Allotment Management Plan
Quartz Wash Allotment

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

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Permittee

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Introduction

This Allotment Management Plan (AMP) is a direct result of the Environmental Assessment and subsequent Decision Notice/Finding of No Significant Impact (DN/FONSI), dated September 29, 2015.

The Quartz Wash Allotment is located about 32 miles northwest of Prescott and 4 miles northeast of Walnut Creek worksite. This allotment is surrounded on the north by private and state trust land, on the east and south by private land, and on the west by the K Four Allotment. The allotment encompasses about 7,000 acres and the topography is gently rolling limestone ridges with broad level areas. The west end of the allotment becomes a little steeper and rougher. Elevation ranges from 4,200 to 5,500 feet.

Soils are varied from basalt and dolomite to limestone based. They range from shallow gravely sandy loam or shrink swell clays to deep well drained soils on alluvial fans.

Vegetation ranges from southern woodland on the higher, steeper slopes to narrow stringers of open grasslands along the bottoms of drainages. Vegetation consists of juniper, pinyon pine, turbinella oak brush, blue and sideoats grama on mesas and side hills. The alluvial fans are primarily perennial grass species: sideoats grama, blue grama, muhly and New Mexico feathergrass.

The entire allotment is in the Big Chino Wash Watershed, a tributary of the Verde River. Lead Quartz Wash dissects the allotment diagonally from the northwest to the southeast eventually draining into Walnut Creek, which is a tributary to the headwaters of the Verde River. A small portion of Walnut Creek is accessible in the south central part of the allotment.

Desired Conditions

The desired conditions on this grazing allotment, based on the Forest Plan 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.
    - On Quartz TEUI 417, Center TEUI 417, and Fritsche TEUI 412, detect an improvement of vegetation spatial distribution (GAP) within 5-7 years (soil health).
- Quartz Pasture Maintain herbaceous cover where potential exists TEUI 417
- Center Pasture Promote woody riparian establishment along greenline and in floodplain of Walnut Creek. Detect establishment and increase of perennial herbaceous plants on the seasonal greenline where the plants can grow (no rock) and indicators of increased bank and channel stability within 3-5 years.
- Fritsche Pasture. Maintain existing herbaceous cover and increase native composition. Detect establishment and an increase of perennial herbaceous plants within 3-5 years.

Grazing Management

Permitted Numbers, Season of Use, and Animal Unit Months

# of Livestock	Season of Use	Animal Unit Months
Between 75 and 120 head of cattle, cow/calf pairs and bulls	November 1 through May 31	Not to exceed 845 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.

The current grazing permit will allow for 75 to 120 cow calf pairs and bulls on a dormant season basis (generally from November 1st through May 31st), annually.

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

[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.

season's grazing schedule, the stocking level, the improvement maintenance needs, needed improvements, and the allowable use levels on key forage and browse species.

Livestock will be managed in a deferred rotation grazing system during the dormant season. Pastures will not be grazed during the same time frame consecutive years, with complete summer rest.

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.

Currently an adjacent grazing permittee is allowed to trail livestock across the Quartz Wash Allotment in the fall see Attachment 1 for route.

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:

- Conservative grazing intensity (35-45% use) on key forage plants in upland key areas as measured at the end of the growing season or seasonal use period;
- Up to 50-60% browse use 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:

- Incidental use 0-30% of herbaceous plants in the Center and Fritsche Pastures (TEUI 412) to improve the vegetative groundcover towards site potential and reduce spatial distance (gap) between herbaceous plants, and reduce soil compaction; use active livestock management techniques (herding, salt and supplement placement, etc.) to disperse cattle throughout the pasture and discourage concentration and trailing within this soil map unit.
- No salting or supplementation allowed in TEUI 412 or 417
- Use of Center and Fritsche TEUI 412 will be discouraged when soils are wet (typically mid-December through mid-March).
- If use of herbaceous plants in TEUI 412 in Center and Fritsche Pastures exceeds 30% that pasture will be receive complete rest the following year.
- After 5 years of incidental use in Center and Fritsche Pastures TEUI 412, if measurable improvement in soil compaction has not occurred, then Center and Fritsche Pastures will receive a full year of rest during 1 out of 4 years to achieve the freeze/thaw effects to alleviate compaction of soils.
- Herding or salting will be implemented to keep livestock out of Walnut Creek riparian areas. If allowable use levels are often exceeded (herbaceous and shrubs), and not meeting desired condition, a fence will be constructed to exclude cattle from Walnut Creek in Center Pasture.

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.

- Construct a water catchment and storage tank (trick tank) in the north half of section 15 in the Quartz Pasture; provide an additional water source in the Center Pasture by laying a pipeline from the Quartz Pasture trick tank to section 14 in the southern part of the Center Pasture and providing additional water storage and a trough at that location.

- Fence accessible portions of Walnut Creek if grazing management adjustments in timing and season of use do not adequately provide for attainment of desired condition in the riparian area.
- Portions of Walnut Creek in sections 13 and 7 that lie outside the allotment boundary but are accessible from private lands to the south that are grazed by cattle. To protect the riparian resources on Forest system lands, a fence would be built that would exclude cattle from accessing Walnut Creek from adjacent private land. These excluded sections of Walnut Creek would not be used by the Quartz Wash Allotment livestock.

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 Center and Fritsche Pastures in TEUI 412, and riparian vegetation concerns in Walnut Creek.

- Canopy gap and vegetative ground cover will be measured at key areas in Center and Fritsche pastures within TEUI 412. Results of monitoring will be analyzed against baseline data or Ecological Classification description to determine if objectives are being met.
- Utilization of riparian vegetation will be measured. If use of vegetation is consistently excessive Walnut Creek will be excluded from Center Pasture. Goal is to be in proper functioning condition when Interdisciplinary Team does the analysis 5 years after implementation of this management plan.
- Visual checks will be done after trailing of livestock through the Quartz Wash Allotment. If needed canopy gap and vegetative ground cover will be measured. If degraded soil and vegetation conditions result from the trailing of neighboring livestock through the allotment, this practice will be discontinued.

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.

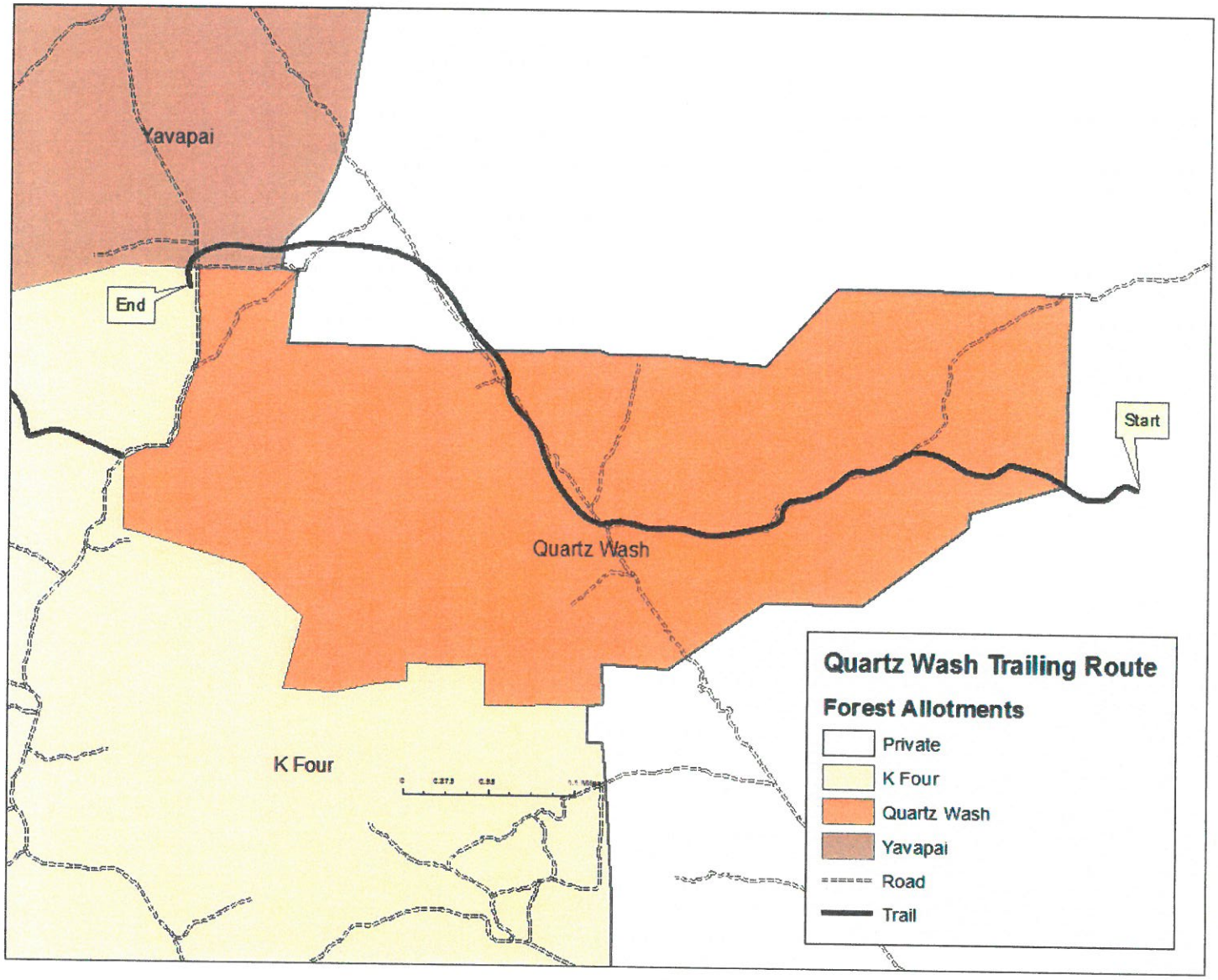
Effectiveness Monitoring

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, Livestock Trailing Map



Attachment 2, Key Area Map

