

**U.S. Department of the Interior
Bureau of Land Management
White River Field Office
73544 Hwy 64
Meeker, CO 81641**

ENVIRONMENTAL ASSESSMENT

NUMBER: CO-110-2006-075-EA

CASEFILE/PROJECT NUMBER (optional): none

PROJECT NAME: Red Wash Restoration Project

LEGAL DESCRIPTION:

Township	Range	Section(s)/Lots or Portions of:
3 North	100 West	19 SW, 20 SW, 29 NW, 30 N 1/2

APPLICANT: Bureau of Land Management (BLM)

ISSUES AND CONCERNS (optional): The proposed area for restoration is heavily infested with annual, invasive, and non-native plant species such as cheatgrass, Russian thistle (tumbleweed), stork's bill, and tumble mustard. These plants consist of approximately 80-100% of the ground cover, which provides little forage, watershed protection, and/or soil stabilization due to the plants shallow root structure and aggressive competitive growth capabilities over native vegetation.

The dominance of cheatgrass and other annual plant species create a situation of increased fire hazard by providing a flashy fuel source that can alter the fire frequency within the landscape. Therefore, once a rangeland is dominated by cheatgrass and the remaining native vegetation (i.e. Wyoming big sagebrush) burns, cheatgrass has the opportunity to form a monoculture that readily burns in a shortened time interval.

Landscapes with cheatgrass domination are not meeting Public Land Health Standards for a healthy and diverse plant community and/or upland soils as they have formed a near monoculture. Thus, these areas are within an early seral stage that is not functioning as desired in soil structure nor for a healthy plant community.

Cheatgrass is listed as a class C species on the State of Colorado Noxious Weed List, with a stated goal of facilitating effective integrated weed management of this grass.

DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES:

Background/Introduction: The proposed action is located in northern Rio Blanco County (RBC) within upper Hatch Flat along RBC road 78, east of the Red Wash drainage. The Deserado Coal Mine's spoil piles are located approximately 1.3 miles west and the mine's railroad coal loading facility is located approximately 2.9 miles northwest of the proposal.

Hatch Flat is dominated by a Wyoming big sagebrush community whose understory is composed primarily of cheatgrass, a non-native, invasive, and annual grass species. The treatment units have been delineated in areas generally devoid of sagebrush and are located in areas dominated by annual plant species (cheatgrass).

Native vegetation of the rangelands in a desired state would contain an overstory dominated by Wyoming big sagebrush and to a lesser extent greasewood, winterfat, Gardner saltbush, shadscale, fourwing saltbrush, and Douglas rabbitbrush. The native grass understory of a climax community would consist primarily of western wheatgrass, Colorado wildrye, Indian ricegrass, needle-and-thread grass, sandberg bluegrass, bottlebrush squirreltail, and galleta grass.

Soils within the treatment area are primarily a Turley fine sandy loam, 0-3% slopes (soil unit 93) and Turley fine sandy loam, 3-8% slopes (soil unit 94), as defined by the Soil Survey of Rio Blanco County. Both soil units are an alkaline slope ecological site located within an alluvial valley floor and/or low terrace. These soils have limitations of low precipitation, alkalinity, and salinity.

Annual precipitation in nearby Rangely, Colorado is 9.81 inches, with the wettest months being September and October. Precipitation has been below average in the years 2000 and 2002-2004, therefore creating a drought situation of lowered vegetative growth. In 2005, the area received favorable moisture levels and timing that bolstered plant production of annual and perennial species.

Proposed Action: Currently, competition is such that in the absence of some sort of seed bed preparation, any community restoration efforts taken would not succeed. This project will explore several options to determine the most cost effective alternative to pursue a large scale restoration project within the greater Red Wash/Wolf Creek watersheds. BLM proposes to aerially spray, with fixed wing aircraft or truck mounted sprayers, approximately 182 acres in four separate units of non-native annual rangelands with Glyphosate, N-(phosphonomethyl) glycine in the form of its isopropylamine salt known under the various trade names as Roundup Original at a rate of 24 ounces/acre, not to exceed 3 quarts/acre per year. This treatment would be conducted twice to deplete the existing seed bank of cheatgrass and other invasive annuals that the chemical has demonstrated to be effective against such as Japanese Brome, Cocklebur, Lamb's quarters, tumble mustard, and to a lesser degree Russian thistle.

The first treatment would be conducted in early spring when the targeted species are actively growing and before the species have set seed, usually April 1 to May 1. Depending upon weather conditions, this could be accelerated by as much as two weeks or delayed by two weeks. The second treatment would be conducted in the early fall after the monsoonal flow has ceased

and before the first hard freeze when the second cohort of cheatgrass usually establishes. This follow up treatment is intended to further deplete the cheatgrass seed bank prior to seeding with desired perennial vegetation.

All herbicidal control would be under a current Pesticide Use Proposal (PUP) which specifies the area targeted, the chemical to be used, and sensitive areas.

All spraying will be under the control of a BLM certified herbicide applicator.

Glyphosate is produced by numerous manufactures such as Dow AgroSciences and Monsanto. This product is absorbed by the foliar portions of the plant and rapidly moves through the plant. It acts by preventing the plant from producing an essential amino acid. This reduces the production of protein in the plant, and inhibits plant growth. Glyphosate is metabolized or broken down by some plants, while others do not break it down. Soil microorganisms break-down glyphosate. The main break-down product in the soil is aminomethylphosphonic acid, which is further broken down by soil microorganisms. Glyphosate is not selective and will damage or kill desirable perennial grasses and shrubs. Thus, precautions must be followed diligently to avoid injury to desirable plants. At the low rate prescribed, 16ounces/acre, perennial vegetation is damaged but not killed. Glyphosate is generally not active in the soil and persists for 1-3 weeks forming a strong bond with soil particles, thus the potential for leaching is low.

To test another alternative for decreasing cheatgrass competition prescribed burning will be conducted on approximately 15 acres within polygon 1 (north of RBC road 78) in June or July of 2006 to mimic a natural wildfire intensity and timing. The objective of the burn would be the reduction of biomass/litter accumulation and to burn the fire as hot as possible to deplete the cheatgrass seed bank. A Burn Plan would be developed and followed during all operations. A control line and natural topography would be used to contain the fire within the prescribed perimeter, which would require no mechanical disturbance and/or road construction. The early spring treatment of glyphosate would not be conducted within this polygon, yet the fall glyphosate treatment would occur before seeding. All prescribed fire will be conducted in accordance with the State of Colorado Smoke Management Plan and Memorandum of Understanding (MOU), and will be regulated under Colorado Department of Public Health and Environment, Air Pollution Control Division, approved open burning permits, which must be issued in advance of the fire. Simple Approach Smoke Estimation Model (SASEM, 1991) air pollutant dispersion predictions will be completed for all prescribed burn plans and reviewed by the State.

To test different seeding techniques and seed species for effectiveness, four separate units have been identified on the attached map. For unit #1 a native seed mix will be applied after disk plowing, unit #2 will apply the same native seed mix with a rangeland drill. Unit #3 will be disk plowed and a seed mix of native and locally adapted species will be used. For unit #4, the same native and locally adapted species will be seeded using a rangeland drill.

Three to four weeks after the final glyphosate application, unit three (see attached map) will be disk plowed to further deplete the cheatgrass seed bank by burying the remaining seed source too deep to facilitate germination and lifecycle completion, and seeded with the prescribed seed mix

and rates (see Table 1 and 2). Units two and four will be seeded utilizing a rangeland drill with the prescribed seed mixes from table one and two.

Table 1 (Native Seed Mix)

Species (Variety)	Pounds PLS/Acre
Western wheatgrass (Rosanna)	3
Indian ricegrass (Rimrock)	3
Thickspike wheatgrass (Critana)	2
Sandberg Bluegrass	1
Bottlebrush Squirreltail	0.25
Needle & Thread	1
Globemallow	0.25
Winterfat	0.5

Table 2 (Locally Adapted Seed Mix)

Species (Variety)	Pounds PLS/Acre
Western wheatgrass (Rosanna)	2
Indian ricegrass (Rimrock)	2
Russian Wildrye (Bozoisky)	3
Crested Wheatgrass (Ephraim)	3
Globemallow	0.25
Winterfat	0.5

To ensure the success of restoration efforts all livestock grazing will be deferred from the seeded portions of the allotment by constant herding for a minimum of two growing seasons.

The following will be contingent upon funding:

Willow and sedge/rush planting will be conducted in several saturation zones in Red Wash where currently there is nothing but Foxtail barley and cheatgrass. No new road construction and/or off road truck travel will occur to implement this treatment. An all-terrain-vehicle (ATV) may be used within the drainage bottom for transportation of materials. All potential ATV use will occur within the barren drainage bottom outside of any riparian zones and/or vegetated areas. Use of an ATV will be kept to a minimum to prevent any trail establishment.

The abandoned and nonfunctional Red Wash enclosure located in upper Hatch Flat will be removed and hauled to an appropriate landfill.

Fencing will be constructed around Prairie Dog and Cactus Reservoirs to exclude livestock and wildlife to minimize the impact of grazing on the willow and cottonwoods around the reservoirs. Appropriate water gaps will be provided to allow livestock access to water.

The BLM will construct up to four enclosures, ranging in size from 10' x 10' to 75' x 75', within the seeded restoration areas to monitor the seeding treatments in the absence of livestock and wildlife grazing pressure.

Mitigation and Stipulations Associated with the Proposed Action Alternative:

Only federally registered herbicides would be used.

Label directions would be followed even when additional restrictions are required.

Herbicides would be applied as per label instructions and restrictions.

The intake operation of water for mixing would be arranged so that an air gap or reservoir would be placed between the live water intake and the mixing tank to prevent back flow or siphoning of chemical into the water source.

Chemical containers will be disposed of as required by the Environmental Protection Agency.

Affected riparian areas will be identified in site-specific Pesticide Use Proposals.

The following buffer will be provided for the riparian areas associated with Prairie Dog Reservoir and Coal Ridge Detention Dam: a minimum buffer strip of 300 feet wide from the high water mark will be provided for aerial spraying. All systems within the project area are ephemeral. Any deviations must be in accordance with the label for the herbicide.

Avoid direct application of Glyphosate to any body of water (i.e. Prairie Dog Reservoir).

All areas to be treated by mechanical, ground disturbing actions will be inventoried for cultural/historical and paleontological materials as appropriate. Inventory for paleontological resources would only be required if areas of exposed rock outcrops are within the cultivation treatment areas.

To minimize drift, application of all herbicides would be confined to periods when wind speed is less than 6 miles per hour. If measurable winds are out of the north, no aerial spraying will occur. Application would not occur during precipitation, or if there is a threat of precipitation.

To further limit the potential for damaging stream habitats supporting a fisheries, application equipment and calibrations (i.e. spray pressure and droplet size) must be selected to deliver sprays which minimize atomized drift in situations where herbicide would be expected to directly contact surface waters (regardless of 6 mph guideline). No application of herbicide may occur in drainages and valley floors when rain showers are imminent or likely within 12 hours.

During preparation of the Pesticide Use Proposal, the project area would be reviewed for known populations of plant species of special concern or their potential habitats. On those areas containing sensitive plants and habitats with good likelihood of containing sensitive plants would be avoided by herbicidal control. Manual control (pulling weeds) would be the preferred method of control. Potential habitats would be inventoried for absence of sensitive plants prior to any herbicidal use should manual control prove ineffective.

Safeguard Measures for the Proposed Action Alternative:

All individuals associated with the handling or application of herbicides on public lands would be familiar with the chemicals used and emergency procedures to be used in case of herbicide spill.

The safe use of herbicides includes precautionary measures to prevent accidental spills. The following written precautions describe measures that would be used to reduce the chance of such accidents.

The applicable Federal regulations concerning the storage and disposal of herbicides and herbicide containers would be followed. These are described in the EPA's "Regulations for acceptance and Procedures for Disposal and Storage", Federal Register notices as amended.

It is essential to prevent damage to containers so that leaks do not develop; care would be exercised so that containers would not be punctured or ruptured, and so that the lids or caps would not be loosened.

Precautions would be taken in the loading and stacking of herbicide containers in the transporting vehicle to assure that they would not fall as the vehicle moves.

Open containers would not be transported. Partly empty containers would be securely re-sealed before transportation.

Mixed herbicide will not be transported.

Each day after returning to the field office, all herbicide containers would be inspected for damage and leaks, and the vehicle would be examined for contamination. Back-pack sprayers will be cleaned each day before placing in the storage room.

No Action Alternative: No treatment will take place to control cheatgrass populations within the Red Wash area. Therefore, cheatgrass and other annual plant species will continue to dominate the ground cover of these rangelands.

ALTERNATIVES CONSIDERED BUT NOT CARRIED FORWARD:

NEED FOR THE ACTION: Cheatgrass and other annual plants within the treatment area are non-native and invasive species that dominate the ground cover. Cheatgrass is an erect winter and/or spring annual grass that is highly competitive over desirable vegetation types, therefore it has formed a mono-culture in the treatment area. Little resource value is derived these annual plant populations as they have a minimal root system that provides diminutive soil protection, and cheatgrass provides little to no foraging value to livestock and/or wildlife once it produces seeds with protruding awns early in the spring.

The proposed revegetation effort will attempt to eliminate the competitive advantage of the current cheatgrass community, thereby creating a rangeland with an intermixed plant community of desired perennial species. The key to controlling existing population of cheatgrass is to eliminate new seed production and to deplete the existing seed bank since cheatgrass reproduces entirely by seed on an annual basis.

Therefore, the proposed action will help reduce the dominance of invasive and annual plants (i.e. cheatgrass) within the rangeland and provide an opportunity for desired seeded species to establish and provide ground cover within the proposed treatment area. Thus the proposal will reduce the inherent fire hazard associated with cheatgrass communities, and aid in converting a site that is not meeting Public Land Health Standards for a healthy and diverse plant community and/or upland soils to one that is meeting these health standards.

PLAN CONFORMANCE REVIEW: The Proposed Action is subject to and has been reviewed for conformance with the following plan (43 CFR 1610.5, BLM 1617.3):

Name of Plan: White River Record of Decision and Approved Resource Management Plan (ROD/RMP).

Date Approved: July 1, 1997

Decision Number/Page: 2-10, 2-11, 2-13

Decision Language: Maintain healthy, diverse, and sustainable rangeland and woodland plant communities (2-10). Improve the present plant species composition on unhealthy or at risk rangelands to a healthy plant community (2-11). Manage noxious weeds so that they cause no further negative environmental, aesthetic, or economic impact (2-13).

AFFECTED ENVIRONMENT / ENVIRONMENTAL CONSEQUENCES / MITIGATION MEASURES:

STANDARDS FOR PUBLIC LAND HEALTH: In January 1997, Colorado Bureau of Land Management (BLM) approved the Standards for Public Land Health. These standards cover upland soils, riparian systems, plant and animal communities, threatened and endangered species, and water quality. Standards describe conditions needed to sustain public land health and relate to all uses of the public lands. Because a standard exists for these five categories, a finding must be made for each of them in an environmental analysis. These findings are located in specific elements listed below:

CRITICAL ELEMENTS

AIR QUALITY

Affected Environment: Air quality is not currently being monitored in the project area, however it is considered to be within the national and Colorado air quality standards. There are two class 1 (visibility) areas located in northwest Colorado including the Mt. Zirkel Wilderness 120 miles to the northeast and the Flat Tops Wilderness 70 miles to the east.

Environmental Consequences of the Proposed Action: By following the proposed mitigation, impacts to air quality from aerial treatments would be negligible. The small acreage proposed for burning combined with the very light fuel loading associated with annual grasses and forbs will result in a very short duration fire with no long term smoke generation.

Both prescribed and wildland fires are potentially a significant source of air pollution emissions including particulate matter, volatile organic compounds, and carbon monoxide.

Under the proposed action, all fire activities will be conducted within existing laws that protect air quality. Specifically, all fire activities must comply with the applicable air quality regulations required by FLPMA, the Clean Air Act, and the Colorado Air Quality Commission. By complying with applicable air quality standards and regulations, impacts to air quality will be short term and considered acceptable.

Prescribed fires are typically smaller than uncontrolled wildfires, occurring during peak burning conditions and typically involve less total combustion than wildfires, as a result of the more mesic conditions under which prescribed fires are conducted resulting in less over all smoke production. Also, prescribed fires are conducted under atmospheric conditions that will promote air pollutant dispersion.

During the drill seeding and plowing localized fugitive dust will be generated. However, this minor localized impact is not considered significant.

Environmental Consequences of the No Action Alternative: The direct environmental consequences associated from this project will obviously be absent in the no action alternative.

Mitigation: None.

CULTURAL RESOURCES

Affected Environment: The proposed area of the vegetation manipulations has been inventoried for cultural resources in 1979 as part of a larger energy development project. The inventory data is dated and sheet erosion may have exposed previously undetected resources in the project area. Given some of the previous disturbance in some of the polygons the potential for undetected resources might be very low.

In the area where disk plowing is proposed there is one previously recorded Isolated Find, 5RB 1335, which, if it was truly an isolated find is not considered to be a significant cultural resource.

Environmental Consequences of the Proposed Action: Aerial application, or ATV mounted sprayer, application of herbicides will have no impacts to any previously unrecorded cultural resources that might be present in the project area. It does not appear that significant cultural resources will be impacted by the proposed prescribed burn.

Drill seeding generally only disturbs the top 12 to 18 millimeters of soil. The displacement vertically and horizontally is generally less than 18 millimeters which has minimal overall impacts to cultural resource contexts. Compaction by the equipment represents the largest single threat to cultural resources under these conditions, though the impacts are generally not severe due to the low overall ground weight of the equipment.

Disk plowing to a depth of more than two inches has the potential to impact previously unknown buried resources that may be present in the alluvial fill of Hatch Flats. Previously undetected resources could be adversely affected by such plowing.

Environmental Consequences of the No Action Alternative: There would be no direct impacts to cultural resources under the No Action Alternative. However, erosion in the area could potentially impact previously unknown and unrecorded sites in the area.

Mitigation: An archaeological monitor shall be present during disk plowing of polygon 3, especially in the vicinity of Isolated Find 5RB 1335, identified during a 1979 inventory for a proposed coal fired power plant site, to ensure that no further materials area present.

A quick reconnaissance of the area of polygon three, especially in the area around the plotted location of Isolated Find 5RB 1335 shall take place prior the initiation of the plowing.

INVASIVE, NON-NATIVE SPECIES

Affected Environment: The proposed treatment areas are heavily infested with invasive, non-native species such as: cheatgrass, Russian thistle (tumbleweed), stork's bill, and tumble mustard. These plants consist of approximately 80-100% of the ground cover in the locality of the proposal (for a greater analysis, refer to the vegetation section of this document).

There are no known noxious weeds within the treatment polygons, yet several small infestations (1/8 acre) of Russian knapweed, a Colorado listed noxious weed, are located nearby at Cactus and Prairie Dog Reservoirs. These noxious weed populations are targeted for treatment by the White River Field Office.

Other invasive, non-native species within the vicinity of the treatment include tamarisk and Canada thistle. Tamarisk, a non-native, invasive, and water obligate species is located in small numbers at both Cactus and Prairie Dog Reservoirs. Canada thistle is located intermittently along the Red Wash drainage.

Foxtail barely is a native species that can be considered weedy and is located at both Cactus and Prairie Dog Reservoirs within the saline and alkaline bottoms. Foxtail barley is most often found as a dense band of vegetation in disturbed areas where ephemeral water accumulates, such as near stock water or in reservoir drawdown areas such as these reservoirs.

The following table shows the seral rating used by the BLM to rate rangeland vegetation communities in comparison to the Potential Natural Plant Community (PNC) for a particular ecological site.

Ecological Site Similarity Ratings	
Seral Rating	% Similarity to the Potential Natural Plant Community
PNC	76-100% composition of species in the PNC
Late Seral	51-75% composition of species in the PNC
Mid Seral	26-50% composition of species in the PNC
Early Seral	0-25% composition of species in the PNC

The following table shows an estimate of public land acreage falling within one of the seral ratings for each ecological site within the proposed treatment area.

Red Wash Restoration Polygons					
Ecological Site Similarity Rating					
Ecological Site	Total BLM ACRES	PNC	Late Seral	Mid Seral	Early Seral
Stoney Foothills	17.8	0	0	0	17.8
Clayey Saltdesert/Clayey Saltdesert	163.9	0	0	0	163.9
Total:	181.7	0	0	0	181.7
% BLM Acres Classified:		0%	0%	0%	100%

As shown in the table above, 100% of the ecological sites within the treatment area represent plant communities as early seral that are not meeting basic public land health standards due to the dominance of cheatgrass and other non-native, invasive species. These areas have crossed a threshold of annual plant domination that will continue without some form of human induced plant community alteration.

The apparent consultative factors for current poor rangeland conditions are historic overgrazing by livestock, past livestock feeding operations, and an increase in elk populations within the area, particularly elk use during the critical growing season.

Environmental Consequences of the Proposed Action: The proposed action includes a native seed mix and a non-native/native seed mix. As allowed within the White River ROD/RMP, naturalized plant species will be allowed for reseeding on “at risk” and “unhealthy” rangelands (2-11). The rationale for a partial non-native seed mix is its associated plant species are highly adapted to this site (heavy clay soils) and offer a greater opportunity to establish vegetative cover that will result in soil stabilization; thereby, providing a competitive interaction between seeded species and noxious and/or invasive weed species such as cheatgrass.

Limiting factors for successful reclamation of the site includes soils with a high clay content, low annual precipitation, drought prone, and cheatgrass establishment on the adjacent rangelands. These mitigated non-native species have demonstrated themselves to have the greatest ability to

establish, provide soil protection, and offer a competitive interaction against invasive, non-native species such as cheatgrass.

An objective of the proposal is to determine which seed mix (native vs. non-native) has the greatest ability to establish and compete with cheatgrass populations. Therefore, this knowledge gained of native/non-native interaction would be carried forward in potential future cheatgrass treatments.

The proposal will attempt to reverse the current transitional state from a cheatgrass, non-native, and invasive plant community to a desired perennial plant community. This would be accomplished by reducing the competitive advantage and seedbank of cheatgrass through burning and/or spring/fall herbicide treatments. Once the seed source of cheatgrass has been depleted through burning and herbicide application, desirable perennial plants would be seeded. Thereby, the proposal will help create a situation for a favorable transitional state change for plant communities within the treatment area.

Cheatgrass provides little forage, watershed protection, and/or soil stabilization due to the plants shallow root structure and aggressive competitive growth capabilities over native vegetation. The dominance of cheatgrass and other annual plant species create a situation of increased fire hazard by providing a flashy fuel source that can alter the fire frequency within the landscape. Therefore, once a rangeland is dominated by cheatgrass and the remaining native vegetation (i.e. Wyoming big sagebrush) burns, cheatgrass has the opportunity to form a monoculture that readily burns in a shortened time interval. Therefore, the proposal will attempt to reverse this situation and provide a plant community that is able to provide soil protection and meet public land health standards for a functional vegetative community.

As these areas are nearly completely devoid of any native/desirable plant populations, any change in plant composition would have a net benefit. Even under the worst case scenario resulting in complete failure of the proposed treatments, the sites would continue in their current state of cheatgrass and other undesirable annual plant domination. Therefore, there is no opportunity for these sites to regress from their current poor ecological status.

Environmental Consequences of the No Action Alternative: Under a no action alternative, the sites would continue in their current state of cheatgrass domination within an early seral condition that are not meeting public land health standards for plant communities. An opportunity would be lost for an increase in knowledge for local land management in restoring degraded ecological sites.

Mitigation: None

MIGRATORY BIRDS

Affected Environment: The project area is dominated by a continuous understory of annual, invasive, non-native species including: cheatgrass, Russian thistle and tumble mustard. Those bird populations identified by the Rocky Mountain Bird Observatory Partners in Flight

program as having higher conservation interest are limited to horned lark, which are well distributed at appropriate densities in the White River Resource Area's semidesert shrublands. There are no specialized or narrowly endemic species known to occupy the project area. Although meadowlark and horned lark may be found nesting in extremely low densities, these degraded sites typically do not provide adequate forage or nesting material for breeding migratory birds.

Environmental Consequences of the Proposed Action: Glyphosate is practically non-toxic to avian wildlife. Because of the relatively low toxicity of this chemical, and the fact that it does not bioaccumulate, and does not involve vegetation that associated bird species typically use for forage or nesting purposes, there is no reasonable probability that migratory bird species would be exposed to meaningful levels of this herbicide. Herbicide application associated with this project would take place during the early spring and fall months, well outside the breeding window for migratory bird species. The prescribed burn is scheduled to take place during June or July, to mimic a natural wildfire. The burn would involve relatively few acres of habitat that otherwise provides little to no value for migratory birds.

Implementation of these treatments would allow for the reestablishment of native vegetation whose resources would provide a greater benefit to migratory bird species than what is currently available.

Environmental Consequences of the No Action Alternative: Under this alternative there would be no potential exposure of migratory bird species to herbicides. However, allowing invasive species to become well established within the project area would impede the expression of native vegetation, whose resources would be more beneficial to migratory bird species.

Mitigation: None

THREATENED, ENDANGERED, AND SENSITIVE ANIMAL SPECIES (includes a finding on Standard 4)

Affected Environment: There are no threatened or endangered animal species that derive important benefit or use from the project area. Hatch Flats is broadly encompassed by white-tailed prairie dog (a BLM-sensitive species) habitat. Beginning in the early 1980's, prairie dog numbers began to decline and have yet been able to rebound to previous levels. Field inspections conducted in January by a BLM biologist indicate prairie dog occupation, but at extremely low densities.

Prairie dogs and their burrow systems are important components of burrowing owl habitat, as well as potential habitat for reintroduced populations of black-footed ferrets. Burrowing owls, a State threatened species are uncommon in this Resource Area. These birds return to occupy a maintained burrow system in early April and begin nesting soon after. Most birds have left the area by September. No burrowing owls have been documented in the vicinity of the project area.

Under the auspices of a non-essential, experimental population rule, black-footed ferrets have been released annually in Wolf Creek (approximately 6 miles northwest) since 2001. The rule applies to any ferrets that may occupy or eventually be released in northwest Colorado and northeast Utah. It is extremely unlikely a ferret would occupy the Hatch Flats area as (1) there is no direct continuity between Wolf Creek and the project site (i.e., lesser physical barriers and habitats unoccupied by prairie dog) and (2) the size and density of the town is not capable of sustaining a ferret for any given period of time.

See Aquatic Wildlife section (below) for discussion pertaining to potential occupation of the project area by Great Basin spadefoot toad, a BLM sensitive species.

Environmental Consequences of the Proposed Action: The proposed action is not expected to result in any adverse effects to special status species. Glyphosate is practically non-toxic terrestrial wildlife. Label consistent application of this chemical as proposed poses no conceivable toxic threat or chronic exposure level to special status species owing to the chemical's relative nontoxic character. Although the proposed action would result in a short-term reduction of forage available for prairie dogs, which may cause those remaining animals to temporarily disperse to areas outside of the treatment sites, the outcome of these treatments would allow for the reestablishment of native vegetation (i.e., redevelopment of a perennial bunchgrass component) whose resources would provide a greater benefit to special status species than what is currently available.

Environmental Consequences of the No Action Alternative: Under this alternative there would be no potential exposure of special status species to herbicide. However, failure to implement this action would result in the continued suppression of native vegetation, both woody and herbaceous, which provide valuable forage and cover for terrestrial species.

Mitigation: None

Finding on the Public Land Health Standard for Threatened & Endangered species: While the surrounding landscape retains sufficient character to support viable populations of resident wildlife, those sites targeted for treatment (e.g., dominated by cheatgrass and other non-native, invasive species) cannot be considered meeting the definition of the land health standard for special status species. The proposed action offers an opportunity to reestablish native herbaceous and woody forage and cover conditions which may be expected to bolster local populations of prairie dogs and potentially benefit individual burrowing owl and black-footed ferret—effects consistent with continued meeting of the Land Health Standards

WASTES, HAZARDOUS OR SOLID

Affected Environment: There are no known hazardous or other solid wastes on the subject lands. No hazardous materials are known to have been used, stored or disposed of at sites included in the project area.

Environmental Consequences of the Proposed Action: No listed or extremely hazardous materials in excess of threshold quantities are proposed for use in this project. While commercial preparations of fuels and lubricants proposed for use may contain some hazardous constituents, they would be stored, used and transported in a manner consistent with applicable laws, and the generation of hazardous wastes would not be anticipated. Solid wastes would be properly disposed of.

Environmental Consequences of the No Action Alternative: No hazardous or other solid wastes would be generated under the no-action alternative.

Mitigation: The applicant shall be required to collect and properly dispose of any solid wastes generated by the proposed actions.

WATER QUALITY/HYDROLOGY, SURFACE AND GROUND (includes a finding on Standard 5)

Affected Environment: Surface Water: The proposed actions are located entirely within the Red Wash catchment area. Red Wash near the proposed treatment area is an ephemeral system which flows primarily in response to snowmelt and high intensity precipitation events. Red Wash is a tributary to the White River which is a tributary to the Green River (tributary to Colorado River). The project area is positioned adjacent to Rio Blanco County road # 78 on the east side of Red Wash approximately 3.5 stream miles above the confluence with the White River. The following table shows stream flow and water quality data recorded by the BLM in Red Wash near its confluence with the White River from 1979-1988. Note that high values for specific conductance (SC) correspond with low flow periods (ground water discharge [base flow]) while lower SC values are associated with periods of higher flow. This correlation indicates that normal surface runoff is of fair water quality while SC readings taken during low flows are skewed by the geology and soil chemistry of the channel bottom at the point of measurement.

Stream Name	Location	Discharge (cfs)	Specific Conductance (SC) $\mu\text{mohs/cm}^2 @ 25 \text{ C}$	pH	Date
Red Wash	near mouth (White R.)	0.115	1800	-	5/10/79
Red Wash	near mouth (White R.)	0.002	6720	-	4/9/79
Red Wash	near mouth (White R.)	6.09	920	8.1	6/1/81
Red Wash	near mouth (White R.)	0.559	3205	8.1	5/4/83
Red Wash	near mouth (White R.)	White R. backed up	-	-	6/1/83
Red Wash	near mouth (White R.)	Sediment clogged channel	2370	8.5	7/11/83
Red Wash	near mouth (White R.)	0.256	5724	8.1	8/15/83
Red Wash	near mouth (White R.)	2.7	1190	8.15	4/6/84
Red Wash	near mouth (White R.)	1.37	2180	8.2	5/11/84
Red Wash	near mouth (White R.)	White R. backed up	-	-	6/20/84
Red Wash	near mouth (White R.)	0.18	2240	7.6	7/24/84
Red Wash	near mouth (White R.)	White R. backed up	-	-	9/5/84
Red Wash	near mouth (White R.)	White R. backed up	-	-	5/17/85

Stream Name	Location	Discharge (cfs)	Specific Conductance (SC) $\mu\text{mohs/cm}^2 @ 25 \text{ C}$	pH	Date
Red Wash	near mouth (White R.)	1.63	1850	8.15	4/10/87
Red Wash	near mouth (White R.)	0.06	3020	8.5	5/29/87
Red Wash	near mouth (White R.)	0	N/A	N/A	5/9/88
Red Wash	near mouth (White R.)	0	N/A	N/A	6/8/88
Red Wash	near mouth (White R.)	0	N/A	N/A	7/29/88
Red Wash	near mouth (White R.)	0	N/A	N/A	8/29/88
Red Wash	near mouth (White R.)	0	N/A	N/A	9/9/88
Average		0.86	2838.09	8.16	

It should also be noted that following completion of the Taylor Draw Reservoir Project on the White River in the early eighties, notable impacts to flow regimes and stream channel morphology in the lower reaches of Red Wash were observed. It is evident in the above table that in the late spring/early summer of 1983 (after reservoir construction), water from the White River backed up in to the lower reaches of Red Wash and sediment accumulation clogged the channel. This reach of the watershed was assessed in March of 2005 and the degree of aggradation combined with the lack of well defined channel characteristics was noted. No flowing water was observed during this assessment.

Unit #3 in the proposed project area is located approximately 175 feet north of Prairie Dog Reservoir. Prairie Dog Reservoir was constructed in an ephemeral tributary to Red Wash in 1960 (range improvement # 001935). The reservoirs primary purpose is to capture low elevation runoff providing water for sheep grazing operations during the winter/early spring months in the Red Wash allotment.

A review of the Colorado's 1989 Nonpoint Source Assessment Report (plus updates), the 305(b) report, the 303(d) list, and the White River Resource Area RMP was done to see if any water quality concerns have been identified. It should be noted that Red Wash has been listed on the states Monitoring and Evaluation list (M&E List) for sediment impairment. In addition, the White River ROD/RMP has also identified Red Wash as not meeting state water quality standards for both suspended sediment and salinity. Elevated sediment/salt loads (not meeting standards) correspond to short duration, high intensity flows resulting from runoff and intense precipitation events. Sediment/salt loads during low/no flow periods currently meet state water quality standards.

Stream segment 13a of the White River Basin is defined as all tributaries to the White River, including all wetlands, lakes and reservoirs from a point immediately above the confluence with Piceance Creek to a point immediately above the confluence with Douglas Creek, except for the specific listings in segments 13b through 20. Stream segment 13a has been classified as "Use Protected". Beneficial uses for segment 13a are as follows: Warm Aquatic Life 2, Recreation 2, and Agriculture. The antidegradation review requirements in the Antidegradation Rule are not applicable to waters designated use-protected. For those waters, only the protection specified in each reach will apply. Minimum standards for four parameters have been listed, these parameters are: dissolved oxygen = 5.0 mg/l, pH = 6.5 - 9.0, Fecal Coliform = 2000/100 ml, and 630/100 ml E. coli.

Ground Water: A review of the US Geological Survey Ground Water Atlas of the United States (Topper et al., 2003) was done to assess ground water resources at the location of the proposed actions. Information presented in Topper et al. (2003) indicates the northwestern extent of the Mesaverde aquifer encompasses the Red Wash drainage near the project area north of Colorado Hwy. 64. The project area is situated near the southeastern extent of the northern limb of the Red Wash Syncline. Surface geology is primarily Wasatch (Tertiary) while a small portion of unit # 4 sits atop the Upper Mesaverde Formation (Upper Cretaceous). The Wasatch formation is a confining unit and consists primarily of shale and lenticular sandstones, thicknesses can reach 5,000 feet. The Upper Mesaverde Formation (Mesaverde Aquifer) consists primarily of sandstone with interbedded shale and coal, thicknesses can reach 7,000 feet. As a result of the interlayered nature of the Mesaverde Aquifer saturated thicknesses ranges from less than 500 to 2,000 feet and porosity is generally less than 10 percent (Topper et al., 2003). Beneath the Mesaverde Aquifer is the Mancos Shale. The Mancos Shale (confining unit) has an approximate thickness of 7,000 feet. This unit is comprised primarily of shale however within the unit, the Frontier Sandstone may occur as a local aquifer which is of poor water quality (highly saline). No water wells utilizing bedrock aquifers have been identified near the project area.

Environmental Consequences of the Proposed Action: Surface Water: Removal of cheatgrass understory by herbicide and fire treatments and disk plowing will leave soils exposed to erosional processes and may elevate sedimentation rates. However, increased sedimentation will be short term and success of the proposed actions will provide long term stabilization to the affected portions of the watershed by replacement of cheatgrass with more desirable vegetation.

The herbicide identified for use in the proposed project area is glyphosate. Glyphosate has been approved for use in controlling unwanted vegetation in aquatic environments, including sources used for drinking water. Adverse impacts to surface water resources resulting from chemical treatments is not expected given glyphosate binds tightly to soil particles, is rapidly degraded by soil microbes, has very low acute and chronic toxicity to mammals, and is not carcinogenic.

Ground Water: Given the nature of the surface geology (confining unit) and concentration of herbicide to be used (16 oz/acre), impacts to ground water are not anticipated. Because glyphosate binds tightly to most soils, potential for transport through soils to ground water is minimized. If drifting, runoff, or treatment of riparian areas results in direct discharge of herbicide to surface waters the ephemeral nature of the Red Wash drainage combined with the strong soil binding, and rapid deterioration characteristics of glyphosate will minimize the risk of contamination to groundwater in the White River Alluvial Aquifer (~3.5 stream miles down stream).

Environmental Consequences of the No Action Alternative: Cheatgrass will continue to dominate the understory. Given the shallow rooting structure of cheatgrass soils will become increasingly vulnerable to erosional processes. Sedimentation to the Red Wash drainage, White River (Taylor Draw Reservoir) will continue to persist at high rates.

Mitigation: Processes outlined in the proposed action will ensure appropriate mitigation measures are conducted to protect surface and ground water resources.

Finding on the Public Land Health Standard for water quality: Stream segment 13a is currently meeting water quality standards set by the state. Red Wash is a tributary to the White River (Segment 12) both are listed on the states Monitoring and Evaluation list (M&E list) for sediment impairment. If the proposed project is a success, sediment production from the project area will be reduced helping Red Wash move towards meeting state water quality standards for sediment during periods of high flow. If the proposed project proves unsuccessful, Red Wash will continue to not meet state water quality standards for sediment during periods of high flow. Segment 13a as a whole will continue to meet/exceed water quality standards regardless of the success of the proposed project.

WETLANDS AND RIPARIAN ZONES (includes a finding on Standard 2)

Affected Environment: Wetlands and riparian communities within the locality of the proposed chemical application include Prairie Dog Reservoir (175 feet south), Cactus Reservoir (5380 feet south), and the Red Wash drainage (2430 feet west).

A marginal riparian community is located along the shoreline of Prairie Dog Reservoir which consists of willows, cattails, foxtail barley, 2-3 cottonwoods, and 1-2 boxelder trees. A small stand of tamarisk, an invasive, non-native riparian species is located along the bank of the reservoir. Russian knapweed, a Colorado listed noxious weed, is located within a stand of willows along the reservoir bank. This reservoir becomes dry during the summer period, thus limiting the potential extent of the riparian zone. Also, this reservoir is slowly filling in with sediment due to natural erosive processes within the uplands, thus limiting the water holding capacity of the reservoir.

Cactus reservoir forms a riparian community consisting bulrushes, cattails, willows, narrow leaf cottonwoods (limited young), box elders, and foxtail barely. Less than 12 tamarisks are located along the banks of Cactus Reservoir. Russian knapweed was discovered during an assessment in 2005 of Proper Functioning Condition (PFC) and then sequentially treated. This system received a functioning rating of Proper Functioning Condition during assessments in 2002, 2004, and 2005. The riparian community is limited in nature due to the reservoir periodically going dry, yet consistently holds a greater volume for of water for a longer period than Prairie Dog Reservoir. Also, this reservoir is slowly filling in with sediment due to natural erosive processes within the uplands, thus limiting the water holding capacity of the reservoir.

The Red Wash drainage is an ephemeral system which supports riparian communities around intermittent saturation zones. Plant species include rushes, Nebraska sedges, narrow leaf willows, redtop, slender wheatgrass, and Fremont cottonwoods. Red Wash periodically experiences heavy flows associated with heavy rain events. This system was rated as Proper Functioning Condition in relation to its ephemeral potential during an assessment in 2002. Red Wash drains into the White River approximately 3.9 miles south of the proposed action's pesticide treatments.

Environmental Consequences of the Proposed Action: All riparian communities are outside of any pesticide application and/or land disturbance treatments. A buffer zone has been created around the north perimeter of Prairie Dog Reservoir to avoid any drift contamination of the site. There is little opportunity for any off-site negative influences of riparian and/or wetland communities using mitigation listed under the proposed action.

Cactus Reservoir and Red Wash are well outside the area of influence associated with the proposed action's Glyphosate application and/or disturbance activities. Therefore, these sites have no potential for adverse impacts attributable to the proposal.

There will be less overland flow and sheet erosion occurring that carries sediment and salinity into these riparian communities with successful reclamation of the uplands. This will be accomplished by using a mixture of bunch and rhizomatous perennial grasses, which have varying root structures that increases soil stability, versus the current annual plant species found in the landscape.

Dependent upon available funding, a net benefit would occur within the Red Wash drainage with the planting of riparian species in areas lacking desired communities (i.e. willows, sedges, rushes). Therefore, once these planted species establish themselves within saturation zones along Red Wash, the plants would provide a seed source and an increase in root structure, soil stability, and riparian diversity.

Environmental Consequences of the No Action Alternative: None

Mitigation: None

Finding on the Public Land Health Standard for riparian systems: All riparian systems within the vicinity have been rated as Proper Functioning Condition and are currently meeting Public Land Health Standards in varying degrees. The proposed action will have no negative influence on this rating, yet with available funding of riparian species planting it will bolster the functionality of Red Wash.

CRITICAL ELEMENTS NOT PRESENT OR NOT AFFECTED:

No ACEC's, flood plains, prime and unique farmlands, Wilderness, or Wild and Scenic Rivers, threatened, endangered or sensitive plants exist within the area affected by the proposed action. For threatened, endangered and sensitive plant species Public Land Health Standard is not applicable since neither the proposed nor the no-action alternative would have any influence on populations of, or habitats potentially occupied by, special status plants. There are also no Native American religious or environmental justice concerns associated with the proposed action.

NON-CRITICAL ELEMENTS

The following elements **must** be addressed due to the involvement of Standards for Public Land Health:

SOILS (includes a finding on Standard 1)

Affected Environment: The following table describes the soils that are present within the project units.

Soil Unit Name	Ecological Site	Erosion	Acres
91-Torriorthents-Rock outcrop complex, 15 to 90 percent slopes.	Stony Foothills	Very High	17.8
93-Turley fine sandy loam, 0 to 3 percent slopes.	Alkaline Slopes	Slight-Moderate	26.3
94-Turley fine sandy loam, 3 to 8 percent slopes.	Alkaline Slopes	Slight-Moderate	137.6

Turley fine sandy loam soils are deep, well drained soil on alluvial valley floors, fans, and low terraces. It formed in calcareous mixed alluvium derived dominantly from sandstone and shale. The native vegetation is mainly desert shrubs and grasses. Elevation is 5,000 to 5,800 feet. The average annual precipitation is 8 to 12 inches, the average annual air temperature is 45 to 50 degrees F, and the average frost-free period is 105 to 125 days. Typically, the upper part of the surface layer is light brownish gray fine sandy loam about 4 inches thick. The next layer is light brownish gray loam about 10 inches thick. The upper 11 inches of the underlying material is light brownish gray loam, and the lower part to a depth of 60 inches or more is light brownish gray loam that has some salt crystals. In some areas the surface layer is sandy loam, loam, or very fine sandy loam. Permeability of this Turley soil is moderately slow. Available water capacity is high. Effective rooting depth is 60 inches or more. Runoff is medium, and the hazard of water erosion is slight to moderate. The soil is calcareous throughout. The potential plant community on this unit is mainly galleta, Indian ricegrass, greasewood, big sagebrush, bud sagebrush, bottlebrush squirreltail, and Gardner saltbush. Smaller amounts of western wheatgrass, Douglas rabbitbrush, and winterfat commonly are also present in the potential plant community.

Torriorthents-Rock outcrop complex is extremely rough and eroded areas on mountains, hills, ridges, and canyon sides. Slopes mainly face south. The native vegetation is mainly sparse shrubs and grasses with some pinyon and juniper trees. Elevation is 5,100 to 7,500 feet. The average annual precipitation is 8 to 18 inches, the average annual air temperature is 40 to 50 degrees F, and the average frost-free period is 70 to 130 days. This unit is 50 percent Torriorthents that have slopes of 15 to 65 percent and 30 percent Rock outcrop that has slopes of 35 to 90 percent. Torriorthents are very shallow to moderately deep and are well drained and somewhat excessively drained. Permeability of the Torriorthents is moderate. Available water capacity is very low. Effective rooting depth is 10 to 20 inches. Runoff is very rapid, and the hazard of water erosion is very high. The potential plant community on this unit is mainly some pinyon and juniper trees with Indian ricegrass, beardless wheatgrass, prairie junegrass, low rabbitbrush, and some forbs. Many areas have sparse stands of pinyon and juniper trees, and other areas are nearly barren. It is in Stony Foothills range site.

The four units selected for restoration are infested with annual, invasive, and non-native plant species such as cheatgrass, Russian thistle (tumbleweed), stork's bill, and tumble mustard.

These plants consist of approximately 80-100% of the ground cover, which provides little watershed protection, and/or soil stabilization due to the plants shallow root structure and aggressive competitive growth capabilities over native vegetation.

Environmental Consequences of the Proposed Action: Removing the existing cover of vegetation through burning and chemical treatment will expose soils to short term wind and water erosion. The units selected for chemical treatment will have the biomass in place to slow water erosion and provide protection from wind erosion. However, since there will be little or no vegetation actively growing, the sites will be subject to increased erosion potential in heavy rain events since there will be no live plant root structures anchoring the soil. This would only happen in the event of a severe thunderstorm dropping unusually high amounts of precipitation in a short period of time, due to the relatively flat topography of the treatment units and high water capacity. This potential exists under the current situation due to the dense monoculture of shallow rooted cheatgrass. For unit 1, prescribed burning will remove all the vegetation and expose the soil to wind erosion and to rain impact and overland flow which will also accelerate erosion. These impacts will be short term, no more than six months for the units being chemically treated and four months for the unit scheduled to be broadcast burned. Disk plowing will loosen the soil particles and aerate the soil which will result in a slightly higher wind erosion rate.

Once desired perennial vegetation has established on the sites, erosion rates are expected to decrease below the pre-treatment rates within one to three years. The seed mix prescribed will provide for a mix of bunch and sod forming grasses and forbs with varying root depths that will more effectively anchor soils, and over time with proper management, provide litter which will also aid in reducing soil erosion. The deeper rooted perennial vegetation will provide better resistance to gully and rill formation than the existing continuous cover of annual species.

Environmental Consequences of the No Action Alternative: There would be no direct impact to soils from the proposed action under this alternative. However, due to the degraded nature of the plant community the sites will be subject to increased erosion potential in heavy rain events since there is almost no perennial vegetation anchoring the soil. This potential would be highest in the event of a severe thunderstorm dropping unusually high amounts of precipitation in a short period of time.

Mitigation: None

Finding on the Public Land Health Standard for upland soils: Soils within the restoration units currently are not meeting Public Land Health Standards. This is due to the lack of plant diversity, species with various root system depth, and vigorous desirable plant species. Implementing this project will cause a short term (6-8 months) increase in soil erosion by decreasing canopy cover and surface litter. However, since the proposed project will replace a dense monoculture of cheatgrass and other undesired annuals with desired perennial grasses and forbs which, over time canopy cover should increase, and plant diversity can be expected to increase from current conditions. It is anticipated that by implementing this proposed action the long term effect should improve the indicators for the upland soils standard.

VEGETATION (includes a finding on Standard 3)

Affected Environment: Ecological sites associated with the proposal include 163.9 acres of Alkaline Slope and 17.8 acres classified as Stony Foothills.

Soil Unit Name	Ecological Site	Acres
91-Torriorthents-Rock outcrop complex, 15 to 90 percent slopes.	Stony Foothills	17.8
93-Turley fine sandy loam, 0 to 3 percent slopes.	Alkaline Slopes	26.3
94-Turley fine sandy loam, 3 to 8 percent slopes.	Alkaline Slopes	137.6

All acres are heavily infested with annual, invasive, and non-native plant species such as cheatgrass (*Bromus tectorum*), Russian thistle (*Salsola kali*, tumbleweed), stork’s bill (*Erodium cicutarium*), and tumble mustard (*Sisymbrium altissimum*). These annual plant communities consist of approximately 80-100% of the ground cover within the treatment polygons. The treatment polygons have excluded populations of Wyoming big sagebrush (*Artemisia tridentata* ssp. *wyomingensis*).

The alkaline slope sites have a potential natural plant community with an overstory of Wyoming big sagebrush and to a lesser extent greasewood (*Sarcobatus vermiculatus*), Gardner saltbush (*Atriplex gardneri*), shadscale (*Atriplex confertifolia*), douglas rabbitbrush (*Chrysothamnus viscidiflorus*), and winterfat (*Ceratoides lanata*). The native grass understory of a potential community would consist primarily of western wheatgrass (*Agropyron smithii*), Colorado wildrye (*Elymus salinus*), Indian ricegrass (*Oryzopsis hymenoides*), needle-and-thread grass (*Stipa comata*), sandberg bluegrass (*Poa secunda*), bottlebrush squirreltail (*Sitanion hystrix*), and galleta grass (*Hilaria jamesii*). Within these Turley fine sandy loams, the effective rooting depth is 60 inches or more, strongly alkaline, and calcareous throughout. Slopes are generally less than 10% and provide a treeless site.

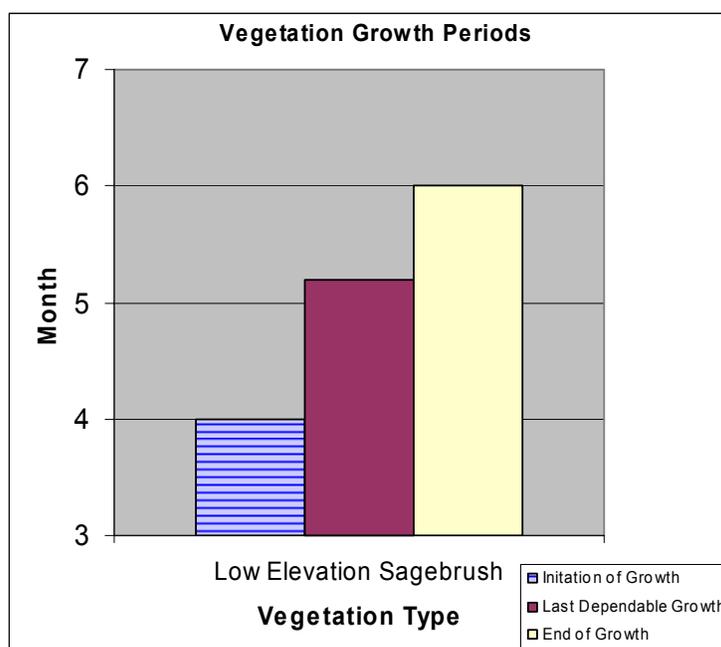
Torriorthents-Rock outcrop complex is extremely rough and eroded areas on hills and ridges with south facing slopes, and the effective rooting depth is 10 to 20 inches. The potential native vegetation of this Stony Foothills ecological site is mainly sparse Wyoming sagebrush, western wheatgrass, junegrass (*Koleria cristata*), Indian ricegrass, galleta, and bottlebrush squirreltail, with some pinyon (*Pinus edulis*) and juniper trees (*Juniperus osteosperma*). These ridge sites have been used as the perimeter buffer zones of the treatment polygons.

The following table lists the plant community appearance for the Ecological Sites associated with the proposed action, along with the predominant plant species comprising the composition of each community. Forb species, though important to the diversity and composition of a community, are not present in the following table because they generally are not contributors to the appearance or dominance of the plant community.

Ecological Site / Woodland Type	Plant Community Appearance	Predominant Plant Species in the Plant Community
Alkaline Slopes	Sagebrush / Grass Shrubland	Wyoming big sagebrush, winterfat, low rabbitbrush, wheat grasses, Indian rice grass, squirreltail

Ecological Site / Woodland Type	Plant Community Appearance	Predominant Plant Species in the Plant Community
Stony Foothills	Grass / Open Shrub Shrubland	Beardless bluebunch wheatgrass, western wheatgrass, needle-and-thread, June grass, Indian rice grass, Wyoming big sagebrush, pinyon and juniper

The table below is a representation of the vegetation growth periods for the site associated with the proposed action. These dates are based upon estimated averages and can vary from year to year dependant upon climatic conditions. As shown below, the initial date of plant growth is typically the first of April and continues into early May, thus forming the critical growing season. Cheatgrass communities are extremely competitive and take advantage when moisture is available, therefore the growing season is highly variable and can begin much earlier then April.



The spring herbicide treatment would coincide with the active growth period of cheatgrass before seed maturation (i.e. turning of color), approximately mid to late April. The fall treatment will coincide with the fall germination of the existing seed bank of cheatgrass, thus depleting the above and below ground cheatgrass seed sources before seeding of desirable perennial plants occurs.

The following table shows the seral rating used by the BLM to rate rangeland vegetation communities in comparison to the Potential Natural Plant Community (PNC) for a particular ecological site.

Ecological Site Similarity Ratings	
Seral Rating	% Similarity to the Potential Natural Plant Community
PNC	76-100% composition of species in the PNC
Late Seral	51-75% composition of species in the PNC
Mid Seral	26-50% composition of species in the PNC

Ecological Site Similarity Ratings	
Seral Rating	% Similarity to the Potential Natural Plant Community
Early Seral	0-25% composition of species in the PNC

The following table shows an estimate of public land acreage falling within one of the seral ratings for each ecological site within the proposed treatment area.

Red Wash Restoration Polygons Ecological Site Similarity Rating					
Ecological Site	Total BLM ACRES	PNC	Late Seral	Mid Seral	Early Seral
Stoney Foothills	17.8	0	0	0	17.8
Clayey Salt-desert/Clayey Salt-desert	163.9	0	0	0	163.9
Total:	181.7	0	0	0	181.7
% BLM Acres Classified:		0%	0%	0%	100%

As shown in the table above, 100% of the ecological sites within the treatment area represent plant communities as early seral that are not meeting basic public land health standards due to the dominance of cheatgrass and other non-native, invasive species. These areas have crossed a threshold of annual plant domination that will continue without some form of human induced plant community alteration.

The apparent consultative factors for current poor rangeland conditions are historic overgrazing by livestock, past livestock feeding operations, and an increase in elk populations within the area, particularly elk use during the critical growing season.

Environmental Consequences of the Proposed Action: The proposal will attempt to reverse the current transitional state from a cheatgrass, annual plant community to a desired perennial plant community. This would be accomplished by reducing the competitive advantage and seedbank of cheatgrass through burning and/or spring/fall herbicide treatments. Once the seed source of cheatgrass has been depleted through burning and herbicide application, desirable perennial plants would be seeded. Thereby, the proposal will help create a situation for a favorable transitional state change for plant communities within the treatment area.

Cheatgrass provides little forage, watershed protection, and/or soil stabilization due to the plants shallow root structure and aggressive competitive growth capabilities over native vegetation. The dominance of cheatgrass and other annual plant species create a situation of increased fire hazard by providing a flashy fuel source that can alter the fire frequency within the landscape. Therefore, once a rangeland is dominated by cheatgrass and the remaining native vegetation (i.e. Wyoming big sagebrush) burns, cheatgrass has the opportunity to form a monoculture that readily burns in a shortened time interval. Therefore, the proposal will attempt to reverse this situation and provide a plant community that is able to provide soil protection and meet public land health standards for a functional vegetative community.

As these areas are nearly completely devoid of any native/desirable plant populations, any addition of perennial plants in the composition would have a net benefit. Even under the worst case scenario resulting in complete failure of the proposed treatments, the sites would continue in their current state of cheatgrass and other undesirable annual plant domination. Therefore, there is no opportunity for these sites to regress from their current poor ecological status.

Glyphosate, the proposed herbicide, is non-selective and provides total vegetation control. It is applied to the foliage and absorbed by leaves and rapidly moves through the plant. It acts by preventing the plant from producing an essential amino acid, thus inhibiting plant growth. Glyphosate is strongly absorbed strongly to soil particles, particularly within the clayey soils found in the treatment area, and is not expected to move vertically below the six inch soil layer. Residues are expected to be immobile within the soil and degrade readily by soil microbes. Therefore, there is minimal opportunity for off-site contamination of plant communities by Glyphosate.

As the herbicide treatment will be applied aerially, there will be an opportunity for herbicide drift into neighboring Wyoming sagebrush communities whose understories are dominated by cheatgrass. The rate of application will be low to essentially affect only annual plant communities; yet there is still opportunity for sagebrush injury and/or die-off resulting from herbicide drift. However, the degree of potential sagebrush die-off should be minimal and within an acceptable level as these sagebrush communities are currently within a poor ecological state and not meeting public land health standards for plant diversity due to an understory that is lacking native/desirable grasses and forbs.

There would be a temporary loss of live plant material (i.e. cheatgrass) providing ground cover after the spring/fall treatment of herbicide, as Glyphosate is a total vegetation control. The burn would reduce any litter accumulations on the soil's surface. The proposed disking would overturn the soil and create of situation of exposed bare ground. These ground cover losses would continue until re-vegetation efforts are taken and an opportunity occurs for the establishment of seeded species. This loss of ground cover would not hamper vegetation conditions, but may temporary increase soil loss through wind and/or rain events.

The proposal will provide an increased knowledge base for land managers to effectively understand landscape dynamics within cheatgrass populations through various treatment techniques. Therefore, this local knowledge of plant interaction could be applied to other degraded sites in an effort to provide ecosystem restoration.

Environmental Consequences of the No Action Alternative: Under a no action alternative, the sites would continue in their current state of cheatgrass domination within an early seral condition that is not meeting public land health standards for plant communities. An opportunity would be lost for an increase in knowledge for local land management in restoring degraded ecological sites.

Mitigation: None

Finding on the Public Land Health Standard for plant and animal communities (partial, see also Wildlife, Aquatic and Wildlife, Terrestrial): Landscapes with cheatgrass domination are not meeting Public Land Health Standards for a healthy and diverse plant community. This is due to the areas having formed a near mono-culture of non-native, invasive species that provide 80-100% of the ground cover. Thus, these areas are within an early seral stage that is not functioning for a healthy and diverse plant community.

WILDLIFE, AQUATIC (includes a finding on Standard 3)

Affected Environment: About half the project area drains to 2 constructed reservoirs: Prairie Dog Reservoir, a 0.6-acre impoundment located approximately 175 feet south of the treatment area 3, and an unnamed 1-acre reservoir immediately south of treatment area 4. These reservoirs are ephemeral and generally store a shallow pool of water in the spring. Although BLM has never encountered or been made aware of amphibian populations in these reservoirs, it is possible that under suitable conditions, chorus frogs, tiger salamanders, and less likely, Great Basin spadefoot toads (a BLM sensitive species) reproduce in these ephemeral impoundments. These species typically reproduce from April through July (BLM experience indicates that most common in early May in the project area) and require at least 3 weeks of persistent water for metamorphosis to adult stages.

Environmental Consequences of the Proposed Action: Technical glyphosate is generally regarded as being practically non-toxic to fish and slightly to very slightly toxic to aquatic invertebrates (<http://extoxnet.orst.edu/pips/glyphosa.htm>). Available literature suggests that amphibians are generally less sensitive to herbicide exposure than are aquatic invertebrates or fish (USFWS, 1986. Manual of Acute Toxicity. Resource Publ. 160). However, there have been concerns expressed regarding the toxicity of surfactants (alone or synergistically with glyphosate) that are integral with various Roundup® formulations (e.g., 3 to 30 times more toxic to aquatic organisms than glyphosate alone). The Roundup® formulation proposed for use in this project would not contain surfactants.

Direct chemical exposure would be relegated to overspray, drift, or runoff of solute to occupied aquatic habitats. Measures to prevent drift and overspray have been incorporated into the proposed action. Glyphosate is strongly adsorbed to clay soils and has low potential (<2% of product) to run off in solution. Based on remaining reservoir storage and the fact that the project area involves only flat terrain, worst-case off-site delivery to Prairie Dog Reservoir would translate to a glyphosate concentration (i.e., 2% x 5.25 gallons active ingredient x 0.6 acre-feet) of 0.5 parts per billion (ppb)--several orders of magnitude below concentrations considered toxic for aquatic organisms (86-780 parts per million (ppm)). Potential chemical concentrations would be far lower at the larger unnamed reservoir.

The proposed treatments involve about 100 upland acres that drain to the two ephemeral stockponds. The 84 acres contributing to Prairie Dog Reservoir (portions of areas 2, 3, and 4) and 16 acres draining to the unnamed reservoir (site 4) comprise about 16% and 2% of their contributing watersheds, respectively. These reservoirs were constructed in the 1950's and are functionally intact, although their capacity has been significantly reduced by deposited

sediments. The fact that these structures continues to capture and retain sediments from their contributing 525 and 880-acre watersheds implies that there is little sediment ultimately reaching the reservoir pool. It is likely that the vast majority of sediments are dropping out in the network of incised drainages that feed these reservoirs. Because these channel sites do not retain pooled water capable of sustaining toad breeding activities, the opportunities for amphibian exposure to herbicide-contaminated sediments in the reservoirs' storage pool would be extremely limited. Because the degradation of glyphosate to elemental constituents is relatively rapid (average half-life of 47 days in soil; 2 to 10 weeks in water), there would be little, if any, effective accumulation or transport of herbicide on or downstream of the project site. Less than 5% of the chemical attributable to the spring treatment should remain at the time of follow-up treatment in fall. It is expected that glyphosate concentrations in the project area would be reduced to trace levels by the following breeding season. BLM believes there is no reasonable likelihood that herbicide concentrations capable of adversely influencing eggs, larvae, or adult forms of amphibians (that may potentially occur in the two ponds) can be attributed to this project in the long or short term.

Environmental Consequences of the No Action Alternative: Under this alternative there would be no potential exposure of aquatic wildlife species to herbicides. Efforts to restore degraded annual-dominated rangelands to a native bunchgrass character would be foregone, as would the opportunity to enhance the functional relationship between upland and aquatic habitats.

Mitigation: Provisions that limit the toxicity and opportunities for off-site exposure of glyphosate have been incorporated into the proposed action. These measures included: use of glyphosate formulations without surfactant adjuvants, limiting herbicide applications to periods when there are no northerly wind components, and aerial-spray buffers around the reservoir margins extended to 300 feet.

Finding on the Public Land Health Standard for plant and animal communities (partial, see also Vegetation and Wildlife, Terrestrial): Although the project area does not provide favorable conditions for the support of well-developed aquatic habitats, the 2 ephemeral ponds on the margin of the treatment areas do represent features that may, under certain conditions, be capable of sustaining small reproducing populations of amphibians. Although contributing watersheds are degraded and do not meet land health standards, the gentle terrain and functional dams have tended to maintain a stable, albeit ephemeral, source of aquatic habitat that marginally satisfies the land health standard. Restoration efforts applied to the contributing watersheds would be expected to reduce long term sediment transport to these sites (i.e., prolonging their functional life) and improve upland infiltration, which may prolong the availability of moisture and enhance vegetative growth in these reservoirs as amphibian habitat—more fully fulfilling the intent of the land health standard. Provisions are included in the proposed action to prevent potential adverse effects involving the exposure of amphibians to herbicide.

WILDLIFE, TERRESTRIAL (includes a finding on Standard 3)

Affected Environment: The project area is encompassed by a heavy understory of invasive, non-native species including: cheatgrass, Russian thistle and tumble mustard. The Hatch Flat area is generally occupied by deer, elk and pronghorn during the winter and early spring months (November through early May). The predominantly annual-based herbaceous forage provides an abundant, but short duration forage source in spring.

Raptor species such as golden eagle, ferruginous hawk and red-tailed hawk may opportunistically forage throughout the area. Juniper, which may provide suitable nesting habitat for raptor species, is located throughout the slopes adjacent to the project area. Nest surveys were conducted by a BLM biologist in January however; there was no evidence of recently occupied nests within the area. There are no cliff-dwelling species that derive important use from the area.

Small mammal populations are poorly documented, however, the species that are likely to occur in this area display broad ecological tolerance and are widely distributed throughout the Rocky Mountain regions. No narrowly distributed or highly specialized species or subspecific populations are known to inhabit this area.

Environmental Consequences of the Proposed Action: The proposed action is not expected to result in any adverse effects to terrestrial wildlife. Glyphosate is practically non-toxic to avian and terrestrial wildlife. Label consistent application of this chemical as proposed poses no conceivable toxic threat or chronic exposure level to resident birds and mammals owing to the chemical's relative nontoxic character. The proposed action targets annual, invasive species (e.g., cheatgrass, Russian thistle and tumble mustard), which, while providing a short-term food source during the spring, typically are not considered a valuable source of forage or cover for big game or raptor species. Woody species, such as big sagebrush and juniper, which provide an important food and cover source for both terrestrial and avian wildlife, should be minimally affected by herbicide application.

Environmental Consequences of the No Action Alternative: Under this alternative there would be no potential exposure of terrestrial wildlife species to herbicides. However, failure to implement this action would result in the continued suppression of native vegetation, both woody and herbaceous, which provide valuable forage and cover for terrestrial species.

Mitigation: None

Finding on the Public Land Health Standard for plant and animal communities (partial, see also Vegetation and Wildlife, Aquatic): While the surrounding landscape retains sufficient character to support viable populations of resident wildlife, those sites targeted for treatment (e.g., dominated by cheatgrass and other non-native, invasive species) cannot be considered meeting the definition of the land health standard for animal communities. Implementation of this project offers an opportunity to reestablish herbaceous and woody forage and cover conditions more consistent with the proper functioning of these sagebrush and semidesert communities as wildlife habitat, thus bettering the opportunity to meet the land health standard.

OTHER NON-CRITICAL ELEMENTS: For the following elements, only those brought forward for analysis will be addressed further.

Non-Critical Element	NA or Not Present	Applicable or Present, No Impact	Applicable & Present and Brought Forward for Analysis
Access and Transportation			X
Cadastral Survey	X		
Fire Management			X
Forest Management	X		
Geology and Minerals	X		
Water Rights	X		
Law Enforcement		X	
Noise	X		
Paleontology			
Rangeland Management			X
Realty Authorizations	X		
Recreation		X	
Socio-Economics		X	
Visual Resources			X
Wild Horses	X		

ACCESS AND TRANSPORTATION

Affected Environment: All units identified in this proposed action have legal public access via Rio Blanco County Road 78 from county road 76 Hall Draw, BLM road 1729, and unimproved two-track roads. County road 78 does have occasional traffic associated with oil and gas development and ranching in the area. Recreational use of routes around the project area occurs primarily during deer and elk hunting seasons.

Environmental Consequences of the Proposed Action: Unit one is bisected by county road 78. Portions of county road 78 may need to be closed or restricted for short periods of time while burning operations are being conducted on this unit. Due to the low traffic volume and alternate routes in the area the impact would not be significant.

No new routes will need to be constructed to implement the proposed action and off road vehicle traffic will be minimized during firing and holding operations during the prescribed fire implementation.

Environmental Consequences of the No Action Alternative: There would be no impacts from the no-action alternative.

Mitigation: None

FIRE MANAGEMENT

Affected Environment: The proposed action occurs within the B3 Salt Desert Shrub fire management polygon. “B” polygons are areas where wildland fire is not desired. In the case of the B3 polygon the vegetation communities are so degraded such that unplanned ignitions will have a negative impact without mitigation. The salt desert shrub community within the polygon under pre-European conditions should have little or no fire ecology associated with this vegetation type due to sparse shrub dispersal and much of the herbaceous vegetation being bunch grasses or lightly stocked sod forming grasses and a few discontinuous forbs. However, due to past land management practices the invasive annual cheatgrass has established and come to dominate much of this community creating a continuous flashy fuel source, altering the fire regime from rare to no fire return interval small fires of >100 acres to a fire return interval of 1-5 years and the fire size limited only by the annual production of cheatgrass for that given year.

The Wyoming sagebrush community under pre-European conditions should have a fire return interval of 50-120 years with a relatively sparse understory of bunch grasses, forbs, and lightly stocked sod forming grasses. As with the salt desert shrub communities this vegetation type is largely degraded by the invasion, and in much of the polygon, total dominance of the understory by cheatgrass resulting in an altered fire regime of 1-5 years and uncharacteristically large fire potential. In both cases this shortened fire regime does not allow native vegetation to re-establish on the site post fire, and once burned cheatgrass’s annual growth habit allows it to out compete native vegetation for limited resources in the dry precipitation zones that the native vegetation occupies.

From 1994-2003 there have been 50 fires occur within the B3 polygon and five of those have been uncharacteristically large reaching 50 acres or greater. Due to the low elevation nature much of the area around the proposed action does not receive lightning caused ignitions as much as the higher elevations to the north (Blue Mountain) and south (Cathedral Bluffs).

Environmental Consequences of the Proposed Action: Developing a cost effective process for converting annual rangelands to a perennial vegetation community will re-establish a more characteristic vegetation community and fire regime with a fire return interval in excess of 20 years. The removal of the continuous flashy fuel source within Red Wash project will limit the potential for large-scale involvement of the adjacent sagebrush communities in the event of a wildfire however, until a large scale effort is undertaken there will be little landscape change due to the small acreage proposed.

Environmental Consequences of the No Action Alternative: The potential for a large, costly landscape scale wildfire would remain without the effort to develop a cost effective method for converting the annual rangelands found with the B3 polygon to a perennial less fire prone community would remain.

Mitigation: None

PALEONTOLOGY

Affected Environment: The proposed project area is in an area generally mapped as the Wasatch Formation (Tweto 1979) which the BLM, WRFO has classified as a Condition I formation which means it is known to produce scientifically important fossil resources. However, most of the project appears to avoid exposed rock outcrops and be confined to the quaternary alluviums in the drainages. Quaternary alluviums are not generally considered fossiliferous.

Environmental Consequences of the Proposed Action: Provided that there are no attempts to disk plow the rock formations there should be no new impacts to fossil resources under the proposed action.

Environmental Consequences of the No Action Alternative: There would be no new impacts to fossil resources under the No Action Alternative.

Mitigation: 1. The operator is responsible for informing all persons who are associated with the project operations that they will be subject to prosecution for knowingly disturbing paleontological sites, or for collecting fossils. If fossil materials are uncovered during any project or construction activities, the operator is to immediately stop activities in the immediate area of the find that might further disturb such materials, and immediately contact the authorized officer (AO). Within five working days the AO will inform the operator as to:

- whether the materials appear to be of noteworthy scientific interest
- the mitigation measures the operator will likely have to undertake before the site can be used (assuming in situ preservation is not feasible)

If the operator wishes, at any time, to relocate activities to avoid the expense of mitigation and/or the delays associated with this process, the AO will assume responsibility for whatever recordation and stabilization of the exposed materials may be required. Otherwise, the operator will be responsible for mitigation cost. The AO will provide technical and procedural guidelines for the conduct of mitigation. Upon verification from the AO that the required mitigation has been completed, the operator will then be allowed to resume construction.

RANGELAND MANAGEMENT

Affected Environment: The proposed action is located in the Red Wash allotment (06320), which is authorized for sheep use by Villard Ranch (0501444). This allotment can be authorized for 1600 sheep from January 25th through April 10th. The ranch typically operates below this authorization level to meet variable rangeland conditions. The Red Wash allotment encompasses 8239 acres, all of which are administered by the BLM.

Environmental Consequences of the Proposed Action: The current situation of cheatgrass domination provides little forage value outside a limited window in early spring. With successful reclamation efforts of seed/desired species, a long-term increase in available forage would exist for livestock.

The deferment of livestock grazing for a minimum of two growing seasons within these 182 acres will result in a temporary loss of available rangelands. This loss can be mitigated through active herding of sheep by Villard Ranch through increase distribution as the area is located within the northeast corner of the allotment. The 182 acres for livestock grazing rest is nominal (2%) in regards to the 8239 acres located in the Red Wash allotment. Therefore, there are available rangelands outside of the proposal that the ranch can utilize during the period of deferment. Through herding, the ranch can readily keep livestock outside the confines of the proposed treatment.

In relation to livestock grazing, glyphosate is non-volatile, essentially non-toxic, has a minimal effect on mammals, and if digested approximately 97.5% is excreted in urine and feces. No waiting period between treatment and feeding of livestock grazing is required as outlined in label direction for rangelands. However, the area for treatment is to be excluded from livestock use for a minimum of 2 growing seasons. Therefore, there is essentially no potential for an adverse effect of glyphosate on livestock.

Environmental Consequences of the No Action Alternative: The area would continue in its poor rangeland health condition and provide minimal forage for livestock. There would be no need for deferment of livestock within the 182 acres of treatment; therefore the entire allotment would be available for livestock use.

Mitigation: None

VISUAL RESOURCE

Affected Environment: The proposed action is within a VRM class III area. 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 the predominant natural features of the characteristic landscape

Environmental Consequences of the Proposed Action: The proposed action is small in scale relative to the surrounding landscape; therefore, any modifications will be unseen to the casual observer, and VRM III objectives will be met. Furthermore, any disturbed vegetation will return making the action virtually unnoticeable within a period of a few years.

Environmental Consequences of the No Action Alternative: No impact on visual resources.

Mitigation: None.

CUMULATIVE IMPACTS SUMMARY: The proposed action is an effort to transition a degraded ecological site consisting of annual, non-native, and invasive plant species (i.e. cheatgrass) to a functional state of perennial plants. These sites for treatment are currently not

meeting Public Land Health Standards for plant communities and/or soils due to their early seral stage resulting from a near mono-culture of cheatgrass.

With successful re-vegetation of desired plant communities as outlined in the proposed action, it will cumulatively create a situation for a favorable transitional state change for plant communities within the treatment area.

Under the no action alternative, cheatgrass populations would continue to dominate the rangeland within their degraded state that does not meet Public Land Health standards. Also, the current cheatgrass populations create a fire hazard by altering the natural fire regime. Thus, there is a potential for a cumulative impact of the continuation of annual cheatgrass domination and greater fire size and increase frequency within the landscape.

The proposed action is to standardize the control of cheatgrass and other invasive annual plant communities using Glyphosate (Roundup Original) along with re-vegetation treatments. The use of herbicides is carefully controlled to protect the environment, public and the applicators, and this Environmental Assessment (EA) provides flexibility to use the method which best meets the treatment site and environmental considerations.

There are no known adverse cumulative impacts to any of the resources discussed in this document in consideration of all mitigation measures proposed in this EA, the Colorado Record of Decision for Vegetation Treatment on BLM Lands in Thirteen Western States, and the pesticide label for Glyphosate. All mentioned documents will be adhered to prevent any undue resource degradation.

REFERENCES CITED:

Tweto, Ogden

1979 Geologic Map of Colorado. United States Geological Survey, Department of the Interior, Reston, Virginia.

PERSONS / AGENCIES CONSULTED: None

INTERDISCIPLINARY REVIEW:

Name	Title	Area of Responsibility
Ken Holsinger	Natural Resource Specialist	Air Quality
Tamara Meagley	Natural Resource Specialist	Areas of Critical Environmental Concern
Tamara Meagley	Natural Resource Specialist	Threatened and Endangered Plant Species
Michael Selle	Archeologist	Cultural Resources Paleontological Resources
Jed Carling	Rangeland Specialist	Invasive, Non-Native Species
Lisa Belmonte	Wildlife Biologist	Migratory Birds
Lisa Belmonte	Wildlife Biologist	Threatened, Endangered and Sensitive Animal Species
Melissa Kindall	Hazmat Collateral	Wastes, Hazardous or Solid
Nate Dieterich	Hydrologist	Water Quality, Surface and Ground Hydrology and Water Rights
Jed Carling	Rangeland Specialist	Wetlands and Riparian Zones
Chris Ham	Outdoor Recreation Planner	Wilderness
Ken Holsinger	Natural Resource Specialist	Soils
Jed Carling	Rangeland Specialist	Vegetation
Lisa Belmonte	Wildlife Biologist	Wildlife Terrestrial and Aquatic
Chris Ham	Outdoor Recreation Planner	Access and Transportation
Ken Holsinger	Natural Resource Specialist	Fire Management
Robert Fowler	Forester	Forest Management
Paul Daggett	Mining Engineer	Geology and Minerals
Jed Carling	Rangeland Specialist	Rangeland Management
Linda Jones	Realty Specialist	Realty Authorizations
Chris Ham	Outdoor Recreation Planner	Recreation
Chris Ham	Outdoor Recreation Planner	Visual Resources
Valerie Dobrich	Natural Resource Specialist	Wild Horses

Finding of No Significant Impact/Decision Record (FONSI/DR)

CO-110-2006-075-EA

FINDING OF NO SIGNIFICANT IMPACT (FONSI)/RATIONALE: The environmental assessment and analyzing the environmental effects of the proposed action have been reviewed. The approved mitigation measures (listed below) result in a Finding of No Significant Impact on the human environment. Therefore, an environmental impact statement is not necessary to further analyze the environmental effects of the proposed action.

DECISION/RATIONALE: It is my decision to approve the proposed action, with the mitigation measures listed below. This development, with mitigation, is consistent with the decisions in the White River ROD/RMP, and environmental impacts will be minimal.

As these areas are nearly completely devoid of any native/desirable plant populations, any addition of perennial plants in the composition would have a net benefit. Even under the worst case scenario resulting in complete failure of the proposed treatments, the sites would continue in their current state of cheatgrass and other undesirable annual plant domination. Therefore, there is no opportunity for these sites to regress from their current poor ecological status.

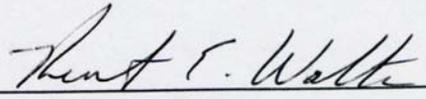
MITIGATION MEASURES:

1. An archaeological monitor shall be present during disk plowing of polygon 3, especially in the vicinity of Isolated Find 5RB 1335, identified during a 1979 inventory for a proposed coal fired power plant site, to ensure that no further materials area present. A quick reconnaissance of the area of polygon three, especially in the area around the plotted location of Isolated Find 5RB 1335 shall take place prior the initiation of the plowing.
2. The applicant shall be required to collect and properly dispose of any solid wastes generated by the proposed actions.
3. Provisions that limit the toxicity and opportunities for off-site exposure of glyphosate have been incorporated into the proposed action. These measures included: use of glyphosate formulations without surfactant adjuvants, limiting herbicide applications to periods when there are no northerly wind components, and aerial-spray buffers around the reservoir margins extended to 300 feet.

COMPLIANCE/MONITORING: A monitoring program will be conducted to determine the potential success rate of the project in relation to desired vegetative ground cover.

NAME OF PREPARER: Jed Carling

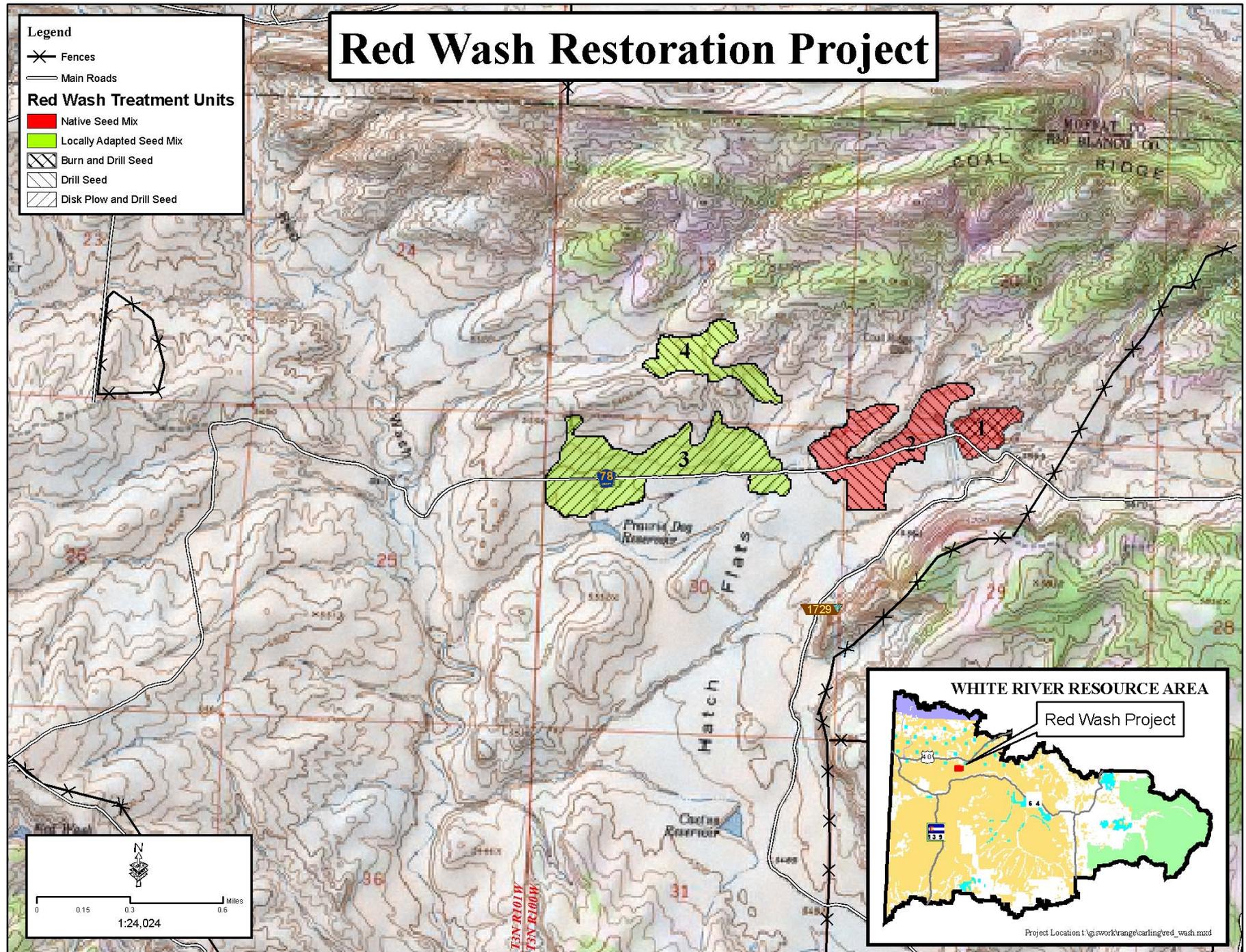
NAME OF ENVIRONMENTAL COORDINATOR: Caroline Hollowed

SIGNATURE OF AUTHORIZED OFFICIAL: 
Field Manager

DATE SIGNED: 02/24/06

ATTACHMENTS: Figure 1: Map of the Red Wash Restoration Project.

Figure 1: Map of the Red Wash Restoration Project



U.S. DEPARTMENT OF INTERIOR
BLM PESTICIDE USE PROPOSAL (PUP)

PROPOSAL NUMBER: _____
REFERENCE NUMBER: CO-110-2006-75-EA
CO-110-2006-95-DNA

STATE Colorado DISTRICT Craig

FIELD OFFICE White River Field Office COUNTY Rio Blanco DATE February 22, 2006

LOCATION 1) Hatch Flat, east of Red Wash (182 acres)

Township	Range	Section(s)/Lots or Portions of:
3 North	100 West	19, 20, 29, 30

2) Powerline Fire (20 acres)
Deserado Fire (27 acres)

Township	Range	Section(s)/Lots or Portions of:
3 North	103 West	19, 30
3 North	101 West	17, 20

DURATION OF PROPOSAL: December 31, 2008

I. PESTICIDE APPLICATION (including mixtures and surfactants):

TRADE NAME(S): Roundup Original (Glyphosate, N-(phosphonomethyl) glycine in the form of its isopropylamine salt).

COMMON NAME(S): Roundup Original

EPA REGISTRATION NUMBER(S): 524-445

MANUFACTURER(S): Monsanto

FORMULATION: Liquid Granular

METHOD OF APPLICATION: Aerially spray with fixed wing aircraft, truck mounted sprayer, and 4-wheeler mounted sprayer

MAXIMUM RATE OF APPLICATION:

USE UNIT ON LABEL: 48 ounces / acre, not to exceed 3 quarts / acre / year

POUNDS ACTIVE INGREDIENT/ACRE: 1.125 pounds acid equivalent / acre

INTENDED RATE OF APPLICATION: 24 ounces / acre = 0.56 pounds acid equivalent / acre

APPLICATION DATE(S): April 1 to May 30, and August 15 to October 31

NUMBER OF APPLICATIONS: 2 applications total 2006 spring application and a 2006 fall application.

Estimated Acres: 182 acres for the Hatch Flat treatment (aerially, truck spray), 20 acres for the Powerline Fire (truck spray), and 27 acres for the Deserado Fire (aerially, truck spray).

PROPOSAL NUMBER:
REFERENCE NUMBER: CO-110-2006-75-EA
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II. PEST (List specific pest(s) and reason(s) for application):

Cheatgrass (*Bromus tectorum*) is a non-native and invasive plant species that accounts for 80-100% of the ground cover in the Hatch Flat treatment area. Within the Deserado and Powerline fires, cheatgrass was the dominant understory of big sagebrush prior to the 2005 fires, which now will form a mono-culture post-fire without a treatment program. Cheatgrass provides little forage value, watershed protection, and/or soil stabilization due to the plants shallow root structure and aggressive competitive growth capabilities over native vegetation.

Cheatgrass creates a situation of increased fire hazard by providing a flashy fuel source that can alter the fire frequency within the landscape. Therefore, once a rangeland is dominated by cheatgrass and the remaining native vegetation (i.e. Wyoming big sagebrush) burns, cheatgrass has the opportunity to form a monoculture that readily burns in a shortened time interval.

Landscapes with cheatgrass domination are not meeting Public Land Health Standards for a healthy and diverse plant community and/or upland soils as they have formed a near mono-culture. Thus, these areas are within an early seral stage that is not functioning as desired in soil structure nor for a healthy plant community.

III. MAJOR DESIRED PLANT SPECIES PRESENT:

Cheatgrass, Russian thistle (tumbleweed), stork's bill, and tumble mustard are the dominant plant species within the designated treatment polygons, which are undesirable. The treatment area lacks desired plant species. Adjacent vegetation includes Wyoming big sagebrush, greasewood, shadscale, western wheatgrass, and squirreltail bottlebrush.

IV. TREATMENT SITE: (Describe land type or use, size, stage of growth of target species, slope and soil type).

Spraying will occur in an area heavily infested with cheatgrass and other invasive, annual, and non-native plant communities that form 80-100% of the ground cover. The target species (cheatgrass) is to be sprayed during the early flower stage and before the plants, including seedheads, turn color.

Soils within the treatment areas are primarily a Turley fine sandy loam, 0-3% slopes (soil unit 93) and Turley fine sandy loam, 3-8% slopes (soil unit 94), as defined by the Soil Survey of Rio Blanco County. Both soil units are an alkaline slope ecological site located within an alluvial valley floor and/or low terrace. These soils have limitations of low precipitation, alkalinity, and salinity.

V. SENSITIVE ASPECTS AND PRECAUTIONS: (Describe sensitive areas [e.g., marsh, endangered, threatened, candidate and sensitive species habitat] and distance to treatment site. List measures taken to avoid impact to sensitive areas.)

Herbicides will be applied as per label instructions with no application directly to water. Streams and riparian areas will have the following buffers; 300 feet for aerially application, 25 feet for truck application, and 10 feet for hand application.

White-tailed prairie dogs (a BLM-sensitive species) are located in the project area. Field inspections conducted in January of 2006 by a BLM biologist indicate prairie dog occupation at extremely low densities.

Under the auspices of a non-essential, experimental population rule, black-footed ferrets have been released annually in Wolf Creek (approximately 6 miles northwest) since 2001. The rule applies to any ferrets that may occupy or eventually be released in northwest Colorado and northeast Utah. It is extremely unlikely a

PROPOSAL NUMBER: _____
REFERENCE NUMBER: CO-110-2006-75-EA
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ferret would occupy the Hatch Flat, Deserado, and/or Powerline areas as (1) there is no direct continuity between Wolf Creek and the project site (i.e., lesser physical barriers and habitats unoccupied by prairie dog) and (2) the size and density of the town is not capable of sustaining a ferret for any given period.

Within the Hatch Flat locality, Great Basin spadefoot toads (a BLM sensitive species) may reproduce (no known population) in these ephemeral impoundments found in the locality of the proposal. It is expected that glyphosate concentrations in the project area would be reduced to trace levels by the following breeding season. BLM believes there is no reasonable likelihood that herbicide concentrations capable of adversely influencing eggs, larvae, or adult forms of amphibians (that may potentially occur in the two ponds) can be attributed to this project in the long or short term.

The proposed action is not expected to result in any adverse effects to special status species. Glyphosate is practically non-toxic terrestrial wildlife. Label consistent application of this chemical as proposed poses no conceivable toxic threat or chronic exposure level to special status species owing to the chemical's relative nontoxic character. Outcome of these treatments would allow for the reestablishment of native vegetation (i.e., redevelopment of a perennial bunchgrass component) whose resources would provide a greater benefit to special status species than what is currently available.

Mitigation, stipulations, and safeguard measures are contained within the Environmental Assessment (CO-110-2006-75EA).

VI. NON-TARGET VEGETATION: (Describe impacts to nontarget vegetation in the project area.)

There will be an opportunity for herbicide drift into neighboring Wyoming sagebrush communities whose understories are dominated by cheatgrass. The proposed mitigation measures within CO-110-2006-75EA that application of the herbicide will be confined to periods when wind speed is less than 6 miles per hour and if measurable winds are out of the north, no aerial spraying will occur will limited potential drift into non-targeted vegetation. Also, the rate of application will be low to essentially affect only annual plant communities; yet there is still opportunity for sagebrush injury and/or die-off resulting from herbicide drift. However, the degree of potential sagebrush die-off should be minimal and within an acceptable level as these sagebrush communities are currently within a poor ecological state and not meeting public land health standards for plant diversity due to an understory of cheatgrass that is lacking native/desirable grasses and forbs.

VII. INTEGRATED WEED MANAGEMENT: (describe other aspects of the IWM program that are being used in addition to this chemical application in the project area).

As described in the E.A., the BLM will be applying an integrated approach in attempting to reverse the current transitional state from a cheatgrass, annual plant community to a desired perennial plant community. This would be accomplished by reducing the competitive advantage and seedbank of cheatgrass through burning and/or spring/fall herbicide treatments. Once the seed source of cheatgrass has been depleted through burning and herbicide application, desirable perennial plants would be seeded. Thereby, the proposal will help create a situation for a favorable transitional state change for plant communities within the treatment area.

Originator's Signature: _____ Date: _____

Telephone Number: (970) 878-3815 (Jed Carling), (970) 878-3838 (Ken Holsinger)

Originator's Company Name: BLM

PROPOSAL NUMBER: _____
REFERENCE NUMBER: CO-110-2006-75-EA
CO-110-2006-95-DNA

Certified Pesticide Applicator's Signature: _____ Date: _____

BLM Manager's Approval: _____ Date: _____

State Pesticide Coordinator's Approval: _____ Date: _____

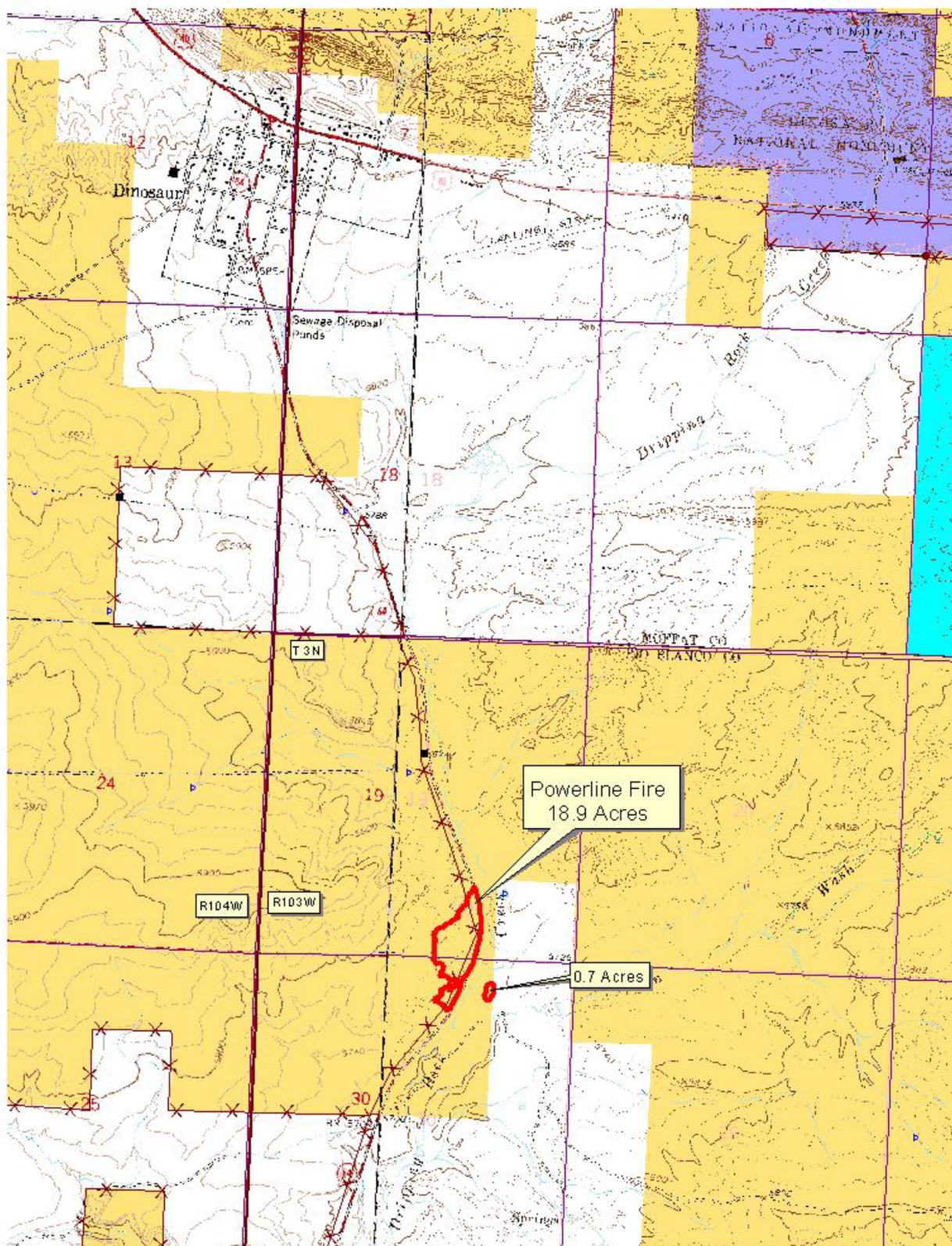
DSD, Lands & Renewable Resources: _____ Date: _____

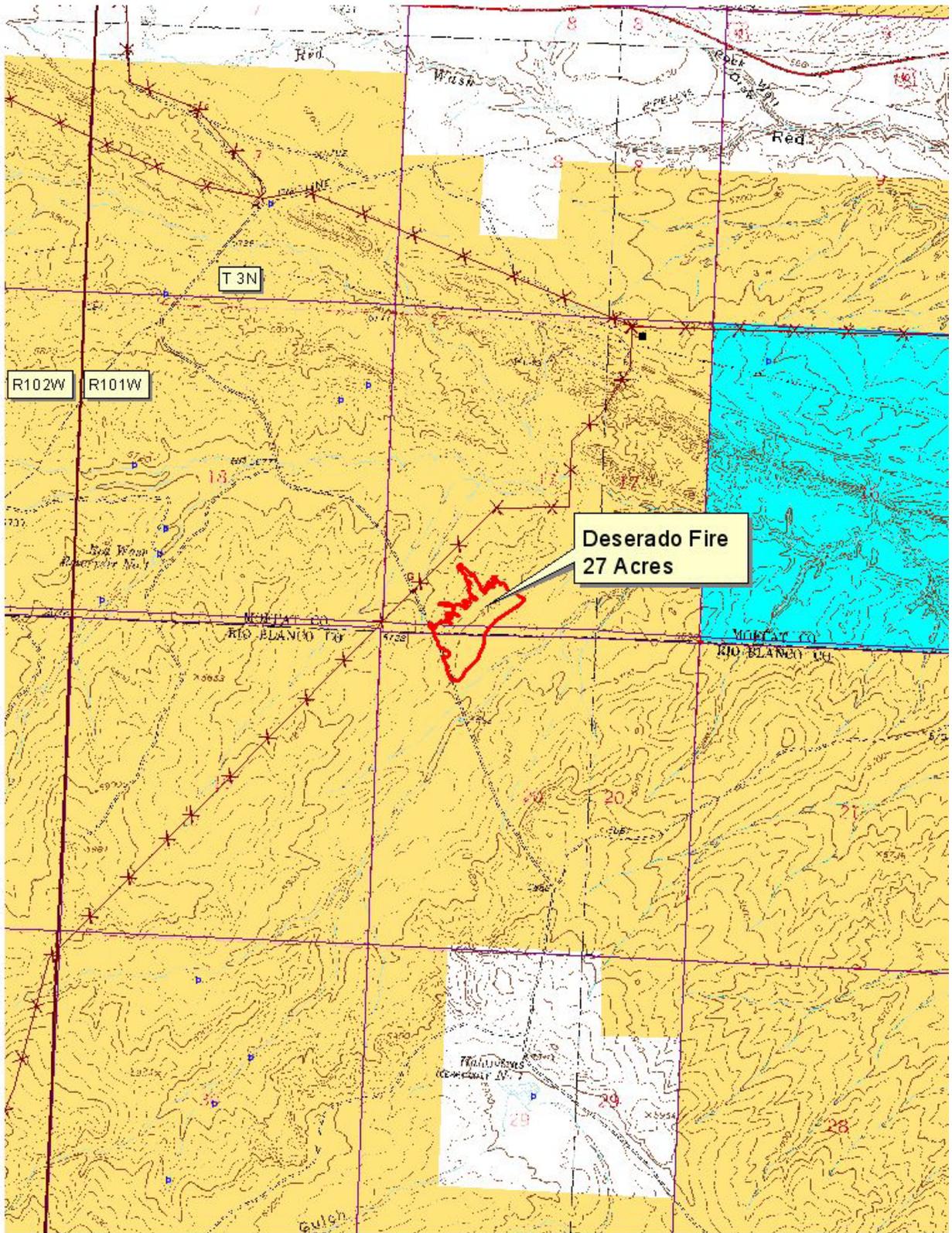
- _____ CONCUR OR APPROVED
- _____ NOT CONCUR OR DISAPPROVED
- _____ CONCUR OR APPROVED WITH MODIFICATIONS

Modifications: Any changes to this proposal by the State Pesticide Coordinator will be listed in an attached memo to the Manager requesting approval.

- _____ APPROVED
- _____ DISAPPROVED
- _____ APPROVED WITH MODIFICATIONS

Modifications:





Red Wash Restoration Project

Legend

- Fences
- Main Roads
- Red Wash Treatment Units**
- Native Seed Mix
- Locally Adapted Seed Mix
- Burn and Drill Seed
- Drill Seed
- Disk Plow and Drill Seed

