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PINE/HOG CANYON ALLOTMENT MANAGEMENT PLAN

*PAYSON RANGER DISTRICT
TONGO NATIONAL FOREST*



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This Allotment Management Plan implements direction established in the March 2003 Tonto National Forest Revised Forest Plan and the September 2010 Decision for the Pine & Hog Canyon Allotments. This Allotment Management Plan is made part of your Term Grazing Permit in accordance with Section 8(a) Part 2 of that permit.

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PINE/HOG CANYON ALLOTMENT MANAGEMENT PLAN

INTRODUCTION

Pine and Hog Canyon allotments have been managed together since around 1970. Prior to this, each was a separate yearlong grazing allotment with separate term permits and pasture rotations. The combined allotments consist of about 35,820 acres of Forest system lands (Figure 3). The Pine Allotment is at the north end of the Payson Ranger District (PRD), bordering both communities of Pine and Strawberry (Figure 4). The Hog Canyon Allotment is geographically separated and is at the south end of the PRD bordering the communities of Round Valley and Rye, State Highway 87 (Beeline Highway) intersects both allotments (Figure 5). Elevations range from about 3,200 feet in the Hog Canyon drainage to around 7,000 feet at the top of the Mogollon Rim that serves as the northern boundary of the Pine Allotment. Vegetation adheres to typical elevation regimes; ponderosa pine and mixed conifer are present at the highest elevations, pinyon/juniper woodlands and interior chaparral are present in transition zones, with semi-desert grasslands at the lower elevations.

Historic & Recent Management

The current Term Grazing Permit for the Pine/Hog Canyon allotment authorizes up to 185 cow/calf pairs from 11/1 through 4/30 on the Hog Canyon Allotment and 185 cow/calf pairs from 5/1 through 10/31 on the Pine Allotment. This is equivalent to 2,938 Animal Unit Months (AUMs). Records compiled from 1977-2009 show an average stocking of 1,634 AUMs.

Baseline conditions for vegetation and watershed have been assessed at 8 key areas on the Pine Allotment and 7 key areas on the Hog Canyon Allotment. The Parker Three-Step Method (Region 3 FSH 2209.21) for evaluating range condition was employed for either pace transects or permanent fixed transects read between 2003 and 2009. Vegetation condition rated as fair or better at 6 of the 15 monitoring sites. The remaining 9 sites that show poor or very poor condition have either a poor mix of desirable forage species or inadequate cover from desirable plants. There is a downward trend at 6 of the sites. When most sites were evaluated in 2003, there had been severe drought for the previous year. Many perennial grasses had died, which negatively affected forage plant cover and apparent trend of the vegetative resource.

Monitoring at 2 key areas on the Pine Allotment were conducted in 2011 and 2014. Vegetation GIS Data System (VGS) was used to collect the data. Analysis showed a slight increase in bare soil and live vegetative ground cover in the Red Hills Pasture. There was a decrease in desirable forage species, such as blue grama and sideoats grama. There was a slight decrease in bare soil and a significant increase in vegetative ground cover in the Telephone Draw Pasture. This pasture saw an increase in some desirable forage species. Additional years of data will need to be collected to see if Red Hills condition improves, and if Telephone Draw continues a positive trend.

Satisfactory soil condition covers about 90% (32,201 acres) of Pine and Hog Canyon allotments. These soils are generally found on steep or extremely rocky slopes, under ponderosa pine forests, mixed conifer forests, or chaparral. Nine percent of the soils (3,322 acres) are impaired soils. These soils tend to occur on flats and low hills. Moderate compaction may occur and litter is normally sparse. Unsatisfactory soil condition makes up 1% (270 acres) of the allotment. Most of the unsatisfactory soils occur in flats within semi-desert grasslands. These soils have high amounts of surface compaction, but a large amount of sheet and rill erosion. All the sites have very poor diversity, density, and composition of perennial grasses and sparse litter cover.

There are around 46 miles of perennial and intermittent streams named on United States Geologic Service (USGS) topographic maps within the Pine and Hog Canyon allotments. In addition to these named streams, there are several miles of unnamed headwaters and tributaries to these in the stream channel network. Based upon existing information, two riparian areas were selected as key reaches for the Pine Allotment; Pine Creek in the Red Hills Pasture and Sycamore Creek in the Connolly Point Pasture. On the Hog Canyon Allotment, four riparian areas were selected as key reaches; Hog Canyon Spring and Upper Hog Canyon Spring in the Hog Canyon Pasture, an unnamed spring in Section 4 of Upper Sycamore Wash, and Grapevine Spring in Gilmore Pasture. These sites were selected by an interdisciplinary team for the purpose of describing desired conditions and developing management objectives for riparian areas on the Pine and Hog Canyon Allotments.

Issues, Concerns, & Conflicts

Pine/Hog Canyon allotment faces the issue of keeping cattle out of private holdings and off Highway 87, specifically on the Hog Canyon allotment. Vandalism of pasture fence is common due to the proximity to small communities and popular OHV routes. This can often lead to cattle moving on to the highway. The FS will work with the permittee to correct this problem by installing a new cattle guard between the community of Round Valley and the town of Payson, as well as employ stricter enforcement of open gates and fence vandalism.

MANAGEMENT PLANS & OBJECTIVES

Management objectives are measurable parameters that can be used to describe attainment of desired conditions. The achievement of these objectives is highly dependent upon adequate precipitation levels and implementation of range improvement practices and other planned vegetation management practices. The anticipated timeframe to achieve objectives is 5-10 years, or 3-5 years after thinning or burning activities. If trends are upward towards the stated objective when monitored, then management may be considered effective in moving towards the desired condition. Vegetation or watershed condition may not improve substantially in key areas with moderate to thick woody overstory until vegetation management projects such as thinning or burning are implemented.

- Maintain or improve range condition to fair or better levels, or demonstrate an upward trend towards this objective where herbaceous vegetation is predominant in pastures.
- Improve livestock distribution to allow more uniform conservative utilization of forage resources and diminish concentration areas through trap fencing and added water sources.

- Reduce canopy cover of woody species on historic grasslands and juniper woodlands to improve or maintain satisfactory range and watershed condition and increase productivity of herbaceous vegetation.
- Improve/maintain satisfactory watershed conditions and effective groundcover.

Planned Actions

The following activities are summarized descriptions outlined in the 2010 Decision. Complete descriptions can be found in Chapter 2 of the Pine/Hog Canyon Allotments EA:

- Permitted grazing by domestic livestock shall occur on Pine/Hog Canyon Allotment.
- Initial stocking rate of no more than 50 cow/calf pairs (equivalent to 792 Animal Unit Months) until existing range improvements are maintained to standards in enough pastures to support a pasture rotation.
- Adaptive management strategies shall be implemented to manage livestock grazing.
- Ten main pastures will be used in a grazing rotation incorporating rest and deferment and needed to achieve desired conditions.
 - Generally pastures will be grazed only once during the grazing year.
- Creation of new improvements (Figure 2) will assist in the achievement of desired conditions.

Grazing Strategy

The Pine/Hog Canyon Allotment supports a yearlong cow-calf operation with calves being sold in the fall or retained as yearlings and sold in the spring. Initial stocking rate of no more than 50 cow/calf pairs (equivalent to 792 Animal Unit Months) will be implemented until existing range improvements are maintained to standards in enough pastures to support a pasture rotation. Based on monitoring of forage resources and range improvements, stocking levels will be increased up to the proposed maximum of 185 cow/calf pairs, or 2,930 Animal Unit Months (AUM's). This is not likely achievable until desired conditions for vegetation and soil have been reached in key areas and measures are implemented to improve livestock distribution. Sustained stocking at higher levels will depend on favorable climatic conditions and is likely to depend on implementation of vegetation improvement practices (thinning, burning, etc).

There are 8 main pastures and 2 holding pastures on the Pine Allotment, and 3 main pastures on the Hog Canyon Allotment (Figures 4-5). These have been managed under a deferred rest-rotation grazing strategy. The current winter/spring pastures are White Hills, Round Valley, Gilmore, and Hog Canyon. Summer/fall pastures are Strawberry Mountain, Strawberry Point, Red Hills, Cedar Mesa, Telephone Draw, and Connolly Point. Holding pastures are Buckhead North and South, which are typically used in the spring or fall for gathering and shipping.

Actual pasture season of use each year will depend on observed resource conditions and herd size. The grazing period within each pasture will be based upon weather/climate conditions, current growing conditions and the need to provide for plant regrowth following grazing. The length of the grazing period within each pasture will also consider and manage for the desired grazing intensity and utilization guidelines.

Figure 1: Sample Pasture Rotation Schedule

		Month*													
		J	F	M	A	M	J	J	A	S	O	N	D		
Year	1	Hog Canyon		Gilmore		Red Hills		Telephone Draw		Connolly Point		Cedar Mesa South		Round Valley	
	2	Round Valley		Hog Canyon		Connolly Point			Cedar Mesa South		Cedar Mesa North			Gilmore	
	3	Hog Canyon		Gilmore		Connolly Point		Telephone Draw		Red Hills		Cedar Mesa North		Round Valley	

* Cattle may use the Hog Canyon Allotment from 11/1 – 4/30 and the Pine Allotment from 5/1 – 10/31

Mitigation

To mitigate resource impacts, the following measures will be implemented. These practices have been demonstrated to be successful when used on similar projects and are considered effective at reducing environmental impacts. They are consistent with applicable Forest Plan standards and guidelines, Best Management Practices and the terms and conditions and conservation measures of applicable U.S. Fish and Wildlife Service Biological Opinions. Implementation of the mitigation measures and design criteria is intended to preclude the occurrence of potentially significant environmental impacts.

Soil, Water and Vegetation

The objective is to mitigate effects of livestock grazing and facility construction through the use of Best Management Practices (FSH 2509.22, PR 61) and adaptive management. Practices include, but are not limited to the following.

- Utilization of key upland herbaceous forage species in key areas will be managed to achieve the goal of light to moderate grazing as a pasture average. The objective is to protect plant vigor, increase herbaceous residue needed for soil protection and to increase herbage producing ability of forage plants. A utilization guideline of conservative use (30-40% forage utilization as measured at the end of the growing season) will be used to achieve this objective. Within riparian areas, allowable use guideline is less than 50% of terminal leaders browsed on the woody vegetation, and less than 40% of total biomass removed for riparian herbaceous species.
- Management practices will be used to achieve proper distribution or lessen the impact on sensitive areas. Practices include herding, salting and controlling access to waters. Salt will be placed on good feed, one quarter to one half mile from waters and salting locations will be moved annually. Placement of liquid or bulk supplements will require prior approval of the District Ranger.
- No hay will be placed on Forest lands in order to minimize the introduction of weed seeds.

Wildlife

The objective is to mitigate impacts to wildlife from livestock grazing and from disturbance associated with maintenance and construction of range facilities.

- All water developments will include wildlife access and escape ramps. Waters will be kept available to wildlife year round.
- All new and reconstructed fencing will be built to Forest Plan standards (Forest Plan, p. 35) to provide for wildlife passage through the fence. At a minimum, this will be a 4-strand fence with smooth bottom wire 16 inches off of the ground and a total height of 42 inches or less.
- Range construction projects will be designed to avoid the destruction of agaves. If impacts to agaves are unavoidable, the Forest will insure that no more than 1% of agaves within 800 meters of a project are impacted. The objective is to avoid impacts to long-nosed bat food resources.
- All proposed range facilities will be evaluated by a qualified wildlife biologist for effects to threatened, endangered or sensitive species prior to any ground-disturbing activities. Facilities will be designed and constructed to have no adverse effect on listed species.

Heritage Resources

The objective is to protect heritage resources (historic and prehistoric sites) from direct or indirect impacts caused by ground-disturbing activities associated with the construction of range facilities and to monitor the effects of cattle grazing on sites to ensure that adverse effects are not occurring:

- All structural range facilities will be surveyed by qualified personnel for heritage resources prior to any ground-disturbing activities. Facilities will be built or modified to avoid impacts to heritage sites. If unrecorded sites are discovered during the course of project implementation, activities will cease and the Forest or District Archeologist will be notified.
- Range facilities, if needed, will be located so as to avoid concentrations of livestock on identified heritage resource sites.
- No salting will occur within or adjacent to identified heritage sites.
- If impacts from grazing (e.g. excessive trampling, cattle rubbing against and knocking down standing features) are occurring to heritage sites, measures will be taken (e.g. fencing) to protect them.

Improvements

Maintenance of all structural improvements listed in the term grazing permit is the responsibility of the permittee. Likewise, the maintenance of any new improvements as a result of this plan will be the responsibility of the permittee. All improvements must be kept in a serviceable condition. Given the increased probability of both prescribed fire and wildfire in this area for the foreseeable future, special attention should be given to protecting infrastructure from the effects of fire. In particular, fences should be kept clear of brush for 3 feet on either side of the fence and brush should be removed from the area around wooden brace and corner posts. The Forest Service will assist in supplying materials for maintenance needs if budgets allow. The Forest Service will also assist the permittee in planning for potential cost share and grant opportunities whenever possible.

Improvements proposed to promote achievement of desired conditions were developed in coordination with the grazing permittee and are listed in Figure 2. These improvements have been proposed in the context of adaptive management, meaning that they have been identified as possible practices to assist

in the achievement of desired conditions if management alone is not sufficient. Future monitoring may indicate that the projects are not necessary, in which case they would not be implemented. However, if some or all improvements are not implemented, the upper limits of permitted livestock numbers may not be achievable. Funding will be a cooperative effort between the permittee, the Forest Service, and other partner organizations or agencies.

Figure 2: Proposed Range Improvements for the Pine/Hog Canyon Allotment

Improvement Description	Purpose and Need
Trap fencing around existing and planned water developments	Better control of livestock distribution
Water developments by pasture: Strawberry Mountain (1); Red Hills (1); Telephone Draw (1); Connally Point (2); Round Valley (1); Hog Canyon (2)	Achieve better livestock distribution
Addition of two new trough and up to ½ mile of pipeline to existing Buckhead holding pasture water system	Achieve better livestock distribution
Split the Connally Point pasture into east and west units with approximately 2 miles of new fence.	Achieve better livestock distribution
Split the Red Hills pasture into north and south units with approximately 1-1 ½ miles new fence	Achieve better livestock distribution
Riparian exclosures at Hog Canyon Spring and reliable springs in Sycamore Wash	If riparian monitoring shows that allowable use levels cannot be achieved over long-term without fencing
Drift fencing or exclosure to keep cattle from Pine Creek in Red Hills and White Hills pastures	If riparian monitoring shows that allowable use levels cannot be achieved over long-term without fencing

ADAPTIVE MANAGEMENT

Adaptive management uses the results from monitoring to provide feedback to adjust management actions in order to achieve specific desired conditions over the long-term. Management objectives are chosen that will be used to document whether desired conditions are being achieved. The proposed action is designed to provide sufficient flexibility to allow for changes in management when resource conditions show that changes are needed. Changes in management may include administrative decisions such as the specific number of livestock authorized annually, specific dates for grazing, class of animal or modifications in pasture rotations. However, such changes would not exceed the limits for timing, intensity, duration and frequency defined in the term grazing permit. Adaptive management would be implemented through annual operating instructions, which would adjust livestock numbers and the timing of grazing so that use is consistent with current productivity and is meeting management objectives.

Adaptive management also includes monitoring to determine whether identified structural improvements are necessary or need to be modified. In the case that changing circumstances require physical improvements or management actions not disclosed or analyzed herein, further interdisciplinary review would occur. The review would consider the changed circumstances and site-specific environmental effects of the improvements in the context of the overall project. Based on the results of the interdisciplinary review, the Ranger would determine whether correction, supplementation or revision of the EA is necessary in accordance with Forest Service Handbook direction at FSH 1909.15(18) and FSH 2209.13(96.1), or whether further analysis under NEPA is required.

Monitoring

The objective of monitoring is to determine whether management is being properly implemented and whether the actions are effective at achieving or moving toward desired conditions.

Effectiveness monitoring includes measurements to track condition and trend of upland and riparian vegetation, soil, and watersheds. Monitoring would be done following procedures described in the interagency technical reference, the Region 3 Rangeland Analysis and Training Guide, and the 1988 R3 Range Analysis and Management Handbook . These data are interpreted to determine whether management is achieving desired resource conditions, whether changes in resource condition are related to management, and to determine whether modifications in management are necessary. Effectiveness monitoring would occur at least once over the ten-year term of the grazing authorization, or more frequently if deemed necessary. Changes in riparian vegetation and stream channel geomorphology condition and trend will be measured at five to 10 year intervals. Protocols are described in the Interagency Technical Reference (1996), Cowley and Burton (2002), or the most current acceptable method.

Implementation monitoring would occur yearly and would include such things as inspection reports, forage utilization measurements in key areas, livestock counts, and facilities inspections. Utilization measurements are made following procedures found in the Interagency Technical Reference and with consideration of the Principles of Obtaining and Interpreting Utilization Data on Southwest Rangelands. Utilization measurements in riparian areas are made following the Interagency Technical Reference (1996), McBride and Grove (2002), and Cowley and Burton (2002) or the most current acceptable method.

Utilization would be monitored on key forage species, which are native perennial grasses that are palatable to livestock. At a minimum monitoring would include use in key areas, but may include monitoring outside of key areas. The Payson District Range Staff Officer and the permittees would be responsible for monitoring livestock grazing utilization. Over time, changes in resource conditions or management may result in changes in livestock use patterns. As livestock use patterns change, new key areas may be established and existing key areas may be modified or abandoned in cooperation with the permittee.

The permittee would be encouraged to participate in monitoring activities. Records of livestock numbers, movement dates and shipping records would be kept by the permittee and would be provided to the District Range Staff annually.

MAPS

Figure 3: Locations of the Pine and Hog Canyon Allotments (2010 EA)

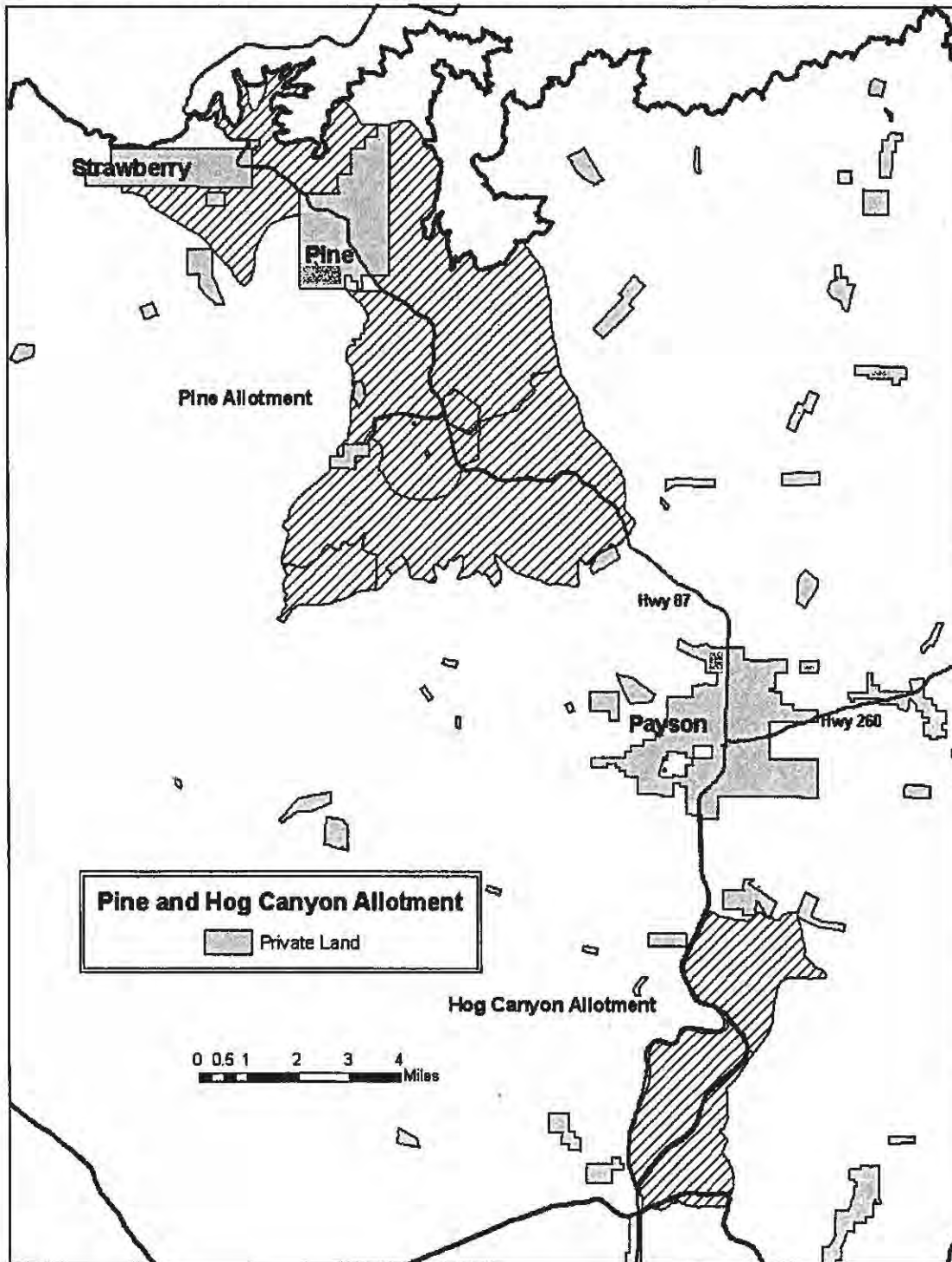


Figure 4: Pine Allotment Pastures (2010 EA)

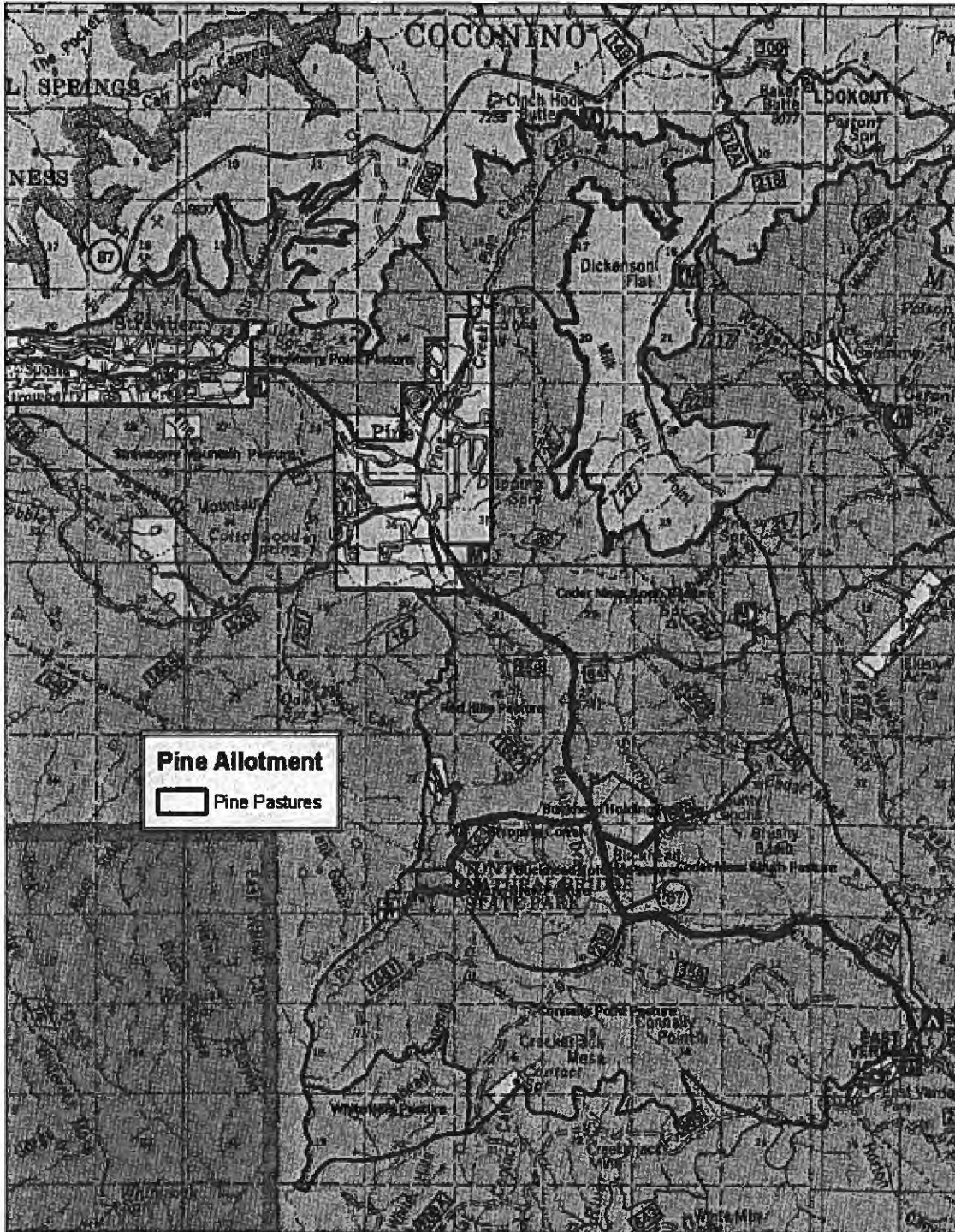


Figure 5: Hog Canyon Allotment Pastures (2010 EA)

