

**NOTICE OF DECISION**  
**Arizona Strip Field Office Fuels Reduction and Ecological Restoration**

Dear Interested Party:

Please be advised that an Environmental Assessment (EA) was prepared (EA-AZ-110-2007-0010) for the proposed Arizona Strip Field Office Fuels Reduction and Ecological Restoration. This EA went through an interdisciplinary review process, and a Finding of No Significant Impact (FONSI) and Decision Record (DR) were approved. The EA, FONSI, and DR are public documents, and available upon request.

The EA showed the site specific environmental effects of using chemical methods to reduce Wyoming big sagebrush composition and pinyon and juniper, with PJ being a collateral to the primary target species, sagebrush on public land managed by the BLM Arizona Strip Field Office.

A substantial portion of the vegetation on northern Shivwits Plateau is dominated by sagebrush and pinyon-juniper woodlands. These shrublands and woodlands contain high volumes of hazardous fuels, and represent a significant risk of high intensity/high severity wildfire. Healthy ecological functions have been disrupted by the exclusion of disturbance, resulting in adverse impacts on wildlife habitat, watershed, livestock grazing, and recreation opportunities. Unhealthy conditions such as high fuel loads, low species diversity, low productivity, and reduced watershed capacity are the result of this conversion from grasslands to shrublands and woodlands. High volumes of hazardous fuels create threats to the safety of visitors and agency personnel, and to property.

The proposed action or alternatives addressed below are consistent with the Arizona Strip District Resource Management Plan (RMP) dated January 31, 1992, as amended April 1997, and are consistent with Federal, State and local laws, regulations, and plans to the maximum extent possible. A No Action alternative was also analyzed. Mitigation measures to be implemented through this analysis are as follows:

Standards and guidelines in BLM Handbook Section 9011 (Pesticide Storage, Transportation, Spills, and Disposal) Section II would be met. This defines standards for storage facilities, posting and handling, accountability, and transportation. It covers spill prevention, planning, cleanup, and container disposal requirements.

Irregular shaping and feathering of treatment edges would be used to reduce straight lines and produce a mosaic of edges. Areas of cliffrose would be flagged and avoided as much as practical. Livestock grazing would be deferred for two years during the growing season. One hundred foot buffers would be established around surface water (springs, ponds, & catchments) to reduce the possibility of tebuthiuron getting into the water. California Condor mitigation measures would be followed. Inspection and monitoring of the proposed treatment areas would be done annually.

This decision is effective immediately in accordance with regulations contained in

43 CFR 4190.1.

If an appeal is taken, your notice of appeal must be filed in this office (at the above address) within 30 days of the receipt of this decision. The appellant has a burden of showing that the decision appealed is in error.

If you wish to file a petition (request) pursuant to regulation 43 CFR 4.416 for a stay (suspension) of the effectiveness of this decision during the time that your appeal is being reviewed by the board, the petition for a stay must accompany your notice of appeal. A petition for stay is required to show sufficient justification based on standards listed below. Copies of the notice to appeal and petition for stay must also be submitted to each party named in this decision and to the Interior Board of Land Appeals and to the appropriate Office of the solicitor (see 43 CFR 4.416) at the same time the original documents are filed with this office. If you request a stay, you have the burden of proof to demonstrate that a stay should be granted.

#### Standards for Obtaining a Stay

Except as otherwise provided by law or other pertinent regulation, a petition for a stay of a decision pending appeal shall show sufficient justification based on the following standards:

- (1) The relative harm to the parties if the stay is granted or denied,
- (2) The likelihood of the appellant's success on the merits,
- (3) The likelihood of immediate and irreparable harm if the stay is not granted,
- (4) Whether the public interest favors granting the stay.

For more information or to request a copy of the EA, FONSI, or DR, please contact LD Walker at (435) 688-3242

Sincerely,

Becky J. Hammond  
Field Manager

**DECISION RECORD**  
**Fuels Reduction and Ecological Restoration**  
**on the Arizona Strip**  
**DR-AZ-110-2007-0010**

**DECISION:** It is my decision to authorize the proposed action described in EA # AZ-110-2007-0010, a sagebrush/tree fuels reduction treatment project on approximately 17,800 acres of public lands administered by the Arizona Strip Field Office. The intent of this treatment is to reduce the woody species composition within the identified treatment areas, thereby reducing the fuel loading and lowering the potential for high intensity, catastrophic fires. This project will aid in achieving desired plant community objectives and improve ecological condition by reducing sagebrush/tree composition and increasing grass and forb composition.

**MITIGATION AND CONDITIONS**

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.

Feathering of edges will be used to reduce straight lines and produce a mosaic.

Areas of cliffrose will be flagged and avoided.

Livestock grazing will be deferred for two years during the growing season.

One hundred foot buffers will be established around surface water to reduce the possibility of tebuthiuron getting into the water.

California Condor mitigation measures will be followed

CC1B. Immediately prior to the start of a permitted project, BLM will contact personnel monitoring California condor locations and movement on the Arizona Strip to determine the locations and status of condors in or near the project area.

CC2B. Where California condors visit a worksite while activities are underway, the on-site supervisor will notify the BLM wildlife team lead or condor biologist. Project workers and supervisors will be instructed to avoid interaction with condors. Project activities will be modified, relocated, or delayed if those activities adversely affect condors. Operations will cease until the bird leaves on its own or until techniques are employed by permitted personnel which results in the individual condor leaving the area.

CC7B. Aircraft use, especially low level flights along the rim of the Vermilion Cliffs and flights near the condor release site at Vermilion Cliffs, will be minimized to the greatest extent possible in order to avoid disturbance to condors which may be present. Known

active nest sites will be avoided.

CC8B. The BLM condor biologist or Wildlife Program Lead will contact the Peregrine Fund, as appropriate, immediately before operations involving aviation begin to check on possible locations of condors in the subject area.

CC9B. All BLM-authorized aviation personnel will be provided literature and/or instructed regarding condor concerns prior to conducting aerial operations.

CC10B. Aircraft will maintain and maximize safe flying separation distances from condors of at least 400 meters, in order to avoid, flying condors. Aircraft will also keep a minimum of 0.25 miles away from condors located on the ground unless safety concerns override this restriction.

CC11B. BLM will implement the protective measures for California condors that are contained in the March 2004 "Recommended Protection Measures for Pesticide Applications in The Southwest Region of the U.S. Fish and Wildlife Service."

**Monitoring.** Inspection and monitoring of the proposed treatment areas will be done annually.

Objectives are: (1) decrease sagebrush composition by weight (CBW) from 50 to 75 percent to approximately 10 percent; and (2) release associated vegetation from competition with sagebrush, increase the composition of perennial grasses to 60 to 75 percent, increase forbs to 1 to 10 percent, and maintain shrubs between 10 to 30 percent. After sagebrush reduction, herbaceous vegetation will propagate through plant tillering or below ground vegetative reproduction, sprouting and also the native seed source which already exists, precluding the need for reseeding. (3) Reduce heavy fuel loading.

**RATIONALE:** The Arizona Strip Resource Management Plan of 1992 as amended in April of 1997, specifically addresses and provides for vegetation treatments to manage those vegetative and soil resources so that they are as productive as feasible for multiple-use values.

The soil, water and air, wildlife habitat, vegetation and forest management, and livestock grazing, as well as fire management sections of the RMP each address and specifically discuss vegetation treatments as a viable and integral part of the overall management direction. (See decision numbers WL 07, WS 01, GZ 06)

It is widely held that there has been an overall increase of woody species and fuel buildup over the Arizona Strip and the west, at the expense of grasslands and other more herbaceous oriented plant communities. There are many and varied views as to the cause of this phenomenon, from livestock grazing to fire suppression and climatic change. Regardless of the cause, the consensus is that overall there is a higher composition of woody species than is desired and a corresponding lack of plant diversity within many of the woody dominated communities.

This project is aimed at precisely that issue and is deemed the most appropriate means to accomplish the objective for these sites, in that it is safer than fire, given the fuel loads and the flame lengths encountered in these fuel types. The logistics are less complex, more certain of completion and less costly than fire and less ground disturbing than fire or mechanical methods.

Since this type of treatment is less ground disturbing than other methods, it is less conducive to the propagation of invasive species and results in an increase in the native grass and forb components without the risks of increases in noxious or other invasive species.

The application rate is extremely light and has effects that are specific to the woody target species while promoting the native grass and herbaceous species, resulting in a more species rich and diverse plant community that can more easily support a natural fire regime of less intensity than would otherwise occur. The resulting community is healthier since it more closely resembles the species composition outlined in the ecological site guides, is less susceptible to catastrophic fire, provides more effective ground cover and reduces erosion rates and supports a greater diversity of dependant wildlife species.

The resulting community is more conducive to all management activities and allows the manager to achieve the long term desired plant community objectives and meet the varied demands placed on the dependent resources.

### **RIGHTS OF APPEAL**

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If you wish to file a petition (request) pursuant to regulation 43 CFR 4.416 for a stay (suspension) of the effectiveness of this decision during the time that your appeal is being reviewed by the board, the petition for a stay must accompany your notice of appeal . A petition for stay is required to show sufficient justification based on standards listed below. Copies of the notice to appeal and petition for stay must also be submitted to each party named in this decision and to the Interior Board of Land Appeals and to the appropriate Office of the soliciter (see 43 CFR 4.416) at the same time the original documents are filed with this office. If you request a stay, you have the burden of proof to demonstrate that a stay should be granted.

#### **Standards for Obtaining a Stay**

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- (1) The relative harm to the parties if the stay is granted or denied,
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- (3) The likelihood of immediate and irreparable harm if the stay is not granted,
- (4) Whether the public interest favors granting the stay.

Approved by: \_\_\_\_\_ Date: \_\_\_\_\_

Acting Field Manager  
Arizona Strip Field Office

**Arizona Strip Field Office Fuels Reduction and Ecological Restoration  
EA-AZ-110-2007-0010**

**Arizona Strip Field Office  
U.S. Bureau of Land Management  
345 E. Riverside Drive  
St. George UT 84790**

## **I. INTRODUCTION**

This environment assessment (EA) analyzes the site specific environmental effects of using chemical methods to reduce Wyoming big sagebrush composition and pinyon and juniper, with PJ being a collateral to the primary target species, sagebrush on public land managed by the BLM Arizona Strip Field Office. This EA is tiered to the Vegetation Treatment on BLM Lands in Thirteen Western States Final EIS (FEIS) of May 1991, which assessed how vegetation treatment, including chemical methods, affects elements of the human environment.

### **Purpose and Need for the Proposed Action**

Under the Public Rangelands Improvement Act of 1978 [43 USC sec. 1901 (b) (2)] Congress established and reaffirmed a national policy and commitment to:

. . . Improve the condition of the public rangelands so they become as productive as feasible for all rangeland values in accordance with management objectives and the land use planning process . . .

A substantial portion of the vegetation on northern Shivwits Plateau is dominated by sagebrush and pinyon-juniper woodlands. These shrublands and woodlands contain high volumes of hazardous fuels, and represent a significant risk of high intensity/high severity wildfire. Healthy ecological functions have been disrupted by the exclusion of disturbance, resulting in adverse impacts on wildlife habitat, watershed, livestock grazing, and recreation opportunities. Unhealthy conditions such as high fuel loads, low species diversity, low productivity, and reduced watershed capacity are the result of this conversion from grasslands to shrublands and woodlands. High volumes of hazardous fuels create threats to the safety of visitors and agency personnel, and to property.

Sagebrush out-competes and excludes other plant species. Baxter's finding that sagebrush crown cover exceeding 10 percent caused decreases in herbaceous vegetation tends to bear this out.<sup>1</sup> Sagebrush-dominated plant communities tend to be very stable and persistent. West et al., Robertson, Sanders and Voth, and Anderson and Holte concluded that high density big sagebrush stands can endure for very long periods of time (in these studies livestock grazing was excluded as an influence).<sup>2</sup> This suggests that intervention

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<sup>1</sup>Garth Baxter, Pesticide Specialist, Intermountain Region, Forest Service, "Management of the Sagebrush Grass Ecosystem," 29 October 1993. Garth Baxter, "Thinning Dense Sagebrush Stands with Spike 20P", *Rangelands* 20(3), June 1998

<sup>2</sup>N.E. West, F.D. Provenza, P.S. Johnson, and M.K. Owens, "Vegetation change after 13 years of livestock grazing exclusion on sagebrush semidesert in central Utah," *Journal of Range Management* 37 (May 1984):262-264; J.H. Robertson, "Changes on a grass-shrub range in Nevada ungrazed for 30 years," *Journal of Range Management* 24 (September 1971):397-400; K.D. Sanders and A.A.Voth, "Ecological changes of grazed and ungrazed plant communities," (Managing Intermountain rangelands—improvement

is necessary to control sagebrush.

Baxter's findings also showed that sagebrush could effectively be thinned rather than eliminated using tebuthiuron which realizes the benefits and dependence of plant and animal species to the sagebrush ecosystem. The increased biodiversity generated from sagebrush thinning developed higher insect populations which in turn benefited species of birds rearing chicks.

The areas identified for treatment have been surveyed and evaluated as to potential for response to the treatment method and achievement of treatment objectives. Portions of proposed treatment areas received treatment in the past during the late 40's to mid 60's. Allotment S&G evaluations in the "Recommendations Section" suggest that methods and options for controlling the brush that is reinvading these allotments be determined and then treat those areas to make them more productive retaining or improving their watershed values. It was determined that the proposal would be the most appropriate means of reducing the target species and increase the preferred vegetative component with the least amount of soil and other resource disturbance.

The maps of the proposed project areas show public land that contain high loads of hazardous fuels and that are in diminished ecological condition due to the high composition of sagebrush and low composition of desirable grasses, forbs, and shrubs (based on field studies of the area and data compiled from the USDA Natural Resources Conservation Service Ecological Site Guides). Through chemical methods, the Bureau of Land Management proposes to reduce hazardous fuels and improve the ecological condition of these public rangelands.

The goals of the project are:

- Remove/reduce hazardous fuels (Dense sagebrush and tree-dominated sites pose a fire hazard when conditions such as high temperatures, low humidity, high winds are coupled with cheatgrass loading. Such conditions could ignite a catastrophic fire event).
- Minimize impacts on cultural resources
- Minimize impacts on wildlife and special status species (plants and animals)
- Minimize surface disturbance

Specific objectives are:

- Reduce fuel loading of brush and trees by 50-80% within one year post-treatment
- Increase native perennial grass cover by 60-75% within two years post-treatment
- Increase native perennial forbs by 1-10% within two years post-treatment
- Achieve a desired plant community of 25% shrubs, 65% perennial grasses and 10% forbs

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of range and wildlife habitats, USDA, Forest Service General Technical Report INT-157, 1983):176-179; J.E. Anderson and K.E. Holte, "Vegetation development over 25 years without grazing on sagebrush dominated rangeland in southeastern Idaho," Journal of Range Management 34 (January 1981):25-29.

**Issues:** The following list of concerns was developed through the public involvement process. Individuals, groups, and/or agency personnel had concerns about:

- Human health and safety
- Invasion of exotic, noxious weeds
- Effects of fire/disturbance on ecosystem components and functions
- Visual impacts of treatment sites
- Impacts on threatened or endangered species
- Impacts on livestock grazing operations
- Impacts on wildlife forage species, particularly cliffrose

### **Conformance With Land Use Plan**

The proposed action or alternatives addressed below are consistent with the Arizona Strip District Resource Management Plan (RMP) dated January 31, 1992, as amended April 1997, and are consistent with Federal, State and local laws, regulations, and plans to the maximum extent possible. Rangeland management was considered in the Vermillion Grazing EIS of 1979, which was subsequently adopted as management direction in the Arizona Strip District RMP of 1992 (I-1). The Vermillion Grazing EIS states: land treatment is proposed to improve range conditions (1-18).

In 2004, BLM issued the Record of Decision for the Arizona Statewide (LUP) Amendment for Fire, Fuels and Air Quality Management. This statewide LUP Amendment established desired future conditions, land use allocations, and management actions for the fire, fuels program and amended all existing LUP decisions concerning fire, fuel, and air quality treatments. These include chemical treatments to meet resource management objectives

This proposal is consistent with the Arizona Record of Decision for vegetation treatment on BLM lands dated July 23, 1991, and meets the Purpose and need set forth in the Vegetation Treatment on BLM Lands in Thirteen Western States Final EIS (FEIS) of May 1991. The statutes, policy and planning criteria for the decision are set forth in the FEIS and Record of Decision.

### **RMP decisions applicable to this proposed action include:**

GZ01 Manage rangelands in accordance with multiple-use objectives, requirements and provisions of established laws, regulations and BLM policies, and the Vermillion Grazing Environmental Impact Statement and Allotment Management Plans, which specify grazing systems, management facilities and land treatments.

GZ21 Vegetative treatment projects will be implemented where plant cover or soil productivity is being lost, to achieve a desired plant community, to improve habitat condition for wildlife or to meet activity plan objectives. Practices used to accomplish this include mechanical treatments, herbicide applications, biological treatments, prescribed fire, reseeding and construction of water control structures as described in the Vermillion Grazing Environmental Impact Statement (1979) and the Programmatic Vegetation Treatment on BLM-Administered Land Environmental Impact Statement (1991).

TE02 Prior to potentially disturbing activities or surface disturbing activities on public

land, a special status species review will be conducted by a qualified specialist.

WS01 Manage vegetation cover toward ecological stability and sound long-term protective soil cover using mechanical, chemical, biological or fire methods as tools for accomplishment.

WL03 Improve wildlife habitat through construction and maintenance of habitat improvement projects.

WL 07 Manage wildlife habitat through the Habitat Management Plan process to achieve desired plant community objectives. Practices used to accomplish this could include mechanical treatments, livestock grazing, herbicide applications, prescribed and natural fire, reseeding, and water developments.

This proposal is in conformance with Arizona's Standards for Rangeland Health and Guidelines for Grazing Administration, which was developed through a collaborative process involving the Arizona Resource Advisory Council and the Bureau of Land Management State Standards and Guides Team. The Secretary of the Interior approved the Standards and Guides in April 1997. The Decision Record, signed by the BLM State Director (April 1997) provided for full implementation of the Standards and Guides in all Arizona Land Use Plans. The "Arizona Standards for Rangeland Health and Guidelines for Grazing Administration" lists under Standard 1 in the Guidelines section: 1-2. When grazing practices alone are not likely to restore areas of low infiltration or permeability, land management treatments may be designed and implemented to attain improvement.

The Arizona Strip Field Office is involved in a planning process that should result in a new RMP going into effect within the next few months. Ecological restoration was identified as one of the scoping issues for this planning process that is subject to public involvement and NEPA analysis. The outcome of this process could be new or modified management decisions that would supersede the current decisions. The scope of this EA is intended to cover conformance not only with the current decisions but also these future decisions. To accomplish this conformance determination after the new RMP goes into effect, BLM would review each proposed annual herbicide treatment project covered under this EA and modify it, as necessary, to ensure that it fully conforms to the new decisions.

## **II. DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES**

### **Proposed Action**

BLM proposes to aerially apply tebuthiuron on up to 17,800 acres of public land at the rates listed in Table 1. Irregular shaping and feathering of edges for the treatments areas would be used where possible to reduce straight line visual effects and mosaic treatment lines overall. Treatment could start as early as fall of 2007 and could stretch into subsequent years, depending on funding and workload capabilities. Past experience has indicated an ability to complete five to ten thousand acres per year.

At the anticipated level, actual application time for aircraft would be approximately three

to five days per year.

<u>Treatment</u>	<u>Approximate</u>
Chemical: tebuthiuron Aerial	17800

Table 1.

Allotment	Treatment/Rate	Application Method	Acres
Johnson Run	Chemical: tebuthiuron 0.4 lb/a	Aerial	2500
Jacob Canyon	Chemical: tebuthiuron 0.4 lb/a	Aerial	1000
Cedar Ridge	Chemical: tebuthiuron 0.4 lb/a	Aerial	1000
Wolfhole Lake	Chemical: tebuthiuron 0.5 lb/a	Aerial	2000
Littlewolf	Chemical: tebuthiuron 0.5 lb/a	Aerial	500
Pocum Tank	Chemical: tebuthiuron 0.4 lb/a	Aerial	2000
Whiterock Soapstone	Chemical: tebuthiuron 0.5 lb/a	Aerial	1200
Cowboy Butte	Chemical: tebuthiuron 0.4 lb/a	Aerial	1000
Cedar Knoll	Chemical: tebuthiuron 0.4 lb/a	Aerial	3000
Wolfhole Canyon	Chemical: tebuthiuron 0.4&0.5 lb/a	Aerial	1000
Fern Tank	Chemical: tebuthiuron 0.4 lb/a	Aerial	1000
Black Canyon	Chemical: tebuthiuron 0.4 lb/a	Aerial	600
Homestead	Chemical: tebuthiuron 0.4 lb/a	Aerial	1000

The proposed treatment areas would include only portions of each allotment. (Refer to maps). No treatment would be carried out in the Paiute Wilderness portion of the Little Wolf Allotment. A pellet form of the herbicide tebuthiuron, which is trade named Spike 20P would be used for the proposed vegetation treatments. Spike 20P pellets are composed of 20 percent tebuthiuron--the active ingredient--and 80 percent inert ingredients, including clay which acts as a carrier. Spike pellets are applied to the soil surface where the tebuthiuron is subsequently water activated in the soil and absorbed by the roots of a plant. Tebuthiuron is then translocated within the plant, mostly in the xylem, to the leaves where it inhibits photosynthesis. The spike pellets would be applied using a fixed-wing aircraft, equipped to precisely dispense the spike pellets at a rate of 0.4 lb. and 0.5lb of active ingredient per acre.

Objectives are: (1) decrease sagebrush composition from 50 to 75 percent to approximately 10 percent; and (2) by releasing associated vegetation from competition with sagebrush, increase the composition of perennial grasses to 60 to 75 percent, increase forbs to 1 to 10 percent, and maintain shrubs between 10 to 30 percent. After sagebrush reduction, herbaceous vegetation would propagate through plant tillering or below ground vegetative reproduction, sprouting and also the native seed source which already exists, precluding the need for reseeding.

Management treatments and project design features relating to vegetation treatment activities are presented in the Vegetation Treatment on BLM Lands in Thirteen Western States, FEIS pages 1-33 to 1-35. All mitigation measures adopted in the ROD are incorporated as additional project design features. In addition, site specific project design would include: identifying and avoiding cliffrose patches as much as practical, and defer livestock grazing for two years during the growing season.

### **No Action Alternative**

This alternative would be to continue managing the vegetation as it currently exists. Sagebrush dominated plant communities tend to be very stable and persistent but do pose a fire hazard when cheatgrass is added to the mix. West et al., Robertson, Sanders and Voth, and Anderson and Holte concluded that high density big sagebrush stands can endure for very long periods of time.<sup>2</sup> So barring some catastrophic event such as fire, no action would keep these stable states in high sagebrush plant composition without changing to some other more favorable plant composition for long periods of time.

### **Alternatives considered but not analyzed**

Prescribed burning would provide similar results to that of herbicide usage. However because of the presence of cheat grass in these areas burning alone only propagates annual cheat grass monocultures. Therefore, any future monocultures of cheat grass would create more hazardous fuel conditions than the present existing conditions. This would limit the potential to achieve satisfactory results using prescribed burning in relation to reducing the hazardous fuels in the treatment area. Also, fire would cause a temporary loss of grass and litter cover thus exposing the soil to erosion. Prescribed burning is best used when follow up seeding is planned, which is not the case with this proposal. Smoke release from a prescribed burn could also be a concern.

The alternatives for use of manual, mechanical, and biological methods have been analyzed in the Vegetation Treatment on BLM Lands FEIS and considered in the ROD. Further discussion in this EA is unnecessary since site specific conclusions and impacts would be essentially the same. The FEIS and ROD are available for public review at any BLM office in the western States.

### **III. AFFECTED ENVIRONMENT**

The Arizona Strip Field Office is located in the northwest portion of Arizona, and the Eastern proposed treatment areas are approximately 7 to 15 miles from the town of Fredonia, Arizona, the central treatment areas are approximately 5 to 33 miles from Colorado City, Arizona. The western portions of the proposed treatment area are found 15-30 miles south, and southeast of St. George, Utah. Topography is open, semiarid range with sloping, rolling, or flat terrain. Elevation ranges from 4600 to 6000 feet, temperatures average 30 degrees in the winter and 90 degrees in the summer, and precipitation averages 11 to 14 inches annually. A general description of the affected environment may be found in the FEIS.

The following critical elements of the human environment are not present or are not affected by the proposal in this EA:

- Air Quality
- Areas of Critical Environmental Concern
- Cultural Resources
- Farm Lands (prime or unique)
- Flood plains
- Native American Religious Concerns
- Environmental Justice
- Wastes (hazardous or solid)
- Wetlands/Riparian Zones
- Wild and Scenic Rivers
- Wilderness

**Resources Brought Forward for Analysis** The following resources could possibly be affected by the proposed action.

**Human health and safety**

There would be a slight risk to the pilot and those loading and transporting product to the air strip, the area would be safer after the treatments by the reduction of wild fire fuels and so would be less of a safety risk for fire fighters as well as users of the land.

**Invasion of exotic, noxious weeds**

Big sagebrush is a natural component in grass-sagebrush communities but has replaced grasses and forbs. This replacement has diminished the biodiversity of these sites changing the ecosystem of the area. Studies show this can result in lowered forage production, increased noxious weed populations, soil erosion, and excess runoff (Tisdale, Hironaka, Fasberg 1969). By removing or thinning the sagebrush grasses and forbs will be allowed to increase back towards the natural balance.

**Effects of fire/disturbance on ecosystem components and functions**

Prescribed burning would provide similar results to that of herbicide usage. However because of the presence of cheat grass in these areas burning alone only propagates annual cheat grass monocultures. Therefore, any future monocultures of cheat grass would create more hazardous fuel conditions than the present existing conditions. This would limit the potential to achieve satisfactory results using prescribed burning in relation to reducing the hazardous fuels in the treatment area. Also, fire would cause a temporary loss of grass and litter cover thus exposing the soil to erosion. Prescribed burning is best used when follow up seeding is planned, which is not the case with this proposal. Smoke release from a prescribed burn could also be a concern, wild fire has and even larger adverse impact because of conditions when wild fires burn.

**Water Quality (drinking/ground)** Surface water resources at the proposed treatment areas consist of stock ponds and intermittent surface flows which occur after precipitation events. These are suitable for livestock and wildlife use, but unsuitable for human consumption. Ground water is at least 600 feet deep.

**Watershed.** Soil parent material is alluvium from either limestone or sandstone. Depth class ranges from shallow to very deep and erosion potential ranges from moderate to critical. Sediment is produced at the proposed treatment areas on watersheds dominated by big sagebrush and in drainages devoid of ground cover.

**Vegetation.** Vegetative composition at the proposed treatment areas is a sagebrush-grass community. Wyoming big sagebrush is the main constituent of the shrub component-- with snakeweed, fourwing saltbush, Mormon tea, and cliffrose as lesser constituents. The latter three are palatable to both wild and domestic ungulates. Perennial grasses include blue grama, galleta, Indian ricegrass, needlegrasses and squirreltail. The forb component is rather limited, composed mainly of desert globemallow. Current composition is 50 to 75 percent shrubs and 25 to 50 percent grasses.

**Wildlife.** Mammals typical of the area include mule deer, pronghorn antelope, coyote, jackrabbit, ground squirrel, and various rodents. Common birds include crows, ravens, and red-tailed hawks, with possible occasional "flyovers" by protected species such as condors, eagles, falcons, etc. Reptiles are mostly various species of small lizards (refer to

the Kanab Creek Habitat Management Plan for a comprehensive list of wildlife species).

**Special Status Species.** An experimental population of the endangered California Condor was reintroduced on the Arizona Strip in 1996. The primary release site for this population of condors is located atop the Vermilion Cliffs on the Paria Plateau. Currently, there are 61 condors in Arizona. Condors have been thought to spend the majority of their time within a few miles of the Vermilion Cliffs release site. However, recent telemetry data indicates they may travel hundreds of miles. Condors released on the Strip have on rare occasions flown to parts of Arizona, Utah, Wyoming, Colorado, and California, however, they typically return after short periods.

The Siler Pincushion Cactus, a species listed threatened, occurs in the Cowboy Butte Allotment. However, surveys done in 1984 to 1987 in the allotment and surrounding area, and project clearances in the 1990s and a encompassing survey done again in 2004 and a pipeline clearance done across the proposed spike treatment area have all shown the cactus to grow south of the treatment area by about one mile. The population found in the south part of the allotment have been sparse. Some survey transects done found none. A total of four were found in the south pasture in 2004.

The proposed spike treatment area is in thick sagebrush growing on the Schnabkaib member of the Moenkopi. This soil is good Siler Pincushion habitat, unless its covered with a competitive shrub like sage brush. The Siler has never been found in close proximity with thick sage brush even on the Schnabkaib. The special status plant clearance of the proposed one mile plus Cowboy Butte pipeline in Pasture 4 crosses through the middle of the spike treatment area, and is in thick sagebrush on the Schnabkaib, and no Siler Pincushion were found in that clearance survey in 2006.

This spike project would have a “no affect” on any listed plant species.

No other listed, proposed, candidate, or special status species are known from the area of the proposed action.

**Visual Resources.** The area within these allotments has been classified as shown in Table 2 below.

The objective of Class II is to retain the existing character of the landscape. The level of change to the characteristic landscape should be low. Management activities may be seen, but should not attract the attention of the casual observer. Any changes must repeat the basic elements of form, line, color, and texture found in the predominant natural features of the characteristic landscape.

The objective of Class III is to partially retain the existing character of the landscape. The level of activities may attract attention but should not dominate the view of the casual observer. Changes should repeat the basic elements found in the predominant natural features of the characteristic landscape. Class III allows moderate change to the landscape which may attract attention, but should not dominate the view of the casual observer.

The objective of Class IV is to provide for management activities that require major modification of the existing character of the landscape. The level of change to the characteristic landscape can be high. These management activities may dominate the view and be the major focus of viewer attention. Every attempt should be made, however, to minimize the impact of these activities through careful location, minimal disturbance and repeating the basic elements.

Table: 2

Allotment	VRM Classes
Johnson Run	II, III, IV
Jacob Canyon	II, IV
Wolfhole Lake	II, III, IV
Littlewolf	I*, II, III
Pocum Tank	IV
Whiterock Soapstone	II, III, IV
Cowboy Butte	III
Cedar Knoll	II, IV
Wolfhole Canyon	II, III, IV
Fern Tank	IV
Black Canyon	III, IV
Homestead	II, III, IV
Cedar Ridge	II, III, IV

\* No treatment will be within class I

**Recreation:** Within the allotment areas, recreation setting attributes include geology, scenic view sheds, remoteness and solitude. General recreation activities include: driving for pleasure, horseback riding, hiking, hunting, rock collecting, photography, bird watching and nature study. Various trails pass through certain allotments: Wolfhole Canyon Allotment: Mokaac Trail; Fern Tank Allotment: Temple Trail, Dominguez & Escalante Route; Johnson’s Run Allotment: Dominguez & Escalante Route; Cowboy Butte Allotment: Old Spanish NHT; Homestead: Old Spanish NHT, Honeymoon Trail. Additionally, the Woodhill Road Recreation & Public Purposes lease (a recreation oriented lease involving OHV routes and day-use and overnight recreation facilities) lies primarily with the Cowboy Butte Allotment.

Off-highway vehicle travel in the allotment areas is primarily limited to existing roads and trails, although several smaller portions are limited to designated roads and trails and others are closed.

Recreation activities occur primarily in physical settings that range from Rural to Semi-Primitive Non-Motorized and social and administrative that range from Primitive to Roaded Natural. (See following tables)

PHYSICAL – Resources & Facilities: <b>Character of the natural landscape</b>					
Primitive	Semi-Primitive Non-Motorized	Semi-Primitive Motorized	Roaded Natural	Rural	Urban
SPECIFIC PHYSICAL ATTRIBUTES					

**PHYSICAL – Resources & Facilities: Character of the natural landscape**

Primitive	Semi-Primitive Non-Motorized	Semi-Primitive Motorized	Roaded Natural	Rural	Urban
<b>a. Remoteness</b>					
>3 miles from any road	>½ mile from any kind of road, but not as distant as 3 miles, and no road is in sight	On or near 4WD roads, but at least ½ mile from all improved roads, though they may not be in sight	On or near improved country roads, but at least ½ mile from all highways	On or near primary highways, but still within a rural area	On or near primary highways, municipal streets, and roads within towns or cities
<b>b. Naturalness</b>					
Undisturbed natural landscape	Naturally-appearing landscape having modifications not readily noticeable	Naturally-appearing landscape except for obvious primitive roads	Landscape partially modified by roads, utility lines, etc., but none overpower natural landscape features	Natural landscape substantially modified by agriculture or industrial development	Urbanized developments dominate this landscape
<b>c. Facilities</b>					
None	Some primitive trails made of native materials such as log bridges and carved wooden signs	Maintained and marked trails, simple trailhead developments, improved signs, and very basic toilets	Improved yet modest, rustic facilities such as campgrounds, restrooms, trails, and interpretive signs	Modern facilities such as campgrounds, group shelters, boat launches, and occasional exhibits	Elaborate full-service facilities such as laundry, groceries, and book stores

**SOCIAL – Visitor Use & Users: Character of recreation & tourism use**

Primitive	Semi-Primitive Non-Motorized	Semi-Primitive Motorized	Roaded Natural	Rural	Urban
<b>SPECIFIC SOCIAL ATTRIBUTES</b>					
<b>d. Group Size (other than your own)</b>					
Fewer than or equal to 3 people per group	4-6 people per group	7-12 people per group	13-25 people per group	26-50 people per group	Greater than 50 people per group
<b>e. Contacts (w/other groups)</b>					
Fewer than 3 encounters per day at campsites and fewer than 6 encounters per day on travel routes	3-6 encounters/day off travel routes(e.g., campsites) and 7-15 encounters/day on travel routes	7-14 encounters/day off travel routes(e.g., staging areas) and 15-29 encounters/day en route	15-29 encounters/day off travel routes(e.g., campgrounds) and 30 or more encounters/day en route	People seem to be everywhere, but human contact is still intermittent	Other people consistently in view
<b>f. Evidence of Use</b>					
Only footprints may be observed	Footprints plus slight vegetation trampling at	Vehicle tracks and occasional litter and soil erosion.	Well-worn soils and vegetation, but often gravel surfaced for	Paved routes protect soils and vegetation, but noise, litter,	A busy place with what seems like constant noise.

	<b>campsites &amp; travel routes. Only infrequent litter</b>	<b>Vegetation becoming worn</b>	<b>erosion control. Litter may be frequent</b>	<b>and facility impacts are pervasive</b>	<b>Unavoidable litter seems to be a lifestyle choice</b>
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ADMINISTRATIVE – Administrative & Service Setting: How public land managers, county commissioners and municipal governments, and local businesses care for the area and serve visitors and local residents

Primitive	Semi-Primitive Non-Motorized	Semi-Primitive Motorized	Roaded Natural	Rural	Urban
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**SPECIFIC ADMINISTRATIVE ATTRIBUTES**

**g. Visitor Services**

<b>None is available on-site</b>	<b>Basic maps, but area personnel seldom available to provide on-site assistance</b>	<b>Area brochures and maps, plus area personnel occasionally present to provide on-site assistance</b>	<b>Information materials describe recreation areas and activities. Area personnel are periodically available</b>	<b>Everything described to the left in this row, and describe experiences and benefits available. Area personnel do on-site education</b>	<b>Everything described to the left in this row, plus regularly scheduled on-site outdoor skills demonstrations and clinics</b>
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**h. Management Controls**

<b>No visitor controls apparent. No use limits. Enforcement presence very rare.</b>	<b>Signs at key access points on basic user ethics. May have back country use restrictions. Enforcement presence rare</b>	<b>Occasional regulatory signing. Motorized and mechanized use restrictions. Random enforcement presence</b>	<b>Rules clearly posted with some seasonal or day-of-week use restrictions. Periodic enforcement presence</b>	<b>Regulations prominent. Total use limited by permit, reservation, etc. Routine enforcement presence</b>	<b>Continuous enforcement to redistribute use and reduce user conflicts, hazards, and resource damage</b>
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**i. Mechanized Use**

<b>None whatsoever</b>	<b>Mountain bikes and perhaps other mechanized use, but all is non-motorized</b>	<b>4WD, ATV, dirt bikes, or snowmobiles in addition to non-motorized, mechanized use</b>	<b>2WD vehicles predominant, but also 4WD and non-motorized, mechanized use</b>	<b>Ordinary highway auto and truck traffic is characteristic</b>	<b>Wide variety of street vehicle and highway traffic is ever-present</b>
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**Impacts on livestock grazing operations**

The action would have a short term negative impact on the grazing operation for the allotments with treatments because of the rest required after treatment but in the long term would benefit the grazing operations by increased forage production and the ability to follow the grazing systems better.

**IV. ENVIRONMENTAL CONSEQUENCES**

The actions described in Chapter II of this assessment which could cause environmental effects are presented in Chapter 3 and summarized in Table 1-9 (Alternative 1) of the FEIS. The FEIS found that the actions analyzed would have no impacts of importance upon the following resources; climate, topography, minerals, utilities, communication sites and energy use.

No effects have been identified which exceeds those addressed in the FEIS and the

proposal referenced in Chapter II of this assessment. The following are effects of importance based upon site specific analysis of the proposal.

**Impacts of the Proposed Action.** The analysis below is to determine the extent of environment impacts associated with the proposed action.

### **Human health and safety**

There would be a slight risk to the pilot and those loading and transporting product to the air strip, the area would be safer after the treatments by the reduction of wild fire fuels and so would be less of a safety risk for fire fighters as well as users of the land. All safety rules will be followed in the transport of product, loading and flying it on.

### **Invasion of exotic, noxious weeds**

Big sagebrush is a natural component in grass-sagebrush communities but has replaced grasses and forbs. This replacement has diminished the biodiversity of these sites changing the ecosystem of the area. Studies show this can result in lowered forage production, increased noxious weed populations, soil erosion, and excess runoff (Tisdale, Hironaka, Fasberg 1969). By removing or thinning the sagebrush grasses and forbs will be allowed to increase back towards the natural balance which would make it harder for weeds to find a place to get started in.

### **Effects of fire/disturbance on ecosystem components and functions**

Prescribed burning would provide similar results to that of herbicide usage. However because of the presence of cheat grass in these areas burning alone only propagates annual cheat grass monocultures. Therefore, any future monocultures of cheat grass would create more hazardous fuel conditions than the present existing conditions. This would limit the potential to achieve satisfactory results using prescribed burning in relation to reducing the hazardous fuels in the treatment area. Also, fire would cause a temporary loss of grass and litter cover thus exposing the soil to erosion. . Prescribed burning is best used when follow up seeding is planned, which is not the case with this proposal. Smoke release from a prescribed burn could also be a concern, wild fire has and even larger adverse impact because of conditions when wild fires burn.

**Water Quality.** Infrequent, high-intensity rain storms would be the most important potential factor in transport of tebuthiuron pellets into surface waters. However, tebuthiuron pellets are designed to disperse into the soil, in place, when saturated with water.

In addition, tebuthiuron is applied at a low concentration of 0.4 and 0.5 pound of active ingredient per acre and, combined with the large quantity of water produced during intensive rain storms, would dilute substantially. One hundred foot buffers would be established around surface waters such as stock ponds to reduce the possibility of tebuthiuron getting into the water. In studies of five watersheds treated with tebuthiuron, the maximum observed value of 0.18 ppm of tebuthiuron in nearby surface water, occurred in an Oklahoma study. This occurred on day 36 after application and resulted from a 7 inch rainfall event in less than 24 hours.

The closest riparian habitat, Kanab Creek, is 5 miles away, and would likely be unaffected even if high-intensity storms caused some movement of tebuthiuron.

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 or greater at the proposed tebuthiuron application sites, it is improbable tebuthiuron could leach that deep into ground water. In addition, tebuthiuron is bound tightly to clay particles, and the native soils contain about 30 percent clay. This would preclude leaching of most of the tebuthiuron.

**Watershed.** Tebuthiuron treatments would have insignificant effects on soil erosion, since existing litter would remain in place on the soil surface; Achieving the goal of the treatment: to reduce sagebrush and increase herbaceous vegetation, would reduce current levels of soil erosion and resultant sediment production.

**Vegetation.** Changes to the plant composition would result from treatment. The present plant composition is 50 to 75 percent shrubs and 25 to 50 percent grasses. Within two to three years after treatment plant composition should range from 10 to 30 percent shrubs, 60 to 75 percent grasses, and 1 to 5 percent forbs.

Tebuthiuron when applied at the rate of 0.4 lb. of active ingredient per acre is quite species specific. An 80-90 percent sagebrush and somewhat less Pinion/Juniper tree kill is expected. Cliffrose is also susceptible, though it's killed at a lower rate than sagebrush. Patches of cliffrose would be avoided during treatment, precluding most of the impact to this species. The majority of snakeweed, fourwing saltbush, and Mormon tea would not be impacted; and grasses and forbs should flourish after the first growing season following application.

After treatment, plants produce tender growth, which animals tend to relish. To mitigate potential harm to plants, livestock grazing would be deferred during the growing season for two years. However, grazing by rabbits, deer, antelope and other wildlife, cannot be controlled and may affect plants early on.

**Wildlife.** Sagebrush treatment may displace some wildlife species. Shrub nesting birds could be displaced to nontreatment areas, though dead sagebrush would be left standing after treatment and could serve as nesting sites. Most common birds which inhabit the area are not shrub nesters. Mule deer may feed on sagebrush if other palatable shrubs are not available, but prefer more palatable shrubs such as cliffrose and fourwing saltbush. Some mule deer may possibly be displaced to nontreatment areas. Pronghorn, coyotes, rabbits, rodents, reptiles, and protected species should largely be unaffected. Observations of previous treatments have actually revealed an increased use of treatment areas by mule deer and pronghorn. The impact of treatment on rodents would be the availability of more grasses for their diet. Also, the ecotone or edge effect and increased vegetation diversity subsequently created by sagebrush treatments is known to benefit wildlife.

Risks from exposure to tebuthiuron have been assessed for the American kestrel and pronghorn antelope, two of the wildlife species which inhabit the Arizona Strip District. 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 the risk to pronghorn antelope is .09% of the LD<sub>50</sub>. These are considered negligible risks under Environmental Protection Agency guidelines.<sup>3</sup>

**Special Status Species.** Because California Condors can travel long distances, they could be found most anywhere on the Arizona Strip, including the area of the proposed action. The release site at the Vermilion Cliffs is characterized by rugged sandstone cliffs and includes the necessary remoteness, ridges, ledges, and caves favored by condors. In contrast, the area of the proposed treatment is characterized by rolling hills and flat lands with dense stands of sagebrush. The treatment area lacks features necessary for roosting or nesting activity. If condors were to use the area, it would most likely be for foraging. California condors are opportunistic scavengers, preferring carcasses of large mammals such as deer, elk, bighorn sheep, range cattle, and horses. Most California Condor foraging occurs in open terrain.

The nature of tebuthiuron application is such that crop dusting aircraft are used at extremely low altitudes. The potential exists for condors to be disturbed by aircraft. In the worst case, condors may collide with aircraft. However, because of the specific, targeted nature of herbicide applications and seedings, implementation of proactive conservation measures, and the ability to avoid condors during these flights, the potential for adverse effect is considered very low.

California condors may also be indirectly affected by ingestion of materials or waste products associated with the herbicide or its residues. Affects of ingestion may not be immediately harmful, but long term exposure to such materials may ultimately lead to reduced fitness, illness, or mortality. While condors may pick up and ingest foreign objects, they are typically attracted to shiny objects such as metal. The clay-based Spike pellets are non-reflective and are small enough to be essentially undetectable to humans from altitudes of greater than 50 feet. A greater risk would be associated with condors feeding on carcasses of dead animals that had ingested the herbicide pellets. For a typical rangeland application of tebuthiuron, the associated risk to the American kestrel and pronghorn antelope are considered negligible under Environmental Protection Agency guidelines. As a result, the risk to California Condors is considered to be negligible.

BLM has determined that implementation of the proposed action may affect but is not likely to adversely affect the experimental non-essential population of California Condors on the Arizona Strip.

The Siler Pincushion Cactus, a species listed threatened, occurs in the Cowboy Butte Allotment. However, surveys done in 1984 to 1987 in the allotment and surrounding area, and project clearances in the 1990s and a encompassing survey done again in 2004 and a pipeline clearance done across the proposed spike treatment area have all shown the cactus to grow south of the treatment area by about one mile. The population found in the

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<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.

south part of the allotment has been sparse. Some survey transects done found none. A total of four were found in the south pasture in 2004.

The proposed spike treatment area is in thick sagebrush growing on the Schnabkaib member of the Moenkopi. This soil is good Siler Pincushion habitat, unless its covered with a competitive shrub like sage brush. The Siler has never been found in close proximity with thick sage brush even on the Schnabkaib. The special status plant clearance of the proposed one mile plus Cowboy Butte pipeline in Pasture 4 crosses through the middle of the spike treatment area, and is in thick sagebrush on the Schnabkaib, and no Siler Pincushion were found in that clearance survey in 2006.

This spike project would have a “no affect” on any listed plant species.

**Visual Resources.** The long-term success of improving land health could contribute to enhancing visual resource conditions by increasing the variety of visual forms, lines, colors and textures where past land use practices may have virtually eliminated any such variety. Conversely, the proposed action could potentially create a moderate contrast in the color and texture of the vegetation. Gray green, grainy textured sagebrush would transition to grayish hues. Green or gold, fibrous textured grasses would increase and brown and gray soil exposures would diminish. In 5 to 10 years recurrence of some sage would serve to blend or transition the contrast created between the treated and untreated areas. These potential effects may only require more intensive mitigation if placed within VRM Class I and II areas. Conducting a Visual Resource Contrast Rating evaluation as part of rangeland development design would likely enable most projects to be mitigated to meet VRM Class objectives.

**Recreation:** Future implementation of treatments in the allotments could slightly impact physical recreation settings and therefore, recreation opportunities in the short term, due to the minor visual change to the settings. Impacts would be negligible over time as the desired vegetation objectives are met and shrubs and grasses are blended.

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,<sup>4</sup> available evidence indicates that tebuthiuron is non-carcinogenic and nonmutagenic.<sup>4</sup>

#### **Impacts on livestock grazing operations**

The action would have a short term negative impact on the grazing operation for the allotments with treatments because of the rest required after treatment but in the long term would benefit the grazing operations by increased forage production and the ability to follow the grazing systems better.

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

**No Action Alternative** The no action alternative assumes that management of resources and uses on public lands in the treatment areas area would continue under existing situations. Sagebrush and invading pinion and juniper trees would continue to dominate the said areas. Over time species diversity would continue to decline and eventually become a site driven by woody species with little to no herbaceous under story. None of the environmental impacts associated with the proposed action would occur under this alternative. Additionally, none of the anticipated benefits of the proposed action would be realized. Other impacted and sensitive resources would not receive adequate levels of management attention.

It is often assumed that the no action alternative has no consequential impacts. However, in the case of resource management in the proposed treatment areas the following would be considered impacts from the no action alternative. The existing stands of sagebrush would continue to increase while under story species decreases. As these vegetation communities become monotypic in composition and structure, species diversity is lost. When the symbiotic relationship between flora and fauna is starved, diversity is lost, soils become less productive, watersheds non-functional, and water quality degraded, which would ultimately result in long-term negative impacts to the area.

**Human health and safety** There would be no risk of any kind to any human as spike 20P (Tebuthiuron) chemical would not be applied or handled.

**Invasion of exotic, noxious weeds** Chemically untreated sites would continue to have small infestations of noxious weeds that persist and spread if undetected and sprayed with chemical.

**Effects of fire/disturbance on ecosystem components and functions** Fire would continue to be a threat, with the proliferation of cheat grass. If no action is taken to reestablish native perennial grasses, then cheat grass and other weeds tend to proliferate or persist in the Wyoming big sage ecotype reducing the actual fire return interval. With the fire return interval reduced shrubs cannot and will not compete with, or out compete annual species.

**Water Quality (drinking/ground).** The alternative would not have substantial impacts on water quality. However, some adverse impacts would occur if no action is taken. Some silt loading would occur to ephemeral streams and wash runoff because sagebrush dominated sites have less under story to hold the soil. Conditions would continue to be regulated by storm events and overland water flow from these events. Short term water quality would not be affected. However, overall long term water quality would not be improved if conditions do not change.

**Watershed.** With chemical methods not employed, more prescribed burning and mechanical treatments would be utilized than with the other alternatives. Therefore the treatment methods occurring are greater than under the other alternatives. Soils would be more susceptible to erosion after prescribed burning and mechanical methods. During the initial regrowth of woody and herbaceous plants some soil would leave the site due to lack of plant cover. Because no herbicide would be used the impacts associated with herbicide use would not apply.

**Vegetation.** With no use of herbicide, chemical control of some target species would not be possible because of lack of suitable substitute treatments. Vegetation treatment on open rangelands would have to be replaced by manual or mechanical methods to the extent possible or not done at all. The latter option would compromise maintenance methods of existing treatment areas as well as contribute to species diversity loss due to vegetative communities becoming monotypic in nature.

**Wildlife.** Important species that would be affected (mule deer and pronghorn) if No Action allowed existing conditions to continue – would be continued encroachment of shrubs and woodlands, high intensity wildfire in long term and invasion of exotic species to the site. Wildlife would be negatively impacted by the end term of post fire conditions. With only encroachment of exotic species of little forage or cover value, the system would be considered highly degraded as wildlife habitat. The long term effects would be fewer wildlife species present as well as decreased numbers of present species.

**Special Status Species.** The alternative would have no effect on special status species.

**Visual Resources.** In the long term, visual contrast would slowly increase as shrubs and trees age become decadent and encroach into open space.

**Recreation.** In the long term increases in pronghorn and mule deer numbers could produce better quality hunting opportunities. Degraded habitats could adversely affect some huntable/viewable wildlife.

**Cumulative Effects.** The Council on Environmental Quality regulations defines cumulative impacts or effects as: “the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.”

The many small individual vegetative augmentation projects in this proposed action, cumulatively, would alter the composition of 17,800 acres of sagebrush communities. This acreage added to the approximately 98,700 acres of sagebrush treated with tebuthiuron over the last 15 years, brings the total area modified to 116,500 acres. This would be approximately 19% of the 615,000 acres of Wyoming Big Sagebrush dominated ecological sites within the Arizona Strip District. This would constitute change from predominately sagebrush with an understory of various perennial grasses and forbs, to predominately native perennial grasses and forbs with some sagebrush overstory. Interdisciplinary efforts in the District have concluded that optimum composition for most sagebrush grass communities on the Arizona Strip District is approximately 25 percent shrubs 65 percent grasses and 10% forbs. A situation which provides species diversity and richness, resulting in a more long term sustainable community with watershed stability. The total sum of tebuthiuron treatments to date of approximately 98,700 acres or 16 percent of the sagebrush dominated ecological sites, and is not considered significant. It is felt that approximately 60,000 acres of sagebrush treatment is reasonable and foreseeable total acreage over the next five to ten years. This would total approximately 158,000 or 25% of sagebrush dominated sites on the Arizona Strip. For an additional discussion on cumulative impacts within the District see the Arizona Strip District Resource Management Plan and Environmental Impact Statement Page III-34.

After the treatments the areas would have a more natural grass to brush mixture and would therefore have less heavy fuels so any burns will be with less intensity and so can be managed better and safer..

**Impacts on livestock grazing operations** With the cumulative effects of reduced fire return intervals, weed infestations and or lack of perennial herbaceous plant cover, livestock production would be reduced. Actual forage availability would also continue to reduce in actual AUMs (Animal Unit Months) produced per acre.

### **Recommended Mitigating or Enhancing Measures.**

Standards and guidelines in BLM Handbook Section 9011 (Pesticide Storage, Transportation, Spills, and Disposal) Section II would be met. This defines standards for storage facilities, posting and handling, accountability, and transportation. It covers spill prevention, planning, cleanup, and container disposal requirements. Irregular shaping and feathering of treatment edges would be used to reduce straight lines and produce a mosaic of edges.

Areas of cliffrose would be flagged and avoided as much as practical.

Livestock grazing would be deferred for two years during the growing season.

One hundred foot buffers would be established around surface water (springs, ponds, & catchments) to reduce the possibility of tebuthiuron getting into the water.

California Condor mitigation measures would be followed (Appendix 1.)

**Monitoring.** Inspection and monitoring of the proposed treatment areas would be done annually.

## **V. CONSULTATION AND COORDINATION**

This document underwent internal review (Arizona Strip Field Office). The BLM specialists conducting this review were:

Gloria Benson, Native American Coordinator  
Tom Folks, Recreation  
Laurie Ford, Lands/Realty/Minerals  
Michael Herder, Wildlife  
John Herron, Cultural  
Lee Hughes, Plants  
Ray Klein GCPNM Supervisory Ranger  
Linda Price, S&G  
Bob Sandberg, Range  
Richard Spotts, Environmental Coordinator  
Ron Wadsworth, Supervisory Law Enforcement  
L.D. Walker, Noxious Weed coordinator

The Notice of Decision for this EA was sent to those on the ASFO NEPA mailing list. The NOD letter was sent to all grazing permittees with allotments covered under the proposed action.

Reviewed by \_\_\_\_\_  
ASDO Environmental Coordinator

**FINDING OF NO SIGNIFICANT IMPACT**

Based on the analysis of potential environmental impacts contained in this environmental assessment, I have determined that the proposed action would not have a significant effect on the human environment and therefore an environmental impact statement will not be prepared.

\_\_\_\_\_  
Field Manager, Arizona Strip Field Office

Date

## **Appendix 1. Conservation Measures for California Condors to be Applied to This Project.**

CC1B. Immediately prior to the start of a permitted project, BLM will contact personnel monitoring California condor locations and movement on the Arizona Strip to determine the locations and status of condors in or near the project area.

CC2B. Where California condors visit a worksite while activities are underway, the on-site supervisor will notify the BLM wildlife team lead or condor biologist. Project workers and supervisors will be instructed to avoid interaction with condors. Project activities will be modified, relocated, or delayed if those activities adversely affect condors. Operations will cease until the bird leaves on its own or until techniques are employed by permitted personnel which result in the individual condor leaving the area.

CC7B. Aircraft use, especially low level flights along the rim of the Vermilion Cliffs and flights near the condor release site at Vermilion Cliffs, will be minimized to the greatest extent possible in order to avoid disturbance to condors which may be present. Known active nest sites will be avoided.

CC8B. The BLM condor biologist or Wildlife Program Lead will contact the Peregrine Fund, as appropriate, immediately before operations involving aviation begin to check on possible locations of condors in the subject area.

CC9B. All BLM-authorized aviation personnel will be provided literature and/or instructed regarding condor concerns prior to conducting aerial operations.

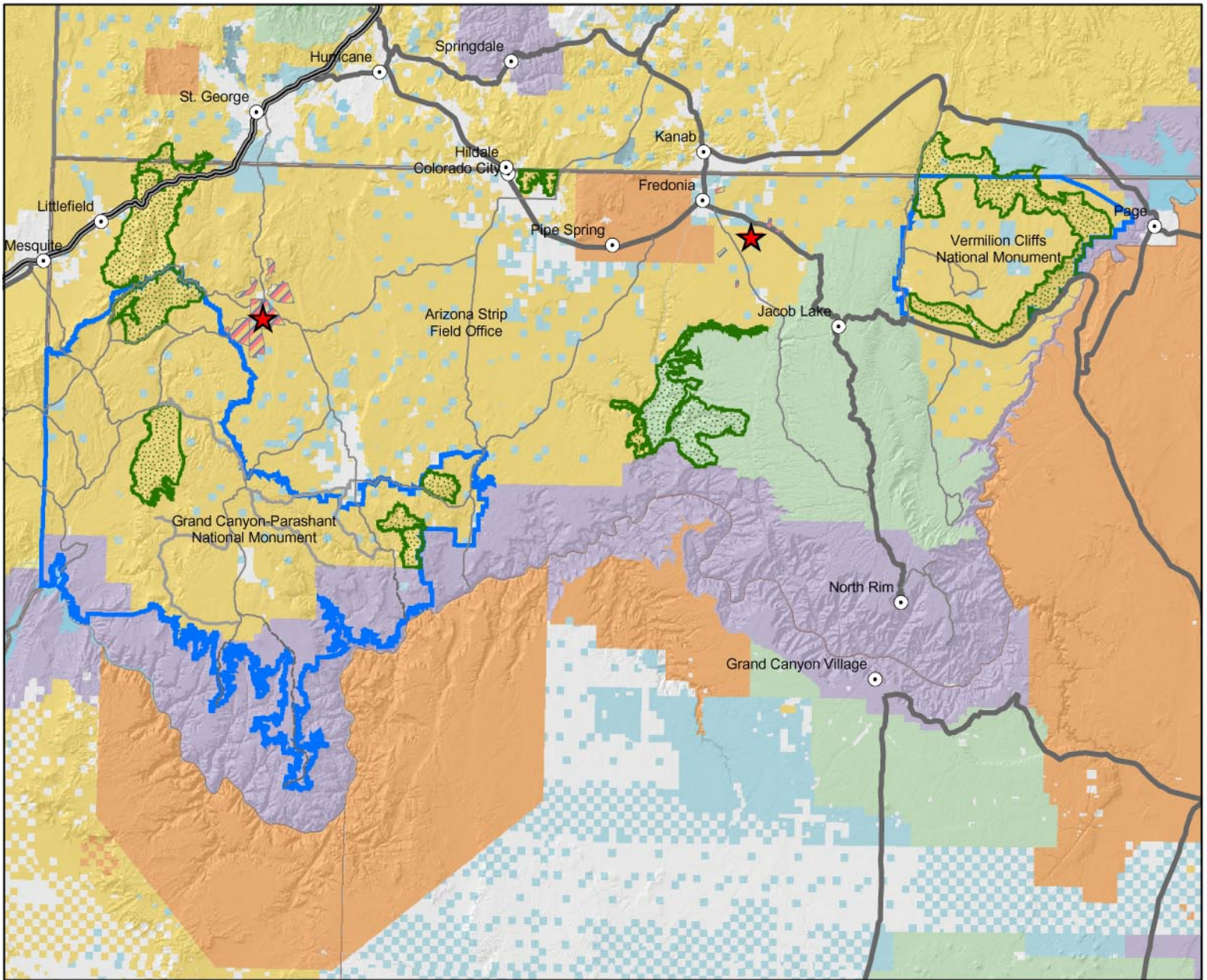
CC10B. Aircraft will maintain and maximize safe flying separation distances from, in order to avoid, flying condors. Aircraft will also keep a minimum of 0.25 miles away from condors located on the ground.

CC11B. BLM will implement the protective measures for California condors that are

contained in the March 2004 "Recommended Protection Measures for Pesticide Applications in The Southwest Region of the U.S. Fish and Wildlife Service."

# AZ-110-2007-0010 - Arizona Strip Field Office Fuels Reduction and Ecological Restoration for 2007

State of Arizona



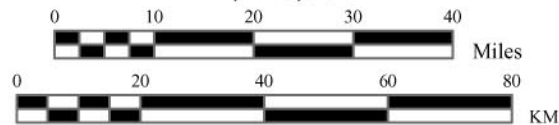
## Legend

- |                       |                           |                       |                   |
|-----------------------|---------------------------|-----------------------|-------------------|
| Areas of NEPA Project | Bureau of Land Management | National Park Service | Interstate        |
| Designated Wilderness | State Lands               | Indian Lands          | Primary Routes    |
| Monuments             | Private Lands             | National Forest       | Secondary Routes  |
|                       |                           |                       | Light Duty Routes |
|                       |                           |                       | 4WD Routes        |

## Location Map



1:1,220,000



United States Department of the Interior  
Bureau of Land Management  
Arizona Strip District Office  
Map created on July 30, 2007



**CAUTION:**  
Land ownership data is derived from less accurate data than the 1:24000 scale base map. Therefore, land ownership may not be shown for parcels smaller than 40 acres, and land ownership lines may have plotting errors due to source data.

No warranty is made by the Bureau of Land Management for the use of the data for purposes not intended by the BLM.