



United States
Department of
Agriculture

Forest
Service

January 2009



Environmental Assessment

Whetstone Mountains Allotments Analysis

Benson, Coal Mine, Knear, Mescal, Middle Canyon and Wakefield Allotments

**Sierra Vista Ranger District, Coronado National Forest
Pima and Cochise Counties, Arizona**

Township 22 South Range 9 East, Sections 1-5, 8-17, 20-29, 32-36
Township 22 South Range 10 East, Sections 5-10, 15-36
Township 22 South, Range 11 East, Sections 1-5, 9-16, 21-27, 34-36
Township 22 South, Range 12 East, Sections 4-8
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Township 23 South, Range 10 East, Sections 1-11, 14-18, 21-24

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CHAPTER 1 – PURPOSE AND NEED

Background

This Environmental Assessment (EA) describes a Forest Service proposal to authorize grazing on the Benson, Coal Mine, Knear, Mescal, Middle Canyon and Wakefield allotments in the Whetstone Mountains, Sierra Vista Ranger District, Pima and Cochise Counties, Arizona. The EA discloses the direct, indirect, and cumulative environmental impacts that would result from the proposed action and alternatives.

Federal actions such as the authorization of grazing must be analyzed to determine potential environmental consequences pursuant to the *National Environmental Policy Act of 1969* (NEPA) and Section 504 of the *Rescission Act of 1995* (P.L 104-19, 1995). This EA provides a summary of the analysis completed by the Forest Service for grazing authorizations. Supporting documentation is contained in the project administrative record, which is available for public inspection in the Coronado National Forest Supervisor's Office in Tucson, Arizona. Throughout the document, references to supporting documentation are shown in parentheses. For example, a reference "(PR 54)" would indicate that a specific passage in the EA is linked to information contained in document No. 54 in the project administrative record. A complete index to the analysis record contents is contained in the environmental assessment as Appendix A.

The analysis and public involvement summarized in this EA was initially completed in 2007-2008. On August 28, 2008 Sierra Vista District Ranger Annette Chavez (the Responsible Official) signed a Decision Notice and Finding of No Significant Impact (DN/FONSI) authorizing the proposed action (*Alternative 2* of the EA)(PR 67). This decision was appealed on October 20, 2008 by Western Watersheds Project (PR 69). On November 13, 2008, Coronado National Forest Supervisor Jeanine Derby reversed the Responsible Official's decision with instructions to address sensitive species and Management Indicator Species information relating to the presence or absence of species and effects on habitat and populations in the project area (PR 71). In addition, the Appeal Reviewing Officer identified the need to address the effects of the alternatives on Inventoried Roadless Areas (PR 71). The EA has been revised to address these issues that were identified on appeal.

Purpose and Need for Action

The Benson, Coal Mine, Knear, Mescal, Middle Canyon and Wakefield allotments (collectively referred to as the Whetstone Mountain allotments) contain lands identified as suitable for domestic livestock grazing in the Coronado National Forest Land and Resource Management Plan (Forest Plan, PR 1). Where consistent with the goals, objectives, standards and guidelines of forest plans, it is Forest Service policy to make forage from lands suitable for grazing available to qualified livestock operators¹.

¹ Authority to manage National Forest System (NFS) rangeland resources is derived from laws enacted by Congress that authorize the Secretary of Agriculture to administer NFS lands and issue necessary

The purpose of the proposed action is to authorize livestock grazing consistent with Forest Service policy and in a manner that maintains or improves project area resource conditions and achieves the objectives and desired conditions described in the Coronado National Forest Plan. The analysis and authorization are needed here and now because:

- There is a need to formally incorporate additional flexibility into the management of the allotments in order to allow the Forest Service and individual grazing permit holders to be able to adapt management to changing resource conditions or management objectives, and to comply with Forest Service Policy (FSH 2209.13 Chapter 90).
- Rangeland vegetation condition is less than desirable in many areas as a result of poor livestock distribution. There is a need for management to be more responsive to decrease the duration and intensity of use in areas with less than satisfactory vegetation condition.
- Additional waters and fences are needed to improve distribution and increase the reliability of some pastures. These facilities will aid in providing additional rest periods and will allow management to decrease use in areas with less than satisfactory vegetation condition.
- Permitted use on some allotments exceeds what is considered sustainable. Forest Plan direction to balance permitted use with capacity is not being met.

Existing Conditions

Location and Setting. The approximately 45,000-acre Whetstone Mountains Ecosystem Management Area (EMA) is within the Sierra Vista Ranger District of the Coronado National Forest and located approximately 40 miles southeast of Tucson, in Pima and Cochise Counties near the developing communities of Benson, Sierra Vista, and Sonoita (Figures 1 and 2). The Bureau of Land Management's Las Cienegas National Conservation Area adjoins the EMA on the west side and Kartchner Caverns State Park is located east of the project area, adjacent to the Middle Canyon allotment. The Whetstone Mountains reach their high point of 7,711 feet on Apache Peak, rising from approximately 4,800 feet at their edges. Steep slopes and rough terrain render much of the higher elevations in the project area unsuitable and incapable for grazing. The majority of suitable and capable rangelands are located on gentler terrain at the base of the mountain range².

regulations. Summaries of these laws and regulations are found in the Forest Service Manual (FSM) Chapter 2200. Forest Service objectives and policies for rangeland management are found in FSM 2202 and 2203.

² Determination of rangeland capability and suitability involves the designation of areas that can support domestic livestock grazing (capability) along with an evaluation of the appropriateness (suitability) of livestock grazing in capable areas relative to all other competing resource values and management objectives. The National Forest Management Act requires the identification of the suitability of lands for resource management (16 USC 1604(g)(2)(a)). Grazing suitability is identified in the Forest Plan by Management Area. Capable rangelands are defined as areas under 40% slope and capable of producing 100 pounds per acre per year of dry forage. In addition to broad suitability designations in the Forest Plan,

Large areas of the Whetstone Mountains are roadless or are accessible only by the poorest of roads. This is due in part to the steep terrain in the central core of the range, and in part to the fact that most access routes cross private lands and have been gated and locked. Currently, NFSR 4011 (Dry Canyon Road), located on the east side of the range, is the only permanent legal access point to the entire Whetstone Mountains EMA.

Vegetation on the allotments includes Southwest Desertscrub and Semidesert Grassland in lower elevation foothills (Figure 3). These grasslands and scrublands are dominated by Lehman lovegrass (*Eragrostis lehmanniana*), an exotic perennial grass widely seeded in the mid-1900s. Above the grasslands, Madrean Evergreen Woodland interspersed with small patches of chaparral covers most of the mountain range. Highest elevations support several small stands of ponderosa pine (*Pinus ponderosa*).

The Whetstone Mountains are a relatively dry range. A few drainages run seasonally in response to precipitation events, but there are no perennial streams in the area. Vegetation associated with stream courses consists of discontinuous patches of small diameter ash, willow and cottonwood. French Joe Canyon is the only area identified as having deciduous riparian vegetation represented by a mixture of evergreen oaks and sycamore, willow, ash and cottonwood. Watersheds on the eastern side drain into the San Pedro River, while those on the western side feed Cienega Creek and thus flow into the Tucson basin.

Current Resource Condition. Rangeland ecological condition data have been collected periodically since the 1950's and most recently in 2004. Indicators of resource condition such as the amount of bare soil and the amount of plant litter show marked improvements from conditions measured in the mid 1960's. Nevertheless, conditions on some portions of the allotments remain less than desirable. Water distribution and availability is poor in most of the allotments, leading to poor livestock distribution and heavy use by livestock in some areas. During dry years, the lack of available water limits the ability of cattle to graze all or portions of the allotments effectively. This is reflected in reduced stocking in recent years, which have been dryer than average. Production and utilization studies were completed in 2004 and 2005 (PR 17). Recent actual use has been within capacity, but there is a need to modify some of the authorizations to reflect the results of recent production and trend studies.

Recent Management. The Whetstone Mountains have been used for grazing since the 1800s. Recent livestock use is shown in Table 1. Numbers on all of the allotments have remained low in recent years due to the effects of drought on forage production and water availability. Current management on each allotment is described below.

The **Benson** allotment consists of three main pastures grazed under a deferred rotation. Two smaller pastures are used as utility pastures, but are not large enough to be included in the rotation. Varied topography and limited water availability result in poor distribution on parts of the allotment.

analysis at the project level may identify additional areas (e.g., campgrounds, wetlands, etc.) considered unsuitable for grazing.

The **Coal Mine** allotment is managed as part of a larger ranch that also includes private and State lease lands. It is used during the winter dormant period and receives growing season rest every summer.

The **Knear** allotment is managed under a six pasture deferred rotation and is grazed year-round. The lack of reliable waters renders some of the pastures un-usable in dry years and has historically resulted in poor distribution.

The **Mescal** allotment is part of a larger ranch comprised of additional State lease and private lands. It is grazed seasonally during the winter and spring. The allotment is divided into two pastures and the herd is gradually moved from west to east throughout the grazing season.

The **Middle Canyon** allotment consists of eight pastures and has been traditionally grazed with two herds under a deferred rotation. Three northern pastures are grazed by a small herd and five southern pastures are grazed by a larger herd. The main management issue on the allotment is the lack of reliable waters in Guindani, Glenn, Starr and Ricketts pastures, resulting in poor livestock distribution and inability to effectively use the entire allotment. A related resource issue is the need to protect water resources in Middle and Guindani canyons, as these canyons are connected hydrologically to Kartchner Caverns.

The **Wakefield** allotment is currently vacant and has not been grazed in several years. Over half of this allotment is not capable of supporting grazing due to steep slopes. On the remainder of the allotment, shallow soils, brushy vegetation, and a lack of reliable water are a concern.

Table 1. Allotment size, stocking and recent use: Benson, Coal Mine, Knear, Mescal, Middle Canyon and Wakefield Allotments. Use is shown in head-months (number of cattle X the number of months grazed) because cattle numbers may vary throughout the grazing season.

	Benson	Coal Mine	Knear	Mescal	Middle Canyon	Wakefield
Total Acres	4,512	2,911	7,255	17,572	6,990	9453
Capable Acres	3,419	2,106	5,486	9,972	3,756	2465
Permitted Use	120 cow/calf	65-75 cow/calf	120 cow/calf	300-800 cow/calf	107 cow/calf	Vacant
Grazing Season	Yearlong	10/1-3/31	Yearlong	11/1-4/30	Yearlong	
Permitted Use: Head Months	1440	390-450	1440	1800-4800	1284	
Authorized Animal Unit Months (AUMs)	1900	515-594	1900	2376-6336	1695	
Recent Actual Use (Head-months)						
Recent Use (HM)						
2000-2001	666	0	1206	2958	509	0
2001-2002	0	0	1098	2931	591	0
2002-2003	1236	0	1099	2384	664	0
2003-2004	280	0	1183	2716	455	0
2004-2005	360	120	502	3136	0	0
2005-2006	600	450	371	3900	191	0

Management Direction

The Coronado Land and Resource Management Plan identifies the following goals for the range, wildlife, soil, water and lands programs on the Forest:

- To restore rangeland to at least moderately high ecological condition (70% to 75% of potential production, fair range condition) with stable soil and a static to upward trend.
- Produce livestock products consistent with other resources and uses.
- Eliminate grazing from areas not capable of supporting livestock without significant detriment to range or other resources.
- Balance permitted grazing use with grazing capacity.
- Provide habitat for wildlife populations consistent with the goals outlined in the Arizona and New Mexico Department of Game and Fish Comprehensive Plans and consistent with other resource values.
- Provide for ecosystem diversity by at least maintaining viable populations of all native and non-native wildlife, fish and plant species through improved habitat management.
- Improve the habitat of and protection for local populations of Threatened and Endangered species to meet the goals of the Endangered Species Act.
- Provide a favorable flow of water in quantity and quality for off-forest users by improving or maintaining all watersheds to a satisfactory or higher level.
- Allow the use of available National Forest lands for appropriate public or private interests consistent with National Forest Policies.

The Whetstone Mountain allotments are located in Forest Plan Management Areas 1, 4 and 7 (Figure 4). Management emphasis for these areas is described below.

Management Area (MA) 1 includes steep, rugged lands that are managed for visual resources and semi-primitive dispersed recreation (Forest Plan p. 47). Slopes are generally in excess of 40% and sites included in this management area are generally considered unsuited for livestock grazing. Although livestock are not physically excluded from these areas, range management standards and guidelines call for no assigned permitted use for livestock. Upper elevation ridges and mountain tops are identified as MA1.

Management Area (MA) 4 comprises a majority of the project area. These lands include a variety of vegetation types on lands with slopes of less than 40%. They are generally considered capable and suitable for livestock grazing. Management emphasis is on a “sustained harvest of livestock forage and fuelwood while maintaining or improving game animal habitat” (Forest Plan p. 62). Lower elevation uplands including most capable acreage are included in this management area.

Management Area (MA) 7b includes lands that have been “identified as supporting flora and fauna associations that are unique enough to require special management practices...includes riparian ecotypes.” Emphasis is placed on managing these areas to benefit unique wildlife or vegetative species while producing livestock forage and fuelwood on a sustained basis (Forest Plan p. 71). Portions of several drainages are

identified within this management area, including Guindani, Cottonwood, French Joe, Bear, Wakefield and Montosa canyons.

Desired Condition

Based on Forest Plan guidance and site-specific knowledge of the allotments, the following objectives constitute the desired condition for the analysis area. Monitoring methods to be used to determine achievement of each objective are also identified.

- Livestock stocking is consistent with annual forage production and use is monitored annually. Management controls livestock use and distribution so that sufficient herbaceous vegetation is retained to protect soils and provide herbaceous wildlife cover; zones of heavy use are minimized. Management plans provide sufficient flexibility to allow management to adapt to changing resource conditions. Achievement will be monitored through implementation monitoring described under the proposed action.
- Areas of historic heavy livestock use have increasing ground cover and litter and stable soils. Achievement will be monitored through implementation and effectiveness monitoring described under the proposed action.
- Ecological sites within the four allotments have stable soils, functional hydrology and support functional biotic communities. All areas are at or moving toward their ecological potential. Lower elevation sites are dominated by warm season perennial grasses and are increasing in diversity of grasses, forbs and shrubs. Achievement will be monitored through effectiveness monitoring described under the proposed action.
- Native vegetation in riparian bottoms is a diverse mix of perennial grasses, forbs, shrubs and trees. Recruitment of young trees is occurring and trees and shrubs show no evidence of high-lining or hedging. Riparian bottoms throughout the allotments provide suitable year-round habitat for species dependent on herbaceous cover. Achievement will be monitored through implementation and effectiveness monitoring described under the proposed action and monitoring at established riparian monitoring transects.
- Occupied habitats for threatened, endangered, sensitive and management indicator species are maintained or improved and recovery objectives are being met. Achievement will be monitored through surveys and occurrence records, implementation and effectiveness monitoring.
- All grazing improvements on all allotments are in proper working order and are contributing toward improved livestock distribution and pasture reliability. Achievement will be monitored through implementation monitoring and facility inspections.

Proposed Action

The Sierra Vista Ranger District proposes to continue to authorize managed grazing on the Whetstone Mountain allotments. Grazing would be authorized using an adaptive management strategy. Light to moderate grazing intensities and regular growing season

rest or deferment will be used to provide for grazed plant recovery, increased plant vigor and retention of sufficient vegetation to protect soils and to provide herbaceous cover for wildlife. Existing structural range improvements would be maintained and selected new improvements would be built to the degree necessary to maintain or achieve management objectives. The proposed action is described in detail as *Alternative 2* in Chapter 2.

Decision Framework

The Sierra Vista District Ranger is the official responsible for decisions regarding management of the Whetstone Mountain allotments. Based on the results of the NEPA analysis, the Ranger will issue a decision document or documents that include(s) a determination of the significance of the environmental effects and whether an environmental impact statement will be prepared. The decision(s) will also include a determination of consistency with the Forest Plan, National Forest Management Act, National Environmental Policy Act and applicable laws, regulations and executive orders.

If the District Ranger determines it is not necessary to prepare an environmental impact statement, the Ranger will decide whether or not livestock grazing will continue to be authorized. If grazing continues to be authorized, the Ranger would determine which management actions, mitigation measures and monitoring requirements would be prescribed, including permitted number of animals, season of use and allowable utilization standards. Decisions may be made separately for each allotment. That is, the District Ranger may decide to authorize grazing on one or more allotments, and not on others, or may select different alternatives for each allotment.

Public Involvement

The proposal has been listed since January 2006 on the Forest's Schedule of Proposed Actions. In January 2006, a Forest interdisciplinary team met to develop proposed actions and to identify preliminary issues, concerns and measures to carry forward into the analysis. The proposal was provided to the public and other agencies for comment during scoping in June 2006 (PR 25). Four comments were received during scoping. Using comments received during scoping (PR 26-29) the Forest refined the list of issues and concerns to address.

In May 2008, a draft of the EA (PR 54, 55) was provided to parties who had expressed interest in the project. The public was also notified of the opportunity to comment through a legal notice published in the *Sierra Vista Herald* on May 9, 2008 (PR 56). Five comment letters were received in response to this solicitation (PRs 57-61). A summary of these comments and a Forest Service response is contained in the project record at PR 63.

Issues

The Forest Service categorized and sorted public scoping comments into issues and non-issues. Issues are defined as a concern or debate about the effects of the proposal. Issues were further categorized as key issues (significant issues used to develop alternatives to the proposed action and other issues (concerns that are addressed through mitigation measures or project design). The effects analysis in Chapter 3 is built around the identified issues and concerns. Comments not considered issues to analyze in this EA

were identified as those that were: 1) outside the scope of the proposed action and thus irrelevant to the decision being made; 2) already decided by law, regulation, Forest Plan, or other higher level decision; 3) conjectural and not supported by scientific or factual evidence³. An analysis of the issues and scoping responses is included in the project record as PR 30.

Key Issues

No issues were identified that could not be addressed through mitigation or project design modifications. Therefore, no additional alternatives were developed.

Other Issues

The following issues were used to define the scope of the analysis. Project design features and mitigation measures have been developed to address these other issues.

Wildlife – Continued grazing in the project area could modify the structure and composition of plant communities that provide habitat through selective removal of forage, disturbance during critical periods, and changes in the availability of water. Effects can be both positive and negative, depending on the timing, intensity, frequency and duration of grazing.

Soil, watershed and riparian condition – Continued grazing in the project area could affect soil condition, hydrological function and riparian areas. Management of water resources and watersheds on the Forest could influence hydrological function and water quality and quantity in the vicinity of Kartchner Caverns State Park. Effects can be both positive and negative, depending on the timing, intensity, frequency and duration of grazing.

Upland vegetation – Continued grazing on the allotments could lead to changes in the composition, structure and vigor of upland vegetation and could affect the condition and trend of rangeland resources.

Additional environmental considerations in this EA include potential effects to **air quality, heritage (archeological and historical) resources and economics/social resources**. Effects on these resources are evaluated through specialists’ reports and consultation with tribes, regulatory and other resource agencies. Design criteria have been incorporated into the proposed action to avoid or minimize effects to these resources.

³ The Council on Environmental Quality (CEQ) NEPA regulations require this delineation in Sec. 1501.7, “...identify and eliminate from detailed study the issues which are not significant or which have been covered by prior environmental review (Sec. 1506.3)...”

CHAPTER 2 - ALTERNATIVES, INCLUDING THE PROPOSED ACTION

This chapter describes and compares the alternatives considered for the management of the Whetstone Mountain allotments. This section presents the alternatives in comparative form, in order to define the differences between each alternative and providing a clear basis for choice among options by the decision maker and the public. Mitigation and monitoring measures incorporated into the alternatives are also described.

Alternatives Eliminated From Detailed Study

Continue Current Management

There would be no change in allotment management. As permits expire, new permits would be issued for the classes and numbers of livestock currently permitted. Annual authorized use would continue to be controlled through annual operating instructions. None of the proposed improvements would be implemented, but existing improvements would be maintained. For the purposes of comparison, this alternative assumes management intensity, utilization and distribution patterns similar to the past five years. This alternative was not analyzed in detail because it does not meet the purpose and need to manage resources in a manner that achieves Forest Plan objectives and desired conditions, nor does it formally incorporate adaptive management to allow for sufficient management flexibility.

Alternatives Considered in Detail

Alternative 1: No Action

Under this alternative, grazing would not be authorized and use of the allotments by domestic livestock would be discontinued. Permittees would be given one year from the date of the decision to remove livestock from the allotments. Existing structural improvements would remain in place but would not be maintained. Improvements contributing to resource protection or enhancement, such as water developments important for wildlife, would be maintained where feasible using other program funds. Periodic inspection of structural improvements would be used to determine whether maintenance or removal is needed. Removal or maintenance of improvements would be authorized by a separate decision. Where necessary, maintenance of allotment boundary fences would be reassigned to adjacent permittees with the understanding that livestock are to be kept off of the allotment(s).

Alternative 2: The Proposed Action

The Forest Service proposed action is to authorize continued livestock grazing on the Benson, Coal Mine, Knear, Middle Canyon and Mescal allotments. Grazing would not be authorized on Wakefield allotment and the allotment would remain vacant. For the five allotments where grazing would be authorized, the proposed action consists of four components – **authorization, improvements, management practices and monitoring** – all of which would be implemented using an adaptive management strategy.

1. Authorization

No livestock use would be authorized on the **Wakefield** allotment. If livestock use is contemplated in the future, any authorization would be subject to additional analysis under NEPA.

On the **Benson, Knear, Middle Canyon, Mescal** and **Coal Mine** allotments grazing would be authorized under the following terms and conditions.

- **Duration, timing and frequency of grazing.** Use on the **Benson, Knear** and **Middle Canyon** allotments would be authorized year-round using rotational grazing (Table 2). Grazing management would be designed to insure that pastures receive periodic growing season rest or deferment in order to provide for grazed plant recovery. The sequence and timing of pasture moves will be based on monitoring of range readiness, ecological condition, forage and water availability and utilization. Use on the **Coal Mine** and **Mescal** allotments would occur during the winter dormant season. These allotments will receive summer growing season rest each year. The timing of entry and exit from the allotments and the sequence and timing of pasture moves will be based on monitoring of range readiness, ecological condition, forage and water availability and utilization.
- **Intensity of grazing.** Forage utilization will be managed at a level corresponding to light to moderate intensity (30-45%)⁴ in order to provide for grazed plant recovery, increased plant vigor, and retention of herbaceous litter to protect soils and provide forage and herbaceous cover for wildlife. Consistent patterns of utilization in excess of 45% of key species in key areas would be used as a basis to modify management practices or take administrative actions necessary to reduce utilization in subsequent grazing seasons.

Administrative actions required to implement the proposed action.

Following the NEPA decision to authorize grazing under the terms and conditions identified above, the following administrative actions would occur in order to implement the decision.

- **Permit issuance.** New ten-year term grazing permits would be issued for each allotment in accordance with Forest Service policy (FSM 2231.03) for the numbers and terms displayed below. The term grazing permits will identify the number, kind and class of livestock authorized and the season of use as required by Forest Service policy (FSM 2231.11). Permits will also identify the total animal unit months⁵

⁴ Based on review of numerous grazing intensity studies, Holechek (2004, PR 18) identifies light to moderate grazing as 32-43% average use of primary forage species. These averages are based on pasture-wide utilization averaged over time. The Forest Service monitors utilization based on the use of key forage species in key areas. Key areas are selected to be representative of management effectiveness over the entire pasture. For the purposes of monitoring, an annual use guideline of 30%-45% of key species in key areas will be used to monitor use in all pastures, which, combined with growing season rest or deferment, should insure pasture-wide *average* use of less than 45%. (Holechek et al, 2004)

⁵ An animal unit month (AUM) is a measure of the amount of *forage* required by a 1000 lb cow or its equivalent for one month based on a daily allowance of 26 lbs. of dry forage per day (Society for Range Management 1998, USFS 1997). It is not synonymous with animal month (or head-month), which is an

(AUMs) authorized for each permit. The number and class of livestock and the season of use would be allowed to vary in response to resource conditions and management objectives. Resource conditions that would affect management decisions include but not be limited to precipitation, forage production, water availability and previous annual or seasonal utilization levels. Annual use will not exceed the total AUMs authorized or the season of use identified in the permit. Changes will be documented and authorized annually in the annual operating plans. Grazing permits would be issued within 90 days of final agency action following the NEPA decision to authorize grazing [FSH 2209.13(94) and R3 Supplement 2209.13-2007-1].

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