

**2009 Bar T Bar  
Allotment Management Plan (AMP)**

**Mogollon Rim Ranger District**

**Coconino National Forest**

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Date April 1, 2009

Agreed to/Reviewed by: Robert Prosser  
Robert Prosser  
Permittee

Date 4-13-09

Approved by: Melinda Roth  
Melinda Roth  
District Ranger

Date 4-13-09

## Record of Decision Summary

Implementation of this Rangeland Allotment Management Plan or 'AMP' is key to the successes of the natural resources of the Coconino National Forest and to the cattle and horse operations of the future. Allotment Management Plans (AMPs), contain the pertinent livestock management direction from the project-level NEPA-based decision.

AMPs also refine direction in the project-level NEPA based decision deemed necessary by the authorized officer to implement that decision. This AMP shall become part of Part 3 of the Bar T Bar Allotment Permit. This Allotment Management Plan follows the "Record of Decision (ROD) for the Bar T Bar and Anderson Springs Allotment Management Plans" as well as the "Final Environmental Impact Statement (FEIS) for the Bar T Bar and Anderson Springs Allotment Management Plans," signed February 3<sup>rd</sup>, 2005, and in which the Preferred Alternative (Alternative 6) was chosen, to include the following direction concerning the Bar T Bar Allotment:

- Issue 10-year grazing permit for the Bar T Bar Allotment.
- Manage livestock and wildlife to achieve site-specific forage utilization levels within a range of 35% to 50% of annual forage production depending on the management objectives defined for the area. Management objectives refer to specific goals relative to resource area concerns. For example: forage utilization of woody vegetation in riparian areas will not exceed 20 percent.
- This permit will allow up to 18,050 permitted head months under a rest-rotation/deferred rest-rotation with multiple herds over 73 pastures with forage utilization levels between 35 and 50 percent, objective driven. Objective driven is defined as the use of plant recovery and timing of grazing and rest to achieve goals of forage utilization.

**Wetland Exlosures**—Forest Service is responsible to construct and maintain enclosure fences; permittee is responsible for ensuring cattle do not enter them.

- Cow Lake Exlosure to be constructed to protect the wetland year-round. **\*\*PROJECT COMPLETED\*\***
- Melatone Lake Exlosure to be constructed to protect this wetland year-round, with the exception of the water lane. Construction of a water lane into Melatone Lake for cattle watering access. **\*\*PROJECT COMPLETED\*\***
- Soldier Lake (reservoir)--Until this Exlosure is developed, this corner portion of the Trap 3 pasture is not to be grazed. The construction of this enclosure will be for the protection of the wetland waterfowl during the nesting season of May 1—July 15.

**Water Developments** (to provide better distribution of water within pastures and to provide water to cattle that will now be excluded out of the wetland enclosures)

1. 1 earthen replacement tank to be constructed on the east side of West Melatone pasture
2. 1 earthen replacement tank to be constructed in the NW corner of North Grapevine pasture
3. 1 new earthen tank to be constructed in East Service pasture
4. 1 new earthen tank to be constructed in Wilkins pasture
5. Trick tank (drinker) to be repaired in Trick Tank pasture
6. 2 earthen tanks to be repaired/cleaned in the Yellowjacket pasture: the Yellowjacket Draw Tank and the Little Springs Tank

#### **Range Improvements**

- Approximately 1.0 mile of new 3-wire electric fence to be built in Northeast corner of West Green Howard (along 82C road)
- Fence to be constructed from the NW Corner of Janice to split Hall Tank in West Green Howard, adjacent to FR82
- 3-strand barbwire fence to be constructed for/around Melatone and Cow Lake enclosures   \*\*PROJECT COMPLETED\*\*
- Approximately 2.3 miles of 4-strand barbwire fence to be newly constructed   \*\*PROJECT COMPLETED\*\*
- Reconstruct ~ 24 miles of 4-strand barbwire fence
- Remove ~3 miles of existing fence   \*\*PROJECT COMPLETED\*\*

#### **Existing Improvements**

- There will be continued management and maintenance on all real property as listed on the Deferred Maintenance Inventory and Certification for Range Improvements list.

#### **Pinyon Pine, Juniper and Ponderosa Pine Vegetation Treatments**

Approximately 32,677 acres of pinyon pine and juniper will be harvested and removed for grassland maintenance and restoration of which:

- Approximately 27,810 acres (grassland maintenance) of young pinyon-juniper woodland trees will be removed that have encroached into historic grasslands. No old-growth trees will be removed.
- Approximately 4,067 acres (grassland restoration) of young pinyon-juniper woodland trees will be removed. This will remove approximately 80–90% of young trees to increase habitat for pronghorn and other grassland species, improve watershed conditions and forage production.
- Approximately 684 acres of grassland maintenance in transition areas (pinyon-juniper into ponderosa pine) to occur by way of removing young pinyon-juniper
- Approximately 116 acres of young juniper trees will be removed for wildlife corridors to encourage movement of elk, deer and pronghorn between summer and winter range. No cutting of alligator juniper trees will be allowed. No old-growth trees will be removed.
- Lop and scatter slash or mechanically grind over most of the above acreages.
- Prescribe burn on 32,677 of the above acres only when soil conditions are satisfactory.

Furthermore, alligator juniper trees with less than a 9 inch diameter at root crown may be removed within the previously specified areas as determined by the Decision Memo entitled “Grassland Restoration Project” which was signed by District Ranger Mindee Roth on July 16, 2007.

### **Monitoring**

- Refer to page 13 of this document.

### **Mitigation**

- This decision adopts **the mitigation measures** disclosed in the FEIS, Chapter 2, Table 3 - Mitigation Measures. These mitigation measures incorporate Best Management Practices (see pages 15, 16, and 17 of this document, Forest Service Handbook 2509.22, and the Natural Resource Conservation Service’s BMP’s for soil conservation), and constitute compliance with Arizona State and Federal Water Quality Standards. These measures are designed to protect resource values, uses, and maintenance of soil productivity, stability and water quality.
- These same mitigation measures include actions to reduce potential impacts to soil and water, vegetation, range, human environment, visual quality, resource access, smoke management, wildlife, fisheries, rare plants and seeding. Furthermore, these mitigation measures include actions to best manage for the connection of fuels and fire, as well as to minimize and allow for a control of the spread of noxious weeds.

## Goals and Objectives of Management

### Background

On July 21, 1988, an environmental assessment was completed and a decision made by Forest Supervisor Neil R. Paulson that would allow livestock grazing to occur on the Bar T Bar Allotment. A 10-year term grazing permit was issued to the Bar T Bar Ranch, Inc. at that time. Pursuant to the 1995 Rescission Act (Public Law 104-19), grazing allotments are effective for a term of ten years. The April 1<sup>st</sup>, 2009 grazing permit implements this AMP as both a term and condition of the permit. Section 504 of this public law addresses allotment analysis, grazing permit issuance, and compliance with the National Environmental Policy Act (NEPA).

The grazing permittee for the Bar T Bar Allotment is the Bar T Bar Ranch, Inc. As of 1987, seven separate allotments were considered consolidated under the Bar T Bar Allotment Grazing Permit. In 1996, the Lost Eden Management Unit (MU) was created from the former Lost Eden Allotment and was incorporated into the Bar T Bar Allotment, effectively increasing the term permit by 2000 Head Months (HM's) from 16,050 to the current 18,050 Head Months.

Red Hill Cell – In 1983, Bar T Bar Ranch submitted a proposal to the Mogollon Rim district ranger to initiate a Savory Grazing Method (SGM) cell on the Red Hill Allotment, now consolidated into the Bar T Bar Allotment. The proposal was approved as a demonstration cell and construction began in 1984. The cell was to be monitored for a 5-year period and a final report was to be written to determine the effects of the high intensity, short duration grazing system on the project area. Monitoring indicated that installation and operation of the Red Hill Demonstration Cell fell short from only one standpoint—ranch economics. The Red Hill Demonstration Cell has since been modified. Many of the fences were removed and the pastures are currently used in a rest rotation grazing system in combination with other pastures on the Bar T Bar Allotment.

### Purpose and Need for Action

The FEIS states that the purpose of this 'action' (or set of planned authorizations) is to authorize permitted livestock grazing on the Bar T Bar Allotment for a 10-year period.

Where consistent with other multiple-use goals and objectives there is Congressional intent to allow grazing on suitable lands (Multiple-Use Sustained-Yield Act of 1960, Forest and Rangeland Renewable Resources Planning Act of 1974, Federal Land Policy and Management Act of 1976, and National Forest Management Act of 1976).

This allotment contains lands identified as suitable for domestic livestock grazing in the Coconino National Forest Plan. Continued domestic livestock grazing is consistent with the goals, objectives, standards, and guidelines of the Forest Plan.

It is Forest Service policy to make forage available to qualified livestock operators from lands suitable for grazing consistent with forest plans (FSM 2203.1).

It is Forest Service policy to continue contributions to the economic and social well being of people by providing opportunities for economic diversity and by promoting stability for communities that depend on range resources for their livelihood (FSM 2202.1).

By regulation, forage-producing lands will be managed for livestock grazing where consistent with forest plans (36 CFR 222.2 (c)).

A 10-year grazing permit period is allowed by law (FLPMA Sec. 402 (a) & (b) (3)). A permit may be issued for a shorter term under several circumstances, including when the best interest of sound land management is served.

Comparison of existing conditions on the allotment and the desired conditions in the Forest Plan indicate a need to address the following:

- To develop a comprehensive plan that would address more than domestic livestock grazing. Through the collaborative process used by the Diablo Trust, it has become apparent that there is a need for development of a comprehensive plan that would address more than domestic livestock grazing. This plan would coordinate livestock management with other resource needs on the allotment.
- To address concerns with increased canopy densities in pinyon-juniper and ponderosa pine vegetation types. Resource conditions on the Anderson Springs Allotment are generally satisfactory, but increased canopy densities in pinyon-juniper and ponderosa pine vegetation types are inhibiting understory plant growth and depleting soil conditions in some areas. As canopy densities and fuel loadings continue to increase in these areas, the potential for high intensity wildfires also increases.
- To address concerns with competition for forage, in particular cool season plant species, between domestic livestock and wild ungulates. Competition for forage between domestic livestock and wild ungulates is common on the allotment. Heavy grazing use on cool season grasses, forbs, and shrubs is occurring in many areas, resulting in decreased species diversity and poor plant vigor.
- To address concerns with decreasing pronghorn antelope populations and habitat quality on summer and winter range. Pronghorn antelope populations are decreasing throughout most of Arizona. There is a need to improve habitat conditions for antelope that summer on Anderson Mesa and winter on adjacent Arizona State Trust Lands and private lands, where possible.

- To address concerns with livestock grazing and waterfowl nesting on wetlands that produce emergent vegetation. The actions proposed will bring the grazing of wetlands on the analysis area in compliance with standards and guidelines set forth in the Coconino National Forest Plan to protect nesting and breeding habitat for waterfowl.

**\*\* See the Pinyon Pine, Juniper, and Ponderosa Pine Vegetation Treatments section on pages 3 & 4 of this document, which relays the ongoing plans that address the issue of existing versus desired conditions on the allotment. These referenced Treatment plans have been activated and will continue to be carried out in the interest of the desired goals. \*\***

## **Grazing System**

Livestock graze the Bar T Bar Allotment seasonally, with use generally occurring from May through October. The current allotment management plan (AMP), approved in 1988, calls for both rest rotation and deferred rest rotation grazing, using about half of the pastures on the allotment each year. There are 9 management units comprised of 73 pastures on the allotment (See Table A. on pages 9 & 10 of this document for the Bar T Bar Allotment's List of Pasture and Unit Names).

The current livestock grazing strategies will continue to be used on the Bar T Bar Allotment for the next 10-year period. Current management on this allotment is objective-driven, where management objectives determine the length of graze, length of rest, whether a pasture is grazed or regrazed in a given year, and the number of livestock grazed. If management objectives are not being met, the strategy is changed to meet the objectives defined for the area. Flexibility is maintained to meet resource needs, as well as social and economic demands.

## **Additional Management Items**

**Annual Operating Instructions:** Annual operating instructions make adjustments to cattle numbers, and time and duration of pasture use based on current climatic and range conditions. Making these plans each year and adjusting throughout the season as conditions change facilitates flexible management.

**Roads and Cattle Guards:** There is a need to keep forest users from leaving gates open. Where roads are maintained as open, cattle guards will be put in place. Where roads are identified for closure, in past and future road decisions, no cattle guard is necessary.

**Cattle Guard Maintenance:** Cattle guard maintenance is shared between the Forest Service and the permittee for level 3 roads (main surfaced roads). Cattle guard maintenance on level 2 roads (secondary smaller roads) is the responsibility of the permittee.

**Implementation of Structural Improvements:** There is a need for cultural, wildlife and recreation coordination when implementing the grazing system. Structural improvements such as fencing, stock tanks and cattle guards will be used to implement the grazing plan. During the life of the permit, there may be additional or fewer improvements needed based on adapting to changes and meeting the goals of the new system. The following parameters need to be followed when implementing structural improvements:

- **Cultural Resource Coordination:** A programmatic cultural report has been completed and approved by the State Historic Preservation Office (SHPO). Using the parameters described in the programmatic report, conduct survey and obtain clearance prior to any ground disturbing activities related to structural improvements.
- **Threatened, Endangered and Sensitive Species Coordination:** Additional very site specific biological assessments and evaluations will be written for chosen actions. Refer to and follow any mitigation measures or implementation parameters described in the biological assessments and evaluations written for this action. Location of improvements may be altered somewhat in response to species considerations. Involve a wildlife biologist prior to final planning of any new improvements.
- **Fencing:** All new fencing will contain a smooth bottom wire and appropriate bottom wire height for wildlife. Conduct cultural resources and threatened, endangered and sensitive species coordination as described above. Elk jumps may be constructed along new fences and along existing fences as appropriate.

**Other Management Items:** Salting occurs throughout the allotment, but is not used in northern goshawk PFAs, meadows, burn areas or locations closer than 1/4 mile to water. Pastures are alternately rested and grazed in a planned sequence. The permittee will rotate livestock in a planned grazing system that alternates rest and graze period throughout a given year and from year to year.



Range Improvement Maintenance

Range improvements assigned to you for maintenance have been identified in red on the permit maps of your term grazing permit. These improvements are to be fully maintained annually to comply with permit requirements (Part 2, section 8i). Any maintenance you perform must conform to the standards specified by your District Rangeland Management Specialist. The grazing permittee is responsible for all maintenance materials, supplies and equipment necessary to properly maintain all range structural improvements. The Forest will replace range structural improvement materials and/or supplies at the end of the improvement's life—when maintenance and repair is no longer feasible to keep the improvement properly maintained and functioning. **Please note that you must notify the District Rangeland Management specialist at least 60 days prior to beginning maintenance of earthen stock tanks.** When the permittee needs prior approval from the Forest Service to do work on the range permit or the Long Lake ditch system, the following tables will be used for clarification. Hay Lake Pass and Chavez Pass are year round off-road vehicular closure areas. The approvals are based on the usual need to get Archaeological Clearances and Biological Evaluations completed for the projects. Depending on the activity, approval for other reasons may be needed.

<b>TABLE A1. RANGE PERMIT MANAGEMENT Activity Description</b>	<b>Activity Outside the Hay Lake &amp; Chavez Pass Closures</b>	<b>Activity Inside the Hay Lake &amp; Chavez Pass Closures</b>
Cattle grazing	No prior approval	No prior approval
Grazing management	No prior approval	No prior approval
Fence maintenance	No prior approval	No prior approval
Stock pond cleaning or repair	Need prior approval	Need prior approval
Cattle guard maintenance	No prior approval	Need prior approval
Cattle guard installation	Need prior approval	Need prior approval
Spring cleaning	Need prior approval	Need prior approval
Pipeline maintenance	No prior approval	N/A
Pipeline construction	Need prior approval	Need prior approval
Driveway maintenance	Need prior approval	Need prior approval
Well maintenance	No prior approval	N/A
Well installation	Need prior approval	Need prior approval
Drinker maintenance	No prior approval	N/A
Corral maintenance	No prior approval	No prior approval
Corral construction	Need prior approval	Need prior approval
Fence removal	No prior approval	No prior approval

(continued on next page)

<b>TABLE A2. DITCH MANAGEMENT Activity Description</b>	<b>Activity Outside Closure Area</b>	<b>Activity Inside Chavez Pass Closure</b>	<b>Activity Inside Hay Lake Closure</b>
Non-motorized Ditch inspection	No prior approval	No prior approval	No prior approval
Motorized ditch inspection	No prior approval	Need prior approval	No prior approval
Ditch maintenance within previously disturbed areas	No prior approval	Need prior approval	No prior approval
Ditch maintenance Outside previously disturbed areas	Need prior approval	Need prior approval	Need prior approval

**Table B. Bar T Bar Allotment—List of Pasture and Unit Names**

<b>PASTURE</b>	<b>UNIT</b>
87	Red Hill / Quail
W. Boundary	Red Hill / Quail
E. Boundary	Red Hill / Quail
Brown	Red Hill / Quail
Diane's	Red Hill / Quail
Free	Red Hill / Quail
Maverick	Red Hill / Quail
NW Quail	Red Hill / Quail
NE Quail	Red Hill / Quail
Red Hill	Red Hill / Quail
Soldier Lake Trap #3	
W. Soldier	Cowhill / Grapevine
N. Grapevine	Cowhill / Grapevine
S. Grapevine	Cowhill / Grapevine
Broomy Valley	Broomy / Lakes
Cow Hill	Cowhill / Grapevine
Slough	
Saw Mill	Cowhill / Grapevine
E. Green Howard	Green Howard / Melatone
W. Green Howard	Green Howard / Melatone
Quail Field (040)	Red Hill / Quail
Willey	Red Hill / Quail
Clinton's Pool	Lost Eden
Turkey Mtn.	Lost Eden
Wochner	Lost Eden
Monty's	Lost Eden
Todd's	Lost Eden
Lost Eden Horse	Lost Eden
Lane	Lost Eden
Mary's	Lost Eden
N. David's	Lost Eden
S. David's	Lost Eden
Sarah's	Lost Eden
Clint's	Lost Eden
Park's	Lost Eden
Janice	Lost Eden
Trick Tank	Moqui / Yellowjacket
E. Melatone	Green Howard / Melatone
W. Melatone	Green Howard / Melatone
E. Service	Service
W. Service	Service
Baucom	Haylake
Summer Field	Red Hill / Quail
Quail Cell 057	Red Hill / Quail

**Table B. (Continued)  
Bar T Bar Allotment—List of Pasture and Unit Names**

<b>PASTURE</b>	<b>UNIT</b>
Lakes	Broomy / Lakes
Hay Lake #1	Haylake
Hay Lake #2	Haylake
Hay Lake #3	Haylake
Hay Lake #4	Haylake
Hay Lake #5	Haylake
Hay Lake #7	Haylake
Hay Lake #8	Haylake
Hay Lake #9	Haylake
Hay Lake #10	Haylake
Milk Pen	Haylake
Horse Pasture	Haylake
Hay Lake	Haylake
Moqui	Moqui / Yellowjacket
Wilkins	Moqui / Yellowjacket
Lost Eden	Lost Eden
Prairie Dog	Haylake
67	Red Hill / Quail
63	Red Hill / Quail
57	Red Hill / Quail
52	Red Hill / Quail
47	Red Hill / Quail
63	Red Hill / Quail
75	Red Hill / Quail
Yellow Jacket	Moqui / Yellowjacket
Fisher	Moqui / Yellowjacket
Trap #4	Cowhill / Grapevine
Trap#2	Buckhorn
Buckhorn	Buckhorn

# Monitoring

## Required Annual Monitoring

**Compliance Monitoring:** Throughout each grazing season, compliance monitoring will be done by Forest Service personnel to determine accomplishment of the terms and conditions of the term grazing permit, Allotment Management Plan, and Annual Operating Instructions—which include a cooperative, annual, year end utilization monitoring.

**Allotment Inspections:** Allotment inspections are a written summary completed each fall by Forest Service personnel to document compliance monitoring and to provide an overall history of that year's grazing. This monitoring is completed with the permittee. This document may include weather history, the year's success, problems, improvement suggestions for the future, and a monitoring summary.

**Range Readiness:** Each spring before cattle are turned out on the allotment, range readiness will be assessed by Forest Service personnel to determine if vegetative conditions are ready for cattle grazing. The range is generally ready for grazing when cool season grasses are leafed out, forbs are in bloom, and brush and aspen are leafed out. These characteristics indicate the growing season has progressed far enough for plants to replenish root reserves so that grazing will not seriously impact the forage plants.

**Forage Utilization:** 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. This assessment, along with climate and condition/trend data, is used to set stocking levels and pasture rotation for future years. Utilization is not intended to be the only way to determine when livestock are moved from one pasture to another or as a nonflexible limit of use within any given year.

Pasture moves will be determined by the previous grazing year's use (also known as year end use), which is the use of any given pasture measured at the end of the grazing season. This year end guideline takes into account any additional growth which might occur that year. For this allotment, pasture moves will be determined by seasonal utilization, while taking into account any additional growth that might occur that year. If forage availability is limited due to elk use, drought, or previous years use, livestock management will be adjusted accordingly.

Utilization monitoring is an estimate of the available forage by weight consumed or trampled through grazing and is expressed as a percent of the current year's biomass removed. Utilization monitoring is designed to assess key forage utilization levels by cattle and elk during the year and from year to year. Key forage species for this allotment include western wheatgrass, blue grama, squirreltail, and Arizona fescue. Utilization monitoring will be conducted by the permittee and spot checked by Forest Service personnel throughout the year in every grazed pasture.

Continually identify key ungulate utilization monitoring areas. These key areas will normally be ¼ to 1 mile from water, located on productive soils on level to intermediate slopes, and be readily accessible for grazing. The size of the key forage monitoring areas could be 20 to 500 acres. In some situations such as high mountain meadows with perennial streams, key areas may be closer than ¼ mile from water and less than 20 acres. Within key forage monitoring areas, select appropriate key species to monitor average allowable use.

### **Required Long-term Monitoring**

**Forage Production:** Forage production surveys for the allotment will be done every nine to 13 years. Methods used for these surveys will be done by the best available methods at that time. These values will be used as a tool to manage this allotment, but will not be the sole measure to set carrying capacity.

**Condition and Trend:** Watershed and vegetative condition and trend monitoring will be conducted once every 10 years to help determine the effectiveness of the Allotment Management Plan and long-term range and watershed trend. In the past, Parker 3-step and paced transects have been used to determine condition and trend. Other monitoring techniques include canopy cover and frequency ground cover plots.

Parker 3-step and paced transect monitoring points were established throughout the allotment in the 1950-60's. These transects are one of the best historic records of range condition and trend. The photo points and vegetative ground cover data show how the site has changed over time. The new plots and techniques will be placed over the Parker 3-step transects in most locations to take over this historic data. The original photo points will be retaken.

Ocular plant canopy cover 0.10 acre plots will be used to compare existing conditions with potential and desired vegetative community conditions. Over time, these plots will show us how canopy cover changes. Canopy cover will provide a representation of both plant composition and an indication of how plants are growing; assuming they are getting bigger and occupying more space, a relative gauge of vigor can be observed through this documentation.

Frequency and ground cover data will be collected using the protocols established in references such as "Some Methods for Monitoring Rangelands and Other Natural Area Vegetation," edited by G.B. Ruyle, Extension Report 9043, 1997. These plots will monitor trends in plant species abundance, plant species distribution and ground cover. This will provide information on plant composition and additional information on regeneration. These transects will be read once every 10 years by Forest Service personnel. These plots will be used to help determine the effectiveness of the Allotment Management Plan.

# APPLICABLE MITIGATION MEASURES

## Mitigation Common to All Alternatives

The following site-specific mitigation measures listed in Table 3 are an integral part of the Proposed Action. The environmental effects described in Chapter 3 are estimated with the assumption that these measures would be implemented. Herein are found the best management practices or (BMPs) designed to minimize the potential adverse effects of sedimentation and turbidity of downstream perennial waters. Unless monitoring proves to the contrary, implementation of the following site-specific BMPs constitutes compliance with Arizona State and Federal Water Quality Standards. Numbers in parentheses ( ) reference best management practices from the Southwestern Region Soil and Water Conservation Practices Handbook (FSH 2509.22). Further mitigation measures may be found within pages 39 to 53 of the FEIS for the Bar T Bar and Anderson Springs Allotments, as well as from the University of Arizona and the USDA Natural Resources Conservation Service's Best Management Practices for working with soil erosion.

Table C. Applicable Mitigation	Mitigation	Rationale
<b>Soil and Water</b>		
SW1	If commercial contracts are used to implement any vegetative treatments, provisions should be included to address oil and hazardous substance spills, plans, prevention and countermeasures. (25.13)	To prevent contamination of waters from accidental spills.
SW2	Mitigation of nonpoint pollution sources is best accomplished through implementation of best management practices (BMPs). BMPs for cattle grazing include the following: BMP 22.1 Range Analysis, Allotment Management Plan, Grazing Permit System, and Permit Operating Plan; BMP 22.11 Controlling Livestock Numbers and Season of Use; BMP 22.12 Controlling Livestock Distribution as outlined in Forest Service Handbook 2509.22, Soil and Water Conservation Practices Handbook.	To minimize nonpoint pollution sources that can contribute sediment to stream courses.
SW3	BMP 1 - Do not operate equipment when ground conditions are such that soil compaction can occur (wet).	To minimize damage to soil physical properties, maintain or improve current soil condition, and maintain or improve water quality during construction of range improvements or during vegetative treatments.
SW4	BMP 2 - Removal of pinyon-juniper overstory to maintain or restore historic grassland and create slash in TES map units 436, 438, 453, 454, 465, and 490.	To improve effective vegetative ground cover, maintain or improve current soil condition, and maintain or improve water quality.

No.	Mitigation	Rationale
SW5	BMP 3 - Closure of temporary drive out roads by covering with created slash after use.	To improve effective vegetative ground cover, maintain or improve current soil condition, and maintain or improve water quality.

SW6	BMP 4 - Burning should not occur on soils that are currently rated as having an impaired soil condition until soil condition has improved to satisfactory. This will more than likely not occur during the 10year timeframe of this analysis.	To move impaired soils to satisfactory condition as soon as possible.
SW7	BMP 5 - Nonriparian stream courses will need an average of 1/2 chain buffer on each side of the streamcourse to filter sediments resulting from burning. This can best be accomplished by not igniting fuels within the buffer area. Some creep may occur into the buffer, but an average width by stream type will be maintained.	To minimize potential sediment impacts from maintenance and prescribed burning activities.
SW8	BMP 6 - Fire prescriptions will be designed to minimize soil temperatures over the entire area. High intensity fire will occur on 5 percent or less of the entire area.	To minimize fire intensity so soil health, soil productivity, and water quality are maintained
SW9	Best management practices to minimize sediment sources from roads would be implemented. These include: BMP 41.14, 41.2, 41.25, and 41.27 (FSH 2509.22). These include, but are not limited to, road maintenance, road drainage (rolling dips, outsloping, etc.), and control of road use during wet periods.	To minimize sediment sources from roads.
SW10	Do not maintain stock tanks in the following identified wetlands In Alternatives 3, 4, and 5: Perry Lake, Camillo Lake, Corner Lake, Corral Lake, Mud Lake, Pine Lake, Tony's Tank, Yeager Lake, Pollimo Lake, Gonzalo Lake, Crater Lake, Driveway Lake, Cow Lake, Hay Lake, and Melatone Lake.	The purpose of this BMP is to minimize impacts to soil condition, vegetation and water quality from grazing animals at stock tank sites in identified wetlands.

#### Vegetation

V1	Created slash from vegetative treatments should be dispersed and lopped into areas void of slash such as interspaces between tree canopies. (24.22)	To prevent accelerated onsite soil loss and sedimentation of stream courses.
V2	If commercial contracts are used to implement any vegetative treatments, provisions should be included to address timing of operations. (24.13, 41.11, 26.11)	To minimize impacts on wet or saturated soils in order to protect soil and water resources.



V3	If commercial contracts are used to implement any vegetative treatments, provisions should be included to address wood product landings. (24.2)	To locate landings so creation of unsatisfactory watershed conditions which lead to water quality degradation is avoided.
V4	In areas where wood products are removed, spread residual slash on disturbed areas where agreed upon in the EIS. (24.22, 24.3)	To prevent accelerated onsite soil loss and sedimentation of stream courses.
V5	If commercial contracts are used to implement vegetative treatments, provisions should be included to protect meadows during the operations. (24.26)	To avoid unacceptable impacts to ground cover, reduction of soil productivity, compaction and erosion.

**Range**

R1	Range analysis, allotment management plan, grazing permit system, and annual operating instructions. (22.1)	To protect resource values and uses. Identify inherent hazards, maintenance of soil productivity, stability and water quality.
R2	Manage livestock grazing numbers and season of use. (22.11, 22.14)	To safeguard water and soil resources under sustained forage production. To improve vegetative ground cover. To insure grazing stays within the lands capability.
R3	Use salt to achieve livestock distribution objectives or to correct localized overuse. Salt at a reasonable distance from waters or natural congregating areas such as swales, drainages, riparian areas, and meadows. (22.12)	To safeguard water and soil resources under sustained forage production and forage utilization by livestock.
R4	Implement seeding projects to maintain or improve vegetative ground cover in areas where soils are compacted and native seed is scarce, in areas where erosion is contributing sediment directly into drainage channels, riparian areas. (22.15)	To establish a vegetative cover on disturbed sites to prevent accelerated erosion and sedimentation.
R5	Maintain existing range structural improvements and install/maintain new improvements as needed. Structural improvements, such as corrals, troughs, trails, or storage tanks should not be located in swales, drainages, riparian areas or meadows. (22.13)	To allow for proper livestock control, distribution, control graze and rest periods. To implement other livestock management techniques necessary to improve and/or maintain long-term soil productivity and water quality.
R6	Forage utilization levels in key areas will be monitored.	To allow for proper use of forage, and protect vegetation and soils from over use.

Best Management Practices (BMPs) are effective, practical, structural or nonstructural methods which prevent or reduce the movement of sediment, nutrients, pesticides and other pollutants from the land to surface or ground water, or which otherwise protect water quality from potential adverse effects of rangeland grazing activities. These practices are developed to achieve a balance between water quality protection and the production of vegetation within natural and economic limitations.