USDA

United States
Department of
Agriculture

Forest Service

January 2018

Allotment Management Plan

Gerald Hills Allotment

Globe Ranger District
Tonto National Forest
Arizona

This Allotment Management Plan implements direction established in the October 1985 Tonto National Forest Plan and the September 2005 decision notice for Gerald Hills Allotment. This Allotment Management Plan is made part of your Term Grazing Permit in accordance of that permit.

Prepared by: _____ Date: 2/2/2018
Andrea Jamie Wages
Range Management Specialist

Agreed to by: _____ Date: 2/2/18
Permittee

Approved by: _____ Date: 2/5/18
Mark Sando
Globe District Ranger

Contents

Gerald Hills Allotment Management Plan

Allotment Description

Allotment consists of about 1,708 acres of Forest system lands. Elevation ranges from approximately 3100 ft. in eastern valley bottom to approximately 3880 ft. in western foothills. Vegetation types are variable and range between semi-arid grasslands, chaparral, and Sonoran desert scrub. Designated riparian areas do not occur throughout allotment.

Allotment Management

Permitted Use

Current term permit documents a 20 adult cattle yearlong with 5 months of natural increase or 374 AUM (Animal Unit Month). Grazing season is yearlong from March 1 to February 28. Authorized livestock numbers on a year-by-year basis is determined by key area monitoring of key species actual utilization and forage availability.

Table 1: Calculation of AUMs

(# of cows multiplied by conversion rate*) X (# of days divided by 30.417) = Animal Unit Month
*Conversion rates: Cow/calf = 1.3 Yearling = 0.7 Bulls = 1.5

Grazing System

Deferred rotation system utilizes one herd between 3 pastures. Upper pasture grazing will be based upon utilization and monitoring.

Schedule may be altered for resource or management reasons by an authorized officer in Annual Operating Instructions (AOI) each year, but must remain in deferred rest rotation.

Table 2: General Pasture Rotation Schedule

		Sequence		
Year	1	Lower (5 months)	Middle (3 months)	Upper (4 months)
	2	Middle (3 months)	Upper (4 months)	Lower (5 months)
	3	Upper (4 months)	Lower (5 months)	Middle (3 months)

Range Improvements

Responsibilities

Permittee is responsible for maintenance of all range improvements, listed on Table 2 and in term grazing permit for course of their usable life. Improvements will be maintained to standards and practices agreed upon and detailed in yearly AOI. When range improvements are beyond point of normal maintenance and heavy maintenance or reconstruction is required, that work will be authorized by separate permit modification. Any maintenance or reconstruction of improvements throughout allotment will need to meet Forest Plan standards and management for Management Area 3D, 3E, 3H, and 3I (1985 TNF Plan, as amended). Archeological and biological clearance may be required for reconstruction of existing improvements.

A schedule of maintenance of listed improvements in term grazing permit, requires normal maintenance to maintain the improvements in usable, sound condition. If range improvements deteriorate beyond point that normal maintenance may repair, improvement will be considered a new project. Permittee and Forest Service range staff will coordinate to determine appropriate course of action.

During tenure of grazing permit, some existing improvements could be determined no longer feasible because of location, competing uses, livestock needs, or type is determined no longer necessary to maintain. List of these improvements will be discussed with Forest Officer, and when resolution is made a modification will be made to permit of removal on permit and on ground. Allotment administration will determine whether identified structural improvements are necessary or need to be updated for continued use.

Specific improvement maintenance will be detailed in AOI's and discussed at yearly meetings.

Table 3: Improvements List

Improvement Name	Improvement Number
Gerald Hills FS Fence	1189
Highway Fence	1190
Gerald Hills/Pikes Peak fence	RA/RO1345
Highway 188 storage tank/trough	222015
Gerald Hills Stock Tank	1182
Horse Stock Tank 1	1183
Horse Stock Tank 2	1184
Dixon Spring	1185
Gerald Windmill	1186
Gerald Spring	1187
Whitebank Spring	1188
Nighthawk Well	1192
Gerald Hills Cattle Guard	1194
Hilltop Spring	222017
Mine Well	222018
Horse stock tank #1 trap	222016

Water Development Standards and Practices: Troughs, Water Systems, and Stock tanks

1. All spring source facilities should be adequately protected (i.e. buried or encased) or fenced and fences maintained to prevent livestock from getting into the source box, unless otherwise stated.
2. Any open top storage tanks are potential traps for wildlife and wildlife ramps are also required, otherwise will have a top placed.
3. Head box lids or covers shall be in place to prevent dirt, rodents, or other refuse from getting into the head box. Head boxes will be of concrete, metal, treated wood or other durable material. The start of the pipeline, inside the box, should be fitted with a tee to prevent debris from entering the pipe.
4. All outlet pipes and valves from head boxes should be functioning and any leaking should be kept to a very minimum.
5. All pipes should be large enough to carry the flow of the water development but not less than 1.25" diameter.
6. Water troughs will be kept at heights that make them useable to livestock. Troughs which become elevated from trampling livestock should be periodically backfilled to maintain a useable height, authorization may be needed.
7. Troughs which become uneven due to settling should be reset and leveled, authorization may be needed.
8. Bottoms of troughs should be kept clear of the ground, when possible, with at least 2" to 4" of clearance under the bottom of the trough to prevent rusting or decomposition.
9. Water should overflow trough side. Overflow pipes must be kept clear. Overflow water will be piped away from troughs at least 50 feet. End of overflow pipe must be protected from trampling by livestock. Water from overflow pipe must be directed away from trough area.
10. Inlet and outlet pipe shall be protected by anchoring to trough with a single post next to the vertical pipe and a brace or pole supporting the horizontal pipe. Inlet and outlet pipeline will be buried as much as possible for their protection.
11. All troughs should be equipped with a wildlife escape and access ramps from which wildlife can escape or drink from trough. Ramp must be fixed to one side of trough.
12. Troughs, storage tanks, and pipelines will be drained and cleaned periodically to prevent moss and debris buildup and damage from freezing.
13. Poles, posts, and trough framing materials used in water development construction will be maintained, repaired, or replaced as needed. Materials must not be taller than the trough and wires should not be placed over trough to allow for watering avian species.
14. All above ground pipeline supported structures will be maintained to keep pipe at gradient and prevent sagging. Support structures should be utilized for entire above ground pipeline.

15. Horizontal wells must contain a shut off valve and reducer. Entire exterior of the well can be earth covered to prevent freezing.
16. Pipelines with air and drain valves will be covered with fine screen to prevent rodents and dirt from entering pipeline. Screens must be replaced as needed.
17. Pipeline leaks will be repaired or damaged section will be replaced with materials similar to materials from original construction.
18. Pipelines with valve covers boxes will be kept covered and repaired when needed.
19. Stock tanks will be kept clear of debris, floating logs, dead animals, etc. Spillways will be cleaned and maintained to prevent washing out or becoming plugged. Rodent damage and damaging vegetation on dams will be reported to Forest officer.
20. Water development components (e.g., rusted out troughs, broken sections of pipe, etc.) replaced during maintenance or reconstruction will be removed from Forest and properly disposed of.

Fence and Corral Standards and Practices

1. All broken wire will be spliced and repaired in such a manner that tension on a wire can be maintained. Wire splices will be made with 12 gauge size tie wire or type of wire used in initial construction.
2. Broken or rotten posts, broken braces and missing staples will be replaced where and when needed to maintain the fence.
3. Wires will be re-stretched where needed.
4. Broken or missing stays will be replaced where needed.
5. Top wire on all range fences should be kept at 42 inches in height, and bottom wire should be smooth and 18 inches above ground.
6. Staples should not be driven so deep into the post that they scar or create a weak spot in the wire.
7. All gates are closed before livestock enter new pastures and opened and tied back after livestock leave pasture, unless otherwise needed.
8. Wire gate tension should be sufficient to prevent gate from sagging and still be easily opened and closed. Gate loops are made of smooth wire, not barbed wire.
9. Trees which fall on fences will be cut and removed when and where needed; wire if broken will be spliced and re-stretched; poles if broken will be replaced.
10. Broken or rotten sections of log or pole fences and corrals will be replaced as needed.
11. Corrals are kept clean of litter, in good repair, and in useable condition.
12. Fences are maintained at, or near as possible to, the standards needed to turn livestock.
13. Metal components of range fences and corrals (e.g., wire, stays, t-posts, gates, etc.) replaced during maintenance or reconstruction will be removed from Forest and properly disposed of.
14. Any maintenance or reconstruction of improvements throughout allotment will need to meet Forest Plan standards and management for Management Area 2D (1985 TNF Plan, as amended).

Travel Management Guidelines

Road maintenance that is required to access range improvements or livestock management must receive a road use permit for any road work. Tonto National Forest is currently planning implementation of Travel Management Rule. These programs are aimed at reducing non-essential roads for watershed and resource protection and will require the following:

1. Travel Management Decision will be followed by permittee.
2. If access is needed to enter a motor vehicle restricted area, you must have special authorization through an Off-Road Vehicle Permit or special authorization through Annual Operating Instructions.

Allotment Management Practices

Livestock Management

Livestock management, such as herding and salting, is critical to livestock to control cattle in appropriate pastures. Permittee will furnish sufficient riders or herders for proper distribution, protection, and management of cattle on the allotment. Tonto National Forest Grazing Practices are as follows:

- Salt should not be placed any closer than quarter of a mile from developed or live water, recreation sites or designated trails. No salting will occur within or adjacent to identified/known heritage sites. Salt will be removed from units when cattle have left an area. Salt should not be placed in a pasture until cattle are moved.
- All troughs will be left full of water and operational year round for wildlife accessibility, unless in limited circumstances where extreme freezing conditions may damage facilities. Limited circumstances will be outlined in AOI, by specific improvement.
- Cattle should be drifted instead of trailed wherever possible.
- When entering next scheduled pasture, all livestock shall be removed from previous pasture within two weeks.
- Time spent in each pasture may vary depending on weather and when seasonal utilization standards are met. It is permittees' responsibility to monitor the utilization and move the cattle before utilization standards are exceeded.
- Permittees will make sure enough time is allowed to remove livestock to meet the pasture move date(s) and avoid unauthorized and excess use.
- Permittee may be asked to provide the Forest Service with an Actual Use Record, and/or Improvement Maintenance Record.

Monitoring

Practices

Following monitoring activities will be carried out by grazing permittee and Forest Service either during or at the end of grazing season. However, not all types of monitoring practices need to be conducted during this time frame. Forest Service monitoring results will be shared with permittees to improve

livestock management. All monitoring information collected by permittees and Forest Service will be included in district allotment file.

Allotment Inspections/Compliance Monitoring

Compliance monitoring ensures livestock are distributed in correct pastures and areas authorized for grazing. It also includes but is not limited to, improvement maintenance inspections, forage utilization and livestock counts. These inspections will occur throughout grazing year.

Utilization measurements are followed by procedures found in the Sampling Vegetation Attributes (1999), Utilization Studies and Residual Measurements (1999). Possible data monitoring could include browse utilization measurements, perennial grass stubble height measurements, photo points, and or height/weight relationships for certain perennial grass species. Utilization would be monitored on key forage species, which are native perennial grasses along with native perennial shrubs that are palatable to livestock.

At a minimum, monitoring would include use in key areas and locations selected outside of key areas. Data collection procedures and interpretation would consider guidance contained in the Principles of Obtaining and Interpreting Utilization Data on Southwest Rangelands (Smith et al. 2005) publication.

Noxious Weed monitoring

Noxious weeds located in these allotments would be treated as necessary. Permittee and Forest Service will coordinate weed inventory and treatment. Noxious weed monitoring is carried out at the same time as allotment inspections are conducted. As noxious weed populations are found they are mapped, monitored, and treated. Treatment methods would follow guidelines established in "Final Environmental Assessment for Integrated Treatment of Noxious or Invasive Weeds".

Heritage Resources monitoring

In conjunction with Forest Archaeologist special care will be carried out to protect heritage resources (historic and prehistoric sites) from impacts caused by range construction projects or livestock concentrations. An archaeological survey will be conducted prior to construction of any new range improvements and/or location selection where impacts to heritage resource sites are avoided.

Existing range facilities (water troughs, corrals) where cattle regularly congregate are periodically inspected to determine whether or not livestock are causing damage to heritage resource sites.

Key Areas

A key area is a portion of rangeland selected because of its location, grazing or browsing value, or use. It serves as a monitoring and evaluation point for range condition, trend, or degree of grazing use. Annual monitoring in key areas is for short-term data collection. These key areas are properly selected to reflect the overall acceptability of current grazing management over the rangeland condition.

These monitoring methods could include, but are not limited to utilization and stubble height monitoring, annual riparian monitoring, and photo point protocols.

Data will be used, along with supporting information to determine when livestock must be moved from one pasture to another and to make any necessary adjustments to livestock numbers and/or season of use (determined in AOI).

Final utilization and stubble height readings will be taken at the end of pasture use, along with end of growing season use of each year. Annual monitoring will follow accepted Forest Service protocols set by the monitoring handbook.

Key areas include but are not limited to:

- Benchmark locations: reading the range plots and parker 3 step locations
- Additional locations that meet definition above

Benchmarks

Condition and long-term trend monitoring will be conducted in some of the key areas used for annual monitoring. Information will be used to determine if the area is meeting or moving towards desired conditions. Long-term trend data will be used to measure changes in plant community composition, cover, structure, soil conditions, frequency, and management of grazing in a trend status. Annual adjustments may be conducted in order to meet long-term desired conditions.

Periodic monitoring, on decade intervals, for vegetation trend will include cover and frequency, in which Parker 3 Step Clusters or other similar procedures will be used.

Indicators of downward trend for vegetation include:

- Desirable and intermediate species decreasing in vigor
- Lack of young plants from desirable and intermediate species
- Invasion by undesirable species.
- Hedged and highlined shrubs. Dead branches, generally indicating that shrubs are dying back.

Indicators of downward trend in soil stability include:

- Rill marks, which are small but conspicuous water channels around vegetation.
- Active gullies are raw, actively downcutting, and may have headcuts. This type of gully may vary from a few inches to several feet deep.
- Alluvial deposits; soil material transported and laid down as small fans in headwater drainages.
- Soil remnants; original topsoil held in place by vegetation or roots.
- Active terraces; usually caused by hooves of animals; stair step in appearance on side-slopes
- Pedestalled plants; exposed plant crown or roots.
- Wind-scoured depressions between plants, or wind deposits of soil
- Soil buildup behind plants, logs, and trees on upslope side.

Long-term monitoring will follow accepted Forest Service protocols determined by the Forest Service Monitoring Handbook, including documents listed above.

Table 4: Benchmark Locations

Study Name	Location
Key Area 1	12S 0509584 - 370411
Key Area 2	12S 0510292 - 3705298
Key Area 3	12S 0512235 - 3705322
Cluster 1	T2N R15E Sec 3 SWNE
Cluster 2	T2N R14E Sec25 NWSE
Cluster 3	T2N R14E Sec 35 NWNE
Pace 1	T2N R14E Sec25 SWNE
Pace 2	T2N R14E Sec 26 SESE
Pace 3	T2N R15E Sec19 SESE

Forest Plan Standards and Guidelines

Forest Plan

Land and Resource Management Plan (Forest Plan) defines long-term direction for managing Tonto National Forest. Forest Plan provides for multiple use and sustained yield of goods and services from lands in a way that maximizes long-term net public benefits in an environmentally sound manner [36 Code of Federal Regulations (CFR) 219.1(a)]. In October of 1985 the Tonto National Forest implemented Forest Management Plan with direction related to livestock grazing and Range Management Program Criteria (Forest Plan pg. 24).

Forest Plan Management Practices

Management criteria for the Range Program on each allotment are as followed:

1. Through range analysis and production /utilization surveys and/or agreement on a proper level of permitted use with the permittees. (forage capacity)
2. Develop an Annual Operating Instructions, and schedule for improvements through program planning budget systems.
3. Riparian utilization will be measured seasonally, when livestock are in pasture. Livestock will be moved from critical area or pasture when recommended guidelines are met.
4. Management practices such as herding, salting, and controlling access to waters will be used to achieve proper distribution or lessen impact throughout allotment.
5. Restricting livestock use in riparian areas during and after a climatic event such as drought and flooding to support limited physical impacts to alterable streambanks and/or greenlines, minimize annual impacts to seedlings and sapling riparian woody species, and maintaining herbaceous vegetation along streambank or greenline.
6. Archaeological survey will be conducted prior to construction of any new range improvements and locations selected where impacts to heritage resource sites are avoided.
7. Existing range facilities (water troughs, corrals) where cattle regularly congregate are periodically inspected to determine whether livestock are causing damage to heritage resource sites.

Allowable Forest Utilization & Stubble Height Standards

Grazing will be managed to achieve long-term goals in pasture key areas. It is the responsibility as permittee to take action so that livestock grazing does not exceed vegetative use thresholds. Please arrange for an allotment inspection if seasonal vegetative use of available forage approaches these thresholds.

Table 5: Allowable Use

Vegetation	Use Threshold
Upland Herbaceous Use	30-40% of current year's growth
Upland Browse Species	50% of current year's growth

Administrative Actions

If monitoring indicates that desired resource conditions are not being achieved in a desired time frame, management may need to be modified. The range specialist, permittee and district ranger will evaluate potential causes for not meeting desired conditions. If changes are needed, group will outline potential strategies that may be implemented. When determinations are made, documentation will occur through annual instructions and in permit and allotment files. Such changes may include adjustments to specific livestock numbers, specific grazing dates, class of animal, or pasture rotations. These changes will not exceed limiting for timing, intensity, duration, and frequency as already described.

Necessary changes will be implemented through annual operating instructions. These instructions may be modified throughout grazing season to respond to unforeseen events.

If the following occur it may necessitate changes in management of this allotment:

- Through monitoring, management objectives are not being achieved, or trend toward desired conditions are not occurring;
- Annual indicators of grazing use or guidelines are not met;
- Climatic events, fire, flood, or uses and activities detrimentally impacting resource conditions.

Then the following actions may be enacted to comply with Forest Plan:

- Extending or shortening time in pastures based on utilization levels in uplands areas;
- Assessing pasture readiness and changing its position in the seasonal rotation;
- Time or season of pasture use;
- Resting a pasture for one or more growing seasons;
- High intensity, short duration or other grazing strategies;
- Complete removal of livestock in event of extended drought, severe fire, or depleted rangelands until rangelands have recovered;
- Decrease or increase herd size within limits of permitted numbers;

- Temporarily close off water in a portion of pasture to manipulate grazing pressure and intensity of use;
- Herding livestock;
- Excluding livestock from specific areas temporarily or permanently for other resource objectives; or
- Changing or limiting season of use to minimize impacts to upland key species.