <40 percent in the area of Alamo Canyon that is part of the Alamogordo Municipal Watershed. This area would be treated using a mix of masticators and mechanical / hand-thin / pile and burn treatments and prescribed fire treatments. Treatments may have to be repeated over several seasons in order to accomplish treatments on the acres in this block. Available material appropriate for firewood may be utilized for public or commercial firewood. A total of 112 acres are in this block. Mastication treatments (and some potential mechanical / hand thin, pile and burn) could occur on approximately 112 acres.

5-acre wildlife openings, four to five of the largest trees per acre would be retained. A buffer area of 50 to 200 feet between the wildlife openings would be retained. The exact buffer size would be determined during implementation. Slash and trees would be left on the ground at a minimum of two years prior to any future prescribed fire. The downed material helps carry prescribed fire, prevents soil movement and serves as protection to seedling browse and forb species. If the wildlife openings can be reached by vehicles they may be fuel-wooded either by commercial or personal use sales.

Within this treatment block, mechanical cutting approximately 5-acre wildlife openings within the pinon/juniper woodlands are proposed. Within the

Treatment limitations in this area include:

- Municipal water collection boxes, streams, springs and other wetland areas would be buffered up to 50-feet and not treated. This is to protect the water quality for this portion of the Alamo Canyon municipal watershed and existing water collection boxes.
- Mechanical mixing of masticator debris with soils would occur only on soils that are determined by the Soils Scientist to have a depth to allow this without adverse impacts to the soils or the equipment

Treatment Block H (Main Ridge-South Boundary)

This is a logical block of area that would be treated using broadcast burning either by aerial ignition or hand ignition, or both. Treatments may have to be repeated over several seasons in order to accomplish treatments on the acres in this block. A hand line of a width determined by the burn boss may be

constructed along the summit ridgelines that separate the main ridge treatment blocks. Treatments could occur on approximately 507 acres.

No mechanical wildlife opening prescriptions in pinon/juniper woodlands would be implemented in this treatment block. However, the mechanical / hand thin, pile and burn treatments in association with hazardous fuels reduction would improve wildlife habitat by decreasing thick woodland and in return increasing the vigor and availability of browse and forb species.

Treatment limitations in this area include:

- Municipal water collection boxes, streams, springs and other wetland areas would be buffered up to 50-feet and not treated. This is to protect the water quality for this portion of the Alamo Canyon municipal watershed and the existing water collection boxes.

Treatment Block Hh (FS Trail #109)

This is specific for FS Trail #109 for the entire length from junction with Westside Road and private lands and then east up to the Alamo Peak communication site. This treatment would create a fuel break buffer of up to 200-feet on each side of FS Trail 132 and would be done using a mix of mechanical / hand-thin / pile/burn / Rx fire treatments on approximately 54 acres. The total length of the FS Trail #109 treatment block is approximately 1.6 miles. Treatments may have to be repeated over several seasons in order to accomplish treatments on the acres in this block.

No mechanical wildlife opening prescriptions in pinon/juniper woodlands would be implemented in this treatment block. However, the mechanical / hand thin, pile and burn treatments in association with hazardous fuels reduction would improve wildlife habitat by decreasing thick woodland and in return increasing the vigor and availability of browse and forb species.

Treatment limitations in this area include:

- Any municipal water collection boxes, streams, springs and other wetland areas would be buffered up to 50-feet and not treated. This is to protect the water quality for this portion of the Alamo Canyon municipal watershed and the existing water collection boxes.
- A buffer of trees or shrubs will be left on either side of the trail 2-5 feet on slopes that are less than 30 percent to keep motorized use on the trail so new trails are not created by users. In areas with steep slopes and areas that the topography of the land would prohibit cross-country motorized travel, no tree buffer will be necessary.

Treatment Block I (Alamo Peak Communications Site)

Specific to the Alamo Peak Communications Site - this treatment would create an up to 800-foot defense zone buffer around the communication area facilities, using a mix of mechanical / hand-thin / pile and burn treatments and prescribed fire treatments. Treatments may have to be repeated over several seasons in order to accomplish treatments on the acres in this block. Available material appropriate for firewood may be utilized for public or commercial firewood. Mechanical / hand-thin / pile and burn treatments could occur on approximately 46 acres.

No mechanical wildlife opening prescriptions in pinon/juniper woodlands would be implemented in this treatment block. However, the mechanical / hand thin, pile and burn treatments in association with hazardous fuels reduction would improve wildlife habitat by decreasing thick woodland and in return increasing the vigor and availability of browse and forb species.

Treatment Block Ii (FS Road #640 – Alamo Peak Communication Site Road Access)

This is specific for FS Road #640 from the Alamo Peak Communication Site to the project boundary. This treatment would create a fuel break buffer of up to 300-feet on each side of FS Road #640 and would be done using a mix of masticator and mechanical / hand-thin / pile and burn / prescribed fire treatments as appropriate. Treatments may have to be repeated over several seasons in order to accomplish treatments on the acres in this block. Available material appropriate for firewood may be utilized for public or commercial firewood. Mastication and/or mechanical / hand-thin / pile and burn treatments could occur on approximately 42 acres. The total length of the Alamo Peak road access treatment block is approximately 0.6 miles.

No mechanical wildlife opening prescriptions in pinon/juniper woodlands would be implemented in this treatment block. However, the mechanical / hand thin, pile and burn treatments in association with hazardous fuels reduction would improve wildlife habitat by decreasing thick woodland and in return increasing the vigor and availability of browse and forb species.

Treatment limitations in this area include:

- Mechanical mixing of masticator debris with soils would occur only on soils that are determined by the Soils Scientist to have a depth to allow this without adverse impacts to the soils or the equipment.
- A buffer of trees or shrubs would be left on either side of the access road 2-5 feet on slopes that are less than 30 percent to keep motorized use on the trail so new unauthorized trails are not created by users.
- A buffer of existing trees and shrubs would be left in place at the location of the gate on Forest Road # 640, below the Alamo Peak Communication Site, in order to keep unauthorized motorized use from going around the gate when closed to the public.

Treatment Block J (Timber Improvement Area)

Specific to the area that has had previous timber management activity and commercial timber harvest roads developed. This area could be treated using a mix of pre-commercial or commercial fire wood sales to reduce stand density, reduce fuel loading, improve tree vigor and renovate the existing aspen stands in this area. Treatments may have to be repeated over several seasons in order to accomplish treatments on the acres in this block. Timber improvement treatments could occur on approximately 132 acres.

No mechanical wildlife opening prescriptions in pinon/juniper woodlands would be implemented in this treatment block. However, the mechanical / hand thin, pile and burn treatments in association with timber stand improvement treatments would improve wildlife habitat by decreasing thick woodland and in return increasing the vigor and availability of browse and forb species.

Treatment Block K (FS Road #63 – Karr Canyon Road)

This is specific for FS Road #63 within the project boundary. This treatment would create a fuel break buffer of up to 300-feet on each side of FS Road #63 and would be done using a mix of masticator and mechanical / hand-thin / pile and burn / prescribed fire treatments. Areas of aspen would be evaluated for treatment to improve wildlife habitat by either cutting, burning, fencing or other actions . Treatments may have to be repeated over several seasons in order to accomplish treatments on the acres in this block. Available material appropriate for firewood may be utilized for public or commercial firewood. There is a total of approximately 129 acres in this block. Mastication treatments could occur on approximately 44 acres and mechanical / hand-thin / pile and burn treatments could occur on approximately 84 acres. The total length of the Karr Canyon Road treatment block is approximately 1.7 miles.

No mechanical wildlife opening prescriptions in pinon/juniper woodlands would be implemented in this treatment block. However, the mechanical / hand thin, pile and burn treatments in association with hazardous fuels reduction would improve wildlife habitat by decreasing thick woodland and in return increasing the vigor and availability of browse and forb species.

Treatment limitations in this area include:

- The Karr Canyon riparian zone (up to 50-feet each side of the stream channel) would not be treated, except as noted for Karr Canyon Picnic Area below. This is to protect shade for the riparian zone and recreation use and to protect the downstream Fresno Canyon Municipal Watershed.
- Mechanical mixing of masticator debris with soils would occur only on soils that are determined by the Soils Scientist to have a depth to allow this without adverse impacts to the soils or the equipment
- A buffer of trees or shrubs would be left on either side of the Karr Canyon road 2-5 feet on slopes that are less than 30 percent to keep motorized use on the road, so new unauthorized access OHV trails are not created by users.

Treatment Block L (Karr Canyon Picnic Area)



Figure 5. Karr Canyon Picnic Area

hand thin, pile and burn treatments in association with hazardous fuels reduction would improve wildlife habitat by decreasing thick woodland and in return increasing the vigor and availability of browse and forb species.

Treatment limitations in this area include:

- The Karr Canyon riparian zone (up to 50-feet each side of the stream channel) would not be treated unless needed for normal picnic area maintenance needs, as portions of the picnic area are within 50-feet of the stream channel. This is to protect shade for the riparian zone and recreation use and to protect the downstream Fresno Canyon Municipal Watershed.

Specific to the Karr Picnic developed recreation site. This treatment would create a buffer of up to 500-foot around the picnic area, using mechanical / hand-thin / pile and burn / prescribed fire treatments. Treatments may have to be repeated over several seasons in order to accomplish treatments on the acres in this block. Available material for firewood may be utilized for public or commercial firewood and some may be left for use by recreation site users for fire pits. Mechanical / hand-thin / pile and burn treatments could occur on approximately 8 acres.

No mechanical wildlife opening prescriptions in pinon/juniper woodlands would be implemented in this treatment block. However, the mechanical /

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Table 2. Summary of Two Goats Proposed Action Treatment Block Acres/Miles

Treatment Block	Estimate Total Acres/Miles	
Block A – High Rolls WUI and Defense Zone Buffer (DZB).	Mastication in Block A-DZB	271 acres
	Mechanical / Hand-thin / pile/burn / Rx fire in Block A-DZB	35 acres
	Mastication within Block A	497 acres
	Mechanical / Hand-thin / pile/burn / Rx fire within Block A	119 acres
	Total acres Block A and DZB	922 acres
	Total miles of Block A-DZB	5.5 miles
Block Aa - FS Trail #132 Fuel break	Mastication in Block Aa	79 acres
	Mechanical / Hand-thin / pile/burn / Rx fire in Block Aa	53 acres
	Total acres Block Aa	132 acres
	Total miles of Block Aa	2.0 miles
Block B – Main Ridge	Prescribed fire	300 acres
Block C – Main Ridge	Prescribed fire	838 acres
Block D – Main Ridge	Prescribed fire	354 acres
Block E – Main Ridge	Prescribed fire	398 acres
Block F – Main Ridge	Prescribed fire	1,323 acres
Block Ff- Caballero Canyon	Hand-thin / hand pile/burn	30 acres
Block G – Alamo Canyon Municipal Watershed	Mastication (and potential Mechanical / Hand-thin / pile/burn / Rx fire) in Block G	112 acres
	Total acres Block G	112 acres
Block H – Main Ridge	Prescribed fire	507 acres
Block Hh – FS Trail #109 Fuel Break	Mechanical / Hand-thin / pile/burn / Rx fire in Block Hh	54 acres
	Total miles of Block Hh	2.0 miles
Block I – Alamo Peak Communications Site	Mechanical / Hand-thin / pile/burn / Rx fire in Block I	46 acres
Block Ii – FS Road #640 Alamo Peak Access	Mastication / mechanical / hand-thin / pile and burn / Rx fire in Block Ii	42 acres
	Total acres Block Ii	42 acres
	Total miles of Block Ii	0.6 miles
Block J – Timber Improvement Area	Timber stand treatments	132 acres
Block K – Karr Canyon Road	Mastication in Block K	44 acres
	Mechanical / Hand-thin / pile/burn / Rx fire in Block K	84 acres
	Total acres Block K	128 acres
	Total miles of Block K	1.7 miles
Block L – Karr Picnic Area	Mechanical / Hand-thin / pile/burn / Rx fire in Block L	8 acres
Summary Totals		
	Total Miles Handline Construction	8.3 miles
	Total Miles of “linear” buffer treatments	11.8 miles
	Total Acres Timber Stand Treatments	132 acres
	Total Acres of Mastication Treatments	1,041 acres
	Total Acres of Mechanical / Hand Thin/Pile/Burn / Rx Fire	403 acres
	Total Acres of Prescribed Aerial Fire (may include some mechanical / Hand Thin/ Pile/Burn acres also)	3,770 acres
	Grand Total Acres all Treatment Blocks¹	5,346 acres

¹ Note that the actual acres of “wildlife openings” are distributed within the other treatment blocks and the exact location of those openings are not known and are not defined on the project maps. The estimated total acres for “wildlife openings” could be approximately 700 acres. This is the amount of acres that can be administratively managed using a service contract to implement per past experience by the Ranger District.

**Project Design Features (PDFs)
And
Monitoring Items**

Table 3 lists the PDFs that were developed to reduce impacts to various resources for the proposed action. These PDFs are considered an integral part of the proposed action when it is analyzed for environmental impacts and implemented. In addition, a list of proposed project monitoring activities is noted in Table 4 below.

Table 3. Project Design Features (PDFs)

PDF Item (By Resource Area or Activity)	Description of PDF	Treatment Blocks to which PDFs Apply
Botany		
BO-1	Known rare plant sites would have buffers of up to 200-ft that would restrict treatments and/or mechanical equipment. These sites would be identified by the Forest Botanist at the time of implementation. Any new sites found would be addressed by the Forest Botanist and appropriate buffers used.	Treatment Blocks G, H and Hh
BO-2	<p>Sacramento Mountains Thistle (SMT) Specific PDFs For treatment blocks H, Hh, and I</p> <ul style="list-style-type: none"> • 4 known populations of SMT within and adjacent to treatment area would need survey before project implementation • Maintain a 200 foot buffer uphill and 100 foot buffer below and beside areas that contain SMT where no treatment activities will take place • No fire, backing or otherwise, should be allowed within SMT buffer areas • During fire operations, populations should be monitored to ensure no fire enters SMT buffer areas • During fire preparations and operations no wild-land fire foam use within SMT buffer areas • No hand piles or jackpot piles within 300 feet in any direction 	Treatment Blocks H, Hh and I
BO-3	<p>Sacramento Prickly Poppy (<i>Argemone pleiacantha ssp pinnatisecta</i>)</p> <ul style="list-style-type: none"> • The treatment blocks that most likely contain prickly poppy potential habitat are blocks H and Hh, both of which have standing 50-foot riparian buffers, and since prickly poppies are most often found within riparian or near-riparian areas, these buffers should protect prickly poppies if they exist in the treatment area. • Pre-treatment surveys will ensure that no poppies exist in the treatment area. • If poppies are found, the same buffers will be applied to prickly poppies as are applied to the Sacramento mountains thistle (200 foot no-treatment above and 100 foot no-treatment below of individuals). 	Treatment Blocks H, Hh
Fuels		
FU-1	Prescribed burns would be done with approved burn plans	All Treatment Blocks
FU-2	Fire lines would have appropriate waterbars in steep sections to reduce erosion and sedimentation.	All Treatment Blocks
Heritage		
HR-1	Heritage surveys will be completed for the entire project area using a phased	All Treatment Blocks

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PDF Item (By Resource Area or Activity)	Description of PDF	Treatment Blocks to which PDFs Apply
	approach, except for previously surveyed locations, prior to implementation. This includes specific units and their ancillary transportation routes, skid trails, landings, etc., where ground disturbance might occur outside of identified units.	
HR-2	Activities are excluded from any known archaeological sites, except on established (open) roads; or allowed with coordination with the archaeologist and consulted upon with the New Mexico State Historic Preservation Office: (Note: Direction for the protection of archaeological sites can be found in the Amended Programmatic Agreement (2003), appendix D, p. 31.)	All Treatment Blocks
HR-3	No driving or staging of vehicles or other equipment or supplies, no mechanical logging or skidding, no piling, and no pile-burning, in known archaeological sites.	All Treatment Blocks
HR-4	For pre-commercial thinning activities, hand-cut vegetation in sites may be hand-carried from archaeological sites to aid in reducing hazardous fuels build-up in sites. This will be approved on a case-by-case basis and monitored by the Forest Archaeologist.	All Treatment Blocks
HR-5	Depending on fuels build-up, wind and moisture levels, broadcast burning can be carried out through non-fire-sensitive sites under low intensity conditions. Fire-sensitive sites (Programmatic Agreement, p. 30) include sites that can be damaged by heat, smoke or flame (containing combustible items such as wood or sensitive to heat and smoke such as rock art, metal, or glass). This will be approved on a case-by-case basis and monitored by the Forest Archaeologist.	All Treatment Blocks
Noxious Weeds		
NX-1	Equipment staging areas would avoid known noxious weed sites.	All Treatment Blocks
NX-2	Areas with disturbed soils caused by heavy equipment would be seeded with an approved seed mix.	All Treatment Blocks
NX-3	Post-project noxious weed surveys would occur.	All Treatment Blocks
Recreation		
RE-1	A buffer of trees or shrubs will be left on either side of FS trails for two to five feet on slopes that are less than 30% to keep motorized use on the trail so new trails are not created by users. In areas with steep slopes and areas that the topography of the land would prohibit cross country motorized travel, no tree buffer will be necessary	Treatment Blocks Aa, and Hh,
RE-2	During treatment activities, trails would be closed to the public if needed for safety.	All Treatment Blocks
RE-3	All treatment slash and debris would be removed from FS trails.	All Treatment Blocks
Watershed/Soils		
WS-1	Where mastication occurs, limit the accumulation of shredded wood to an average maximum of 4-inches deep in a discontinuous pattern over each treated unit. This will allow for grasses and other ground vegetation to grow up through the shredded woody mulch.	All Treatment Blocks with mastication treatments
WS-2	Mechanical mixing of masticator debris with soils would occur only on soils	All Treatment Blocks

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	that are determined by the Soils Scientist to have a depth to allow this without adverse impacts to the soils or the equipment.	using mastication treatments.
WS-3	Any municipal water collection boxes and other streams, springs and other wetland or riparian areas would be buffered up to 50 feet and not treated. This is to protect the water quality for riparian areas, riparian function and municipal watershed water collection boxes.	All Treatment Blocks
WS-4	Riparian zones with flowing water would have up to a 50 foot buffer each side of the stream channel) that would not be treated. This is to protect shade for the riparian zone and recreation use and to protect the downstream municipal watersheds	All Treatment Blocks
WS-5	Intermittent or ephemeral channels would have up to a 50-foot buffer that would not be treated, in order to minimize sediment movement to streams.	All Treatment Blocks
WS-6	Designated equipment crossings would be used on intermittent or ephemeral channels to minimize impacts to the channels.	All Treatment Blocks
WS-7	Prescribed fires would not be lit within the riparian buffers; however, low-intensity prescribed fire would be allowed to back into riparian areas. Mechanical equipment would not be allowing in riparian buffers.	All Treatment Blocks
WS-8	No burn piles would be placed within buffers noted for streams, wetlands, springs and seeps.	All Treatment Blocks
WS-9	Burn piles only when soils are damp and air moisture is high to protect soils from burn pile created heat.	All Treatment Blocks
WS-10	Piles of slash should be no larger than approximately 12 feet wide by 6 feet high to minimize heat damage to the soil when the pile is burned.	All Treatment Blocks
WS-11	Store oil, gasoline, other ignition agents and chemical compounds where they are physically isolated from streams, springs and other water sources. If there are any accidental spills or contamination of water resources is suspected, a hazardous materials specialist will assess the situation and determine the corrective actions to take, per Federal standards.	All Treatment Blocks
WS-12	Heavy equipment would be used only when soils are dry.	All Treatment Blocks
WS-13	Courtney Mine is identified as a HAZMAT site and is in the process of being cleaned up. The area would be avoided with a 100 ft buffer.	All Treatment Blocks
Wildlife		
WL-1	<p><u>Mexican Spotted Owl (MSO) Specific PDFs</u></p> <ul style="list-style-type: none"> • Suitable unoccupied acres that have survey information over 5 years old, will need a survey before project implementation. • Allow no timber harvest except for fire risk abatement in mixed conifer and pine-oak forests on slopes greater than 40% where timber harvest has not occurred in the last 20 years. • Limit human activity in protected activity centers during the breeding season (March 1st through August 31st). • In protected and restricted areas, when activities conducted in conformance with these standards and guidelines may adversely affect other threatened, endangered or sensitive species or may conflict with other established recovery plans or conservation 	All Treatment Blocks

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PDF Item (By Resource Area or Activity)	Description of PDF	Treatment Blocks to which PDFs Apply
	<p>agreements; consult with the US Fish and Wildlife Service to resolve the conflict.</p> <ul style="list-style-type: none"> • Road or trail building in protected activity centers should be avoided but may be permitted on a case-by-case basis for pressing management reasons. • Harvest fuel-wood when it can be done in such a way that effects on the owl are minimized. Manage within the following limitations to minimize effects on the owl: 1) Retain key forest species such as oak, and 2) Retain substantive amounts of key habitat components such as snags and large downed logs (ex. snags 18 inches in diameter and larger, down logs over 12 inches midpoint diameter). <ul style="list-style-type: none"> ▪ If at least three snags greater than 18 inches dbh are not available the three largest snags or snags with obvious wildlife use will be retained. To reduce losses of large snags (3 per acre greater than 18 inches) or snags with obvious heavy use (cavities present and visible), cutting unit boundaries and/or prescriptions will be modified to save the snag; so that it is no longer a hazard. • Designate a 100-acre "no treatment" area around any known nest site of each protected activity center. Habitat in the no treatment area should be as similar as possible in structure and composition as that found in the activity center. • Use combinations of thinning trees less than 9 inches in diameter, mechanical fuel treatment and prescribed fire to abate fire risk in the remainder of the selected protected activity center outside the 100 acre "no treatment" area. • Burning in mixed conifer should be considered if less than 20 percent of the burned area would experience complete overstory mortality. The mortality needs to occur in a mosaic pattern and avoiding creating large extensive open areas. • All Threshold Restricted habitats may not be treated below specified requirements. • No more than 10 percent canopy of MSO PAC can be affected where the overstory is removed. • Only low intensity/low-severity prescribed fires will be allowed in MSO habitat. • No non-emergency aircraft flight operations under 500 feet will be permitted for prescribed fires over MSO PAC's during the breeding season (March 1st through August 31st). • Any prescribed fires in close proximity to PACs during the breeding season will be conducted in such a manner to ensure only limited smoke will occur within a PAC. • Micro-habitat vegetation monitoring will occur within project treatment areas using Region 3 protocol. • All treatments will retain some trees greater than 18" dbh. 	
WL-2	<p><u>Northern Goshawk Specific PDFs</u></p> <ul style="list-style-type: none"> • Suitable unoccupied acres that have survey information over 5 years old, will need a survey before project implementation. • If a nesting pair is found during the survey, a Post Fledgling Area will be established. • Canopy cover for a mid-aged mixed conifer forest will have 1/3 	All Treatment Blocks

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PDF Item (By Resource Area or Activity)	Description of PDF	Treatment Blocks to which PDFs Apply
	<p>60+% and 2/3 40+%.</p> <ul style="list-style-type: none"> • Canopy cover for a mid-aged ponderosa pine forest will have 40+% mid-aged forest, 40+% mature forest and 40+% old forest. • Within mixed conifer forests in Post-fledgling Family Areas, the canopy cover for mid-aged forests to old forests will average 60+%. • Within ponderosa pine forests in Post-fledgling Family Areas, the canopy cover for mid-aged forests will average 1/3 60+% and 2/3 50+%. Mature and old forest will average 50+%. • Maintain 50-70% canopy cover in VSS5 and 6 in nest stands. • Retain at least 5 green trees greater than 18" dbh per acre. • Save all snags over 14 inches dbh that are not hazard trees. Insure that at least 3 snags, 18 inches dbh or greater per acre are left after treatment. To reduce losses of large snags (per acre greater than 18 inches) or snags with obvious heavy use (cavities present and visible) cutting unit boundaries and/or prescriptions will be modified to save the snag; so that it is no longer a hazard. 	
WL-3	<p><u>Wildlife Game Species Specific PDFs</u></p> <ul style="list-style-type: none"> • Prescribed fire with mortality thresholds of less than 60% percent mortality in pinon/juniper stands. • Implement prescribed fire in oak woodlands to reduce densities and increase browse availability for mule deer. • Implement group selection cut areas approximately five acres in size, leaving 4 to 5 of the largest trees per acre in pinon/juniper stands. The leave trees will consist of pinon pine greater than 14 inches diameter at root crown (DRC) or juniper trees greater than 18 inches DRC. • Created slash in the pinon/juniper stands will be left on the ground at a minimum of two years prior to burning to prevent soil movement. They also will enable seedling development for browse and grass species. • All red squirrel cache sites will be retained with a 37- foot buffer in the mixed conifer stands. 	All Treatment Blocks
WL-4	<p><u>Sacramento Salamander Specific PDFs</u></p> <ul style="list-style-type: none"> • No mechanical ground disturbance or burning in occupied habitat while species are found to be above ground. This is common from July till September. If moist conditions occur before July (ex. May or June) and salamander presence is detected than season restrictions will occur. • Retain 10-15 tons of downed woody material favoring not removing any logs greater than 12 inches midpoint diameter and at least 8 feet long. When large woody material is retained, it assumed that it is treated in such a way that it still performs a biological purpose. Retention will be maintained by utilizing a variety of methods (ex. Lining logs, wetting material, seasonal prescription, rotational lighting of piles, etc.). • Monitoring before and after treatment in occupied stands will occur, to see, if occupancy has changed. All information will be sent to the New Mexico Salamander Working Group. 	All Treatment Blocks
WL-5	Prescribed fire with mortality thresholds of less than 60% percent mortality in	Treatment Blocks C,

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PDF Item (By Resource Area or Activity)	Description of PDF	Treatment Blocks to which PDFs Apply
	pinon/juniper stands. Implement prescribed fire in oak woodlands to reduce densities and increase browse availability for mule deer. Burning in mixed conifer should be considered if less than 20 percent of the burned area would experience complete overstory mortality. The mortality needs to occur in a mosaic pattern and avoiding creating large extensive open areas.	D, E, F, H, Hh, I, li, J, K, and L
WL-6	Retain 10-15 tons of downed woody material favoring not removing any logs greater than 12 inches midpoint diameter and at least 8 feet long in mixed conifer and 5-7 tons in ponderosa pine. When large woody material is retained, it assumed that it is treated in such a way that it still performs a biological purpose. Retention will be maintained by utilizing a variety of methods (ex. Lining logs, wetting material, seasonal prescription, rotational lighting of piles, etc.).	Treatment Blocks B, C, D, E, F, H, Hh, I, li, J, K, and L
WL-7	If located within ponderosa pine and mixed conifer make sure that at least three snags greater than 18 inches dbh or the three largest snags or snags with obvious wildlife use will be retained after treatment. To reduce losses of large snags (3 per acre greater than 18 inches) or snags with obvious heavy use (cavities present and visible), cutting unit boundaries and/or prescriptions (ex. burning) will be modified to save the snag; so that it is no longer a hazard.	Treatment Blocks B, C, D, E, F, H, Hh, I, li, J, K, and L
WL-8	Canopy cover for mixed conifer for mid-aged forest (VSS4) should average 1/3 60+% and 2/3 40+%, mature forest (VSS 5) should average 50+%, and old forest (VSS6) should average 60+%. Maximum opening size is up to 4 acres with a maximum width of up to 200 feet. Retain one group of reserve tres per acre of 3-5 trees per group for openings greater than 1 acre in size.	Treatment Blocks B, C, D, E, F, H, Hh, I, li, J, K, and L
WL-9	Canopy cover for ponderosa pine for mid-aged forest (VSS4) should average 40+%, mature forest (VSS 5) should average 40+%, and old forest (VSS6) should average 40+%. Maximum opening size is up to 4 acres with a maximum width of up to 200 feet. Retain one group of reserve tres per acre of 3-5 trees per group for openings greater than 1 acre in size.	Treatment Blocks B, C, D, E, F, H, Hh, I, li, J, K, and L

Table 4. Monitoring Activities

Monitoring (By Resource Area)	Description of Monitoring Activity
Heritage	
HRm1	Monitor approximately 10% of known heritage sites receiving protective treatments upon completion of the project to assure the preservation and protection of the heritage resources and determine the success of the proposed treatments. <u>Responsible Staff:</u> Forest or Staff Archaeologist
Noxious Weeds	
NX-m1	Monitor for noxious weeds on a yearly basis until project activities are completed. <u>Responsible Staff:</u> Forest or District Range Conservationist
Watershed/Soils	
WS-m1	Monitor impacts on soils from mastication treatments to determine effectiveness of the PDFs. <u>Responsible Staff:</u> Forest or District Soils Scientist or Hydrologist
Wildlife	
WL-m1	Monitor effectiveness of the PDFs for species noted. <u>Responsible Staff:</u> Forest or District Wildlife Biologist
WL-m2	Complete USFS Region 3 microhabitat monitoring for MSO on plots installed before treatments in MSO habitat. <u>Responsible Staff:</u> Forest or District Wildlife Biologist

Figure 6. Location Map for Two Goats Project

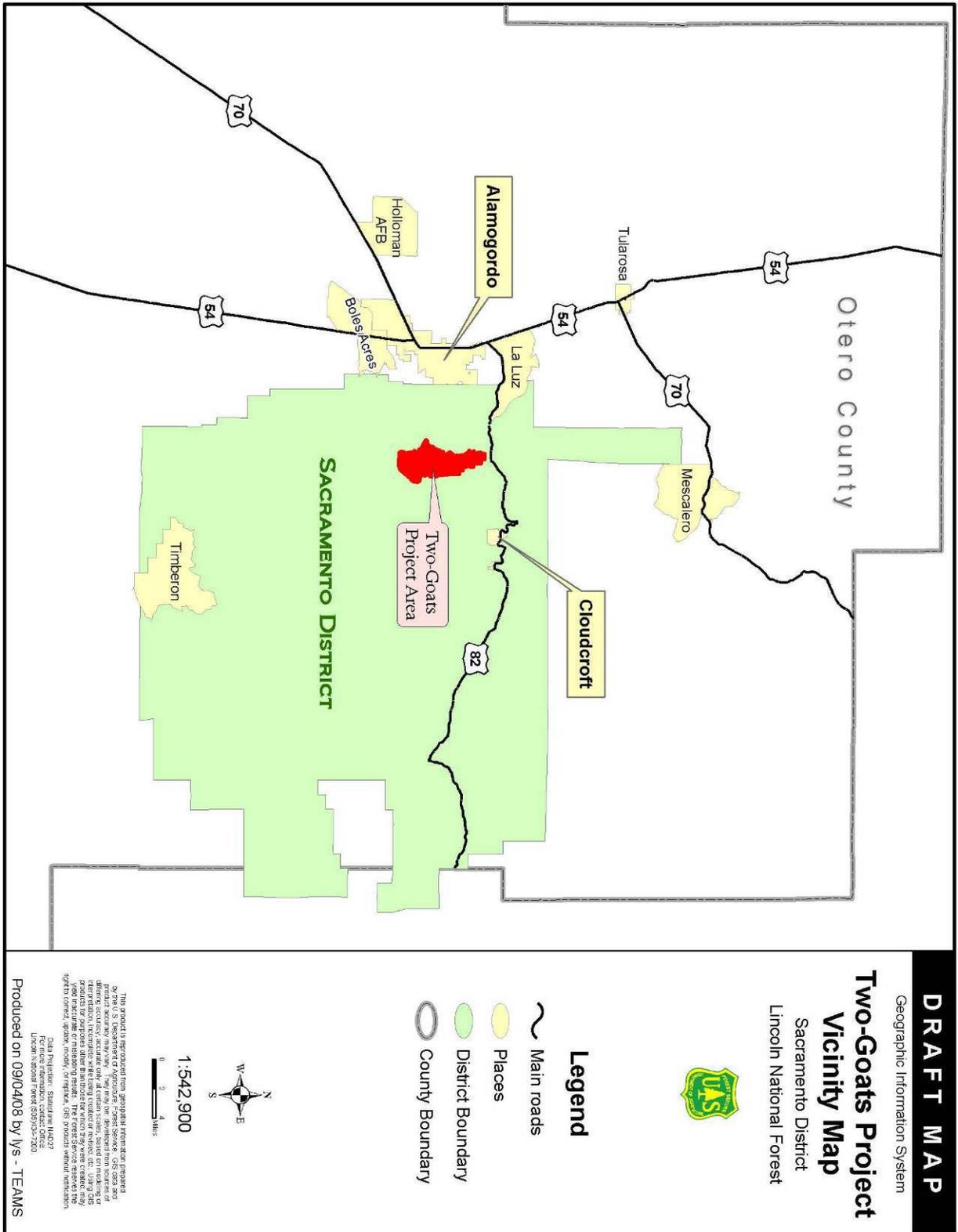


Figure 7. Map of Two Goats project area showing treatment blocks.

