USDA-FOREST SERVICE FS-2500-8 (6/06)

Date of Report: August 24, 2007

BURNED-AREA REPORT
(Reference FSH 2509.13)

PART I - TYPE OF REQUEST

A. Type of Report

[**X**] 1. Funding request for estimated emergency stabilization funds
[ ] 2. Accomplishment Report
[ ] 3. No Treatment Recommendation

B. Type of Action

[**X**] 1. Initial Request (Best estimate of funds needed to complete eligible stabilization measures)

[ ] 2. Interim Report #____
[ ] Updating the initial funding request based on more accurate site data or design analysis
[ ] Status of accomplishments to date

[ ] 3. Final Report (Following completion of work)

PART II - BURNED-AREA DESCRIPTION

A. Fire Name: Lost and Wilbur (part of Powder River Complex) B. Fire **Number:** MT-CNF-098 – Wilbur Fire
MT-CNF-100 – Lost Fire

C. State: Montana D. County: Powder River

E. Region: Northern F. Forest: Custer

G. District: Ashland H. Fire Incident Job Code: PDDV7W

I. Date Fire Started: August 12, 2007 J. Date Fire Contained: August 20, 2007

K. Suppression Cost: $2.3 million (for complex)

L. Fire Suppression Damages Repaired with Suppression Funds
1. Fireline rehabilitated* (miles): 34.1 miles – completed
*No rehabilitation is anticipated on existing two track roads that were used as firelines other than blading and where necessary.
2. Fireline seeded (miles): 14.4 miles – in progress
3. Other (identify): na

M. Watershed Number: 100901020203 (Horse Creek), 100901020204 (Indian Creek), 100901020104 (Cub/Tooley Creek)

N. Total Acres Burned: 12,142
NFS Acres(12,142) Other Federal (0) State (0) Private (0)

O. Vegetation Types: Mixed grass/shrubland (60% of fire area) and ponderosa pine (40%)

P. Dominant Soils: Dominant parent materials are slope alluvium and colluvium over residuum derived from softly consolidated interbedded silt, clay, and sandy shales. Dominant subgroups include Ustic Torriorthents, Ustic Haplargids, Lithic Haploborolls, Typic Argiborolls, Typic Haploborolls, and Typic Ustorthents. Depths are mostly shallow to moderately deep. Particle size class are mostly fine loamy to loamy. Mineralogy classes are mixed. The dominant temperature regime is frigid.

Q. Geologic Types: Interbedded silt, clay, and sandy shales.

R. Miles of Stream Channels by Order or Class: 16 (intermittent/interrupted flow), 20 (ephemeral flow)

S. Transportation System

Trails: 0 miles Roads: 19.7 miles

PART III - WATERSHED CONDITION

A. Burn Intensity[1] (acres): 8,256 (low/unburned) 2,428 (moderate) 1,457 (high)

B. Water-Repellent Soil (acres): undetermined but considered low
C. Soil Erosion Hazard Rating (acres):
Undetermined but majority of acres are considered low to moderate
D. Erosion Potential: 2 ton/acre* (low severity), 3.5 ton/acre* (moderate severity)
E. Sediment Potential: 1630 cubic yards / square mile*
*Based on silt loam soil with average slopes of 30 percent (modeled with Disturbed WEPP for 2006 Watt Draw Fire).

PART IV - HYDROLOGIC DESIGN FACTORS

A. Estimated Vegetative Recovery Period, (years):	1 (grass/shrublands), 45 (ponderosa pine)
B. Design Chance of Success, (percent):	90
C. Equivalent Design Recurrence Interval, (years):	10
D. Design Storm Duration, (hours):	0.5
E. Design Storm Magnitude, (inches):	1.03*

*Extrapolated from NOAA Atlas 2, and Arkell and Richards (1986)

F. Design Flow, (cubic feet/second/square mile):	< 0.1
G. Estimated Reduction in Infiltration, (percent):	40 (worse case)
H. Adjusted Design Flow, (cfs per square mile):	36 (worse case)

[1] Intensity acres were estimated as follows: 20% of the fire area did not burn (2428 ac.). Of the 80% that burned, 60% is grassland (5828 ac.) which resulted in low intensity. Moderate intensity was based on 25% of the 80% burned, since it occurred in an open forest setting (2428 ac.). High intensity was based on 15% of the 80% burned, since it occurred in a closed forest setting (1457 ac.). Previous fires on the District have shown that high intensity fire generally produces high severity impacts to soils, whereas moderate and low intensity fire generally produces low severity impacts to soils.

PART V - SUMMARY OF ANALYSIS

A. Describe Critical Values/Resources and Threats:

Weed Control, Native Vegetation Recovery and Soil Stabilization: The emergency to the resource caused by the fire is of a high priority, especially in those areas, which have highly invasive species concentrations prior to the burn. About one third (approximately 4000 gross acres) of the Lost Fire is infested with spotted knapweed. Although the estimated net infested acreage is 15% of gross acreage, the entire 4000 acre area provides a seed bed where spotted knapweed seeds can remain viable in the soil for up to 12 years. Suppression lines for both fires (34.1 miles) are considered prime weed beds, especially with a large infestation being in the area and suppression activities possibly moving seed source around suppression lines. The Lost and Wilbur Fires burned grassland and forest land, and eliminated natural competition for invaders. The fire-caused disturbance creates perfect habitat for noxious weed invasion and expansion. If emergency mitigation activities are not implemented this problem will expand exponentially and will require future extensive resources to manage. If left unmanaged the results could permanently alter plant communities and habitat, and adjacent private land values. Results of uncontrolled weed spread are well documented. Without treatment, weeds can increase about 14% a year under natural conditions. Studies show that spotted knapweed and its distribution will continue to increase if not aggressively treated. In the next three years, without treatment, it is estimated to cost $328,840 for treatment of expanded infestation and a cost of $4,302 for loss of 239 AUMs from vegetation type conversion from native forage to spotted knapweed.

The fire perimeter encompasses 12,124 acres that contain a very high percentage of suitable grazing land that is a part of four allotments. These allotments permit 12,890 AUMs, of which 24 percent was lost due to the fire. The percent of pastures burned range from 15 percent to 96 percent. Additionally, approximately 11.8 miles of fence were impacted to varying degrees by the fire. Livestock forage values and plant communities within and adjacent to the fire are at risk of overgrazing without short-term changes to management (deferment). An emergency exists where permitted livestock needs to have special management through deferment, in order for vegetation and soil recovery. To allow for rangeland recovery during the first one to two growing seasons (determined on a case-by-case basis), livestock deferment strategies will be employed. Two proposed temporary fences (3.5 miles total) would protect the proposed competitive seeding for minimizing weed spread. Without temporary fence, there will be costs/losses from weed spread, outlined above, related to protection of infestation perimeter competitive seeding with native seed.

Other: These fires resulted in mosaic burn patterns across grass/shrublands and timber stands of mixed age classes. Approximately 60% of the area is grass/shrubland. Severity of burn in grasslands is low as sprouting is anticipated with the next rain events. Relatively high timber mortality of seedling/sapling age classes occurred, but mortality of older age classes was minor. Small areas (+/- 40 ac) of total timber mortality occurred where fuels were dense and resulted in high burn intensity and severity. Given these post-fire vegetation conditions, landscape level response to high intensity rain events are not expected to be significant, except in small isolated tributary drainages and hillslopes. The only transportation facilities potentially at risk are unimproved two-track roads along the bottom of drainages. Given the combination of low values at risk and low potential for landscape response, treatment of these facilities is not proposed.

Other land treatments were identified for cultural resources. Three Civilian Conservation Corp (CCC) drainage crossing structures exhibit plugged inlets. They are located within Horse Creek drainage. Because only a minor amount of labor is needed to remedy this situation, district personnel will conduct hand work necessary to make these culverts functional and no BAER funding is requested for this treatment.

B. Emergency Treatment Objectives:

Weed Control, Native Vegetation Recovery and Soil Stabilization: Minor changes to current year allotment operating instructions are being implemented on the affected four allotments with pastures within the fire perimeter. Deferment of grazing until late season 2008 is the recommended action during next year grazing season. This deferment is one component to help plant communities recover from wildfire impacts. BAER funding is not necessary in order to implement these actions.

Three and one half miles of temporary fence is needed to allow for seeding treatment establishment, vegetative recovery, and reducing weed spread. Adjacent private land fencing is still intact.

Immediate treatment (herbicide and competitive seeding) of known weed infestations and monitoring most likely vectors of weed spread will reduce the risk of expansion of existing infestations and allow burned plant communities to recover more rapidly.

C. Probability of Completing Treatment Prior to Damaging Storm or Event:

Land 100 % Channel ___ % Roads/Trails __ % Protection/Safety ___ %

D. Probability of Treatment Success

	Years after Treatment		
	1	3	5
Land (temp. fence)	**100**	**100**	**100**
(weed herbicide treatment)	**50**	**70**	**90**
(competitive seeding treatment)	**50**	**60**	**70**
Channel	**-**	**-**	**-**
Roads/Trails	**-**	**-**	**-**
Protection/Safety*	**-**	**-**	**-**

E. Cost of No-Action (Including Loss): $389,662*****
*Cost of treatment of weed infestation spread over three year period ($328,840), plus loss of AUMs due to vegetation type conversion($4,302), plus loss of AUMs for deferment for one year ($56,520).

F. Cost of Selected Alternative (Including Loss): $138,638*
*This figure reflects the cost of the proposed treatments, but without losses. Treatments are expected to be highly effective and successful and no significant losses are anticipated outside of human control.

G. Skills Represented on Burned-Area Survey Team:

[x] Hydrology [ ] Soils [ ] Geology [x] Range
[ ] Forestry [ ] Wildlife [ ] Fire Mgmt. [ ] Engineering
[ ] Contracting [ ] Ecology [x] Botany [x] Archaeology
[ ] Fisheries [ ] Research [ ] Landscape Arch [x] GIS

Team Leader: Mark P. Nienow

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H. Treatment Narrative:

Land Treatments:

Weed Control, Native Vegetation Recovery and Soil Stabilization:

Spotted knapweed occurs extensively in the Horse Creek drainage within one third of the fire perimeter. Canada thistle occurs only sporadically. Immediate control within known infestations and suppression line related weed infestations will reduce the risk of expansion of weeds. Additional treatment funds may be requested in outyears – FY 09 and 10. The table bellows outlines FY08 estimate of herbicide control of weed infestations.

Estimated Immediate Weed Treatment Cost – FY08

Fire	Gross Ac Existing	Gross Ac Equivalent	Miles Dozer and Two-Track Suppression Lines	Gross Acre equivalent using 100' buffer from suppression line	Net Acres (15% of Gross Area of Existing and Potential)	Cost @ $110/Ac
Existing Infestations						
Lost	4008	4008			601	$66,110
Potential Infestation - Suppression Lines						
Lost			9.4 Mi Dozer	228		
			18.2 Mi 2-track	441		
			1.5 Improved Rd	36		
Wilbur			5 Mi Dozer	121		
Subtotal			**34.1 Miles**	**827 Ac**	**124**	**$13,640**
Total					**725**	**$79,750**

To minimize the spread from the known spotted knapweed infestation, broadcast competitive seeding is recommended in within the first 100 feet of the infestation perimeter (10.8 miles) within the burn area. This must be done in the fall of 2007 prior to snow (all in FY08).

The following mix (for broadcast treatment)[2] should be used. Subject to availability, a species might need to be substituted or the mix reconfigured. The mix must be certified weed seed free: Certified, blue-tagged seed shall be used where a name variety or cultivar is specified. Blue tags, that are removed to mix or spread the seed will be saved and provided to the Forest Service.

Native Seed Mix, Rates, and Costs – FY08

Common name & variety	Scientific name	Quantity of PLS (lbs/ac) - Broadcast	$ / Pound	Acres	Cost	Cost / Ac
western wheat (rosana or rodan)	*Agropyron smithii*	7.0				
thickspike wheat (critana)	*Agropyron dasystachym*	5.3				
slender wheat (pryor)	*Agropyron trachycaulum*	3.0				
green needle grass (lodorm)	*Stipa viridula*	2.3				
Total Pure Live Seed (PLS) lbs/acre		17.6	$6.64[3]	131	$15,309	$116.86
ATV Seeder/Spreader ($250 ea) & Supplies					$1,500	$11.45
Labor – 40 Person Days	@303.75 / Person Day				$12,150	$92.75[4]
Total				**131**	**$28,959**	**$221.06**

The following table outlines projected deferment strategy by Allotment unit.

Deferment Recommendations

Allotment	Pasture Name	Pasture Ac	Burned Ac	% Burned	Deferment / Recommendations
LOST FIRE					
Cub Creek	Cub Creek	7358	7082	96%	Defer to 2008 Mid September Late Season
	Butte	4402	1444	33%	Temp Fence (1.78 miles) unburned and Defer burned to Mid August 2008
Cow Creek	Lower	10,501	10786	17%	Defer to 2008 Late Season
	Upper	5220	1176	22%	Temp Fence (1.72 miles) unburned and Defer burned to 2008 Late Season
West Tooley	West	1186	328	28%	Defer to 2008 Late Season
WILBUR FIRE					
Indian Creek	Lower	2800	420	15%	Defer to Mid August 2008

The table below identifies the location and extent of fencing needs as a result of fire impacts. Three and a half miles of temporary fencing will allow protection for the proposed competitive seeding along a 100 foot distance inside the perimeter of the spotted knapweed infestation. It is important to note that the BAER fencing proposal does not include burned interior fences (11.8 miles) that separate burned areas from other burned areas. Reconstruction and repair of these fences will be pursued under other funding sources.

BAER Temporary Fence Costs – FY08

Immediate Fencing Needs - Lost Fire (NFS Interior Fence to separate NFS Burned from NFS Unburned)	Total Miles	Cost / Mile	Cost
Cub Cr - Butte Temporary Fence	1.78	$6,070	$10,805
Cow Cr – Upper Fence	1.72	$6,070	$10,440
Subtotal	3.5	$6,070	$21,245
Indirect Costs: Project Prep / Implementation Costs (18% of Direct Project Cost)			$3,824
Total			**$25,069**

Cultural Resources: No treatments proposed.

Channel Treatments: No treatments proposed.

Roads and Trail Treatments: No treatments proposed.

[2] The above species are considered native to the area. Mix recommendation - USDA-Bridger, MT Plant Material Center, Mark Majerus.

[3] Current estimate from Wind River Seed, Manderson, WY 307-568-3361; cost estimate includes shipping and handling (~$0.05 / #).

[4] This cost per acre is approximately the same estimated cost per acre to cover aerial application if that method is chosen instead of persondays.

I. Monitoring Narrative:

Spotted Knapweed occurs extensively in the Horse Creek drainage within the fire area. Monitoring these infestations and likely vectors of weed spread will reduce the risk of expansion of existing infestations. Additional monitoring funds may be requested in outyears – FY 08 and 09**.**

Estimated Weed Monitoring Cost – FY08

Monitoring Phase	Resources Needed	Estimated Unit Cost[5]	Estimated Total Cost
Phase I	6 Person Days	$285/person/day	$1710
	4-wheel Drive Pickup and 2 ATVs (150 miles) or comparable contract	.22/mile*	$35
		$300 FOR	$50
Phase II	10Person Days	$285/person/day	$2850
	4-wheel Drive Pickup and 2 ATVs (600miles) or comparable contract	.22/mile*	$140
		$300 FOR^	$75
Total Cost			**$4,860**
Cost / Unit	Unit: 16 persons days + fleet	**$303.75**	**$4,860**

Part VI – Emergency Stabilization Treatments and Source of Funds Initial Request

			NFS Lands				Other Lands			All
		Unit	# of		Other	# of	Fed	# of	Non Fed	Total
Line Items	**Units**	**Cost**	**Units**	**BAER $**	**$**	**units**	**$**	**Units**	**$**	**$**
A. Land Treatments - FY08										
Weed herbicide treatment	AC	110	725	$79,750	$0		$0		$0	$79,750
Weed competitive seeding	AC	221.06	131	$28,959	$0		$0		$0	$28,959
Livestock Deferment - No Cost	JOB	0	0	$0	$0		$0		$0	$0
Temporary fence	MI	6070	3.5	$21,245	$0		$0		$0	$21,245
Temp Fence prep and admin (18%)	EA	3824	1	$3,824	$0		$0		$0	$3,824
Subtotal Land Treatments				$133,778	$0		$0		$0	$133,778
B. Channel Treatments										
Insert new items above this line!				$0	$0		$0		$0	$0
Subtotal Channel Treat.				$0	$0		$0		$0	$0
C. Road and Trails										
Insert new items above this line!				$0	$0		$0		$0	$0
Subtotal Road & Trails				$0	$0		$0		$0	$0
D. Protection/Safety										
Insert new items above this line!				$0	$0		$0		$0	$0
Subtotal Structures				$0	$0		$0		$0	$0
E. BAER Evaluation - FY07										
Assessment (person days)	DAYS	350	10	---	$3,500		$0		$0	$3,500
Travel	LS	200	1		$200		$0		$0	$200
Insert new items above this line!				---	$0		$0		$0	$0
Subtotal Evaluation				---	$3,700		$0		$0	$3,700
F. Monitoring - FY08										
Weed monitoring	AC	303.75	16	$4,860			$0		$0	$4,860
Insert new items above this line!				$0	$0		$0		$0	$0
Subtotal Monitoring				$4,860	$0		$0		$0	$4,860
G. Totals				$138,638	$3,700		**$0**		**$0**	**$142,338**
Previously approved										
Total for this request				**$138,638**						

PART VII - APPROVALS

1. _____ _____
Forest Supervisor (signature) Date

2. _____ _____
Regional Forester (signature) Date

[5] * Includes driving to and from fire area daily; ^ ½ month FOR.