United States Department of the Interior
Bureau of Land Management

June 2006

Environmental Assessment UT-020-2006-0030

Rockwell Hazardous Fuels Treatment

Location: Tooele County

MERIDIAN	TOWNSHIP	RANGE	SECTIONS IN TOWNSHIP
26	9S	8W	1-3, 10-15, 22-25
26	9S	7W	3-9, 16-21, 28, 29
26	8S	7W	32-34

Salt Lake Field Office
2370 South 2300 West
Salt Lake City, Utah 84119
Phone: 801 977-4000
Fax 801 977-4397

1.0 Purpose & Need

1.1 Introduction

This Environmental Assessment (EA) has been prepared to analyze BLM managed land relative to the Rockwell Hazardous Fuels Reduction (HFR) project. The EA is a site-specific analysis of potential impacts that could result with the implementation of a proposed action or alternative to the proposed action. The EA assists the BLM in project planning and ensuring compliance with the National Environmental Policy Act (NEPA), and in making a determination as to whether any "significant" impacts could result from the analyzed actions. "Significance" is defined by NEPA and is found in regulation 40 CFR 1508.27. An EA provides evidence for determining whether to prepare an Environmental Impact Statement (EIS) or a statement of "Finding of No Significant Impact" (FONSI). A Decision Record (DR), which includes a FONSI statement, is a document that briefly presents the reasons why implementations of the proposed action will not result in "significant" environmental impacts (effects) beyond those already addressed in the Pony Express Resource Management Plan (1990). If the decision maker determines that this project has "significant" impacts following the analysis in the EA, then an EIS would be prepared for the project. If not, a DR may be signed for the EA approving the alternative selected.

While wildland fires play an integral role in many forest and rangeland ecosystems, decades of efforts directed at extinguishing every fire that burned on public lands have disrupted the natural fire regimes that once existed. Moreover, as more and more communities develop and grow in areas that are adjacent to fire-prone lands in what is known as the *wildland urban interface*, wildland fires pose increasing threats to people and their property.

The **National Fire Plan (NFP)** (http://www.fireplan.gov) was developed in August 2000, following a landmark wildland fire season, with the intent of actively responding to severe wildland fires and their impacts to communities while ensuring sufficient firefighting capacity for the future. The NFP addresses five key points: Firefighting, Rehabilitation, Hazardous Fuels Reduction, Community Assistance, and Accountability. It also established an intensive, long-term hazardous fuels reduction program. Hazardous fuels reduction treatments are designed to reduce the risks of catastrophic wildland fire to people, communities, and natural resources while restoring forest and rangeland ecosystems to closely match their historical structure, function, diversity, and dynamics. Such treatments accomplish these goals by removing or modifying wildland fuels to reduce the potential for severe wildland fire behavior, lessen the post-fire damage, and limit the spread or proliferation of invasive species and diseases.

1.2 Background

Alterations in vegetation in the Great Basin are a common problem (Romme et al. 2002). An increase in sagebrush cover has created a more favorable environment for juniper establishment (Knight 1994). Juniper-pinyon communities today are more of a result of past human activity rather than a result of natural ecological processes (Creque 1999, Evans 1988). It is estimated that pinyon and juniper woodland have increased ten-fold over the past 130 years throughout the Intermountain West (Miller and Tausch 2001). Because of increased juniper cover in the analysis area (Christensen 1965, GLTI 1997), the SLFO BLM proposes to reduce fuels in an area between the Simpson and Sheeprock Mountains.

Implementation of HFR projects intend to reduce the potential of wildland fire from burning across BLM managed lands, other federal, state, private, and tribal land–which place natural resources, human communities, and associated infrastructures at risk. Management actions seek to reduce the rate of spread, intensity, resistance to control, and crowning (movement of a fire from the understory into the crown of a tree canopy) potential of wildfires by reducing available fuel.

The analysis area consists of approximately 19,000 acres of juniper and sagebrush on BLM managed land located in the valley between the Simpson and Sheeprock Mountains.

1.3 Need for the Proposed Action

Recent research in the Great Basin has demonstrated clearly that pinyon and juniper are increasing in density throughout much of this region and many areas that were formerly dominated by shrubs are now being taken over by pinyon and juniper (Romme et al. 2002, GLTI 1997, Naillon 1999, West et al. 1987). The Salt Lake Field Office is experiencing encroachment of Utah juniper (*Juniperus Osteosperma*) between the Simpson and Sheeprock Mountains; beyond its historic densities. This process is creating a tree over story which decreases the climax shrub and grass species due to shading and increased water resource competition. When juniper canopy cover increases, the potential for crown fire activity becomes greater due to the extra fuel loading available. Crown fires in thick juniper stands are difficult and expensive to suppress and exhibit greater severity to the vegetation and soils. The current hazardous fuel conditions within the area are at risk for unusually large and severe wildfires. Although some native understory still exists, it is being out competed by juniper and is at risk of conversion to juniper woodland barring any disturbance or to cheatgrass following wildfire.

In this light, it is evident that a hazardous fuels treatment is needed in order to begin the process of restoring the integrity of the sagebrush steppe and reduce the potential for large, devastating wildfires.

A multi-phased fuels treatment is needed in order to:

- **(1)** Produce safety areas for suppression resources;
- **(2)** Reduce fuel loadings, break up the continuity of the juniper canopy, increase vegetation diversity to reduce the potential of high-severity large wildland fires; and
- **(3)** Improve fire regime and condition class.

1.4 Purpose of the Proposed Action

Objective 1: Create a fuel break by removing 75-100% of the juniper trees (previously treated in the late 60's) in the West Oak Brush area which is approximately 951 acres and about 627 acres in Section 4.

Objective 2: Increase juniper crown spacing to an average of approximately 40' (+/- 10') on roughly 6,606 acres.

Goals:

- **a)** Reduce invasive juniper from the sagebrush steppe;
- **b)** Protect the area from high-severity wildland fires by increasing canopy spacing;
- **c)** Reduce threats to rangeland health across the landscape;
- **d)** Promote the systematic gathering of information to address the impacts to rangeland health; and
- **e)** Improve biological diversity.

1.5 Conformance with BLM Land Use Plans

The proposed action and alternatives described in this EA conform to the Pony Express Resource Management Plan (RMP) (1990) Decision One page 56, as amended by the SLFO Fire Management Plan (FMP) (1998) Alternative 2-Proposed Action/Integrated Fire/Resource Management Plan page seven. Although the proposed action and alternatives are not specifically mentioned in the plan, they are consistent with the objectives, goals, and decisions of the RMP and FMP.

This EA has been reviewed to determine if the proposed action conforms to the land use plan terms and conditions as required by 43 CFR 1610.5.

1.6 Relationship to Statutes, Regulations, or other Plans

The proposed action and alternatives are consistent with federal, state and local laws, regulations, and plans to the maximum extent possible. Other activity plans direct SLFO management in the analysis area including the Five Year Noxious Weed Control Plan (1996), Utah Rangeland Health Standards and Guidelines for Healthy Rangelands (1997), Squarrose Knapweed Management Plan (1996), the Utah Sage Grouse Conservation Plan Fourth Draft March 2001, West Lookout Allotment Management Plan (1970), and the Tooele County Spring/Summer Livestock Grazing Permit Renewal EA UT-020-2001-0084.

1.7 Identification of Issues

Announcements were mailed to interested citizens, businesses, organizations, and Native American Tribes on March 7, 2006. Also, environmental notification was posted on the SLFO Environmental Notification Bulletin Board/Front Lobby on March 9, 2006. Based on an interdisciplinary review the following issues may be impacted by the proposed action:

- Air Quality
- Cultural Resources
- Invasive Nonnative Species
- Rangeland Health Standards and Guidelines
- Livestock Grazing
- Woodland/Forestry
- Vegetation including Special Status Plant Species other than FWS Candidate or Listed Species
- Wildlife Including Special Status Species other than FWS Candidate or Listed Species
- Soils
- Visual Resources
- Fuels/Fire Management

2.0 Description of Alternatives Including Proposed Action

2.1 Introduction

This EA describes Alternative A – Proposed Action/Mechanical Treatment/Slash Pile Burning, Alternative B – Prescribed Burning and Seeding Treatment, and Alternative C – No Action Alternative/Continuation of Current Management. No additional alternatives where suggested by the public or SLFO Specialists. The no action alternative is considered and analyzed to provide a baseline for comparison of the impacts to Alternative A and B.

2.2 Alternative A – Proposed Action/Mechanical Treatment/Slash Pile Burning

Several mechanical treatments are proposed to break-up thick juniper stands that are encroaching into the sagebrush-steppe ecosystem (see **Appendix A**). The projects are proposed to begin in the fall of 2007 and end in 2011. The objectives (as stated in 1.4) would be accomplished utilizing two different treatment methods and are as follows:

(1) Chainsaws would slash juniper trees in section 4 (objective #1) and in the West Oak Brush areas, as well as, on steep slopes and drainage bottoms where the bullhog is unable to access. The chainsaws would cut juniper trees down to no greater than 6" stump height being measured on the uphill side. The juniper slash could then be used to:

- **(1)** Scatter across the area to minimize fuel accumulations;
- **(2)** Piled and burned under acceptable weather conditions (analyzed in a specific burn plan);
- **(3)** Used by the public as posts, poles, and firewood; and/or
- **(4)** Placed in drainages to operate as erosion control points.

(2) A bullhog would mulch juniper trees (objective #2) to ground level with a stump height no greater than 6" measured on the uphill side. The mulch, created by the bullhog, would be scattered if the depth of the mulch is greater than 6".

The thinning treatment would create irregular mosaic patterns within thick juniper stands, thus creating a patchy mixture of islands and corridors of undisturbed vegetation. The juniper trees selected to be retained would be of good form and vigor and of various age and size classes. Pinyon trees would be avoided if they are discovered to be in the treatment area.

The bullhog is a self propelled, tracked or rubber-tired, brush cutting piece of rangeland/forestry equipment with carbide tipped cutters mounted on a rotary drum. The cutting head reduces wood and brush quickly into shredded material leaving a layer of mulch-like material. Bullhog sizes range from 13,000 pounds up to 42,000 pounds and 10' long by 6' wide up to 20' long and 10' wide.

FY07: 951 acres (hand thinning), 800 acres (bullhog)
FY08: 722 acres (bullhog)
FY09: 1,803 acres (bullhog)
FY10: 1,212 acres (bullhog)
FY11: 2,069 acres (bullhog)
Total: 7,384 acres

Some maintenance activities may be necessary after the fuels treatment has been concluded and the implementation years, listed above, could be subject to change due to weather, funding, and equipment related issues.

If new routes are created during project work, by equipment and support vehicles, the routes would be rehabilitated to prevent further use by off-highway vehicle (OHV) users. Some routes may require the installation of signs stating "closed to motorized vehicles" to prevent OHV use until the evidence of tire tracks are obscured by vegetation cover.

2.3 Alternative B – Prescribed Burn and Seeding Treatment

A prescribed burn would occur on approximately 7,384 acres in sagebrush and juniper blackening 40-80% of the burn units as depicted in **Appendix B**. The juniper burns would be conducted in a mosaic pattern creating a patchy mixture of unburned islands while limiting the amount of high severity burning. Different age and size classes of juniper would be targeted while retaining the trees with good form and vigor. The area would then be seeded to accomplish objective #2, goal (e), (see Seed Species List in **Appendix C**). The use of a rangeland drill is the preferred seeding treatment method after the bullhog has mulched selected trees. Aerial or other ground broadcast treatments may also be used. Seeding would be dependant upon weather conditions and when soil moisture is higher; preferably the fall months.

The prescribed burns would be broken into 5 separate units. One unit per year would be implemented as follows:

FY07: 951 acres
FY08: 1,432 acres
FY09: 1,170 acres
FY10: 1,135 acres
FY11: 2,696 acres
Total: 7,384 acres

The juniper prescribed burn would include a Maximum Manageable Area (MMA). An MMA is a pre-identified ‘buffer’ area which surrounds the actual targeted prescribed burn units. The prescribed fire action is only planned within the burn units, not within the entire MMA. However, if fire crosses the prescribed burn unit perimeter and enters the MMA, this prescribed fire is acceptable, but would be managed in order to keep the fire small. Any prescribed fire found within the MMA would be immediately suppressed. Any prescribed fire that goes beyond the MMA boundary is not acceptable. Therefore, the prescribed fire would be declared an “escape”, transitioned to wildland fire status, assigned a fire number, and managed as a suppression action. The MMA border for the prescribed burn is about 18,693 acres and is the analysis area boundary as depicted in **Appendix B**.

Some maintenance activities may be necessary after the fuels treatment has been concluded and the implementation years, listed above, could be subject to change due to weather, funding, and equipment related issues.

If new routes are created during project work, by equipment and support vehicles, the routes would be rehabilitated to prevent further use by off-highway vehicle (OHV) users. Some routes may require the installation of signs stating "closed to motorized vehicles" to prevent OHV use until the evidence of tire tracks are obscured by vegetation cover.

2.4 Alternative C – No Action/Continuation of Current Management

There would be no fuels treatment completed between the Sheeprock and Simpson Mountain areas. Management would continue as directed under the Pony Express RMP (1990), as amended by the SLFO FMP (1998).

3.0 Affected Environment

3.1 Introduction
This chapter presents the affected environment of impact areas as identified by the Interdisciplinary Team Analysis Record Checklist in **Appendix D**. This chapter provides the relevant environmental components for comparison of impacts/consequences in section four.

3.2 General Setting
The Rockwell project area is located between the Simpson and Sheeprock Mountains in Tooele County. The area is used for livestock grazing and wildlife habitat and resides within a wild horse herd management area.

3.3 Resource/Issues Brought Forward for Analysis

3.3.1 Critical Elements/Other Resources of the Human Environment

3.3.2 Air Quality
The area is within the attainment category for the National Ambient Air Quality Standards and is classified as Class II under the Prevention of Significant Deterioration of Air Quality Classifications.

3.3.3 Cultural Resources
Very little of the area has been inventoried for cultural resources. Existing inventories indicate that a moderate density of prehistoric remains may be present.

3.3.4 Invasive Nonnative Species
A small amount of cheatgrass exists in the proposed project area. Squarrose knapweed has infested areas adjacent to the proposed project area. This area is at risk of squarrose knapweed invasion (knapweed is slowly advancing south on Erickson Pass).

3.3.5 Native American
This area may contain Traditional Cultural Properties (TCP), which are areas that are important to Native Americans for religious and/or cultural reasons. These sites may also be considered Historic Properties.

A consultation letter was sent on March 7, 2006 to the tribes listed in Table 5.2 asking if they were aware of historic properties of traditional religious and/or cultural importance to the tribe that may be impacted by the proposed action.

3.3.6 Rangeland Health Standards and Guidelines
Rangeland Health Standards have not been assessed on the Government Creek or the West Lookout allotments. These allotments are on the SLFO schedule for completion of Standards and Guidelines (S&G) and were scheduled for completion in 2003-2004; these allotments were not assessed on schedule due to a change in priorities from recent litigation. These assessments have been tentatively rescheduled for completion in 2010.

The 2001 Tooele County Spring/Summer Livestock Grazing Permit Renewal EA (UT-020-2001-0084) described these allotments as areas that have been burned and reseeded with Crested

wheatgrass, Intermediate wheatgrass, and Pubescent wheatgrass species. The EA also listed juniper encroachment as a threat to native and seeded areas on the allotments.

Allotment Name	Soil Stability	Watershed Function	Riparian PFC (Proper Functioning Condition)	Biotic Integrity	Water Quality	Allotment Meeting the Standards	Reason for Allotment not Meeting the Standards	Apparent Trend
West Lookout	Not Assessed	Not Assessed	No Riparian	Not Assessed	Not Assessed	Not Assessed	Not Applicable	Unknown
Government Creek	Not Assessed	Not Assessed	Aspen Creek – Functional-at-risk Judd Creek – Not Functioning – Dewatered by mine	Not Assessed	Not Assessed	Not Assessed	Not Applicable	Unknown

3.3.7 Livestock Grazing

Livestock grazing within the analysis area is authorized based on the following table:

Grazing Use					
Allotment Name	**Livestock #**	**Livestock Type**	**Active Permitted AUMs**	**Season of Use (100%PL)**	**Number of Permittees**
Government Creek	749	Cattle	3,755	May 16 Thru October 15	8
West Lookout	3,090 3,075 2,571	Sheep Sheep Sheep	1,320	November 1 Thru February 28 April 1 Thru April 10 April 11 Thru May 15	1

3.3.8 Woodland/Forestry

Historically, the analysis area had a more diverse juniper/pinyon pine/sagebrush savannah than what exists today. Because of encroachment of juniper, the historical composition of the area has changed to a more closed canopy state. This closed canopy makes the area more susceptible to catastrophic wildland fire events.

3.3.9 Vegetation including Special Status Plant Species other than FWS Candidate or Listed Species

Vegetation within the analysis area is typical of that found to occur on semi-arid loam and stony loam ecological sites on the lower elevations and mountain stony loam which occur at the higher elevations. There is a mixture of native and introduced vegetation species throughout the analysis area. A number of wildland fires have burned within the Government Creek area; these burns have been rehabilitated with less fire prone plant species. Many of these rehabilitated areas are being invaded by juniper trees. There are also patches of annual plant species such as cheatgrass.

Small spring-parsley (*Cymopterus acaulis* var. *parvus*), a BLM Special Status Plant, occurs within the analysis area. The exact location of this plant has yet to be determined. The area is in the process of being evaluated for this plant.

3.3.10 Wildlife Including Special Status Species other than FWS Candidate or Listed Species

The sagebrush and pinyon/juniper communities provide year round and seasonal habitat for a variety of neotropical migratory and resident songbirds. Mammal species likely to be found include coyote, badger, black-tailed jackrabbit, desert and mountain cottontails, and a variety of small mammals (mice and kangaroo rats). Mule deer inhabit this area in winter and pronghorn year round. Bat species that may be found roosting and or foraging in the area include western small-footed myotis, silver-haired bat, big brown bat, western pipistrelle, Brazilian free-tailed bat, and Townsend's big-eared bat. Many raptor species may use the area for foraging and roosting. These include long and short-eared owls, red-tailed hawk, Swainson's hawk, ferruginous hawk, golden eagle, peregrine and prairie falcon, rough-legged hawk (winter only) and bald eagles (winter only).

Special status species potentially found in the analysis area include bald eagle, Brazilian free-tailed bat, Townsend's big-eared bat, ferruginous hawk, milksnake, peregrine falcon, short-eared owl, and Swainson's hawk. Sage grouse are known to occur in the area and it is likely there is an undocumented lek (Tom Becker, UDWR, personal communication).

3.3.11 Soils

Soil types within the analysis area are Borvant gravelly loam or Lundy/Lodar. Range sites included within these soil types are Upland Shallow loam and Upland Shallow Hardpan. Soils within the analysis area are typically gravelly sandy loam to clay loam in texture. The analysis area fits the NRCS soils survey (NRCS 2000) description of the Hiko Peak inclusions contained within the Borvant soil map unit. The Hiko Peak inclusion is very deep and located on the lower fan remnants.

Major soils within the analysis area are of good fertility and are very deep. These soils from the fan skirts on the north to the fan remnants and ballenas to the south are Hiko Peak, Taylorsflat, Abela, Kapad, soils. Less fertile mountain soils at higher elevation on the upper edges of the analysis area are Reywat and Broad soils. These soils are mostly of shallow to moderate depth and contain lithic material.

3.3.12 Visual Resources

The proposed project is in visual resource management class III and IV. Visual class III allows for change in visibility but does not attract attention.

Class III Objective - Change Attracts Attention but is Not Dominant

The objective of this class is to partially retain the existing character of the landscape. The level of change to the characteristic landscape should be moderate. Management activities may attract attention, but should not dominate the view of the casual observer. Changes should repeat the basic elements found in predominate natural features of the characteristic landscape.

Class IV Objectives - Change is Dominant but Mitigated

The object of this class is to provide for management activities which 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 a major focus of the

viewers' attention. However, every attempt should be made to minimize the impact of these activities through careful location, minimal disturbance, and repeating the basic element.

3.3.13 Fuels/Fire Management

Due to increased juniper density, as well as some cheatgrass invasion in these fuel types, fuel is presently in fire regime III condition class 3. The risk of severe wildland fire is present. Fire Regime Condition Class (FRCC) is an interagency, standardized tool for determining the degree of departure from reference condition vegetation, fuels and disturbance regimes. Assessing FRCC can help guide management objectives and set priorities for treatments

Big sagebrush is an earlier successional species than juniper and commonly reestablishes itself on a burned area and becomes a nurse plant for juniper seedlings to become established (Barney 1974, West 1984). As the juniper encroaches and the canopy becomes closed, the risk increases for large, destructive crown fires to occur. The situation is also complicated by the invasion of cheatgrass and the associated increased fire return interval in these fuel types.

The risk of catastrophic fast-moving wildland fire is present in the analysis area.

- **Fire History**

The Government Creek, Simpson Mountains, and Sheeprock Mountains all have an active fire history; both lightning and human caused fires are common. Wildland suppression resources have faced challenges in these areas due to the thickness of the juniper which makes access difficult and dangerous. The continuous canopy of juniper is conducive to crown fires which are extremely difficult and expensive to suppress.

4.0 Environmental Impacts

4.1 Introduction
Below are the issues and resources to be analyzed. Because all known mitigating measures have been included in the proposed action and alternative, the environmental consequences described below are unavoidable.

4.2. Alternative A – Proposed Action/Mechanical Treatment/Slash Pile Burning

4.2.1 Air Quality
Implementation of this proposed project could cause short-term, localized increases in particulate emissions from planned ignitions. The pile burns could also cause some short-term reductions in visibility in the immediate area. By following the SMP, the proposed pile burns would not cause or significantly contribute to daily or annual PM2.5 and PM10 NAAQS violations. Smoke or dust particles would not cause transportation or public health and safety issues since burning is strictly regulated by the SMP in order to avoid these concerns. Per SMP guidelines, burning would not be conducted when the National Weather Service's forecasted Clearing Index (CI) for the burn site is less than 500. Burning with a CI equal to or greater than 500 ensures adequate atmospheric ventilation and dispersal of smoke and particulate matter.

The proposed slash piles would reduce fuel loading in the area and create less smoke than might occur during a wildland fire scenario in the same location. Pile burning by nature is more efficient than broadcast burning which minimizes smoke production. Pile burns also create fewer emissions due to the ability to stack the piles in conical shapes, and remove larger diameter fuels. The material is dead and cured moreover smoldering is limited.

Potential smoke receptor sites would be identified. As per Bureau policy, the prescribed fire team would mitigate potential impacts through the following means:

1) The utilization of the clearing index: used as an indicator of the predicted rate of clearance of ground level pollutants from a given area. Ignition will not commence unless the clearing index is above 500.

2) Signs/lookouts will be posted on local roads in order to warn traffic of potential visibility problems if necessary.

3) Ignition would commence only if the prevailing winds or atmospheric stabilities indicate that impacts from smoke would be minimal.

4.2.2 Cultural Resources
Adverse effects to Historic Properties would be avoided or mitigated.

If archaeological mitigation measures are needed the SLFO will consult with the Utah SHPO.

A Class III cultural resource inventory will be completed to locate historic properties prior to any ground disturbance.

4.2.3 Invasive Nonnative Species

The bullhog would eliminate several acres of invasive juniper within the project area. The area would be monitored for invasive species after project completion.

Possible weed infestation would be managed with in accordance with the SLFO LUP, Noxious Weed Act of 2004, and the Final EIS Vegetation Treatment on BLM Lands in 13 Western States.

4.2.4 Rangeland Health Standards and Guidelines/Vegetation

The proposed action would have a positive impact to rangeland health standards for the analysis area. Juniper encroachment would be reduced to approximately 75%, which would allow the historical native community of sagebrush and grasses to return. Biotic integrity and infiltration rates would be enhanced on approximately 7,384 acres.

4.2.5 Livestock Grazing

Livestock grazing would occur as permitted. All prescribed burn areas of treatment would receive one or more years of non-use from grazing. This would require coordination with affected permittees. Areas of treatment would be fenced or agreements would be reached with permittees for non-use within the area of the treatment on the affected allotments. If agreements could not be reached with affected permittees or fencing is not completed then livestock grazing would not be authorized within the treatment areas.

4.2.6 Woodland/Forestry

Removing juniper would allow the native plant community to move towards a more diverse structure and re-establish the historic range of the juniper plant community. The trees that remain in the area, following the treatment, should in general be healthier due to the removal of competition. There could be short-term adverse impacts due to damage to remaining foliage (bruising and tearing) and roots (compaction) caused during the implementation. However, the amount of root compaction should be minimal because the root area is similar in size to the crown canopy. These short-term impacts would, however, be offset by the long-term improvement in the diversity of the forest community. Implementation activity would avoid pinyon.

4.2.7 Vegetation including Special Status Plant Species other than FWS Candidate or Listed Species

The elimination of juniper trees allows for greater competition for the desirable perennial plants. Presently the production of native grass and forb species is limited due to the competitive nature of the juniper trees. Consequentially, to remove trees would allow grasses and forbs to increase in density and produce greater biomass per individual than now exists. Soil erosion would decrease with additional ground cover. Nutrient cycling would increase with a long-term improvement in soil fertility.

The area may be a site ideal for small spring parsley. However, due to a long drought in the area, small spring parsley has not been discovered.

4.2.8 Wildlife Including Special Status Species other than FWS Candidate or Listed species

In general, wildlife species using the area would be disrupted by the treatment activities. Most species are highly mobile and would relocate to other areas. This disruption would be short-term and temporary with the impacted species returning to normal activity patterns upon project completion.

The project, once implemented, would improve winter range for mule deer by providing greater amounts of forage and improved forage quality. The remaining juniper would continue to provide thermal cover. Treatments would be timed to avoid the nesting season and chick rearing seasons for neotropical migratory and resident songbirds. Increased vegetation diversity would likely result in increased insect diversity. These insects serve as prey for many songbirds and all bat species. The removal of juniper would result in the loss of nesting and roosting areas for songbirds, however they would relocate to other areas of suitable nesting habitat. The project would not likely result in decreased nest success or survival. Sage grouse nesting and lekking areas would be improved allowing for an expansion into historical range. The increased plant community diversity would benefit small mammal populations, which are typically food limited. Small mammal populations should increase thereby benefiting raptors, predatory mammals, and reptiles.

4.2.9 Soils

The soil survey recommends juniper control activity on range sites within this area. Soil compaction due to equipment would be minor and would not effect overall infiltration rates. The proposed vegetation treatment would have a positive impact on soils within the analysis area by increasing soil cover (litter and vegetation component).

It is anticipated that the treatment of juniper on this site would release the necessary vegetation to allow for adequate cover of the soils for protection from surface runoff.

4.2.10 Visual Resources

Improve visual quality by returning the vegetation to its natural historic state. The project would produce more diversity and contrast in the predominant natural landscape by breaking up the dense stands of vegetation with monotheistic color and texture.

As a result of Alternative A the visual esthetics would be enhanced with mosaic patterns of different plant communities providing color, texture, and contrast. The area would be green in the spring and amber in the late summer and fall.

4.2.11 Fuels/Fire Management

As juniper density increases, associated understory and interspace herbaceous percent cover and diversity decreases (Bowns 1999, Naillon et al. 1999). The proposed treatments would decrease fuel loading, break up the continuous canopy, and increase vegetation diversity within the juniper stands. Sagebrush would rejuvenate and the understory grasses and forbs would increase (Bowns 1999, West 1984, West et al. 1987). The potential for devastating wildfires within the Government Creek area would be reduced. The treatments would all connect in order to blend the project into the landscape. Combining the fuel treatments into a larger fuel break concept would reduce the potential for large, severe wildfires (Agee et al. 2000, Omi 1996). Additionally, the treatments would improve firefighter safety in the event of a wildfire. The treatments would affect fire behavior by reducing the potential for crown fire and reducing fire rates of spread leading to more successful fire suppression (Agee and Skinner 2005, Fule et al. 2001).

Reducing fuels would also move the area from condition class III into condition class 2, allowing wildland fire to burn in natural mosaic patterns instead of stand replacement levels.

The treatments would provide disturbance under controlled conditions, consequently protecting natural resources and reducing the risk of catastrophic fast-moving wildland fire. Fuels would be

managed to reduce the risk of property damage, high intensity wildfires, and would reduce the potential for large wildland fire growth.

A lower fire hazard would directly reduce the risk to the sagebrush steppe ecosystem while increasing the ability of initial attack suppression forces to control wildland fire more quickly, safely, and cost efficiently.

4.2.12 Cumulative Affects

Wildland fire within the analysis area has a potential of burning a high number of acres annually. This fuels treatments would greatly reduce and discourage the number of acres burned annually and encourage proactive management of resource values in the area.

Manipulating vegetation within the analysis area could directly influence the success of BLM meeting Utah's Standards for Rangeland Health. Scheduled monitoring could ensure proper management of rangeland and watershed resources within the analysis area.

Overall, the fuels reduction project would protect the sagebrush steppe ecosystem.

There have been three other SLFO hazardous fuels reduction projects in the area. The Lee Canyon hazardous fuels project took place on approximately 570 acres in 2005 and is considered to be a successful juniper reduction treatment. The second project, known as the Government Creek hazardous fuels project, occurred on approximately 1,148 acres, was also a bullhog treatment, and considered to be a successful juniper reduction. The third project called the Government Creek Prescribed Burn, was attempted in 2003, but was not completed due to extensive drought not creating enough fine fuels to carry the prescribed fire.

4.3 Alternative B – Prescribed Burn and Seeding Treatment

4.3.1 Air Quality

Implementation of this proposed project could cause short-term, localized increases in particulate emissions from planned ignitions. The prescribed fires could also cause some short-term reductions in visibility in the immediate area. By following the SMP, the proposed prescribed fires would not cause or significantly contribute to daily or annual PM2.5 and PM10 NAAQS violations. Smoke or dust particles would not cause transportation or public health and safety issues since burning is strictly regulated by the SMP in order to avoid these concerns. Per SMP guidelines, burning would not be conducted when the National Weather Service's forecasted Clearing Index (CI) for the burn site is less than 500. Burning with a CI equal to or greater than 500 ensures adequate atmospheric ventilation and dispersal of smoke and particulate matter.

The proposed prescribed fires would reduce fuel loading in the area and create less smoke than might occur during a wildland fire scenario in the same location. The proposed prescribed fires would allow emission reduction techniques to be utilized such as: mass ignition, good ventilation and dispersion days, minimizing smoldering phase through mop-up, and burning when fuel moistures are lower.

4.3.2 Cultural Resources

A Class III cultural resource inventory would be completed to locate Historic Properties prior to any ground disturbance. Adverse effects to historic properties will be avoided or mitigated.

4.3.3 Invasive Nonnative Species

Removal of invasive juniper, within the project area, would allow the understory vegetation or seeded species to flourish in the area. This activity could also create a seed bed for noxious weeds if these areas are not reseeded or if there is no competition from natural understory vegetation. A successful seeding or sprouting of new native vegetation would keep noxious and invasive weeds from becoming established.

4.3.4 Rangeland Health Standards and Guidelines

The impacts to Rangeland Health would be similar to that of the proposed action in that it would have a positive impact to rangeland health standards for the analysis area. Juniper encroachment would be reduced to approximately 75%, which would allow the historical native community of sagebrush and grasses to return.

4.3.5 Livestock Grazing

Permitted livestock grazing would occur as permitted. All prescribed burn areas of treatment would receive one or more years of non-use from grazing. This would require coordination with affected permittees. Areas of treatment would be fenced or agreements would be reached with permittees for non-use within the area of the treatment on the affected allotments. If agreements could not be reached with affected permittees or fencing is not completed then livestock grazing would not be authorized within the treatment areas.

4.3.6 Woodland/Forestry

Implementation of this alternative could result in an increase in diversity over the long term if the fire could be conducted in such a manner as to encourage a canopy burn in some areas, and a low level burn in others. The result would be an uneven age class of the tree canopy and other vegetation in the community. However, manipulating fire in a closed canopy state, as exists currently, would be extremely difficult and potentially hazardous to personnel involved in the burning operation. Since fire is so unpredictable, it is probable that the desired mosaic and uneven age class would not be achieved and the end result could be a net loss of the desired understory.

4.3.7 Vegetation including Special Status Plant Species other than FWS Candidate or Listed Species

Properly executed prescribed fire techniques kill young and old plants of big sagebrush and juniper. This removes the competition resulting in the exploitation of other plant species. Perennial grasses typically increases after a prescribed fire if they can out compete annual cheatgrass. Perennial grasses may be more abundant than cheatgrass for this area since perennial plants are currently more abundant.

Since small spring parsley generally grows on rather sandy open sites, fire is felt not to be detrimental to this plant. Should the small spring parsley occur in areas of cheatgrass, then cheatgrass would be expected to increase on these sites following fire. In this case cheatgrass would be a problem for the survivability of this plant. Under this alternative, if the parsley were to be found under this scenario, then fire should be restricted in those cheatgrass locations.

4.3.8 Wildlife Including Special Status Species other than FWS Candidate or Listed

In general, wildlife species using the area would be disrupted by the treatment activities. Most species are highly mobile and would relocate to other areas. This disruption would be short-term and temporary with the impacted species returning to normal activity patterns upon project completion.

The project, once implemented, would improve winter range for mule deer by providing greater amounts of forage and improved forage quality. The remaining juniper would continue to provide thermal cover. Treatments would be timed to avoid the nesting season and chick rearing seasons for neotropical migratory and resident songbirds. Increased vegetation diversity would likely result in increased insect diversity. These insects serve as prey for many songbirds and all bat species. The removal of juniper would result in the loss of nesting and roosting areas for songbirds, however they would relocate to other areas of suitable nesting habitat. The project would not likely result in decreased nest success or survival. Sage grouse nesting and lekking areas would be improved allowing for an expansion into historical range. The increased plant community diversity would benefit small mammal populations, which are typically food limited. Small mammal populations should increase thereby benefiting raptors, predatory mammals, and reptiles.

4.3.9 Soils

If the seeded species do not establish within the first year, wind could cause soil erosion in the area. The proposed seed species mixture is well adapted for the climate and soil types within the analysis area and it is anticipated that the seeding would be successful, thereby protecting the burn area.

Long-term impacts are anticipated to be stable and positive through the reduction of juniper encroachment. The impacts would be similar to those anticipated in the proposed action.

4.3.10 Visual Resources

The prescribed burn would degrade visual quality by leaving burned areas with a scorched appearance and dead vegetation in the short-term. In the long-term thick stands of dead juniper snags would remain and dominate the visual landscape in the treatment areas. The dead vegetation could take an extensive amount of time to decompose and be reclaimed by the surrounding environment.

4.3.11 Fuels/Fire Management

Fire would more readily burn in areas where the understory is still found in abundance. A complete kill of juniper would be difficult in this area because of the density. It would be difficult for fire to move through these thick juniper patches where the understory no longer exist. The prescribed fire would burn the existing understory and leave partially burned juniper trees.

4.4.12 Cumulative Impacts

There have been three other SLFO hazardous fuels reduction projects in the area. The Lee Canyon hazardous fuels project took place on approximately 570 acres in 2005 and is considered to be a successful juniper reduction treatment. The second project, known as the Government Creek hazardous fuels project, occurred on approximately 1,148 acres, was also a bullhog treatment, and considered to be a successful juniper reduction. The third project called the Government Creek Prescribed Burn, was attempted in 2003, but was not completed due to extensive drought not creating enough fine fuels to carry the prescribed fire.

4.4 Alternative C – No Action/Continuation of Current Management

4.4.1 Air Quality
Air quality in the area of the proposed project would remain in the same condition. Juniper would continue to encroach into the sagebrush steppe and increase the fuel load available to wildland fires. The dense juniper increases the risk of large, high intensity wildland fires that are difficult to control. Therefore, the risk of greater emissions from large, unplanned wildland fires would most likely increase and threaten the quality of the air during such events.

4.4.2 Cultural Resources
Fuel loads would continue to increase thereby increasing the intensity of wildfire. Intense wildfires would be detrimental to prehistoric and historic resources, which may have only experienced regular wildfire regimes in the past.

4.4.3 Invasive Nonnative Species
The dense juniper stands would remain the same and continue to encroach into the sagebrush steppe. Due to lack of understory under juniper stands invasive plant species could take effect especially in the event a fire occurred, it could be expected that knapweed would invade the area. This would require extra control effort and money to eradicate the invader species.

4.4.4 Native American
The SLFO BLM are unaware of the potential locations and types TCPs in the area and therefore are unable assess.

4.4.5 Rangeland Health Standards and Guidelines
Rangeland Health Standards have not been assessed on the Government Creek or the West Lookout allotments. These allotments are on the SLFO schedule for completion of Standards and Guidelines (S&G) and were scheduled for completion in 2003-2004; these allotments were not assessed on schedule due to a change in priorities from recent litigation. These assessments have been tentatively rescheduled for completion in 2010.

4.4.6 Livestock Grazing
Livestock would provide fine fuel reduction in the analysis area, but would be ineffective in managing the large fuels. Livestock uses on the allotment would continue as allowed in the terms and conditions of the existing permits–there would be no changes in number or season.

4.4.7 Woodland/Forestry
The lack of a fuels treatment in this area would allow for the continued encroachment of juniper, therefore leading to the eventual displacement of other native species. The tight canopy could also lead the area to an increased potential for a catastrophic event, such as wildland fire, the spread of disease, and/or insect infestation. If an incident such as this were to occur, the lack of an understory would encourage the encroachment of cheatgrass and other undesirable species.

4.3.8 Wildlife Including Special Status Species other than FWS Candidate or Listed Species
Population levels and population trends would remain as they currently are. Crucial deer winter range would not be improved. Plant diversity would remain low along with associated insect diversity. There would not be temporary disturbance to wildlife from bullhog, hand thinning, or prescribed burning operations.

4.4.9 Soils
Soil conditions would remain as described in the West Lookout AMP and the Tooele County Spring/Summer Grazing Permit Renewal EA.

4.4.10 Visual Resources
Visual quality would remain would remain the same.

4.4.11 Fuels/Fire Management
The area would remain in fire regime III condition class 3. The potential for large destructive wildfires would remain high. The threat of juniper invasion to the sagebrush steppe ecosystem would also remain high. Fire prevention would rely on reactionary fire fighting techniques to battle large or small-scale fires in the area.

Fuel loading would continue and increase fire danger. If a wildland fire was to occur in the area cheatgrass and other weeds may proliferate, therefore increasing fire return intervals.

4.4.12 Cumulative Affects
Suppression efforts would remain the same. Fuel loading would continue to increase, increasing fire danger. If a wildland fire were to occur in the area, cheatgrass, squarrose knapweed, and other weeds may proliferate, therefore increasing fire return intervals.

As vegetation remains untreated, hazardous fuels would increase and remain at risk to catastrophic wildfire. The risk to resource values would remain high with the increase in hazardous fuels. Community members and private landowners may accomplish fire hazard reduction work independently of BLM actions. However, the prevalence of heavy fuel loading on BLM land in the area would allow a large fire hazard to remain unchecked.

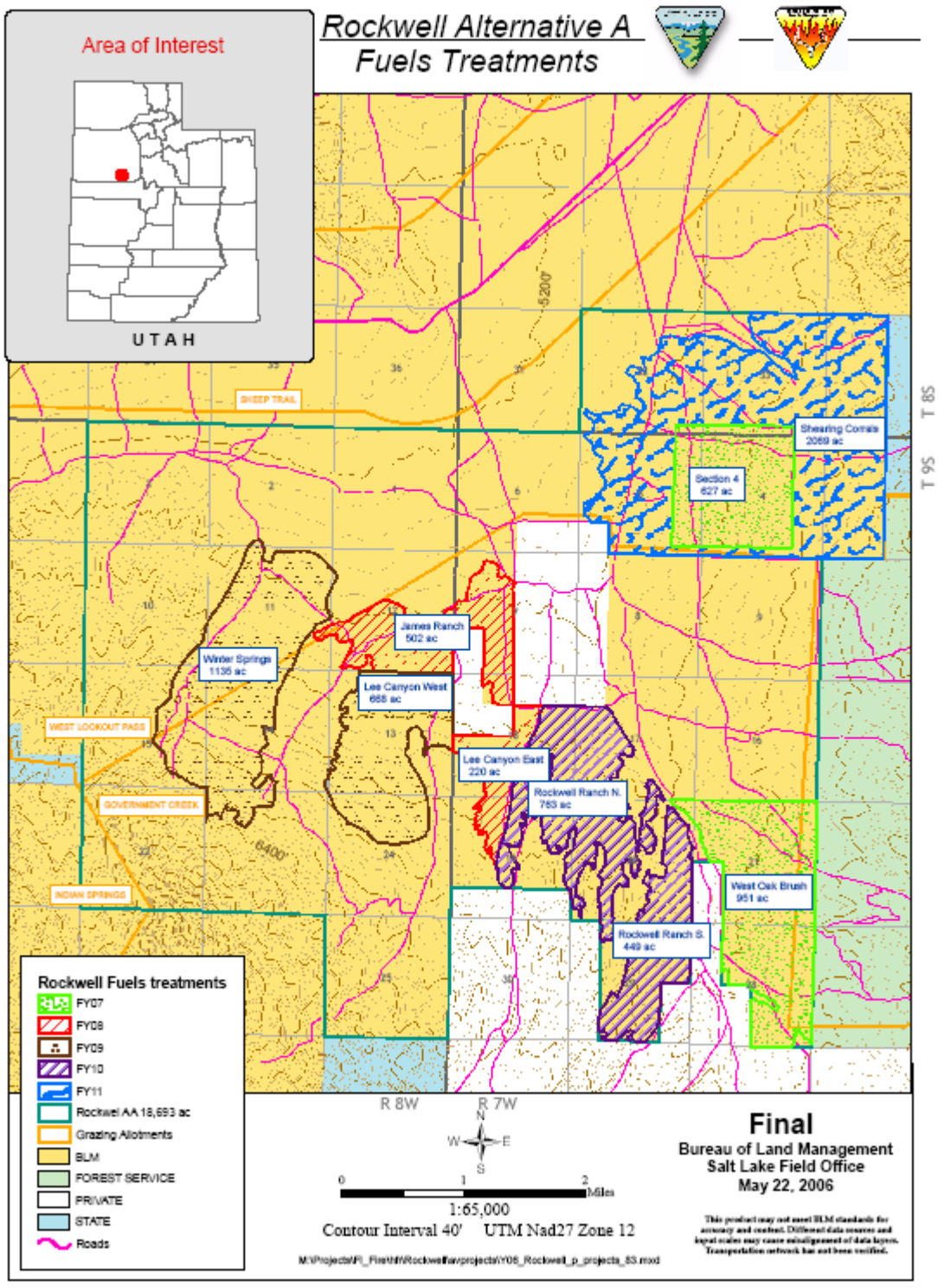
5.0 CONSULTATION & COORDINATION

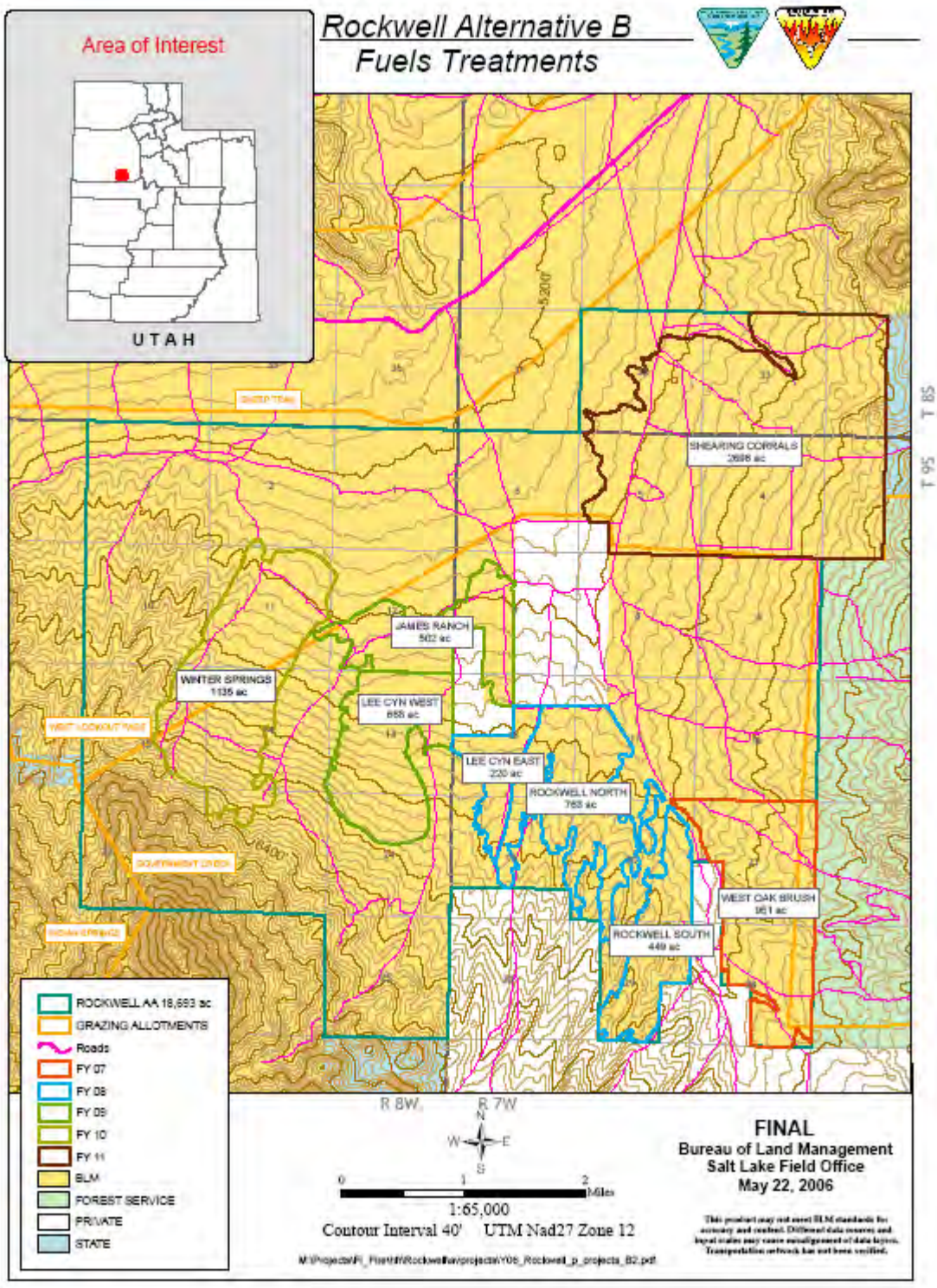
5.1 Introduction

The issue identification section of Chapter 1 identifies those issues analyzed in Chapter 4. **Appendix D** provides the list of preparers and the issues identified as a potential impact. These issues were identified through the public and agency involvement process described in sections 5.2 below.

5.2 Mailing List of Persons, Agencies, & Organizations Consulted

Name	Purpose & Authorities for Consultation or Coordination	Findings & Conclusions
Utah State Historic Preservation Office (SHPO)	Consultation for undertakings, as required by the National Historic Preservation Act (NHPA) (16 USC 470)	SHPO receives quarterly reports, under a State Protocol Agreement, concerning all WUI and HF activities in lieu of normal NHPA consultation.
Tribes Consulted: Goshute Reservation, Skull Valley Gosiutes, Ute, and Paiute	Consultation as required by the American Indian Religious Freedom Act of 1978 (42 USC 1996) and NHPA (16 USC 470)	A consultation letter was sent on March 7, 2006 informing the tribes about this project. The Paiute Indian Tribe of Utah sent a letter dated March 14, 2006 stating that they do not have objections pertaining to this project. The other tribes have not responded to the letter.
Several other members of the public were contacted concerning the proposed project.	NEPA, grazing regulations, and National Fire Management Plan	Two permittees responded by letter and approve of the project.


Area of Interest
UTAH
Rockwell Alternative A
Fuels Treatments
SHEEP TRAIL
WEST LOCKOUT PASS
GOVERNMENT CREEK
INDIAN SPRINGS
5200'
6400'
T 8S
T 9S
Shearing Corrals
2089 ac
Section 4
627 ac
James Ranch
502 ac
Winter Springs
1135 ac
Lee Canyon West
688 ac
Lee Canyon East
220 ac
Rockwell Ranch N.
783 ac
West Oak Brush
951 ac
Rockwell Ranch S.
449 ac
Rockwell Fuels treatments
FY07
FY08
FY09
FY10
FY11
Rockwell AA 18,693 ac
Grazing Allotments
BLM
FOREST SERVICE
PRIVATE
STATE
Roads
R 8W
R 7W
N
W
E
S
0
1
2
Miles
1:65,000
Contour Interval 40'
UTM Nad27 Zone 12
Final
Bureau of Land Management
Salt Lake Field Office
May 22, 2006


Area of Interest
UTAH
Rockwell Alternative B
Fuels Treatments
SHEARING CORRALS
2698 ac
JAMES RANCH
502 ac
WINTER SPRINGS
1135 ac
LEE CYN WEST
888 ac
LEE CYN EAST
220 ac
ROCKWELL NORTH
783 ac
WEST OAK BRUSH
951 ac
ROCKWELL SOUTH
449 ac
ROCKWELL AA 18,693 ac
GRAZING ALLOTMENTS
Roads
FY 07
FY 08
FY 09
FY 10
FY 11
BLM
FOREST SERVICE
PRIVATE
STATE
R 8W.
R 7W
T 8S
T 9S
1:65,000
Contour Interval 40'
UTM Nad27 Zone 12
FINAL
Bureau of Land Management
Salt Lake Field Office
May 22, 2006

Alternative C
Seed Species List

Grass	N/I*	Forbs	N/I*	Browse	N/I*
Bottlebrush Squirreltail	N	Yellow Sweetclover	I	Four-wing Saltbrush	N
Russian Wild Rye	I	Ladak Alfalfa	I	Antelope Bitterbrush	N
Western Wheatgrass	N	Sainfoin	N	Sagebrush	N
Indian Ricegrass	N	Globemallow	N	Gardner Saltbrush	N
Siberian Wheat Grass	I	Kochia, Forage	I		
Thickspike Wheatgrass	N	Lewis Flax	N		
Basin Wild Rye	N	Small burnet	I		
Snake River Wheat Grass	N	Western Yarrow	N		
Paiute Orchardgrass	I				

Native vs. Introduced

Appendix D
Interdisciplinary Team Analysis Record Checklist

Project Title: Rockwell HF EA
NEPA Log Number: UT-020-2006-0030
File/Serial Number: 2823 JQ
Project Leader: Brook Chadwick
Plan Decision/Objective: Hazardous Fuel Reduction **Date of Public Notification:** March 7, 2006
FOR EAs/CXs: NP: not present; NI: resource/use present but not impacted; PI: potentially impacted

INTERDISCIPLINARY TEAM ANALYSIS RECORD CHECKLIST

Project Title: Rockwell Fuels Treatment **NEPA Log Number**: UT-020-2006-030

File/Serial Number: 2823 JQ RA43 **Project Leader**: B. Chadwick

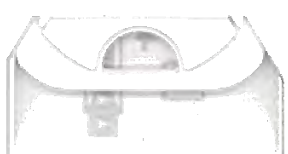
DETERMINATION OF STAFF:

Det ermination	Resource	Rationale for Determination	Signature	Date
		CRITICAL ELEMENTS		
~~NI~~ PI	Air Quality	PROJECT IS IN AN ATTAINMENT AREA. THE PROJECT WILL NOT CONFLICT WITH UTAH'S DAQ SIP AND NAAQS WILL NOT BE EXCEEDED. ANY PM. WILL DISPERSE QUICKLY.		3/6/06
	Areas of Critical Environmental Concern			
PI	Cultural Resources	cultural resource inventory will be completed prior to the undertaking		3/23/06
NI	Environmental Justice	Y/o minority population would be affected. Social economics is not present.		3.22.06
NI	Farmlands (Prime or Unique)	Map units designated as prime or unique farmlands may be present within the analysis area but are not irrigated or subirrigated, Proposed project would not affect farmlands		3/6/06
	Floodplains	Map units designated as floodplains may be present within the analysis area, proposed Project would not restrict access to flood resource		3/6/06
PI	Invasive, Non-native Species	Spot treatments may be needed to control small infestations. Action would not cause large scale invasion of new ones		3/23/06
PI	Native American Religious Concerns	letters will be sent to approp. tribes to identify concerns		3/23/06
PI	Threatened, Endangered or Candidate Plant Species	This Area is being cleared for Small Spring Parsley & Pohl's milkvetch	R. V. Hanley	3/6/06
NI	Threatened, Endangered or Candidate Animal Species	potential foraging area for wintering bald eagles. No adverse impacts anticipated.		3/6/06
NP	Wastes (hazardous or solid)			
NI	Water Quality (drinking/ground)	No Impact to USES Impaired Waters Proposed Actions involve uplands		3/23/06

NP = not present in the area impacted by the proposed or alternative actions
NI = present, but not affected to a degree that detailed analysis is required
PI = present with potential for significant impact analyzed in detail in the EA; or identified in a DNA as requiring further analysis
NC = (DNAs only) actions and impacts not changed from those disclosed in the existing NEPA documents cited in Section C of the DNA form.

Determination	Resource	Rationale for Determination	Signature	Date
NI	Wetlands/Riparian Zones	Proposed projects are not located in or around springs, seeps or creeks. Isolated springs seeps would be avoided	[signature]	3/16/06
NP	Wild and Scenic Rivers	Not present	[signature]	3/22/06
NP	Wilderness	Not present	[signature]	3/22/06
		OTHER RESOURCES / CONCERNS		
PI	Rangeland Health Standards and Guidelines	Rangeland health will be positively impacted by proposed action. Improvements anticipated in Biotic Integrity.	[signature]	3/16/06
PI	Livestock Grazing	[illegible] [illegible] [illegible] [illegible] [illegible] [illegible] resting and [illegible] on.	[signature]	[illegible]
PI	Woodland / Forestry	forested lands have the potential to be impacted due to nature of project.	[signature]	03/16/06
PI	Vegetation including Special Status Plant Species other than FWS candidate or listed species	Vegetation - Juniper encroached areas should be positively impacted by proposed action. Functional structural vegetation groups will be restored	[signature]	3/16/06
PI	Fish and Wildlife Including Special Status Species other than FWS candidate/listed	Deer & elk winter range. Potential sage grouse habitat in southern portion of projects. Other sensitive species present.		
PI	Soils	Soil impacts will be [illegible] and small in nature. Erosion occurring within Juniper encroached areas will [illegible]	[signature]	3/16/06
NI	Recreation	Methods proposed will not affect access to dispersed recreation	[signature]	3/22/06
PI	Visual Resources	Project will improve natural character of surrounding dominant landscape.	[signature]	3/22/06
NI	Geology / Mineral Resources/Energy Production	Mineral resources may be present in these areas, but the proposed actions will not affect any resources.	[signature]	3/23/06
NI	Paleontology	Paleontological resources may be in area (although [illegible] of any significant resources), but proposed action will not affect.	[signature]	3/23/06
	Lands / Access			

NP = not present in the area impacted by the proposed or alternative actions
NI = present, but not affected to a degree that detailed analysis is required
PI = present with potential for significant impact analyzed in detail in the EA; or identified in a DNA as requiring further analysis
NC = (DNAs only) actions and impacts not changed from those disclosed in the existing NEPA documents cited in Section C of the DNA form.



Det ermination	Resource	Rationale for Determination	Signature	Date
PI	Fuels / Fire Management	The risk of high fire danger is in this area. The proposal would lessen the potential of catastrophic wildland fire.	Amber Mathews	3.7.06
NP	Socio-Economics	see environmental justice	Amber Mathews	3.22.06
PI	Wild Horses and Burros	The proposed project lies w/in the Orange Hma. There is a potential for impacts		3/06/06
NP	Wilderness Characteristics	Not present.		3/22/06

FINAL REVIEW:

Reviewer Title	Signature	Date	Comments
Environmental Coordinator			
Authorized Officer			

NP = not present in the area impacted by the proposed or alternative actions
NI = present, but not affected to a degree that detailed analysis is required
PI = present with potential for significant impact analyzed in detail in the EA; or identified in a DNA as requiring further analysis
NC = (DNAs only) actions and impacts not changed from those disclosed in the existing NEPA documents cited in Section C of the DNA form.