

**Kendrick Mountain
Allotment Management Plan (AMP)**

Flagstaff Ranger District

Coconino National Forest

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I. Decision Summary

The Decision Memo and Finding of No Significant Impact for the environmental analysis for Kendrick Mountain grazing allotment was signed by Gene Waldrip, District Ranger, on February 25, 2000. The following Allotment Management Plan (AMP) reflects the desired management of Kendrick Mountain grazing allotment as described in the selected alternative of the 2000 Decision Memo and Finding of No Significant Impact.

II. Annual Operating Instructions

Annual Operating Instructions (AOIs) will be issued prior to the beginning of each grazing season and are part of the term grazing permit as indicated in Part 2, Section 8, paragraph (a). AOIs will be developed cooperatively with the permittee and will include instructions and/or information related to the following: authorized livestock numbers; period of use; pasture grazing schedule; grazing strategy; utilization standards; seasonal utilization standards; monitoring; mitigation measures; range improvements; salting/mineral practices; and fire protection. As needed, other instructions may be included in the AOI. The AOI may be amended during the grazing season due to under/over seasonal utilization, climatic changes, and other unexpected changes affecting management of the allotment. Making these plans each year and adjusting throughout the season as conditions change provides the needed flexibility for livestock operations in the Southwest.

III. Allotment Management

Kendrick Mountain allotment consists of approximately 8,000 acres, and includes one holding pasture and 4 main grazing pastures; Cabin Flat, Horseshoe, Mudersbach, and Mountain.

Permitted Livestock

Permitted livestock numbers for the allotment will be set at a maximum of 75 head of adult cattle. Livestock use will not exceed 380 AUMs for the authorized season of use. Annual authorized livestock numbers will be based on existing conditions, available water and forage, and predicted forage production for the year. Adjustments to the annual authorized livestock numbers (increase or decrease) may occur during the grazing season based on conditions and/or range inspections.

The class of livestock may be changed from adult cattle to yearling cattle (9 to 18 months of age; 300 to 800 pounds). The conversion factor will be 1.43 yearling cattle per head of adult cattle. The maximum number of yearling cattle that would be authorized for the permitted season of use is 105 head.

Season of Use

The permitted season of use will be from June 1 to October 31. At the permitted stocking level of 75 head of adult cattle, this equates to 377 AUMs for the 5 month season of use.

Management Strategy

Livestock grazing will occur using a four pasture deferred rotation management system, which will allow for plant growth and recovery. Generally, cattle will be moved from one pasture to another according to the grazing schedule; however seasonal utilization will be the primary factor in determining actual pasture move dates. Each pasture will have only one grazing period during the grazing season. Once all 4 pastures have been grazed by livestock, the cattle will be removed from the allotment. Appendix 1 provides an example of a 5-year pasture rotation schedule that incorporates the deferred rotation management strategy. The pasture rotation schedule shown in Appendix 1 is provided as an example for comparison purposes only; actual pasture rotation schedules will be determined each year depending on climate and forage conditions, and will be included in each year's AOI.

Utilization Guideline

Utilization is defined as the proportion or degree of current year's forage production by weight that is consumed or destroyed by animals. 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 area can be assessed.

A management guideline of conservative use will be employed to maintain or improve rangeland vegetation and long term soil productivity. This guideline will allow up to 35% utilization of herbaceous vegetation by livestock and/or wildlife. Annual reductions in the utilization guideline may be made based on resources conditions.

Additional information regarding the Utilization guideline can be found in section five of this document.

Seasonal Utilization Guideline

Seasonal utilization is defined as the amount of herbage removed through grazing or trampling during the grazing period. Seasonal utilization will be measured at the end of each pasture's livestock grazing period.

A light to moderate seasonal utilization guideline of 21% to 50% will be used within grazed pastures on the allotment. The seasonal utilization guideline will be the primary factor in determining when livestock need to move to the next pasture; but other factors such as climatic conditions, opportunity for plant regrowth, and previous year's utilization level will also be considered. Annual reductions in the seasonal utilization guideline may be made based on resource conditions.

Additional information regarding the Seasonal Utilization guideline can be found in section five of this document.

Pasture Grazing Period

The planned grazing period within each pasture will be as follows: approximately 40 days each year in the Cabin Flat, Mudersbach, and Horseshoe pastures; and approximately 30 days each year in the Mountain pasture.

The actual grazing period within each pasture will be determined primarily by the seasonal utilization guideline; however other factors such as climatic conditions, opportunity for plant regrowth, the previous year's utilization level, and the current year's desired utilization level will also be considered.

Each pasture will be grazed only once during the grazing season.

Structural Range Improvements

1. Existing Structural Range Improvements

Structural range improvements assigned to you for maintenance are listed in your Term Grazing Permit and are also identified on the allotment map. 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.

2. New Structural Range Improvements

A. The Forest Service may construct a cattle exclosure around a portion of the Mudersbach Meadow that occurs within the Kendrick Mountain allotment. When this fence is completed, the Forest Service and the permittee will share maintenance responsibilities.

Salt and Protein Block Practices

Proper salt and protein block location is a good tool to aid in livestock distribution, and will be used in a manner to spread livestock utilization throughout the pasture. The following guidelines will be used when placing salt and protein blocks:

1. In general, salt and protein blocks should not be placed within ¼ mile of water.
2. Salt and protein blocks will not be placed in areas of depleted range, erosive soils, or sensitive plant or animal species. Areas of sensitive plant or animal species will be identified by your Rangeland Management Specialist and included in each year's AOI.
3. No more than three blocks (50 lb. blocks) of salt/protein will be placed at any location at any one time.
4. Salt/protein will not be placed at the same location twice during the same grazing season.
5. The use of portable salt/protein block containers is encouraged but not mandatory.
6. Additional guidelines specific to northern goshawk populations are discussed in section IV of this document.

Temporary Livestock Water

Temporary sites for livestock water may be needed and should be used as necessary to assist in livestock distribution. The following requirements will apply to temporary livestock water locations:

1. Coordinate with the District Rangeland Management Specialist to identify temporary livestock water locations for individual pastures prior to the grazing period.
2. To aid in livestock distribution, the temporary livestock water locations should generally be in areas of light forage utilization.
3. Generally, temporary livestock water locations will not be located at sites used in previous years.
4. Temporary livestock waters will not be located in areas of depleted range, erosive soils, or sensitive plant or animal species. Areas of sensitive plant or animal species will be identified by you Rangeland Management Specialist and included in each year's AOI.
5. Temporary livestock water locations will be moved when the desired forage utilization levels have been reached.
6. Temporary livestock water storage tanks and troughs will be removed when livestock leave the pasture.

IV. Mitigation Measures for Special Status Species

Mexican Spotted Owl

There is a determination of “may affect not likely to adversely affect” for Mexican spotted owls. There are two known PACs on the allotment totaling approximately 1,350 acres mostly occurring within the Kendrick Mountain Wilderness. There is no restricted MSO habitat within Kendrick Mountain allotment. PAC habitat within the allotment is characterized by steep slopes and dense canopy cover. Due to steep slopes and dense canopy cover, PACs within the Kendrick Mountain allotment are rarely used by livestock.

Northern Goshawk

There is a determination of “may impact individuals” for northern goshawk. Two PFAs are located on the allotment, one with 615 acres and another with 720 acres. To reduce adverse affects to northern goshawk populations from livestock grazing, salting should not occur in PFAs, meadows, or burn areas.

Additional Measures

Utilization levels will not exceed 35% by livestock and wildlife. This is intended to maintain a condition which assures recovery and continued existence of threatened, endangered and sensitive species. A utilization level of 35% allows for the residual 65% of the plant to be available to reproduce, produce seed heads, produce litter important for nutrient recycling, and provide for the needs of wildlife. Additionally, utilization by livestock and wildlife typically occurs in relatively flat areas with open canopies. As a

result there will be little to no utilization by livestock and wildlife within PACs and PFAs.

Additional information regarding utilization levels can be found in section five of this document.

V. Monitoring

Two types of monitoring will be used for monitoring resource conditions and livestock management; implementation monitoring and effectiveness monitoring. Both qualitative and quantitative monitoring methods will be used in accordance with the Interagency Technical References, Region 3 Rangeland Analysis and Management Training Guide, and the Region 3 Allotment Analysis Handbook. Monitoring frequency varies by each activity and will be accomplished collaboratively by Forest Service personnel, permittee, and cooperating agencies.

Implementation Monitoring

Implementation monitoring will be conducted on an annual basis and will include the following:

Permit Compliance: Throughout each grazing season, Forest Service personnel will monitor activities on the allotment to ensure compliance with Permit terms and conditions, the allotment Management Plan, and the Annual Operating Instructions.

Livestock Actual Use: Permittee will keep accurate records regarding actual livestock numbers and pasture use dates on the form supplied as part of the Annual Operating Instructions. This form will be submitted to the Forest Service at the end of the grazing season.

Range Readiness: Range readiness is assessed prior to the start of the grazing season by Forest Service personnel to determine if vegetative conditions are ready for livestock grazing. The range is considered ready for grazing once cool season grasses have leafed out, forbs are in bloom, and brush and aspen have 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.

Seasonal Utilization: Seasonal utilization monitoring will occur within each of the main grazing pastures a minimum of two times during the grazing period for each pasture: 1) prior to livestock going into the pasture, and 2) immediately after livestock have been removed from the pasture. Seasonal utilization is defined as the amount of herbage removed through grazing or trampling during the grazing period. Seasonal utilization will be used by the Forest Service and the permittee to control actual pasture moves. Livestock may need to be moved out of a pasture sooner if the seasonal utilization guideline is reached before the planned move date. Likewise, livestock may stay longer in a pasture if seasonal utilization is below the established guideline when the planned move date arrives.

Seasonal utilization measurements will be taken in key areas which reflect grazing effects within an entire pasture. A minimum of one key area will be established within each main grazing pasture, at existing long-term monitoring sites if possible, to represent the overall seasonal utilization within the pasture.

Utilization: Utilization monitoring will occur at the end of the growing season within each of the main grazing pastures (late October/early November). Utilization is defined as the proportion or degree of current year's forage production that is consumed or destroyed by animals (including insects). It is a comparison of the amount of herbage left compared with the amount of herbage produced during the year. Utilization is measured at the end of the growing season when the total annual production can be accounted for and the effects of grazing in the whole management unit can be assessed.

Utilization measurements will be taken in key areas which reflect grazing effects within an entire pasture. A minimum of one key area would be established within each main grazing pasture, at existing long-term monitoring sites if possible, to represent overall pasture utilization. Utilization guidelines are not intended as inflexible limits. Utilization measurements can indicate the need for management changes prior to this need being identified through long term monitoring. Utilization data will not be used alone, but will be used along with climate and condition/trend data, to determine stocking levels and pasture rotations for future years.

If monitoring shows that the utilization guideline was exceeded in a pasture, the pasture grazing period and/or cattle numbers will be adjusted for the following year. If utilization is exceeded after these adjustments are made, then changes will be made to the grazing management system.

Forage Production and Ground Cover: Forage production assessments will be made to determine stocking levels for the grazing season and will also be used during the grazing season to determine if adjustments in the stocking level should be made. Qualitative assessments of ground cover will also be made and used as an indicator of condition and trend; observed changes may indicate the need to conduct effectiveness monitoring (condition and trend) prior to the scheduled interval.

Precipitation: Precipitation is currently recorded at 1 site that approximates the precipitation for the allotment. Additional precipitation gauges may be placed on the allotment for more localized information.

Allotment Inspection: A written summary will be completed each year by Forest Service personnel to document the overall history of that year's grazing. This document will include a monitoring summary, livestock actual use, weather history, and a discussion of the year's accomplishments and problems. Information from this report will be used in preparing the following year's grazing plan.

Effectiveness Monitoring

Effectiveness monitoring will be used to evaluate the success of management in achieving the desired objectives. Effectiveness monitoring will occur within key areas on permanent transects at an interval of 10 years or less. Effectiveness monitoring may also be conducted if data and observations from implementation monitoring (annual monitoring) indicate a need. Effectiveness monitoring will include the following:

Forage Production: Forage production surveys will be conducted using the best available methods at that time. Forage production data will be used as a tool to manage this allotment, but will not be the sole measurement to establish carrying capacity.

Long Term Trend Monitoring: Four Parker Three-Step clusters were established on Kendrick Mountain allotment in 1957; location of these plots is not known. In 1998 six frequency, ground cover, and canopy cover plots were established on the allotment; one of those plots, C3, is read annually. Data was last collected from the other five long term trend monitoring locations in 1998.

Frequency and ground cover data will be collected using the widely accepted plant frequency method (University of Arizona, 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.

Ocular plant canopy cover plots (0.10 acre plots) will be used to compare existing conditions with potential and desired vegetative community conditions. An explanation of the potential and desired vegetative community conditions can be found in the Project Record for the Kendrick Mountain grazing allotment EA. Over time, these plots will document canopy cover changes.

Threatened, Endangered and Sensitive Species

Threatened, endangered and sensitive species monitoring is covered by the preceding monitoring techniques.

VI. Adaptive Management

Adaptive management will continue to be used on the allotment to maintain and improve the vegetation, soil, and watershed conditions. Adaptive management allows the Forest Service to adjust the timing, intensity, duration and frequency of livestock grazing in response to changing ecological conditions, climatic conditions, and management activities. If monitoring indicates that changes are needed, management will be modified in cooperation with the permittee and the changes will be implemented through the Annual Operating Instructions. Changes may include administrative decisions such as the specific number of livestock authorized annually, specific dates of grazing, intensity of grazing, the class of animal, or modifications in pasture rotations. Adaptive management changes in livestock management will not exceed the limits established in

the environmental analysis decision document for the timing, intensity, duration, and frequency of livestock grazing.

Appendix 1: Example of Pasture Rotations for Five years on the Kendrick Mountain Allotment

Year	Pasture	Grazing Period (Days)
Year 1	Cabin Flat	40
	Horseshoe	40
	Mudersbach	40
	Mountain	30
Year 2	Mudersbach	40
	Cabin Flat	40
	Mountain	30
	Horseshoe	40
Year 3	Horseshoe	40
	Mountain	30
	Mudersbach	40
	Cabin Flat	40
Year 4	Mountain	30
	Cabin Flat	40
	Horseshoe	40
	Mudersbach	40
Year 5	Cabin Flat	40
	Mudersbach	40
	Mountain	30
	Horseshoe	40