USDA-FOREST SERVICE FS-2500-8 (7/00)

Date of Report:

BURNED-AREA REPORT
(Reference FSH 2509.13)

PART I - TYPE OF REQUEST

A. Type of Report

[X] 1. Funding request for estimated WFSU-SULT funds
[ ] 2. Accomplishment Report
[ ] 3. No Treatment Recommendation

B. Type of Action

[X] 1. Initial Request (Best estimate of funds needed to complete eligible rehabilitation 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: Highline Fire

B. Fire Number: ID-PAF-000159

C. State: Idaho

D. County: Idaho

E. Region: R4

F. Forest: Payette

G. District: Krassel

H. Date Fire Started: 07.28.2017

I. Date Fire Contained: Not contained

J. Suppression Cost: 2.8 Million

K. Fire Suppression Damages Repaired with Suppression Funds
1. Fireline waterbarred (miles): n/a
2. Fireline seeded (miles): n/a
3. Other (identify):

L. Watershed Numbers: 1706020703 (Chamberlain Creek), 1706020705 (Big Squaw Creek-Salmon River); 1706020707 (Big Mallard Creek-Salmon River), and 1706020606 (Middle Big Creek)

M. Total Acres Burned:
NFS Acres(89641) Other Federal ( ) State (407) Private ( )

N. Vegetation Types: Lower elevations support grasslands, shrublands, ponderosa pine and Douglas-fir along with bunch grass, ninebark, bitterbrush and pinegrass understories. Higher elevations are dominated by Douglas-fir, grand fire, and subalpine fire with pockets of lodgepole pine and aspen with whortleberry, beargrass, and elk sedge understories.

O. Dominant Soils:

- Typic Cryopsamments, mixed: both deep (30-50 in.) and shallow (15-20 in.), depending on landscape position. Surface soils are fine sandy loams and sandy loams over loamy sand and sand subsoils.
- Typic Cryochrepts, coarse-loamy, mixed, deep (40-60 in.) soils are also common, and are typically sandy loams throughout profile.

P. Geologic Types: The surface geology is dominated by granites of the Idaho Batholith (Hornblend-biotite granit) and to a much lesser extent alluvium deposits of unconsolidated boulder, gravel, sand deposits of Holocene and Pleistocene age (Lund, 2005).

Q. Miles of Stream Channels by Order or Class: Intermittent: 40 miles Perennial: 245 miles

R. Transportation System

Trails: 106 miles Roads: 0 miles

PART III - WATERSHED CONDITION

A. Burn Severity (acres):

9,078 (10%) (unburned) 37,296 (41%) (low) 34,286 (38%) (moderate) 9,390 (10%) (high)

B. Water-Repellent Soil (acres): weak to not present on high and moderate burn severity soils

C. Soil Erosion Hazard Rating (acres):
58,533 (low) 16,209 (moderate) 15,309 (high)

D. Erosion Potential: 2 tons/acre

E. Sediment Potential: 27 cubic yards / square mile (first year post-fire)

The total fire area of 140 sq. mi is estimated to have a natural sediment yield of approximately 21 cu yds./sq. mi. This is based on established erosion rates for landtypes within the fire area found in the Land System Inventory (1973). Increases for the first year given the acres of each level of burn severity (SBS data derived from BARC data) over the fire area, are estimated to increase this natural rate by 26 percent (to 27 cu yds./sq. mi) and 6 percent (to 22 cu yds./sq. mi) for the second year (BOISED sediment model).

PART IV - HYDROLOGIC DESIGN FACTORS

No treatments are proposed requiring analysis of a design storm to estimate success. Therefore potential storm scenarios are addressed generally in the Hydrology Specialist Report.

A. Estimated Vegetative Recovery Period, (years): 3-5

B. Design Chance of Success, (percent): 90

C. Equivalent Design Recurrence Interval, (years): 30

D. Design Storm Duration, (hours): 24 hr

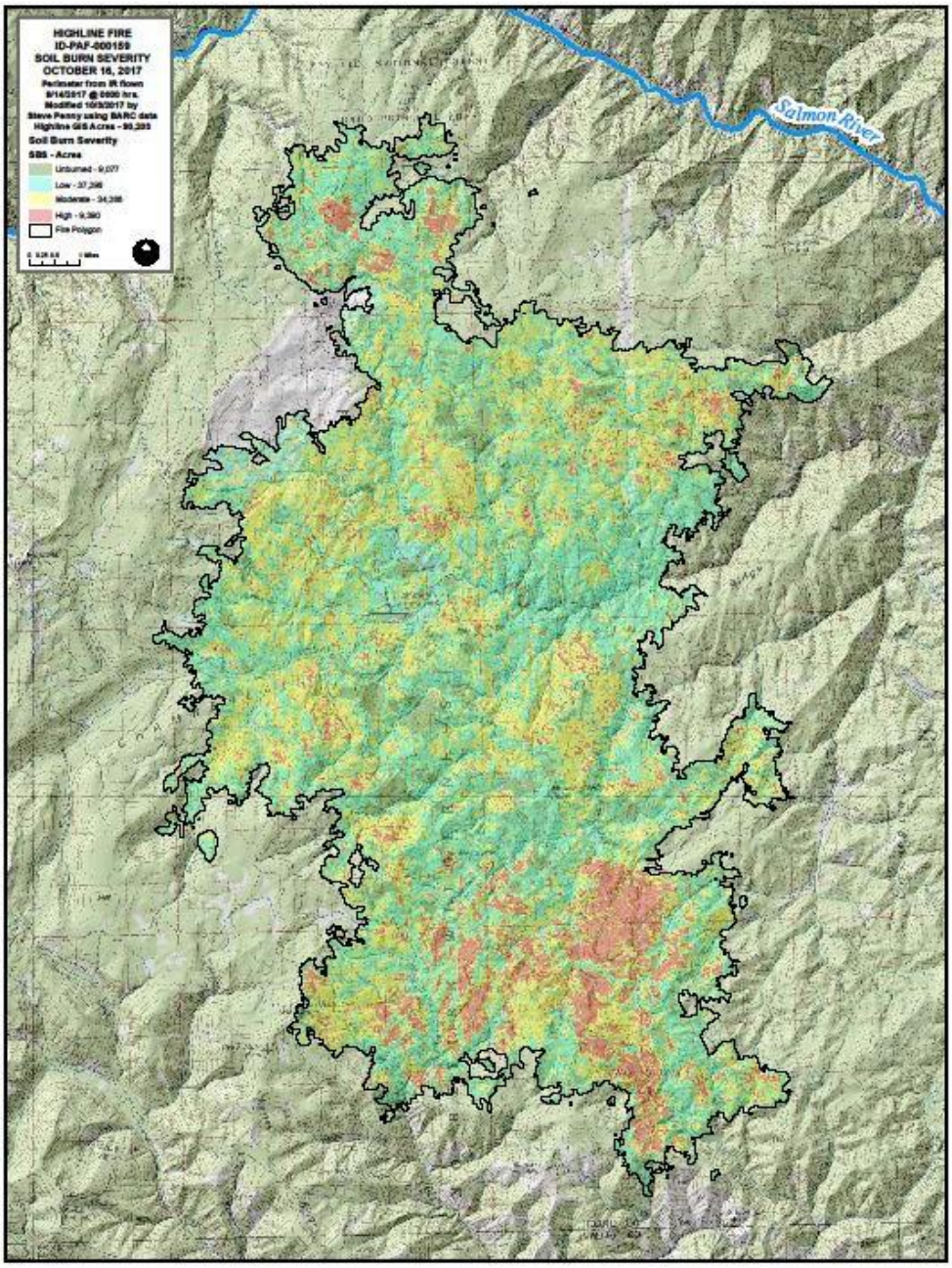
E. Design Storm Magnitude, (inches): .75

F. Design Flow, (cubic feet / second/ square mile): 67

G. Estimated Reduction in Infiltration, (percent): <5 (weak to no hydrophobicity)

H. Adjusted Design Flow, (cfs per square mile): 107

Figure 1. Soil Burn Severity Map



PART V - SUMMARY OF ANALYSIS

A. Describe Critical Values/Resources and Threats

Threats to Human Life and Safety

Flood Hazard:
The flood hazard is predicted to increase within the Chamberlain Basin and the tributaries of the Main Salmon River and Big Creek that had high percentages of moderate to high soil severity burn. No emergency to Human Life and Safety from flood hazard was determined for the following reasons:

- The forest service infrastructure at risk to flood flows are the Chamberlain Guard Station which includes six cabins and outbuildings, Chamberlain airstrip, trails and trail bridges. Occupation of Chamberlain Guard Station is typically after spring runoff.
- There are no other forest service infrastructure, residents, or private land exposed due to the remoteness of this fire within a wilderness area.
- Previous fires have already altered the crown cover and hydrologic response to storm events.

Emergency Determination: The probability of threats to human life and safety is unlikely and the magnitude of consequence is Moderate. Therefore, the BAER risk is Low.

Threats to Natural Resources

Water Quality Degradation:
Critical Values include water systems at both Chamberlain Guard Station and Stonebraker Ranch. Although the Stonebraker Ranch is located on state land, the water source is located on the West Fork of Chamberlain Creek on Forest Service administered lands.

The cumulative effect of increased peak flows and sediment from the burned areas increases the risk for various downstream values at risk, particularly effects on domestic and irrigation water providers.
Soil erosion and subsequent sediment increases are predicted throughout and downstream of the burn area. An effort to inform the Fish and Game regarding potential hazards of water quality degradation was determined for the following reasons:

- Peak flows and sediment increases are expected. These increases will be of short term duration, recovering to pre-fire conditions over the next three years. During this time there is some potential for increased ash and debris in the water at Stonebraker water source in the West Fork Chamberlain. However, this risk is fairly low due to the low gradient stream channel where the water developments downstream of moderate to high severity burn areas. The Chamberlain water source is a spring development within low to moderate burn severity which could incur some inputs of ash, this is also expected to be a short-term effect.

Emergency Determination: The probability of loss is Possible and the magnitude of consequence is Minor. Therefore, the BAER risk is Low

Native Plant Communities:
The noxious weeds, spotted knapweed (*Centaurea maculosa)* and Canada thistle (*Cirsium arvense)* currently infest about 250 acres within and in the immediate vicinity (less than 1000') from the Highline Fire perimeter. Significant threats to ecosystem integrity exist from the potential invasion of noxious weeds and invasive non-native plants within the Chamberlain Basin and upper Chamberlain Creek headwaters.

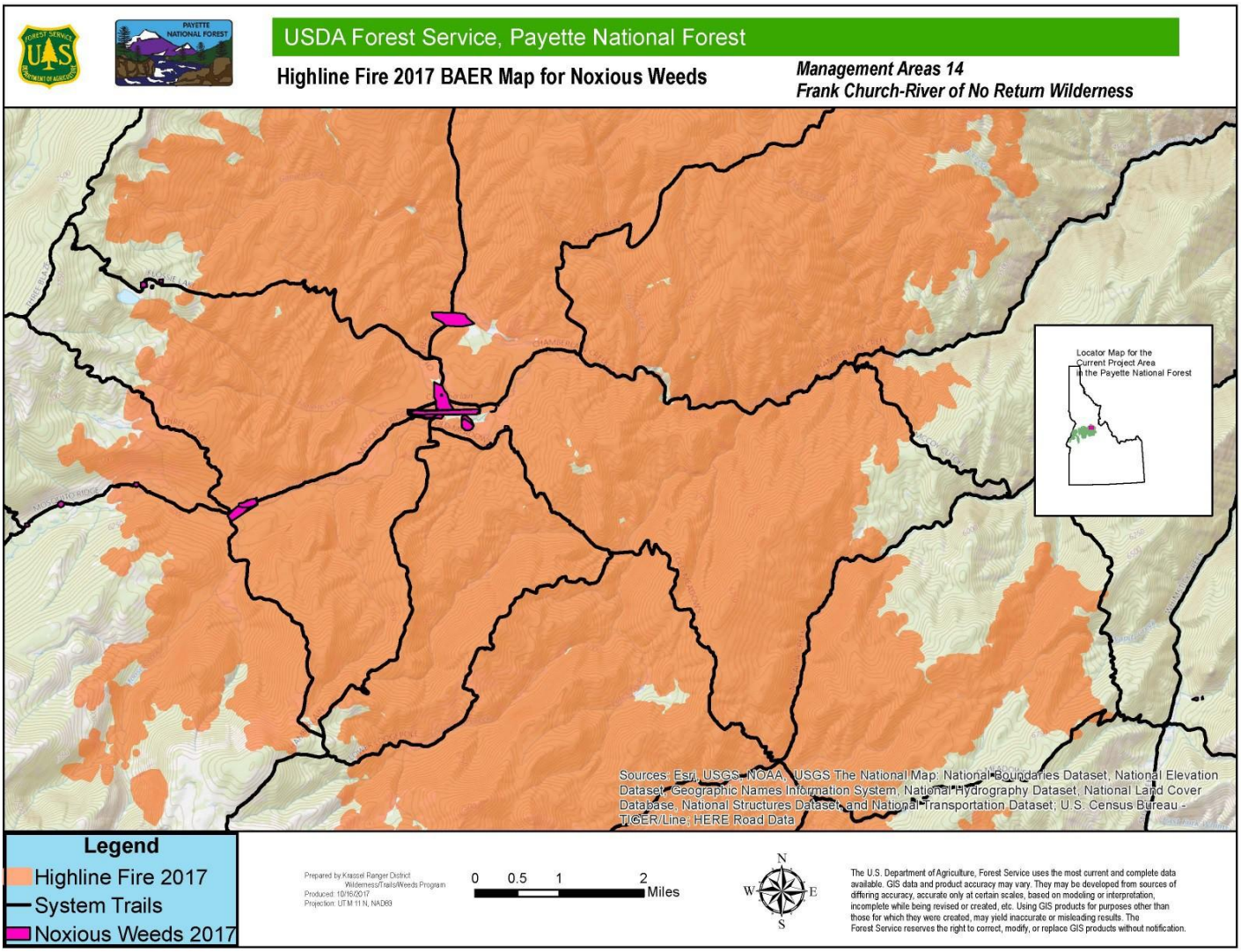
Noxious weed invasion is expected in areas within burn areas because of the known sources along the NFS trails, an administration site, an airstrip and other areas within the fire perimeter. Infestations which have the highest likelihood of spreading to surrounding lands include: hillsides within and immediately adjacent to the fire perimeter. Even where noxious weed species do not currently occur on the landscape, the threat will persist until native plants have had a chance to recolonize burned and disturbed areas. This could take several years.

Emergency Determination: For threats from noxious weeds, the probability of damage or loss is Very Likely and the magnitude of consequence is Major to Moderate. Therefore, the BAER risk is Very High **(Table 1)**. The spread of noxious weeds would adversely affect multiple resources including native plant communities which in turn affects threatened and endangered species habitat for wildlife, fisheries and plants. In addition noxious weeds can alter natural plant communities in eligible wild and scenic river corridors. Currently, 139 acres of Canada thistle and 111 acres of Spotted Knapweed (total of 250 acres) were burned or are immediately adjacent to areas that have burned **(Figure 2)**. Early season monitoring and treatment throughout the main growing season will be needed to implement a timely and effective treatment response to this threat.

Table 1. BAER Risk Assessment of Highline Fire effects to Native Plant Communities from Noxious Weeds and to Trails

Probability of Damage or Loss	**Magnitude of Consequences**		
	Major	Moderate	Minor
	RISK		
Very Likely	Canada thistle, Spotted Knapweed spread = **Very High**	Untreated Trail Erosion, Spotted Knapweed spread, Canada thistle spread = **Very High**	**Low**
Likely	**Very High**	**High**	**Low**
Possible	**High**	**Intermediate**	**Low**
Unlikely	**Intermediate**	**Low**	**Very Low**

Figure 2. Map of Noxious Weeds within the Highline Fire Perimeter



Threats to Property

Trails:
Approximately 106 miles of trail were impacted by the Highline Fire **(Figure 3).** Post-fire hydrology driven by high and moderate burn severity will increase risk of damage to trail prism and existing water-bars. Numerous water-bars were identified as burned and are no longer functioning as intended **(Figure 4).** These issues will need to be addressed as early as possible in the coming spring run-off period. The fire has created conditions that potentially threaten the stability and integrity of these trails.

Assessments revealed significant hazards to users along the portion of most of the trails within the fire perimeter. Some sections of trail were simply blocked by downfall. Other sections of trail experienced damage to the tread with post fire runoff to date. In some cases water diversion structures (water bars) were burned which will also increase potential for erosion damage to the trail. It is anticipated that problems with gully and surface erosion will worsen with the impaired trail condition as a results of the fire. There is a potential for further damage to the trail system due to runoff erosion in the next several years. Most of the damage is

expected to occur during the emergency period of 1 year following fire. There are opportunities to limit the extent of trail loss with fall and early spring water drainage work in the first year following fire.

Emergency Determination**:** For threats to trails due to post fire run off events, the probability of damage or loss is Very Likely and the magnitude of consequence is Moderate. Therefore, the BAER risk is Very High **(Table 1)**. 70 miles of trail were burned under moderate and high severity. In addition to the potential to lose trail infrastructure there are other values at risk that can be affected by loss of proper trail drainage. These include threats to threatened and endangered fish species as well as access both for the administration of the area as safe access to the wilderness area for the public. Some form of erosion control and removal of subsequent falling burned trees from off of the trail will prevent major points of erosion from contributing detrimental effects to the fishery by alleviating any potential sedimentation into streams from occurring through debris flows piling up against downed logs and subsequently "blowing out".

Figure 3. Trails Impacted by High and Moderate Severity Fire

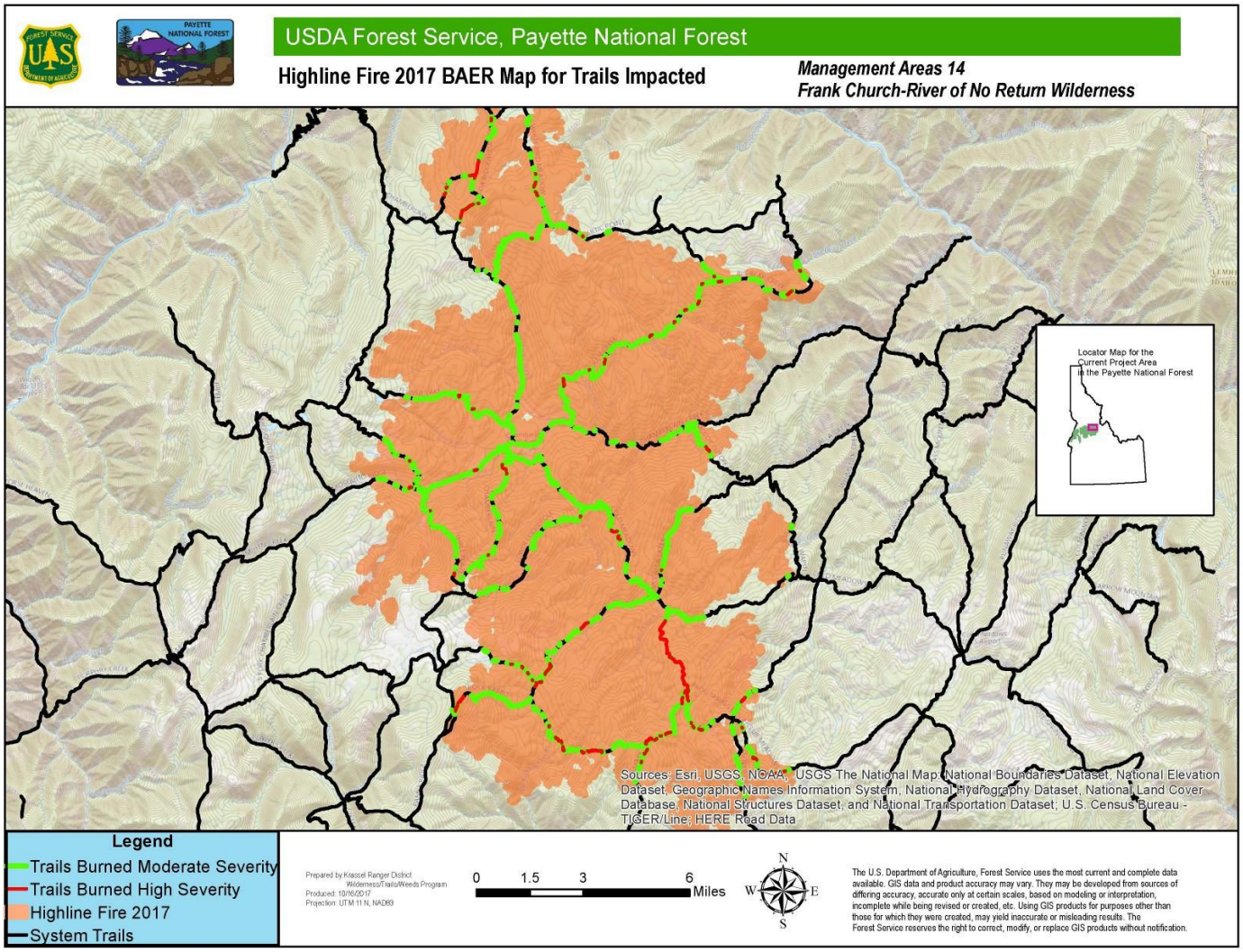


Figure 4. Burned Water Bar and Trail

Chamberlain Guard Station and Airstrip:

Historic Chamberlain Guard Station and airstrip are located in a broad valley bottom in a slightly elevated position adjacent to meadows and wetlands within the Ranch Creek watershed. This watershed burned during the Flossie Fire in 2000 which resulted in higher flows and elevated water table that inundated a portion of the guard station where five cabins, out buildings and an airstrip with two runways are located. Ranch Creek flows through a culvert under one of two runways and is undersized for the expected post fire flows. Post-Highline Fire hydrology driven by high and moderate burn severity within Ranch Creek watershed has created similar conditions that could threaten the integrity of these properties. With elevated flows, Ranch Creek is expected to flood a portion of the airstrip and is susceptible to plugging. Ranch creek diversion will be impacted by higher flows, debris and deadfall that could result in greater downstream flooding of Chamberlain Guard Station. The primary threat to these properties within the first year after the fire during the first spring runoff event.

Emergency Determination**:** For threats to Chamberlain Guard Station and Airstrip due to post fire run off events, the probability of damage or loss is Possible and the magnitude of consequence is Major. Therefore, the BAER risk is High.

Threats to Cultural and Heritage Resources

The Highline Fire has twenty-three recorded cultural resources. Some of these cultural resources are eligible for listing on the National Register of Historic Places (NRHP). These sites are eligible because they have good context, capable of contributing to research and knowledge of Native American Indian lifeways, including resource procurement, settlement patterns, travel routes, and land-use strategies. Impacts by fire-induced erosion or looting may damage or destroy the archaeological record and the depositional contexts important to the site's significance and information potential (Criteria D).

The probability that fire damage and fire-induced runoff from high and moderate intensity and short duration summer thunderstorms may impact the archaeological record is possible and, if impacted, the consequences would be major damage or loss. In addition, the close proximity of sites to trails and their exposure due to fire and post-fire effects may result in the potential for looting and safety hazards. The BAER risk for impacts to these resources is considered to be moderate.

Values at Risk from fire effects include prehistoric sites eligible for the NRHP within the fire perimeter near steep slopes, headwaters, and in areas of severe burn. Both recorded and unknown sites are at risk to context loss and changes in site significance. Damage would be irreversible. Three eligible archaeological sites are identified with high and intermediate risk for impact due to location within the moderate severity burn area and proximity to trails and slopes with erosion potential. These three sites require monitoring and have the potential for treatment measures to mitigate scientific data loss, looting, safety hazards, and erosion.

Emergency Determination: The probability of damage or loss to three eligible prehistoric sites is Likely to Possible and the magnitude of consequence is Moderate. Therefore, the BAER risk is High to Intermediate.

B. Emergency Treatment Objectives:

Trails

Provide clear and safe passage to emergency treatment sites for both crews and stock support. Remove imminent safety hazards around treatment sites. Reestablish proper drainage and water management structures to prevent further loss to the Wilderness transportation infrastructure. Emergency trail work will be accomplished next spring and early summer prior to mid and late summer thunderstorms.

Chamberlain Guard Station and Airstrip

Ensure existing drainage structure and water diversion on Ranch Creek remain functioning through storm inspection and response treatment during the first Spring runoff event. This will provide protection of existing drainage structures in lieu of more costly upgrades such as upsizing or installing more drainage structures that may not be feasible because of expense and design time frame due to the Wilderness setting.

- Clear Ranch Creek diversion from debris plugs that can alter and divert flows
- Inspect watertable and flooding of Chamberlain facilities for possible damage and take appropriate actions to protect
- Clear airstrip culvert inlet clear of debris to prevent damage to airstrip

Noxious Weeds

- Treat noxious weed infestations with herbicides or mechanically within the burn perimeter for one year following the fire. Treatment would occur on approximately 250 acres in and adjacent to the Highline

Fire perimeter. Treatment will be done with backpack sprayers using chemicals and guidelines approved in the wilderness weed treatment EIS (USDA, 1999). Treatment near waterways will require hand removal of infestations to prevent water contamination.

- Monitor for noxious weed invasion and the effectiveness of treatments. Monitoring would be done periodically to assess BAER weed treatments and recovery of the burned sites. It would evaluate the success or failure of treatment, recommend adjustments to treatment or re-treatment and report the findings to management.
- Identify areas within the fire perimeter or those within 1000' of a noxious weed infestation for survey for the year following (Spring and Fall) the fire.

Cultural and Heritage Resource

Stabilize site to reduce risk of erosion. Protect sites from looting, due to proximity to trails. Remove potential hazard trees, if dead cambium peeled trees pose an imminent safety hazard. Emergency site stabilization and evaluation will be accomplished during the 2018 field season.

- Stabilization of sites to reduce risk of erosion and looting will be assessed on the ground on a site to site basis. This can include, but is not limited to laying brush, deadfall, and heavy vegetation to limit the visibility of cultural resources from the trail. Also, this will help with soil stabilization preventing erosion events from exposing more of the site and damaging the cultural context.
- Remove potential safety hazards by cutting down dead cambium peeled trees if they pose an imminent threat due to trail proximity.

C. Probability of Completing Treatment Prior to First Major Damage-Producing Storm:

Noxious Weeds 80% Storm Inspection & Response 80% Trails 80% Cultural 80%

D. Probability of Treatment Success

	Years after Treatment		
	1	3	5
Noxious Weeds	80	90	95
Storm Inspetion and Response	80	90	95
Trails	80	90	95
Cultural/Heritage	80	90	95

E. Cost of No-Action for Trails, Storm Inspection and Response, Noxious Weeds, and Cultural and Heritage Resources (Including Loss): $367,960

Trails:
Not taking action would potentially lead to all or large portions of at least 70 miles of NFS Trails to be destroyed or damaged considerably from any spring rain or rain on snow event. Total costs to rebuild or re-route, reinstall water-bars or other drainage structures and remove downfall and the NEPA necessary to do so, on the trails burned over within moderate and high burn severity would be $210,000 @ $3,000/mile. These trails are popular and have a lot of public use, as well as, outfitter and guide use, so their loss would negatively affect the livelihood of the outfitters currently using them and the publics use as well. Trails burned over with moderate and high burn severity (70 miles) are a public risk to health and safety, due to downfall and tread loss. Sediment and erosion are also a loss to hydrologic function and long term soil productivity.

Chamberlain Guard Station Storm Inspection and Response:
The total cost to replace or add drainage structures is approximately $40,000. The existing airstrip culvert is over 200 feet in length. All work would be accomplished using human and horse power.

Noxious Weeds:
The total costs for not treating weeds will continue to rise yearly. In three years, weed populations could exponentially expand from approximately 250 acres to 1500 acres within the fire perimeter. As a result, monitoring, treatment and eradication costs would likewise increase to approximately $75,000.00. As weed populations grow in size the logistics of weed treatment within the Frank Church River of No Return Wilderness become more difficult and less cost effective.

Cultural and Heritage Resource Protection:
Impacts by fire-induced erosion or looting may damage or destroy the archaeological record and the depositional contexts important to the site's significance and information potential. The sites identified for treatment are those with a high probability of irreversible damage, are located in a variety of terrain and vegetation types, including floodplains and areas prone to erosion, and in areas of moderate to high burn severity. Once a cultural resource is damaged or destroyed that knowledge is lost and irreplaceable. In the case of no action, a full scale excavation would be required to determine the full extent of site disturbance and loss. For the cambium peeled trees burned over in moderate severity can pose a risk to public safety, due to the proximity of trails. If the tree is dead and needs to be felled, the site will need to be documented and would require Section 106 consultation with SHPO and the tribes to approve proposed recovery actions. The total cost of recovery, mitigation, and stabilization of affected resources would be $12,956.40. This cost includes: flights, pack support, personnel wages, per diem, field and report writing days, and consultation.

F. Cost of Selected Alternative for for Trails, Noxious Weeds, and Cultural and Heritage Resources (Including Loss): $165,190

G. Skills Represented on Burned-Area Survey Team:

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

Team Leader: John Dixon

Email: jdixon@fs.fed.us Phone:208.634.0639 FAX:208.634.0634

H. Treatment Narrative:

Trails:

- Provide clear and safe passage for crews and stock along the system trails effected by the Highline Fire. Clear trails impacted by fire of trees and rocks, repair drainage, and reconstruct tread where needed to access emergency treatment sites.
- Replace and install water diversions structures to accommodate runoff and reduce potential for trail washouts prior to the spring runoff.
- Remove debris slides where potential exists to wash out more trail.
- Remove debris accumulated behind bridge structures to prevent bank erosion and sedimentation.

Chamberlain Guard Station and Airstrip:

Ensure existing drainage structure and water diversion on Ranch Creek remain functioning through storm inspection and response treatment during the first Spring runoff event.

- Clear Ranch Creek diversion from debris plugs that can alter and divert flows
- Inspect watertable and flooding of Chamberlain facilities for possible damage and take appropriate actions to protect
- Clear airstrip culvert inlet clear of debris to prevent damage to airstrip

Noxious Weeds:

Survey for new noxious weed infestations and treat with herbicides or mechanically within the burn perimeter for one year following the fire. Monitoring would occur on approximately 500 acres within and adjacent to known weed infestations within the Highline Fire perimeter. Treatment will be done on approximately 250 acres with backpack sprayers using chemicals and guidelines approved in the wilderness weed treatment EIS (USDA, 1999). Treatment near waterways will require hand removal of infestations to prevent water contamination.

Cultural and Heritage:

Protect three known eligible prehistoric sites identified as Values at Risk. If determined to be at risk:

- Stabilize and protect these sites by laying brush, deadfall, and heavy vegetation cover
- Potential hazard tree removal, if dead cambium peeled trees pose a threat due to proximity to trails

Part VI – Emergency Rehabilitation Treatments and Source of Funds by Land Ownership

			NFS Lands				Other Lands			
		Unit	# of	WFSU	Other	# of	Fed	# of	NonFed	All
Line Items	Units	Cost	Units	SULT $	$	units	$	Units	$	$
A. Land Treatments										
Weeds Treatments	acres	92.87	250	$23,218	$0		$0		$0	$23,218
				$0	$0		$0		$0	$0
				$0	$0		$0		$0	$0
Insert new items above this line!				$0	$0		$0		$0	$0
Subtotal Land Treatments				$23,218	$0		$0		$0	$23,218
B. Channel Treatments										
				$0	$0		$0		$0	$0
				$0	$0		$0		$0	$0
				$0	$0		$0		$0	$0
Insert new items above this line!				$0	$0		$0		$0	$0
Subtotal Channel Treat.				$0	$0		$0		$0	$0
C. Property										
Trails	Miles	950.57	70	$66,540	$0		$0		$0	$66,540
Chamberlain Storm		3,700	1	$3,700	$0		$0		$0	$3,700
Inspection & Response				$0	$0		$0		$0	$0
Insert new items above this line!				$0	$0		$0		$0	$0
Subtotal Road & Trails				$70,240	$0		$0		$0	$70,240
D. Structures										
				$0	$0		$0		$0	$0
				$0	$0		$0		$0	$0
				$0	$0		$0		$0	$0
Insert new items above this line!				$0	$0		$0		$0	$0
Subtotal Structures				$0	$0		$0		$0	$0
E. Cultural Resources										
Site Protction		4,141	1	$4,141	$0		$0		$0	$4,141
				$0	$0		$0		$0	$0
Insert new items above this line!				$0	$0		$0		$0	$0
Subtotal Evaluation				$4,141	$0		$0		$0	$4,141
F. Monitoring										
				$0	$0		$0		$0	$0
Insert new items above this line!				$0	$0		$0		$0	$0
Subtotal Monitoring				$0	$0		$0		$0	$0
G. Totals				**$97,599**	**$0**		**$0**		**$0**	**$97,598**

PART VII - APPROVALS

1. /S/KEITH LANNOM 10/23/2017
Forest Supervisor (signature) Date

2. /s/ David Jenkins (for Nora Rasure) 11/2/17
Regional Forester (signature) Date

PART F - INDIVIDUAL SPECIFICATION

TRAILS:

TREATMENT/ACTIVITY NAME	T2 – Trail facility protection	**PART E SPECIFICATION #**	*****
NFPORS TREATMENT CATEGORY*	Property	**FISCAL YEAR(S) (list each year):**	2018
NFPORS TREATMENT TYPE *	Trails	**WUI? Y / N**	No
IMPACTED COMMUNITIES AT RISK		**IMPACTED T&E SPECIES**	No

* See NFPORS Restoration & Rehabilitation module - Edit Treatment screen for applicable entries.

WORK TO BE DONE (describe or attach exact specifications of work to be done):

A.) General Description:

Provide clear and safe passage to emergency treatment sites within the Frank Church River of No Return Wilderness through the burned portions of the Highline Fire for both crews and stock support. Remove imminent safety hazards such as pile-ups and other hung-up snags to crews installing emergency treatments. Re-establish proper drainage and water management structures to prevent further loss to the Wilderness transportation infrastructure. Emergency trail work will be accomplished in the spring and early summer prior to mid and late summer thunderstorms.

B.) Location/(Suitable) Sites:

Approximately 70 miles of trail in severe or moderately high burn within the Highline Fire, located within the Frank Churn River of No Return Wilderness. These trails are within the burn perimeter however they are at a significant distance from any access point. The trail sections are not contiguous.

C. Design/Construction Specifications:

1. Provide clear and safe passage for crews and stock along the trails. Clear trails impacted by fire of trees and rocks, repair drainage, and reconstruct tread where needed to protect work crews.
2. Replace and install water diversions structures to accommodate runoff and reduce potential for trail washouts prior to the spring runoff.
3. Remove debris slides where potential exists to wash out more trail.

D. Purpose of Treatment Specifications:

To protect trail infrastructure.

E. Treatment Effectiveness Monitoring Proposed:

1. Monitor effectiveness of emergency treatments after each damage-producing storm events and during the first snowmelt runoff.

LABOR, MATERIALS AND OTHER COST:

PERSONNEL SERVICES: (Grade @ Cost/Hours X # Hours X # Fiscal Years = Cost/Item): Do not include contract personnel costs here (see contractor services below).	**COST / ITEM**
GS-9 natural Resource Specialist @ $330/day x 30 days (Coordinate trail repair and monitoring/treatments)	$9,900.00
GS-5 Trail Technician @ $135/day x 50 days (trail clearing and repair of tread and drainage structures)	$6,750.00
GS-4 Trail Technician @ $120/day x 50 days (trail clearing and repair of tread and drainage structures) x 3 technicians	$18,000.00
WG-5 Packer @ $185/day x 30 days (support to Trail Crew, move in and pull crew for project area)	$5,550.00
TOTAL PERSONNEL SERVICE COST	$40,200.00
EQUIPMENT PURCHASE, LEASE AND/OR RENT (Item @ Cost/Hour X # of Hours X #Fiscal Years = Cost/Item): Note: Purchases require written justification that demonstrates cost benefits over leasing or renting.	**COST / ITEM**
N/A	
TOTAL EQUIPMENT PURCHASE, LEASE OR RENTAL COST	
MATERIALS AND SUPPLIES (Item @ Cost/Each X Quantity X #Fiscal Years = Cost/Item):	**COST / ITEM**
Riding Stock @ $200/day x 30	$6,000.00

Pack Stock @ $65/day x 6 (animals) x 30 days	$11,700.00
TOTAL MATERIALS AND SUPPLY COST	$17,700.00
TRAVEL COST (Personnel or Equipment @ Rate X Round Trips X #Fiscal Years = Cost/Item):	**COST / ITEM**
Flight to access area (Chamberlain Station) @ $600/flight x 3 (move crew to Chamberlain and return to Duty Station)	$1,800.00
Trail Crew per diem @ $380/10 day hitch x 3 crew members x 5 hitches	$5,700.00
Packer per diem @ $38/day x 30 days	$1,140.00
TOTAL TRAVEL COST	$8,640.00
AGREEMENT COST (Labor or Equipment @ Cost/Hour X #Hours X #Fiscal Years = Cost/Item):	**COST / ITEM**
N/A	$
TOTAL AGREEMENT COST	$

SPECIFICATION COST SUMMARY

FISCAL YEAR	PLANNED INITIATION DATE (M/D/YYYY)	PLANNED COMPLETION DATE (M/D/YYYY)	WORK AGENT	UNITS	TOTAL UNIT COST	PLANNED ACCOMPLISHMENTS	PLANNED COST
FY18	5/01/2018	09/30/2018	USFS-PNF	70 miles	$950.57/ mile	Trail clearing, tread and drainage repair	$66,540.00
						TOTAL	$66,540.00

Work Agent: C=Coop Agreement, F=Force Account, G=Grantee, P=Permittees, S=Service Contract, T=Timber Sales Purchaser, V=Volunteer

SOURCE OF COST ESTIMATE

1.	Estimate obtained from 2-3 independent contractual sources.	
2.	Documented cost figures from similar project work obtained from local agency sources.	P,E,M,T
3.	Estimate supported by cost guides from independent sources or other federal agencies	
4.	Estimates based upon government wage rates and material cost.	P,E,M,T
5.	No cost estimate required - cost charged to Fire Suppression Account	

P = Personnel Services, **E** = Equipment **M** = Materials/Supplies, **T** = Travel, **C** = Contract, **F** = Suppression

TRAILS: RELEVANT DETAILS, MAPS AND DOCUMENTATION INCLUDED IN THIS REPORT:

List Relevant Documentation and Cross-References within ESR Plan

Highline Fire Trail Protection Treatment Estimates

Monitoring/Potential Treatment Area	Acreage to be Monitored/Treated	Location	Estimated Days
Existing trails within the fire area.	70	Existing trails in the Highline Fire perimeter, within the Frank Church River of No Return Wilderness. 70 Trail Miles identified as (moderate to high burn severity) and work covering 2 FY's.	50/person
Total Trail Miles in Highline Fire	**70 trail miles on FS (treatment will be for non-concurrent trail miles)**		**Total Days = 50/person**

TRAILS: TOTAL COST BY JURSIDICTION

JURISDICTION	UNITS TREATED	COST
Payette National Forest	70 miles	$66,540.00
	TOTAL COST	$66,540.00

Chamberlain Guard Station and Airstrip Storm Inspection & Response Treatment

TREATMENT/ACTIVITY NAME	Chamberlain Guard Station and Airstrip Storm Inspection & Response Treatment	**PART E SPECIFICATION #**	
NFPORS TREATMENT CATEGORY*	Property	**FISCAL YEAR(S) (list each year):**	2018
NFPORS TREATMENT TYPE *	Inspection & Response Treatment	**WUI? Y / N**	No
IMPACTED COMMUNITIES AT RISK		**IMPACTED T&E SPECIES**	No

* See NFPORS Restoration & Rehabilitation module - Edit Treatment screen for applicable entries.

WORK TO BE DONE (describe or attach exact specifications of work to be done):

A.) General Description:

Historic Chamberlain Guard Station and Airstrip are located in a broad valley bottom in a slightly elevated position adjacent to meadows and wetlands within the Ranch Creek watershed. This watershed burned during the Flossie Fire in 2000 which resulted in higher flows and elevated water table that inundated a portion of the guard station where five cabins, out buildings and an airstrip with two runways are located. Ranch Creek flows through a culvert under one of two runways and is undersized for the expected post fire flows. Post-Highline Fire hydrology driven by high and moderate burn severity within Ranch Creek watershed has created similar conditions that could threaten the integrity of these properties. With elevated flows, Ranch Creek is expected to flood a portion of the airstrip and is susceptible to plugging. Ranch creek diversion will be impacted by higher flows, debris and deadfall that could result in greater downstream flooding of Chamberlain Guard Station. The primary threat to these properties within the first year after the fire during the first spring runoff event.

B.) Location/(Suitable) Sites:

Historic Chamberlain Guard Station is a USFS Administrative site that includes five cabins, out buildings and an airstrip with two runways

C. Design/Construction Specifications:

Ensure existing drainage structure and water diversion on Ranch Creek remain functioning through storm inspection and response treatment during the first Spring runoff event.

- Clear Ranch Creek diversion from debris plugs that can alter and divert flows
- Inspect watertable and flooding of Chamberlain facilities for possible damage and take appropriate actions to protect
- Clear airstrip culvert inlet clear of debris to prevent damage to airstrip

D. Purpose of Treatment Specifications:

Protection of Chamberlain Guard Station and Airstrip

E. Treatment Effectiveness Monitoring Proposed:

Monitor effectiveness of emergency treatments during Spring snowmelt runoff.

LABOR, MATERIALS AND OTHER COST:

PERSONNEL SERVICES: (Grade @ Cost/Hours X # Hours X # Fiscal Years = Cost/Item): Do not include contract personnel costs here (see contractor services below).	**COST / ITEM**
Calculated cost for 3 workdays for two GS-11 employees at $350/day =	
TOTAL PERSONNEL SERVICE COST	$2,100.00
TRAVEL COST (Personnel or Equipment @ Rate X Round Trips X #Fiscal Years = Cost/Item):	**COST / ITEM**
Roundtrip backcountry flight support to Chamberlain Guard Station	
TOTAL TRAVEL COST	$1,600

SPECIFICATION COST SUMMARY

FISCAL YEAR	PLANNED INITIATION DATE (M/D/YYYY)	PLANNED COMPLETION DATE (M/D/YYYY)	WORK AGENT	UNITS	TOTAL UNIT COST	PLANNED ACCOMPLISHMENTS	PLANNED COST
2018	Spring (06/21/2018)	Fiscal year 2018					
						TOTAL	$3,700.00

Work Agent: C=Coop Agreement, F=Force Account, G=Grantee, P=Permittees, S=Service Contract, T=Timber Sales Purchaser, V=Volunteer

Noxious Weeds:

TREATMENT/ACTIVITY NAME	T1 - Early Detection & Rapid Response (EDRR)	**PART E SPECIFICATION #**	T1 - Noxious & Invasive Species Monitoring & Treatment
NFPORS TREATMENT CATEGORY*	Invasive Species	**FISCAL YEAR(S) (list each year):**	2018
NFPORS TREATMENT TYPE *	Invasive Species	**WUI? Y / N**	No
IMPACTED COMMUNITIES AT RISK		**IMPACTED T&E SPECIES**	No

* See NFPORS Restoration & Rehabilitation module - Edit Treatment screen for applicable entries.

WORK TO BE DONE (describe or attach exact specifications of work to be done):

A.) General Description:

Survey and treat noxious weed infestations with herbicides or mechanically pull within the burn perimeter for one year following the fire. Treatment would occur on approximately 250 acres in and adjacent to the Highline Fire perimeter, while inventory would occur on approximately 500 acres surrounding the existing infestations. Treatment will be done with backpack sprayers using chemicals and guidelines approved in the wilderness weed treatment EIS (USDA, 1999). Treatment near waterways will require hand removal of infestations to prevent water contamination.
Monitor for noxious weed invasion and the effectiveness of treatments. Monitoring would be done periodically to assess BAER weed treatments and recovery of the burned sites. It would evaluate the success or failure of treatment, recommend adjustments to treatment or re-treatment and report the findings to management.

B.) Location/(Suitable) Sites:

Chamberlain Airstrip and Administration Site and all trails within and leading into the Highline Fire used for travel with existing populations of Canada thistle and spotted knapweed. Areas within the fire perimeter or, that are within 1000' of a noxious weed infestation for survey, treatment and monitoring for the year following (Spring and Fall) the fire.

C. Design/Construction Specifications:

1. Monitor disturbed areas during growing seasons for spread. Conduct two surveys of the area within the first year following the fire by small ground crews, hiking into area from Chamberlain Guard Station Airstrip. Two separate surveys, late spring and early to mid-summer to detect the variety of weed species that may emerge in this ecosystem based on weed biology.
2. If spread of noxious and invasive weeds is identified, then plan and design treatment.
3. Select mechanical or chemical treatment dependent upon weed species and location. With chemical treatments, determine appropriate herbicide, application rate, and application timing based on specific weed being treated and access to the location of the infestation.
4. Consideration for sensitive habitat when selecting appropriate herbicide.

D. Purpose of Treatment Specifications:

Reduce the potential for establishment of new noxious weed infestations in highly susceptible burned areas, prevent spread of existing infestations, and prevent increase in weed density in existing infestations. Reduce the potential for establishment of new noxious weed infestations in native or naturalized communities

E. Treatment Effectiveness Monitoring Proposed:

Follow-up monitoring would be needed in subsequent years if new or expanded weed populations are discovered during the 1st year of BAER treatments.

LABOR, MATERIALS AND OTHER COST:

PERSONNEL SERVICES: (Grade @ Cost/Hours X # Hours X # Fiscal Years = Cost/Item): Do not include contract personnel costs here (see contractor services below).	**COST / ITEM**
GS-11 Sup. Natural Resource Specialist @ $350/day x 30 days (Coordinate weed monitoring/treatments)	$10,500.00
GS-6 Weeds Technician @ $146/day x 30 days (Weed Treatments/Inventory/Data entry into NRIS & FACTS)	$4,380.00
GS-4 Weeds Technician @$118/day x 30 days (Weed Treatments/Inventory/Data entry into NRIS & FACTS)	$3,540.00
TOTAL PERSONNEL SERVICE COST	**$18,420.00**
EQUIPMENT PURCHASE, LEASE AND/OR RENT (Item @ Cost/Hour X # of Hours X #Fiscal Years = Cost/Item): Note: Purchases require written justification that demonstrates cost benefits over leasing or renting.	**COST / ITEM**
N/A	
TOTAL EQUIPMENT PURCHASE, LEASE OR RENTAL COST	
MATERIALS AND SUPPLIES (Item @ Cost/Each X Quantity X #Fiscal Years = Cost/Item):	**COST / ITEM**
Chemical: Milestone $91/ gal = 2 gallon (Knapweed).	$182.00
PPE: $60/ apron x 3 aprons.	$180.00
Parts/Equipment: Sprayer parts for backpack sprayers: $100 x 2	$200.00
TOTAL MATERIALS AND SUPPLY COST	**$562.00**
TRAVEL COST (Personnel or Equipment @ Rate X Round Trips X #Fiscal Years = Cost/Item):	**COST / ITEM**
Flights into and out of Chamberlain Airstrip: $600.00/flight	$1,800.00
Vehicle ($208/month @ ¾ month = $156.00	$ 156.00
Per diem for crew =30 day per diem rate per person = $38/day x 60days total	$2,280.00
TOTAL TRAVEL COST	**$4,236.00**
AGREEMENT COST (Labor or Equipment @ Cost/Hour X #Hours X #Fiscal Years = Cost/Item):	**COST / ITEM**
N/A	$
TOTAL AGREEMENT COST	$

SPECIFICATION COST SUMMARY

FISCAL YEAR	PLANNED INITIATION DATE (M/D/YYYY)	PLANNED COMPLETION DATE (M/D/YYYY)	WORK AGENT	UNITS	TOTAL UNIT COST	PLANNED ACCOMPLISHMENTS	PLANNED COST
FY18	5/01/2018	09/30/2018	USFS-PNF	250	$92.87 /acre	Monitor/treat weed infestations	**$23,218.00**
						TOTAL	

Work Agent: C=Coop Agreement, F=Force Account, G=Grantee, P=Permittees, S=Service Contract, T=Timber Sales Purchaser, V=Volunteer

SOURCE OF COST ESTIMATE

1.	Estimate obtained from 2-3 independent contractual sources.	
2.	Documented cost figures from similar project work obtained from local agency sources.	P,E,M,T
3.	Estimate supported by cost guides from independent sources or other federal agencies	
4.	Estimates based upon government wage rates and material cost.	P,E,M,T
5.	No cost estimate required - cost charged to Fire Suppression Account	

P = Personnel Services, **E** = Equipment **M** = Materials/Supplies, **T** = Travel, **C** = Contract, **F** = Suppression

RELEVANT DETAILS, MAPS AND DOCUMENTATION INCLUDED IN THIS REPORT:

List Relevant Documentation and Cross-References within ESR Plan

Highline Fire Weed Monitoring & Treatment Estimates

Monitoring/Potential Treatment Area	Acreage to be Monitored/Treated	Location	Estimated Days
FS Trails within burned area where it enters and travels through the fire. Existing weed infestations within 1,000 feet of fire perimeter.	250	Approximately 70 miles of trail corridor, inventory will occur within one chain (66 feet) either side of trail. Fire perimeter where it falls near existing weed infestations and within 1,000' of any weed infestations in or near the fire.	30
Total Acres Weed Monitoring in Highline Fire	**250 acres on FS (monitoring & treatment will be concurrent for small acreages)**		**Total Days = 30**

NOXIOUS WEEDS: TOTAL COST BY JURSIDICTION

JURISDICTION	UNITS TREATED	COST
Payette National Forest	250	**$ 23,218.00**
	TOTAL COST	**$ 23,218.00**

Cultural Resources

TREATMENT/ACTIVITY NAME	Heritage Site Protection	**PART E SPECIFICATION #**	
NFPORS TREATMENT CATEGORY*	Land Treatments	**FISCAL YEAR(S) (list each year):**	2018
NFPORS TREATMENT TYPE *	Heritage Site Stabilization	**WUI? Y / N**	No
IMPACTED COMMUNITIES AT RISK	Heritage Site Significance, NRHP Eligibility	**IMPACTED T&E SPECIES**	No

* See NFPORS Restoration & Rehabilitation module - Edit Treatment screen for applicable entries.

WORK TO BE DONE (describe or attach exact specifications of work to be done):

A.) General Description:

Remote cultural sites managed by the Payette National Forest require additional assessment for identification of direct and indirect impacts resulting from the Highline Fire. Three Native American sites eligible for listing on the NRHP are identified as at-risk to direct and indirect post-fire impacts based on the Soil Burn Severity (SBS) map and a moderate severity burn level. These sites were identified based on proximity to headwaters, drainages, and trails. Probable impacts include damage to the resources and their data recovery potential, unacceptable degradation due to looting and erosion, and potential hazard tree removal of cambium peeled trees due to proximity to trails. The probability of damage or loss is likely (50-89%) at these locations and would result in irreversible damage to significant cultural resources. Survey crews from the Payette National Forest's Heritage Program must visit these sites to administer mitigative measures involving data recovery, stabilization, and hazard tree removal.

B.) Location/(Suitable) Sites:

The three sites identified with a high and intermediate probability of irreversible damage are located in a variety of terrain and vegetation types, including adjacent to drainages, headwaters, and are in areas of moderate burn severity.

C. Design/Construction Specifications:

Heritage Program crews will visit the sites identified with high and intermediate risk for loss or damage and will stabilize the sites with the appropriate prescriptions given the conditions and variables if needed.

D. Purpose of Treatment Specifications:

Cultural resources within the fire perimeter may have irreversible damage following fire damage and erosional events. Sites are eligible based on dendrochronology and intact stratigraphy and artifact contexts that are damaged by fire, sediment erosion, and looting. Damage to cambium peeled trees, re-deposition, and looting will damage the sites' integrity and significance.

E. Treatment Effectiveness Monitoring Proposed:

Additional monitor work may be necessary.

LABOR, MATERIALS AND OTHER COST:

PERSONNEL SERVICES: (Grade @ Cost/Hours X # Hours X # Fiscal Years = Cost/Item): Do not include contract personnel costs here (see contractor services below).	**COST / ITEM**
Calculated cost for 5 workdays for a crew of two: one GS-7 and one GS-9 @ 23.53/hr and 40/hr, respectively	
TOTAL PERSONNEL SERVICE COST	$2,5410.20
TRAVEL COST (Personnel or Equipment @ Rate X Round Trips X #Fiscal Years = Cost/Item):	**COST / ITEM**
Roundtrip backcountry flight support to Chamberlain Guard Station or Stock/pack support	
TOTAL TRAVEL COST	$1,600

SPECIFICATION COST SUMMARY

FISCAL YEAR	PLANNED INITIATION DATE (M/D/YYYY)	PLANNED COMPLETION DATE (M/D/YYYY)	WORK AGENT	UNITS	TOTAL UNIT COST	PLANNED ACCOMPLISHMENTS	PLANNED COST
2018	Summer field season 2018	Fiscal year 2018					
						TOTAL	$4,141.20

Work Agent: C=Coop Agreement, F=Force Account, G=Grantee, P=Permittees, S=Service Contract, T=Timber Sales Purchaser, V=Volunteer