

**Juan Tank**  
**Allotment Management Plan**  
**2014**

## **I. Introduction and Background Information:**

The Juan Tank grazing allotment is located in Coconino County northwest of Williams, Arizona within the Williams Ranger District of the Kaibab National Forest (see Map 1). The allotment is located within all or portions of T23N, RIW, Section 36; T22N, RIW, Sections 1, 12, 15 and 24; T22N, R1E, Sections 1-19, 22- 26, 35-36; T22N, R2E, Sections 7, 17-21, and 30; and T21N, R1E, Sections 1-2. The topography within the allotment varies from mostly flat with rolling hills on the west side to steeper terrain on the east and south sides. Major geographic features include Signal Hill, Three Sisters Peak, Hearst Mountain, Rogers Canyon, Juan Tank Canyon, and Holden Lake.

The allotment contains three pastures, two holding pastures (traps), and one horse pasture. The allotment includes approximately 18,535 Forest Service acres and 821 private acres, of which 680 acres are owned by the current permittee.

The canyons and washes within the Juan Tank allotment are part of the Upper Verde and Colorado River drainage systems. These drainages are ephemeral, flowing only during periods of spring snow melt and heavy monsoon storms, and do not contain riparian vegetation types. Holden Lake is the only wetland known to occur on the allotment. There are no natural springs. There are no known populations of threatened, endangered, proposed, candidate, or conservation agreement species within the allotment boundary. There are no wild and scenic rivers, research natural areas, designated wilderness areas, inventoried roadless areas, designated parklands, or prime farmlands within or near the allotment. Forest Service sensitive plant and animal species may occur.

Pinon/juniper, savanna, and grasslands are the dominant vegetation types on the allotment. There is a minor ponderosa pine component. Predominant grass species include blue grama (*Bouteloua gracilis*), western wheatgrass (*Pascopyrum smithii*), prairie junegrass (*Koeleria cristata*) and bottlebrush squirreltail (*Elymus elymoides*). A loss of herbaceous understory species is evident in portions of the allotment due to juniper encroachment.

Juniper treatments (i.e., grassland and savannah restoration) have taken place on the allotment beginning in the 1950s and continue today. These treatments have allowed for the recovery of native plant communities, thus providing forage for wildlife and livestock while increasing vegetative ground cover to reduce erosion. However, early treatments are believed to be when Japanese brome (*Bromus japonicus*), a non-native invasive species, was introduced.

## **II. Purpose and Objectives:**

The purpose of this Allotment Management Plan (AMP) is to implement the April 23, 2014 Juan Tank Allotment NEPA Decision Notice authorizing livestock grazing consistent with Forest Service policy that maintains or improves project area resource conditions, promotes ecological resiliency across the landscape, and achieves the objectives and desired conditions described in the Kaibab National Forest Plan. There is a need to formally incorporate additional flexibility into the management of the Juan Tank Allotment. This is to provide the Forest Service and individual grazing permittee the ability to adapt management currently and into the future in response to changing resource conditions and achieve management objectives and to comply with Forest Service Policy (FSH 2209 .13).

This AMP will be incorporated into, and be made part of, the current and any future Term Grazing

Permit(s) that authorize livestock grazing on this allotment. This AMP provides for flexibility of the yearly stocking rates, time of use, kind and class of livestock and scheduled pasture use periods on the Juan Tank Allotment. Annual adjustments in management will be developed with permittee input and documented in the Annual Operating Instructions (AOI).

The objectives of this Allotment Management Plan (AMP) are to:

1. Maintain or improve range conditions on the allotment by limiting the grazing use of forage plants to conservative or moderate levels and by providing periods of growing season rest or deferment for forage plants.
2. Maintain watershed conditions at current levels on the allotment by managing for the ecological site potential level of herbaceous ground cover and allowing for residual plant materials to accumulate.
3. Maintain the current proper functioning riparian conditions at the springs/seeps on the allotment by not salting or placing supplements near the springs/seeps and by providing growing season rest or deferment for the pasture where these spring/seeps are located.
4. Manage for possible drought conditions by maintaining forage plants at, or near, their highest potential for growth (vigor) and reserving unused forage when possible.
5. Implementing the appropriate mitigating measures that are currently, or in the future, determined to be necessary.

### **III. Management:**

The April 23, 2014 Decision Notice for the Juan Tank Allotment incorporates management flexibility by providing a range of allowable numbers that reflect variations in resource conditions and management objectives over time. Within this range, annual authorized livestock numbers will be specified in an AOI. Changes in stocking would occur as a result of changes in resource conditions, infrastructure conditions or management objectives. Herd movements would be determined by utilization levels, forage conditions and water availability and will be specified in an AOI. This AMP and future AOIs will also include mitigation measures and BMPs to avoid or minimize effects to wildlife, soil and water quality. Monitoring of forage availability and utilization, range readiness and resource conditions will be used to determine whether management is being properly implemented and whether the actions are effective at achieving or moving toward desired conditions.

#### **Stocking Level and Class of Livestock**

Authorize up to 2,280 AUMs (up to 185 cattle and 5 horses) for up to a 12-month season of use. However, only 150 cattle will be authorized until adequate monitoring data indicate that vegetation trends on the allotment are improving toward desired conditions.

#### **Allowable Use**

- The utilization<sup>1</sup> guideline will continue to allow up to 40 percent use by cattle and/or wildlife. This is considered "conservative" grazing intensity and is measured before the end of the growing season.

<sup>1</sup> Utilization is the proportion or degree of the current year's forage production that is consumed or destroyed by animals (including insects).

- Seasonal utilization could be used to determine when livestock should move to the next pasture in the rotation. Other factors to consider include weather patterns, likelihood of plant regrowth, and previous years' utilization.
- Pastures should not be grazed twice during the same grazing season unless resource conditions permit (e.g., above-average forage production, dormant-season grazing). If a pasture is grazed twice in the same season, a light grazing intensity standard should be applied (20%).

### **Use of Supplements**

When there is a need to provide supplements to the livestock authorized on the allotment the following practices will be followed:

- a. Locate supplement sites 0.25 mile or more from waters except where prior written approval has been obtained from District Ranger.
- b. Place salt and mineral supplements where forage is abundant and current grazing use levels are low. Supplements should not be placed at any one location more than once during the grazing season to prevent the concentration of livestock.
- c. Limit routine supplement types to salt, protein, and mineral blocks to reduce risk of spreading noxious weeds and to reduce the risk of creating areas of concentrated livestock use.
- d. If there is a need to feed energy supplements such as grain, hay, surplus milk products, ethanol production by-products or molasses-based products; a supplemental feeding plan will need to be developed and approved by the District Ranger prior to placing these energy type supplements on National Forest lands.

### **Integrated Pest Management**

Development of an Integrated Pest Management Plan will facilitate treatment of Japanese brome. Cultural control such as sheep grazing (up to 1,200 head), fire, herbicide, and mechanical treatments may be used to control Japanese brome on the Juan Tank Allotment. Sheep grazing would generally take place in the early spring months when Japanese brome is most palatable and native grasses are mostly dormant. Sheep would be moved to an ungrazed area when consumption of Japanese brome approaches 80 percent. Consumption of native grasses would be monitored to avoid exceeding the 40 percent allowable use guideline and to provide for the developmental needs of sustainable native plant communities.

### **IV. Improvements:**

The range improvements described below will allow flexibility in adjusting grazing timing, duration, and intensity. This flexibility will allow grazing management actions (e.g. spring deferment or grazing rest) that are expected to improve rangeland conditions in areas where conditions are currently undesirable (e.g. Japanese brome infestations). My decision includes construction of the following structural improvements:

- Holden Lake wetland will be fenced by the Forest Service to exclude livestock grazing while allowing livestock access to the earthen tanks within the wetland (Map 2). The permittee may construct a waterlot/corral around the two tanks at his expense. Construction will occur in year one or two following this decision. All fences will be built to wildlife standards. The permittee may continue to haul water from the tanks for use in troughs elsewhere on the allotment.
- Up to two corrals may be constructed to aid in livestock management. Up to four trick tanks may be constructed to provide water in other areas of the allotment to improve livestock

distribution. These developments should be built within five years following this decision or as budgets and staffing allow. Locations will be determined after consulting with the grazing permittee and Forest Service archaeologists, wildlife biologists, soil scientist, and range management personnel.

- Access to Holden Lake from the Forest Road 124 will be eliminated immediately following this decision. A wildlife viewing overlook and interpretive kiosk will be built within the first six to seven years following a decision (Forest Service expense).
- Up to six existing earthen tanks (Bootlegger, Doe, Gate, Juan, Mud Ketch, and Perrin) may be fenced to aid in the distribution of livestock. Current waterlot fences will be rebuilt or repaired. These projects will begin in the first year following this decision. Limiting the number of waters available to livestock will aid in meeting resource objectives. All fencing will meet specifications for wildlife, and waterlots will vary in size from one to six acres depending on surrounding topography and size of tank. Waterlot gates will be left open when cattle are not in those pastures to allow for wildlife passage.
- The Juan Tank and Sisters pastures will be divided if waterlot fencing does not achieve the desired level of livestock distribution and/or resource objectives after four to six grazing seasons. Locations of those fences, if needed, will be determined after consultation with the grazing permittee and Forest Service archaeologists, wildlife biologists, soil scientist, and range management personnel.
- Up to four livestock enclosure plots may be constructed in the Juan Tank Pasture in order to conduct trials on Japanese brome treatments. These may be built in year one or two following this decision. The enclosures may be up to three acres in size and treatments may include grazed/ungrazed, herbicide, and seeding treatments, as well as other methods (e.g., biological control, burning) as they become available for use. As treatments are evaluated and determined to be successful, they could be applied to the larger pasture (Forest Service expense).
- Bottom wires (i.e., strands) that are currently barbed will be replaced with smooth wire on all rebuilt fences within the allotment. All new fences will meet standards for wildlife passage as recommended by Forest Service biologists in cooperation with the Arizona Game and Fish Department.
- When monitoring data indicate management changes in the HQ Pasture are needed, a staged approach will be employed. This will consist of utilizing temporary improvements (e.g. temporary fencing) to facilitate meeting desired conditions prior to any development of permanent improvements (e.g. a permanent fence).

### **Maintenance of Existing Range Improvements**

As specified in the current Term Grazing Permit(s) and any future grazing permits, the permittee will be required to maintain all assigned range improvements.

- Maintain all current range infrastructures to a satisfactory condition, such as fences and waters developments.
- Ensure all future range fence reconstruction would be designed as wildlife friendly including appropriate installation of elk crossings, use of smooth bottom wire, standard spacing to prevent entrapment, maximum height limits, and locations.
- Ensure all future range water developments would be designed as wildlife friendly including wildlife escape ramps and provide access to wildlife on existing and proposed water troughs.

Any construction or reconstruction of range improvements on this allotment by the permittee will be authorized as a modification of the Term Grazing Permit, which is the standard policy and procedure for doing this type of work.

## **V. Monitoring and Inspections:**

The purpose of annual rangeland monitoring is to determine-

1. If individual plants have had an opportunity to recover, grow, and reproduce following grazing impacts;
2. If sufficient residual forage remains across the allotment at the end of the growing season to provide for other resource values or requirements such as soil stability, wildlife habitat, and dormant season use;
3. If maintenance or improvement of rangeland conditions are indicated; and
4. If management adjustments are warranted for the following season to provide for physiological needs of the primary forage species.

Monitoring frequency varies by each activity and funding and may be accomplished by either the permittee and/or Forest Service personnel. Monitoring is adaptive, and as improved methods are developed; they will be considered. The selected alternative includes the following monitoring:

**Compliance Monitoring:** Scheduled and unscheduled inspections will ensure that all livestock and grazing management measures stipulated in permits, AMPs and AO Is are being implemented (e.g. cattle numbers, on/off dates, rotation schedules, maintenance of improvements, mitigation measures).

**Implementation Monitoring:** Annual monitoring will be conducted within key areas of the Juan Tank Allotment. This may include, but is not limited to, evaluating grazing intensity during the season and utilization at the end of the growing season. This provides opportunities to make necessary management changes needed for plant development and plant recovery from grazing. Other examples of implementation monitoring may include, but are not limited to, permit compliance, allotment inspections, range readiness, forage production, rangeland utilization, and comparative yield.

**Effectiveness Monitoring:** Long-term condition and trend monitoring will be used to assess the effectiveness of management in achieving desired objectives. Example methods for effectiveness monitoring may include, but are not limited to, vegetative condition and trend, presence and distribution of invasive species, and soil and watershed conditions. Monitoring will occur on historic benchmarks, which correspond with key areas. Depending upon the method selected, effectiveness monitoring should occur at an interval of at least every 5 to 10 years in key areas.

**Range Readiness:** Forest Service personnel and/or the grazing permittee will assess range readiness prior to cattle coming onto spring pastures to determine if vegetative conditions are ready for cattle grazing. The range is generally ready for grazing when cool season grasses and shrubs are leafed out and forbs are in bloom. These characteristics indicate the growing season has progressed far enough to replenish root reserves so that grazing will not seriously impact these forage plants.

**Rangeland Utilization:** Utilization is used as a tool to understand and achieve the goals of long-term management. Utilization guidelines are intended to indicate a level of use or desired stocking rates to be achieved over a period of years.

The definition of utilization and seasonal utilization is adapted from standard protocols established by the Society of Range Management and the new guidelines established by the Forest Service Region 3 Regional Forester (Smith *et al.* 2005). The following are definitions and procedures for utilization taken and adapted to fit this project.

Utilization is the proportion or degree of current year's forage production that is consumed or destroyed by animals (including insects). It is a comparison of the amount of herbage left compared with the amount of herbage produced during the year. Utilization is measured at the end of the growing season when the total annual production can be accounted for and the effects of grazing in the whole management unit can be assessed. Utilization guidelines are intended to indicate a level of use or desired stocking rate to be achieved over a period of years.

Utilization measurements (ocular and/or actual measure) will be taken in key areas that reflect grazing effects within the allotment. Utilization guidelines are not intended as inflexible limits. Utilization measurements can indicate the need for management changes prior to this need being identified through long-term monitoring. Utilization data will not be used alone but will be used along with climate and condition/trend data to set stocking levels and pasture rotations for future years.

Cattle may be required to move when seasonal utilization in a pasture approaches a conservative level depending on the potential for post-grazing regrowth. Under Alternative 4, conservative seasonal utilization will be approximately 40 percent. This is an approximate value because it takes into account any additional growth that might occur later in the year and considers season of use, wildlife use, weather conditions, availability of forage, and water in pastures. This utilization level leaves residual cover for wildlife and soils and provides for long-term health of the grazed plants.

If monitoring shows utilization rates exceed the utilization guideline in a given year, the grazing schedule and/or permitted numbers will be adjusted the following year so utilization guidelines are not exceeded again. If utilization is exceeded after these adjustments are made, the grazing management system may be changed to ensure this does not happen in the future.

**Condition and Trend:** Watershed and vegetative condition and trend monitoring will determine the effectiveness of the allotment management plan and long-term range and watershed trends.

Parker Three-Step and paced transect monitoring points were established throughout the allotment in the 1950s. Transect data from these monitoring points are the best historical records of range condition and trend available. The photo points and vegetative ground cover data show how the site has changed over time. One-tenth acre canopy cover plots and pace-frequency transects were established on top of the Parker Three-Step transects in 2011 to supplement these historical data. Frequency and ground cover data were collected using the widely accepted plant frequency method (Ruyle 1997). These plots monitor trends in species abundance, composition, and ground cover. This provides information on plant composition and additional information on plant community dynamics.

**Precipitation:** Precipitation is currently recorded at the Flagstaff National Weather Service Office at Bellemont, Arizona. Precipitation data may be recorded within or near the allotment for more localized information. Precipitation data may be recorded throughout the year and summarized in the annual inspection. These data assist managers with forage utilization and production data collection.

**Noxious Weeds:** Noxious and invasive weeds located within the allotment will be treated as necessary. The grazing permittee and Forest Service will coordinate weed inventory and treatment activities with responsibilities identified through the AOI. The design features, best management practices, and mitigation measures in Appendix B of the Three Forest Integrated Treatment of Noxious or Invasive Weeds Environmental Impact Statement (EIS) will be implemented (USDA Forest Service 2005).

**Soil and Watershed Condition:** The grazing system approved in this decision incorporates best management practices (BMPs) and grazing practices and constitutes compliance with Arizona State and Federal Water Quality Standards. Arizona Department of Water Quality will continue to monitor water quality in the area.

Watershed condition can be assessed using information gained from the monitoring strategies described above. Monitoring of plant abundance, ground cover, species diversity, and estimates of overall soil condition (using the methods described throughout this monitoring section) will indicate whether or not management practices are effectively meeting management goals. Trends toward improvements in species abundance and diversity should indicate that management practices are effectively improving soil condition and, by inference, maintaining or improving downstream water quality and complying with water quality standards. Conversely, decreases in plant abundance and species diversity may indicate that management practices are not effective and need to be changed. Environmental factors, especially precipitation, will be considered when evaluating monitoring results. If plant cover, litter cover, and/or soil condition decline, changes will be made to the livestock numbers, grazing period, grazing time, or pasture rotation.

## **VI. Travel Management**

Under Department of Agriculture (USDA) regulations (36 CFR Part 212-Travel Management), the Kaibab National Forest is implementing the Travel Management Rule (TMR). The TMR and subsequent implementation decision prohibits the public from use of motor vehicles for cross-country travel, as well as on roads closed to motor vehicle use. Under the terms and conditions of the term grazing permit, the permittee is authorized to conduct livestock grazing activities on National Forest lands within the Kaibab National Forest.

Motor vehicle use that is specifically needed, authorized, and/or directly related to the terms and conditions of the grazing permit are exempted from the prohibitions applied to the general public. This includes motor vehicle use in order to conduct the following types of activities associated with the term grazing permit:

- Normal vehicular use needed to maintain all range improvements assigned under the term permit as the permittee's responsibility for maintenance.
- Normal vehicular use as needed to properly check on and care for livestock authorized under the term grazing permit.
- Normal vehicular use as needed to check on forage, water, and general range conditions within the permitted grazing allotment.
- Any other vehicular use needed to properly care for livestock and/or to redeem the permittee's responsibilities under the terms and conditions of the term grazing permit.

All motor vehicular use authorized shall be conducted in a responsible manner so as to not cause and/or accelerate resource damage and/or cause degradation to the soil or vegetation related resources. Special caution must be taken so that vehicular use occurs only when soils are sufficiently dry and/or frozen so as to avoid resource degradation or any long-lasting negative impacts.

Single purpose roads that are authorized for administrative use only through the term grazing permit may require occasional maintenance in order to access existing range improvements. Site-specific cultural and biological clearances will be conducted on these roads or portions of them as the need dictates.

## **VII. Adaptive Management**

Adaptive management is designed to provide sufficient flexibility so that management can be adjusted in recognition of changing circumstances such as drought, fire, or seasonal fluctuations in forage production. If monitoring indicates that progress toward desired conditions is not being achieved on a particular allotment, management will be modified in cooperation with the permittee. Changes may include administrative decisions such as the specific number of livestock authorized annually, specific dates of grazing, class of animal (e.g. cow/calf pairs versus steers or heifers) or livestock herd movement, but such changes will not exceed limits for timing, intensity, and duration defined in Alternative 4. Timing is the time of year livestock are present in a pasture. Intensity is degree to which herbage is removed through grazing and trampling by livestock. Duration is length of time livestock are present in a given pasture.

When adjustments are needed, they are implemented through the AOI, maintaining numbers and management in such a way that annual indicators of progress toward desired conditions, such as forage use, are consistent with achieving those desired conditions. Alternative 4 allows plant, soil, wildlife habitat, and watershed conditions to be maintained or improved.

Under the adaptive management approach incorporated into this alternative, annual rangeland monitoring may indicate need for administrative changes in livestock management within the scope of the analysis. The need for these changes will be based on magnitude or repeated reoccurrence of deviations from guidelines provided, or because of indications of a lack of progress toward desired resource conditions. AOIs and Allotment Management Plans (AMPs) will be modified as appropriate to adapt management within parameters of this Alternative. These changes may include, but are not limited to, such items as adjustments in number of head stocked on an allotment in a particular year or season or periods of rest, or deferment or nonuse of portions or all of an allotment for an appropriate period of time, as conditions warrant. The timing of such management changes will reflect urgency of the need for adaptation. This approach to management will more proactively respond to the need for management changes and address climatic conditions and other dynamic influences on the system in order to more effectively make progress toward or maintain desired conditions for rangeland resources.

Future proposals to use other resource management tools, such as thinning and prescribed fire for control of juniper encroachment, will be subject to separate analysis under the NEPA. Adaptation of livestock management maybe applied to accommodate use of these tools in the future.

**VIII. Revisions:**

This plan is intended to be flexible and may be revised if the objectives and goals are not being met or management changes are necessary to meet required changes in policy, regulations, or laws. Any revision of this AMP will be carried out in close cooperation with the permittees.

**IX. Attachments:**

The established key areas for utilization checks and the improvements to be maintained/ reconstructed or newly constructed are shown on the allotment map attached to this AMP and Term Grazing Permit.