

**NORMAL YEAR FIRE REHABILITATION PLAN  
And  
ENVIRONMENTAL ASSESSMENT  
NV-030-02-07**

CARSON CITY FIELD OFFICE

US Department of the Interior  
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Carson City Field Office  
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**I. INTRODUCTION/PURPOSE AND NEED**

**Introduction**

Over the past ten year period (1992 to 2001) 905 fires burned 261,658 acres of public land administered by the Carson City Field Office. Based on these statistics, an average of 26,000 acres of public lands can be expected to burn annually. During the past ten years 22 emergency fire rehabilitation and stabilization (EFR/ESR) efforts involving 126,229 acres of public land have been completed by the Carson City Field Office. This represents 48 % of the total acres burned during this period. This represents a 10 year average of 12,623 acres of EFR/ESR per year.

<b>FIRE YEAR</b>	<b>NUMBER OF FIRES</b>	<b>ACRES PUBLIC LAND</b>
1992	100	1,217
1993	42	612
1994	66	16,076
1995	56	376
1996	130	12,787
1997	89	1,045
1998	56	393
1999	123	139,485
2000	142	70,133
2001	101	19,534
<b>TOTAL</b>	<b>905</b>	<b>261,658</b>

**Purpose and Need**

The purpose of this Normal Year Fire Rehabilitation Plan (Plan) is to allow completion of on-the-ground treatments within a time frame consistent with the urgent nature of fire rehabilitation. The need of the NFRP is to expedite emergency fire rehabilitation and stabilization procedures. An approved plan, its accompanying environmental assessment (EA), and advance procurement and administrative procedures would allow the field office to proceed with EFR/ESR projects requiring less than \$100,000. Projects in excess of \$100,000 or in the event that authority to use these funds has been rescinded, this Plan would be used as a programmatic document.

**Land Use Plan Conformance**

EFR/ESR treatments outlined in this document are in conformance with the Carson City Field Office Consolidated Resource Management Plan (May 2001):

Standard Operating Procedures, (Page SOP-3, #18) *Re-vegetation of disturbed areas will be required as specified by the Bureau.*

Livestock Grazing Management, RMP Decisions, Desired Outcomes (Page LSG-1, #1) *Maintain or improve the condition of the public rangelands to enhance productivity for all rangeland and watershed values.*

Walker and Lahontan Rangeland Program Summary, (Page LSG-2, A.) *Maintain a sufficient quality, and diversity of habitat and forage for livestock, wildlife, and wild horses through natural regeneration and/or vegetation manipulation methods.*

Soil, Watershed and Air, Standard Operating Procedures, (Page SWA-4, #7) *In order to insure watershed health, control or elimination of noxious weeds on both upland and riparian areas will be in cooperation with local, state, and other federal agencies, as well as private groups or other interested parties.*

The EFR/ESR practices would also assist in meeting the standards and guidelines for rangeland health taken from the Standards and Guidelines for Livestock Grazing on public lands prepared by the Resource Action Committee for the Sierra Front-Northwestern Great Basin Area (1997), which include: plant and animal habitat standards, and several livestock grazing guidelines. Applicable guidelines include: (4) After a range fire or other natural catastrophic event, vegetation should be returned to the native species as rapidly as possible, to afford forage and habitat for native animals. If a nurse crop is needed to protect the land from erosion, all native nurse crops should be used first. (5) Treated areas would be rested from livestock grazing for two growing seasons or until seedlings are established or the vegetative response has achieved objective levels. (6) Alternative solutions (e.g., reseeding, funding, labor, equipment use or rental) to facilitate fire rehabilitation, may be included in cooperative agreements involving qualified groups and individuals who want to participate. (18) Implement aggressive action to reduce the invasion of exotic plant species into native plant communities. Control the spread of noxious weeds through various methods such as, grazing management, fire management, and other vegetative management practices.

**TEN YEAR EMERGENCY FIRE REHABILITATION/STABILIZATION HISTORY**

<b>YEAR</b>	<b>FIRE NAME</b>	<b>ACRES BURNED</b>	<b>ACRES TREATED</b>	<b>TREATMENT</b>
1994	Holbrook	4,468	4,468	Aerial Seeding, Erosion Control
1996	American Flat	50	50	Aerial Seeding
	Sand Hills 2	200	200	<b>Aerial Seeding</b>
	Sunrise	2,200	200	Aerial Seeding
2000	Cold Springs	540	540	Aerial Seeding
	Pah Rah	5,610	100	Drill & Broadcast Seeding
	Fish	34,000	34,000	Aerial Seeding
	New Pass	47,626	10,800	Drill & Aerial Seeding
	Red Rock	3,070	2,500	Aerial Seeding
	Reservoir	4,640	4,640	Aerial Seeding
	Sand Springs	14,700	3,800	Drill & Aerial Seeding
	Stillwater Complex	15,774	3,000	Aerial Seeding
	Shoshone	8,000	8,000	Aerial Seeding
	Sutro	800	800	Aerial Seeding
	Wilcox	3,680	1,500	Aerial Seeding
2001	Reno Complex	13,940	2,415	Drill Seeding
	Cold Springs	680	40	Aerial Seeding
	Ramsey	1,526	700	Aerial Seeding
	Cottonwood	5,200	5,200	Aerial Seeding
	Red Rock	2,200	250	Aerial Seeding
	Twin Peaks	39,663	39,663	Aerial Seeding
	Como	1,362	1,362	Aerial Seeding & Chaining
<b>Total</b>		<b>209,930</b>	<b>126,229</b>	

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

### **PROPOSED ACTION**

Because of the diverse situations encountered in EFR/ESR several possible options or treatments, either separate or in combination, would be considered. The object is to mitigate, in the most cost effective and expeditious manner, the adverse effects of wildfires. Treatment options proposed are:

#### **Treatment 1: Natural re-vegetation with closure to grazing.**

This treatment would be considered for burn areas that are not recommended for seeding either because of limiting factors such as precipitation, topography, and soils or because the intensity of the burn was such that the existing vegetation was not completely destroyed. Closure would be secured by temporary fencing, or deferment of grazing by agreement, for at least two growing seasons. This treatment would allow “cool burn” or un-seedable areas to recover from wildfires by preventing livestock grazing of new shoots and other vegetation

#### **Treatment 2: Seeding of grass/forb/shrub mixtures by means of drilling, broadcasting or aerial seeding with closure to grazing.**

Seed mixtures would be tailored for individual burn areas. Seeding rates would range from 8 lbs/acre (PLS) for drill application on drier sites, to 16 or more lbs/acre (PLS) for aerial application on higher elevation sites. EFR/ESR seedings would be considered only for areas receiving greater than seven inches average annual precipitation. This precludes seeding in the salt desert shrub vegetation zone.

#### **Treatment 3: Seeding of grass/forb/shrub mixtures by means of broadcasting or aerial seeding , then one pass chaining with closure to grazing.**

Seed mixtures would be tailored for individual burn areas. Seeding rates would range from 8 lbs/acre (PLS) for broadcast or aerial application on drier sites, to 16 or more lbs/acre (PLS) for broadcast or aerial application on higher elevation sites. EFR/ESR seedings would be considered only for areas receiving greater than seven inches average annual precipitation. This precludes seeding in the salt desert shrub vegetation zone.

#### **Treatment 4: Planting of bitterbrush seedlings in key mule deer winter range.**

This treatment would be considered only for key mule deer range that is included in burn areas. Bitterbrush seedlings would be hand planted in the fall or early spring and protected from browsing animals by netting or other similar devices. Seedling density would range from 100 to 300 per acre depending on soils precipitation etc.. Monitoring of the seedlings would be conducted annually to determine the success or failure of the treatments.

#### **Treatment 5: Control and/or eradication of invasive or noxious weeds.**

This treatment would include the inventory of the burned areas to identify weed problem areas. Any identified weed problem areas would then be treated in accordance with recommended

practices in the existing weed management EIS. Method of treatment would include, but not be limited to, hand grubbing, chemical application, and mechanical cutting.

**Treatment 6: Seeding of small fires (less than 25 acres) by means of broadcasting or aerial seeding.**

Two seed mixtures would be tailored, one for low elevation areas and lower precipitation (less than 12 inches per year), and one for high elevation areas and higher precipitation (more than 12 inches per year). The mixture would be comprised of several grass species only and may be comprised of native or non-native species. Seeding would be accomplished without further investigation or analysis and could be accomplished by the suppression team upon control of the fire.

**Treatment 7: Construction of erosion control structures and protective fencing.**

This treatment would include construction of loose rock, single and double fence check dams, gully plugs, natural vegetation (trees), and armoring or rip-rap of channels. Protection of unstable channels in the vicinity of the burn would be accomplished by temporary fencing. Protective fencing would also include construction of permanent and/or temporary livestock management fences as well as aspen and riparian enclosures. Monitoring would be conducted quarterly during the first year after construction, and then yearly to ensure integrity of the structures or treatments.

**NO ACTION ALTERNATIVE**

Under this alternative no protective measures such as grazing closures, seeding, fencing, weed control, erosion control structures, chaining, or any other treatment listed in the Proposed Action would be considered.

**Standard Operating Procedures**

Standard Operating Procedures (SOPs) originate either through BLM or Field Office policy and would apply to both the Proposed Action and the No Action Alternative. The SOPs for the Carson City Field Office are as follow:

1. All major wildfires (greater than 300 acres and/or requiring an overhead team), and all fires in municipal watershed, urban interface areas, flood hazard zones, and erosion prone areas would be reviewed by an EFR/ESR inspection team within five days of fire control. A report would be submitted to the AFM Renewable Resources within seven working days of burn inspection.
2. Prior to conducting any rehabilitation work the area would either be scheduled to be fenced from livestock, a non-use agreement obtained from the permittee to exclude the area from grazing, or a decision issued closing the area to grazing for a minimum of two growing seasons.

3. Burn areas receiving less than seven inches of precipitation annually would not be considered for seedings.
4. Rangeland Drills and/or chaining would be used whenever possible to help reduce the risk of seeding failure.
5. When burn areas are located in commercial timber or woodland products areas, a forester would be included on the EFR/ESR inspection team to coordinate timber restoration with EFR/ESR.
6. Construction of all fences would conform to the objectives and specifications in Bureau manual H-1742-1, to assure minimization of impacts to wildlife, wild horses, recreation and visual resources.
7. Cultural resource inventory would be completed before any ground disturbing activity takes place. Pre-historic structural features and other cultural loci would be flagged and the areas avoided during any ground disturbing EFR/ESR treatments.
8. Planning, design, and construction of erosion and sediment control structures, and floodwater retarding structures, would be done in accordance with BLM Manual 9172 Water Control Structures.
9. All seed mixtures would be tailored to the individual burn area's soil, precipitation exposure, elevation, etc..
10. Monitoring of vegetation response to treatments would be conducted on each burn included within an ESR or EFR plan.

#### **CRITERIA FOR REOPENING CLOSED BURN AREAS**

Burn areas closed to multiple use would be re-opened using the following criteria following the second growth year:

##### **Areas Under 12 Inches of Precipitation**

- a. The burn areas would be rested from grazing of domestic livestock for a minimum of two years.
- b. On burns within fall/winter livestock use areas, grazing would be restored up to 100 percent of the pre-burn stocking rate, with a target utilization of moderate use.
- c. On burns within spring/summer livestock use areas, grazing would be restored up to 100 percent of the pre-burn stocking rate, with a target utilization of high slight to low moderate use.

- d. Past experience relating to permittee cooperation and compliance would influence the decision to restore grazing and to what level it would be restored.
- e. Each burn area would be monitored annually by the rangeland management specialist administering the burned area allotment(s) in order to obtain utilization levels.
- f. The utilization level and line intercept cover data would be used to indicate the trend of the burn restoration.
- g. Trend information would be used to make annual adjustments to stocking rates, utilization levels, and/or length or season of use.

**Areas Over 12 Inches of Precipitation:**

- a. The burn areas would be rested from grazing of domestic livestock for a minimum of two years.
- b. Grazing would be restored to pre-burn levels when total cover from the majority of the line intercept cover plots (total of grass, forb, and shrub cover) within the burned area equals or exceeds 50 percent of the minimum estimated average cover value identified by the Natural Resource Conservation Service in its description of the range site. Each plot/soil type has been matched to the applicable range site identified by the NRCS for that location/soil type.
- c. Each burn area would be monitored annually by the rangeland management specialist administering the burned area allotment(s) in order to obtain utilization levels.
- d. The utilization level and line intercept cover data would be used to indicate the trend of the burn restoration.
- e. Trend information would be used to make annual adjustments to stocking rates, utilization levels, and/or length or season of use.

### **III. AFFECTED ENVIRONMENT**

#### **SCOPING AND ISSUE IDENTIFICATION**

Initial scoping and issue identification took place on January 8, 2002 during the Carson City Field Office's NEPA Review and Team Assignments meeting. Internal issues were further refined on January 15, 2002 at the NFRP revision team meeting. The draft NFRP will be sent to the US Fish and Wildlife Service, Bureau of Indian Affairs, US Forest Service, Tribal Governments, the Nevada State Clearinghouse, County governments, and the public via news release.

#### **PROPOSED ACTION**

The following critical elements of the human environment are not present or are not affected by the Proposed Action or No Action Alternative in this EA:

- Environmental Justice
- Flood Plains
- Hazardous Materials
- Prime/Unique Farm Lands
- Wild and Scenic Rivers

The following critical elements of the human environment may be present and may be affected on a site specific basis and would be addressed in site specific supplemental documents:

- Native American Religious Concerns
- Paleontology

Bureau specialists have further determined that the following resources, although present in the project area, are not affected by the Proposed Action:

- Minerals
- Lands

Resources Present and brought Forward for Analysis:

#### **A. Soils**

Most of the soils in the Carson City Field Office are classified as aridic, with sizeable areas receiving less than eight inches of precipitation per year. These aridic soils are found in virtually all of the intermountain basins in the Field Office. At locations on the valley floors, Pleistocene lake terraces and beaches, and alluvial fan piedmonts, soils are usually deep and well drained and have varying amounts of coarse fragments in the soil profile. As a rule, the lower positions on the alluvial fans and the area adjacent to remnant Pleistocene lake beds, are fine-textured and contain less coarse fragments (pebbles, cobbles, and stones) than do soils higher up on the fan piedmont. Soils adjacent to Pleistocene lakebeds also have relatively high percentages of excess salts, including sodium, which affects soil structure and permeability, and limits vegetative species composition. Some of these soils also have aquic moisture regimes due to high water tables in the spring months, or year-around. Those areas on the lower alluvial fan piedmont

positions are sometimes suitable for irrigated agricultural production. Those soils with clayey lacustrine sub strata are much more difficult to leach and are best left undisturbed. Some of the alluvial fan piedmont soils are shallow with a silica cemented hardpan and may contain a clayey or fine loamy textured horizon that contains excess sodium. Many of the low elevation mountain ranges and hills also have an aridic moisture regime. They have moderate to steep slopes and are generally shallow to weathered bedrock, containing high percentages of rock fragments. This aridic zone makes up most of the Field Office. These soils are relatively low in productivity and are unsuitable for rangeland seeding and other vegetation manipulations.

The soils that offer the most opportunities for successful rehabilitation generally occur on alluvial fan piedmonts above the 5,500 foot elevation in the Xeric moisture zones. However, these soils occupy only a small part of the Field Office.

The rest of the soils in the Field Office that fall in the xeric moisture regime are located in the higher elevation mountain ranges. These soils usually contain more than one percent organic matter, sometimes to one meter depth, and fall mostly in the frigid temperature zone.

Detailed site-specific soils information can be found in published soil surveys [Douglas County, Mineral County, Lyon County, Washoe County (Southern and Central Parts), Carson City Area, Carson Valley, Churchill County, Mineral and Sierra Valley (California)], and three unpublished, draft surveys (Nye County, Lassen County, and Alpine County).

## **B. Air Quality**

The quality of air on BLM administered land is quite good and generally meets the Nevada Division of Environmental Protection's (NDEP) air quality standards. Presently there are no Bureau or Bureau authorized land-disturbing or other such activities which would cause air quality degradation. After wildfire; burn areas often generate particulates from blowing dust, ash, and sand. This usually affects areas immediately adjacent to burn areas and occurs in the first few weeks after burning. Occasionally these condition may persist for months when wildfires remove vegetation from soil types that are prone to wind erosion such as those soils in "Wind Erodibility Groups 1 – 3" (Natural Resources Conservation Service Soil Survey). These groups include soils that are sandy, loamy sand, or sandy loam soils.

## **C. Water Resources**

The hydrology of the Field Office is typical of the eastern Sierra rain shadow with most of the precipitation occurring in winter, and peak flows occurring in mid to late spring. Summer is usually dry, however, sporadic thunder showers can generate major runoff events and occasional flash flooding. Average annual precipitation in the Field Office ranges from approximately four inches per year in the valley floors to over twenty inches in the higher elevations.

### Surface Water

Most of the Carson City Field Office lies within the Truckee, Carson, and Walker river basins. All three basins were placed in the highest restoration priority category following the Nevada

Unified Watershed Assessment. Key resource issues for prioritization included: (1) listing under Section 303(d) of the Clean Water Act, (2) areas of excessive erosion, and (3) non-point source pollution. The rivers were listed under Section 303(d) partly due to sediment related issues, such as total suspended solids, turbidity, and phosphorous.

#### Ground Water

Ground water yields and quality are highly variable and depend on the geology of the alluvium forming the valley fill aquifers. There are about 150 stock watering wells and 70 wells used for wildlife, mining and other purposes. They range from 60 to 500 feet in depth.

The analysis of representative samples taken in 1979 through 1985 indicate that the quality of waters occurring in BLM lands is quite good and generally suitable for livestock, wildlife, wild horses, and recreation use.

#### **D. Wetlands/Riparian**

Riparian and wetland areas have greater biodiversity than surrounding uplands due to the presence of water and their variety of vegetative composition and structure. Common riparian species in the Field Office include poplar (*Populus spp.*), willow (*Salix spp.*), cattails (*Typha spp.*), rushes (*Juncus spp.*), sedges (*Carex spp.*), and numerous grasses and forbs. Most wildlife species depend on riparian habitats for all or part of their life cycles.

Hundreds of riparian and wetland areas are found throughout the region, but they comprise a small percentage of the total land base. Lentic areas (i.e., standing water habitat) are found at springs, playas, and marshes. Lotic areas (i.e., flowing water habitat) are found along streams and rivers. Most of the sources discussed in the Water Resources section of this EA have associated riparian or wetland habitats, but ephemeral sources can also support riparian vegetation.

Riparian vegetation communities are closely related to their floodplains and are influenced by flooding intervals. Functioning floodplains provide many benefits, which include reducing flood peaks, increasing ground-water recharge, enhancing base flows, filtering sediment, and improving water quality and aquatic habitat.

#### **E. Vegetation**

In addition to variances in such things as soils, elevation, precipitation, and topography, there are four Major Land Resource Areas (MLRA's) within the Field Office's boundaries (23, 26, 27, and 29). These represent a complex array of plant communities, the descriptions of which can be found in the ecological site descriptions of the four MLRA's. These plant communities can be grouped into three major categories: Salt-Desert Shrub, Sagebrush-Bunchgrass, and Pinyon-Juniper Woodland. The following are descriptions of these major plant communities within the Carson City Field Office:

### Salt Desert Shrub Community

This community is found in the lower elevation of the Field Office, from 3,350 feet to approximately 5,500 feet in elevation. The vegetation in this zone is usually sparse and rarely burns, although in sub irrigated areas there can be relatively dense stands of shrub species. The main vegetative types in this zone are as follow; **Shrubs:** Black Greasewood (*Sarcobatus vermiculatus*), Bailey Greasewood (*Sarcobatus vermiculatus baileyi*), Shadscale (*Atriplex confertifolia*), Fourwing Saltbrush (*Atriplex canescens*), Rubber Rabbitbrush (*Chrysothamnus nauseosus*), and seepweed (*Suaeda*); **Grasses:** Indian Ricegrass (*Oryzopsis hymenoides*), Inland Saltgrass (*Dystichlis stricta*), galleta (*Hilaria jamesii*), Bottlebrush Squirreltail (*Sitanion hystrix*), and Neelegrasses (*Stipa sp.*)

Precipitation in this zone is below seven inches annually and therefore this zone is normally precluded from EFR/ESR seedings.

### Sagebrush-Bunchgrass Community

This community is found everywhere in the Field Office above approximately 5,500 feet in elevation. Various species of big sagebrush have adapted to almost every soil and topographical condition. Some stands of big sagebrush are very dense and burn readily. Many of the wildfires in the Carson City Field Office burn in this zone. The main vegetation types in this zone are as follows: **Shrubs:** Wyoming Big Sagebrush (*Artemisia tridentata wyomingensis*), Basin Big Sagebrush (*Artemisia tridentata tridentata*), Mountain Big Sagebrush (*Artemisia tridentata vaseyana*), Low Sagebrush (*Artemisia arbuscula*), Black Sagebrush (*Artemisia arbuscula nova*), Bud Sage (*Artemisia spinescens*), Antelope Bitterbrush (*Purshia tridentate*), Ephedra (*Ephedra sp.*), Desert Peachbrush (*Prunus andersonii*), Spiny Hopsage (*Grayia spinosa*), and Snowberry (*Symphoricarpos sp.*); **Grasses:** Bottlebrush Squirreltail, Indian Ricegrass, Basin Wildrye (*Elymus cinereus*), Idaho Fescue (*Festuca idahoensis*), various Bluegrass species (*Poa sp.*), and Needlegrasses. Also included in the zone are small areas of scattered Utah Juniper (*Juniperus osteosperma*), riparian zones composed of Willow species (*Salix sp.*), Wildrose (*Rosa sp.*) Gooseberry and Currant (*Ribies sp.*), and a few small wet meadows.

Because of favorable precipitation (7 to 12 inches average annual) and site potentials most EFR/ESR seedings are done in this zone.

### Pinyon-Juniper Community

This community is found on mountain slopes above approximately 6,000 feet in elevation, however, singleleaf Pinyon Pine (*Pinus monophylla*) is absent north of the Truckee River. Average annual precipitation ranges from 12 to 20 inches. The understory of this zone is commonly sparse and is composed primarily of sagebrushes and cool season perennial grasses. Burns in this community are frequently extreme in intensity, especially on north slopes with heavy canopy cover. These areas usually lack a significant understory, with ground surface cover commonly being composed almost entirely of pine duff and suficial rock fragments. When the percentage of rock fragments is low, these areas are highly susceptible to sheet and rill erosion. The Pine Nut Mountains south of Carson City have a history of wild fires. The main

vegetation types within this community are as follow; **Trees:** Singleleaf Pinyon, Utah Juniper and Jeffery Pine (*Pinus jeffreyi*); **Shrubs:** Wyoming Big Sagebrush, Mountain Big Sagebrush, Low Sagebrush; **Grasses:** Bottlebrush Squirreltail, Bluegrasses, and Needlegrasses. Jeffery Pine is found in two small areas within the Field Office in California near Markleeville and west of Halleujah Junction. Most EFR/ESR seedings in this zone are done by aerial broadcasting because of the steepness of slopes and high percentage of surficial rock fragments associated with this topography.

#### **F. Noxious Weeds**

Seventeen species of noxious weeds have been identified within the Carson City Field Office, either on private or public lands: African rue (*Peganum harmala*), tall white top/perennial pepper weed (*Lapidium latifolium*), yellow star thistle (*Centaurea solstitialis L.*), musk thistle (*Carduus nutans L.*), hoary cress (*Cardaria draba*), Russian knapweed (*Centaurea repens L.*), Canada thistle (*Cirsium arvense L.*), diffuse knapweed (*Centaurea diffusa Lam.*), medusa head (*Elymus caput-medusae*), puncture vine (*Tribulus terrestris*), scotch thistle (*Onopordum acanthium*), poison hemlock (*Conium maculatum*), water hemlock (*Cicuta maculata*), horse nettle (*Solanum carolinense & elaeagnifolium*), camelthorne (*Alhagi camelorum*), and saltcedar (*Tamarix ramosissima*).

Over 120 infestations of many of these species are currently being treated, either chemically or mechanically by the BLM. Approximately 50% of the Field Office yet to be inventoried. Disturbed areas and roadways adjacent to these existing infestations offer the greatest potential for new infestations, however, urban interface lands in the Reno-sparks, Carson City, and Carson Valley areas are also very likely to see infestations of these species, as well as new invaders, due to the constant influx of travelers from California. New species likely to invade the area include: common crupina (*Crupina vulgaris*), rush skeletonweed (*Chondrilla juncea*), dyers woad (*Isatis tinctoria*), St. John's wort (*Hypericum perforatum*), spotted knapweed (*Centaurea maculosa Lam.*), squarrose knapweed (*Centaurea virgata*), leafy spurge (*Euphorbia esula*), dalmation toadflax (*Linaria dalatica*), houndstongue (*Cynoglossum officinale*), and mediterranean sage (*Salvia aethiopsis*).

An inventory database is being kept on the field office's GIS system and is updated yearly. Chemical and mechanical/cultural treatments are currently the only options for these species. All herbicides used within the field office area are approved for use on public lands (Vegetation Treatment on BLM lands EIS-1991).

#### **G. Wildlife**

Over 300 vertebrate wildlife species occur within Carson City Field Office boundaries. Large mammals include mule deer (*Odocoileus hemionus*), antelope (*Antilocapra americana*), desert and California bighorn sheep (*Ovis canadensis* spp.) and black bear (*Ursus amreicana*). Upland game species include sage grouse (*Centrocercus urophasianus*), mountain quail (*Oreortyx pictus*), chukar (*Alectoris chukar*), mourning dove (*Zenaidura macroura*), California quail (*Lophortyx californicus*), and cottontail rabbit (*Sylvilagus bachmani*). Other common species

include coyote (*Canis latrans*), black-tailed jack rabbit (*Lepus californicus*), mountain lion (*Felis concolor*), bobcat (*Felis rufus*). A variety of raptors nest and/or winter on public lands in the Field Office, as do many species of neotropical and non-game/non-neotropical birds. Any rehab efforts made on burned areas would be made during late fall/early winter: none of the birds covered by the Federal Migratory Bird Treaty Act would be affected during their nesting season. Common raptors include: red-tailed hawk (*Buteo jamaicensis*); golden eagle (Sensitive but common, *Aquila chrysaetos*); kestrel (*Falco sparverius*); prairie falcon (*Falco mexicanus*). These are all common, and found throughout the Field Office in habitats suitable for them.

Mule deer are found throughout the Field Office. Up to 18,000 deer reside on public lands at some time during the year. There are three interstate herds which winter on BLM in Nevada and summer on U.S. Forest Service and private land the rest of the year. The key vegetative species on winter ranges is antelope bitterbrush, a species which does not recover easily after any fires except ones that burn very cool. Winter areas include Petersen, Dogskin, Seven Lakes, Pine Nut, and Virginia mountains; Indian Creek area; Virginia Range; Baldwin Canyon and the southeast flank of the Wassuk Range. Other areas such as the Clan Alpine and Stillwater Mountains support deer year long.

Antelope are scattered throughout the district in small numbers, except in winter, when they herd up. Important areas include Long Valley (Hallelujah Junction area), Bedell Flat, Nine Mile Flat and Baldwin Canyon southwest of Hawthorne, and the Pah Rah Mountains east of Sparks.

Mountain sheep: California bighorn sheep are found on the Virginia Range north of Reno and as far west as the California border: Desert Bighorns are found south of Interstate 80 in the Clan Alpine, Stillwater, Desatoya, Gillis, Gabbs Valley, Wassuk, Excelsior, and Pilot mountains; the Sand Springs Range and Fairview/Slate mountains. Roughly 700+ bighorns live on these named ranges. All but a handful were reintroduced into identified historic habitat starting in 1981, the exception being Dutch Creek on the east side of the Wassuk Mountains, where bighorns were reintroduced starting in 1968.

Upland game species are found throughout the district: mourning doves and chukars on drier sites; cottontail rabbits and California quail around wetter areas--towns, meadows, and streams. Neotropical birds are found district wide in suitable habitat, as are the common raptors.

#### **H. Threatened & Endangered Species**

There are at least 55 T/E/S flora and fauna species recorded on or near public lands in this district. A full listing is available in the Wildlife Program Leader's files. Only those species or their habitats deemed at risk from fire or EFR/ESR activities would be addressed here.

Plants. The Endangered Steamboat Buckwheat (*Eriogonum ovalifolium* var. *williamsiae*) is located on less than 100 acres just south of the intersection of U.S. Highway 395 and Nevada State Route 341--Mount Rose, at the south end of the Truckee Meadows (Reno). The occurrence of fire and need for EFR/ESR is almost nil.

The U.S. Fish and Wildlife Service (USFWS) Category 1 (for listing) Candidate Williams Combleaf (*Polycatenium williamsiae*) occurs on 4 small playas in the Jumbo area between Carson City and Reno, and on 2 playas in the Pine Nut Mountains east of Carson City. The playas in the Jumbo area were fenced in 2001 to exclude livestock and Off-Highway Vehicles (OHV). There is a Conservation Agreement between BLM and USFWS covering protection and monitoring of these plants, and the area in which they are found, has been identified as an ACEC-Area of Critical Environmental Concern. Fire is not currently deemed a direct threat to them, although the playas on which they are found are surrounded by unburned sagebrush and PJ.

Sodaville Milkvetch (*Astragalus lentiginosus* var. *sesquimetralis*) is found only at Sodaville, 35 miles east of Hawthorne on U.S. Highway 95. Virtually all plants are located on 530 acres of private ground, in an area that has not burned within anyone's memory, due to lack of moisture and sparse, low desert vegetation.

A plant that is not on the T/E/S list, but supports the sensitive Sand Mountain Blue Butterfly (*Euphilotes pallescens arenamontana*) is the Kearney Buckwheat (*Eriogonum nummulare*), which is concentrated on several hundred acres around Sand Mountain, east of Fallon on U.S. Highway 50. The butterfly lives almost exclusively on the buckwheat, which varies from plant to plant in its current phenological stage. Fire and EFR/ESR are improbable, but not impossible. If the plant population burned, the butterfly population would disappear.

Two Ivesias--Pine Nut Mountains (*Ivesia ptyocharis*) and Webber's (*Ivesia webberi*) are found near U.S. Highway 395 on the west side of the Pine Nuts. Their specific locations are identified on hard copy maps and in the GIS.

Altered andesite buckwheat (*Eriogonum robustum*) is found throughout the northwest part of the district, usually associated with yellow soil at mine tailings or around Jeffrey Pines (*Pinus jeffreyi*). Fire and EFR/ESR threats are unlikely, and the plant is so widely scattered that fires or EFR/ESR would have little effect on overall populations.

All threatened/endangered/sensitive plant species are identified on 1:100,000 maps covering the Field Office, as well as in GIS files. The data and maps are updated annually, with new data provided by the Nevada Heritage Program, which is an entity within the Nevada Division of Forestry.

Animals. The threatened Lahontan cutthroat trout (*Onchorhynchus clarki henshawi*) is located in streams in the Desatoya Mountains at the east edge of the Field Office. Fire, and the need for EFR/ESR is rare, but very possible. EFR/ESR plans for these streams would require formal Section 7 (Endangered Species Act) consultation with USFWS. Edwards Creek, which supports one population of Lahontan cutthroats, has been fenced extensively, following Formal Section 7

Consultation in 1989.. Fire in the riparian area, which is dominated by quaking aspen, willow, and rose bushes, would be very damaging if conditions were right.

The Carson Wandering Skipper (*Pseudicippaeodes eunus obscurus*), a small butterfly, uses big sagebrush/saltgrass habitat along the Winnemucca Ranch Road north of Reno. It is an endangered species. Known habitat covers less than 1,000 acres. Habitat critical for it has been identified through an ACEC--Area of Critical Environmental Concern.

Sage grouse, a BLM sensitive species, are found mainly in the Pine Nut, Wassuk, Pah Rah, Clan Alpine, Stillwater, and Desatoya mountains. Populations in the Pine Nut and Wassuk ranges are deemed part of the ■Mono• populations. Hard copy maps of 1:100,000 scale showing their ranges, including leks (breeding grounds) are housed in Field Office map files, and GIS. Data and maps are updated as new information becomes available. See Appendix IV.

Sensitive pygmy rabbits (*Brachylagus idahoensis*) have been identified from two locations on public lands within the Field Office. They utilize tall big sagebrush (*Artemisia* sp.) found in drainage bottoms, supported by certain soil types. Fire or EFR/ESR would have major negative effects on local populations, which might not survive long enough for the seeded species to mature and create new habitat.

Mountain quail populations are very small and widely scattered. These birds are still found in unburned portions of the Desatoya Mountains, and perhaps elsewhere. Populations and habitat that existed in the Virginia Mountains north of Reno have mostly disappeared following wildfires there in 1999 and 2000. The USFWS has received a petition to list these birds as threatened or endangered but has not acted upon it as this is written. Burned habitat would be difficult to replicate in less than 5-6 years since these birds prefer tall brush fields.

## **I. Wild Horses**

The Carson City Field Office contains twenty herd areas for wild horses, and one herd area for burros which is located in the Marrietta area. The wild horse herd areas are scattered throughout the Field Office and are as follows: Augusta Mountains, Garfield Flat, Flanigan, Fort Sage, Pine Nut Mountains, Clan Alpine Mountains, Horse mountain, Lahontan, Pilot Mountains, the Wassuk Range, Dogskin Mountain, Granite Mountain, Tule Ridge, the southern end of the Stillwater Mountains, Montgomery Pass, Powell Mountain, the northern end of the Stillwater Mountains, and the Desatoya Mountains. Five of these herd areas (Flanigan, Dogskin, Granite Mountain, Tule Ridge, and Pine Nut Mountains) are in a high fire occurrence zone.

Wild horse population levels would be managed for appropriate management levels as identified in the Carson City Field Office Consolidated Resource Management Plan.

Population adjustments would be determined by analysis of monitoring data and/or consultation with affected interest groups. See Appendix VI for Wild Horse and Burro Herd areas.

## **J. Livestock**

The Carson City Field Office administers the grazing on 90 separate allotments encompassing 5,080,014 acres of public land. During an average year the Field Office authorizes approximately 65,000 Animal Unit Months (AUM's) for cattle grazing 26 AUM's for horse grazing and 2500 AUM's for sheep. Seasons of use vary throughout the Field Office. Spring/summer grazing makes up the majority of the use in the Field Office. The allotments that provide this spring/summer use are most often the allotments directly affected by wild land fire. These allotments are normally higher in elevation and typically receive 12 inches or more of precipitation each year, hence they normally produce the most vegetative growth (fuel).

The average carrying capacity of these lands vary greatly from area to area. In those areas where the vegetation would normally carry fire, the carrying capacity is from 10 to 30 acres per animal unit month. These areas susceptible to fire are also on higher producing lands and more valuable to the livestock industry. See Appendix V for grazing allotment.

## **K. Socioeconomic**

Most of the fires in the Field Office occur in Washoe, Carson City, and Douglas Counties. Public land related economic activity associated with EFR/ESR (livestock grazing, OHV recreation, Wildlife associated recreation, and firewood harvesting accounts for less than 0.01% of regional income. Of greater social economic importance is the fact that the area consists of intermingled public and private lands, including municipal watersheds susceptible to fire damage. Public concerns about fire rehabilitation in the region are primarily associated with damage to watersheds and subsequent downstream flooding and that blowing dust and sand can cause some damages to buildings, equipment, etc.. Sediment deposition on adjacent property can clog drainage ditches and cause removal problems on local streets and property. There is additional concern about preventing fire prone vegetation on public lands adjacent to private property. Communities and adjacent landowners are also concerned about the effects on scenic and aesthetic values associated with open space and view-scapes. Such values are typically negatively affected by wildfire.

## **L. Recreation**

Over 837,000 visits to public lands administered by the Field Office were recorded in FY 2001. Recreational opportunities are diverse and numerous, and include activities ranging from camping, hiking, horseback riding, fishing and nature study, to ATV and OHV driving, mountain biking and sandboarding. In addition, numerous competitive and commercial recreation events and activities take place under Special Recreation Permit (SRP) authorizations. Virtually all of these activities are enhanced by the public lands retaining a relatively natural appearance.

## **M. Wilderness**

There are nine Wilderness Study Areas (WSA) either partially or wholly within the jurisdiction of the Carson City Field Office, totaling approximately 576,000 acres. These WSAs are:: Slinkard Valley, Carson-Iceberg, Burbank Canyons, Gabbs Valley Range, Clan Alpine Mountains, Stillwater Range, Job Peak, Desatoya Mountains, and Augusta Mountains.

The Winnemucca Field Office has the lead in the interim management of the Augusta Mountains WSA. The Alpine County (CA) portion of the Slinkard Valley WSA is managed by the Carson City Field Office, while the Mono County (CA) portion is managed by the Bishop Field Office. See Appendix II for a map of the WSAs.

#### **N. Areas of Critical Environmental Concern**

There are six designated Areas of Critical Environmental Concern located on lands administered by the Carson City Field Office.

The Incandescent Rocks Natural Scenic Area, located on the southern slopes of the Virginia Range directly west of Pyramid Lake, includes 1,075 acres of public land. Incandescent Rocks, a unique geologic feature, is within the foreground viewing zone from the Pyramid Lake Highway and contains critical raptor nesting sites.

The Steamboat Hot Springs Area of Critical Environmental Concern is located on the south end of the Truckee Meadows basin. This area includes 40 acres of geyser field and other thermal features.

The Stewart Valley Fossil Site is the third Area of Critical Environmental Concern and contains 1,420 acres of public land. It is located approximately 18 miles south of Gabbs, Nevada.

The Carson Wandering Skipper Area of Critical Environmental Concern contains 243 acres of habitat. The site is located adjacent to and on the east boundary of the Winnemucca Ranch Road north of Reno, Nevada. The Carson wandering skipper is a member of a monotypic genus of skipper butterflies that are locally and patchily distributed in grassland habitats on alkaline substrates in Nevada and California.

The Pah Rah High Basin Petroglyph District Area of Critical Environmental Concern I located in the dry mountains directly east of the Spanish Springs/Sparks area. This ACEC includes 3,881 acres in the Pah Rah Range and consists of hundreds of petroglyphs, rock rings, grinding slicks, talus pits, and lithic scatters located primarily along or within several north/south trending basalt ridges.

The Virginia Range Williams Combleaf Habitat Area of Critical Environmental Concern is located in the foothill area directly south and east of Pleasant Valley. This ACEC consists of 473 acres of public land. Williams combleaf belongs to a small genus in the mustard family, consisting of one other species, *P. fremontii*. Both species are restricted in distribution to the western United States. Representatives from both species occur in Nevada. The plants occur mostly within the Sagoupe Variant soil series which extends from the outer edge of the lake beds to the extreme high water line.

## **O. Visual Resources**

The lands along the Sierra Front urban interface have been inventoried, evaluated and assigned Visual Resource Management (VRM) objectives under the VRM system. Inventories are lacking for the remainder of the Carson City Field Office, however it is recognized that many of these lands are highly regarded for their scenic quality.

Along the urban interface, the most scenic areas are the Incandescent Rocks ACEC, the Lassen Red Rocks Scenic Area, the Petersen Mountain Natural Area, the east slope of the Pine Nut Mountains (including the Burbank Canyons WSA), the East Fork of the Carson River, and the Indian Creek Recreation Area. Other areas to the east of the urban interface recognized as having above-average to excellent scenic quality (Class A or B under the VRM system) include: all of the WSAs listed under the Wilderness section of the Affected Environment, the Wassuk Range, Wilson Canyon, the Sand Mountain Recreation Area and the Carson River.

### **NO ACTION ALTERNATIVE**

The description of the Affected Environment for the No Action Alternative would be the same as that for the Proposed Action.

## **IV. ENVIRONMENTAL CONSEQUENCES**

### **Proposed Action**

#### **A. Soils**

Initiation of the Proposed Action (Treatment 2 and 3) would ensure timely stabilization of watersheds, flood hazard zones, and erosion-prone areas by replacing lost basal cover and litter with aggressive perennial grass species. The re-establishment of vegetative cover, litter, and viable root mass in the surface soil would reduce the impacts of raindrop splash and water runoff energies and increase infiltration. Erosion control structures (Treatment 7) used in conjunction with seedings, or used by themselves, in low annual precipitation zones, would provide immediate protection in areas threatened by increased flood hazard, runoff, and sedimentation. Stabilization of water sheds would prevent undue loss of topsoil and site potential, and would ensure site recovery, as well as provide protection of downstream areas from increased runoff.

Short term increases in rill, inter-rill and wind erosion are unavoidable in the first year following a wild fire. Treatment 1, could lengthen the recovery process in some areas where burn temperatures were hot enough to destroy viable seed reserves in the topsoil.

#### **B. Air Quality**

The Proposed Action would decrease wind erosion in susceptible areas by providing ground cover in seedings, thereby lessening the amount of blowing particulates (dust, ash, and sand). This protection would not take place until the end of the first growing season. The Proposed Action would not protect surrounding areas from blowing particulates immediately after the burn or for approximately one year if treatment #1 is recommended. Treatment # 3 may increase air-born particulate matter in the short term due to the soil surface disturbance associated with one pass chaining. The risk of increased short term particulate matter would be offset by the increased chance of seeding success due to seed bed preparation through one pass chaining.

#### **C. Water Resources**

Wildfire can impact water resources by causing greater flood peaks, increasing erosion and sedimentation of water bodies, and damaging aquatic habitat. Fires remove the vegetative ground cover that protects soil from wind and water erosion, enhances infiltration rates, and slows runoff. Severe fires can also cause soils to become water repellent, aggravating these impacts. In addition, disturbances associated with suppression efforts sometimes expose soils to erosion, which can lead to sedimentation of water sources.

Rehabilitation methods described in the Proposed Action would benefit water quality by reversing some of the damage caused by wildfire. Seeding efforts are designed to more quickly restore the vegetative cover that was lost during the fire. This would protect soils from erosion, increase infiltration capacities, and slow runoff. More precipitation would be used onsite to enhance plant growth, and runoff would come more slowly and with reduced peaks. Selective use of structures would also protect drainages that are especially vulnerable to erosion.

#### **D. Wetlands/Riparian**

Emergency fire rehabilitation efforts generally would benefit riparian areas. Treatments specific to riparian areas are uncommon because they are not typically damaged by wildfire. However, seeding, erosion control projects, and other efforts can protect and enhance riparian communities by reducing soil losses, slowing runoff, and reducing flooding. Reestablishing vegetative cover would also improve floodplain function by enhancing infiltration, increasing ground-water recharge, and filtering sediment.

#### **E. Vegetation**

##### Salt-Desert Shrub Community

Seedings are not recommended below seven inches of annual precipitation, and therefore, EFR/ESR treatments in this plant community are limited to erosion control structures and natural re-vegetation with closure to livestock grazing. Cheatgrass infestation in the 6-8 inch/year precipitation zone is a problem especially north of the Reno/Sparks area; however, at this time there are no reliable grass species that can compete with the commonly extensive reserves of viable cheatgrass seed in the soil.

##### Sagebrush-Bunchgrass Community

Most of the wildfires in the Carson City Field Office occur in this plant community. The Proposed Action would replace lost native vegetation with a mix of native and non-native species or, if the treatment areas lie within Wilderness Study Areas, all native species. Seeding of non-native species may interfere with natural succession of native species but may also inhibit the invasion or increase in noxious or invasive species. The possible reduction of cheatgrass infestation may reduce the possibility of fire dis-climax and the associated cyclic wildfire condition. The Proposed Action would result in watershed stabilization by increasing surficial vegetative cover and litter, reducing erosion by protecting the soil surface from raindrop splash and reducing water runoff energy. Protecting seeded areas for at least two growing seasons would allow the seeded species to develop the root systems needed to withstand grazing pressures from wildlife, livestock and wild horses.

Natural revegetation with closure or fencing would allow for re-establishment of perennial grasses since competition for moisture in the surface soil would be less due to a much depleted shrub component. In burn areas not seeded, there exists the potential for development of a fire dis-climax vegetation community composed primarily of cheatgrass.

Construction of erosion control structures would help to preserve site potential, including riparian areas by stabilizing drainage ways and preventing gullyng and sedimentation of downstream areas.

##### Pinyon-Juniper Community

This plant community occurs on mountain side slopes and upper alluvial fans, which commonly precludes the use of rangeland drills because of slope and surficial rock fragments. Germination

and survival of seeded species in these areas have been attained through both aerial seeding and aerial seeding/one pass chaining in Nevada. Seeded species would effectively set back successional patterns and delay natural reforestation; however, the benefits to be gained by erosion control and site potential preservation would seem to outweigh such delays. Burns in this community are frequently extreme in intensity, especially on north slopes with heavy canopy cover. The Proposed Action would stabilize these areas by increasing surficial vegetative cover, thus decreasing erosion and sediment yield and preserving site potential.

Closing burn areas for at least two growing seasons would allow seeded species to develop the root systems needed to withstand grazing pressures from livestock and wild horse. If the areas are not seeded this closure would allow for re-establishment of perennial vegetation.

Construction of erosion control structures would help to preserve site potential, including riparian areas by stabilizing drainage ways and preventing gullying and sedimentation of downstream areas.

#### **F. Noxious Weeds**

Impacts anticipated through use of the Proposed Action (treatments 2 through 6) would negatively affect noxious weeds (slow their establishment or ability to spread). The addition of seed or seedlings, and control or eradication measures on existing noxious weeds would allow rapid establishment of beneficial perennial vegetation that would inhabit the ecological niches left vacant by the burned vegetation. Impacts through implementation of treatment 1 (natural re-vegetation) could positively impact the growth or spread of noxious weeds as the healing process through natural re-vegetation could be slow.

#### **G. Wildlife**

Rehabilitation efforts in habitat used by large mammals (particularly mule deer) includes grasses, forbs, and shrubs as SOP. While antelope bitterbrush is a key species for mule deer, it is very difficult/chancy to grow from seed (either drilled or broadcast/chain) as conditions must be almost perfect for germination and seedling growth. Four-wing saltbush has proven to be an easy to grow species which provides both food and cover for mule deer and currently is of equal importance as a replacement species in the seed mixes tailored to mule deer sites. There has been improved EFR/ESR success using bitterbrush seedlings, 1 or 2 years old (usually 1). These are grown in nurseries, and when planted are protected by a plastic mesh cone or some other device, which allows the seedling to establish a root system strong enough to withstand the first browsing tug from either a deer, cow, or domestic sheep. Using seedlings is very labor intensive, however, and requires much additional coordination and transportation. Locally, sportsmen and homeowner volunteer efforts have been utilized locally, while convict labor has been used elsewhere. Seedling survival of up to 70 per cent after 3 years has been reported on the Plumas National Forest, following treatment after prescribed burns in the 1980's.

Any EFR/ESR efforts would be done as soon as possible after the site burned, which usually means late fall/early winter. When treatments are done in this time frame (which is SOP) there

are no nesting birds of any kind affected, including those protected by the Migratory Bird Treaty Act.

Species such as antelope, bighorn sheep, chukar, and mourning dove live in drier habitats characterized by less ground cover and shorter shrubs and grasses. Most of these sites receive less than 7 inches of moisture per year. In areas such as these where precipitation is so low, probably no reseeding would be done, and the critters would have to depend on natural revegetation, which would result in a short term lack of cover and forage.

Any fences required to protect EFR/ESR efforts would be designed to allow easy and safe passage by wildlife. This is SOP. Standard BLM fence designs and specifications would be used.

#### **H. Threatened & Endangered Species**

Any EFR/ESR plans affecting listed or candidate plant species (Steamboat Buckwheat, Williams Combleaf, Carson Wandering Skipper, and Sodaville Milkvetch) might require Section 7 consultation between BLM and USFWS. Whether it would be formal consultation would be determined on a case-by-case basis. Chances for fire (and EFR/ESR needs) are slim, based on existing vegetation and fire history, for three of the four species above. Wandering Skipper habitat, however, characterized by big sagebrush, almost level ground, and saltgrass, is very much at risk from fire, since adjacent areas west and south of it burned during major fires in 1984 and 1985. If the Skipper habitat burned, the Skipper population could be extirpated.

Any EFR/ESR plans affecting Lahontan Cutthroat trout (LCT) streams in the Desatoya Mountains (Edwards, Willow, and Upper Dens creeks) could also require Section 7 consultation, since consultation was necessary when LCT habitat protection was an issue (and resulted in extensive riparian fencing). Fire in these riparian areas (characterized by quaking aspen, willows, and rose bushes) could be very damaging to the trout habitat. If the fish populations were lost, however, they could be restocked from other LCT sources. If only one of the three populations (streams) was affected, then replacement stock would come from one of the two remaining sources, since these fish have been deemed by geneticists to be very close to the original LCT genetic strain.

Sage grouse habitat has been lost to fire in the Pah Rah and Virginia Mountains north of Reno in 1999 and 2000, and in the Clan Alpine Mountains in 2000. Forb and sagebrush species which benefit sage grouse habitat were used in the rehab mixes in the Virginia and Clan Alpine EFR/ESR efforts. This is and would be SOP for future fire rehab in sage grouse habitat. Whether Section 7 consultation with USFWS is needed in the Pine Nut and Wassuk ranges might depend on whether the Mono population is listed as threatened or endangered.

Mountain quail and pygmy rabbits would be heavily affected by fires, since these two species use thick, tall brush covered lands as their habitat. Any reseeding using sagebrush or other

species would take at least 5+ years to mature, during which the local sensitive species population could well pass out of the picture.

#### **I. Wild Horses**

The Proposed Action would not benefit wild horses and burros in the first two years following treatment because of the possibility of protective fence construction in the herd areas. Site specific plans may require the physical removal of animals for the first two growing seasons. However, EFR/ESR treatments would benefit them in the long term by providing forage and preserving ecological site potential. Water sources (springs and seeps), if vital to maintain a strong and healthy population, would be fenced or protected in such a way as to ensure access for the animals. In low precipitation areas where EFR/ESR seedings would not be considered (or if Treatment 1 is recommended) the herd would have to depend on natural re-vegetation. This would prolong the period when insufficient forage is produced on the burned area. Monitoring results of treated areas would be used to determine impacts to AUM numbers allowed after treatment.

Erosion control structures would help to preserve site potential, including riparian areas by stabilizing drainage-ways and preventing gullying and sedimentation of down stream areas.

#### **J. Livestock**

In burn areas that are proposed for EFR/ESR seedings (treatment 2, or 3 or if treatment 1 is recommended) livestock would be negatively impacted for at least two growing seasons, since the treatment areas would either be fenced or closed by decision or agreement for that period of time. EFR/ESR seedings would lessen topsoil loss by controlling sheet and rill erosion by increasing vegetative cover. This preservation of site potential would be an indirect benefit to livestock during the closure period. After the closure period, livestock would benefit directly from the continued forage production. The removal of livestock for two growing seasons would be a short-term hardship for the livestock operators. However, successful rehabilitation of a burned area through any of the proposed treatments would prove to be a long-term benefit to livestock. Monitoring data from the burn areas would be used to determine grazing use levels after treatment.

#### **K. Socioeconomic**

The Proposed Action would have positive social economic impacts in terms of preventing flood and sediment damage and reducing the potential future fire damage to adjacent private lands. The livestock industry may benefit in the long term through increased forage availability, although in the short term individual ranchers would be negatively affected due to the closure of EFR/ESR areas for a two-year period. A minimal beneficial impact to the wildlife related recreation industry would occur due to continued wildlife forage availability. The Proposed Action would also serve to eliminate or minimize the negative economic effects associated with invasive weeds and ensuing forage degradation.

## **L. Recreation**

The Proposed Action would have a positive impact to recreation resources and opportunities by providing a means of restoring the natural appearance of the public lands in a timely manner. Most recreationists tend to avoid burn areas as unattractive and uninteresting. By restoring these lands as outlined in the Proposed Action, the time during which recreation opportunities are precluded or lessened would be shortened.

## **M. Wilderness**

The Proposed Action would have a positive impact on wilderness resources and WSAs within the Carson City Field Office. It would provide for rehabilitation of burned areas through vegetative recovery by species native to the burned area.

## **N. Areas of Critical Environmental Concern**

Proposed Action treatments including any surface disturbing activities would produce a negative impact and would not be allowed in any ACEC. Aerial seeding treatments would positively impact the ACECs, especially if seeded species are native to the area. (Refer to discussion under: IV. Environmental Consequences; Proposed Action; H. Threatened & Endangered Species, first paragraph.)

## **O. Visual Resources**

The Proposed Action would benefit visual resources by providing watershed protection through closure, seeding or both. EFR would prevent gullying and other types of erosion that are not only visually unappealing, but also can change the burn area's ecological site potential, permanently altering its visual quality. For other mitigating measures refer to Standard Operating Procedures, Nos. 6 and 8, in the Proposed Action section of this document.

Short-term impacts to visual quality as a result of a burn are unavoidable and would be substantial for at least 2-3 years post burn, or longer, if Treatment 1 is recommended. Other treatments would accelerate the process of recovery and lessen impacts to the visual resource.

## **NO ACTION ALTERNATIVE**

### **A. Soils**

Under this alternative, burn areas in need of EFR/ESR would experience increased levels of soil erosion and sediment yield. The loss of vegetal cover would result in increased rain-drop splash, siltation, and water runoff energies. This in turn would result in increased sheet rill and wind erosion. Increased rilling could lead to gullying (including head-cutting, down-cutting, and bank erosion) in or near drainage-ways and riparian areas, possibly affecting the local water tables adjacent to wet meadows and/or springs and seeps. Continued use by livestock and wild horses would compound this problem by utilizing what little vegetation re-sprouts after the burn. Depending on the intensity of the burn, soil texture, percent utilization, permanent long-term loss of ecological site productivity and potential could result.

## **B. Air Quality**

The No Action alternative would not significantly impact air quality in the long term unless burned areas were infested with cheatgrass creating a shorter fire cycle. Burn areas could contribute dust or sand to the atmosphere due to increased wind erosion in the months following the burn, however, natural re-vegetation would eventually stabilize soils in the area.

## **C. Water Resources**

The No Action alternative would impact the water resource by allowing increased sediment delivery into perennial streams decreasing water quality. Increased runoff from burn areas would lessen watershed storage of precipitation. The risk of property damaging runoff in municipal watersheds would increase.

## **D. Wetlands/Riparian**

The No Action alternative would not allow for re-establishment of vegetative cover, which in turn would reduce infiltration, thus increasing surface runoff and sedimentation, all of which would negatively affect riparian and wetlands.

## **E. Vegetation**

Under this alternative there would be no adjustment of AUM's in the burn area. In this scenario, depending on the intensity of the burn, increased competition for scarce forage between livestock, wild horses, mule deer and antelope, along with the distinct possibility of cheatgrass infestation (increasing chances of re-burn), could lengthen site recovery time in the long term. It also could alter the ecological site towards one that is less productive. The impacts would be severe on intensive burn areas where perennial root crowns have been destroyed. Runoff and sediment yield would increase, possibly causing downstream damage.

### Salt Desert Shrub Community

Under this alternative, burns in low precipitation zones could result in possible loss of site potential and increased sediment yield. Runoff and sediment from these areas could damage private property.

### Sagebrush-Bunchgrass Community

Under this alternative, many burn areas in the Carson City Field Office that require EFR/ESR would suffer high erosion rates in the short term (1-2 years) and possible loss of ecological site potential in the long term. The establishment of annual range in burn areas is a distinct possibility. Infestation of cheatgrass not only lengthens ecological site recovery time, but increases the chances of re-burn. Runoff and the increased sediment yield from these areas could damage private property

### Pinyon-Juniper Community

The impacts to this plant community under the No Action alternative are the same as those in the sagebrush-bunchgrass community, however, post-burn erosion rates would be somewhat higher in most cases, due to increased slopes, shallower soils and increased precipitation.

## **F. Noxious Weeds**

The No Action alternative would positively impact noxious weed by extending the time period require for natural re-vegetation. Areas with few or even no per-burn perennial vegetation would surely be infested or invaded by noxious or invasive weed species, thus, negatively affecting ecological site potential.

## **G. Wildlife**

Under this alternative, all megafauna, which would refer to deer, bighorn sheep, antelope, would be competing directly with domestic cattle, sheep and wild horses for the very limited vegetative resources that usually come back following wildfire. Bitterbrush, which would resprout if the wildfire was very cool burning, would be at a premium. But it would never have a chance to really mature and would pass out of the picture due to over utilization by all species except bighorns and horses. Perennial grasses, which could come back well after fires, would be at a premium. They would be very heavily utilized to the extent that less desirable grasses and shrubs would be at an advantage in competing for soil moisture.

Mule deer, since they do not pioneer new areas (i.e., move from burned into unburned habitat if it is not familiar to them) could simply starve to death, especially during winter months. Antelope and bighorns would do much better, since they would move to unburned areas.

Riparian habitats are resilient if given a chance. In a No Action scenario, any remaining megafauna would consume all resprouts and the riparian area would be over utilized to the point of extirpation. This particularly applies to quaking aspens.

With no rehabilitation, migratory/neotropical bird species which usually depend on/prefer brush fields and treed or riparian areas would have very marginal places to nest, escape, or feed, and would be lost from the landscape. Birds such as chukar and mourning doves would survive. Chukars would because they originally came from areas characterized cheatgrass and rocky slopes. Doves would because they would fly a long distance to feed and eat.

With No Action, smaller mammals such as rabbits and rodents would survive any way they could; taking advantage of forage and cover, but perhaps being at a disadvantage because of lack of cover.

## **H. Threatened & Endangered Species**

The No Action is not an option for any of the listed or candidate species (Steamboat Buckwheat, Williams Combleaf, Carson Wandering Skipper, or Sodaville Milkvetch) the USFWS would simply not allow that to happen. What to do to bring any of these species back, however is totally uncertain, since these species have never been subject to fire, either planned or unplanned.

If riparian habitat which protects Lahontan cutthroat trout (LCT) populations from overheating, burned and was not replenished or protected in any way, the LCT in Edwards/Willow/Upper

Dens creeks would pass out of the picture. This would occur either during fire or following it when summer sun raised water temperatures beyond levels that the fish could stand.

No Action in sage grouse habitat would not be acceptable to USFWS. The same is true for Mountain Quail and Pygmy Rabbits.

#### **I. Wild Horses**

Under this alternative ecological site potential could be impacted due to increased competition for scarce forage. Wild horses and burros, being mobile would impact other areas adjacent to the burn, extending the adverse impacts of the burn. Wild horses and burros would not be severely impacted by this alternative. However, this alternative does not meet the objectives in the Carson City Field Office Consolidated Resource Management Plan concerning wild horses and burros.

#### **J. Livestock**

Under this alternative, ecological site potential would be impacted due to increased competition for scarce forage. Livestock numbers or season of use may not be impacted in the short term, but weight gain and calf crop could be impacted depending on the severity of the burn. Under this alternative adjacent pastures/allotments may be impacted as livestock drift in order to acquire sufficient forage to sustain themselves.

#### **K. Socioeconomic**

This alternative would have negative social economic impacts in terms of allowing flood and sediment damage and increasing potential future fire damage to adjacent private lands. The livestock and wildlife associated recreation industries would have minor long term negative impacts due to decreased forage.

#### **L. Recreation**

Natural reseeding/recovery would take longer and the possibility of non-native species invading the burn area would be increased. This could impact the ecological diversity of the burn area and make it less attractive to the average recreationist.

#### **M. Wilderness**

The No Action Alternative could have a negative impact on wilderness resources since the option of reseeding the burn area with native species would be foregone. Natural reseeding/recovery would take longer and the possibility of non-native species invading the burn area would be increased.

#### **N. Areas of Critical Environmental Concern**

No Action could have a negative impact on the ACECs. Natural re-vegetation of the burn areas could fail or be extremely slow in their recovery, thus allowing noxious or invasive species to fill the ecological niche left by the burned vegetation.

## **O. Visual Resources**

This alternative may have a negative impact on visual resources by increasing the chances of erosion and loss of ecological site potential. This could, in turn, permanently and negatively alter the burn area's visual quality.

### **MITIGATING MEASURES**

All reasonable mitigating measures would be identified in the site specific supplements to the Normal Year Fire Rehabilitation Plan that would be prepared for each incident or group of incidents.

### **CUMULATIVE IMPACTS**

All resource values have been evaluated for cumulative impacts. It has been determined that cumulative impacts would be negligible as a result of the Proposed Action or No Action Alternative.

### **MONITORING**

The chronology of vegetative monitoring would be conducted in accordance with the draft "Burned Area Emergency Stabilization and Rehabilitation Handbook". The Carson City Field Office would establish monitoring sites in all major soil types within the burned areas as well as within those same soil types adjacent to the burned areas (if the unburned sites are available).

Cover data would be collected along a 100 foot transect using the line intercept method. Cover would be recorded on perennial vegetation only. Cover data collected would be canopy cover for shrubs and basal cover for grasses and forbs. Density data would be collected along a 200 foot transect using a hoop representing one square meter. Density data would be collected every 20 feet starting at the ten-foot mark continuing out to the 190-foot mark. Also established at each transect location would be a standard photo plot (5 feet X 5 feet).

## V. CONSULTATION AND COORDINATION

### List of Preparers:

Terri Knutson	Environmental Coordinator/Air Quality/ACEC
Jim Schroeder	Water Resources/Wetlands/riparian
Dean Kinerson	Vegetation
Jim deLaureal	Noxious Weeds/Soils
William R Brigham	Wildlife/Threatened & Endangered Species
Jim Gianola	Wild Horses and Burros
Tom Crawford	Socioeconomic
Terry Knight	Recreation/Wilderness/Wild and Scenic Rivers/Visual Resources
Richard Depaoli	Livestock/Team Leader

### Persons, Groups or Agencies Consulted:

Federal Agencies: United States Fish and Wildlife Service, United States Forest Service, Bureau of Indian Affairs, Tribal Governments

State Agencies: Nevada State Clearinghouse

Public Involvement: County Governments, News Release

**APPENDIX I**

**CARSON CITY FIELD OFFICE**

**APPENDIX II**  
**SITE SPECIFIC ADDENDUM FORMAT**

## **APPENDIX II**

### **SITE SPECIFIC ADDENDUM FORMAT**

- I. ENVIRONMENTAL ASSESSMENT DECISION REPORT (Decision Record/Rational)
  
- II. LIST OF PREPARERS/REVIEWERS
  
- III. PROJECT AREA DESCRIPTION
  - A. Fire Description
  - B. Vegetation & Soil Description
  
- IV. PROPOSED PROJECT TREATMENTS
  - A. Revegetation
    - 1. Species & Rate of Application
    - 2. Acres
    - 3. Method
    - 4. Timing
  
  - B. Structures
    - 1. New Fence
    - 2. Protective Fence Repair
    - 3. Cattle Guards
    - 4. Water Developments (funded from other sources)
    - 5. Recreation Facilities (funded from other sources)
    - 6. Other (funded from other sources)
  
  - C. Erosion Control
    - 1. Check Dams
    - 2. Ripping, Contour furrowing/Felling etc.
    - 3. Other
  
  - D. Site Preparation

1. Chemical
2. Mechanical

V. CONSIDERATION OF CRITICAL ELEMENTS

- A. Air Quality
- B. Cultural/Paleontology Resources
- C. Hazardous Substances or Solid Waste
- D. Native American
- E. Noxious Weeds
- F. Prime & Unique Farmlands
- G. Special Management Areas
- H. Special Status Species
- I. Visual Resources
- J. Water Quality
- K. Riparian-Wetland Areas, Floodplains
- L. Wild & Scenic Rivers
- M. Wilderness/WSA's
- N. Wild Horse/Burro Management

VI. Project Cost Summary

- A. Labor Costs
- B. Operation Costs
  1. Vehicles, Travel
  2. Contracts/Services
  3. Material Costs (seed, fencing, etc.)
- C. Total Costs by Fiscal Year
- D. Funding From Other Sources

VII. PROJECT MAP(S)

VIII. COST/RISK ASSESSMENT

IX. NATIVE/NONNATIVE WORKSHEET

**APPENDIX III**  
**WILDERNESS STUDY AREAS**

**APPENDIX IV**  
**KEY WILDLIFE AREAS**

**APPENDIX V**  
**SAGE GROUSE HABITAT**

**APPENDIX VI**  
**GRAZING ALLOTMENTS**

## **APPENDIX VII**

### **WILD HORSE AND BURRO HERD MANAGEMENT AREAS**

**APPENDIX VIII**  
**VEGETATION MAP**

## **APPENDIX IX**

### **AREAS OF CRITICAL ENVIRONMENTAL CONCERN (ACEC)**

## **APPENDIX X**

### **FIRE SUPPRESSION MANAGEMENT CATEGORIES MAP**