

Warm Springs Fire
BURNED AREA REHABILITATION PLAN
 Bureau of Land Management/Boise District/Four Rivers Field Office
 Idaho State Office

FIRE BACKGROUND INFORMATION

Fire Name	Warm Springs Fire
Fire Number	DNZ5
District/Field Office	Boise District, Four Rivers Field Office
Admin Number	ID110
State	Idaho
County(s)	Washington
Ignition Date/Cause	July 6, 2007/Lightning
Date Contained	July 11, 2007
Jurisdiction	<i>Acres</i>
BLM	5,294 (22%)
State	1,196 (05%)
Private	17,357 (73%)
Other	
Total Acres	23,847
Total BAR Plan Costs	\$ 141,000

Status of Plan Submission (check one box below)

X	Initial Submission
	Updating or Revising the Initial Submission
	Amendment

PART 1. REHABILITATION PLAN SUMMARY

BACKGROUND ON THE FIRE

The Warm Springs fire burned 5,294 acres of public land (Map 1). Of this, approximately 3,725 acres are within eight (8) grazing allotments and the remaining 1,569 acres are mostly within the Henley Basin Wildlife Habitat Area. There are a few scattered parcels that are intermingled with private lands that are not within an allotment. Although grazing periods vary on each allotment in the burned area, cattle use is authorized year-round, totaling 2,230 AUMS.

The northern and eastern extents of the fire were characterized by a pre-fire vegetation of big sagebrush intermingled with small patches of bitterbrush with an understory dominated by perennial native grasses and forbs. These areas also supported mountain shrub patches, and riparian habitat with a dominant overstory of willows. The south and western extents of the fire are typified by pre-fire vegetation dominated by invasive annuals (cheatgrass and medusahead). In the general area, cheatgrass and medusahead are represented in scattered occurrence as invasive annual grasses that can dominate in a post-burn scenario. Noxious weeds such as Scotch thistle and jointed goatgrass are scattered throughout the burned area.

The general area provides habitat for big game including elk and mule deer, along with diverse populations of nongame birds and mammals. The burned area is within designated crucial elk and mule deer winter range. Big sagebrush and bitterbrush are habitat components lost by the fire that support elk and mule deer populations that utilize this area during the winter. Henley Basin Wildlife Habitat Area (WHA) is within the burned area, and is managed cooperatively by BLM and Idaho Department of Fish and Game. Within the burned area there is an isolated 40 acre parcel that contains an extant population of southern Idaho ground squirrels, a candidate species for listing under the Endangered Species Act. Pre-burn vegetation on the parcel was characterized by xeric big sagebrush, bitterbrush, native grasses and forbs, and a component of cheatgrass and medusahead. The parcel is surrounded by private land with a vegetative component largely comprised of cheatgrass and medusahead.

Treatments which address the rehabilitation of Southern Idaho ground squirrel (an ESA listed Candidate Species) habitat require multiple year implementation and are being proposed under the BAR plan.

COST SUMMARY TABLE

Spec. #	Planned Action	Unit	# Units	Unit Cost	FY07	FY08	FY09	FY10	Spec. # Totals
R2	Ground Seeding	Acres	40	475	0	7,000	6,000	6,000	19,000
R2	Ground Seed Purchase	Acres	40	125	0	0	5,000	0	5,000
R2	Ground Seeding Cultural Clearance	Acres	40	25	0	1,000	0	0	1,000

R3	Aerial Seeding	Acres	1,342	14	0	19,000	0	0	19,000
R3	Aerial Seed Purchase	Acres	1,342	22	0	30,000	0	0	30,000
R5	Noxious Weeds	Acres	5,294	2	0	0	6,000	6,000	12,000
R7	Fence Repair/Gate	Milles	23	2,391	0	55,000	0	0	55,000
R15	Closures	Acres	0		0	0	0	0	0
	TOTAL COSTS		5,294	27	0	112,000	17,000	12,000	141,000

LAND USE PLAN CONSISTENCY

The 1987 Cascade Resource Management Plan (RMP) states: Fire rehabilitation seedings in crucial wildlife habitats would be multi-species, incorporating species to restore wildlife habitat values (page 50) and public land and resources affected by wildfires will be rehabilitated (page 54). Some of the proposed actions listed below are not directly addressed in the 1987 Cascade RMP; however, they are clearly consistent with LUP decisions (objectives, terms, and conditions).

1. R2 - Ground Seeding: Drill seeding of perennial forbs, grasses and a shrub would be conducted to restore pre-fire vegetative components on the tract of land which supports a population of southern Idaho ground squirrel. The Cascade RMP addresses ground seeding, or “disk & seed,” as an acceptable vegetation manipulation method in Preferred Alternative E, Livestock Resources and Wildlife Resources, Actions, Vegetative Manipulation.
2. R3 - Aerial Seeding: For diversity and to restore shrub structure lost by the fire, mountain big sagebrush and alfalfa would be aerial broadcast seeded. This seeding would also support big game populations on crucial winter range that burned in the fire. The Cascade RMP does not directly address aerial seeding, but the use of “seeding” as a method to provide forage for livestock and improve wildlife habitat is cited in Preferred Alternative E, Livestock Resources, and Wildlife Resources, Objectives, Actions
3. Noxious Weeds (R5) The burned area would be surveyed for the presence of noxious species, and appropriate control measures would be initiated. The control of noxious weeds is consistent with Cascade RMP, Resource Management Guidelines, Weeds (Control of Noxious), “BLM districts will work with respective County governments to monitor the location and spread of noxious weeds and to maintain up-to-date inventory records.” BLM will control the spread of noxious weeds on public lands where possible, where economically feasible, and to the extent that funds are prioritized for that purpose.” The control of noxious weeds is in compliance with State and county laws.
4. Fence Repair/Gate (R7): Repair and/or replacement of existing fence to provide a functional structure for the control of livestock grazing distribution. Fence repair would afford livestock exclusion from the treatment area, providing for the establishment of desired seeded species and natural recovery. The repair and/or replacement of fire damaged fences, although not addressed in the 1987 Cascade RMP, is consistent with RMP Objectives and Actions.
5. Livestock Closure (R15) Livestock would be excluded from the treatment areas until monitoring results, documented in writing; show rehabilitation objectives have been met. In case of treatment failure factors may need to be considered such as, natural recovery of untreated areas, and need or reason to continue closure. The Cascade RMP, Fire Management,

Rehabilitation, Greenstripping and Reduction Actions/Procedures, (3.) states “All grazing licenses issued that include areas recently burned and/or seeded will include a statement concerning the amount of rest needed in the seedings or burned area. Normally two years of rest will be necessary to enable recovery of these areas.”

6. Monitoring Effectiveness of Treatments (R16) Monitoring data would be collected from initiation of the proposed treatments through 2010.

PART 2. - REHABILITATION ISSUES

Objectives: 1) To evaluate actual and potential long-term post-fire impacts to critical cultural and natural resources and identify those areas unlikely to recover naturally from severe wildland fire damage; 2) To develop and implement cost-effective plans to emulate historical or pre-fire ecosystem structure, function, diversity, and dynamics consistent with approved land management plans, or if that is infeasible, then to restore or establish a healthy, stable ecosystem in which native species are well represented; and 3) To repair or replace minor facilities damaged by wildland fire. 620DM3.4

Priorities: 1) To repair or improve lands damaged directly by a wildland fire; and 2) To rehabilitate or establish healthy, stable ecosystems in the burned area. 620DM3.8

Rehabilitation Issues

1. **Lands Unlikely to Recover Naturally.** The 40-acre parcel of public land that supports southern Idaho ground squirrel is unlikely to recover naturally. Without rehabilitation this site would recede to an annual grass and forb dominated landscape, which researchers have found leads to the extirpation of southern Idaho ground squirrel. Conversion from native vegetation to annuals has been referred to as “the kiss of death” for southern Idaho ground squirrel. It is imperative this parcel be rehabilitated for the long-term survival of this southern Idaho ground squirrel population. Two other parcels were initially identified as a possible rehabilitation sites for southern Idaho ground squirrel, but they proved to be too rocky to allow seed drilling and aerial seeding would be in effective.
2. **Weed Treatments.** Noxious weeds such as Scotch thistle are known to be present within, and in the immediate vicinity of, the burned area. Failure to locate and control existing noxious weed sites would lead to continued spreading of the undesirable species. To promote establishment of seeded species and reduce risk of failure, competition from noxious and invasive plants must be controlled.
3. **Tree Planting.** N/A
4. **Repair/Replace Fire Damage to Minor Facilities.** Repair and/or replacement of 23 miles of existing fence is necessary to provide a functional structure for livestock grazing management.

Fence repair would allow for the exclusion of livestock from the treatment area, providing for the establishment of desired seeded species and natural recovery. These pasture and allotment boundary fences adjoin private land owner fences. Livestock grazing permittees will provide labor to repair fences in their allotments on the public lands; BLM would provide fencing materials for repair of public land fences.

PART 3. - DESCRIPTION OF TREATMENTS

Issue 1: Actions to Repair/Improve Lands Unlikely to Recover Naturally

R2 - Ground Seeding

- A. **Treatment/Activity Description (Map 1).** To restore diversity and shrub structure lost by the fire, the 40 acre parcel which supports southern Idaho ground squirrel would be drill seeded using Drill Seed Mix 1; a perennial seed mix which includes non-native forbs, and native grasses and shrub. Seedbed preparation and drill seeding sequence would be as follow:

2007 early to mid-fall – (Till) After fall green-up, till the project area with a chisel plow or off-set disc to a depth of **four to six inches. This would eliminate all emerged weedy annuals and mix surface** weed seeds into the soil. Two passes in different directions may be necessary.

2008 early to mid-spring – (Till) Following spring growth when target weeds (medusahead and cheatgrass) are in the “boot stage,” till with a rod-weeder, or spring-tooth cultivator with sweeps, or tandem disc. If a tandem disc is used, it should be followed by a drag-harrow to reduce moisture loss. Two tillage passes may be necessary.

2008 early to mid-summer – (Possible Herbicide Spray or Till Weed Treatment) If weeds reoccur after the first spring tillage passes, then further mechanical or chemical treatment may be warranted, depending on the density and species of weeds. It is desirable to use Roundup™ if a second treatment is necessary to conserve residual soil moisture which would be lost in a mechanical treatment.

2008 mid to late-fall – (Possible Herbicide Spray or Till Weed Treatment) If a flush of annual grasses appears following early fall rains and conditions are otherwise favorable, treat project area with herbicide formulation glyphosate to kill emerged weed seedlings or use tillage as described above. This step may not be necessary, depending on rainfall and other weather factors, and the following 2009 early spring treatment would remove any annual grasses that sprouted during the winter, before they produce seed.

2009 early-mid spring – (Herbicide Spray or Till Weed Treatment) After spring green-up, treat project area with herbicide formulation glyphosate kill emerged weed seedlings, or use tillage as described above

2009 mid to late fall – (Possible Herbicide Spray Weed Treatment) If necessary, due to weed emergence following early fall rains, treat project area with herbicide formulation glyphosate to kill weed seedlings. Normally this step would not be necessary.

2009 late fall – (Drill Seed) Ground seed 40-acre project area to selected species using a suitable drill seeder. The following seed mixture and described procedures, would be used:

Drill Seed Mix 1:

Variety	PLS lbs/acre
Big bluegrass Sherman	1.0 pound per acre
Bottlebrush Squirreltail (Sand Hollow)	1.0 pound per acre
Bluebunch wheatgrass Anatone	1.5 pounds per acre
Basin wildrye Magnar	1.0 pound per acre
Small burnet Delar	0.5 pound per acre
Alfalfa (Ranger)	1.0 pound per acre
Big Sagebrush (Basin)	0.1 pound per acre

If necessary due to loose soils, use an Ace Groundhog, or similar compaction device, to firm soil before seeding. This ensures a much more accurate depth of seed placement. Then, follow up with another compaction pass after drilling. This is an important step given that soils have been loosened by the previous mechanical treatments, and would insure optimum seed/soil contact and germination. If a drill equipped with press wheels is used, the post-drilling compaction pass can be eliminated.

The treatment described above describes methods used for areas in low rainfall areas of the Pacific Northwest. The proposed seeding mixture has been adapted for successful establishment of plant species favorable to southern Idaho ground squirrel.

B. How does the treatment relate to damage or changes caused by the fire?

The Warm Springs Fire was a complete burn with no remaining islands of unburned vegetation. Furthermore, the fire intensity on the 40 acre treatment site was intense enough to remove native grasses and forbs and completely kill-out existing shrubs. Without treatment, this site would pass below a threshold where the dominance by invasive annuals would make it very difficult to reclaim. Without treatment, southern Idaho ground squirrel **habitat** would become a monoculture of exotic invasive annual grasses. Research has shown that southern Idaho ground squirrel cannot survive in habitats which have converted to annual grass (cheatgrass and medusahead) monocultures. Success of the seeding treatment could range in effectiveness from 75-90%.

C. Why is the treatment/activity reasonable, within policy, and cost effective?

The proposal maximizes the likelihood of rehabilitation success by removing competition with annual vegetation while, at the same time, “banking” soil moisture to optimize seedling success. This technique has been proven in the area. Rehabilitation experience gained in the Intermountain West has shown that seeding of native vegetation when in direct competition with exotic annual species is not effective. Flexibility is included in the plan to deal with unforeseen variance in future precipitation. Short of implementing this approach, we are at risk of losing the southern Idaho ground squirrel population on public lands in this area. BLM would be remiss in not securing habitat when given the opportunity because conversion of lands to annual grass monocultures is the number one threat to the species.

To improve the cost effectiveness of this project, seed is currently being propagated by the U. S. Fish and Wildlife Service at Lucky Peak Nursery. By the time drill seeding takes place, a free source of forb seeds will be available. This seed is dedicated to rehabilitating southern Idaho ground squirrel.

R3 - Aerial Seeding

A. Treatment/Activity Description (Map 1): A total of 1,342 acres would be aerially seeded during the winter 2007-2008 either prior to snowfall or on top of existing snow cover. Two treatments are proposed based on a 3,500 foot elevation break. To optimize project success, it is proposed to limit seeding to northwestern through eastern slope aspects above 3,500 feet (1,253 acres). All other aspects above 3,500 feet would not be seeded, being left to re-vegetate naturally. On sites below 3,500 feet (89 acres), seeding would be limited to northwestern, northern, and northeastern aspects. The aerial seeding would re-establish pre-fire shrub structure and some plant diversity. This seeding would restore big game crucial winter range habitat components lost by the fire. Big sagebrush is necessary to provide food and cover for wintering big game. The seeded alfalfa would provide forb diversity and would be utilized during the early spring by wintering big game.

Aerial Seed Mix 1

Variety	Approximate Acres	PLS lbs/acre
Alfalfa (Ranger)	1,342	1.0
Big sagebrush (Mountain)	1,342	0.1

B. How does the treatment relate to damage or changes caused by the fire?

The Warm Springs fire was a complete burn, meaning no islands of unburned vegetation remain after the fire. Big sagebrush does not re-sprout after a fire and bitterbrush typically persists for one to two seasons post-fire before dying out. As such, reestablishment of shrubs is of paramount concern in big game crucial winter ranges. Natural re-vegetation of big sagebrush would take a decade or more since seedlings would have to slowly establish inward from the unburned margins of the fire. The success of the seeding treatment could range in effectiveness from 50-100%.

C. Why is the treatment/activity reasonable, within policy, and cost effective?

Specific costs of the aerial seeding are shown in the cost tables. Aerial broadcast seeding is the most efficient and effective way to plant a seed mixture comprised of very small seeds. This method insures seed is evenly broadcast over the burned area at the desired seed rate. Aerial seeding has been used to rehabilitate similar habitat types within the Four Rivers Field Office that have been burned by wildfire, with a fairly high rate of success during average or favorable growing conditions. These treatments were chosen by: (1) viewing pre-fire aerial photos for existing shrubs, and (2) avoiding annual vegetation that would directly compete with seedlings for resources. Above 3,500 feet, competition from annual vegetation would be very light on the chosen aspects which assure the optimum chance for seeding success. Below 3,500 feet, only northern aspect are proposed which again reduces direct competition between annual vegetation and seeded species.

R15 – Livestock Closure

A. Treatment/Activity Description: Portions of eight (8) grazing allotments and the Henley Basin WHA that will be drill and aerially seeded will be closed to livestock grazing. All allotments have intermingled land patterns, with private land being the majority. Refer to the table in the ES plan for specific public land closures within each allotment.

B. How does the treatment relate to damage or changes caused by the fire? Rest from livestock use is typically necessary to enable recovery of burned and establishment of seeded areas. BLM policy requires rest of the treated area from livestock grazing use until stabilization and rehabilitation objectives have been met. Closures allow for the recovery of vegetation and establishment of seeded species.

C. Why is the treatment/activity reasonable, within policy, and cost effective? BLM policy requires rest of the treated area from livestock grazing use until stabilization and rehabilitation objectives have been met. Closures allow for the recovery of vegetation and establishment of seeded species.

Issue 2: Weed Treatments

R5 - Noxious Weeds

A. Treatment/Activity Description: Starting in the spring of 2008, the 5,294 acres of public lands that burned would be surveyed for the presence of noxious species and appropriate control measures would be taken (ES). Follow up surveys and monitoring/re-treatment of noxious weed sites would be conducted through 2010 (BAR). The BLM will provide assistance to the Washington County Weed Department for survey and treatment of noxious weeds on public lands within the fire. The private landowners affected by this wildfire are currently developing a weed management plan, through the Lower Weiser Cooperative Weed Management Area (CWMA), which will address surveying and treatment of noxious weeds on private lands. The BLM will coordinate with this CWMA and Washington County to ensure that the entire weed problem within this area is addressed and effectively treated.

- B. How does the treatment relate to damage or changes caused by the fire? Potential for noxious weeds to spread is amplified after wildland fire disturbance. Wildfires foster the spread of noxious weeds by burning and removal of competitive vegetation. Application of appropriate treatments would control the spread of noxious weeds. Effectiveness of controlling noxious weeds is related to the size and configuration of weed populations. The smaller and more uniform a noxious weed population the more effective the control efforts.
- C. Why is the treatment/activity reasonable, within policy, and cost effective? Compliance with State and county laws requires the control of noxious weeds. The establishment and long-term maintenance of perennial seeded species and natural recovery of burned areas could be jeopardized if noxious weeds are not controlled. Considering the significant cost of implementing a BAR plan, noxious weed treatment is a reasonable and cost effective method of protecting this investment, as well as complying with State and county laws.

Issue 3. Tree Planting. N/A

Issue 4: Repair/Replace Fire Damage to Minor Facilities

R7 - Repair Fence/Gate

A. Treatment/Activity Description (Map 2): Approximately 23 miles of existing allotment management fence was damaged by the wildfire. These pasture and allotment boundary fences adjoin private fences and are in need of repair/replacement to control livestock grazing distribution and provide for natural recovery and/or establishment of desired seeded species. Fence repair on public lands would conform to current BLM standards for fences located in deer habitat. Materials for a standard 4-strand barbed wire fence includes brace structures (inline and corners), metal t-posts, 12-gauge barbed wire, smooth wire, inline stays, and wire mesh (for rock cribs). Allotment permittees will provide labor and BLM would provide materials to repair fire damaged fences on public lands (see table below).

Fence	RIPs Number	Financial Code	Location	Length
Jenkins Creek Fence	0757	D4CM	T12N, R6W, Sec 14, 23, 26, 34 T11N, R6W, Section 2	5.2 miles
Lower Allotment Boundary Fence	5649	D4CN	T12N, R6W, Sections 3, 4 T13N, R6W, Section 33	3.5 miles
Kelly Mountain Pasture Fence	5650	D4CO	T12N, R6W, Sections 22, 23	.8 mile
Southeast Pasture Fence	5651	D4CP	T12N, R6W, Section 35	1.5 miles
Scott Creek Allotment Boundary Fence - West	5652	D4CQ	T12N, R6W, Sections 3, 10, 15, 22, 27 T11N, R6W, Section 3	5.5 miles
Jenkins Creek Allot Pasture 3 South	5653	D4CR	T11N, R6W, Sections 1, 2	1.5 miles

Fence	RIPs Number	Financial Code	Location	Length
Boundary Fence				
Jenkins Creek Allot Pasture 3 North Boundary Fence	5654	D4CS	T12N, R6W, Section 25	1.5 miles
Tar Gulch Allot South Pasture Fence	5655	D4CU	T11N, R5W, Section 6	1.0 mile
Tar Gulch/Jenkins Creek Allotment Boundary Fence	5656	D4CT	T12N, R5W, Section 31	1.0 mile
Sage Hen Flat Allot S. Boundary Fence	5657	D4CV	T11N, R6W, Section 5	1.0 mile
Grouse Creek Allot Boundary Fence	5658	D4CW	T12N, R7W, Section 26	.50 mile
TOTAL				23 miles

B. How does the treatment relate to damage or changes caused by the fire? Repair of existing allotment management fence damaged by fire would provide for the exclusion livestock from treatment areas, while allowing grazing permittees to utilize unburned portions of pastures or allotments. This measure would be highly effective in controlling livestock distribution, providing for natural recovery and/or establishment of desired seeded species.

C. Why is the treatment/activity reasonable, within policy, and cost effective? Fence repair would provide for the effective management of livestock and the protection of natural recovery or seeding treatment areas. The cost of repairing the fence is low relative to the investment of the proposed seeding treatment. Replacing the wooden H-braces and corners with steel posts incurs a greater cost now but will save money in the long run should the area burn again. Fence repair contracts in this type of terrain typically run \$2,500 mile. This cost is substantially lower than construction of new fence.

PART 4. - INDIVIDUAL TREATMENT SPECIFICATIONS

BAR		FY07	FY08	FY09	FY10	Total Costs
R2	Ground Seeding					
	Labor	0	2,000	2,000	2,000	
	Travel/Vehicles	0	1,000	1,000	1,000	
	Equipment Rental	0	0	0	0	
	Supplies/Materials	0	0	0	0	
	Contract Range Land Drills	0	4,000	3,000	3,000	
	Contract No-Till Drills	0	0	0	0	
	Contract Administration	0	0	0	0	
	Drill FOR and Transportation	0	0	0	0	
	Total	0	7,000	6,000	6,000	19,000

BAR		FY07	FY08	FY09	FY10	Total Costs
R2	Ground Seed					
	Seed	0	0	4,448		
	Seed Mixing/Handling/Testing	0	0	500	0	
	Total	0	0	5,000	0	5,000
R2	Ground Seeding Cultural Clearance					
	Labor	0	0	0	0	
	Travel/Vehicles	0	320	0	0	
	Supplies/Materials	0	0	0	0	
	Contract	0	585	0	0	
	Contract Administration	0	400	0	0	
	Total	0	1,000	0	0	1,000
R3	Aerial Seeding					
	Labor	0	671	0	0	
	Travel/Vehicles	0	336	0	0	
	Equipment Mobilization	0	0	0	0	
	Supplies/Materials	0	201	0	0	
	Contract	0	16,104	0	0	
	Contract Administration	0	1,342	0	0	
	Total	0	19,000	0	0	19,000
R3	Aerial Seed					
	Seed Aerial Fall 2007		28,182			
	Seed Aerial Fall 2008		0			
	Seed Mixing/Handling/Testing	0	1,476	0	0	
	Total	0	30,000	0	0	30,000
R5	Noxious Weeds					
	Labor	0	0	2,647	2,647	
	Travel/Vehicles	0	0	1,324	1,324	
	Chemical Purchase	0	0	1,059	1,059	
	Supplies/Materials	0	0	265	265	
	Contract	0	0	1,059	1,059	
	Contract Administration	0	0	0	0	
	Total	0	0	6,000	6,000	12,000
R7	Protective Fence Repair/Gate					
	Labor	0	4,600	0	0	
	Travel/Vehicles	0	2,300	0	0	
	Clearances	0	0	0	0	
	Fence Material	0	32,200	0	0	
	Contract Fence Construction	0	13,000	0	0	
	Contract Administration	0	2,300	0	0	
	Supplies/Materials	0	345	0	0	
	Total	0	55,000	0	0	55,000
R15	Closures (OHV/livestock/area)					
	Labor	0	0	0	0	

BAR		FY07	FY08	FY09	FY10	Total Costs
	Travel/Vehicles	0	0	0	0	
	Supplies/Materials	0	0	0	0	
	Contract	0	0	0	0	
	Contract Administration	0	0	0	0	
	Total	0	0	0	0	0
	BURNED AREA REHABILITATION	0	112,000	17,000	12,000	141,000

SEED LISTS

DRILL SEEDING

Seed Type/Variety	PLS Rating	Seeding Acres	Lbs/Ac Bulk	Lbs/Ac PLS	# Seeds/Lb Bulk	# Seed Lb PLS	# Seed/Ac Bulk	# Seed/Ac PLS	# Seed/Sq Ft PLS	Total Lbs PLS	Total Lbs Bulk	Cost Per Lb	Total Cost
Bluebunch Wheatgrass, Anatone	0.7650	40	2.0	1.5	140,000	107,100	280,000	214,200	4.9	61.2	80	\$12.00	\$960.00
Basin Wildrye, Magnar	0.7650	40	1.0	0.8	150,000	114,750	150,000	114,750	2.6	30.6	40	\$8.00	\$320.00
Big Bluegrass, Sherman	0.6300	40	1.0	0.6	917,000	577,710	917,000	577,710	13.3	25.2	40	\$12.00	\$480.00
Bottlebrush Squirreltail, Sand Hollow	0.6750	40	1.2	0.8	220,000	148,500	264,000	178,200	4.1	32.4	48	\$35.00	\$1,680.00
Alfalfa, Ranger	0.8075	40	1.2	1.0	230,000	185,725	276,000	222,870	5.1	38.76	48	\$2.50	\$120.00
Small Burnet, Delar	0.7600	40	0.6	0.5	50,000	38,000	30,000	22,800	0.5	18.24	24	\$7.00	\$168.00
Big Sagebrush, Basin	0.1600	40	1.0	0.16	2,500,000	400,000	2,500,000	400,000	9.2	6.4	40	\$18.00	\$720.00
TOTALS		280	8.0	5.3			4,417,000	1,730,530	39.7	212.8	320		\$4,448.00

AERIAL SEEDING

Seed Type/Variety	PLS Rating	Seeding Acres	Lbs/Ac Bulk	Lbs/Ac PLS	# Seeds/Lb Bulk	# Seed Lb PLS	# Seed/Ac Bulk	# Seed/Ac PLS	# Seed/Sq Ft PLS	Total Lbs PLS	Total Lbs Bulk	Cost Per Lb	Total Cost
Alfalfa, Ranger	0.8075	1,342	1.2	1.0	230,000	185,725	276,000	222,870	5.1	1,300	1,610	\$2.50	\$4,026.00
Big Sagebrush, Mountain	0.1600	1,342	1.0	0.16	2,250,000	360,000	2,250,000	360,000	8.3	215	1,342	\$18.00	\$24,156.00
TOTALS		2,684	2.2	1.1			2,526,000	582,870	13.4	1,515	2,952		\$28,182.00

NATIVE/NON-NATIVE PLANT WORKSHEET

Proposed Native Plants in Seed Mixture

1. Are the native plants proposed for seeding adapted to the ecological sites in the burned area?
Yes [**X**] No [] Rationale: Proposed species are specific to NRCS site guides for the locale or have been recommended by local soil scientists. Forb seed mixtures were developed in cooperation with USF&WS, and IDF&G for the 40 acre tract.

2. Is seed or seedlings of native plants available in sufficient quantity for the proposed project?
Yes [**X**] No [] Rationale: In addition to commercially available seed, forb seed is being grown and would be harvested by the USF&WS specifically for this effort.

3. Is the cost and/or quality of the native seed reasonable given the project size and approved field unit management and Plan objectives?
Yes [**X**] No [] Rationale: Aerial seedings are approved in the land use plan to rehabilitate crucial big game winter range. Ground seeding is required to rehabilitate the 40-acre tract of Southern Idaho ground squirrel habitat which is for the conservation of a Candidate species. Forb seed is specifically being selected and propagated for this site by another federal agency.

4. Will the native plants establish and survive given the environmental conditions and the current or future competition from other species in the seed mix or from exotic plants?
Yes [**X**] No [] Rationale: Seeding sites have been selected to minimize competition and improve the success of establishing desired seeded species. In the aerial application, only aspects with limited annual exotics were chosen. In the ground seeding application, a specific plan has been developed that reduces competition from exotic plants and uses a seed mixture that was developed to be successful and meet habitat requirements for the Candidate species.

5. Will the existing or proposed land management practices (e.g. wildlife populations, recreation use, livestock, etc.) maintain the seeded native plants in the seed mixture when the burned area is re-opened?

Yes [**X**] No [] Rationale: Fences would be in place to manage livestock for proper use levels on seeded vegetation; however, big game can be expected to make use of these plants due to loss of their crucial winter range. It is difficult to predict the amount of use or damage that wildlife would inflict on seeded species.

Proposed Non-native Plants in Seed Mixture

1. Is the use of non-native plants necessary to meet objectives, e.g., consistent with applicable approved field unit management plans?

Yes [**X**] No [] Rationale: The land use plan allows for non-native species if beneficial to wildlife or soil stabilization.

2. Will non-native plants meet the objective(s) for which they are planted without unacceptably diminishing diversity and disrupting ecological processes (nutrient cycling, water infiltration, energy flow, etc.) in the plant community?

Yes [**X**] No [] Rationale: Non-native plants would improve diversity and their use is intended to benefit wildlife or in one case add soil nitrogen (legume).

3. Will non-native plants stay on the site they are seeded and not significantly displace or interbreed with native plants?

Yes [**X**] No [] Rationale: Seeding rates of non-natives are light and not expected to spread.

PROPOSED SEED SPECIES - NATIVES AND NON-NATIVES

Non-native Plants	Native Plants
Small burnet, Delar	Big bluegrass, Sherman
Alfalfa (Ranger)	Bottlebrush Squirreltail (Sand Hollow)
	Bluebunch wheatgrass, Anatone
	Basin wildrye, Magnar
	Big Sagebrush (Basin)
	Big Sagebrush (Mountain)

PART 5. - COST-RISK ANALYSIS

Probability of Rehabilitation Treatments Successfully Meeting Objectives

Action/ Spec. #	Planned Action	Unit (acres, WMs, number)	# Units	Total Cost	% Probability of Success
R2	Ground Seeding	Acres	40	25,000	75-90
R3	Aerial Seeding	Acres	1,342	49,000	50-100
R5	Noxious Weeds	Acres	5,294	12,000	60-90
R7	Fence Repair/Gate	Miles	23	55,000	100
R15	Livestock Closure	Acres	4,940	0	100
	TOTAL COSTS			141,000	

COST-RISK SUMMARY

1. Are the risks to natural resources and private property **acceptable** as a result of the fire if the following actions are taken?

Proposed Action: Yes No Rationale: The proposed treatments (seedings and livestock closure) are related actions which maximize the probability of success and effectiveness of restoring ecosystem components and achieving BAR objectives.

No Action Yes No Rationale: No action could result in the spread of medusahead and other invasive annuals, lack of shrub structure and a lower functioning ecosystem

Alternative(s) Yes No Rationale: Although acceptable alternatives may exist, none have been identified that would pose less risk to the natural resources than the proposed treatments

2. Is the probability of success of the proposed action, alternatives or no action acceptable given their costs?

Proposed Action: Yes No Rationale: The probability of the proposed treatments being successful are relatively high, and the cost is reasonable considering the benefits to be realized.

No Action Yes No Rationale: There would be no costs associated with no action, but no benefits would be realized.

Alternative(s) Yes No Rationale: No alternatives have been identified that would be more cost effective than the proposed treatments.

3. Which approach will most cost-effectively and successfully attain the rehabilitation objectives and therefore is recommended for implementation from a Cost/Risk Analysis standpoint?

Proposed Action , **Alternative(s)** , or **No Action**

Comments: The proposed treatments are anticipated to be cost effective, and would reduce vulnerability of the site to expansion of invasive annuals by restoring ecosystem components lost by the fire. The cost/risk is reasonable considering the benefits to the long-term health of the ecosystem.

RISK OF RESOURCE VALUE LOSS OR DAMAGE

No Action – Treatments Not Implemented (check one)

Resource Value	N/A	None	Low	Medium	High
Unacceptable Loss of Topsoil			X		
Weed Invasion					X
Unacceptable Loss of Vegetation Diversity					X
Unacceptable Loss of Vegetation Structure					X
Unacceptable Disruption of Ecological Processes					X
Off-site Sediment Damage to Private Property		X			
Off-site Threats to Human Life		X			
Other – loss of wildlife habitat					X

Proposed Action – Treatments Successfully Implemented (check one)

Resource Value	N/A	None	Low	Medium	High
Unacceptable Loss of Topsoil			X		
Weed Invasion				X	
Unacceptable Loss of Vegetation Diversity			X		
Unacceptable Loss of Vegetation Structure			X		
Unacceptable Disruption of Ecological Processes			X		
Off-site Sediment Damage to Private Property		X			
Off-site Threats to Human Life		X			
Other – loss of wildlife habitat			X		

PART 6. – MONITORING PLAN

Monitoring protocols for vegetation treatments within this plan are based primarily on those described in the Monitoring Manual for Grassland, Shrubland, and Savanna Ecosystems by Jeffery E. Herrick, Justin W. Van Zee, Kris M. Havstad, Laura M Burkett, and Water G. Whitford; published in 2005 by USDA-ARS Jornada Experimental Range, New Mexico State University.

The proposed treatments would be actively monitored and documented by personnel of the Boise District; Division of Operations and Four Rivers Field Office. Effectiveness of the ground seeding, herbicide application(s) and aerial seeding would be monitored by collecting density and cover data from randomly located plots which diagonally traverse flight patterns and drill rows within the treatment areas. Monitoring plots and funding in the Emergency Stabilization Plan will be used to collect data and determine if BAR objectives have been met.

R2: Ground Seeding

Effectiveness of the ground seeding would be monitored by measuring seedling density. The treatment objective would be achieved when data collected from 1-2 monitoring sites, with at least thirty (30) 0.25m² plots per site, indicate the a mean density of forbs $\geq 3/m^2$, big sagebrush $\geq 1/9m^2$, and mature established seeded perennial grasses $\geq 5/m^2$ have developed root systems that are extensive enough to provide soil stabilization and prevent uprooting when grazed, and 60% or more of those plants have produced seed heads. Monitoring of the drill seeding areas would take place during the summers of 2010 and 2011.

R3: Aerial Seeding

Monitoring the success of the aerial seeding would take place during the summers of 2008-2010. Treatment objectives would be achieved when density data collected from not less than one hundred (100) 0.125m² plots indicate mean establishment densities as follows:

Aerial Seed Mix	Mountain Big Sagebrush $\geq 1/9m^2$
	Ranger Alfalfa $\geq 2/m^2$

R5: Noxious Weeds

In 2008, BLM noxious weed specialists would inventory the area, identify noxious weeds on the site, and conduct control. Species found, treatment, and GPS location would be recorded. Personnel would revisit the treated sites, to evaluate mortality and search for any additional weed populations. In addition, the Four Rivers Range Staff would watch for any occurrences of noxious weeds in the burned area and report their locations to the noxious weed specialist. The entire 5,294 acre burned area would be surveyed for the presence of noxious species. Site inventory and noxious weed control would be conducted starting spring of 2008 (ES) and follow-up monitoring and treatments would be conducted 2009-2010. Appropriate treatment (s) would be applied during the suitable stage of plant growth. The objective would be the elimination or control of noxious weeds on the site.

R7: Repair Fence/Gate

Fence repair would be monitored by Four Rivers range staff during routine allotment inspections. Routine site visits would be made by BLM personnel to monitor livestock grazing distribution and ensure effectiveness of fences to maintain the area closure.

R15: Livestock Closure

Where possible and practical (see livestock closure table above), livestock are to be excluded from the burned area until monitoring results, documented in writing; show rehabilitation objectives have been met. In case of treatment failure, other factors may need to be considered, such as natural recovery of untreated areas, and need or reason to continue closure. Routine site visits would be made by BLM personnel to monitor for livestock trespass and ensure effectiveness of area closure.

PART 7 - MAPS

1. Southern ID Ground Squirrel Locations, Aerial Seeding Above 3,500 feet, Aerial Seeding below 3,500 feet, Proposed Drill Seeding
2. Proposed BAR Fence (Repair)

REVIEW, APPROVALS, AND PREPARERS**REHABILITATION PLAN TEAM MEMBERS**

Position	Team Member (Agency/Office)	Initial and Date
Team Leader	Mary Clark (BLM/Four Rivers FO)	
Operations	Cindy Fritz (BLM/Boise District) Alex Webb (BLM/Boise District)	
NEPA Compliance & Planning	Matt McCoy (BLM/Boise District)	
Botanist	Mark Steiger (BLM/Four Rivers FO)	
Hydrologist	Allen Tarter (BLM/Four Rivers FO)	
Soil Scientist	Paul Seronko (BLM/Boise District)	
Cultural Resources/Archeologist	Dean Shaw (BLM/Four Rivers FO)	

REHABILITATION PLAN TEAM MEMBERS

Position	Team Member (Agency/Office)	Initial and Date
Rangeland Mgt. Specialist	Mary Clark (BLM/Four Rivers FO)	
Wildlife Biologists	Tim Carrigan (BLM/Four Rivers FO) Anna Owsiak, Tim Shelton (IDFG) Marilynn Hemker (USFWS)	
GIS Specialist	Jeff Mork (BLM/Boise District)	
Other Technical Specialists - Noxious Weeds	Pat Kane (BLM/Boise District)	
Resource Advisor(s) on Fire	Allen Tarter (BLM/Four Rivers FO)	

REHABILITATION PLAN APPROVAL

“The Agency Administrator is responsible for developing, implementing, and evaluating emergency stabilization and rehabilitation plans, treatments, and activities.” 620 DM 3.5C

/s/ John Sullivan (Acting)

9/24/2007

FIELD OFFICE MANAGER

DATE

FUNDING APPROVAL

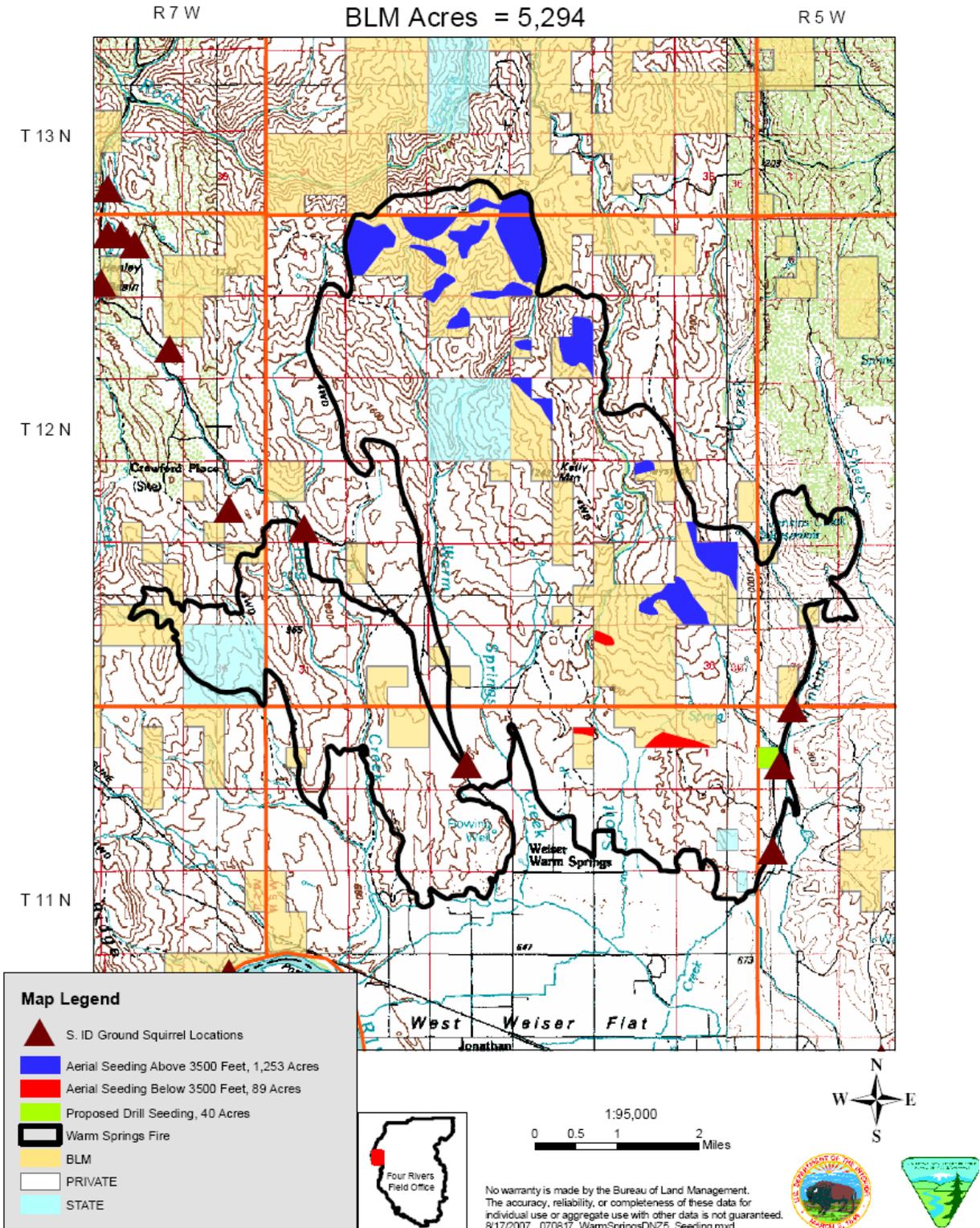
Rehabilitation plans are approved through the AWP, on a priority basis by the Interior BAER Coordinators. Funding for prior year fires is typically through the AWP the following year. If it becomes necessary to prioritize, this will be done by the IBAER coordinators based on relative values to be protected, commensurate with rehabilitation costs.

MAP 1

Warm Springs Fire DNZ5

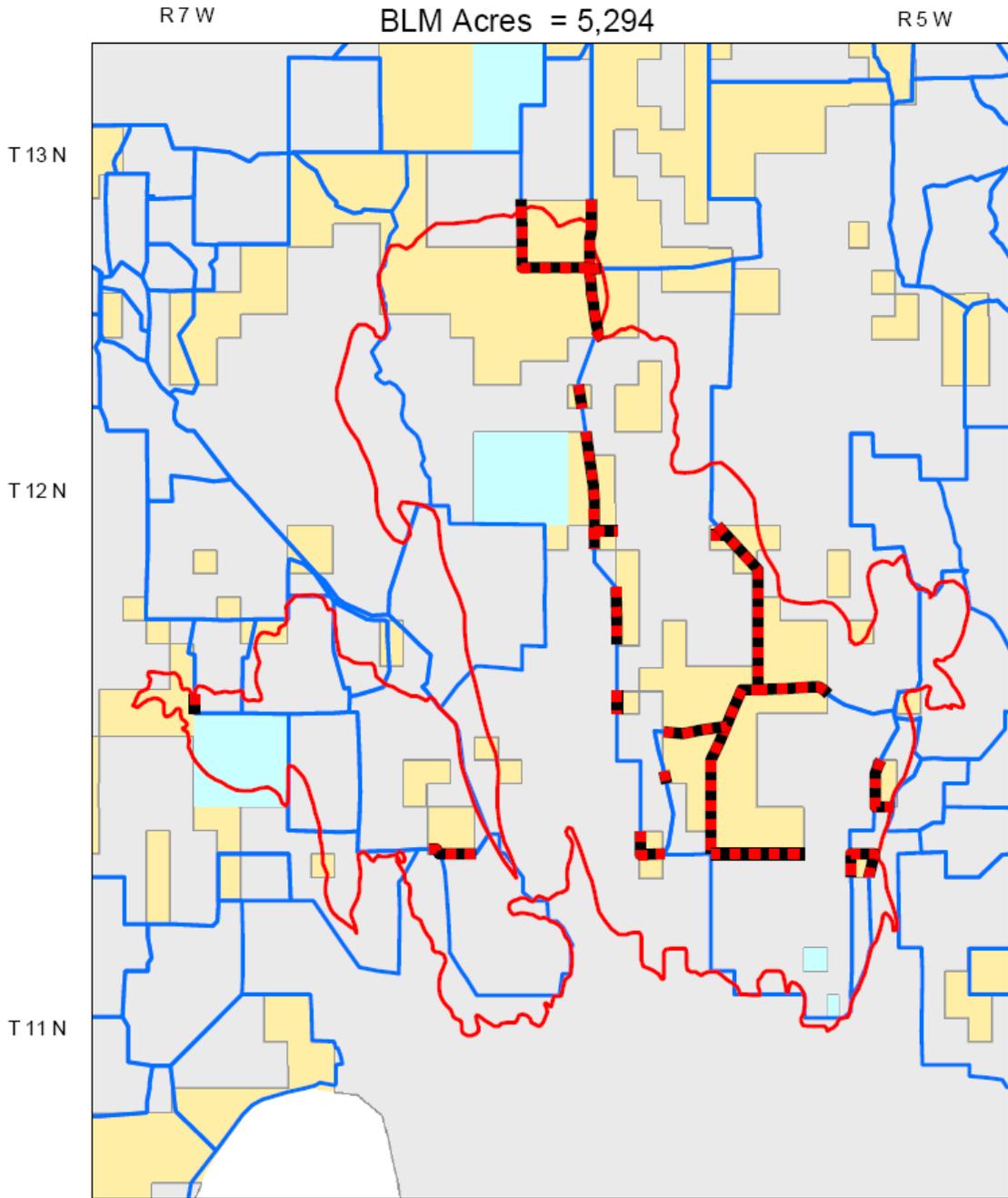
Total Acres = 23,847

BLM Acres = 5,294



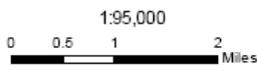
MAP 2

Warm Springs Fire DNZ5 BAR Plan
Total Acres = 23,847
BLM Acres = 5,294



Legend

- Proposed BAR Fence
- Warm Springs Fire
- Pasture Boundary
- BLM
- PRIVATE
- STATE



No warranty is made by the Bureau of Land Management. The accuracy, reliability, or completeness of these data for individual use or aggregate use with other data is not guaranteed. 8/23/2007. 070817_WarmSpringsDNZ5_BAR_Fence.mxd

