

**BLM IDAHO POST-FIRE RECOVERY PLAN
EMERGENCY STABILIZATION AND BURNED AREA
REHABILITATION**

PLAN TEMPLATE 2010

HILLTOP FIRE (HT65)

BLM Boise District Office

IDAHO STATE OFFICE

FIRE BACKGROUND INFORMATION

Fire Name	HILLTOP
Fire Number	HT65
District/Field Office	Boise District Office
Admin Number	LLIDB00000
State	IDAHO
County(s)	ADA
Ignition Date/Cause	08/06/2013 Human Caused
Date Contained	08/07/2013
Jurisdiction	<i>Acres</i>
DOD	190
State	50
Private	50
BLM	778
Total Acres	1068
Total Costs	\$426,000
Costs to LF20000ES (2822)	\$101,000
Costs to LF32000BR (2881)	\$325,000

Status of Plan Submission (check one box below)

<input checked="" type="checkbox"/>	Initial Submission of Complete Plan
<input type="checkbox"/>	Updating or Revising the Initial Submission
<input type="checkbox"/>	Amendment

PART 1 - PLAN SUMMARY

BACKGROUND INFORMATION ON FIRE.

The Hilltop Fire was human caused; it started on August 7, 2013 and was contained August 8, 2013. The fire burned a total of 1,010 acres in Ada County approximately 15 miles east of Boise, ID. Of the acres burned, 778 acres occurred on lands managed by the BLM. The fire burned approximately 632 BLM acres, roughly 40%, of Pasture 2 of the Boise Front Allotment.

The burned area contains a central ridge that runs roughly north/south with steep east, west and south slopes, 30-50%, that drain into draws and eventually into Lucky Peak Reservoir. The elevation varies from 3,000 to 4,375 feet.

Pre-burn vegetation consisted of a mixture of bitterbrush (*Purshia tridentata*) with small amounts of sagebrush (*Artemisia tridentata*) and an understory of cheatgrass (*Bromus tectorum*) and some native perennial grasses. Other areas were dominated by cheatgrass, medusahead (*Taeniatherum caput-medusa*) and other non-native invasive annuals. Bluebunch wheatgrass (*Pseudoroegneria spicata*) was present on the steeper slopes of the east and south side of the fire. Rush skeletonweed (*Chondrilla juncea*), a noxious weed, is also present within the burned area and adjacent lands. Some drainages contained riparian dependent shrubs, grasses and forbs. In 1997 portions of the burn perimeter were aerial seeded and following the Northshore Fire of 1996. As part of the stabilization and rehabilitation at that time bitterbrush and sagebrush seedlings were also planted.

The area burned by the Hilltop Fire provides crucial elk and mule deer winter range and is range for a year-round mule deer population. The Hilltop Fire also burned within the boundary of the Boise Front ACEC which is managed by the BLM to protect critical watersheds, wildlife, recreation, and scenic values. The total acreage of the Boise Front ACEC is 51,767 of combined ownership. The burned area is a high priority for stabilization and rehabilitation because of steep slopes and close proximity to Lucky Peak Reservoir, which is utilized for flood control, irrigation and hydroelectric power.

One grazing allotment was affected by the fire; roughly 40% of Pasture 2 of the Boise Front Allotment burned. This pasture is currently used for sheep trailing in May and then again in late October/early November. While the pasture is permitted for cattle grazing, no grazing currently occurs, has occurred in the recent past, or is planned to resume within the next two years. The twice per year trailing of one band of sheep through this pasture will not necessitate the closure of this pasture to protect stabilization and rehabilitation efforts.

Allotment Name Boise Front
Pasture 02
BLM Acres 1597
BLM Acres Burned 632

% BLM Acres Burned 40%

Operators Alta LLC Current Season of Use 4/15-7/31 (Cattle)

Operators Frank Shirts Current Season of Use 5/5-5/27; 10/25-11/16

(Sheep)

Simpson's hedgehog cactus, *Pediocactus simposonii*, is found on the southern finger ridges within the fire perimeter. This species is a Type 4 BLM Special Status Species meaning it is generally rare within Idaho.

LAND USE PLAN CONSISTENCY

S5 - Noxious Weeds ES Issue 5

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.

S13 - Monitoring ES Issue 5

See Monitoring Section

R2 - Ground Seeding BAR Issue 1

The 1987 Cascade RMP, Resource Management Guidelines, Wildlife Resources, states "Habitat to support viable populations of all native and exotic wildlife species present in the resource area will be maintained."

Suppression of wildfire in crucial wildlife habitats will have a high priority. Fire rehabilitation seedings in crucial wildlife habitats will be multispecies, incorporating species to restore wildlife habitat values (CRMP).

"Where applicable, "Mule Deer Habitat Guidelines" contained in Technical Note TIN 336 (USDI, BLM 1979) will be followed. These include: In range rehabilitation or manipulation projects, maintain a 60/40 ratio of forage area to cover area. Try to achieve a mosaic or mottled pattern of cover in prescribed burning and manipulation projects. Improve forage condition by establishing seedings or plantings of bitterbrush, four-wing saltbrush or other palatable shrub species on crucial mule deer winter range..." (CRMP).

Within the Cascade RMP rehabilitation of burned areas is a management emphasis for lands within the Boise Front ACEC.

R3 - Aerial Seeding BAR Issue 1

The 1987 Cascade RMP, Resource Management Guidelines, Wildlife Resources, states “Habitat to support viable populations of all native and exotic wildlife species present in the resource area will be maintained.”

Suppression of wildfire in crucial wildlife habitats will have a high priority. Fire rehabilitation seedings in crucial wildlife habitats will be multispecies, incorporating species to restore wildlife habitat values (CRMP).

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Within the Cascade RMP rehabilitation of burned areas is a management emphasis for lands within the Boise Front ACEC.

R4 - Seedling Planting BAR Issue 3

The 1987 Cascade RMP, Preferred Alternative E, Wildlife Resources, Objectives, cites “shrub plantings” as a way of improving wildlife habitat, and the RMP Resource Management Guidelines, Wildlife Resources, Mule Deer Habitat, acknowledges the use of bitterbrush plantings as a method for improving forage condition for mule deer.

R5 - Noxious Weeds BAR Issue 2

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.

R7 - Fence/Gate/Cattleguard BAR Issue 4

The repair of protective fencing, although not addressed in the 1987 Cascade RMP, is consistent with RMP Objectives and Actions.

COST SUMMARY TABLES

Emergency Stabilization (LF20000ES)

Action/ Spec #	ES Issue #	Planned Action	Unit (Acres, WMs, Number)	# Units	Unit Cost (If Appl.)	FY 2013	FY 2014	FY 2015	FY 2016	Totals by Spec.
S1		Planning (Project Management)	WM'S	9	\$5,000.00	\$0.00	\$15,000.00	\$15,000.00	\$15,000.00	\$45,000.00
S2										
S3										
S4										
S5	5	Noxious Weeds	Acres	778	\$10.28	\$0.00	\$8,000.00	\$0.00	\$0.00	\$8,000.00
S6										
S7										
S8										
S9										
S10										
S11										
S12										
S13	5	Monitoring	Acres	778	\$61.70	\$0.00	\$20,000.00	\$16,000.00	\$12,000.00	\$48,000.00
S14										
TOTAL COSTS (LF20000ES)						\$0	\$43,000	\$31,000	\$27,000	\$101,000
OTHER FUND CODE TOTALS:										
TOTAL COSTS (???)										
TOTAL COSTS (???)										
TOTAL COSTS (???)										

Burned Area Rehabilitation (LF32000BR)

Action/ Spec #	BAR Issue #	Planned Action	Unit (Acres, WMs, Number)	# Units	Unit Cost (If Appl.)	FY 2013	FY 2014	FY 2015	FY 2016	Totals by Spec.
R1										
R2	1	Ground Seeding	Acres	10	\$1,000.00	\$0.00	\$10,000.00	\$0.00	\$0.00	\$10,000.00
R3	1	Aerial Seeding	Acres	765	\$115.03	\$0.00	\$88,000.00	\$0.00	\$0.00	\$88,000.00
R4	3	Seedling Planting	#	150,000	\$1.24	\$0.00	\$93,000.00	\$93,000.00	\$0.00	\$186,000.00
R5	2	Noxious Weeds	Acres	778	\$21.85	\$0.00	\$0.00	\$9,000.00	\$8,000.00	\$17,000.00
R6										
R7	4	Fence/Gate/Cattleguard	Miles	3	\$8,000.00	\$0.00	\$24,000.00	\$0.00	\$0.00	\$24,000.00
R8										
R9										
R10										
R11										
R12										
R13										
R14										
TOTAL COSTS (LF32000BR)						\$0	\$215,000	\$102,000	\$8,000	\$325,000
OTHER FUND CODE TOTALS:										
TOTAL COSTS (???)										
TOTAL COSTS (???)										
TOTAL COSTS (???)										

PART 2 - POST-FIRE RECOVERY ISSUES

EMERGENCY STABILIZATION ISSUES

1 - Human Life and Safety

N/A

2 - Soil/Water Stabilization

N/A

3 - Habitat for Federal/State Listed, Proposed, or Candidate Species

N/A

4 - Critical Heritage Resources

N/A

5 - Invasive Plants and Weeds

Rush skeletonweed (*Chondrilla juncea*) is common throughout the area and is known to occur within the fire perimeter. While this is the only species known to occur within the burn, there is a high probability for infestation by new species due to the proximity of Hwy 21 and the high amount of recreation the area receives. The likelihood of noxious weeds increasing within the burned area is very high because of exposed soil. The control of noxious weeds will help to ensure the successful establishment of seeded species as well as increase the vigor of existing plants on site. Inventory, treatment, and monitoring of noxious weed infestations is imperative to creating a diverse mixture of plant species that will provide suitable conditions for big game and other special status species.

BURNED AREA RECOVERY ISSUES

1 - Lands Unlikely to Recover Naturally

Big Game:

The area burned by this fire is considered crucial mule deer and elk winter range and is within the Boise Front segment of the Idaho Fish and Game Boise River Wildlife Management Area (WMA). According to the Fish and Game over 7,000 mule deer and roughly 500 elk spend the winter months on the WMA. One mule deer population uses portions of the burned area year-round. Over the past 10 years, roughly 20% of the winter mule deer concentration area in which the fire perimeter falls has burned at least once.

The fire removed nearly 100% of the sagebrush shrub cover. The shrub component of the vegetation community is integral for these species. Re-establishing the shrub component of this vegetation community is critical for the long-term maintenance of big-game populations in the area.

Special Status Species:

Other Animals

While not within the fire perimeter, the long-toed salamander, *Ambystoma macrodactylum* and the western fence lizard, *Sceloporus occidentalis*, are found in the immediate surrounding area.

Plants

Simpson's hedgehog cactus, *Pediocactus simpsonii*, a BLM Special Status Plant is found within the perimeter of the fire. This species is ranked as Type 4 by BLM meaning it is rare in the state of Idaho, and S3 by the state meaning it is rare or uncommon but not imperiled. This population is the only one documented in Ada County.

2 - Weed Treatments

Rush skeletonweed (*Chondrilla juncea*) is common throughout the area and is known to occur within the fire perimeter. While this is the only species known to occur within the burn, there is a high probability for infestation by new species due to the proximity of Hwy 21 and the high amount of recreation the area receives. The likelihood of noxious weeds increasing within the burned area is very high because of exposed soil. The control of noxious weeds will help to ensure the successful establishment of seeded species as well as increase the vigor of existing plants on site. Inventory, treatment, and monitoring of noxious weed infestations is imperative to creating a diverse mixture of plant species that will provide suitable conditions for big game and other special status species.

3 - Tree Planting

Planting bitterbrush and sagebrush seedlings in strategic areas throughout the burned area would restore the shrub structure lost in the fire. Seedlings would be planted in early spring of FY14, FY15, and FY16. Seedlings would be placed throughout the fire in pockets where mature shrubs occurred prior to the fire. All of the burned area was critical mule deer winter range. Sagebrush and antelope bitterbrush recovery can take decades to return to a pre-burn level. Seedling planting would establish seed sources within the burned area which would assist in recovery of habitat for big-game.

4 - Repair/Replace Fire Damage to Minor Facilities

Approximately 3 miles of fence repair/reconstruction is needed. The fence is needed to properly manage livestock grazing in the affected allotment.

PART 3 - DESCRIPTION OF TREATMENTS

Issue 5 - Invasive Plants and Weeds

S5 Noxious Weeds

A. Treatment/Activity Description

Rush skeletonweed is known to occur within the fire perimeter, and Highway 21 is a likely corridor for invasion by other species. Inventories for noxious weeds will occur throughout the burned area, with emphasis being on corridors such as roads, trails, riparian areas, fences, range improvements, and other disturbed areas. Noxious weed infestations will be inventoried, GPSed, treated, monitored and retreated as necessary; infestations may also be treated with biological control agents if warranted. Treated infestations will be monitored over a three year period documenting treatment effectiveness and expansion. Noxious weeds populations still persisting within the burned fire perimeter after the three year period will be transitioned to the District Noxious weed program for future inventorying and treatments. All actions would be in accordance with the Boise District Noxious Weed EA, Environmental Assessment #ID100-2005-EA-265.

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

Noxious weeds are present in the area and are expected to expand due to the removal of existing plant cover as a result of the wildfire. The opportunistic nature of noxious weeds will allow them to take advantage of reduced competition from native plants. Inventory and treatment immediately after the wildfire event will aid in preventing expansion of existing and reducing new infestation of noxious weeds in the area. Control of noxious weeds is imperative to creating a diverse mixture of plant species that will provide suitable conditions for quality habitat for big-game and other wildlife species in the future.

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

If the affected area is not inventoried and treated it would be reasonable to expect that a portion of existing weeds would become permanent occupants on site, degrading the overall ecological health of the site. Weed treatments immediately after a wildfire that prevent existing populations from expanding and prevent spot infestations from becoming established is more cost effective than a later treatment of a larger infestation. If weed populations are left unchecked to expand and invade, any attempts at future treatments would be more costly and have a reduced chance for effectiveness. Furthermore, field work would be combined with other weed treatments in the area for cost efficiency.

S13 Monitoring

A. Treatment/Activity Description

See Monitoring Section

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

See Monitoring Section

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

See Monitoring Section

Issue 1 - Lands Unlikely to Recover Naturally

R2 Ground Seeding

A. Treatment/Activity Description

Approximately 10 acres along Highway 21 will be drill seeded with forage kochia. This is a critical area and it is expected that drill seeding will provide optimum seed to soil contact and result in the greatest chance of success. Due to the small acreage, this seeding will be performed with an ATV and small drill seeder. This small area is the only area where it would be practical to implement ground seeding due to the steep topography of the rest of the fire. A successful seeding here will help protect the investment that has been made from being damaged in future fire events.

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

The fire removed all vegetation within the fire perimeter. It was a very clean burn and nearly 100% of shrub vegetation was removed. Consequently it is imperative to re-establish a shrub community that will support big-game and return structure and function to the burned area.

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

Establishing a healthy stand of forage kochia would help rehabilitate crucial big-game winter range. Because the topography is more moderate here it is possible to conduct drill seeding which would provide the best seed to soil contact and thusly the best chance of success. Furthermore, a healthy stand of kochia would also help reduce the fire danger from State Highway 21 and protect the investment made to rehabilitate the rest of the fire. Implementation costs would be minimal because only an ATV would be used, and the drill would be borrowed from the Pocatello Field Office.

R3 Aerial Seeding

A. Treatment/Activity Description

All of the burned BLM land is identified to be aerial seeded with native and non-native shrub species. This treatment will occur in early FY14 as funding allows. Optimum timing for sagebrush and forage kochia seeding would be prior to the first snow fall in approximately early December, however if funding is not available to complete this treatment in this timeframe the seeding will occur as soon as possible but prior to March 1, 2014. Appropriate wildlife and cultural resource inventories/surveys will be complete prior to implementing these specific projects.

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

The fire intensity removed nearly 100% of the shrub cover and consumed all shrub skeletons. Because 100% of sagebrush cover was consumed, natural regeneration is not possible as sagebrush seed does not persist in the soil. The presence of unburned sagebrush islands as a seed source for natural regeneration does not exist. The area is left with little to no above ground structural component. This treatment will aid in the re-establishment of the pre-fire shrub community that matches the structural component and species composition that existed before the wildfire event. Accelerating the rate of re-establishment of native shrubs is important in maintaining the value of the area as mule deer and elk crucial winter range.

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

The treatment and activities are reasonable for the type of issues identified for this site. Estimated aerial application contracting cost and seed purchase are typical for the Boise District Office area. Seed cost varies from year to year and this expense is far less than the value of degraded big-game winter range. Left untreated this area would have low probability of returning to a shrub dominated community in a reasonable time frame which would leave the area vulnerable to infestation by noxious and other undesirable weed species.

Issue 2 - Weed Treatments

R5 Noxious Weeds

A. Treatment/Activity Description

Rush skeletonweed is known to occur within the fire perimeter, and Highway 21 is a likely corridor for invasion by other species. Inventories for noxious weeds will occur throughout the burned area, with emphasis being on corridors such as roads, trails, riparian areas, fences, range improvements, and other disturbed areas. Noxious weed infestations will be inventoried, GPSed, treated, monitored and retreated as necessary; infestations may also be treated with biological control agents if warranted. Treated infestations will be monitored over a three year period documenting treatment effectiveness and expansion. Noxious weeds populations still persisting within the burned fire perimeter after the three year period will be transitioned to the District Noxious weed program for future inventorying and treatments. All actions would be in accordance with the Boise District Noxious Weed EA, Environmental Assessment #ID100-2005-EA-265.

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

Noxious weeds are present in the area and are expected to expand due to the removal of existing plant cover as a result of the wildfire. The opportunistic nature of noxious weeds will allow them to take advantage of reduced competition from native plants. Inventory and treatment immediately after the wildfire event will aid in preventing expansion of existing and reducing new infestation of noxious weeds in the area. Control of noxious weeds is imperative to creating a diverse mixture of plant species that will provide suitable conditions

for quality habitat for big-game and other wildlife species in the future.

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

If the affected area is not inventoried and treated it would be reasonable to expect that a portion of existing weeds would become permanent occupants on site, degrading the overall ecological health of the site. Weed treatments immediately after a wildfire that prevent existing populations from expanding and prevent spot infestations from becoming established is more cost effective than a later treatment of a larger infestation. If weed populations are left unchecked to expand and invade, any attempts at future treatments would be more costly and have a reduced chance for effectiveness. Furthermore, field work would be combined with other weed treatments in the area for cost efficiency.

Issue 3 - Tree Planting

R4 Seedling Planting

A. Treatment/Activity Description

50,000 seedlings (40K bitterbrush, 10K sagebrush) a year for three years will be planted in strategic locations in the burned area to provide multiple age classes of shrubs in the burned area. The locations for the antelope bitterbrush and Wyoming big sagebrush seedlings will provide connectivity of habitat between the widely distributed unburned islands inside the fire perimeter and to habitat outside the fire perimeter. The planting sites will be located in draws where bitterbrush grew naturally pre-fire to provide optimum potential for growth and success. The seedlings will be 1 year old, bare-root seedlings. Planting will occur in the spring of FY14-FY16. Planting would be done by hand using sharpshooter shovels, hoe dads, augers, or planting bars.

In cooperation with BLM efforts, Idaho Fish and Game will also be planting approximately 20,000 antelope bitterbrush seedlings with the help of volunteer groups. The use of volunteers provides community identity and fosters a positive relationship with the local communities. There will be no cost to the BLM using this workforce and exemplifies the principles of cooperation and coordination.

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

The fire burned crucial mule deer winter range and crucial elk winter range. Bitterbrush is the key component for big game winter range and subsequent to the fire, animals would need to travel greater distances to find browse. This will increase the potential for collisions with big game on State Highway 21, as animals that typically use the burned area travel to unburned habitat. Planting seedlings will jump start the recovery process for shrubs, and provide multiple age classes. Both species of shrub proposed for seedling planting are needed for crucial big-game habitat.

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

The entire burned area was classified as crucial winter range for both elk and mule-deer. Antelope bitterbrush is the key component of big-game winter range and nearly 100% of it was removed by the fire. Seedling plantings have been shown to be a cost effective and successful way to re-establish antelope bitterbrush post-fire. Past seedling plantings have been successful in similar soils with similar precipitation (i.e. Sand Hollow ESR).

Issue 4 - Repair/Replace Fire Damage to Minor Facilities

R7 Fence/Gate/Cattleguard

A. Treatment/Activity Description

Approximately 3 miles of interior livestock management fences were damaged to the point of needing either repair or replacement in the fire. Fire damaged wood corners and braces will be replaced with steel posts and structures that will provide long term protection against any future wildfire event. Damaged wire will be repaired or replaced. If large portions of fence need to be replaced they will be re-built to BLM standards for wildlife (mule-deer). Portions of fence that are only being repaired will be repaired meet BLM standards for wildlife (mule-deer) only when practical and with no additional cost.

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

The fire burned wood components of interior livestock management and allotment division fencing in Boise Front allotment. Additionally, some stretches of fence where the fire burned with higher intensity altered the tensile strength of the wire, resulting in brittle wires that need to be replaced. These fences would need to be repaired prior to livestock turnout for proper livestock management.

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

The wildfire damaged fences associated with livestock management in the affected allotment. Reconstruction and repair of management fences damaged by the fire would maintain the future integrity of the existing livestock grazing system and augment vegetation recovery. Utilizing existing fences and gates is cost effective and allows for proper grazing management of burned and unburned portions of affected allotments. Damaged wood stretch points and corners would be replaced with steel pipe thus increasing the longevity of the structures and resistance to future wildfire damage.

PART 4 - DETAILED TREATMENT COST TABLE

Action / Spec #	Action Description	Unit Type	# Units	Unit Cost	FY13	FY14	FY15	FY16	Total Cost
S1	Planning (Project Management)								
1	PROJ MGMT	WMS	45	\$1,000.00	\$0.00	\$15,000.00	\$15,000.00	\$15,000.00	\$45,000.00
	Total			\$1,000.00	\$0.00	\$15,000.00	\$15,000.00	\$15,000.00	\$45,000.00
S5	Noxious Weeds ES Issue 5								
1	NOXIOUS WEEDS	Acres	8	\$1,000.00	\$0.00	\$8,000.00	\$0.00	\$0.00	\$8,000.00
	Total			\$1,000.00	\$0.00	\$8,000.00	\$0.00	\$0.00	\$8,000.00
S13	Monitoring ES Issue 5								
1	MONITORING	Total	48	\$1,000.00	\$0.00	\$20,000.00	\$16,000.00	\$12,000.00	\$48,000.00
	Total			\$1,000.00	\$0.00	\$20,000.00	\$16,000.00	\$12,000.00	\$48,000.00
ES	Grand Total			\$3,000.00	\$0.00	\$43,000.00	\$31,000.00	\$27,000.00	\$101,000.00
Action / Spec #	Action Description	Unit Type	# Units	Unit Cost	FY13	FY14	FY15	FY16	Total Cost
R2	Ground Seeding BAR Issue 1								
1	GROUND SEEDING	Total	10	\$1,000.00	\$0.00	\$10,000.00	\$0.00	\$0.00	\$10,000.00
	Total			\$1,000.00	\$0.00	\$10,000.00	\$0.00	\$0.00	\$10,000.00
R3	Aerial Seeding BAR Issue 1								
1	AERIAL SEEDING	Total	88	\$1,000.00	\$0.00	\$88,000.00	\$0.00	\$0.00	\$88,000.00
	Total			\$1,000.00	\$0.00	\$88,000.00	\$0.00	\$0.00	\$88,000.00
R4	Seedling Planting BAR Issue 3								
1	SEEDLING PLANTING	Total	186	\$1,000.00	\$0.00	\$93,000.00	\$93,000.00	\$0.00	\$186,000.00
	Total			\$1,000.00	\$0.00	\$93,000.00	\$93,000.00	\$0.00	\$186,000.00
R5	Noxious Weeds BAR Issue 2								
1	NOXIOUS WEEDS	Total	17	\$1,000.00	\$0.00	\$0.00	\$9,000.00	\$8,000.00	\$17,000.00
	Total			\$1,000.00	\$0.00	\$0.00	\$9,000.00	\$8,000.00	\$17,000.00
R7	Fence/Gate/Cattleguard BAR Issue 4								
1	FENCING	Total	24	\$1,000.00	\$0.00	\$24,000.00	\$0.00	\$0.00	\$24,000.00
	Total			\$1,000.00	\$0.00	\$24,000.00	\$0.00	\$0.00	\$24,000.00
BAR	Grand Total			\$5,000.00	\$0.00	\$215,000.00	\$102,000.00	\$8,000.00	\$325,000.00
Project	Grand Total			\$8,000.00	\$0.00	\$258,000.00	\$133,000.00	\$35,000.00	\$426,000.00

PART 5 - SEED LISTS

DRILL SEED

Ground Mix 1

Species	Scientific Name	% PLS	PLS Seeds / sq. ft.	PLS Seeds / ac.	Seeds / lb (bulk)	Total Seeds / Acre (Bulk)	Drill Seedings (Acre)	Lbs / Acre	Total Lbs.	Cost / Lb	Total Cost
Forage Kochia, Immigrant	Bassia Prostrata	54.0%	49.82	2,170,159	502,400	4,018,813	10.0	4.3	43.2	\$ 29.55	\$2,364.00
TOTALS:			49.82	2,170,159	502,400	4,018,813		4.3		\$ 29.55	\$2,364.00

AERIAL SEED

Aerial Mix 1

Species	Scientific Name	% PLS	PLS Seeds / sq. ft.	PLS Seeds / ac.	Seeds / lb (bulk)	Total Seeds / Acre (Bulk)	Aerial Seedings (Acre)	Lbs / Acre	Total Lbs.	Cost / Lb	Total Cost
Wyoming Big Sagebrush, Wyoming	Artemisia tridentata wyomingensis	16.0%	11.48	500,069	2,500,000	3,125,430	765.0	0.2	153.0	\$ 24.00	\$22,950.00
Forage Kochia, Immigrant	Bassia Prostrata	54.0%	8.07	351,529	502,400	650,980	765.0	0.7	535.5	\$ 32.00	\$31,824.00
TOTALS:			19.55	851,598	3,002,400	3,776,410		0.9		\$ 56.00	\$54,774.00

SEEDLINGS

Seedling Species	Scientific Name	Acres of Seedlings planted.	# of Seedlings per Acre	Total # of Seedlings	Cost / Seedling	Total Cost
Antelope Bitterbrush	Purshia tridentata	778.0	52	40,456	\$ 0.85	\$34,387.60

Wyoming Big Sagebrush, Wyoming	Artemisia tridentata wyomingensis	778.0	13	10,114	\$ 0.85	\$8,596.90
TOTALS:		1,556.0	65	50,570		\$42,984.50

PART 6 - NATIVE/NON-NATIVE PLANT WORKSHEET

A. Proposed Native Plants in Seed Mixtures (Both ES & BAR Treatments)

1. Are the native plants proposed for seeding adapted to the ecological sites in the burned area?

Yes No Rationale:

The proposed natives in the seed mix are adapted to the area and the precipitation zone and will have a high chance of success to establish in the area. Similar seedings and seedling plantings have proven successful from past ESR treatments in the Four Rivers Field Office and are documented in monitoring reports: Frenchie 2007, Sand Hollow 2009.

2. Is seed or seedlings of native plants available in sufficient quantity for the proposed project?

Yes No Rationale:

The native seed proposed for the estimated 765 acres in the treatment area is generally available in the required quantities. Aerial seeding would not occur until the winter of FY14 which should allow seed quantities to be more available.

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 No Rationale:

The current market rate for seed is reasonable compared to the benefit to the habitat. Seed purchased by the BLM is tested and insured to be of high quality and free of noxious weeds. The native seed proposed for use has been increasingly utilized in recent years for stabilization, rehabilitation and restoration. The demand has resulted in increased production and decreased price.

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 No Rationale:

The native taxa proposed for seeding have exhibited the ability to establish and persist in similar ecological sites within the Four Rivers Field Office, and we have had success in establishing these species in surrounding areas with similar soil types, precipitation zones, and invasive competition (see citations for monitoring reports above).

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 No Rationale:

Currently the only livestock use of the area is during trailing. Disturbance from livestock trailing is expected to be minimal and of short duration. During trailing livestock will be managed to avoid seedling plantings.

B. Proposed Non-native Plants in Seed Mixtures (Both ES & BAR Treatments)

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

Yes No Rationale:

Proposed non-native plants will help to out compete invasive annual grasses and enhance the food source for deer and elk over the short-term until native grass, forb, and shrub species have time to mature. Because this area is heavily used by both deer and elk in critical winter months the use of forage kochia will enhance available forage for these species over the first several years post-fire recovery. The use of forage kochia will also help reduce the fire risk thus protecting the investment from repeated damage by wildfire.

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 No Rationale:

The proposed non-native species will not out-compete existing or seeded natives in the area. They will be seeded at rates that will allow them to be a component of the vegetation community but not dominant. Also, the species proposed will be preferred by wildlife and livestock over the natives allowing the natives to establish and flourish on site.

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

Yes No Rationale:

Proposed species are not competitive and do not have the ability to interbreed with local and seeded natives.

C. Proposed Seed Species - Native & Non-Natives (Both ES & BAR Treatments)

Non-native Plants	Native Plants
Forage Kochia, Immigrant (<i>Bassia Prostrata</i>)	Antelope Bitterbrush (<i>Purshia tridentata</i>)
	Wyoming Big Sagebrush, Wyoming (<i>Artemisia tridentata wyomingensis</i>)

PART 7 - COST-RISK ANALYSIS

A. Probability of Treatments Successfully Meeting Objectives

Action/Spec #	ES Issue #	Planned ES Action (LF20000ES)	Unit (acres, WMs, Number)	# Units	Total Cost	% Probability of Success
S5	5	Noxious Weeds	Acres	778	\$8,000.00	95%
S13	5	Monitoring	Acres	778	\$48,000.00	100%
					\$56,000.00	
Action/Spec #	BAR Issue #	Planned BAR Action (LF32000BR)	Unit (acres, WMs, Number)	# Units	Total Cost	% Probability of Success
R2	1	Ground Seeding	Acres	10	\$10,000.00	80%
R3	1	Aerial Seeding	Acres	765	\$88,000.00	80%
R4	3	Seedling Planting	#	150000	\$186,000.00	80%
R5	2	Noxious Weeds	Acres	778	\$17,000.00	95%
R7	4	Fence/Gate/Cattleguard	Miles	3	\$24,000.00	100%
					\$325,000.00	

B. 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 for Answer:

The seeding of perennial shrubs will help aid in the establishment and recruitment of future shrub cover, and will have a positive effect on forbs and grasses in the area. The noxious weed treatments will help prevent expansion of existing weed populations and prevent new invasions. The fence repair will allow for proper grazing management.

No Action Yes No Rationale for Answer:

No action would result in a lack of shrub cover and the area becoming unsuitable for big-game winter range, as well as an increase of invasive annual grass. Known and introduced noxious weed species will quickly expand and dominate parts of the burned area. Wildlife habitat on adjacent unburned land would be compromised and left at risk of the expansion of invasive annuals and noxious weeds.

Alternative(s) Yes No Rationale for Answer:

no other alternatives were evaluated

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

Proposed Action Yes No Rationale for Answer:

Suitable sites aerially seeded with sagebrush on average exhibit a 70% success rate across the Boise District, particularly in areas receiving 10 or more inches of average annual precipitation (e.g., South Slope Granitic 12-16, Churning Clay 8-16 ecological sites). Success is defined as meeting ESR Plan objectives for seedling survivorship; typically an average of 1 (or >1) seedling per 10m² after third year in suitable locations across seeding area.

Antelope bitterbrush seedling planting has been shown to be very effective in the Four Rivers Field Office in areas receiving 10+ inches of annual precipitation. ESR seedling planting treatments (Sand Hollow ESR) on similar ecological sites (South Slope Granitic 12-16) have been effective and met objectives: >45% seedling survival.

Weed control efforts in this area and for similar noxious weed species and in similar soils and precipitation has proven to be successful. The objective is to contain known infestations from mass spread and to detect new invaders. Known sites are already identified which will aid in the successful monitoring of spread and treatment. There is a high likely hood for early detection and rapid response for new noxious weed invasion.

No Action Yes No Rationale for Answer:

There would be no costs associated with no action, but no benefits would be realized. It is likely that the area would not recover and crucial big-game winter range would be permanently lost or rehabilitation treatments would become cost prohibitive in the future due to site degradation. The burned area has a high potential for expansion of noxious weeds. There is high potential for adjacent unburned areas (federal, state, and private) becoming dominated by noxious weeds.

Alternative(s) Yes No Rationale for Answer:

no other alternatives were evaluated

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

Proposed Action

Alternative(s)

No Action

Comments:

Already described in proposed action and in each individual treatment for cost effectiveness and recommendations.

C. Risk of Resource Value Loss or Damage

No Action - Treatments not Implemented

Resource Value	N/A	None	Low	Med	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 Access Road Due to Plugged Culverts			X		

Proposed Action - Treatments Successfully Implemented

Resource Value	N/A	None	Low	Med	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 Access Road Due to Plugged Culverts		X			

PART 8 - MONITORING PLAN

S5 - Noxious Weeds - ES Issue 5

Identify the objective of the treatment:

Two species of noxious weeds have been identified and recorded within the burned area and four more are found within a five mile radius. It is expected that these weeds will expand their range as a result of the fire. Since these weed species are not uniformly distributed across the burn area, a quantifiable objective cannot be determined.

The objective for the first growing season is to conduct an inventory of the burned area. Noxious weeds detected during the inventory would be treated when possible. Any expansion of known populations of noxious weeds would be treated to contain their spread. The objective for the second and third years is to decrease the size and abundance of noxious weed infestations within the burned area as compared to the first year.

Describe how implementation will be monitored:

Inventory and treatment data will be recorded in the NISIMS database, in Pesticide Application Records, and using GPS/GIS. This data will include information on species, location and size of infestation, chemicals applied, amount of chemicals applied, weather, phenology, etc.

Describe how effectiveness will be monitored, how it will be measured, and within what time period:

Size and abundance of noxious weed infestations as well as any needed treatments would be compared between years one, two, and three to determine treatment effectiveness. If noxious weed populations remain in the burned area beyond the third year, responsibility would be transferred to the Boise District Noxious Weed Program for ongoing inventory, treatment and monitoring using funding sources other than ESR.

S13 - Monitoring - ES Issue 5

Identify the objective of the treatment:

See each individual treatment for objectives

Describe how implementation will be monitored:

See each individual treatment for objectives

Describe how effectiveness will be monitored, how it will be measured, and within what time period:

See each individual treatment for objectives

R2 - Ground Seeding - BAR Issue 1

Identify the objective of the treatment:

The objective is to establish forage kochia into the burned area in order to provide a food source for big-game and return shrub structure to the area. This will establish an environment conducive to the preservation and maintenance of crucial big-game winter range. The ground seeding would be considered successful when 3 plants/m² are established and rooted firmly in the ground.

Describe how implementation will be monitored:

Implementation monitoring includes ensuring that the seed is planted at the proper time, in the correct area and using the correct methods.

Describe how effectiveness will be monitored, how it will be measured, and within what time period:

Vegetation recovery will be monitored by District ESR monitoring staff annually for three consecutive years following fire containment.

- a. Monitoring methods include photo plots, density measurements, and qualitative site assessments.
- b. Data collection will occur between April and July of each year.
- c. An ESR Monitoring Report which includes results, conclusions, and recommendations will be submitted by September of each year for three years, to the Washington Office; the final report will be submitted on the third year after fire containment.

R3 - Aerial Seeding - BAR Issue 1

Identify the objective of the treatment:

The goal of the treatment is to promote recovery of ecosystem health, restore sagebrush structure and function, reduce the expansion of invasive grasses and noxious weeds, and prevent erosion in susceptible areas from high fire severity.

The aerial seeding treatment would be considered successful when the following objectives are met:

- a. Aerially seeded species attain a density of 1 per 10m² in suitable areas.
- b. Seeded species are found to be common in qualitative surveys (site assessments).

Describe how implementation will be monitored:

Aerial seeding treatment implementation will be monitored during contract administration to ensure contract specifications are met. A Contract Officer Representative (COR) will be at the landing site with the contractor, and a Project Inspector (PI) will be on-site to measure seed distribution. Any changes from the planned implementation would be noted in the project file “as built” discussion.

Describe how effectiveness will be monitored, how it will be measured, and within what time period:

The site will be monitored by District ESR staff annually for three consecutive years following fire containment. An evaluation of monitoring data and qualitative assessments by ESR monitoring staff and Field Office staff will be completed annually.

- a. Aerially seeded shrub density will be collected utilizing a 10 m² plot (1.73 meter radius circle) in areas considered suitable for shrub establishment.
- b. Photo plots and qualitative site assessments will also be conducted to inform seeding success.
- c. Data collection will occur between April and July of each year.
- d. An ESR Monitoring Report which includes results, conclusions, and recommendations will be submitted by September of each year for three years; the final report will be submitted the third year after fire containment.

R4 - Seedling Planting - BAR Issue 3

Identify the objective of the treatment:

The objective is to establish antelope bitterbrush and big sagebrush in suitable planting sites. Seedling establishment would be considered successful when 40% of the planted seedlings persist into the third year following the fire.

Describe how implementation will be monitored:

Seedlings are to be planted under contract. Monitoring plots will be established during the planting to identify plants for spring effectiveness monitoring and for contract compliance. A 16.6 foot radius monitoring site will be established and the number of plants will be counted, pin-flagged, and diagramed for future data collection on survival and for contract inspection and quality control.

Describe how effectiveness will be monitored, how it will be measured, and within what time period:

Effectiveness will be monitored in April-June each spring. The monitoring plots that were established during contract implementation will be revisited and data will be collected on survival rate, browse, and competition.

R5 - Noxious Weeds - BAR Issue 2

Identify the objective of the treatment:

Two species of noxious weeds have been identified and recorded within the burned area and four more are found within a five mile radius. It is expected that these weeds will expand their range as a result of the fire. Since these weed species are not uniformly distributed across the burn area, a quantifiable objective cannot be determined.

The objective for the first growing season is to conduct an inventory of the burned area. Noxious weeds detected during the inventory would be treated when possible. Any expansion of known populations of noxious weeds would be treated to contain their spread. The objective for the second and third years is to decrease the size and abundance of noxious weed infestations within the burned area as compared to the first year.

Describe how implementation will be monitored:

Inventory and treatment data will be recorded in the NISIMS database, in Pesticide Application Records, and using GPS/GIS. This data will include information on species, location and size of infestation, chemicals applied, amount of chemicals applied, weather, phenology, etc.

Describe how effectiveness will be monitored, how it will be measured, and within what time period:

Size and abundance of noxious weed infestations as well as any needed treatments would be compared between years one, two, and three to determine treatment effectiveness. If noxious weed populations remain in the burned area beyond the third year, responsibility would be transferred to the Boise District Noxious Weed Program for ongoing inventory, treatment and monitoring using funding sources other than ESR.

R7 - Fence/Gate/Cattleguard - BAR Issue 4

Identify the objective of the treatment:

The objective of this treatment is to: repair approximately 3 miles of existing boundary livestock management fence for treatment protection. This will help to prevent livestock grazing and big game from having highway access. Fence construction/reconstruction would also maintain grazing integrity on affected allotments. The fences would be constructed to BLM fence standards.

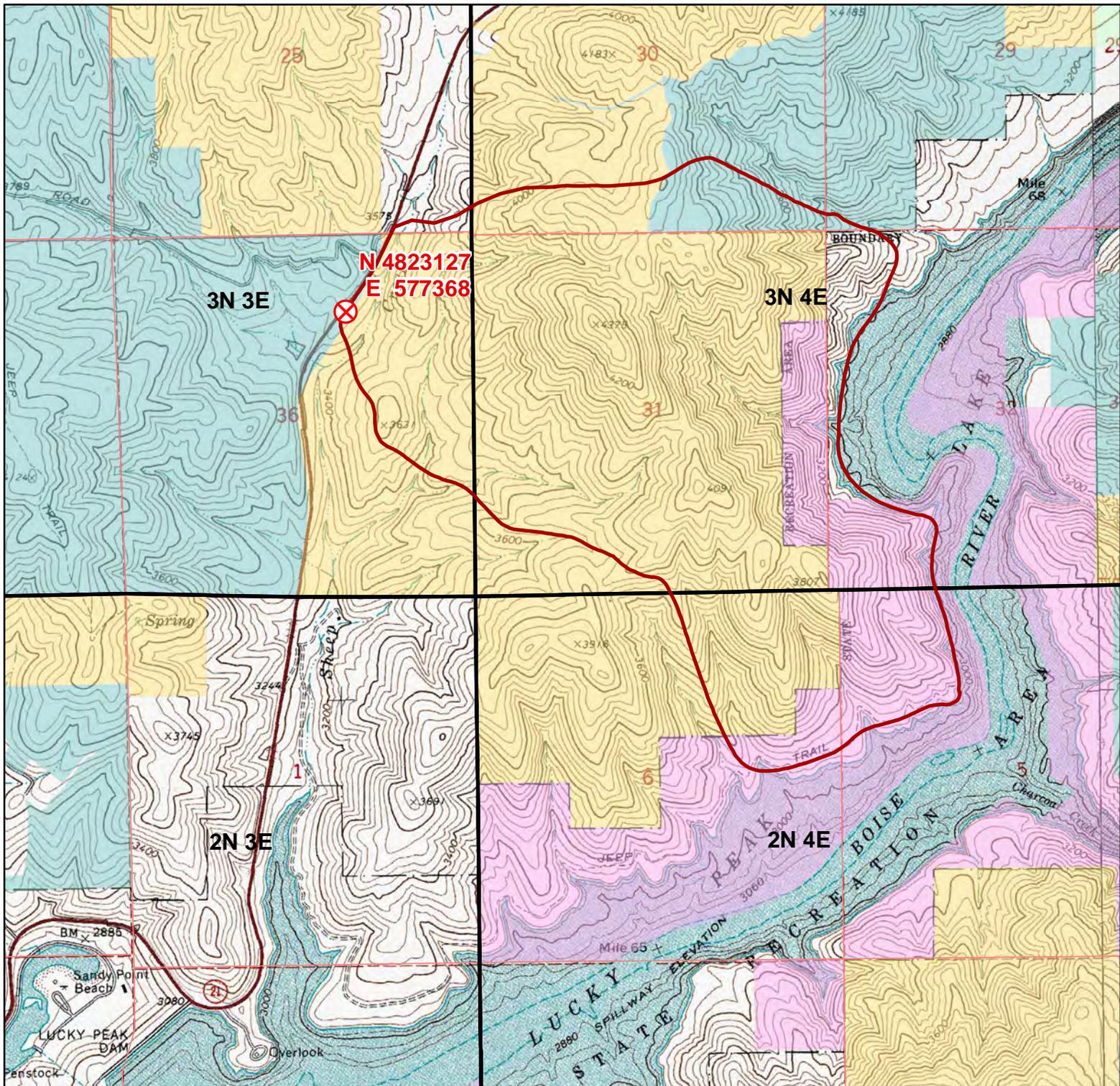
Describe how implementation will be monitored:

Implementation is monitored through contract administration. Any changes from the planned implementation would be noted in the project file "as built" discussion.

Describe how effectiveness will be monitored, how it will be measured, and within what time period:

Repair and replacement of damaged fences and the construction of temporary protection fence will be monitored through contract administration. Repairs and completion will be documented in a project file “as built” and filed in the project file. Construction of temporary protection fence will be completed within the first year of the fire. Repairs not needed for protection will be completed within the second or third year of the fire.

PART 9 - MAPS



Fire Origin:
T03N R03E, Sec 36

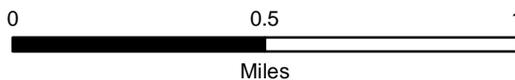
Total acres: 1,063
BLM 778 acres
Private 50 acres
Army COE/Military 190 acres
State F&G 46 acres

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.

Map projection: UTM 11, NAD 1983, meters

Boise District 2013 Four Rivers Field Office Fire: HT65 Hilltop

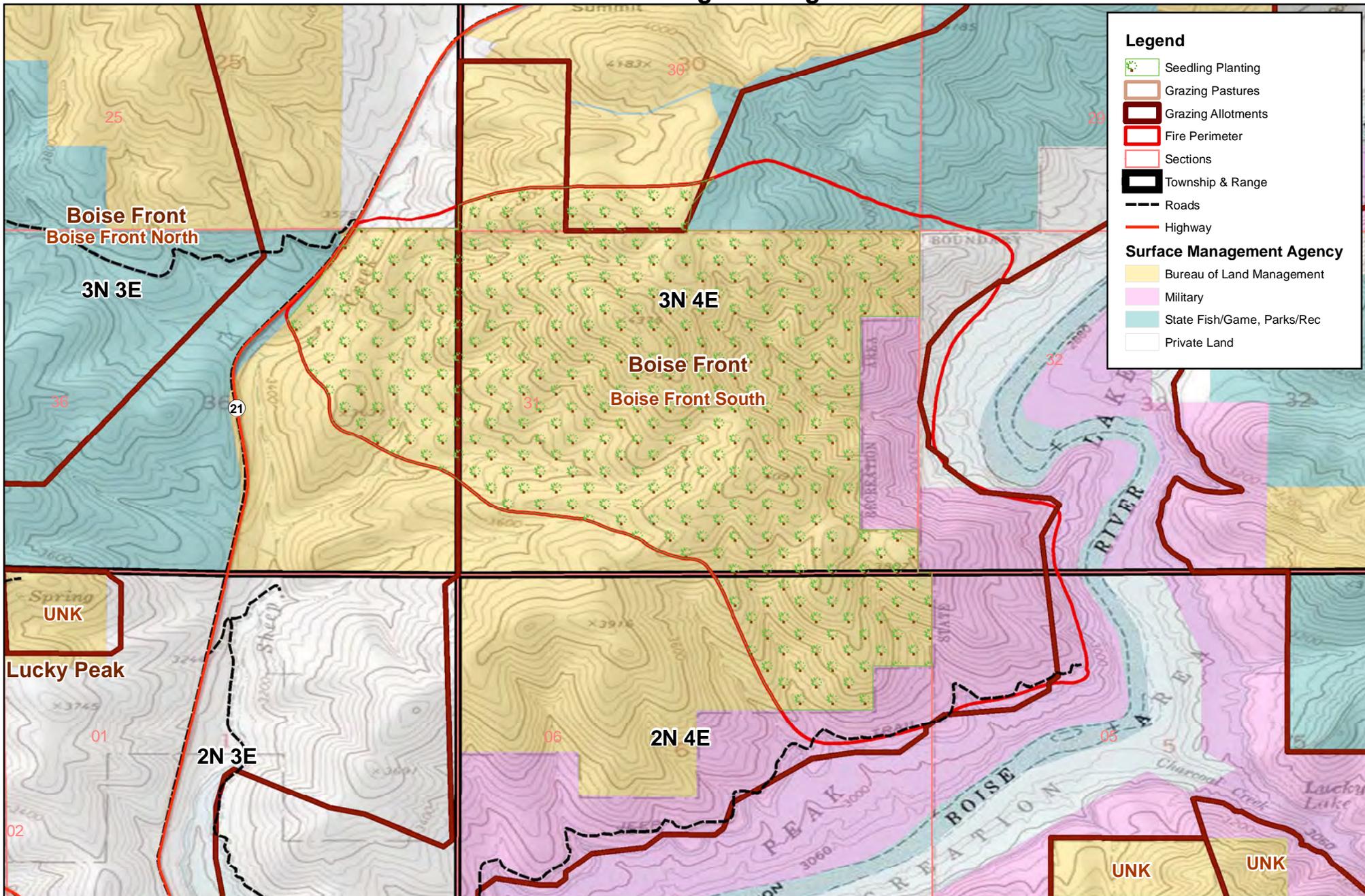


	Fire Origin
	Fire Perimeter
	BLM
	FS
	COE/Military
	State F/G, Parks/Rec
	Private
	Township
	Section

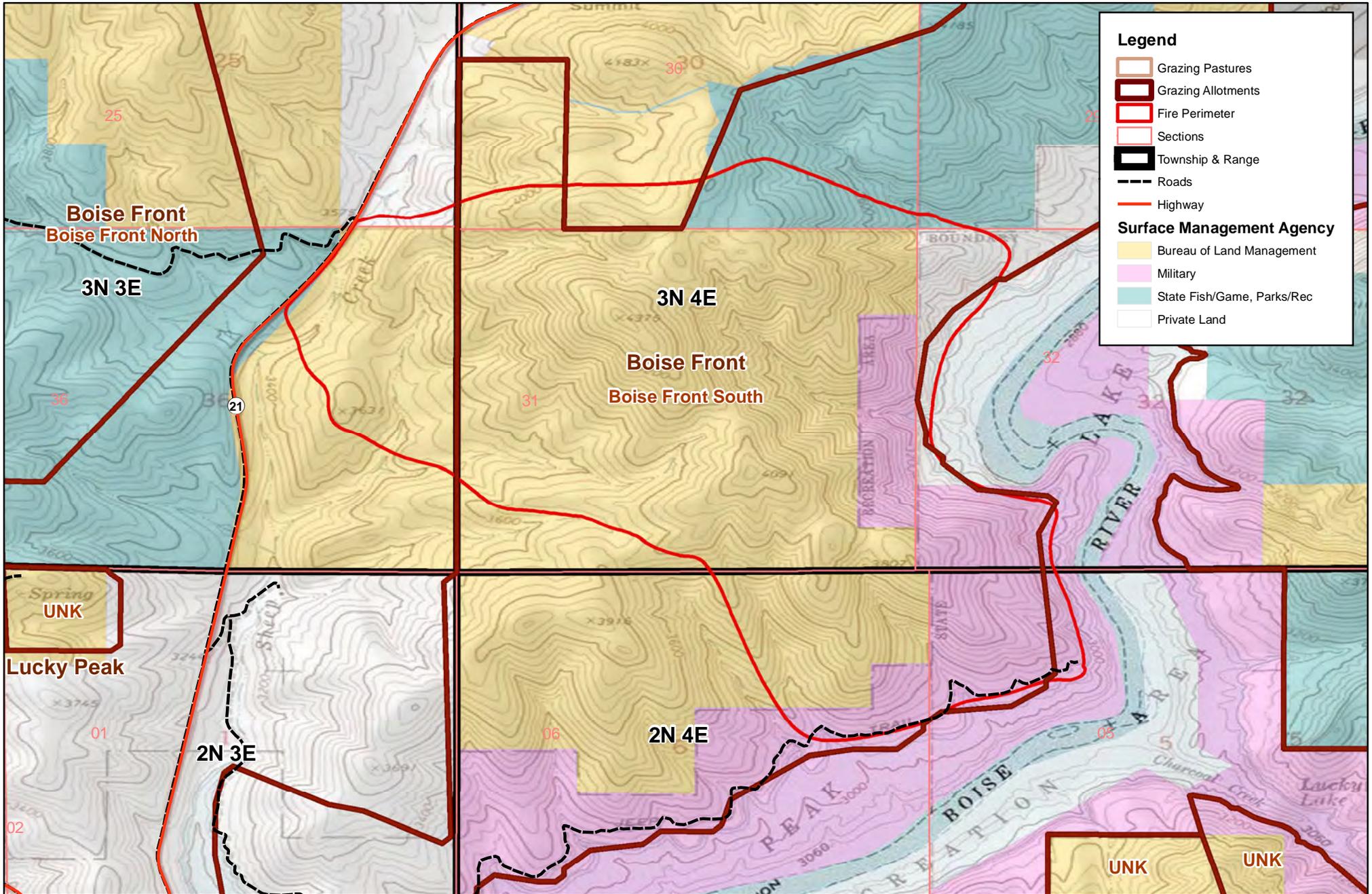
Map Date: August 13, 2013

Miles

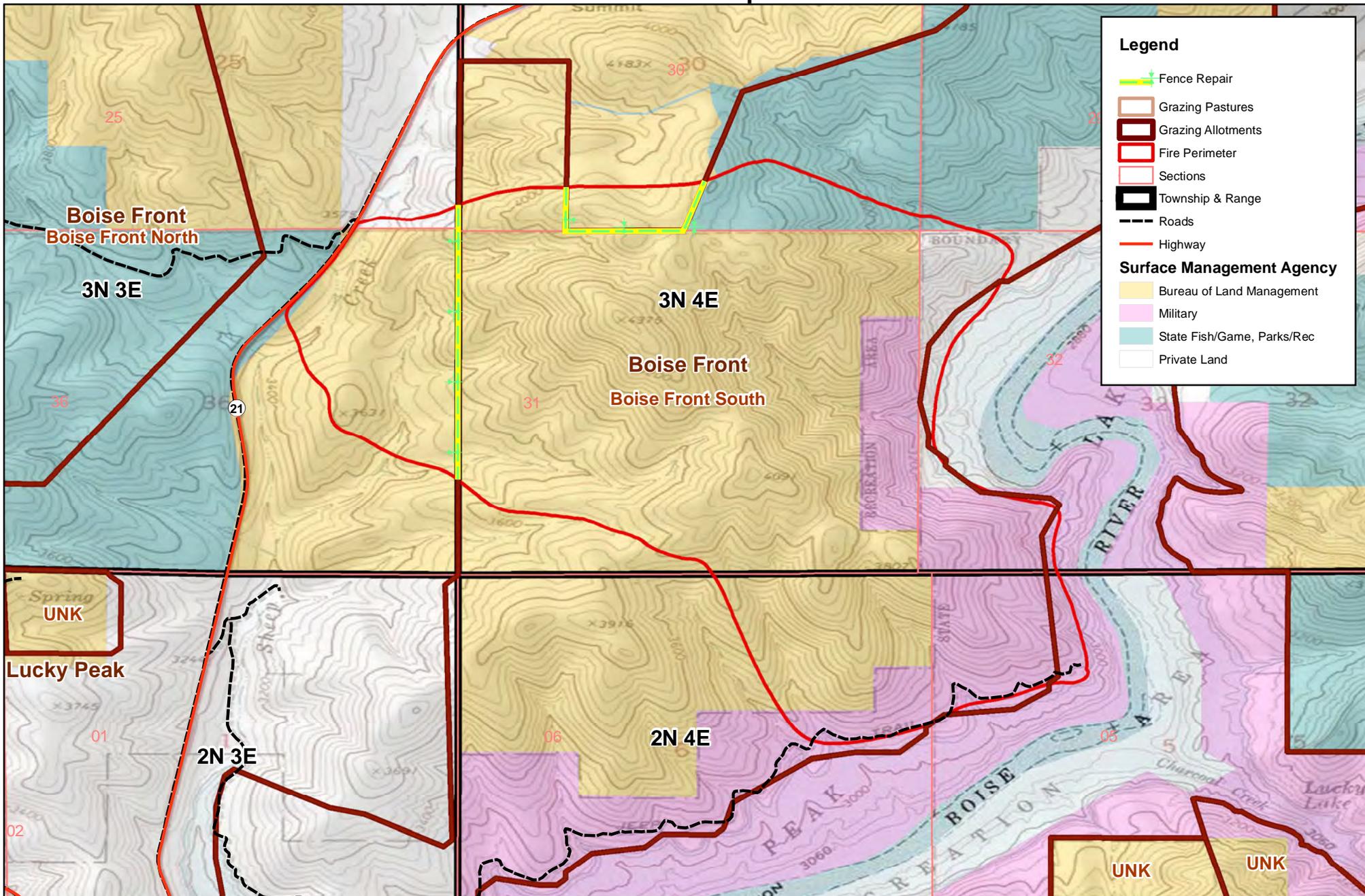
Boise District BLM HT65 Hilltop Fire ES&R R4 Seedling Planting



Boise District BLM HT65 Hilltop Fire ES&R Allotments and Pastures



Boise District BLM HT65 Hilltop Fire ES&R R7 Fence Repair



Legend

- Fence Repair
- Grazing Pastures
- Grazing Allotments
- Fire Perimeter
- Sections
- Township & Range
- Roads
- Highway

Surface Management Agency

- Bureau of Land Management
- Military
- State Fish/Game, Parks/Rec
- Private Land

PART 10 - REVIEW, APPROVALS, and PREPARERS

TEAM MEMBERS

Position	Team Member (Agency/Office)	Initial	Date
Team Leader	Robert Bennett (BLM Boise District)	Initialed	08/21/2013
Operations	Cindy Fritz (BLM Boise District)	Initialed	08/21/2013
GIS Specialist	Alex Webb (BLM Boise District)	Initialed	08/21/2013
Wildlife Biologist	Joey Weldon (BLM Boise District)	Initialed	08/21/2013

PLAN APPROVAL

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

/s/ Terry A. Humphrey

08/21/2013

FIELD OFFICE MANAGER

DATE

FUNDING APPROVAL

The funding of ES treatments is approved through the appropriate administrative approval level in coordination with the National Office Budget Shop. As funding is available, ES funding requested within a plan that totals below \$100,000 may be approved by the State Director, while ES funding of \$100,000 and above must be approved by the WO. If the ES funding cap is reached, all ES funding will be approved through the National Office in coordination with State ES&R Coordinators to determine highest priority projects. Funding of all BAR treatments is accomplished through a scoring process and is dependent on accurate entries into NFPORS. All funding is approved and allocated on a year-by-year basis.