Allotment Management Plan
Smith Canyon Allotment

USDA Forest Service
Chino Valley Ranger District, Prescott National Forest
Yavapai County, Arizona

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Introduction

This Allotment Management Plan (AMP) is a direct result of the Environmental Assessment and subsequent Decision Notice (DN), dated September 30, 2016.

The Smith Canyon Allotment is located on the Chino Valley District of the Prescott National Forest (PNF) and represents the project area for this analysis, an area of approximately 48,000 acres. The allotment is located in the southwest portion of the district, approximately 17 miles west of Chino Valley, Arizona.

83% of the allotment is in the Santa Maria River watershed the remaining 17% is in the Big Chino Watershed. The western four fifths of the allotment is drained by Smith Canyon and Cottonwood Canyon which are tributaries of the Santa Maria River. Riparian vegetation occurs along these stretches dominated by woody species with some areas of aggradation with grass and grass like vegetation. Elevation ranges from 3,195 feet at the junction of Smith Canyon and Cottonwood Creek to ~6,200 feet on Sheridan Mountain. The topography is rough and broken with some flat mesas and more gentle country in the far eastern portion.

Vegetation on the allotment consists primarily of Pinyon Juniper evergreen shrub and Interior Chaparral, with ten percent considered Juniper grassland. Canopy cover from shrub species is moderately to extremely thick in some locations to the extent that herbaceous forage is reduced or absent. A portion of the forage base of the allotment is provided by desirable browse species such as turbinella oak with mountain mahogany, deerbrush, and skunkbush in smaller quantities. Perennial grasses can be locally abundant, especially in juniper woodlands that have been previously thinned, and south aspects.

Desired Conditions

The desired conditions on this grazing allotment, based on the Forest Plan (see Attachment 1 Forest Plan Standards and Guidelines) and the work of the Interdisciplinary Analysis Team (ID team), include:

- Range administration that provides for the maintenance of satisfactory Rangeland Management Status (RMS) with a static or upward apparent trend;
- The maintenance of vegetation with mid- to high similarity to the Desired Vegetative Status (DVS) providing for ecological functionality and resiliency following disturbance while sustaining long-term productivity of the land;
- The installation and maintenance of structural improvements, such as water-supply systems, that enhance management control and flexibility and allow for effective distribution of forage use;
- The maintenance of soils in satisfactory condition over the long-term, or show improvement in areas departing from satisfactory condition where livestock grazing is contributing to the departure;
- The maintenance of functioning spring-fed riparian systems, and saturated soils where potential exists, that support vegetation within site potential and provide habitat for riparian-dependent plants and animals while providing water sources for wildlife and livestock needs;

- The maintenance of fully functional riparian systems supported by herbaceous and multi-age woody vegetation, within site potential, that provides for stable stream channels and banks and habitat for riparian-dependent plants and animals;
- Protection and preservation of important historic and cultural sites; and
- The maintenance of suitable habitats for Management Indicator Species, Migratory Bird Treaty Act species, Forest Service Sensitive species, and for indigenous plant and animal species.

Resource Objectives

The following management objectives were developed to measure progress towards meeting desired conditions:

- Improve or maintain cover of perennial grasses to achieve mid- to high similarity with the potential perennial grass canopy cover and composition as shown in the Ecological Classification for the Prescott National Forest for key TEUI map units; achieve an upward trend in vegetation condition towards this objective.
- Detect an improvement of vegetation spatial distribution (GAP) within 5-7 years (soil health).
    - Smith Canyon pasture; TEUI 427
    - Granites pasture: TEUI 461
    - Spider pasture TEUI 486
    - Smith Mesa pasture TEUI 490

Grazing Management

Permitted Numbers, Season of Use, and Animal Unit Months

# of Livestock	Season of Use	Animal Unit Months
Between 200 to 275 head of cattle, cow/calf pairs and bulls	yearlong	Not to exceed 3,300 Animal- Unit- Months[1]

The period of grazing and the stocking numbers on NFS lands will be determined by monitoring, designated in the Annual Operating Instructions (AOI) and authorized in the Bill for Collection.

AOI will be prepared each year in cooperation with the permittee to allow for consideration of current allotment conditions and management objectives. This AOI will detail the current season's grazing schedule, the stocking level, the improvement maintenance needs, needed improvements, and the allowable use levels on key forage and browse species.

Annual stocking would be based on adaptive management, considering forage production, water availability, and resource conditions. Annual stocking could fall below the low end of the proposed stocking range. There are seven main pastures used in a

[1] Animal-Unit-Month (AUM) is the amount of oven-dry forage required by one mature cow of about 1,000 pounds, either dry or with a calf up to six months of age, or their equivalent, for a standardized period of 30 animal-unit-days.

rotational grazing system. Pasture rest and deferment will be scheduled to provide for achieving desired resource conditions.

Adaptive management is designed to provide sufficient flexibility to allow livestock management to address changes in climatic conditions, seasonal fluctuations in forage production, and other dynamic influences on the ecosystem in order to effectively make progress toward or maintain desired conditions of the rangeland and other resources. Under the adaptive management approach, regular/annual monitoring of short-term indicators may suggest the need for administrative changes in livestock management. If monitoring indicates that progress toward desired conditions is not being achieved on the allotment, management will be modified.

Modifications can include adjustments in timing, intensity, and duration of grazing. Timing is the time of year the livestock are present in a pasture. Intensity is the degree to which forage is removed through grazing and trampling by livestock. Duration is the length of time livestock are present in a given pasture. These modifications would be made through administrative decisions such as: the specific number of head stocked on the allotment annually or in a particular season; the class of animals stocked (cow/calf pairs vs. yearlings, steers or heifers, etc.); specific dates of grazing; livestock herd movement; and periods of rest, deferment, or non-use of portions or all of the allotment for an appropriate period of time, as conditions warrant. Such changes will not result in exceeding the AUMs authorized for livestock use.

Application of standard management practices such as salting, herding, and controlling access to water to achieve proper distribution or lessen the impact on areas which are sensitive or are natural concentration areas will be applied by the permittee.

Protein, salt, and other supplements will not be placed within ¼ mile of water or any identified sensitive plant population. New improvements (e.g. pipelines, troughs, tanks, or fences) will be designed to avoid adverse impacts to any such populations.

Allowable Use

Allotment Wide Measures:

Grazing intensity guidelines will be applied across the allotment to provide rangeland managers with information needed to adapt management through adjustments, as may be needed, on an annual basis. Examples of appropriate grazing intensity and forage use guidelines for areas of the allotment that are generally described to be in satisfactory condition include:

- A management guideline of 35-45% utilization of key forage plants in upland key areas as measured at the end of the growing season or seasonal use period;
- Up to 50-60% leaders browsed on key upland woody species;
- Minimum stubble height on key riparian herbaceous species: four to six inches where sedges and rushes are key and eight inches where deergrass is key;
- Up to 20% use by weight on key woody species within riparian areas; or less than 50% of terminal leaders browsed on woody species less than 6 feet tall.

Grazing intensity will be determined using key herbaceous and browse species within key areas. Grazing would be adjusted if periodic monitoring indicates that desired resource conditions are not being maintained.

Site-specific Measures:

The following measures will be applied in areas of concern where current conditions are not meeting desired conditions, and management objectives have been established to measure progress towards meeting desired resource conditions:

- Smith Canyon pasture: Incidental use levels (0-30%) to promote biomass retention and subsequent litter development (TEUI 427 & 461), and seasonal deferment and/or rest and improving livestock distribution by controlling access to waters and herding.
- Granites pasture: deferred season of use to allow further graminoid biomass retention (TEUI 461) and control access to water facilities to improve distribution. An additional water source is proposed that would distribute cattle away from the area needing improvement.
- Spider pasture: incidental use (0-30%) in the no capacity areas of TEUI 486 (Dillon field, south of Fair Oaks Road).
- Smith Mesa pasture: rest and incidental use (0-30%) in TEUI 490. Control access to water and place salt and supplement in locations to discourage concentrated use in TEUI 490.

Once desired conditions for vegetation or soil are being met in areas needing improvement, then the allotment-wide utilization standards could be applied.

In the event that the above resource protection measures do not accomplish site-specific resource objectives, additional optional measures may be implemented. These optional measures will be designed to address site-specific resource concerns and may include, but are not limited to, such things as temporary fencing, electric fencing, and reconstruction of existing non-functional improvements and construction of new improvements such as drift fences.

Rangeland Improvement Program

Construction of New Range Improvements:

Construction of the following new structural improvements has been approved to address resource concerns. These improvements are intended to aid in the achievement or maintenance of desired resource conditions by improving livestock distribution. The Forest Service will work in collaboration with the Permittee, AZ G&F and other partners as the opportunity presents.

Because of limited road access for large vehicles like well-drilling rigs, the proposed water developments on the Smith Canyon Allotment would likely be trick tanks (catchment apron that directs rainfall into a storage tank and pipeline system with troughs), or earthen stock tanks (dug out areas that collect rainfall directed from shallow ditches).

- Construct 3 reliable water developments in Smith Canyon Pasture:
  - one north of Sheridan Lake in the north half of section 21;
  - one on the south benches in NE quarter of section 35;
  - one in north half of section 6. Two of these (section 21 and 35) are to replace existing earthen stock tanks that are non-functional and replace with trick tanks.
- Cottonwood Pasture SW quarter of section 31;
- Granites Pasture north half section 4;

- Moano Pasture west half of section 22 (replace non-functional earthen stock tank);
- Spider Pasture NE quarter of section 32;
- Jones Pasture NW quarter of section 33.
- Construct drift fences to better control livestock distribution:
    - Smith Canyon Pasture near Sycamore Spring;
    - Smith Mesa Pasture along the trail west of Horseshoe Tank;
    - Granites Pasture along the trail north of Saddle Tank.
- Construct fences (water lots) around Alkaline Tank and Dyke Pond in the Smith Canyon Pasture to better control livestock use patterns in the pasture.
- Construct an east-west fence to split Smith Mesa Pasture into Mesa and Rincon Pastures if controlling access to water does not sufficiently improve distribution and result in achieving desired resource conditions.
- Expand the existing fencing at Alkaline Spring to include protection for the spring area.

Maintenance Responsibility

The Term Grazing Permit includes a list of all improvements which the permittee will continue to maintain at a level that effectively provides for their intended uses and purposes. Range improvements will be inspected periodically during the term of the permit to document condition.

Damage resulting from big game, wind, other acts of nature, or human caused actions, must be repaired in a timely manner so as to ensure the integrity of the structures.

All maintenance of exterior fences must be completed prior to turn-on each year. *(It is the responsibility of the permittee to ensure that the necessary coordination occurs between adjacent allotments to ensure maintenance is completed in a timely manner).*

AOI will identify range improvements in need of maintenance. Existing improvements may be replaced when their conditions warrant. All improvements identified on allotment maps have been evaluated and determined necessary to the management of the allotment through the life of this plan.

Access to Improvements:

Authorization for cross-country motorized travel is provided for the permittee to administer the livestock operation and maintain improvements under the terms and conditions of the Term Grazing Permit.

Annual authorization for actions implementing management direction in the AMP will be included in the AOI , such as a description of the anticipated level of cross-county travel, travel needed for improvement maintenance, new improvement construction, or reconstruction of existing improvements.

All authorizations for cross-country motorized travel are subject to existing regulations intended to protect natural and/or heritage resources. Cross-country travel is not allowed when such travel would cause unacceptable resource damage.

The permittee may be authorized to maintain forest systems road to facilitate the maintenance, replacement, or installation of range improvements. Maintenance activities will adhere to Forest Service standards and be authorized through a road use permit.

Drought Management

Perennial grasses and major browse species need deferment/rest in order to provide time to recover from drought induced stress. Even when rested or deferred, if adequate precipitation is not received, recovery may not be adequate for livestock use.

Move cattle to the next scheduled pasture when utilization in pastures is met. If complete removal of livestock is necessary, they may be authorized to return to the allotment once conditions improve; meaning sufficient recovery from the effects of drought stress has occurred and there has been enough herbaceous production to support livestock numbers. Potential return of livestock will be evaluated no earlier than the summer growing season.

Monitoring and Evaluation

Implementation Monitoring

This monitoring will be conducted on an annual basis and will include such things as livestock actual use (# of head, # of months) and scheduled and unscheduled inspections to ensure that all livestock and grazing management measures stipulated in the permit, AMP, and AOI are being implemented (*e.g.* cattle numbers, on/off dates, rotation schedules, maintenance of improvements, mitigation measures).

Monitoring activities would be focused on those resources that need improvement or where there is a concern for an important habitat type. For this project, there are soil and vegetation condition concerns in the Smith Canyon pasture in TEUI 427and 46, and soil condition concerns in Granites pasture TEUI 461, Spider pasture TEUI 486, Smith Mesa pasture TEUI 490.

- Canopy gap and vegetative ground cover will be measured at key areas in Smith Canyon pasture (TEUI 427), Granites pasture (TEUI 461), Spider pasture (TEUI 486), and Smith Mesa pasture (TEUI 490) Results of monitoring will be analyzed against baseline data or Ecological Classification description to determine if objectives are being met.

Forage utilization will be monitored on the allotment at key areas and at areas identified with site-specific resource concerns. *See Attachment 2, Key Area Map.*

The key area concept is based on the premise that no range of appreciable size will be grazed uniformly (Holechek, Pieper and Herbel, 1998). When key areas are "properly" used there may be substantial areas that are used more or less than the key areas, including some that will not be used at all. Forest Service personnel can work with the permittee in selecting these areas.

(*Monitoring of allowable use on key forage species in key areas is the joint responsibility of the Forest Service and the permittee. Although the Forest Service will make every effort to assist the permittee in ensuring compliance with standards, the permittee has the ultimate responsibility for ensuring that the allowable use standards are met).*

If periodic field checks indicate that plant vigor or production is poor, and bare soil is increasing, this would trigger a need to make adaptive management adjustments. This could also result in re-evaluation of vegetation or soil condition through effectiveness monitoring.

Field Checks will include informal inspections, formal inspections, and permittee compliance monitoring.

Informal Inspections

Informal inspections conducted by the Forest Officer will be made as the opportunity arises, such as when the Forest Officer is working in the area or is passing through the allotment.

The permittee will be notified by telephone of any significant observations needing immediate attention. Significant observations will be documented in writing by the Forest Officer and a copy of the inspection notes will be sent to the permittee in a timely manner.

Formal Inspections

Formal inspections conducted by the Forest Officer will be made as time and competing duties allow with an attempt to inspect each of the pastures.

The permittee will be requested to accompany the Forest Officer during the inspections. Significant findings from these inspections will be documented in a letter or inspection report sent to the permittee in a timely manner.

Permittee Compliance Monitoring

The permittee will:

- Monitor the allotment continuously throughout the grazing season to determine current resource conditions and to ensure the terms of the permit are being met.
- Document all findings through notes, photographs, or other means decipherable by the Forest Officer
- Share monitoring information with the Forest Officer, and
- Coordinate with the Forest Officer to resolve any problems that arise.

Effectiveness Monitoring

The permittee is encouraged to participate in any effectiveness (e.g. long term condition and trend) monitoring and evaluation conducted on the allotment. This type of monitoring evaluates the success of management in achieving the desired objectives within key and critical areas or on permanent transects at an interval of 10 years or less. Data collected for the Allotment Management Plan revision serves as a baseline for vegetation and soil condition. The same key areas evaluated for the analysis will be re-visited to determine if desired conditions are being maintained, or there is acceptable progress in those areas needing improvement. Effectiveness monitoring may also be conducted if data and observations from implementation monitoring indicate a need.

Both qualitative and quantitative monitoring methods will be used in accordance with Interagency Technical References, the Region 3 Rangeland Analysis and Management Training Guide, and the Region 3 Allotment Analysis Handbook. Common methods to evaluate vegetation trend include plant frequency changes over time, or comparison of existing vegetation canopy cover and species composition to the potential natural vegetation based on soil type, climate, elevation, topography, and past land uses.

Attachment 1, Relevant Forest Plan Standards and Guidelines

Range Management	
Std-Range-1	**Water troughs shall incorporate escape devices to prevent animal entrapments**
Std-Range-2	**Year-long livestock grazing in riparian areas (streams, springs, and seeps) shall be avoided to prevent adverse impacts to water quality and riparian habitat in those areas**
Guide-Range-1	The placement of salt, minerals, and/or other supplements for the purposes of livestock management should be located further than one-quarter mile from riparian areas or seasonally present water.
Guide-Range-2	For structural improvements: • Implement design features that incorporate wildlife needs and reduce barriers to movement and entrapment hazards • Consider wildlife needs in fence placement and design to reduce barriers and hazards to movement and minimize chances of entrapment • Remove fencing when it is no longer needed
Guide-Range-3	After occurrence of wildland fire or mechanical activity that removes most vegetation, a time period for recovery, establishment, and regrowth of vegetation should be determined and applied to meet site-specific objectives
Guide-Range-4	Livestock salting should be located away from known locations of Southwestern Region sensitive plant species so that plants are not adversely affected by associated trampling
Guide-Range-5	Livestock use of woody riparian species (e.g. cottonwood, willow, ash, and alder) should provide for maintenance of those species and allow regeneration of new individuals leading to diverse age classes of woody riparian species where potential for native woody vegetation exists
Guide-Range-6	Grazing intensity, frequency, occurrence, and period should provide for growth and reproduction of desired plant species while maintaining or enhancing habitat for wildlife
	Watersheds guidelines
Guide-WS-4	Adverse impact to stream channel features (e.g. streambanks, obligate riparian vegetation) should be minimized by modifying management actions. Examples of modification could include, but are not limited to: adjusting timing and season of grazing, limiting use and location of heavy machinery, or avoiding placing trails or other recreation structures where recreation use could negatively affect stream channel features
Guide-WS-5	Ground cover sufficient to filter runoff and prevent erosion should be retained in riparian corridors, seeps, and springs
Guide-WS-9	Along perennial streams, perennial intermittent streams, and spring ponds, mitigation such as offsite water for livestock should be provided to reduce impacts on riparian communities and groundwater dependent sites

Guide-WS-10	Measures that restrict use should be considered as a way to mitigate recurring negative impacts to aquatic species and riparian plants. These could include, but are not limited to: installation of barriers, road closures, area closures, or seasonal restrictions
Soils Guideline	
Guide-Soil-1	Projects should be designed to limit activities that would cause long term impacts to soils such as loss of ground cover, severely burned soils, detrimental soil displacement, erosion, puddling, or compaction. Where disturbance cannot be avoided, project-specific soil and water conservation practices should be developed.
Vegetation Standard	
STD-Veg-2	**When treating nonnative and invasive plant species, design features in appendix B of the "Final Environmental Impact Statement for Integrated Treatment of Noxious or Invasive Weeds" (Forest Service, 2005a) or the most current direction must be followed to protect endangered, threatened, proposed, and candidate wildlife and plant species and their habitats**

Attachment 2, Key Area Map

