Cerro Trigo

Allotment Management Plan

T9N, R26E, Sections 1 -4; 10 -12; 13-15; 23-26; 35,36; and T9N, R27E, Sections 17, 18, 20 of the Gila Salt River Base and Meridian (GSRBM).

This allotment management plan has gone through the National Environmental Policy Act (NEPA) process, including Environmental Assessment (EA), Finding of No Significant Issues (FONSI), and Decision Notice (DN) finalized July 17, 2012, and implemented on November 13, 2012, following appeal disposition.

Description of the Allotment

Prior to the 2012 Decision, the allotment had 4 pastures, Kitchen Springs, Cerro Trigo, Atascacita Springs, and Ted Hearn totaling 2,582 acre. One permittee ran 48 head, cow/calf, 7/1 to 10/31, which included a Term Private Land Grazing Permit of 7 c/c. This configuration of the Cerro Trigo Allotment was private land prior to 1997. The Forest Service aquired this area through a land exchange with a private owner. J.A. Brown Ranches Inc. had previously leased the private land for grazing. When the Forest first created the Cerro Trigo Allotment, it was permitted it to J. A. Brown Ranches, Inc. This was done in part to offset grazing capacity near Big Lake and Crescent Lake that was waived back to the Forest Service by Brown Ranches on the Burro Creek Allotment.

The 2012 Decision divided the Hall allotment, and added Little Giant, Mallory, and Lane pastures to Kitchen Springs, Cerro Trigo, Atascacita Springs, and Ted Hearn pastures for a new allotment configuration of the Cerro Trigo allotment totaling 9,699 acres.

The Little Giant pasture is mostly ponderosa pine with patches of aspen and spruce on the knolls with small open grasslands. Mallory is a lower elevation pasture to the north that contains pinyon/juniper transition dominated by blue grama. The dominant vegetation type in the remaining four smaller pastures is grassland associated with scattered ponderosa pine and pinyon/juniper. The grasslands are dominated by blue grama, Arizona fescue and mountain muhly. Atascacita Draw is the main drainage on the allotment. There are some wetland areas within the allotment, associated with the more productive springs. The elevation ranges from 7,700 to over 9,000 feet.

Desired Future Conditions

Range

- Where potential exists, increased percentage of native perennial species as identified in the Potential Natural Community (PNC), providing increased ground cover and increased native perennial species diversity.
- Where potential exists, lentic and lotic riparian areas are in proper functioning condition.
- Where potential exists, deeply rooted plants such as sedges occupy stream banks and wetlands for maintenance and recovery.

- Allotment is stocked when the range is ready[1], at a level that balances grazing with proper forage use.
- All structural improvements are in functional condition.

Wildlife

- Grazing operations are managed to maintain and improve habitat conditions for key listed and sensitive species. The Greens Peak allotment currently provides Mexican spotted owl and Northern goshawk habitat, and potential Mexican wolf habitat.
- The northern portion of the allotment is managed to maintain and improve winter range habitat conditions.
- Management maintains good to excellent range conditions in riparian areas.
- Establish conservative allowable use levels to expedite or maintain good to excellent range conditions.
- Implement strategies that restore good conditions to degraded riparian communities as soon as possible.
- Limit human activities associated with livestock management in Mexican spotted owl PACs during breeding season.
- Implement forest plan forage utilization standards and guidelines to maintain owl prey availability.

Fisheries/Watershed/Soils

- Maintain satisfactory riparian and instream habitat conditions in order to benefit aquatic dependant resources on the allotment as well as downstream from the project area.
    - Satisfactory or better watershed conditions are maintained in both the drainage corridors and in the uplands to minimize sediment movement into drainages.
    - Existing road system has minimal effect on erosion rates that could potentially alter stream habitats.
    - Healthy riparian vegetation is present and maintaining its density and vitality. Maintain adequate streambank vegetation (woody and non-woody) cover.
    - Little to no active headcutting occurring within drainages in the action area.
    - Restoration of downcut channels, where feasible.
    - Instream flows are maintained for the benefit of aquatic dependent resources.
- Aquatic habitats in the action area support viable populations of species designated as TES and MIS as well as other vertebrate species that are suitable to those habitats.
- Minimize soil compaction and trampling damage to riparian areas.
- Move toward minimizing soil erosion to below threshold levels, Minimize soil compaction.

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[1] Rangeland is generally ready for grazing when the soil has become firm after winter and early spring precipitation, and when plants have reached the defined stage of growth at which grazing may begin under a specific management plan without long-lasting damage. Rangeland is generally ready when cool-season grasses are headed out, forbs are in full bloom, and brush and aspen is leafed out (Rangeland Analysis and Mgmt. Training Guide 6/97).

- Identify watershed improvement opportunities (on gullies, headcuts, excessive erosion)
- Record presence of Noxious Weeds.

Heritage

- Heritage resources are inventoried, documented, and evaluation of all sites are to Forest standards. Furthermore, management activities should promote the protection and preservation of heritage resources.

Management

- Permit livestock numbers between 0 to 969 AUMs on the expanded Cerro Trigo allotment. Grazing will begin between June 1 – June 15 and end on or prior to October 31. (Term Private Land Grazing Permit represents an additional 29 AUM's)
- Typically, 875 AUMs will be authorized in years of favorable climatic and forage conditions. Up to 969 AUMs could be authorized when monitoring determines there is sufficient forage available for resource protection, improvements (listed under adaptive management) have been completed, desired conditions are met in areas of concern (Kitchen Spring, Atascacita Spring), and all stream courses and wetlands are in proper functioning condition (PFC).
- Maintain existing spring developments and expand the existing exclosure upstream of Kitchen Springs to protect the spring itself.
- Annual authorized livestock numbers would be based on range readiness, existing conditions, available water and forage, and predicted forage production for the year. Adjustments to the annual authorized livestock numbers may occur during the grazing year, based on favorable conditions or may be adjusted downward if conditions are not favorable, such as in the case of drought, insect infestations, or other environmental factors.
- Grazing would generally occur through a deferred system allowing for plant growth and recovery. Pasture rotations will be planned at the beginning of each grazing year and modified in response to changing resource conditions. Other systems may be employed to facilitate specific resource objectives. Pasture rotations will be planned at the beginning of each grazing year and will be continually modified through adaptive management in response to changing resource conditions, Mexican Gray Wolf management, or for other reasons.
- In general, pastures would be grazed only once during the grazing year. However, if the need arises to provide rest or deferment for other pastures, a pasture may be used twice provided sufficient vegetative re-growth has occurred and grazing is managed to meet desired conditions.
- A management guideline of conservative use of 30 - 40% by weight maximum utilization of one to two key forage species in the uplands as measured at the end of the growing season would be employed to improve vegetative and soil conditions.
- In order to provide riparian vegetation of adequate height and cover to protect soil surfaces and dissipate energy during overland flows, where the potential exists, maintain stubble heights of herbaceous vegetation at the green line of streamside perennial vegetation (6 inches along streams and in wetland (hydrophilic) vegetation in satisfactory

PFC condition; 8 inches if less than satisfactory, at the end of the growing season). All other areas of unsatisfactory riparian (wetlands and stream courses) will be maintained at 8 inches stubble height until conditions are satisfactory. Satisfactory condition is defined as PFC while unsatisfactory conditions are defined as non-functioning or functioning-at-risk.

- Within Northern Goshawk habitat, maintain maximum forage utilization between 20% - 40% by weight at the end of the grazing season.
- Promote and maintain good to excellent range conditions over time and across communities used by the Mexican spotted owl in Protected Activity Center areas.

Adaptive Management

Adaptive management options provide a range of actions that may be needed to adjust management to meet desired conditions. If monitoring indicates that desired conditions are not achieved, management will be modified with one or more adaptive actions. Adaptive management allows the Forest Service to adjust: the timing, intensity, frequency and duration of grazing; the grazing management system and livestock numbers. If adjustments are needed, they will be implemented through the annual operating instructions (AOI). Adaptive management options for all allotments include:

- If desired vegetative conditions are not met in riparian areas, the permittees will use a herder to move livestock out of critical areas.
- If livestock distribution needs improving, watering sources may be developed in the uplands. Possible methods include adding to functional pipelines, constructing trick tanks, or constructing roadside pit tanks.
- Forest boundary fences will be reconstructed when necessary.
- Install protective fencing around active springs and make the water available via troughs outside the fences, as appropriate.
- Replace or repair approximately 0.5 miles of Burnt Mill Pipeline from right fork to the storage tanks, east and then north to Mallory Pasture north boundary. Replace old troughs and float boxes. This pipeline is an extension from Burnt Mill Spring.
- Construct approximately 1.5 miles of new pipeline and setup a trough in Section 11 of Mallory Pasture. This pipeline will be extended from Homestead Pipeline, running along south and north of Whiting Homestead.
- Construct approximately 0.5 miles of new pipeline and setup troughs in the west end of Atascacita Springs Pasture. The pipeline will be extended from the existing Burnt Mill Pipeline.
- Construct approximately 0.75 miles of new pipeline and setup a trough in the west end of Mallory Pasture. The pipeline will be extended from existing Homestead Pipeline.
- Construct approximately 1.5 mile of new pipeline and setup a trough in the north end of Kitchen Springs. The pipeline will be extended from the existing Homestead Pipeline. The main pipeline would continue onto this private land to the north.
- Replace the trough located near the Substation.
- Construct an approximately 60 acre fenced area near private land on west end of former Boy Scout camp, to serve as a horse trap (to keep authorized ranch horses).

- Repair pipeline, fence and troughs at Mallory Springs.

Additional Management Requirements

- Appropriate inventories must be conducted in advance of the implementation of any ground-disturbing activities. Projects should be managed in such a manner that ensures a determination of either "No Historic Properties Affected" or "No Adverse Effect" to heritage resources, and discovery of any undocumented heritage resources during project implementation should result in immediate cessation of any ground disturbing activities in the locale and notification of the Forest Archaeologist.
- According to the Programmatic Agreement between the Forest Service and the State Historic Preservation Officer, maintenance, replacement, or reconstruction of existing facilities are not considered undertakings and do not require additional survey. However, activities may be considered undertakings, depending upon the nature of the installation/removal activities.
- Natural springs and the summits of knolls and mountains are often traditional cultural places (TCP's), and the allotment contains potential shrine sites. Therefore, any proposed projects that are in the vicinity of springs, or on the summits of prominent knolls or mountains have the potential to affect TCP's (even if these projects are not considered undertakings by the AZ State SHPO) and will therefore require Tribal Consultation.

Monitoring Strategy

Introduction

The objective of this monitoring strategy for the Greens Peak, Hall and Cerro Trigo allotments is to identify monitoring methodologies and frequencies, to determine whether management is being implemented as envisioned in the chosen alternative, and whether the actions are effective at achieving or moving toward desired conditions.

Monitoring is a measure of indicators that detect change and may trigger further detailed analysis of a particular resource. Either monitoring or detailed analysis may trigger adaptive management options on the allotments on a seasonal basis or to verify changes needed in the Allotment Management Plan and term permit.

We need to acknowledge that there are environmental factors outside management control, such as multi-year droughts or large fires, which can overpower the effects of livestock management actions. The time frames of this strategy do not take such events into account. However, such events can take place and if so, need to be taken into account in analyzing the effects of management on the resources. Another major environmental factor affecting resource condition is the West-wide increase in tree canopy cover of almost every tree species. In these allotments it is most felt in historic grasslands being overtaken by juniper and ponderosa pines and taking on the aspect of forests. This ongoing increase in tree cover outcompetes and replaces herbaceous and shrubby cover and cannot be reversed by livestock management. Where TES map units envision potential vegetation communities being grasslands, and existing tree cover exceeds about 10 percent, only active tree reduction projects will open enough resources to effect movement towards increased similarity to the envisioned herbaceous density and composition. Such projects are not within the scope of this analysis and decision.

This strategy envisions that final details of monitoring locations, if not already established, will be established in a collaborative way with input from the district range personnel, the riparian coordinator and permittee(s). For instance, certain stream reaches have been identified by name in the analysis as

being in less than Proper Functioning Condition. Selecting where along the identified reach to install permanent monitoring transects would be done as described above.

Tables are provided that give an overview of monitoring needs on the allotments, followed by narratives that explain planned monitoring in more detail.

Monitoring Definitions

Monitoring: Monitoring is defined as the orderly collection, analysis, and interpretation of resource data, to evaluate progress toward meeting management goals and objectives. This process must be conducted over time in order to determine whether or not management objectives are being met.

Implementation Monitoring: Determines whether standards and management practices are implemented as detailed in a Decision Document, Allotment Management Plan (AMP), or Annual Operating Instructions (AOI). This short-term monitoring answers the question: was the management implemented as designed? It annually documents several items. Items which may be documented through implementation monitoring include, but are not limited to actual use (livestock numbers and days), condition of range improvements, levels of forage utilization, stubble heights, etc.

Effectiveness Monitoring: Determines whether management practices are effective in moving the allotment toward a desired condition as described in the AMP. This long-term monitoring documents whether management actions are having the expected progress towards achieving resource management objectives. Examples include:

1) Evaluating changes in vegetation composition or soil cover (ecological status).
2) Tracking progress of specific PFC elements

Monitoring Summary

The following Tables 1 and 2 summarize the monitoring to be accomplished on the allotments.

Table1: Summary of Monitoring by Allotment

Monitoring Item	When
Riparian obligate vegetation height	Annually
Ecological Status/Range Condition (trend, composition, soil cover)	Years 5 and 10
Riparian Condition / Key PFC Elements	Years 1, 5 and 10
Soil Condition	As Needed
Watershed / Soils Problem Areas	As Needed

Table 2: Specific Monitoring Items: Who, What, When and Where

Monitoring Item:	Methods	Timing	Frequency (Interval, years)	Where	Critical Triggers	Lead Responsibility
Riparian Obligate Vegetation height	Residual vegetation (stubble height)	end of growing season and/or seasonal	Annually	Critical riparian areas – see table below for details	Sat: < 6" going into winter Unsat: < 8" going into winter	Range
Upland forage utilization	Various methods*	end of growing season and/or seasonal	Annually	Key and critical upland areas, including goshawk habitat	Percent utilized >10% above allowable, in two consec. years	Range
Ecological Status/ Range Condition (trend, composition, ground cover)	Various methods*	late Summer	Year 5 & 10	Permanent transects – see range specialist report for locations. Paced transects, as determined necessary.	Decreased status compared to prior monitoring; no improvement in unsat. parameters (if tree canopy permits); Less than USLE tolerance thresholds conditions	Range
Assess Riparian condition / key PFC elements	Various method, such as documented in Multiple Indicators Monitoring, as needed to quantify aspects previously IDed in PFC as unsatisfactory	Mid-Summer or Later	Unsat: year 1 & 5 & 10 Sat: year 10	Critical riparian areas – see table below for details	Downward trend or non-apparent trends if unsat.	Watershed
Soil Condition	Various methods*	Any	As Needed: Onset, yr. 5 & 10	Critical Areas – see watershed specialist	Downward or non-apparent trends	Watershed

				report for details		
Watershed/Soils Problem Areas	Field observation and/or inspection	Any	As Needed: Onset, yr. 5 & 10	Gullies, headcuts, rills, wherever found	Non-apparent trend in unsat. areas, or downward trends	Range

***Available from Interagency Technical Guide,1996, Region 3 Rangeland Analysis and Management Training Guide, Principles of Obtaining and Interpreting Utilization Data on Rangeland, 5/07, finalized Forest Service Handbook, and other acceptable methods.**

Minimum locations and parameters for riparian monitoring

- Lentic areas around Kitchen Springs - Yearly streambank residual veg min 6". PFC assessments at years 5 and10.

Monitoring Strategy: Range Management

Implementation Monitoring -- Objective: Ensure that the action(s) described in the Decision Document (EA) are implemented accordingly, as scheduled and are in compliance with the Forest Plan standards and guidelines.

Annual monitoring to adjust or evaluate the timing, intensity, frequency and season of use, and livestock numbers will be conducted during the grazing season (seasonal) and/or at the end of the growing season. These practices are part of adaptive management and make necessary management changes needed for range development and recovery.

Compliance with Annual Operating Instructions (AOI) – Each year's AOI includes specific pasture rotations, livestock numbers to be grazed, pasture entry and exit dates, improvement maintenance and construction, and general annual allotment operating procedures. Monitoring involves allotment inspections, counting livestock on or off, and required permittee-provided documentation of accurate records of the number of livestock run on the allotment and entry and exit dates of each pasture grazed.

Range Readiness - Range readiness checks will be conducted in anticipation of livestock entry in seasons when spring growth is delayed. The main objective is to determine whether entry pastures are capable of being grazed and trampled without causing long term damage to the vegetation or soils.

1. Soil condition - The soil is firm, at or below field capacity.

   Saturated soils are not present, shown by the reviewer being able to walk about without leaving depressions in the soil. Standing water and ponding from snowmelt are not present.

2. Vegetative development stage. With rest or deferment, it may be possible to graze at earlier stages, however not on an annual basis. Rangeland is generally ready when cool-season grasses are headed out, forbs are in full bloom, and brush and aspen is leafed out. Range readiness dates will vary between allotments and pastures with different elevations and management systems.

Stubble Height –Monitoring of riparian vegetation in critical areas, to help ensure retention of adequate stubble height at the end of the growing season in order to protect soil from high spring runoff and snowmelt, and that appropriate grazing levels are being met in Mexican spotted owl habitat. The minimum height is 6 inches of stubble height of sedge species/perennial greenline herbaceous vegetation in satisfactory riparian condition (in PFC), and 8 inches of stubble height of sedge species/perennial greenline herbaceous vegetation in unsatisfactory riparian condition (FAR or NF), at the end of the growing season.

Forage Utilization (Height-Weight, Landscape Appearance, Grazed Class etc.) - To assure that conservative maximum use levels of 30%-40% in key upland areas and levels of 20 to 40% used within northern goshawk habitat are being met. Along with actual use and stubble heights, these methods measure short-term effects of grazing activities and are used as a basis for adjusting future grazing use.

Effectiveness Monitoring -- Objective: Effectiveness monitoring is intended to determine whether management is successful at moving rangeland resources towards desired conditions. The long term-term health of upland and riparian resources will be monitored in key areas or critical areas on each allotments using one or more of the following methods as needed, but not limited to:

Ecological Status and/or Range Condition/Trend - Range transect sites and areas suitable for determining long-term trend in vegetation should be read at years 5 and 10. Emphasize monitoring ecological status.

1. Ecological Status (Cover Frequency/Similarity)
2. Paced Transect
3. Parker 3-Step

Soil Cover – The percent of an area that is covered by vegetation, rocks and litter. Ground cover is important to intercept raindrops impact before reaching the soil. An increase in vegetation and litter cover from baseline measures documented in the project files is considered as moving toward Desired Conditions (DC); a decrease is considered as not accomplishing DC. Soil cover data can be accomplished using any of the protocols below, or through stand-alone data collection.

1. Point Cover
2. Cover Frequency
3. Paced Transect
4. Parker 3-Step

Forage Production – Forage production surveys are optional unless indicated by actual forage utilization levels significantly higher or lower from those listed in the decision for the various land categories, for more than a single year. Forage production surveys will facilitate capacity determination if the rangeland is found able to support more AUMs than the current high end or less than the current low end.

1. Ocular Estimates with Calibration Clipping
2. Production/Utilization surveys and mapping

Noxious Weeds - The location of any noxious weeds should be noted in the monitoring write ups and transferred into the current Forest Service database. If appropriate, at discovery noxious weeds shall be grubbed out or treated and documented regarding the location.

Monitoring will be used to analyze and if necessary, adjust or amend previously described actions in the decision document or AMP. Permittees should be informed of upcoming monitoring dates and invited to attend or assist. Information on monitoring should be shared with the permittee and others concerned with the decision. Data provided by the permittee or other stakeholders can be accepted and used if performed in locations and with protocols meeting Forest Service standards.

If the monitoring data indicates management is not achieving or moving toward the Desired Conditions, Forest Service personnel must analyze the problem and decide on a course of action. If necessary, an ID Team may be instituted to determine if the goals and objectives are correct or need to be adjusted. Re-initiation of NEPA is not necessary if the adaptive action is still within the scope of the original decision.

Monitoring Strategy: Riparian, Watershed/Hydrology, & Soils

Watershed Hydrology Monitoring Methods

Under "watershed monitoring," most often parameters of runoff timing, runoff quantity, runoff quality, and sediment yield apply. Current levels of livestock grazing usually do not produce measurable change resulting from allotment management on any of these parameters. Runoff timing and quantity is usually a function of either massive precipitation events such as large rainfalls or rain on snow events, or large-scale ground disturbing activities such as wholesale clear-cut logging or fires that remove existing overstory and ground cover. The smaller scale of sediment discharge associated with grazing allotments is best monitored at a local scale, watching for pedestalled plants, surface rill erosion or gully formation within problem areas. Larger basin-scale monitoring of sediment movement is usually studied in relation to river or stream functionality (PFC discussed below) or on even larger scales which aim at geomorphological changes.

As watershed hydrology is intimately related to the health or functionality of its drainage network, monitoring drainage characteristics often pays off. The discussion below pertaining to "Riparian Areas" concerns the proper functioning condition (PFC) of drainage channels.

There are numerous elements that influence watershed function: soil infiltration rates, ground cover, canopy cover, amount of overstory, soil type, soil condition including compaction, soil structure, slope, etc. Many of these factors have been combined into what are known as "runoff curves" in standard methods of calculating potential runoff from different ground cover scenarios such as urban areas, pavement, and agricultural fields, to name a few. These methods can estimate runoff from whole sub-watersheds or basins and are sensitive to gross differences in cover type, like for example an urban area versus an agricultural field. However, they are not designed to be sensitive to minute changes that occur from subtle differences in compaction for example, or slight changes in litter ground cover. Most runoff formulas use soil type as a constant (soil classes A thru D) and subtle differences in soils are not accounted for. Therefore, the concept of runoff curve numbers is incapable of tracking allotment management changes and is wholly inadequate as a monitoring tool at smaller scale.

In terms of monitoring "watershed condition," attention focuses on ground cover. This item is covered under "Soils" below. Related characteristics, such as monitoring local rill and gully formation, or areas of excessive plant pedestalling are also discussed under "Soils." The condition of drainage channels is discussed under "Riparian Areas" below.

Soil Monitoring Methods

As soil formation is extremely slow, the conservation of soils – the basic resource – is of prime importance. Several attempts at modeling soil erosion have been made, however in order to simplify the countless contributing factors, most of these models were initially designed to simulate erosion from agricultural fields. Later, these models were extrapolated to wildland situations; however, their results must be taken at best as gross estimates of actual values. Resulting values serve more as a basis of comparison rather than absolutes.

The most used of these erosion models is known as USLE, or the Universal Soil Loss Equation. The USLE is the most comprehensive technique available for field use in estimating cropland erosion. It involves six major factors that affect upland soil erosion in terms of water: rainfall erosiveness, soil erodibility, slope length, slope steepness, cropping management techniques, and supporting conservation practices. Four values are commonly derived from USLE, including erosion rates and corresponding ground cover for: potential soil loss, natural soil loss, current soil loss and tolerance soil loss. These are further defined in the Apache-Sitgreaves Terrestrial Ecosystem Survey. Briefly, they are defined as follows. Natural soil loss is the rate of soil loss expected under climax conditions, potential soil loss is the loss rate expected under complete removal of ground cover, tolerance soil loss is the loss rate that can

occur while sustaining inherent productivity, and current soil loss is the loss rate under existing conditions of effective ground cover.

The most important element in controlling erosion, according to the USLE model, is **ground cover**. A minimum of ½ inch of litter, a live plant base or a rock of at least ½ inch diameter counts as effective ground cover. Data regarding effective ground cover is collected in numerous ways. It is collected from permanent range transects (Parker 3-Step), from Daubenmire transects, from pace transects, or even from ocular estimates. This ground cover data is sufficient to track changes in ground cover, which relates to watershed condition as well as soils.

If more detailed information is desired regarding soils, then the standard Region 3 protocol for **soil condition** is used which more closely looks at numerous site factors that enter into soil function. This may be of use in areas as small as a pasture, in order to assess what elements of soil condition may be at risk the most and it may also yield some answers regarding what needs to change for a better soil condition score.

In specific local instances, **problem areas** with obvious signs of erosion such as rills, gullies, headcuts, or pedestalled plants may be found. If documentation of this is desired, it is recommended to take photographs, roughly describe conditions and mark locations on maps so they can easily be relocated. It is advised to seek help from SO watershed specialists regarding restoration plans. If needed, conduct a soil condition assessment in order to help determine causes of accelerated erosion that can then be used to change livestock management or to seek other means of helping to correct the situation. In cases of large headcuts or gullies, different livestock management may help the healing process, but active restoration will be needed to reshape affected areas and to provide effective means of stabilization.

Riparian Area Monitoring Methods

The standard assessment protocol for riparian and wetland areas is the **PFC** procedure (Proper Functioning Condition). This assessment is established for lentic (wetlands) and lotic (streams) areas, and a separate procedure is used for each respective type of riparian area. The lotic procedure uses 17 key yes/no questions, while the lentic procedure uses 20 questions. During the assessment, it is encouraged to answer each question as detailed as possible. In cases of "no" answers, these items then become the focus for future monitoring to determine whether positive change has occurred. In this regard, monitoring of riparian areas becomes very simple, using established procedures, and able to focus on changing only specific elements to obtain satisfactory conditions.

Each of the individual **PFC elements can be quantified** by separate procedures on an as-needed basis. For example, if information is desired regarding species composition, one or more transects can be established in the lentic area in question, to document current and future conditions and trends. Similarly, methods to quantify any site characteristic can be found to help answer specific questions. Under normal circumstances, quantification of PFC elements is not necessary, and field conditions can be photographed and adequately described to serve the purpose of documenting current or improving conditions. See the draft Multiple Indicator Monitoring Field Guide for monitoring examples (Burton et al, 2009).

Lentic and Lotic Area Stubble Height of sedges or greenline perennial vegetation can be measured at seed maturity or later, to estimate whether the minimum stubble height will be retained at the end of the grazing season. A minimum of 6 inches will be present going into winter in satisfactorily functioning areas, and whether a minimum of 8 inches will be present in non-functional and functioning-at-risk areas. The purpose is to keep streambank vegetation and roots healthy and abundant to protect streambanks from erosion during spring runoff, and to encourage maximum growth of sedges needed for riparian / wetland function.

Riparian Condition – This monitoring tracks the effectiveness in improving or maintaining riparian condition.

1. Full PFC assessments of lentic and lotic areas
2. Follow-up quantifiable assessments of key elements needing improvement

Monitoring Strategy: Wildlife & Fisheries

Monitoring described above for range, watershed, riparian and soils will meet the needs of wildlife and fisheries.

Monitoring of important wildlife habitat parameters (i.e., Mexican spotted owl and northern goshawk prey base) have been incorporated into the range monitoring planned for these allotments.

Fisheries desired conditions focus on maintenance of healthy watersheds, including riparian areas, in order to minimize downstream adverse effects to aquatic species from allotment-generated sedimentation. Monitoring identified for soils, watershed and riparian are also crucial for aquatic resources.

Documentation of Monitoring

All forms of monitoring will be documented and retained in appropriate District files.

Best Management Practices

A Best Management Practice (BMP) is a practice or combination of practices that are determined (by a state or designated area-wide planning agency) through problem assessment, examination of alternative practices, and appropriate public participation to be the most effective, practicable (including technological, economic, and institutional considerations) means of preventing or reducing the amount of pollution generated by non-point sources to a level compatible with water quality goals.

BMPs from various sources have been incorporated into the authorization, monitoring, adaptive management options and mitigation measures for the proposal. These sources include Arizona Department of Environmental Quality, Apache-Sitgreaves Land Management Plan, Forest Service Handbook 2509.22 (R3 Soil and Watershed Conservation Practices Handbook), and other sources listed in the Specialist Report for Watershed, Hydrology, Riparian and Soils.

The following are examples of BMPs incorporated into project design:

1. The **location, timing and intensity of livestock grazing** activities shall be implemented with objectives of achieving soil cover to prevent accelerated erosion and to protect water quality.

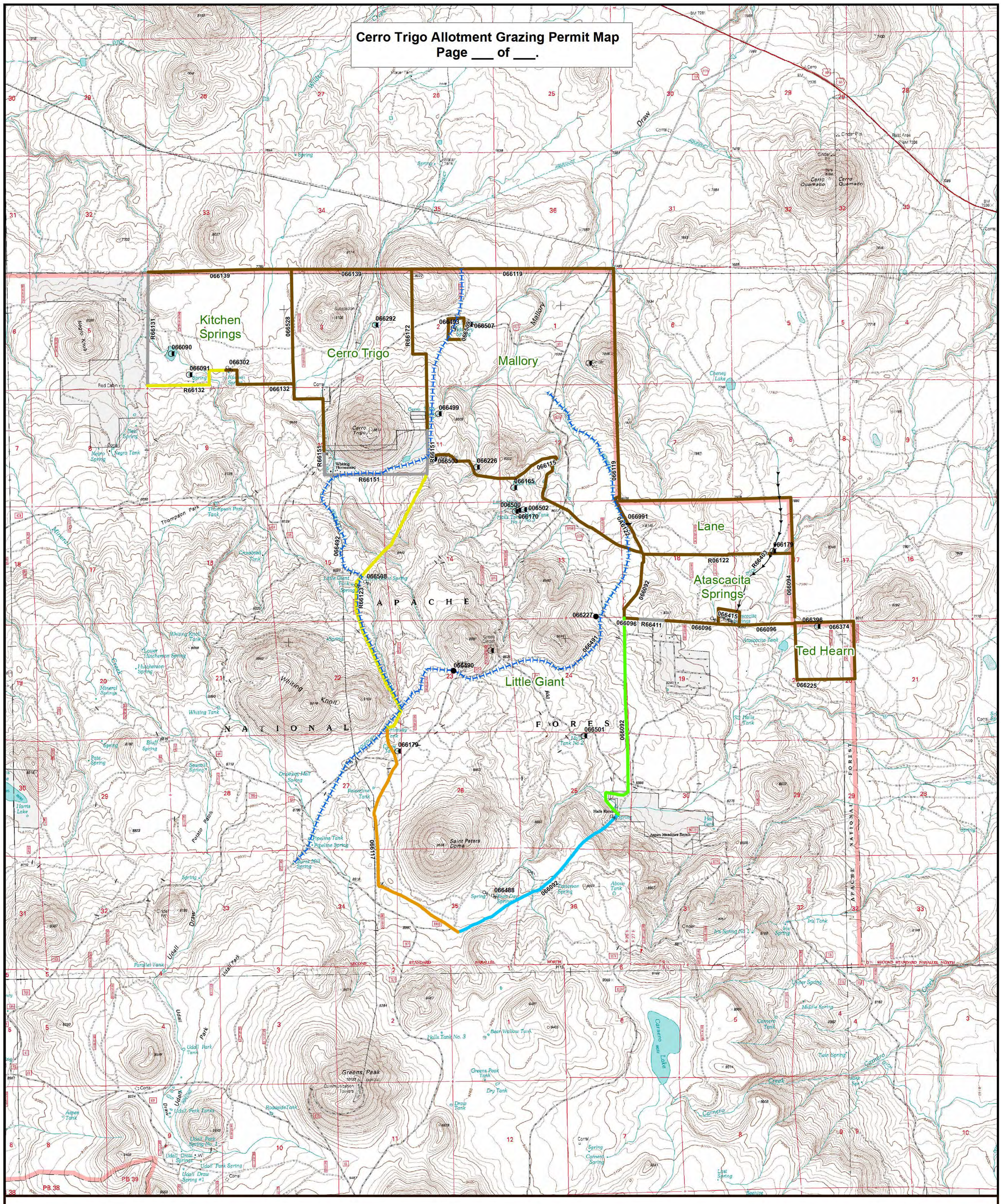
2. Planned grazing systems shall be implemented to maintain or improve plant cover while properly using the forage available, increasing efficiency by uniformly using all suitable parts of each grazing unit, reducing erosion and improve water quality, ensuring a supply of forage throughout the grazing season, increasing production with improved quality of forage, enhancing wildlife habitat, promoting flexibility in the grazing program and buffer the adverse effects of drought. Proper stocking and improved distribution of cattle will be major considerations for evaluating effects of implementing a system.

3. Grazing shall be at an **intensity** that will maintain enough cover to protect the soil or improve the quantity and quality of desirable vegetation. Utilization guidelines may be adjusted by soil condition and other resource concerns. Key grazing areas will be monitored to determine when cattle should be moved to prevent overuse. Riparian areas shall be identified as critical areas.

4. Utilize **salt** to improve livestock distribution. Salt a reasonable distance (at least ¼ mile) away from water or natural congregating areas such as roads, trails, and saddles in hills, and avoid key areas. Move salt when distribution objectives are not being met or to correct localized overuse problems.

5. **Structural range improvements**, when determined necessary to meet desired conditions, such as fences, water developments, trails and corrals, will be planned, constructed and utilized in a manner to enhance or maintain water quality.

Cerro Trigo Allotment Grazing Permit Map
Page ___ of ___.



Legend

- Spring
- Tank
- Water Storage Tank
- Water Trough
- Pipeline
- Ditch

Apache-Sitgreaves National Forests
Springerville Ranger District
Range Improvement Map

Cerro Trigo Allotment

N
W E
S

0 0.5 1 2 Miles

S.Weaver 12/5/2022

MAINTENANCE RESPONSIBILITY

- Cerro Trigo Permittee
- Hall Permittee
- Kenneth Salazar
- Hall Ranches, L.L.C.
- Harris Lake Permittee
- Private Land Owner

This map is part of Grazing Permit No.
issued to
on_____by_____
and shows the Cerro Trigo Allotment.