

# Signature Rock and Pratt Tank Allotments CRMP EA-AZ-010-95-06

## **INTRODUCTION**

**Purpose And Need For The Proposed Action.** A Coordinated Resource Management Planning Group was formed in 1992, and subsequently developed a Holistic Resource Management Plan for grazing allotments administered by the Bureau of Land Management (BLM) and U.S. Forest Service (USFS). An environmental assessment (EA) which addresses management of the USFS allotment has been completed. The purpose of this EA is to analyze impacts associated with implementing Holistic Resource Management (HRM) on two allotments administered by BLM (see attached map). HRM involves setting quality of life, production, and landscape description goals; and is based on the concept that cycling of water and nutrients, conversion of solar energy by green plants, and orderly change of living communities from simple to complex are the driving forces of an ecosystem. According to HRM, tools such as rest, fire, grazing, animal impact, living organisms, and technology can be used to achieve resource management goals, but this must be done within the parameters of the previously mention ecosystem processes. The underlying premise of HRM is that change in one ecosystem process affects all ecosystem processes.

The proposal is to improve watershed condition by reducing the density of sagebrush, vegetating bare ground, and stabilizing and healing gullies; and to improve livestock and wildlife habitat by reducing sagebrush and increasing density and diversity of desirable plant species using HRM.

**Conformance With Land Use Plan.** As required by 43 Code of Federal Regulations 1610.5, this proposal is consistent with the Arizona Strip District Resource Management Plan of 1992 (RMP), which adopted the Vermillion Grazing EIS (1979) as management direction for livestock grazing. The EIS calls for range improvements and land treatments to improve range condition.

**Relationship To Statutes, Regulations, or Other Plans.** The Public Rangelands Improvement Act of 1978 (43 U.S.C. 1901 et seq.) requires BLM to manage, maintain, and improve the public lands suitable for livestock grazing so that they become as productive as feasible.

A 1987 Memorandum of Understanding directed the BLM, Soil Conservation Service, Forest Service, and Extension Service to encourage Coordinated Resource Management (CRM). CRM is defined in the Memorandum as "an approach that provides for interaction among interested and affected agencies, organizations, individuals, and the planning agency to determine mutually acceptable management practices and multiple use objectives at the local level."

## **PROPOSED ACTION AND ALTERNATIVE**

**Proposed Action (Preferred Alternative).** In order to reduce the bulk of this EA and eliminate repetitive discussions of the same information, the John Rich, Sr. Family Allotments Coordinated Resource Management Planning Group, Holistic Resource Management Plan (HRM Plan) is hereby incorporated by reference into this EA. A copy of the HRM Plan is provided in conjunction with this EA when distributed for public review. Also, the HRM Plan is available at the BLM Vermillion Resource Area Office, 345 E. Riverside Dr., Suite 103, St. George, Utah 84790.

The Coordinated Resource Management Planning Group (Group), who developed the HRM Plan, is composed of ranchers and personnel from the BLM, Forest Service, Southern Utah/Northern Arizona Wildlife Federation, Cooperative Extension, Arizona Game and Fish Department, Utah Chapter of the Sierra Club, and Natural Resources Conservation Service. After the Group was formed, a Memorandum of Understanding was drawn up, whereby the Group agreed to help the grazing permittees, BLM, and Forest Service better manage the subject allotments. The Group participated in goal setting and finding ways to attain these goals, while abiding by the recommendations of the Group and complying with BLM and Forest Service regulations. Basically, the goals are enhance the quality of life, centering around quality of the human environment; increase forms of production, including healthy and productive plant and animal populations; and promote a future landscape for the allotments composed of dense, diverse stands of grasses, forbs and shrubs, with washes vegetated and riparian characteristics restored. These goals are covered in detail on pages 9-11 of the HRM Plan.

The focus of this EA will be to analyze environmental impacts connected with the following proposed action items, which are needed to facilitate implementation of Holistic Resource Management on the BLM administered allotments--Signature Rock and Pratt Tank. A brief description of each proposed action item follows.

### **Livestock grazing system**

The two BLM allotments would be used in conjunction with the Forest Service allotment to provide a year round operation. The BLM allotments would be used generally from October thru June with the Forest used July thru September (see HRM plan for description of specific pasture use sequence and other details).

A modified deferred rotation grazing system is proposed in the HRM plan. On and off dates would be somewhat flexible, with the allotments initially stocked at about  $\frac{2}{3}$  of carrying capacity. An annual review would be conducted to fine tune the planned grazing system, with vegetative monitoring studies used as a basis to adjust and fine tune the system.

### **Animal impact and baiting**

Cattle would be concentrated in areas where Wyoming big sagebrush is increasing and in eroding drainages. Cattle numbers would range from 100 to 500 in order to achieve desired

impact, i.e., reduce sagebrush density and increase perennial herbaceous vegetation on approximately 1300 acres. Hay, salt, supplement, or water hauling would be used as attractants.

<sup>1</sup>Rasmussen has shown that concentrating cattle by feeding hay can reduce the canopy cover of Wyoming big sagebrush 80% and increase perennial herbaceous plant production by 1500%.

### **Fencing**

Additional pastures are needed for better control of duration and frequency of grazing, as well as for better animal impact at Pratt Tank Allotment. The cumulative additional fencing would be approximately 5 miles, using either 3 wire electric or conventional barbed wire/smooth wire combinations. Fences would be built to BLM standards in order to minimize restriction of wildlife movement, with a maximum 42 inch top wire height to allow movement of deer and a smooth bottom wire 16 inches off the ground to allow movement of antelope.

### **Vegetation treatment**

Use biological, mechanical and/or chemical means to treat about 25% of the 16,000 acres of Wyoming big sagebrush on Pratt Tank Allotment. This would release herbaceous understory from competition with sagebrush, while ample cover and winter forage for wildlife would be provided by remaining sagebrush. Also, once perennial herbaceous plant density increased, after competition with sagebrush was eliminated, overland flow induced erosion would be reduced.

An objective of the vegetation treatment is to improve ecological condition by reducing the abundance of sagebrush. This would allow for an increase in perennial herbaceous vegetation. Methods considered to control sagebrush include: plowing or disking, biological (animal impact), and chemical.

### **Pond maintenance and construction**

Clean and line 2 ponds in the West Pasture, and construct 1 pond in the North Pasture of Pratt Tank Allotment. Artificial water harvesting aprons would also be constructed at each pond.

### **Catchment**

Construct a catchment in the West Pasture of Pratt Tank Allotment. This should reduce the need for water hauling and allow for better animal distribution.

### **Pipeline maintenance or reconstruction**

Repair or replace 2 existing pipelines on Signature Rock Allotment. This would allow better

---

<sup>1</sup>G. Allen Rasmussen, Dept. Range Science, Utah State University, Logan, UT 84322-5230, and James D. Keyes, Extension, Utah state University, Monticello, UT 84535-0549 Cattle as a Biological Control Agent on Wyoming Big Sagebrush (*Artemisia tridentata wyomingensis*), (1993):1-8.

animal distribution on the allotment.

### **Water hauling**

Water hauling has occurred in the past and needs to continue. This is necessary since portions of the allotments are too far from dependable water sources. In addition, water hauling may be used to bait animals, which is necessary to achieve desired impacts.

### **Grade stabilization structures**

These would be constructed to prevent damage to pipelines or roads.

### **Tree planting**

This is contingent on conditions developing which are favorable for survival of cottonwood and willow trees.

### **Exclosure**

Construct an exclosure at Signature Rock allotment to compare the difference between intense animal impact and long term rest on understory plant production, watershed condition, and biodiversity.

### **Fertilization experiment**

Use nitrogen and/or phosphorus to fertilize native vegetation to determine if it becomes more palatable to livestock and wildlife. And if so, would animals congregate and cause the desired animal impact. Also, fertilize plants along contour lines to determine if they would increase in density sufficiently enough to act as water spreaders.

The foregoing is covered item by item on pages 12-19 in the HRM Plan. Legal descriptions are given for most items, and maps in the appendices show locations.

### **Alternative (No Action).**

Continue existing management of Signature Rock and Pratt Tank Allotments. This would entail (1) carrying on with an 8 pasture Savory grazing system and a 3 pasture deferred rest rotation grazing system, respectively, at Signature Rock and Pratt Tank Allotments; (2) relying on the 50 percent utilization criterion to ensure proper use of the range; and (3) dependency on existing range improvements, without benefit of additional range development projects.

## **AFFECTED ENVIRONMENT**

**General Setting.** The Arizona Strip District/Vermillion Resource Area is located in the northeast portion of Arizona. Pratt Tank and Signature Rock Allotments are located, respectively, 12 and 40 highway miles southeast of Fredonia, Arizona. These allotments comprise approximately 26,500 acres, with 90% of this BLM, 5% private land, and 5% state land. Average annual precipitation is 10 to 12 inches, but has ranged from 5 inches to 18 inches in some years.

Signature Rock Allotment is scheduled for year-round grazing and has 8 pastures or paddocks.

This is to accommodate a Savory grazing system, whereby cattle are concentrated in the paddocks, but are moved from paddock to paddock at frequent intervals.

Cattle currently graze Pratt Tank Allotment from November 1 through May 30. The allotment has 3 pastures and uses a deferred rest rotation grazing system. Under this system forage plants are rested from grazing every year during the growing season in two pastures (one of these two pastures is rested the entire year). Utilization levels are set at 50 percent on key species, which means ½ the plants annual biomass is grazed and ½ remains.

Additional information regarding livestock grazing is included in the HRM Plan on pages 5-7.

Vegetative composition at Pratt Tank Allotment is a sagebrush-grass community with pockets of pinyon/juniper. The overstory of Wyoming big sagebrush is suppressing establishment of perennial herbaceous vegetation by depleting surface soil moisture, and is also contributing to sediment production in many places on the allotment. During the past 20 years about 3000 acres of the allotment has been plowed or burned to reduce sagebrush density, then seeded with perennial grasses, forbs, and shrubs. Studies completed between 1988 and 1992 indicate the ecological condition on 60 percent of the allotment is good and on 40 percent it is fair.

Signature Rock Allotment is vegetated mostly by pinyon-juniper and grasses. Most of the perennial grasses on the allotment are warm-season species (warm-season is a term used to designate plants which make most of their growth during summer). Studies completed in 1992 show that 80 percent of this allotment is in fair condition and 20 percent is in good condition.

Various wildlife species including large and small mammals, avian species, and reptiles inhabit the allotments (refer to page 7 of the HRM Plan for a list of wildlife species). Mule deer (*Odocoileus hemionus*) winter habitat is present on Pratt Tank Allotment. Pronghorn antelope (*Antilocapra americana*) and mule deer habitat occurs on Signature Rock Allotment, and Bighorn sheep (*Ovis canadensis nelsoni*) may use the allotment also, although their habitat lies east of the allotment.

Visual Resource Management Classes (Class I, II, or III) were assigned to the allotments when the Arizona Strip Resource Management Plan was implemented in 1992. The designated wilderness within Signature Rock Allotment was ranked Class I, with the remainder of the allotment denoted Class II; and Pratt Tank Allotment was denoted Class III. Class I stipulates change to the landscape should be minimal and must not attract attention, Class II stipulates management activities may be seen, but should not attract the attention of the casual observer, and Class III allows moderate change to the landscape which may attract attention, but should not dominate the view of the casual observer.

The areas encompassed by the allotments are managed for dispersed recreation with minimal regulation, except for designated wilderness within Signature Rock Allotment. Dispersed recreation pursuits consist mostly of hunting, wildlife viewing, and sightseeing/pleasure driving.

**Affected Resources.** Twelve resource elements are evaluated below. By excerpt from the BLM Manual H-1790-1, Appendix 5 "The following elements of the human environment are subject to requirements specified in statute, regulation or executive order and must be considered in all EA's and EIS's."

**Air Quality.** Air quality in the vicinity of the allotments is good. No monitoring data for air pollutants in this area is available; however, most undeveloped regions have ambient pollutant levels below measurable limits.

**Areas of Critical Environmental Concern (ACEC)** . These designated special management areas on public land are for the protection of important historic, cultural, or scenic values; fish and wildlife; natural systems or processes; or for protection of life and safety from natural hazards. There are no designated ACEC's which are included in or occur in the immediate vicinity of Pratt Tank or Signature Rock Allotments.

**Cultural Resources.** Much remains to be learned about cultural resources on the Arizona Strip District, since intensive field inventories have been completed on only two percent of the acreage on the district. It is likely that cultural sites from the prehistoric period (10,000 BC to 1850 AD) exist on both allotments, inasmuch as sites have been found in areas adjacent to the allotments. It is also probable that historic cultural sites occur on both allotments. The historic Dominquez-Escalante and Arizona Road/Honeymoon Trails traverse Signature Rock Allotment, and the Signature or Inscription Rock is within the boundaries of the allotment.

**Farm Lands (prime or Unique).** Neither Pratt Tank nor Signature Rock Allotment has prime or unique farm lands within its boundaries.

**Floodplains.** Neither Pratt Tank nor Signature Rock Allotment has floodplains within its boundaries.

**Native American Religious Concerns.** The American Indian Religious Freedom Act of 1978 directs Federal agencies to obtain and consider the views of Indian leaders when a proposed land use might conflict with traditional Native American religious beliefs and practices. Sites which could be sacred to Indians may be present. Indian leaders will be contacted to determine if sites of religious significance exist on the allotments.

**Threatened or Endangered Species.** Two special status species may occur on Signature Rock Allotment: (1) American peregrine falcon (*Falco peregrinus anatum*) aeries have been observed in the Vermillion Cliffs, a portion of which is included inside the northeast boundary of Signature Rock Allotment. The peregrine falcon is a federally listed endangered species and is an Arizona State Candidate for Threatened Native Wildlife, which is for "species with known or suspected threats, but for which substantial population declines from historical levels have not been documented." Habitat of the (2) Kaibab plains cactus (*Pediocactus paradinei*) occurs along the west boundary of the allotment, although no cactus have been seen inside the

allotment boundary. The Kaibab plains cactus is a category 1 candidate species, which means the Fish and Wildlife Service has enough information to support listing it as endangered. It was also listed in 1990 as Highly Safeguarded under Arizona Native Plant Law.

In addition, the Northern goshawk (*Accipiter gentilis*), a category 2 species, nests in coniferous forests and may forage at Signature Rock Allotment. The designation category 2 means there is insufficient information currently available to support listing a species. Suitable nesting habitat for the goshawk does not exist on Signature Rock Allotment.

**Wastes, Hazardous or Solid.** Soil erosion potential ranges from slight to critical. Sediment is produced at both Pratt Tank and Signature Rock Allotments on watersheds dominated by Wyoming big sagebrush and in drainages devoid of ground cover. This sediment is termed nonpoint source pollution, since it is not discharged at a specific, single location.

**Water Quality, Drinking/Ground.** Surface water resources at the allotments consist of springs & seeps, stock ponds, and intermittent flows which occur after precipitation events. None of these sources of water is suitable for human consumption, though they are acceptable for livestock and wildlife use. Ground water at the allotments is 600 plus feet deep and may contain dissolved salts.

**Wetlands/Riparian Zones.** Wet areas exist at the springs and seeps along the northeast boundary of Signature Rock Allotment. These riparian areas are small with flows extending less 1000 feet, and have not been inventoried to determine condition. These areas are mostly on private property.

**Wild and Scenic Rivers.** Neither Pratt Tank nor Signature Rock Allotment has wild and scenic rivers within its boundaries.

**Wilderness.** The Paria Canyon - Vermilion Cliffs Wilderness encompasses approximately 700 acres of the southeast corner of Signature Rock Allotment. Pratt Tank Allotment has no wilderness within its boundaries.

## **ENVIRONMENTAL IMPACTS**

**Impacts of the Proposed Action.** The analysis below is to determine the extent of environment impacts associated with the following proposed action items: livestock grazing system, animal impact and baiting, fencing, vegetation treatment, pond maintenance and construction, catchment, pipeline maintenance or reconstruction, water hauling, grade stabilization structures, tree planting, exclosure, and the fertilization experiment. Proposed action items which are believed to have little or no impact are not mentioned in the analysis below.

**Air Quality.** Dust would be generated from livestock movement, vehicle traffic associated with managing livestock, and water hauling; and from heavy equipment use to maintain and

construct ponds, pipelines, and for mechanical vegetation treatment (if used). Exhaust emissions would also be produced by vehicles and heavy equipment. However, these are short duration, insignificant impacts to air quality (dust is excluded as an air quality criterion in the Clean Air Act). No direct, indirect, or cumulative impacts are anticipated.

**Cultural Resources.** Cultural surveys are required for all proposed action items except livestock grazing and vegetation treatments where chemical means are used. However, cultural surveys would be done where livestock are to be concentrated for animal impact.

Class III or intensive field inventories would be completed prior to implementation of the remaining proposed action items. These are inventories of an entire area where a project is to be constructed. If an inventory reveals the presence of a cultural site, an attempt would be made to redesign or relocate the proposed project to avoid impacting the cultural site. On rare occasions it may be necessary to disturb a cultural site. Prior to disturbing the site, the Arizona State Historic Preservation Officer would be consulted and measures developed to mitigate the disturbance.

No direct, indirect, or cumulative impacts are anticipated if mitigation is followed.

**Native American Religious Concerns.** Indian leaders would be contacted to obtain their views regarding implementation of the proposed action items and the effect on their traditional religious beliefs and practices. Unnecessary interference with Indian religious practices would be avoided during project implementation. No direct, indirect, or cumulative impacts are anticipated.

**Threatened or Endangered Species.** BLM policy is: no action will adversely affect habitat of and/or recovery of T&E species, and ensure that actions do not cause a need to list candidate species (category 1 & 2 species) as T&E.

Livestock grazing and concentrating of livestock to achieve desired animal impact is not expected to affect the peregrine falcon nor the goshawk. Peregrine falcon aeries are high in the Vermilion Cliffs and not accessible to livestock. Suitable nesting habitat for the goshawk does not exist on Signature Rock Allotment. Livestock grazing and concentrating of livestock within the confines of the allotment would have little affect overall on the vast forage areas utilized by raptors.

No salt, supplement, or water would be placed near habitat of the Kaibab plains cactus and, therefore, no effect to the cactus' habitat resulting from livestock grazing or animal impact is anticipated.

Pipeline maintenance and reconstruction, water hauling, grade stabilization structures, tree planting, the exclosure, and fertilization experiment would be confined to small areas and avoid the habitat of special status species, and as a result, would have no affect on the peregrine falcon, goshawk, or Kaibab plains cactus.

The remaining proposed action items planned for Pratt Tank Allotment, i.e., fencing, vegetation treatment, and pond maintenance and construction would have no affect on T&E species, since there are no T&E species or habitat present on this allotment.

No direct, indirect, or cumulative impacts are anticipated if mitigation is followed.

**Wastes, Hazardous or Solid.** Sediment produced at the allotments is termed nonpoint source pollution, which means it comes from no specific, single location. Livestock grazing would most likely have a negligible effect on present sediment production. The grazing system is designed to prevent overgrazing and subsequent loss of vegetation, thus preventing increased soil erosion and sediment production, and actually reducing erosion.

The effect of vegetation treatments on soil erosion and sediment production may range from no increase to a short term (3 to 5 year) increase, pending establishment of desired vegetation. Mechanical treatments such as disking to disturb the soil; and infrequent, intense rainstorms could, following mechanical treatment, erode disturbed soil. Animal impact and tebuthiuron treatments would likely have insignificant effects on soil erosion, since litter would remain in place on the soil surface. In addition, animal impact does not disturb the surface soil to the extent that mechanical treatment does. However, achieving the goal of the treatments: to reduce sagebrush and increase herbaceous vegetation, would probably reduce nonpoint source pollution through significant reductions in current levels of soil erosion and resultant sediment production.

Fencing, pond construction and maintenance, and pipeline maintenance and reconstruction would be confined to small portions of the allotments and have little effect on soil erosion and sediment production.

No direct, indirect, or cumulative impacts are anticipated.

**Water Quality, Drinking/Ground.** The proposed action items are not anticipated to significantly increase current levels of contaminants or sediment in surface waters, either inside or outside the allotments. Livestock grazing and animal impact could increase bacteria in stock ponds, but water in these ponds is not intended for human consumption, and stock ponds are exempt from regulation under the Clean Water Act. Infrequent, high-intensity rain storms would be the most important potential factor in transport of tebuthiuron pellets (proposed vegetation treatment), fertilizer (proposed fertilization experiment), or sediment into surface waters. However, a portion of the tebuthiuron and fertilizer would be dispersed into the soil, in place, when saturated with water. In addition, tebuthiuron is applied at a low concentration of ½ pound of active ingredient per acre and, combined with the large quantity of water produced during intensive rain storms, would dilute significantly in concentration if mixed with surface waters. Furthermore, one hundred foot buffers would be established around surface water to reduce the possibility of tebuthiuron getting into the water. The ramifications of sediment production (sediment in water adversely affects its quality) were addressed previously in Wastes, Hazardous or Solid.

None of the proposed action items are expected to substantially affect ground water quality. Leaching and a shallow water table are the two main factors which could influence movement of tebuthiuron into ground water. Tebuthiuron is a relatively persistent herbicide with an average half-life in soil of one year, a susceptibility factor in leaching. Nevertheless, given the water table depth of 600 feet at Pratt Tank Allotment (site of the proposed tebuthiuron application), it is improbable tebuthiuron could leach that deep into ground water. In addition, tebuthiuron is bound tightly to clay particles, and soils at the allotment contain about 30 percent clay. This should preclude tebuthiuron from leaching into the water table.

No direct, indirect, or cumulative impacts are anticipated if mitigation is followed.

**Wetlands/Riparian Zones.** Riparian areas on the northeast of Signature Rock Allotment occur mostly on private property. Neither livestock grazing nor the proposed action items are expected to negatively impact the current condition of these riparian areas. No direct, indirect, or cumulative impacts are anticipated.

**Wilderness.** The Wilderness Act stipulates that "livestock grazing, where already established, must be permitted to continue." Since livestock grazing occurred on the wilderness portion of Signature Rock Allotment prior to its designation as wilderness, there is no impact to wilderness under this status quo. In addition, livestock seldom graze within the wilderness portion of the allotment.

It is also stipulated in the Wilderness Act that improvements and facilities within wilderness, which are associated with livestock grazing, may be used and maintained. One of the facets of a proposed action item calls for maintenance or reconstruction of the existing pipeline within wilderness at Signature Rock Allotment (refer to the map in Appendix G of the HRM plan). A range improvement maintenance agreement between BLM and the permittee places constraints on maintenance work within wilderness, i.e., maintenance should be done during periods of low recreation visitor use, and only hand tools should be used. If reconstruction of the pipeline is of the scope and magnitude which requires the use of mechanized equipment, the permittee is to submit a reconstruction proposal to BLM 60 days prior to the proposed reconstruction.

Other than livestock grazing and maintenance or reconstruction of the pipeline there are no proposed action items planned in wilderness.

Wilderness management guidelines from the BLM Manual specify that nonwilderness activities or uses may occur up to the boundary of a wilderness area, but impacts of these activities on the wilderness resource should be addressed in an EA. Visual impacts are addressed on page 13 in this EA, and would also be applicable to wilderness. Noise generated during pipeline maintenance or reconstruction, construction of grade stabilization structures, and water hauling at Signature Rock Allotment may affect the solitude of wilderness, but would be short in duration.

The proposed action items planned for Pratt Tank Allotment would have no impact on

wilderness because they could not readily be seen or heard within wilderness areas.

No long-term direct, indirect, or cumulative impacts are anticipated.

### **Other Impacts**

**Vegetation.** Plowing or disking effectively reduces sagebrush, but may also decrease existing perennial grasses. These methods are recommended where herbaceous understory is sparse and follow-up seeding is planned, as the associated soil disturbance creates a ready seedbed.

High densities of cattle can be used to produce animal impact. Water, hay, supplement, or herding is used as a means to confine animals to small areas in order to achieve desired impact. As a result, sagebrush is trampled and defoliated, the soil crust is broken by hoof action--producing a seedbed, and manure and plant material are worked in--mulching and fertilizing the soil. Rassmussen, cited previously in this EA, has proven that animal impact can reduce sagebrush and increase perennial herbaceous vegetation. Disadvantages of using animal impact are: nontarget vegetation may be affected and it is labor intensive.

Tebuthiuron, which is applied to the soil surface in pellet form, is the chemical of choice for controlling sagebrush. It is a non-specific herbicide, but application rates of around .5 lb. active ingredient per acre effectively controls sagebrush, while grass production is enhanced. The effect of tebuthiuron on shrubs other than sagebrush varies by species. This herbicide is best used where densities of desirable vegetation are high enough to propagate after competition with sagebrush is diminished.

Vegetation would be disturbed in the immediate vicinity of fencing, water development projects, and pipeline construction. However, this would be confined to small areas, with negligible overall impact to vegetation.

Livestock grazing can be detrimental to vegetation if improper grazing occurs. Traditionally, to prevent improper grazing and ensure the health and propagation of desirable vegetation, grazing systems have been used and utilization of vegetation held to a maximum of 50 percent. Recent university studies have shown, however, that observing plant responses to grazing is better than using the 50 percent utilization method. Plants are monitored after grazing to determine when regrowth is initiated. When this occurs livestock are moved to a different location, allowing the plants a period of rest. Monitoring plant response and moving cattle frequently is one of the basic precepts of Holistic Resource Management, and using these HRM precepts,<sup>2</sup>HRM has been successfully implemented on an USFS allotment near the town of Austin, Nevada. The downside to HRM is that it is very labor intensive.

---

<sup>2</sup>Toiabe Watershed & Wetland Team, Addendum To Allotment Management Plan Indian Canyon Division Reeds-Indian Canyon Allotment #315 Lander County, Nevada, Environmental Assessment, May 8, 1992.

**Wildlife.** Livestock grazing operations can disturb big game during the critical fawning and wintering periods. However, livestock grazing does not usually affect big game species because their respective habitat or diet preferences differ, or the wildlife population density may be low, meaning competition is slight. As previously mentioned, bighorn sheep habitat is east of Signature Rock Allotment, and competition is minimal for forage on Pratt Tank Allotment between mule deer and cattle, since mule deer prefer browse and cattle prefer grasses. A target population of 120 antelope for House Rock Valley (Signature Rock Allotment is included within this area) was proposed in the Paria-Kanab Creek Habitat Management Plan. This population goal has been achieved.

Livestock have grazed in the area where Pratt Tank and Signature Rock Allotments exist today for well over 100 years, and though this may have influenced change in composition of wildlife species from that of earlier times, no adverse impact to large or small mammals, avian species, or reptiles is anticipated as a result of current livestock grazing practices.

Treating sagebrush by mechanical, biological, chemical means could be beneficial to some wildlife species and detrimental to others. Pronghorn antelope and bighorn sheep would benefit if sagebrush were reduced and herbaceous vegetation increased, as the majority of their diet is composed of herbaceous vegetation. Mule deer may feed on sagebrush if other palatable shrubs are not available, but prefer more palatable shrubs such as cliffrose (*Cowania mexicana*), fourwing saltbush (*Atriplex canescens*), and winterfat (*Ceratoides lanata*).

Mechanical, biological, or chemical treatment could reduce the density of these palatable shrubs temporarily. The top of the plant would be removed to or below the soil surface with mechanical or biological treatment; however, these treatments would not kill most fourwing saltbush and winterfat, as they can sprout from basal buds. Cliffrose could be avoided during mechanical treatment and, due to its size, is not as vulnerable as sagebrush to trampling (biological control aka animal impact). Also, if the chemical tebuthiuron were applied at .5 lb. active ingredient or less per acre, most of these palatable shrubs would survive.

Sagebrush treatment could displace some wildlife species. Mule deer may use sagebrush cover for protection from cold in wintertime, and if sagebrush were treated, deer would be displaced to nearby nontreatment areas. After mechanical or biological treatment, shrub nesting birds would also be displaced to nontreatment areas. Nonetheless, dead sagebrush would be left standing after treatment with the chemical tebuthiuron and could serve as nesting sites. In addition, mechanical treatment could damage tunnels of burrowing animals.

<sup>3</sup>Risks from exposure to tebuthiuron have been assessed for the American kestrel and

---

<sup>3</sup>U.S. Department of the Interior, Bureau of Land Management, Vegetation Treatment on BLM Lands in Thirteen Western States, Environmental Impact Statement, (May 1991): Appendix E7-1 to E8-13.

pronghorn antelope, two of the wildlife species which inhabit the allotments. LD<sub>50</sub> is the criterion used to assess risk to wildlife and is defined as "the dosage of toxicant, expressed in milligrams of toxicant per kilogram of animal body weight, required to kill 50 percent of the animals in a test population when given orally." For a typical rangeland application of tebuthiuron, the associated risk to the American kestrel is .3% of the LD<sub>50</sub> and risk to the pronghorn antelope is .09% of the LD<sub>50</sub>. These are considered negligible risks under Environmental Protection Agency guidelines.

Maintenance and reconstruction of water facilities would benefit wildlife by making additional water available.

Neither the proposed action nor the no action alternative is anticipated to cause adverse impacts to wildlife.

**Humans.** <sup>4</sup>Risks to the public from the use of tebuthiuron in rangeland treatments were delineated through animal testing and herbicide exposure analysis. Animal species having similar metabolism and organ systems to that of humans were used to determine the dose levels of tebuthiuron which produced no observed chronic, subchronic, or reproductive/developmental toxicity. Also, hypothetical herbicide treatment situations were analyzed to determine herbicide doses members of the public could realistically be exposed to through skin contact and ingestion. Based on this, the tebuthiuron dosage at which no observed systemic toxicity or reproductive effects occurs in test animals is more than 100 times greater than the representative dosage a member of the public might be exposed to on rangelands treated with tebuthiuron. In addition, available evidence indicates that tebuthiuron is non-carcinogenic and nonmutagenic.

**Recreation and Visual.** The Class I landscape character (wilderness) should remain as is, and would not be affected by maintenance or reconstruction of the existing pipeline or continued livestock grazing.

Proposed action items such as animal impact and pipeline maintenance or reconstruction would cause surface disturbance and/or vegetation removal, but should revegetate within 2 years. These proposed action items would comply with Class II visual management guidelines for non-wilderness portions of Signature Rock Allotment.

The proposed vegetation treatment, additional fencing, and additional water development on Pratt Tank Allotment would meet Class III visual management criteria. Mechanical and animal impact treatments denude vegetation for a period of time, and after treatment with tebuthiuron, there may be contrast between dead and living vegetation until desired vegetation is established. However, the result of these treatments would be greater diversity of vegetation in the landscape, which could be aesthetically pleasing, especially in areas needing rehabilitation.

---

<sup>4</sup>Ibid., Appendix E3-1 to E5-29.

Additional fencing and the catchment project may attract attention, but would not dominate the view.

Impacts to recreationists, especially sightseers, resulting from livestock grazing is subjective. To some, livestock grazing evokes a pastoral scene which they enjoy--others are indifferent about it--and still others would like to see livestock removed from public lands.

Fencing projects and vegetation treatments at Pratt Tank Allotment may affect some recreationists. Additional fencing could impede recreationists on foot, requiring them to straddle a fence or find a gate. Some vegetation treatments may displace hunters and wildlife viewers to non-treatment areas, prior to establishment of desired vegetation.

### **Impacts of No Action Alternative.**

**Air Quality.** As with the proposed action, dust would be generated from livestock movement and vehicle traffic associated with managing livestock, and from heavy equipment used to maintain ponds and pipelines. Exhaust emissions would also be produced by vehicles and heavy equipment. However, these are short duration, insignificant impacts to air quality (dust is excluded as an air quality criterion in the Clean Air Act). No direct, indirect, or cumulative impacts are anticipated.

**Cultural Resources.** Cultural surveys are not required for livestock grazing. Cultural sites are usually covered over by soil, and no significant livestock related damage to cultural sites has been observed. No direct, indirect, or cumulative impacts are anticipated.

**Native American Religious Concerns.** The alternative to the proposed action would not affect this critical element.

**Threatened or Endangered Species.** BLM policy is: no action will adversely affect habitat of and/or recovery of T&E species, and ensure that actions do not cause a need to list candidate species (category 1 & 2 species) as T&E.

Livestock grazing is not expected to affect the peregrine falcon nor the goshawk. Peregrine falcon aeries are high in the Vermilion Cliffs and not accessible to livestock, and suitable nesting habitat for the goshawk does not exist on Pratt Tank Allotment. Livestock grazing within the confines of the allotment would have no effect on raptor foraging, since the areas where these birds forage are vast.

No salt, supplement, or water would be placed near habitat of the Kaibab plains cactus and, therefore, no effect to the cactus' habitat resulting from livestock grazing is anticipated.

No direct, indirect, or cumulative impacts are anticipated if mitigation is followed.

**Wastes, Hazardous or Solid.** Livestock grazing would most likely have a negligible effect on

present sediment production. The grazing system is designed to prevent overgrazing and subsequent loss of vegetation, thus preventing increased soil erosion and sediment production.

There would be no reduction in sagebrush or attendant increase in herbaceous vegetation without vegetation treatments. Therefore, current levels of soil erosion and sediment production would continue.

Pond maintenance and pipeline maintenance would be confined to small portions of the allotments and have little effect on soil erosion and resultant sediment production.

No direct, indirect, or cumulative impacts are anticipated.

**Water Quality, Drinking/Ground.** The alternative to the proposed action is not anticipated to significantly increase current levels of contaminants or sediment in surface waters, either inside or outside the allotments. Livestock grazing could increase bacteria in stock ponds, but water in these ponds is not intended for human consumption, and stock ponds are exempt from regulation under the Clean Water Act. The ramifications of sediment production (sediment in water adversely affects its quality) were addressed previously in Wastes, Hazardous or Solid.

No direct, indirect, or cumulative impacts are anticipated.

**Wetlands/Riparian Zones.** Riparian areas on the northeast of Signature Rock Allotment occur mostly on private property. Livestock grazing is not expected to impact the current condition of these riparian areas. No direct, indirect, or cumulative impacts are anticipated.

**Wilderness.** The Wilderness Act stipulates that "livestock grazing, where already established, must be permitted to continue." Since livestock grazing occurred on the wilderness portion of Signature Rock Allotment prior to its designation as wilderness, there is no impact to wilderness under this status quo. In addition, livestock seldom graze within the wilderness portion of the allotment.

No new projects would be constructed either inside or outside wilderness, though noise generated during pipeline maintenance at Signature Rock Allotment may affect the solitude of wilderness, but would be short in duration.

No direct, indirect, or cumulative impacts are anticipated.

#### **Mitigation Measures.**

1. If the herbicide tebuthiuron is used, standards and guidelines in BLM Handbook Section 9011 (Pesticide Storage, Transportation, Spills, and Disposal ) Section II will be met. This defines standards for storage facilities, posting and handling, accountability, and transportation. It covers spill prevention, planning, cleanup, and container disposal requirements.

2. One hundred foot buffer zones would be observed around ponds if tebuthiurn were aerially applied.
3. No salt, supplement, or water would be placed within ½ mile of habitat of the Kaibab plains cactus.
4. Cultural surveys are to be completed before projects are implemented.
5. Fences would be constructed to allow movement of wildlife. Barbwire fences, if used, would have a maximum 42 inch top wire height and a smooth bottom wire 16 inches off the ground.
6. Water troughs would be equipped with a wildlife escape ramp.
7. Avoid the pipeline right-of-way (PHX-064823) beginning at House Rock Spring and continuing south along the east side of the Two Mile road.

**Residual Impacts.** If the previously mentioned mitigation measures are applied; no residual impacts from the proposed action will remain. Also, no residual impacts from the no action alternative would remain.

#### **CONSULTATION AND COORDINATION**

This document is going through internal review (Vermillion Resource Area Office) as well as review by other agencies and interested publics, with comments being incorporated into the analyses as appropriate. The following is a list of staff reviewers:

Dennis Curtis, Vermillion Resource Area Manager  
Ken Moore, Non Renewable Resource Branch Chief  
Greg Taylor, Environmental Protection Specialist/AP&EC  
Mike Small, Wildlife/T&E(fauna)  
Bob Sandberg, Renewable Resources Branch Chief  
Laurie Ford, Lands and Realty  
Tom Folks, Recreation/Wilderness/Visual  
Diana Christensen, Cultural Resources  
Lee Hughes, Ecologist/T&E(flora)  
Bill Wall, Rangeland Management Specialist

