



United States
Department of
Agriculture

Forest
Service

January 2011



Environmental Assessment

Goat Peak Allotment Management

Verde Ranger District, Prescott National Forest
Yavapai County, Arizona



Cherry Creek, January 2010

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CHAPTER 1 – PURPOSE AND NEED

Background

The District Ranger on the Verde Ranger District is proposing to resume the authorization of livestock grazing on the Goat Peak Allotment under an adaptive management system and to adjust the allotment boundary to facilitate effective management and administration. The Goat Peak Allotment is located on the Verde Ranger District of the Prescott National Forest (PNF) and represents the project area for this environmental analysis. The analysis area encompasses the Cherry Creek/Upper Verde River and the Cienega Creek sub-watersheds which contain the allotment.

The allotment surrounds the community of Cherry, Arizona in the northwestern portion of the District approximately nine miles west of Camp Verde, Arizona (see allotment map in Appendix 1). The allotment is bordered by the Verde allotment on the east, the Cienega allotment on the south, the Bottle allotment on the west and the Jerome allotment on the north. Elevations range from 4900' to 5,890'. The allotment is characterized by rolling hills and intervening draws with both perennial and intermittent portions of Cherry Creek. The vegetation consists of oak and manzanita chaparral with scattered pinyon/juniper woodland, and riparian vegetation in the Cherry Creek riparian corridor.

The original Goat Peak Allotment contains approximately 6,067 acres of National Forest System land in four pastures. The Goat Peak Pasture is approximately 2,729 acres in size; the Cherry Pasture includes 1,986 acres; the Bardshare Pasture 357 acres, and the Logan Pasture 995 acres. The Goat Peak Pasture has been added to the Bottle Allotment under an analysis conducted for the Bottle Allotment and a decision that was issued on November 2, 2010. The proposal being analyzed here for the remaining pastures on the Goat Peak Allotment would result in the Cherry Pasture being closed to livestock grazing and the Logan and Bardshare Pastures to be authorized for grazing and administratively added to the neighboring Cienega allotment with no resultant increase in the number of permitted livestock for that allotment. For the purposes of this analysis, the project area consists of the Logan, Bardshare, and Cherry Pastures encompassing approximately 3,338 acres.

The Goat Peak Allotment has previously been permitted for 96 cattle year-round, however, it has been vacant and in non-use for the last 20 years. Recently recorded rangeland inventory data indicate that resource conditions on the allotment meet Prescott National Forest Land and Resource Management Plan (1986, as amended; Forest Plan) goals and standards.

The Goat Peak Allotment has a history dating back to the turn of the century. Originally, this area was grazed as the Cherry Creek Community Allotment (boundaries unknown), Grazing District No. 5. Early use involved many Cherry community ranchers, a series of increases and reductions, trespasses and transfers before solidifying into the Goat Peak Allotment in 1934 to William J. Godac with 80 cattle year long (CYL), along with the Logan Allotment in 1927 to Hugh Allen, with 26 CYL. The Goat Peak and Logan Allotments (Modern day Goat Peak

Allotment) have been grazed for some years with 20 CYL and 60 CYL respectively for a total of 80 CYL. Actual use records are shown in Appendix 3.

Noxious weed surveys have not been conducted specifically on this allotment; however, no large infestations are known to be present at this time. Treatment of noxious weeds is addressed in the *Final Environmental Impact Statement for Integrated Treatment of Noxious or Invasive Weeds, Coconino, Kaibab, and Prescott National Forests within Coconino, Gila, Mohave and Yavapai Counties, Arizona* and is managed under the PNF's noxious weeds program and will not be further addressed in this proposed action.

The Prescott National Forest designated a system of roads and trails that are open to motor vehicle use in 1989 through Forest Plan Amendment #4. Motor vehicle use off the designated road system by the permit holder to conduct activities associated with administration of the term grazing permit is allowed under the terms and conditions of the permit.

Purpose and Need for Action

The purpose of and need for this proposed action is to authorize livestock grazing on the Logan and Bardshare Pastures of the Goat Peak Allotment in a manner consistent with the Forest Plan while meeting resource management needs and minimizing conflicts along an extensive border with private land and the community of Cherry. Continuation of the livestock grazing authorization, under the proposed action described below, is needed for the Goat Peak Allotment because:

- Where consistent with other multiple use goals and objectives, there is Congressional direction to provide for livestock grazing on suitable lands under the Multiple Use Sustained Yield Act of 1960, the Wilderness Act of 1964, the Forest and Rangeland Renewable Resources Planning Act of 1974, and the Federal Land Policy and Management Act of 1976, as amended.
- It is Forest Service policy to continue to make contributions to economic and social well-being by providing opportunities for economic diversity and by promoting stability for communities that depend on range resources for their livelihood (FSM 2202.1).
- The Goat Peak Allotment is scheduled for an environmental analysis of grazing management practices at this time in order to comply with section 504 of the Emergency Supplemental Appropriations and Rescissions Act of 1995, as amended (the Burns Amendment, P.L. 104-19).
- It is Forest Service policy to make forage available to qualified livestock operators from lands suitable for grazing, consistent with land management plans (FSM 2203.1, 36 CFR 222.2 (c)).
- The lands making up the Goat Peak Allotment are identified as suitable for domestic livestock grazing in the Forest Plan and continued domestic livestock grazing is consistent with the goals, objectives, standards, and guidelines of the Forest Plan.
- There is a need to provide for management flexibility in order to address changing ecosystem conditions, site-specific concerns and desired future conditions as provided by the Forest Plan, as amended.
- There is a need to utilize range structural improvements to facilitate herd management and address resource conditions and concerns.

Forest Plan Direction

The Prescott Forest Plan provides the following guidance, management direction and standards and guidelines for management activities. The proposed action must comply with all Prescott Forest Plan standards and guidelines in order to be considered as a viable management alternative. The following Forest Plan excerpts are mentioned here due to the relevance to this particular project; page numbers within the Forest Plan are listed in parentheses:

All Resources:

- The forest is managed with a primary emphasis on healthy, robust environments with productive soils, clean air and water, and diverse populations of flora and fauna. (pg. 11)
- Cross-country travel by any vehicle is prohibited, with the following exception(s): Approved resource management activities (employees/permittees) (pg. 19).

Range Management:

- rangeland management that can respond to local or national demands for livestock production while maintaining air, soil and water resources at or above minimum local, State or Federal standards (pg. 11);
- range administration that provides for the maintenance of satisfactory rangeland management status with a static or upward apparent trend (pg. 32);
- Identify key ungulate forage monitoring areas. These key areas will normally be one-quarter to 1 mile from water, located on productive soils on level to intermediate slopes, and be readily accessible for grazing. 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 one-quarter mile from water and less than 20 acres. Within key forage monitoring areas, select appropriate key species to monitor average allowable use. (pg. 155, Prescott Forest Plan, as amended, and *Record of Decision for Amendment of Forest Plans*, USFS Southwestern Region, 6/96)
- Manage to bring all grazing allotments to satisfactory management by the end of the first decade (1986-1995). Satisfactory management occurs on allotments where management actions are proceeding according to a schedule (allotment management plan), which leads to fair or better range condition with an upward trend. (pg. 32)
- Manage livestock grazing to achieve soil and water protection objectives. Make use of cost effective range improvements and management techniques. (pg. 32)
- Control livestock grazing through management and/or fencing to allow for and favor adequate establishment of riparian vegetation and elimination of overuse. (pg. 32)
- Implement grazing systems and/or methods that will advance the ecological objectives for riparian dependent resources, and require sufficient recovery rest to meet the physiological needs of the plants and plant associations. (pg. 35)
- Eliminate yearlong grazing in riparian areas. (pg. 35)

- Manage range resources in Management Area 3 – Chaparral, to realize maximum livestock production and utilization of forage allocated for livestock use consistent with maintaining the environment and providing for multiple use of the range. Substantial increases in new structural and nonstructural developments are made to help achieve these objectives. (pg. 58 & pg. 125)

Soils, Watershed and Riparian Areas:

- Protect and improve the soil resource. (pg. 13)
- Restore all lands to satisfactory watershed condition. (pg. 14)
- Give riparian-dependent resources preference over other resources. (pg. 14)
- Improve all riparian areas and maintain in satisfactory condition. (pg. 14)
- Maintain riparian communities by providing water for wildlife and livestock away from sensitive areas. (pg. 31)
- Through the use of best management practices (BMPs), the adverse effect of planned activities will be mitigated and site productivity maintained. (pg. 40)
- Construct adequate exclosures to protect key riparian areas from livestock grazing where rest rotation or time control grazing fails to provide adequate protection to the riparian areas. (pg. 31)

Wildlife, Rare Plant, Fish & Aquatic Species Management:

- All water developments will consider small game and nongame needs and escape devices. (pg. 27)
- All fencing will be to wildlife standards and consider local species' needs. (pg. 27)

The Prescott National Forest Land and Resource Management Plan (PNF LRMP) has the following direction for the predominant Management Areas for this project. Acreages listed below are National Forest System lands within entire Goat Peak Allotment. (PNF GIS).

Woodland (Management Area 2 – approximately 4,942 acres)

In the predominant vegetation types of pinyon/juniper and juniper, the emphasis will be on wildlife management and on improving and maintaining watershed condition. Range management will generally be at the current level, except in the desert shrub-grass vegetation areas where Level E management will be used. Treatments in the 934 acres of managed timber will complement the emphasis on wildlife habitat management and provide firewood from logging slash. The high chaparral lands will receive extensive treatment to improve water yield after the first decade. Dispersed recreation will be managed to maintain environmental quality and reduce conflicts between forest users. Improve all riparian areas and maintain in satisfactory condition. This management area is an emphasis area for interpretation. Interpretation efforts will be focused on high-use roads, trails, sites, and areas.

Chaparral (Management Area 3 – approximately 1,123 acres)

The predominant vegetation is chaparral with interspersed stands of pinyon/juniper and juniper. Generally, the chaparral lands are adjacent to commercial timber lands and other high-value

resource areas. The 2,028 acres of ponderosa pine in this area will be managed as commercial timber. The area has 100 acres of developed recreation (Powell campground). There are 291.4 miles of road, for a road density of 0.6 mile per square mile. There are 201.8 miles of trails. The range resource will generally be managed at the current level throughout the area, but with an emphasis on improving and maintaining watershed condition.

Desired Conditions & Resource Objectives

The desired conditions and resource objectives for resources and infrastructure on this grazing allotment, based on the Forest Plan and the work of the Interdisciplinary Analysis Team, include:

- management of the grazing operations using a system that is responsive to changing climatic or environmental conditions;
- the maintenance of vegetation with mid- to high similarity to the potential natural plant community (PNC) providing for ecological functionality and resiliency following disturbance while sustaining long-term productivity of the land;
- the installation and maintenance of structural improvements, such as water-supply systems, that enhance management control and flexibility and allow for effective distribution of forage use;
- the maintenance of soils in satisfactory condition over the long-term with improving conditions in areas departing from satisfactory condition where livestock grazing is affecting the condition;
- the maintenance of satisfactory conditions for water resources that meet total maximum daily load (TMDL) and other State water quality objectives;
- the maintenance of functioning spring-fed riparian systems, and saturated soils where potential exists, that support vegetation within site potential and provide habitat for riparian-dependent plants and animals while providing water sources for wildlife and livestock needs;
- the maintenance of fully functional riparian systems supported by herbaceous and multi-age woody vegetation, within site potential, that provides for geomorphically stable stream channels and banks and habitat for riparian-dependent plants and animals. Functional riparian systems support water quality and both hydrogeomorphic and biological attributes and processes;
- protection and preservation of important historic and cultural sites; and
- the maintenance of suitable habitats for Management Indicator Species, Migratory Bird Treaty Act species, federally Threatened and Endangered species, Forest Service Sensitive species, and for indigenous plant and animal species.

Public Involvement

The proposal was listed in the Schedule of Proposed Actions since April 2010. The proposed action was provided to the public and other agencies for comment during scoping that began on May 27, 2010.

Three responses were received during the scoping period for this project, and no issues were raised that caused the project proposal to be modified.

The preliminary Environmental Assessment (EA) that included Chapters 1 and 2 and a table summarizing the effects of the alternatives on various resources was sent to those that commented during scoping on November 15, 2010. The legal notice for the 30-day comment period on the EA was published in the Prescott Daily Courier on November 17, 2010. There were no comments received during the 30-day comment period.

Issues

The purpose of scoping is to provide an opportunity for the public to share concerns or issues they may have regarding an action being proposed by the Forest Service. Issues are defined as concerns about the effects of a proposed action that are not addressed by the project design or alternatives to the proposed action. The subject of an issue must be within the scope of the proposed action and relevant to the decision to be made, not already decided by law, regulation or higher-level decisions, and must be supported by scientific or factual evidence. Concerns or issues that meet these criteria may be determined to be key or significant issues and may drive the development of alternative actions for analysis if they have not been resolved or addressed in an alternative already.

None of the responses received during scoping or the 30-day comment period have raised concerns that will not be addressed through implementation of the proposed action within the framework of the direction, standards and guidelines of the Prescott Forest Plan. The Interdisciplinary Team and Responsible Official have determined that none of the responses from scoping contain concerns that represent key or significant issues that would necessitate the development of additional alternatives.

Decision Framework

The Verde District Ranger is the Responsible Official for this project. The decision to be made is whether or not to authorize livestock grazing on the Goat Peak Allotment and if so, in what manner; whether to administratively adjust the allotment boundary; and whether to authorize the construction of new improvements.

Future Review of the Decision

Adaptive management, as described in this document, is based on the cycle of implementation of a course of action, monitoring of conditions and results, and adjustment of management as needed to continue to steer a stated course. Monitoring of adaptive management is designed to answer the question “Is acceptable progress being made towards attainment of resource management objectives and thus desired conditions?” Changes in management actions are considered and implemented as appropriate when monitoring indicates that current actions are not being effective in reaching defined objectives. Through the implementation of a NEPA decision that includes adaptive management principles and which identifies an array of possible management practices, the grazing permit, AMP and/or AOI may be administratively modified or re-issued over time, based on monitoring, as long as the modified permit, AMP and/or AOI

are within the bounds of the original adaptive management decision and supporting NEPA analysis and documentation. (FSH 2209.13, Section 92.23b)

A project-level, NEPA-based decision, such as the decision to be made based upon this analysis, remains valid as long as the authorized activity complies with laws, regulations and the Forest Plan, and is within the scope of the decision. Reviews of existing project-level decisions must be conducted on an interval of at least 3-5 years to determine if the grazing activity, permit(s), AMP and AOIs are consistent and within the bounds of the existing NEPA documentation, if that analysis and documentation continue to remain valid, or if new information exists that requires some further analysis and potential modification of the activity. If the responsible official determines that correction, supplementation, or revision is not necessary, implementation of existing decisions shall continue. The findings of the review shall be documented in the program or project file. (FSH 1909.15, Section 18 and FSH 2209.13, Sec. 96)

CHAPTER 2 - ALTERNATIVES, INCLUDING THE PROPOSED ACTION

This chapter describes and compares the alternatives considered for the Goat Peak Allotment Management project. This section also presents the alternatives in comparative form, defining the differences between each alternative and providing a clear basis for choice among options by the decision maker and the public.

Alternatives

Alternative 1

The Proposed Action

The following Proposed Action has been developed to meet the project's purpose and need for action. The Proposed Action consists of six components: Adaptive Management; Grazing Capacity; Resource Protection Measures; Authorization; Structural Range Improvements; and Monitoring. The Proposed Action follows current guidance from Forest Service Handbook 2209.13, Chapter 90 (Grazing Permit Administration; Rangeland Management Decision-making). The map in Appendix 1 shows the project area and location of range improvements.

Adaptive Management

The Proposed Action includes the application of adaptive management principles. Adaptive management is designed to provide sufficient flexibility to allow management to address changes in climatic conditions, seasonal fluctuations in forage production, and other dynamic influences on the ecosystem in order to effectively make progress toward or maintain desired conditions of the rangeland and other resources. Adaptive management will also include the implementation of resource protection measures.

Under the adaptive management approach, regular/annual monitoring of short-term indicators may suggest the need for administrative changes in livestock management. The need for adaptation would be based on the magnitude or repeated re-occurrence of deviations from guidelines provided, or due to indications of a lack of progress toward desired resource conditions. The timing of such management changes would reflect the urgency of the need for adaptation. Annual Operating Instructions and the Allotment Management Plan may be modified as appropriate to adapt management within the parameters of this proposed action.

If monitoring indicates that progress toward desired conditions is not being maintained or achieved on the allotment, management will be modified in cooperation with the permittee. Modifications may include adjustments in timing, intensity, and/or duration of grazing. Timing is the time of year the livestock are present in a pasture. Intensity is the degree to which forage is removed through grazing and trampling by livestock. Duration is the length of time livestock are present in a given pasture.

These modifications would be made through administrative decisions such as: the specific number of head stocked on the allotment annually or in a particular season; the class of animals stocked (cow/calf pairs vs. yearlings, steers or heifers, etc.); specific dates of grazing; livestock herd movement; and/or periods of rest, deferment or non-use of portions or all of the allotment for an appropriate period of time, as conditions warrant.

Future proposals to use other resource management tools such as prescribed fire or mechanical vegetation treatments will be subject to additional project-specific analysis under the National Environmental Policy Act. Adaptation of livestock management may be applied to accommodate use of these vegetation management tools.

Grazing Capacity

An estimated grazing capacity for the affected pastures of the Goat Peak Allotment was devised based upon the relationship between livestock behavior and distance from water, available forage production, and topography (Holechek 1988). Adjustments in livestock numbers are made based upon slope class and distance from water. Any grazing capacity calculation will only provide an estimate for one point in time because the climate and vegetation on any area are dynamic rather than constant. However, if properly determined and interpreted, grazing capacity knowledge is still a critical component in the development of sound range management practices.

Using Geographic Information Systems (GIS), a slope break map and associated acreages were developed for this calculation. Additionally, in this estimate it is assumed that the affected pastures are fully watered (less than 1 mile from water). The forage production value used in these calculations was based on herbaceous and browse forage production listed as the "FORG" value for each TES unit identified in each pasture (Terrestrial Ecosystems Survey of the Prescott National Forest, 2000). Then, an average harvest coefficient of 40% use was assigned. The 40% use value represents a mid-point between the Conservative (30-40%) and the Moderate (40-50%) grazing intensity guidelines. Using this methodology, the calculated grazing capacity ranged from 16 Animal Units¹ in the Bardshare Pasture for 1 month (16 AUMs²), to 40 Animal Units in the Logan pasture for 1.5 months (60 AUMs) or combined forage availability for both pastures in average years of about 76 AUMs. As with any capacity estimate monitoring over time will be necessary to validate these values.

Resource Protection Measures

The proposed action is designed to comply with Forest Plan standards and guidelines, as amended. Resource protection measures will be incorporated into the project as design features to protect forest resources such as soil, water, vegetation, riparian habitats, and wildlife, as well as to maintain or make progress toward desired conditions. Best Management Practices will be implemented to comply with the Clean Water Act.

¹ Animal Unit is considered to be one mature cow of about 1,000 pounds (450 kg), either dry or with calf up to six months of age, or their equivalent, consuming about 26 pounds (12 kg) of forage on an oven-dry basis (SRM 1998).

² Animal Unit Month is the amount of oven-dry forage required (forage demand) by one animal unit for a standardized period of 30 animal-unit-days.

Allotment-wide Measures: Livestock will be managed with the objective of maintaining or improving the condition of rangeland resources through the use of grazing intensity guidelines. Holechek and Galt (2000³, 2004⁴) provide a comprehensive review of studies related to residual leaf lengths on southwestern forage species and growth forms as indicators of grazing intensity. They concluded that grazing at moderate or conservative intensities will generally result in maintaining or improving rangeland conditions over time.

Stubble height guidelines for riparian herbaceous species are used as a short-term indicator of whether grazing effects are resulting in meeting or moving towards long-term riparian management objectives. The proposed stubble heights should be considered a starting point for maintaining riparian conditions which are currently assessed as satisfactory. Clary and Leininger (2000⁵) concluded that stubble heights ranging from 7 cm. to 20 cm. (3" – 8") may provide for adequate riparian system function depending on the type of site. The stubble height guidelines listed here may be adjusted to allow for attainment of the riparian management objectives described for this project.

Grazing intensity guidelines will be applied across the allotment to allow rangeland managers to adapt management through adjustments, as may be needed, on an annual basis. Examples of appropriate grazing intensity and forage use guidelines for areas of the allotment that are generally described to be in satisfactory condition include:

1. Conservative grazing intensity (30-40% use) on key herbaceous species during the spring and summer growing periods (typically April 1 to September 30);
2. Moderate grazing intensity (40-50% use) on key herbaceous species during the dormant season;
3. Moderate grazing intensity (50-60% leaders browsed) on key upland woody species;
4. Four to Eight-inch minimum stubble height on key riparian herbaceous species;
5. Up to 20% use on key woody species within riparian areas.

Grazing intensity will be determined using key herbaceous and browse species within key areas. Guidelines would be adjusted if periodic monitoring indicates that resource conditions are not being maintained or are not moving toward desired conditions.

Site-specific Measure:

Through the allotment analysis process undertaken by the interdisciplinary analysis team, a need to maintain existing riparian vegetation along Cherry Creek in order to minimize any possible sediment production in the Cherry Creek/Upper Verde watershed has been identified. In order to accomplish this objective, a site-specific resource protection measure, consisting of a fence excluding the Cherry Creek riparian area from the Logan Pasture, will be implemented.

³ Holechek, J.L. and D. Galt. 2000. Grazing Intensity Guidelines. *Rangelands* 22 (3):11-14.

⁴ Holechek, J. and D. Galt. 2004. More on Stubble Height Guidelines. *Rangelands* 26 (4):3-7.

⁵ Clary, W.P. and W.C. Leininger. 2000. Stubble Height as a Tool for Management of Riparian Areas. *J. Range Manage.*

53:562-573.

Additional optional measures, such as water system improvements at springs, may be constructed as needed. These optional measures would be designed to address site-specific resource concerns. Other optional measures may include, but are not limited to, such things as temporary fencing, electric fencing, drift fences, livestock enclosures, and temporary pipelines and water troughs.

Authorization

The Verde District Ranger proposes to authorize livestock grazing on the Goat Peak Allotment under the following terms:

- The boundary of the Goat Peak Allotment will be administratively adjusted to close the Cherry Pasture to livestock grazing, while retaining the Bardshare and Logan Pastures. The fence between the two pastures may be removed at some point in the future if it would improve livestock management.
- Cherry Creek will be excluded from the northern edge of the Logan Pasture.
- The Logan and Bardshare Pastures will be added to the Cienega Allotment.
- There will be no change in permitted livestock numbers on the Cienega Allotment.
- Livestock will be managed under a rotational grazing system.

Structural Range Improvements

Construction of New Range Improvements: The proposed action includes construction of the following structural improvements (see attached maps for locations of improvements):

1. Redevelop spring improvements at Bardshare and Hance Springs. This may include spring boxes, pipeline, troughs, and fencing of the spring source. Enclosure fencing will be designed and constructed to protect important riparian vegetation while still providing for livestock watering.
2. Install approximately .75 miles of new allotment boundary fence, running east-west along the south side of Cherry Creek on the northern boundary of the Logan Pasture. This fence will be in 2 segments, .75 miles long and 30 feet long, and tying in to a natural barrier.

Maintenance of Range Improvements: The Term Grazing Permit includes a list of all improvements which the permittee will continue to maintain at a level that effectively provides for their intended uses and purposes. Range improvements will be inspected periodically during the term of the permit to document condition. Annual Operating Instructions (AOIs) will identify range improvements in need of maintenance. Existing improvements may be replaced when their conditions warrant.

Access to Improvements: All authorizations for cross-country motorized travel are subject to existing regulations intended to protect natural and/or heritage resources. Cross-country travel is not allowed when such travel would cause unacceptable resource damage.

No need for deviation from existing access needs for motorized use is anticipated on the Goat Peak Allotment. Authorization is provided for the permittee to administer the livestock operation and maintain improvements under the Term Grazing Permit.

Annual authorization for actions implementing management direction in the Allotment Management Plan will be included in the Annual Operating Instructions, such as a description of the anticipated level of cross-county travel, travel needed for improvement maintenance, new improvement construction or reconstruction of existing improvements.

Monitoring

Three types of monitoring will be used – implementation monitoring, periodic monitoring of short-term indicators of resource conditions, and effectiveness monitoring.

Implementation Monitoring: This monitoring will be conducted on an annual basis and will include such things as livestock actual use (# of head, # of months) and scheduled and unscheduled inspections to ensure that all livestock and grazing management measures stipulated in permits, AMPs and AOIs are being implemented (*e.g.* cattle numbers, on/off dates, rotation schedules, maintenance of improvements, resource protection measures).

Periodic Monitoring of Short-term Indicators of Resource Conditions: Short-term indicators of resource conditions such as forage utilization, residual forage, species composition, plant cover, frequency or density, and/or vegetative ground cover will be monitored on the allotment at key areas and at areas identified with site-specific resource concerns. Methods will include generally accepted monitoring protocols.

The purpose of periodic monitoring of short-term indicators is to determine:

1. If individual plants have had an opportunity to recover, grow and reproduce following grazing impacts;
2. If sufficient residual forage remains at the end of the growing season to provide for other resource values or requirements such as soil productivity, wildlife habitat, and dormant season use;
3. If maintenance or improvement of rangeland conditions are indicated;
4. If management adjustments are warranted for the following season to provide for the physiological needs of primary forage species and other resources identified as concerns;
5. If soils and riparian areas are maintaining or moving toward desired conditions;
6. If critical areas are moving toward desired conditions.

Meeting guidelines established for short-term indicators is not a management objective; rather, guidelines are one of the indicators or tools managers use to guide management. These point-in-time monitoring measurements provide information about current resource conditions and apparent trend. When and where resource condition-indicators on an allotment are obviously better than those called for under management guidelines, actual measurements may or may not be recorded every year for all key areas; however, at a minimum, observed general forage conditions at the end of each growing season will be documented in the allotment file by rangeland managers. Grazing intensity guidelines may be revised upward or downward as conditions warrant and as monitoring indicates the status of progress toward desired conditions.

Effectiveness Monitoring: Monitoring, according to a Monitoring Plan to be established in the Allotment Management Plan, to evaluate the success of management in achieving the desired objectives will occur within key and critical areas or on permanent transects at an interval of 10 years or less. Initial baseline information will be collected on this allotment. Effectiveness monitoring may also occur if data and observations from monitoring of short-term indicators suggest a need for additional information.

Both qualitative and quantitative monitoring methods will be used in accordance with the Interagency Technical Reference, Region 3 Rangeland Analysis and Management Training Guide and the Region 3 Allotment Analysis Handbook.

Alternative 2

No Action/No Grazing

Alternative 2 is the No Action Alternative required by regulations implementing the National Environmental Policy Act found at 40 CFR 1502.14(d) and by FSH 2209.13 Chapter 90. Under Alternative 2, livestock grazing on the Goat Peak Allotment would continue to not be authorized and a Term Grazing permit would not be issued (FSM 2231.62d/FSH 2209.13-16.24).

Authorization

Livestock grazing would not be authorized.

New Range Improvements

Under this alternative, no new range improvements would be constructed on the allotment.

Maintenance of Existing Range Improvements

Maintenance of range improvements normally assigned to the permit holder would no longer occur.

Cancellation of the Grazing Permit

If there were a current Term Grazing permit, it would be cancelled when this alternative is implemented. Existing structural improvements that contribute to resource protection or that are important to other resources and functions, such as water sources for wildlife populations or fire control, would remain but will not be maintained unless this activity is picked up and funded under another resource area on the Prescott NF, or by a cooperating partner. Removal of improvements losing their functionality would have to be authorized under a future NEPA decision if new ground disturbance is anticipated. Where allotment boundary fences are necessary, the maintenance of these fences may be reassigned to adjacent grazing permit holders in order to maintain the integrity of the boundaries of adjacent allotments.

Implementation of a no grazing decision on this allotment does not represent an official administrative closing of the allotment; rather it would represent the suspension of grazing on this allotment for an undetermined amount of time, until or unless a different decision is made. This alternative could be selected by the responsible official in situations of

compelling resource concerns where higher resource values may be at risk and conflict directly with livestock grazing management.

Comparison of Alternatives and Effects

Goat Peak Allotment	Alternative 1 Proposed Action	Alternative 2 No Action/ No Grazing
Authorization (AUMs, Season of Use & Term)	Bardshare and Logan Pastures may be used at any time during the year with an estimated grazing capacity of approximately 76 AUMs. The period of use would likely range from 30-60 days per year depending on whether one or both pastures are used. Pastures will be used as part of the neighboring Cienega Allotment to provide management flexibility for that allotment without an increase in permitted livestock number.	N/A
Grazing Intensity	Conservative to Moderate	N/A
New Improvements	Redevelop Bardshare and Hance Springs; construct 0.75 miles of new allotment boundary fence that will exclude Cherry Creek from grazing.	None
Maintenance of Improvements	Maintenance assigned to the Cienega Allotment permittee during term of permit	Maintenance of range improvements discontinued
Monitoring	Monitoring of implementation and effectiveness of Adaptive Management during term of permit	Monitoring of livestock use and effects discontinued
Range Effects	Enhanced management flexibility with adaptive management; improved livestock distribution due to redevelopment of two springs and fence construction	Livestock use discontinued

Goat Peak Allotment	Alternative 1 Proposed Action	Alternative 2 No Action/ No Grazing
<p>Watershed/Soil Effects</p>	<p>Soils are meeting desired condition and therefore no site specific resource protection measures were identified for soil improvement. Minor effects to soils and water lessened through enhanced management flexibility due to improved water distribution and through the application of Resource Protection Measures and Best Management Practices.</p>	<p>Soil and watershed/riparian conditions maintained. No short term effects from construction of range improvements.</p>
<p>Wildlife/Plant Effects</p>	<p>Enhanced riparian protection of Cherry Creek beneficial for wildlife; some impacts possible on ground-nesting birds by trampling only in the Logan and Bardshare Pastures.</p> <p>No impacts on MIS habitat seral stages or trend of MIS species forest-wide.</p> <p>Effects to FS sensitive and migratory bird species may impact individuals but do not create a trend toward federal listing. Maintaining riparian habitat quality would maintain foraging and roosting habitat quality for bats and foraging habitat for peregrines.</p> <p>Meets desired conditions for plant and animal species and their habitats.</p>	<p>Impacts to Forest Service sensitive species, Management Indicator Species and migratory birds from the presence of livestock will not occur.</p>
<p>Aquatic Species Effects</p>	<p>With no livestock grazing along Cherry Creek, there would be no impacts to FS sensitive amphibians. Potential impacts to individuals and short-term impacts to their habitat at spring sites in the Logan and Bardshare Pastures; impacts would not create a trend towards federal</p>	<p>With no livestock grazing on the allotment, there would be no impacts to FS sensitive amphibians.</p>

Goat Peak Allotment	Alternative 1 Proposed Action	Alternative 2 No Action/ No Grazing
	listing.	
Archaeological Effects	No adverse effects on heritage resources	No effects on heritage resources
Recreational Effects	No adverse effects on recreation, Inventoried Roadless Areas or Wild & Scenic River resources	Same as Alternative 1
Compliance w/ Forest Plan and Federal Regulations 36 CFR 222.2 [c]	Yes	No, does not comply with direction to manage forage-producing lands for livestock grazing

CHAPTER 3 – EXISTING ENVIRONMENT AND ENVIRONMENTAL EFFECTS

The section is organized by resource. Within each section, the affected environment is briefly described, followed by the environmental consequences (effects) of implementing each alternative. The direct and indirect effects to a particular resource are disclosed, as well as the cumulative effects that would result by implementing the alternative in addition to the past, present, and reasonably foreseeable future actions that are affecting the defined area (usually a watershed) that contains the project area. A more detailed discussion of the effects to each resource is found in the complete specialist reports located in the Project Record.

Cumulative Effects Area

In this analysis, watersheds are used as the basis to evaluate the cumulative effects of projects on the various resources. The cumulative effects analysis area for the Goat Peak Livestock Grazing Project is the 5th Level HUC watershed Cherry Creek – Upper Verde River. Although there is a very small acreage within the 5th level Ash Creek and Sycamore Creek HUC it was analyzed and determined that quantitative tables of activities were not necessary because:

- It constitutes only 0.14 % (fourteen hundredths of one percent) of the 5th level HUC
- It contains no riparian areas
- There is no downstream water quality impairment identified in the Arizona Department of Environmental Quality (ADEQ) assessment
- Cumulative effects analysis for the adjacent Bottle Allotment (Prescott NF 2010) with a major portion of its area within this same 5th level HUC (it made up 9 % of the HUC) found no significant effects and is hereby incorporated by reference

The following table summarizes the past, present and future activities within the Cherry Creek and Upper Verde sub-basins that have been considered in the cumulative effects analysis. The Prescott National Forest administers 52% of the lands within the Cherry Creek and Upper Verde 5th level watersheds.

Past, Present and Future Activities Table for the Goat Peak Allotment – Cherry Creek/Upper Verde River Watersheds

Type of Activity	Past Activities/Events	Present Activities	Future Activities
Wildfire Suppression	Historic activity throughout the watersheds. Approximately 537 acres from 2003 to 2009.	On-going 2009 Woodchute Fire – 163 acres	On-going suppression of fires in the wildland/urban interface areas and for human-caused

Type of Activity	Past Activities/Events	Present Activities	Future Activities
			ignitions
Vegetation Treatment including Timber Harvest, Fuelwood, Watershed and Wildlife Habitat Improvement	Various treatments from 1987 to 2006 consisting of 2307 acres within the watersheds	None currently	Black Hills Project – 2700 acre
Fire and Fuel Projects including RX Burns	Primarily RX Burn from 2003 to 2009 – 4536 acres	2010 Cherry RX Burn- 1000 acres	Black Hills Rx Burn – 22,903 acres Black Hills Biomass project – 18,037 acres
Livestock Grazing	Past livestock management of allotments on NFS lands; livestock grazing on lands of other ownerships.	Stocking levels reflect forage and range conditions w/ associated structural range improvements	Same
Water Supply Improvements	Spring boxes and collector pipelines; irrigation diversions, ditches and returns; municipal, domestic, and irrigation wells with associated distribution systems.	Continuing	Reconstruction of existing spring developments on FS; additional wells on private land
Recreational Activities & Fuelwood Cutting	Camping in developed campgrounds, dispersed camping, hiking, trailheads, OHV activity, snow-play and day-use areas, hunting, and sightseeing.	Implementation of the Motor Vehicle Use Map	Same

Type of Activity	Past Activities/Events	Present Activities	Future Activities
Roads, Utility ROWs, Land Development and Land Exchanges	670 miles of levels 1 to 5 roads across all ownerships. Road maintenance. Utility ROW maintenance, communications special uses, gravel pits, private land fencing and access through NF.	Same	Same, plus unknown new roads possible as interior private lands are developed.
Mining	50 mines (on all included land ownerships)	22 active mines	30 mines

Vegetation

Two primary vegetation ecotypes are prevalent on the Goat Peak Allotment. The allotment is mostly comprised of chaparral (86%), and pinyon-juniper (PJ) (11%). There is a small amount of mixed conifer (less than 1%), riparian (less than 1%) and ponderosa pine (2%). The mixed conifer and ponderosa pine are found entirely within the Goat Peak Pasture that has been added to the Bottle Allotment and will not be considered in this analysis. A map showing the ecotypes present on the Goat Peak Allotment is found in Appendix 2.

Within the Logan and Bardshare pastures, the top of DeKuhn Mesa supports a juniper woodland/grassland that has experienced an increase in juniper density over the last several decades. Grass species consist of sideoats grama, blue grama, curly-mesquite and three-awn. Around the sides of the DeKuhn Mesa supports a woodland type; grass species consists of sideoats and blue grama and curly-mesquite. The overstory is juniper, turbinella oak, skunkbrush, desert ceanothus, and holly leaf buckhorn. Undesirable species such as snakeweed and prickly pear cactus are common as well. The remaining portions of the Logan pasture as well as the Bardshare pasture are comprised of mostly chaparral vegetation. Common chaparral species consists of turbinella oak, skunkbush, Wright's silktassel, holly leaf buckhorn, desert ceanothus, mountain mahogany and manzanita.

Field sampling was conducted by the Interdisciplinary Core Team (ID Team) consisting of a range conservationist, soil scientist, hydrologist, and ecologist. The sampling provided information that allowed for comparison between the currently existing vegetation/plant community and the potential natural community (PNC), as defined by the Terrestrial Ecosystem Survey (TES) of the Prescott National Forest (2000). This comparison provides an approximation of the ecological status for each area or map unit sampled. Ecological status was then described in terms of the sampled unit's similarity to the PNC, i.e., as having either high, mid- or low similarity to PNC. The ID Team identified a representative TES mapping unit where livestock grazing would have measurable influence in the Logan and

Bardshare Pastures is Map Unit 476. When sampled in January 2010, the tree life form in Map Unit 476 showed high similarity with PNC, having 12% canopy cover of Emory oak, while the shrub life form showed mid-similarity with PNC, having 70% canopy cover of turbinella oak and manzanita. The combined ecological status for all life forms was considered to have high similarity with the Potential Natural Community as shown by TES. This information, coupled with the observation of a static apparent trend, means that the existing condition of the vegetation is meeting the desired condition for the vegetation resource that was established for this project.

Effects of the Proposed Action

In general, light to moderate grazing intensities provide opportunity for increased average annual forage production in wet or dry years and upward trend in range condition, as compared to heavier grazing intensities. Grazing, when it resumes in the project area, will be managed using a deferred rotational system with proposed structural range improvements designed to improve livestock distribution. Deferred rotation allows key forage species the opportunity to store carbohydrates and set seed during periods of seasonal rest. Periodic rest provides additional opportunity for improved plant vigor and enhanced reproductive capability on key forage species.

Prescribed grazing intensity guidelines will be applied to maintain desired conditions of the vegetation as measured by ecological status, thereby meeting the resource management objectives. Pasture key areas would receive appropriate forage and browse utilization guidelines. It is important to note, however, that apparent trend (trend) in key areas can be independent of livestock grazing influence. Trend can fluctuate based upon local climatic events such as drought. Given that this proposal is adaptive in nature, whereby stocking rate and periods of rest are dictated by actual observed vegetative conditions, the probability of the grazing prescriptions and guidelines described in this alternative to successfully meet the resource objectives described for this project is high. In the Cherry pasture soil and vegetative conditions would remain satisfactory because livestock grazing would not occur as has been the case for the past 20 years.

The effects of the proposed range improvements (waters and fences) will improve livestock distribution in the Logan and Bardshare Pastures. Distribution across the allotment will be more uniform, and redistribute grazing pressure and increase management flexibility. Improved livestock distribution may lessen the effects of grazing on traditional congregation sites preferred by livestock, and make more of the total forage base within a pasture available. Providing for better distribution in a pasture would increase the number of plants subjected to grazing, but by distributing conservative use across an entire pasture, there is more available forage and possibly longer use periods within a pasture that are sustainable. Additional upland waters are also important because Cherry Creek will not be available as a livestock water source since the resource protection measure of building the riparian fence is required upon implementation of the project.

Effects of No Grazing

Only incidental wildlife grazing would occur at sporadic light intensities. Desirable forage plant density and plant residue would increase, plant species composition would remain the same, and vigor of forage plants would be healthy. Apparent trend (trend) in key areas can be independent of any grazing influence. Trend may fluctuate based upon local climatic events but based upon average and above average rainfall patterns the trend is expected to remain static or slightly upwards in concert the incidental grazing. In the Cherry pasture soil and vegetative conditions would remain satisfactory. Vegetative ground cover and organic matter would be retained on site for soil function maintenance and protection.

Cumulative Effects

Activities that can affect vegetation include prescribed burning, brush or tree thinning, recreational vehicle use (motorized and non-motorized), firewood cutting, powerline maintenance, road and trail maintenance, urban development, mining and wildlife use. These activities can reduce vegetation height and ground cover, expose soil and indirectly lead to increased sedimentation from the watershed. These actions would result in short term vegetation and soil disturbance which is either over a small, localized area as in the case of road or trail maintenance, or the effects of the action will be of short duration (one growing season) but are expected to contribute to plant community health over the long term by restoring a more natural vegetative mosaic with increased herbaceous cover in treated areas, as is the case with prescribed burning and brush thinning.

All of these activities on public lands have had some level of environmental analysis. When projects are implemented there are site-specific Best Management Practices (BMPs), mitigation measures and project design features that are in place so that there should be no cumulative significant impacts to the environment due to the actions of the various projects.

The impacts created through livestock grazing, improvement construction and the adaptive management described for the action alternative, when added to the other past, present and future activities listed in the table at the beginning of Chapter 3, do not together accumulate to levels that are expected to lead to irreversible effects to vegetation that would affect long-term productivity or sustainability of the vegetation resource.

Water and Riparian Resources

The condition of a watershed is based upon the conditions of upland areas and of the stream-courses or riparian areas within the watershed. The watershed condition of the uplands within the Goat Peak Allotment is satisfactory based on stability, hydrologic, and nutrient cycling function as described under soils.

The Goat Peak Allotment is primarily within the Cherry Creek Watershed which is tributary to the Verde River. Approximately 233 acres drain to Cienega Creek, a tributary of Ash Creek, which then drains to the Agua Fria River.

Cherry Creek is the primary drainage in the project area. Downstream from the allotment there are approximately 7 miles of intermittent, and primarily ephemeral, channel before reaching the Verde River. Surface flow to the Verde River occurs only in response to storms and surface runoff. There are approximately 0.4 miles of Cherry Creek within the Logan Pasture and 1.9 miles within the Cherry Pasture with an intervening 0.8 miles on private land with rural residential development. Because the Proposed Action would not authorize grazing in the Cherry Pasture, this segment of Cherry Creek was not assessed for existing condition.

Riparian condition was assessed using the Proper Functioning Condition methodology (USDI 1998), with supplemental information documented on the Prescott National Forest Riparian Field Worksheet. This supplemental evaluation provided separate descriptions of both hydrogeomorphic function and riparian vegetation.

In the Logan Pasture both the 0.4 mile reach of Cherry Creek and a 0.25 mile riparian reach in the draw below Hance Spring were assessed in the field by the interdisciplinary team and both assessed at Proper Functioning Condition. Cottonwood and willow constitute the primary woody riparian species. In the steeper gradient drainage below Hance Spring deergrass is effective in streambank protection and stability.

Two springs with historic development for livestock water are present within the pastures assessed – Hance Spring within the Logan Pasture and Bardshare Spring within the Bardshare Pasture. Both have associated riparian vegetation in the downstream channel and in both cases the collection and delivery system to livestock drinking facilities is not currently functional. There are mapped springs within the Cherry Pasture and records indicate that several have previously had collection and delivery systems for livestock water; however they were not assessed in the field as the Proposed Action would not include grazing in this pasture.

In addition to riparian condition, water quality is another indicator of the health of a system that is addressed by the federal Clean Water Act (CWA). The CWA requires the Arizona Department of Environmental Quality (ADEQ) to conduct a comprehensive analysis of surface water quality every two years to determine if water quality standards are being met and designated uses are being supported. If designated uses are not being attained and are found to be impaired, a determination of the pollutant(s) causing the impairment and their sources is made. If the source(s) of pollution are not solely natural, a Total Maximum Daily Load (TMDL) for the pollutant(s) may be assigned to the impaired reach.

The Verde River from above Sycamore Canyon (above the project area) to Fossil Creek (below the project area) was listed as impaired water based on samples collected from 1991 to 1995. The pollutants found were turbidity and suspended sediment. The ADEQ TMDL report (Bowman 2001) recommended the use of Best Management Practices and certain non-structural projects, such as prescribed fire and grassland restoration treatments, aimed at reducing wildfire danger and improving vegetative ground cover that will assist with reducing excessive storm runoff and soil erosion. The turbidity impairment appeared to be directly correlated to large storm events, and no reduction in suspended sediment load was found to be necessary during base flow conditions. Sampling on the Verde River between

Sycamore Creek and Beaver Creek in 2000-2004 found an overall assessment of attaining water quality standards for all beneficial uses except warm water aquatic and wildlife community uses with the primary pollutant being turbidity (ADEQ, 2008).

Ash Creek flows into the Agua Fria River primarily through an ephemeral stream reach. The Agua Fria was sampled just below this junction in 2002-2003. The sampling indicated attainment of water quality standards for all beneficial uses (ADEQ, 2008).

Wild and Scenic Rivers: A 40-mile section of the Verde River has been classified as a Wild and Scenic River (W&SR). The Goat Peak Grazing Allotment is about 20 miles from the section of the Verde River that is designated as a W&SR and would not affect the W&SR characteristics in this section of the Verde River.

General Grazing Effects

Riparian areas have ecological importance beyond their small percentage of land area. This percentage is even smaller in the arid southwestern United States, and inversely, their importance more critical. With their high species diversity and structural complexity, they provide critical terrestrial and aquatic habitat to wildlife species from adjacent upland and riparian area environments.

Livestock are naturally drawn to riparian areas. The availability of water, lush forage, shade in warm months, and relatively gentle topography are attractants. Grazing can affect riparian habitats by removal of herbaceous and woody vegetation due to herbivory, and compaction or physical shearing of stream banks due to hoof action. Alteration of stream banks can lead to hydrogeomorphic changes in the stream channel, often manifested by the channel becoming wider and shallower once stream banks are destabilized. Herbaceous riparian vegetation is especially important to stabilizing the stream bank and point bar and floodplain deposits, critical to the channel restoration process.

Livestock can impact water quality directly through their waste and indirectly by effects on soil stability and vegetative protection effectiveness. Livestock waste of fecal material and urine can affect both biological and chemical water quality parameters. Nutrients (primarily nitrogen and phosphorus) at levels above natural backgrounds can affect dissolved oxygen levels and composition of invertebrate species (EPA 2003). Biological contaminants reported include *E. coli* and *Cryptosporidium* among others (Belsky, et al 1999). The presence of dense, vigorous herbaceous vegetation can reduce the impacts by incorporation into the nutrient cycle and trapping/holding waste materials and preventing washing into the stream from areas above the high water line.

Effects Common to All Alternatives

Under both alternatives there would be some effects by other ungulates (elk and deer) through browsing of woody riparian seedlings and saplings, plus some trailing/trampling. Neither alternative is expected to affect water yield. Research in Arizona on water yield as affected by management activities has found temporary increases in water yield from

vegetative overstory (e.g., ponderosa pine or interior chaparral) removal or significant modification (Baker 1999). Neither the proposed action nor the no grazing alternative will modify the vegetative overstory.

Effects of the Proposed Action

Under adaptive management with its available tools, existing satisfactory watershed condition should continue in the upland areas. The riparian area along Cherry Creek will be protected by the new fence to be constructed along the north side of the Logan Pasture and livestock grazing will not affect its remaining in Proper Functioning Condition, including both hydrogeomorphic function and riparian vegetation composition and structure. The monitoring component of adaptive management will be applicable to ensure maintenance of the Proper Functioning Condition of the riparian drainage below Hance Springs, with appropriate adjustments to timing, intensity, and/or duration if needed.

Existing water quality in Cherry Creek and the Verde River downstream will not be adversely affected. Potential effects from livestock accessing Cherry Creek with streambank alteration and deposit of wastes within the floodplain will be eliminated. The action is consistent with the Verde River TMDL recommendations.

Environmental effects on water resources from construction activities for the new fence along the north edge of the Logan Pasture will be quite localized and temporary. The fence is located outside the flood plain. Application of Best Management Practices (BMP) found in the Project Record, tab 37, should minimize effects. The effects disclosed herein are based upon project implementation utilizing the aforementioned BMPs.

Effects of No Action Alternative

The No Grazing Alternative eliminates the direct effects of livestock grazing to stream courses and riparian areas in the Goat Peak Allotment.

Cumulative Effects

Water Quantity and Timing

Because there are no direct or indirect effects to water quantity there would be no contribution to cumulative effects. The project would not affect timing of runoff from storms or snowmelt and would not contribute to increases in peak flows. There is a slight effect of the riparian corridor in absorbing overbank flows; however, the relatively steep gradient of the channel and narrow floodplain within the allotment limit the effect of this factor.

Riparian Areas

The riparian areas within the allotment are currently in Proper Functioning Condition. With construction of the fence on the north side of the Logan Pasture to prevent livestock access to Cherry Creek this should continue. Elimination of grazing within the Cherry Pasture would also prevent any livestock impact on riparian habitat. The riparian communities will continue to contribute to the seed source for downstream areas on Cherry Creek and the Verde River.

Water Quality

The Verde River for its length through the Cumulative Effects Analysis Area is currently listed as Category 4 (Not Attaining). This is based on turbidity and suspended sediment. Violations of water quality standards were not a problem during base flow conditions but occurred with storm runoff.

There will not be a contribution to adverse effects on water quality because:

- riparian areas are being protected from potential livestock impacts of bank alteration, deposit of livestock wastes within the floodplain, and riparian vegetation browsing/grazing,
- construction and maintenance of range improvements will employ Best Management Practices
- livestock management will be based on adaptive management techniques including monitoring, resource protection guidelines, and adjustment of grazing timing, intensity and/or duration as necessary

Terrestrial Wildlife

No federally listed terrestrial species or their habitats occur within or are impacted by the proposed action (Wildlife Report, PR Doc #34). Regional Forester sensitive species that could occur within or near the project area include the common black hawk, western red bat, Arizona phlox, pocket free-tailed bats, and peregrine falcons. Prescott National Forest Land and Resource Management Plan Management Indicator Species (MIS) expected to occur within the project area include spotted towhee, mule deer, and possibly juniper titmouse and Lucy’s warbler.

Summary of Effects for terrestrial wildlife and plant species considered for the Goat Peak Allotment.			
Species Name	Status	Alternative 1 No Action	Alternative 2 Proposed Action
Common black hawk	Sensitive	No Effect	No Effect
Western red bat	Sensitive	No Effect	No Effect
Arizona phlox	Sensitive	No Effect	MIH ⁶
Pocket free-tailed bat	Sensitive	No Effect	No Effect
Peregrine falcon	Sensitive	No Effect	No Effect
Spotted towhee	MIS	No Effect	No impact to forestwide habitat or population trends
Mule deer	MIS	No Effect	No impact to forestwide habitat or population trends
Juniper titmouse	MIS	No Effect	No impact to forestwide habitat or population trends
Lucy’s warbler	MIS	No Effect	No impact to forestwide habitat or population trends

⁶ MIH = May impact individuals or habitat but is not likely to result in a trend towards federal listing or loss of viability for the species.

General Habitat Effects

Proposed Action:

Direct and indirect effects of the proposed action to the physical resources or the physical habitat characteristics would include reducing plant height, canopy cover and ground cover. The degree of these effects would be influenced by the utilization guidelines and timing of use. If growing conditions are favorable, plant height and canopy cover would completely recover within one year. If growing conditions are not favorable, plant recovery would occur more slowly (up to two to three years). Plant recovery will also be contingent upon rainfall amounts, timing and subsequent herbivory by livestock and wildlife.

With the recommencing of livestock grazing in the project area, water developments would be maintained and improved. These water developments would improve the quality of habitat for animals large and small. Ungulates such as deer and javelina would be drawn to habitat near water. Small mammals, birds and reptiles would also be drawn to the water sources in the midst of dry vegetation types. Predators for all of these prey species would be drawn by both the water and the food available near the water sources.

Building the fence in the Logan Pasture to exclude livestock from grazing the Cherry pasture would facilitate no grazing in that pasture. Continued rest from livestock grazing in the main Cherry Creek drainage would allow both woody and herbaceous vegetation to continue to grow and flourish.

No Action/No Grazing:

For the No Action, No Grazing alternative, there would not be any measurable change in the current existing vegetative condition. Upland vegetation would remain the same in the absence of livestock grazing. Continued lack of livestock grazing in the main Cherry Creek drainage would allow both woody and herbaceous vegetation to continue to grow and flourish. Any remaining functioning water developments may continue to function or deteriorate in the absence of permittee maintenance on the structures. Natural water sources would continue to be available.

Effects of the Proposed Action

Regional Forester Sensitive Species:

All four of the sensitive animal species that could occur in or near the project area would be expected to forage within the Cherry Creek riparian corridor. Excluding grazing from the Cherry Pasture would indirectly lead to improved prey species habitat for a wide variety of species within the riparian corridor. Long term, recruitment of trees may increase with the absence of livestock grazing leading to increased or improved nesting habitat for black hawks and roosting habitat for red bats. Maintaining and developing water sources may increase foraging opportunities for all four sensitive species within the project area.

Locations of new improvements will be surveyed for sensitive plants and impacts to known populations will be avoided when feasible. Direct effects to the sensitive plant species,

Arizona phlox, include potential losses of individuals or groups during construction or maintenance of structural range improvements. However, these losses would not be substantial enough to contribute to a decline in the species as a whole. Grazing effects to Arizona phlox are unknown. However, studies on Hood's phlox (Gucker, 2006) generally showed an increase in the species in grazed areas compared to ungrazed areas. It is thought this is because plants are generally unpalatable and perhaps too short to be grazed by domestic livestock.

Management Indicator Species:

Indicator habitat is present for four species. Mule deer and spotted towhee are associated with the chaparral vegetation type. The mule deer and juniper titmouse would be associated with the pinyon juniper vegetation type. Lucy's warbler is associated with the riparian vegetation type.

For the mule deer, spotted towhee and juniper titmouse, the proposed action would not change the seral stage of the respective indicator vegetation types or impact snags in pinyon juniper and therefore would not change the habitat quantity within the project area. For mule deer, construction and maintenance of water developments may provide additional foraging opportunities but again would not change the quality of the habitat as the chaparral and pinyon juniper vegetation types would remain in late seral stages. Livestock grazing would not impact juniper titmouse foraging within the foliage or bark of pinyon juniper and it would not impact any snags that occur in the project area. Therefore there would not be any change in the habitat quality for titmouse within the project area.

The majority (78%) of the project area is in a late seral chaparral vegetation type. Livestock grazing may reduce ground cover leading to reduced diversity of insect prey species for the spotted towhee. Livestock may trample nests in the project area. The presence of livestock within the project area may change the habitat use patterns of the spotted towhee but it is not expected to impact the population trend for the project area as no key habitat areas have been identified.

For the Lucy's warbler that may occur in the riparian habitat along Cherry Creek, excluding livestock grazing in Cherry Creek Pasture would be expected to increase habitat quantity and improve habitat quality as woody species recruitment and development increases in the absence of livestock grazing. This would only occur on 34 acres and therefore would not be expected to impact a population at the project level.

The project area is 3,338 acres, less than 0.2% of the entire Prescott National Forest. This alternative would not have any impact to forest-wide habitat or population trends for any MIS species.

Arizona Game and Fish Department Wildlife Species of Concern:

Detailed analysis determined that the project area did not provide any suitable habitat for any wildlife species of concern.

Migratory birds:

Analysis identified nine species of migratory birds that may occur within the project area based on their association to the habitats that occur within the project area.

Migratory birds associated with vegetation types within the project area.	
Species	Habitat Type
Black-chinned Sparrow	Dry chaparral & PJ
Black-throated Gray Warbler	PJ & oak woodlands
Canyon Towhee	Chaparral, open PJ, and open evergreen oak
Crissal thrasher	Chaparral, PJ, oak
Gray Flycatcher	Pinyon-juniper
Gray Vireo	Open PJ
Pinyon Jay	Pinyon-juniper
Virginia's warbler	Chaparral
Yellow Warbler (<i>sonorana</i> ssp.)	Cottonwood/willow riparian

There is potential for disturbances to nests or loss of eggs/unfledged chicks due to livestock trampling, with the possibility of impacts to ground nesting birds. The species that are above ground nesting birds have potential for disturbance through the dislodging of nests from livestock or from reduction of prey abundance associated with the grazing. Potential for nest parasitism from cowbirds is also increased for those species that are commonly used as hosts. The unintentional take from these effects are expected to be infrequent and are not projected to rise to a level that affects the total population size for any species. Grazing could affect habitat structure and composition of prey cover, as well as the availability and diversity of prey in certain areas of the allotment. Managing to conservative use levels during the growing season should ensure that habitat structure and composition of prey cover are maintained during the breeding season.

None of the proposed action would impact any snag retention within the project area. There are no IBAs (Important Bird Areas) in or near the project area (PR Doc#34). Removal and/or destruction of vegetation used by migratory birds is not a taking under the Migratory Bird Treaty Act. Given that the project area is only 3,338 acres and represents less than 0.2 % of the Prescott National Forest, there would not likely be any discernible short term or long term effects to migratory birds from this alternative.

Effects of No Action Alternative

Regional Forester Sensitive Species:

All four of the sensitive animal species that could occur in or near the project area would be expected to forage within the Cherry Creek riparian corridor. Continuing the absence of grazing in the Cherry Pasture would indirectly lead to improved prey species habitat for a wide variety of species within the riparian corridor. Long term, recruitment of trees may increase with the absence of livestock grazing leading to increased or improved nesting habitat for black hawks and roosting habitat for red bats. With no maintenance or

development of water sources, foraging opportunities for all four sensitive animal species would remain the same within the project area. Natural water sources would continue to be available. With no livestock grazing or development of water sources, there would not be any impacts to Arizona phlox.

Management Indicator Species:

For the mule deer, spotted towhee and juniper titmouse, the no action alternative would not change the seral stage of the respective indicator vegetation types or impact snags in pinyon juniper and therefore would not change the habitat quantity within the project area. For mule deer, the lack of maintenance of water developments may lead to loss of function of those water sources. However, that would not change the quality of the habitat as the chaparral and pinyon juniper vegetation types would remain in late seral stages. Natural water sources would continue to be available. Absence of livestock grazing would not impact juniper titmouse foraging within the foliage or bark of pinyon juniper and it would not impact any snags that occur in the project area. Therefore, there would not be any change in the habitat quality for titmouse within the project area.

In the absence of livestock grazing, chaparral habitat quality for the spotted towhee would remain static and would maintain the existing prey species diversity. Ground nests would not be trampled and habitat quality would not change.

For the Lucy's warbler that may occur in the riparian habitat along Cherry Creek, as woody species recruitment and development increases in the absence of livestock grazing in Cherry Creek Pasture, habitat quantity would be expected to increase and habitat quality would be expected to improve. This would only occur on 34 acres and therefore would not be expected to impact a population at the project level.

Migratory birds:

With no livestock grazing and no water development occurring within the project area, migratory bird habitat would remain the same. Habitat structure would not change and nests would not be disturbed. Prey species' habitat and snag habitat within the project area would not change.

Cumulative Effects

For the black hawk, red bat, free-tailed bat and peregrine falcon, none of the projects listed in the cumulative effects table would improve riparian broadleaf foraging, nesting or roosting habitat for these four species. Cherry Creek and other riparian areas would probably be the only portions of the project area used by all four species. Both alternatives have similar impacts to the riparian habitat along Cherry Creek. There would only be slight differences in the effects to foraging, nesting, or roosting opportunities between the alternatives. This localized impact to either a pair of raptors or a few individuals of bats would not impact any of the four species at the species level. With no impacts from past, present or future projects, neither alternative would contribute to any cumulative effects for these four animal species.

For the Arizona phlox, past, present and future activities that may impact the Arizona Phlox include Black Hills vegetation management project and recreational activities including

dispersed camping and fuelwood cutting. Past, present and future activities include wildfires, prescribed fire and fire suppression, fuelwood and timber harvesting, recreation, mining, road maintenance, grazing and structural range improvements. The past effects of these activities on Arizona phlox are unknown. Some may have affected local distribution and abundance of the species but apparently have not contributed to the overall decline of the species. Future activities that may affect Arizona phlox will be mitigated through project planning and implementation.

Aquatic and Amphibian Species

Aquatic habitat within the allotment is limited to short stretches of perennial water along Cherry Creek and several springs scattered across the area. Arizona toad and lowland leopard frog could occur in these perennial waters. There are no federally-listed or Forest Service Sensitive fish species or their habitat within the analysis area. There are no Forest Service Sensitive garter snakes or their habitat within the analysis area.

Summary of Effects for federally listed species and Region 3 Forest Service sensitive species for the Goat Peak Allotment.			
Species Name	Status	Alternative 1 Proposed Action	Alternative 2 No Action/Grazing
Arizona toad	Sensitive	MIIH ⁷	No Impacts
Lowland leopard frog	Sensitive	MIIH	No Impacts

Summary of Effects on Management Indicator Species (MIS) analyzed on the Goat Peak Allotment by alternative.				
MIS	Alternative 1 Proposed Action		Alternative 2 No Action/Grazing	
	Project Level Effects on MIS Habitat Quantity & Quality	Effects on MIS Habitat and Population Forest-wide Trends	Project Level Effects on MIS Habitat Quantity & Quality	Effects on MIS Habitat and Population Forest-wide Trends
Macroinvertebrates	No change in habitat quantity of late-seral riparian habitat and aquatic habitat. With the resource protection measures, habitat	No effect to forest-wide trends.	No change in habitat quantity of late-seral riparian habitat and aquatic habitat. With no livestock grazing, habitat quality for this species would be	No effect to forest-wide trends.

⁷ MIIH = May impact individuals or habitat but is not likely to result in a trend towards federal listing or loss of viability for the species.

	quality for this species should be maintained		maintained.	
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Direct and Indirect Effects

Proposed Action:

Cattle would not have access to perennial portions of Cherry Creek since a fence will be built at the north end of the Logan Pasture. Given that cattle cannot access the creek, there would be no effects to riparian-dependent species. The analysis for soil and water resources does not display any effects that would lead to increased sedimentation from project actions when following Best Management Practices. Spring sites within Logan and Bardshare Pastures have the potential to provide some habitat for aquatic species. Effects to aquatic and amphibian species could be in the form of disturbance to individuals and egg masses during the breeding season; impacts to riparian/aquatic habitat because of grazing or trailing in accessible reaches; or impacts to water quality from animal waste causing nutrient loading and breakdown of streambanks causing sedimentation of aquatic habitat. Effects to aquatic/riparian habitat would be minimized by implementation of riparian grazing intensity guidelines and Adaptive Management principles.

Spring renovation of Hance and Bardshare springs would have potential impacts to individuals and short-term impacts to their habitat. Timing restriction would be implemented to reduce impacts to species during the breeding season. Fencing of the spring sites would reduce livestock impacts to the species and would have long-term improvements in aquatic/riparian habitat.

With livestock grazing in the watershed there could be short-term impacts to water quality from livestock waste being washed down into aquatic habitat from the uplands causing nutrient loading.

No Action:

No grazing within the project area would have similar effects to the perennial portions of Cherry Creek as the proposed action due to the fact that Cherry Creek will be excluded from grazing. The springs in Logan and Bardshare Pastures would not be subject to grazing and would be preserved as potential habitat for riparian-dependent species.

Cumulative Effects

The cumulative effects include activities that would impact the species or its habitat in the project area. Low intensity prescribed fire and vegetation treatments would have short-term effects of surface runoff and sedimentation to aquatic habitats. Implementation of Project Design Features and Best Management Practices would minimize effects to species and their habitat in the treatment area. Projects would benefit watershed/soil and aquatic/riparian conditions in the long-term. Recreational activities are having localized impacts to stream systems in the project area. Roads in the project area contribute to channeling runoff and sediments to stream systems during snowmelt and storm events. When added to the effects of

the projects listed at the beginning of this chapter, effects of the proposed action are not expected to cause a decline in riparian habitat quality or quantity, thereby affecting aquatic and amphibian species.

Soil

The following table displays the soil condition rating for the representative map unit that was analyzed for the Bardshare and Logan Pastures. The Cherry Pasture’s Terrestrial Ecosystem Survey (TES) soil conditions are displayed but actual field verification was not conducted because the proposed action would administratively close this pasture to grazing.

Soil Condition							
Bardshare and Logan Pasture	TES Map Unit	TES Soil Condition					
	476	Satisfactory					
	Pasture	Acres	Percent of Pasture				
	Bardshare	65	18%				
	Logan	263	25%				
	Soil Surface Components	Litter 1"	Basal Veg	Soil	Rock		
	Natural	45	10	5	5		
	Existing	62	5	8	25		
	Community Type	Soil Condition Field Verify	Soil Condition Rationale			Grazing Influence	
CT1.1	Satisfactory	Soils are stable and hydrologically functioning due to high litter levels associated with the shrub cover and good vegetation spatial distribution. Interspaces showing signs of high run off and soil movement but connectivity is discontinuous and short.			No		
Cherry Pasture	TES Map Unit	TES Soil Condition	Acres	Percent of Pasture			
	436	Satisfactory		81	4%		
	448	Satisfactory		584	26%		
	475	Satisfactory		988	45%		
	476	Satisfactory		446	21%		

Satisfactory soil condition that is found in Logan, Bardshare, and Cherry Pastures can be further described as follows:

- *Satisfactory*. Indicators signify that soil function is being sustained and soil is functioning properly and normally. The ability of the soil to maintain resource values and sustain outputs is high.

Vegetative ground cover levels in Bardshare and Logan Pasture exceed potential and are distributed evenly across the landscape. Soils are stable and hydrologically functioning. Generally, the Bardshare and Logan Pastures do not have any limiting soil characteristics. However, they do have inherently erosive soils due to granite parent material. Current and potential impacts from livestock grazing has minimal to no potential to exacerbate soil instability on these soils because the high litter levels associated with dense brush from the chaparral communities protect and maintain these sites.

Soil Condition Direct and Indirect Effects

Alternative 1: Grazing:

On the Bardshare and Logan pasture satisfactory soil conditions would remain the same because Best Management Practices would be employed. The complete list of Best Management Practices (BMP) that would be employed is found in the Project Record at tab

37. The effects to the soils resource that are disclosed herein are based on project implementation using the BMPs that are disclosed in the Project Record. The shrub cover would continue to provide high litter levels and organic matter input for nutrient cycling, promotion of favorable soil structure and infiltration rates, and stabilization of the soils. Grazing intensity level guidelines would promote vegetative ground cover retention.

On the Cherry pasture soil conditions would remain satisfactory as described in TES because livestock grazing would continue to not occur. Vegetative ground cover and organic matter would be retained on site for soil function maintenance and protection.

Alternative 2: No Grazing:

On the Bardshare and Logan pasture satisfactory soil conditions would remain similar to existing conditions because livestock grazing would not occur. Vegetative ground cover would be retained on the site for soil protection. Shrub cover would provide high litter levels and organic matter input for nutrient cycling, promotion of favorable soil structure and infiltration rates, and stabilization of the soils.

On the Cherry pasture soil conditions would remain satisfactory as described in TES because livestock grazing would not occur. Vegetative ground cover and organic matter would be retained on site for soil function maintenance and protection.

Effects of Implementing Range Improvements

Adaptive management provides the flexibility to employ a myriad of rangeland management strategies to achieve desired conditions and effects. This includes constructing, re-constructing, re-locating, and maintaining range improvements.

The direct effects of the physical impact associated with range improvement installation and maintenance has the potential to decrease and damage protective vegetative ground cover, cause soil displacement, and compaction. This has the potential to decrease infiltration, increase runoff, accelerate soil loss, disrupt nutrient cycling, and ultimately negatively impact productivity. Soil disturbance and excavation can also expose unfavorable subsurface soil properties that may reduce soil productivity. These potentially negative impacts would be largely mitigated by implementing range improvement soil and water conservation practices identified in the BMPs.

Alternative 1: Grazing:

The installation and maintenance of range improvements has the potential to damage the soil resources but these adverse effects would be largely mitigated by implementing Best Management Practices. Range improvement soil and water conservation practices, identified in the BMPs, provide guidance on site evaluation, site preparation, and erosion control measures as a means to minimize soil damage to productivity.

Alternative 2: No Grazing:

There would be no impacts to the soil resources from range improvement installation and maintenance because livestock grazing would not occur. However, the removal of range

improvements has the potential to negatively impact the soil resources but these impacts would be largely mitigated by implementing Best Management Practices. Range improvement soil and water conservation practices, identified in the BMPs, provide guidance on site evaluation, site preparation, and erosion control measures as a means to minimize soil damage to productivity.

Cumulative Effects

Activities listed in the table at the beginning of this chapter can affect the soil resource in various ways. Fire and fuels treatments can eliminate protective vegetative groundcover in the short-term, but improve vegetative health and enhance its ability to protect soils in the long-term. Roads and mining can cause soil disturbance which increases the opportunity for erosion, but the use of Best Management Practices in project design can mitigate these effects to acceptable levels. Soil compaction, surface disturbance, and vegetative ground cover removal may occur from recreational dispersed camping, off-highway vehicle use, and range development construction but the effects are localized and cover small areas in relation to the project area and watershed.

The proposed action would incrementally improve the cumulative effects to soil and watershed resources because it would result in a slight improvement of the soil and water resources, primarily within the riparian and floodplain area. Any potential adverse impacts to the soil and water resources due to construction of the range improvement structures would be temporary and would be mitigated by implementing soil and water conservation practices (BMPs). The proposed action integrates design features to ensure the protection and improvement of the soil and watershed resources. The activities affiliated with the Goat Peak Allotment would not add to the cumulative watershed effects of the other listed actions because of the net improvement upon the soil, vegetation, and water resources; the large size of the watershed compared to the small size of the project actions; and because sources of existing impairments are not related to products of this proposal. This project would not add to current impairments nor would it create future impairments.

Recreation

The Prescott National Forest in this area is open (unless posted “closed”) for dispersed recreation activities such as: camping, hiking, horseback riding, hunting, mountain biking and target shooting. Motorized travel must be on designated roads only (36 CFR 261.13). Visitation in the general project area has increased by about 20% since 2002. Powell Springs Campground is a developed recreation facility that is about 2 miles west of the Goat Peak Allotment boundary. This campground is not in the area that the Goat Peak Allotment uses for grazing, but it is likely that people using this campground recreate within the allotment boundary.

The unincorporated town of Cherry is about 1/4 mile west of the Goat Peak Allotment boundary. Cherry is on County Road 75 which is a popular pleasure driving destination for people. People enjoy the feeling of isolation and viewing the scenery from their vehicles while traveling to and from Cherry.

Within the Goat Peak Allotment's boundary there are parts of three Inventoried Roadless Areas (IRAs). Some of the Black Canyon IRA (128 acres), parts of the Ash Creek IRA (70 acres), and a part of the Grief Hill IRA (872 acres) are in the allotment. Inventoried Roadless Areas are a group of National Forest System lands that were previously identified by government reviews as lands without existing roads that could be suitable for Roadless Area Conservation (Roadless Area Conservation is a conservation policy limiting road construction and tree cutting). This area was identified as an IRA in 1979. Trails, either motorized or non-motorized, are allowed in IRAs. There are no congressionally-designated Wilderness Areas within the Goat Peak Allotment.

Environmental Consequences

Alternative 1 – Proposed Action

The purpose and need for this proposed action is to continue to authorize livestock grazing on the Goat Peak Allotment in a manner consistent with the Forest Plan. Recreational activities (dispersed camping, hiking, biking, horseback riding, driving and other recreational activities) and recreation planning would not be affected by re-authorizing livestock grazing on the Goat Peak Allotment.

The Black Canyon and Ash Creek Inventoried Roadless Areas (IRAs) are contained within the Goat Peak Pasture that has been added to the Bottle Allotment and is not being considered in this analysis. The Grief Hill IRA is contained within the eastern part of the analysis area in the Bardshare and Cherry Pastures. Range improvement structures that are proposed as part of this alternative include redevelopment of Bardshare Spring that is inside the Grief Hill IRA. There will be no road construction authorized as part of the activities associated with redevelopment of Bardshare Spring, so this activity will not alter the integrity of the Inventoried Roadless Area. Other range improvements to be constructed are outside of the IRAs in the project area.

Alternative 2 – No Action

Most recreationists involved with various recreational activities (camping, hiking, biking, horseback riding, driving and other recreational activities) would not notice a difference if cattle were no longer on the Goat Peak Allotment.

Cumulative Effects

There would be no negative impacts or changes to recreation resources by re-authorizing Goat Peak livestock grazing, so there are no cumulative impacts to this resource from this project.

Heritage Resources

Since 1993, heritage resource specialists have identified and documented seven sites within the allotment. Sites that may be sensitive to grazing such as Traditional Cultural Places (TCP), rock art sites, rock shelters/caves, or ruins with free-standing walls have not been identified in the allotment. The seven recorded sites have been evaluated as eligible for the National Register of Historic Places (NRHP) in consultation with the State Historic

Preservation Office (SHPO). All heritage reports and site inventory forms with maps are on file with the Forest Heritage Specialist at the Prescott National Forest Supervisor's Office.

Environmental Consequences

Alternative 1 – Proposed Action (Direct and Indirect Effects)

It has been documented in the PNF range files that this area of the Verde Ranger District has been grazed by livestock for over 100 years and at numbers higher than current levels. The Forest Service's permit for livestock grazing does not recommend changing to a more intensive grazing system nor does it recommend increasing the number of livestock. Heritage surveys of proposed range projects that are scheduled to be implemented within the next 2 years have been conducted and the proposed projects will have a no effect on heritage sites. In the future, if additional range improvements or other ground disturbing management practices are necessary, the Forest Service will complete the appropriate heritage surveys and/or reports as outlined in our Region 3 Programmatic Agreement Regarding Historic Property Protection and Responsibilities and be in compliance with all applicable provisions of Section 106 of the NHPA. The Forest Service will consult with the SHPO on the effects of livestock grazing on heritage resources prior to the signing of the EA. Continued livestock grazing is not expected to significantly impact heritage resource sites.

The Forest Service's proposal to continue livestock management as proposed under this alternative is considered to have a no adverse effect on the heritage resource sites located within the allotment.

Cumulative Effects

Past, present, and reasonably foreseeable future actions on the allotment have been considered as part of this cumulative impacts analysis. Authorization of livestock grazing along with the past, present, and reasonably foreseeable future actions, would have minimal cumulative effects on heritage resource sites.

CHAPTER 4 – COORDINATION AND REFERENCES

The Forest Service consulted the following individuals, Federal and State agencies, Tribes and non-Forest Service persons during the development of this environmental assessment:

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Dorothy Baxter	Recreation Planner
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Thomas Potter	GIS Coordinator
Nancy Walls	Forest Natural Resources Staff Officer
Dee Hines	past Verde District Ranger
Linda Jackson	Acting Verde District Ranger
Celeste Gordon	Verde District Ranger

Federal and State Agencies

AZ Department of Environmental Quality, Northern Regional Office
US Fish and Wildlife Service, AZ Ecological Services Office
AZ Game and Fish Department
AZ State Historic Preservation Office

Tribes

The Hopi Tribe
The Hualapai Tribe
The Tonto Apache Tribe
The Yavapai Prescott Tribe
The Fort McDowell Yavapai Nation
The Yavapai-Apache Nation

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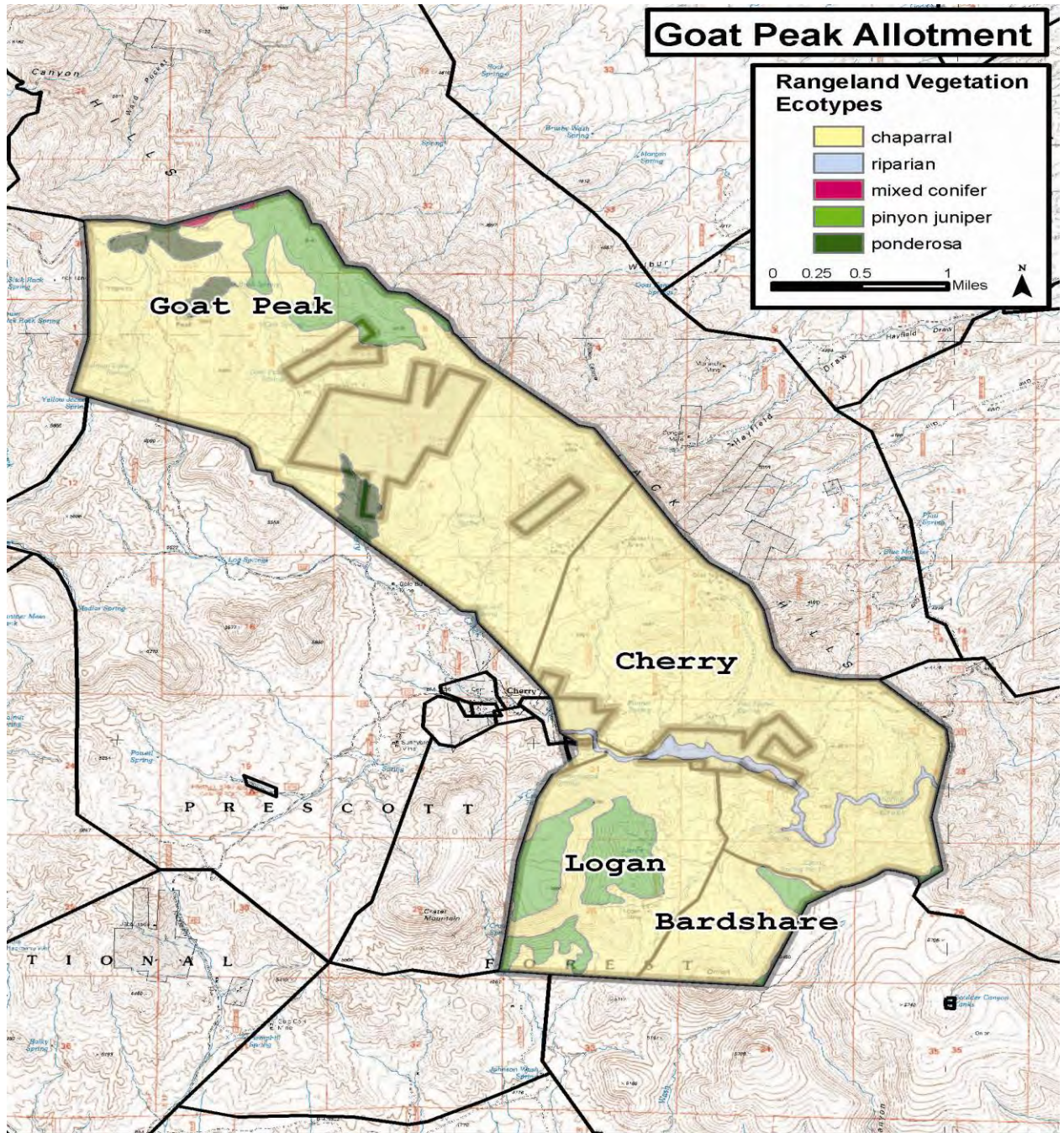
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Appendix 1 – Goat Peak Allotment Map with Range Improvements

Map shown on following page

Appendix 2 – Rangeland Vegetation Ecotypes on the Goat Peak Allotment



Appendix 3 – Actual Use Records for the Goat Peak Allotment (Current Boundaries)

Goat Peak and Logan Actual Use

Year	No. permitted	Season	Free Use	permitted A.M.	Actual Use A.M
1972	80+3	YL	4	978	955
1973	80	YL	4	960	953
1974	20	YL	0	240	240
1975	?	YL	0		
1976	80+16	YL	4	1128	872
1977	80+16	YL	4	944	944
1978	80+16	YL	4	1152	1133
1979	96	YL	4	1152	1152
1980	96	YL	4	1152	1152
1981	96	YL	0	1152	1152
1982	96	YL	0	1152	1152
1983	96	YL	0	1152	1152
1984	96	YL	0	1152	1152
1985	96	YL	0	1152	1152
1986	96	YL	0	1152	1152
1987	96	YL	0	1152	1152
1988	96	YL	0	1152	1152
1989	79	YL	0	948	948
				average	975.8

From 1990 to present the Goat peak Allotment has been vacant and no grazing use has occurred.

Appendix 4 – Glossary of Terms

Adaptive Management- A formal, systematic, and rigorous approach to learning from the outcomes of management actions, accommodating change, and improving management. It involves synthesizing existing knowledge, exploring alternative actions and making explicit forecasts about their outcomes.

Allotment Management Plan (AMP) - An Allotment Management Plan (AMP) is unique, and is based on the individual landscape and ranch operation and will be modified with modification or issuance of a new permit following a NEPA decision to ensure consistency with the NEPA decision. The AMP must be included in Part 3 of the term grazing permit. The Sycamore Allotment must maintain a current AMP developed within the bounds of the NEPA based decision (USDA 2007).

Animal Month (AM) - A month's use and occupancy of rangeland by a single animal or equivalent.

Animal Unit Month (AUM) – The quantity of forage required by one mature cow (1,000 pounds) or the equivalent for 1 month; approximately 26 lbs of dry forage per day is required by one mature cow or equivalent.

Annual Operating Instructions (AOI) - Instructions developed a guideline for grazing management by the agency and livestock permittee for implementing grazing management activities on a specific allotment for a specific grazing season.

Aquatic – Pertaining to standing and running water in streams, rivers, lakes and reservoirs.

Best Management Practice (BMP) – Application of the best available demonstrated control technology, processes, measures and operating methods that are socially, economically and technically feasible for controlling soil loss or improving water quality.

Browse – Young twigs and leaves of woody plants consumed by wild and domestic animals.

Candidate Species- Plants and animals for which the U.S. Fish and Wildlife Service (FWS) has sufficient information on their biological status and threats to propose them as endangered or threatened under the Endangered Species Act (ESA), but for which development of a proposed listing regulation is precluded by other higher priority listing activities.

Community Type – Community types represent existing vegetation communities that do not currently reflect potential due either to disturbance or natural processes related the development of the community. Vegetation may be disturbed by a number of factors including: grazing, fire, and other activities.

Critical Habitat – That portion of a wild animal's habitat that is critical for the continued survival of the species as declared by the Secretary of the Interior.

Cultural Resource – The physical remains of past human cultural systems and places or sites of importance in human history or prehistory.

Desired Conditions- Descriptions of the social, economic and ecological attributes that characterize or exemplify the desired outcome of land management. They are aspirational and likely to vary both in time and space.

Dispersed Recreation – In contrast to developed recreation sites (such campgrounds and picnic grounds) dispersed recreation areas are the lands and waters under Forest Service jurisdiction that are not developed for intensive recreation use. Dispersed areas include general undeveloped areas, roads, trails and water areas not treated as developed sites.

Ecological Type – Ecological types are derived directly from the TES document and describe the potential vegetation for a particular soil type. The potential vegetation was defined through intensive field sampling. See the Terrestrial Ecosystem Survey Handbook, USDA 1986 for a full description of how potential vegetation descriptions were derived.

Endangered Species – Any species that is in danger of extinction throughout all or a significant portion of its range, as declared by the Secretary of the Interior.

Environmental Analysis – An analysis of alternative actions and their predictable short- and long-term environmental effects, including physical, biological, economic and social effects.

Environmental Assessment – The concise public document required by regulations for implementing the procedural requirements of NEPA (40 CFR 1508.9).

Ephemeral – A stream that flows only in direct response to precipitation, and whose channel is above the water table at all times.

Erosion – The wearing away of the land's surface by running water, wind, ice or other geological agents. Erosion includes detachment and movement of soil or rock fragments by water, wind, ice or gravity.

Forage – All non-woody plants (grass, grass-like plants and forbs) and portions of woody plants (browse) available to domestic livestock and wildlife for food.

Forage Utilization – The portion of forage production by weight that is consumed or destroyed by grazing animals. Forage utilization is expressed as a percent of current year's growth.

Forest Plan – A document, required by Congress, assessing economic, social and environmental impacts, and describing how land and resources will provide for multiple use and sustained yield of goods and services.

Grazing Capacity – The maximum level of plant utilization by grazing and browsing animals that will allow plants or associations of plants to meet their physiological and/or reproductive needs.

Grazing Period - The length of time grazing livestock or wildlife occupy a specific land area.

Grazing Permittee – An individual who has been granted written permission to graze livestock for a specific period on a range allotment.

Gully Erosion – The erosion process whereby water accumulates in narrow channels and, over short periods, removes the soil from this narrow area to depths ranging from several feet to as much as 75 to 90 feet.

Habitat – The sum total of environmental conditions of a specific place occupied by a wildlife species or a population of such species.

Improvement – Manmade developments such as roads, trails, fences, stock tanks, pipelines, power and telephone lines, survey monuments and ditches.

Indicator Species – A wildlife species whose presence in a certain location or situation at a given population level indicates a particular environmental condition. Population changes are believed to indicate effects of management activities on a number of other wildlife species.

Interdisciplinary (ID) Team– A group of individuals with skills from different resources. An interdisciplinary team is assembled because no single scientific discipline is sufficient to adequately identify and resolve issues and problems. Team member interaction provides necessary insight to all stages of the environmental analysis process.

Intermittent (or Seasonal Stream) – A stream that flows only at certain times of the year when it receives water from springs or from some surface source such as melting snow in mountainous areas.

Issue – a point of discussion, debate, or dispute with a Proposed Action based on some anticipated effect.

Key Area - A relatively small portion of a range selected because of its location, use or grazing value as a monitoring point for grazing use.

Management Indicator Species – See "Indicator Species."

Mesa – A tableland; a flat-topped mountain or other elevation bounded on at least one side by a steep cliff.

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

National Environmental Policy Act (NEPA) – An act to declare a National policy that will encourage productive and enjoyable harmony between man and his environment; to promote efforts that will prevent or eliminate damage to the environment and biosphere and stimulate the health and welfare of man; to enrich the understanding of the ecological systems and natural resources important to the Nation and to establish a Council on Environmental Quality.

National Forest System Land – National forests, national grasslands and other related lands for which the Forest Service is assigned administrative responsibility.

NEPA- See “National Environmental Policy Act”

Perennial Stream – A stream that flows continuously. Perennial streams are generally associated with a water table in the localities through which they flow.

Permitted Grazing – Authorized use of a National Forest range allotment under the terms of a grazing permit..

Proper Functioning Condition (PFC) - A methodology for assessing the physical functioning of riparian and wetland areas. The term PFC is used to describe both the assessment process, and a defined, on-the-ground condition of a riparian-wetland area. PFC evaluates how well the physical processes are functioning through use of a checklist.

Proper Functioning Condition (PFC) Assessment - Provides a consistent approach for assessing the physical functioning of riparian-wetland areas through consideration of hydrology, vegetation, and soil/landform attributes. The PFC assessment synthesizes information that is foundational to determining the overall health of a riparian-wetland area.

Proposed Action – In terms of the National Environmental Policy Act, the project, activity or action that a Federal agency intends to implement or undertake and that is the subject of an environmental assessment.

Range Allotment – A designated area of land available for livestock grazing upon which a specified number and kind of livestock may be grazed under a range allotment management plan. It is the basic land unit used to facilitate management of the range resource on National Forest System and associated lands administered by the Forest Service.

Range Condition – The state of health of a range land site based on plant species composition and forage production in relation to the potential under existing site conditions. Range condition is rated as satisfactory or unsatisfactory.

Riparian – Land adjacent to perennial and intermittent streams, lakes and reservoirs. This land is specifically delineated by the transition ecosystem and defined by soil characteristics and distinctive vegetation communities that require free and unbound water.

Sheet Erosion – The removal of a fairly uniform layer of soil from the land surface by rainfall and runoff water without the development of conspicuous water channels.

Seral Community - an intermediate stage found in ecological succession in an ecosystem advancing towards its climax community.

Sinuosity- A bending or curving shape or movement.

Soil Erosion – The wearing away of the land surface by running water, wind, ice or other geological agents, including such processes as gravitational creep. Detachment and movement of soil or rock by water, wind, ice or gravity.

Soil Productivity – The capacity of a soil in its normal environment to produce a specified plant or sequence of plants under a specified system of management.

Species Composition – Species composition refers to a descriptive list of species that together make up a given ecological community.

Species Diversity – Diversity refers to the measure of composition for a given community and is also referred to as species richness.

Stream Reach - the length of the stream selected for monitoring.

Structural Range Improvement – Any type of range improvement that is manmade (e.g., fences, corrals, water developments).

Suitable Range – Range which is accessible to livestock or wildlife and which can be grazed on a sustained yield basis without damage to other resources.

Terrestrial Ecosystem Survey (TES) - consists of the systematic analysis, classification and mapping of terrestrial ecosystems. It describes and maps the soils and potential vegetation (ecological types). This Ecological Classification describes the existing vegetation (community types) associated with the ecological map units.

Thermal Cover – Cover used by animals to reduce effects of weather.

Threatened Species – Any species which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.

Travelway - Any transportation facility that allows vehicle passage of any sort, that came into existence without plans, design or standard construction methods, that is not maintained or signed and has a very low traffic volume.

Trend- The direction of change in an attribute as observed over time.

Utilization- The proportion or degree of the current year's forage production that is consumed or destroyed by animals (including insects). The term may refer either to a single plant species, a group of species, or to the vegetation community as a whole.

Watershed – The entire area that contributes water to a drainage or stream.

Watershed Condition – A description of the health of a watershed in terms of the factors that affect the hydrologic function and soil productivity.

Wildlife Habitat – The sum total of environmental conditions of a specific place occupied by a wildlife species or a population of such species.