Date of Report: 10/05/2014
Interim Report: 12/11/2014

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

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

[X] 2. Interim Report # 1
[ ] 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: Onion Mountain

B. Fire Number: OR-RSF-141146

C. State: OR

D. County: Josephine

E. Region: R6

F. Forest: Rogue River-Siskiyou NF

G. District: Wild Rivers

H. Fire Incident Job Code: P6JD99

I. Date Fire Started: September 13, 2014

J. Date Fire Contained: September 30, 2014

K. Suppression Cost: 11 Million as of 10/01/2014

L. Fire Suppression Damages Repaired with Suppression Funds
1. Fireline waterbarred (miles): unknown
2. Fireline seeded (miles): 4 miles
3. Other (identify): 4 acres of other disturbed areas

M. Watershed Number: 1710031002 (Hellgate Canyon-Rogue River) and 1710031107 (Briggs Creek)

6th Field Watersheds within Burned Area

6th field watershed	HUC	Total Acres	Acres Burned	Percent Burned
Upper Briggs Creek	171003110701	24,627	2,789	16%
Taylor Creek	171003100203	17,641	1,337	5%

Burn Severity by HUC6

6th field watershed	Unburned Acres (%)	Low Acres (%)	Moderate Acres (%)	High Acres (%)
Upper Briggs Creek	23,290 (95%)	769 (3%)	143 (1%)	425 (2%)
Taylor Creek	14,852 (84%)	1,591 (9%)	350 (2%)	842 (5%)

N. Total Acres Burned: 4,134
NFS Acres(4,134) Other Federal (0) State (0) Private (0)

O. Vegetation Types: Douglas-fir, white fir, Pacific madrone, canyon live oak, tanoak, ponderosa pine, California black oak; big-leaf maple; poison oak, oregongrape, snowberry, ocean-spray

P. Dominant Soils:
Estimated Taxonomic Classifications of Soil Map Units in the **Onion Mountain Fire** from Siskiyou National Forest SRI (1979).

Soil MU	Acres in fire perimeter	Est. Taxonomic Classification
15	19	Loamy-skeletal, mixed, mesic, Ultic Haploxerolls
18	849	Loamy-skeletal, mixed, mesic Ultic Haploxeralfs
312	17	Clayey-skeletal, serpentinitic, mesic, Typic Xerochrepts; Clayey-skeletal, serpentinitic, mesic, Mollic Haploseralfs
313	121	Clayey-skeletal, serpentinitic, mesic, Typic Xerochrepts; Serpentine rock outcrop
4	88	Landflow/landstump terrain generally on metamorphic and sedimentary rock
76	1396	Loamy-skeletal, mixed, mesic, Lithic Xerochrepts
767	11	Loamy-skeletal, mixed, mesic Lithic Xerochrepts; Loamy-skeletal, mixed, mesic, Typic Xerochrepts
77	563	Loamy-skeletal, mixed, mesic, Typic Xerochrepts
86	675	Loamy-skeletal, mixed, mesic Typic Xerochrepts
860	319	Loamy-skeletal, mixed, mesic Typic Xerochrepts; Rock outcrop
867	73	Loamy-skeletal, mixed, mesic Typic Xerochrepts; Loamy-skeletal, mixed, mesic, Typic Xerochrepts
868	3	Loamy-skeletal, mixed, mesic Typic Xerochrepts; Loamy-skeletal, mixed, mesic, Ultic Haploxeralfs

Q. Geologic Types: Galice Formation marine metasediments and metavolcanics. Galice metasediments are hard, dark gray to black, fine grained, thinly layered, slaty to phyllitic mudstones interbedded with hard dark gray or buff, medium grained, lithic, poorly sorted sandstones. Galice metavolcanics consist of thick volcanic flowsmainly porphyritic with breccias and tuffs. Applegate Group which consists of ultramafic rocks (including peridotite and serpentine) and metamorphosed sedimentary/volcanic rocks. Rogue Formation which consists of marine sedimentary rocks.

R. Miles of Stream Channels by Order or Class:

Stream Class (miles) by HUC6 within the Fire Perimeter:

	Upper Briggs Creek	Taylor Creek	Total
Class 1	0.4	0.7	1.1
Class 2	0.7	1.6	2.3
Class 3	5.1	10.4	15.5
Total	**6.2**	**12.7**	**18.9**

S. Transportation System

Trails: 0 miles Roads: 19 miles

PART III - WATERSHED CONDITION

A. Burn Severity (acres): 2364 (low) 494 (moderate) 1268 (high)
This break-out of burn severity is based on field mapping of the fire over two days, as no clear BARC was available due to cloud cover. Low and Unburned was lumped together as Low, so this is an expected over-estimation of Low severity. Once a preliminary BARC map is acquired, it will be compared to the field testing and mapping, and will be corrected and finalized for the Onion Mountain Fire.

B. Water-Repellent Soil (acres): 1762 acres
Strong hydrophobic tendencies going down 4 to 6 cm in the soil were found in all moderate and high burn severity areas that were tested. Strong but more shallow (at soil surface directly below organic matter layer) hydrophobic tendencies were also observed in low as well as unburned areas. It is assumed that these shallow hydrophobic tendencies in the unburned/low areas are seasonal, and will dissipate in the fall/winter with soil wetting precipitation, whereas the fire-induced hydrophobicity that is deeper in the soil has the potential to remain longer.

C. Soil Erosion Hazard Rating (acres):
0 (low) 1519 (moderate) 2615 (high)

D. Erosion Potential: Minnow Creek drainage: 6 to 40 tons/acre
Horse Creek drainage: 6 to 45 tons/acre

E. Sediment Potential: Minnow Creek drainage: 457 to 3038 cubic yards / square mile
Horse Creek drainage: 453 to 3452 cubic yards/ square mile

PART IV - HYDROLOGIC DESIGN FACTORS

A. Estimated Vegetative Recovery Period, (years): 10-20

B. Design Chance of Success, (percent): 80%

C. Equivalent Design Recurrence Interval, (years): 25

D. Design Storm Duration, (hours): 24

E. Design Storm Magnitude, (inches): 7.0 .

F. Design Flow, (cubic feet / second/ square mile): 534

G. Estimated Reduction in Infiltration, (percent): 20

H. Adjusted Design Flow, (cfs per square mile): 651

PART V - SUMMARY OF ANALYSIS

A. Describe Critical Values/Resources and Threats:
Human Life and Safety:
Human life and safety on or in close proximity to burned NFS lands. Forest roads within and adjacent to the burn perimeter have the greatest concern for human life and safety from rock fall and snags. Two roads access the fire area, FS road 2509 and FS road 2500565. There is a ***Possible*** probability of damage or loss, and a ***Major*** magnitude of consequences if someone were to be killed or injured, resulting in a ***High*** risk. Storm proofing work on the 2509 road has revealed new locations of road prism and fill collapse, fill cracking and slumping from tree bole and root burnouts in the fillslope and loss of vegetation, which are resulting in destabilization and potential loss of road shoulder and prism. Some of these destabilizing locations are on narrow sections of the road that are posing an unseen danger even to alert and wary drivers. There is a

Possible probability of damage or loss, and a *Major* magnitude of consequences if someone were to be killed or injured, resulting in a High risk. **Treatments recommended – Burned Area Warning signs at strategic locations entering the burned area; potentially a temporary closure device on 2500565. Temporary closure order on the 2509 road with installation of a gate at each end.**

Property:

Approximately 19 miles of forest road is within the fire perimeter, of this approximately 9 miles are within high to moderate burn severity. Drainage structure and fill slope repair (from burned out roots) are at risk of damage from water erosion, debris generated from the fire, and increased sedimentation.

Forest Roads within the fire perimeter

Road ID	Est. Miles in Perimeter	Est. Miles within Mod & High Severity	Maintenance Level
2500121	0.05	0.05	1
2500565	2.67	0.5	2
2500568	1.1	0	
2500569	0.8	0	
2500571	0.2	0	
2509000	5.8	3.6	2
2509015	1.12	1	2
2509020	0.5	0.2	2
2509022	0.2	0	
2509025	0.97	0.97	2
2509032	0.8	0	
2509049	0.68	0.68	2
2509055	0.9	0.5	3
2509056	0.5	0.5	2
2509610	0.13	0.13	2
2509613	0.7	0	
2509615	0.3	0	
2509617	0.1	0	
2509625	0.4	0	
2509626	<0.1	0	
2509630	0.1	0	
2509631	0.1	0	
2509632	0.1	0	
2509633	0.1	0	
2509634	0.3	0.3	1
2509635	0.17	0.17	2
Total	**18.79**	**8.6**	

There is a *Likely* probability of damage or loss due to steep slopes and prevelance of severe soil erosion ratings, and a *Moderate* to *Major* magnitude of consequences resulting in a *High to Very High* risk. Storm patrolling on the 2509 road has revealed at least 11 new locations with the beginnings of road prism and fill collapse, fill cracking and slumping triggered by recent precipitation events due to tree bole and root burnouts in the fillslope and loss of all vegetation. There is a *Very Likely* probability of damage or loss of sections of the 2509 road prism, and a *Major* magnitude of consequences resulting in a *Very High* risk. **Treatments**

recommended- sediment control at culverts and cross ditches, ditch cleanout, storm patrol, on sections of road impacted by Moderate and High severity burn. Excavation, backfill and compaction of failing fillslope and road prism locations.

In addition to the drainage structures there are two culverts on main stream crossings (Taylor Creek and Horse Creek) downstream of large areas with high to moderate burn severity. The Taylor Creek crossing is a bridge and will not be affected by possible increased flow due to the fire. The Horse Creek crossing is on a level 1 road with 35% of the watershed burned at a moderate to high severity. Post-fire streamflows from a 25-year, 24-hour storm event are predicted to increase by 24%. Horse Creek meadow is downstream of this location and would allow any sediment to settle out if the culvert did blow out causing a sediment pulse downstream. The probability of damage or loss is *possible*, the magnitude of consequences is *minor*, resulting in a *Low* risk. **No Treatments recommended**.

The Onion Mountain lookout is very near the fire perimeter, however it is upstream of the fire perimeter and there are no burned trees that could reach it, therefore it will not be affected by effects from the fire. No trails, water systems, utility systems, dams, or wells were within the burned area and those that are downstream will not be affected by potential effects from increased runoff after the fire. **No Treatment recommended.**

Natural Resources:

- *Soil productivity and hydrologic function on NFS lands*. After a fire there is the potential threat of increased soil erosion affecting site productivity, and ash flows and increased peak flows that could cause streambank erosion in Horse Creek, Minnow Creek, and Taylor Creek. The majority of soils in the fire perimeter have a severe erosion potential rating, and are susceptible to debris slides, rock fall, and channel scour. Approximately 43 percent of the fire area burned at moderate to high severity, and are exhibiting strong hydrophobic tendencies at 4 to 6 cm in the soil. There is risk for loss of long term soil productivity, but soil movement is tempered by a high amount of surface rock that is expected to act as effective groundcover against rainsplash, sheet and rill erosion. Much of the terrain that burned at moderate and high severities is too steep for any form of mulching treatment to be measurably effective. The probability of damage or loss is *possible* and the magnitude of consequence would be *minor to moderate* depending on the size of individual areas of concern, resulting in *Low to Intermediate* risk. **No Treatments Recommended.**

- *Critical habitat or suitable occupied habitat for federally listed threatened or endangered terrestrial, aquatic animal, or plant species on NFS lands.*
    - The Taylor Creek subwatershed is occupied by SONCC coho salmon and contains critical habitat for SONCC coho salmon. The mainstem of Taylor Creek, the South Fork of Taylor Creek, and the West Fork of Taylor Creek are all occupied by coho salmon. Critical habitat for coho salmon is located in all of the occupied reaches and also in China and Minnow Creeks. There is the potential for increased sedimentation due to higher erosion rates, increased stream temperature from the loss of riparian vegeation, and increased landslide potential due to the amount of high severity fire within or upstream of occupied or critical habitat. The probability of damage or loss is *Possible* and the magnitude of consequencs is *Minor*, resulting in a *Low* Risk. **No Treatments Recommended.**

    - The Onion Mountain fire (approximately 4,132 acres) is completely within northern spotted owl designated critical habitat unit 9 Klamath West, subunit 2 (KLW-2). This subunit encompasses approximately 149,800 total acres. Table 1 displays the acres of burn severity for suitable spotted owl habitat within the fire area. Critical habitat subunit KLW-2 includes approximately 91,350 acres of nesting, roosting foraging (NRF) habitat and 36,658 acres of dispersal habitat. High burn severity occurred within approximately 1% of suitable NRF, and less than 1% of dispersal habitat within KLW-2.

      Based on historic and recent owl surveys, suitable habitat within the fire area is considered occupied by northern spotted owls. Five spotted owl home ranges (1.3 mi radius) and four

core areas (0.5 mi radius) overlap the fire area. Two core areas and two home ranges were affected by considerable high and moderate severity fire.

Table 1. Acres of Suitable Northern Spotted Owl Habitat Burned in Onion Mountain Fire		
Burn Severity	**Nesting, Roosting, Foraging**	**Dispersal**
High	846	284
Moderate	306	122
Low	1388	671
Total Habitat	**2540**	**1077**

Based on the analysis presented above, the probability of damage or loss of habitat within high burn severity is ***very likely***. The probability within areas of moderate severity is ***possible***. The magnitude of consequences to northern spotted owl habitat is considered ***moderate***, where damage by the fire will result in long-term loss of suitable habitat which is considerable for two owl core areas and two home ranges. **No Treatments Recommended.**

- *Native or naturalized communities on NFS lands where invasive species or noxious weeds are absent or present in only minor amounts.*

The native plant communities and sensitive plant habitat within the Onion Mountain Fire area are widespread. Refer to the map at the end of this report. In particular, there are sensitive plant species in the Minnow Creek drainage with no known noxious weeds, that burned at moderate to high severity and are now more susceptible to invasion. The impacted habitat is dissected with roads, trails, and watercourses which act as invasive plant vectors. The forested areas are susceptible to the spread of existing infestations and the establishment of new noxious weed infestations. The potential threat is the spread of non-native invasive plant species (particularly noxious weeds as designated by the Oregon Dept. of Agriculture) into the burned area where there is currently no known infestations. Noxious weeds known to exist within close proximity to the fire perimeter are: meadow knapweed, Canada thistle, Scotch broom, bull thistle, and medusa head. There is currently only one known noxious weed occurrence within the fire perimeter (Bull thistle).

ONION MOUNTAIN FIRE NOXIOUS WEED INFESTATIONS

Within Perimeter

CIVU_0039 *Cirsium vulgare* (bull thistle)
- All along the 2509 road
- Many infestations unmapped throughout the fire perimeter

Outside of Perimeter

CIVU_0008
- Many infestations mapped and unmapped adjacent to the fire perimeter

CEDE5_0351 *Centaurea debeauxii* (meadow knapweed) (*Centaurea* X *moncktonii*)
- 600 feet from east boundary

CEDE5_0166
- On access route driven to egress fire
- 1500 feet from perimeter

CEDE5_172
- 750 feet from perimeter

CIAR_0016 *Cirsium arvense* (Canada thistle)
- 1000 feet from east boundary

TACA8_0009 *Taeniatherum caput-medusae* (medusa head)
- At drop point 52-many vehicles staged here and travelled within fire perimeter

TACA8_0004
- Close to Drop Point 52

TACA8_0001
- On access route driven to egress fire
- Heli-spot and spike out on infestation

TACA8_0003
- On access route driven to egress fire
- 1300 feet from perimeter

CYSC4_0105 *Cytisus scoparius* (scotch broom)
- Along travel route near fire perimeter

ONION MOUNTAIN FOREST SERVICE SENSITIVE AND STRATEGIC PLANTS

SENSITIVE

SOLE3 *Sophora leachiana* (western sophora)
- Many populations within fire perimeter
  - SOLE3_0017
    SOLE3_0019
    SOLE3_0028
    SOLE3_0033
    SOLE3_0034
    SOLE3_0040
    SOLE3_0056
    SOLE3_0060
    SOLE3_0076
    SOLE3_0086
- Large number of occurrences adjacent to fire perimeter
  - From 195 feet to 2 miles

CYFA_0030 *Cypripedium fasciculatum* (clustered lady slipper)
- Within fire perimeter

STRATEGIC

ALBO_0014 *Allium bolanderi* (bolander onion)
- Within perimeter

ALBO_0016
- Within the fire perimeter

There is a need for BAER detection surveys and noxious weed treatment within the Onion Mountain fire area. The existing Oregon State listed noxious weed infestations within the fire perimeter and surrounding areas are at moderate to high risk of spreading into the newly burned and disturbed areas. Many infestations are composed of wind disseminated species. This places the acres, within the Onion Mountain fire perimeter that have incurred moderate and severe burn intensity at risk from noxious weed spread and establishment.

There is an immediate threat of noxious weeds infesting, spreading, and establishing in vulnerable habitats changing the structure and composition of native plant communities. This is especially important in locations of suitable rare plants habitat. There are many locations of rare plants adjacent to the fire boundary. Detection surveys and noxious weed treatments are necessary to prevent any additional negative impacts to native plant communities and potential rare plant habitat. Probability of damage or loss is ***Likely*** and the magnitude of consequences is ***Moderate***, resulting in ***High*** risk. **Treatments Recommended – Noxious weed/Invasive species early detection rapid response.**

B. Emergency Treatment Objectives:

The primary objectives of the burned area emergency treatments are to:

- Minimize the effects of post-fire hillslope hazards and destabilized road prisms along travel routes within the fire area on human life and safety.
- Minimize the effects of post-fire erosion and debris hazards on FS roads within moderate and high burn severity areas in order to protect and maintain the roadbeds.
- Minimize the increased potential for the spread of invasive and noxious weeds into previously uninfested habitats in the burn area.

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

Land **80** % Channel **N/A** % Roads/Trails **75** % Protection/Safety **85** %

D. Probability of Treatment Success

	Years after Treatment		
	1	3	5
Land	70	80	80
Roads/Trails	85	90	95
Protection/Safety	85	90	95

E. Cost of No-Action (Including Loss): $10,600,000
This is putting the value on human life and safety at 10M, when it is really priceless.
F. Cost of Selected Alternative (Including Loss): $1,620,894

G. Skills Represented on Burned-Area Survey Team:

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

Team Leader: Joni D. Brazier

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H. **Treatment Narrative:**

Land Treatments: Invasive Plant Early Detection surveys by 2 district Biological Science Technicians in late spring/early summer 2015 along and within the fire perimeter in moderate and high burn severity areas. If new infestations of noxious weeds or other invasive plants are detected, funding for treating will be requested in summer of 2015 to be implemented the same summer.

Channel Treatments: None proposed.

Road Treatments: Storm patrol the fire area to assure debris and sediment does not plug drainage culverts causing the roads to be overtopped and erode, with focus being on segments passing through and adjacent to moderate and high severity burn areas (approximately 9 miles of road). This would include sections of the following roads: 2500121, 2500565, 2509, 2509015, 2509020, 2509025, 2509049, 2509055, 2509056, 2509610, 2509634, and 2509635. Road treatment costs vary by road design/drainage/surface type, which is shown in the table in Part VI. Excavation, backfill, and compaction at destabilizing road prism and fillslope locations along the 2509 road.

Protection/Safety Treatments: Install burned area hazard warning signs at both ends of FS road 2509, and the beginning of FS road 2500565. Initiate a temporary road closure order on the 2509 road and install two temporary gates, one on each end of the 2509 road.

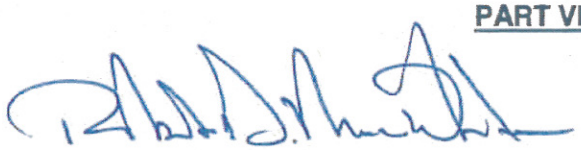
I. **Monitoring Narrative:**

Implementation: Implementation monitoring and documentation will be conducted for each treatment to ensure that it is implemented correctly following specifications. Results of this monitoring will be submitted in an Interim or Final 2500-8, Accomplishment Report.

Part VI – Emergency Stabilization Treatments and Source of Funds **Interim # 1**

			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										
Noxious Weed Detecti	Acres	$13	875	$11,375	$0		$0		$0	$11,375
				$0	$0		$0		$0	$0
Insert new items above this line!				$0	$0		$0		$0	$0
Subtotal Land Treatments				$11,375	$0		$0		$0	$11,375
B. Channel Treatments										
				$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. Road and Trails										
Storm proof & patrol	miles	$350	0.5	$175	$0		$0		$0	$175
Storm proof & patrol	miles	$500	3.7	$1,850	$0		$0		$0	$1,850
Storm proof & patrol	miles	$1,000	4.4	$4,400	$0		$0		$0	$4,400
Road stabilization	each	$520	11	$5,720						
Insert new items above this line!				$0	$0		$0		$0	$0
Subtotal Road & Trails				$12,145	$0		$0		$0	$6,425
D. Protection/Safety										
Hazard warning signs	each	$525	3	$1,575	$0		$0		$0	$1,575
Temporary gate install	each	$2,900	2	$5,800	$0		$0		$0	$5,800
				$0	$0		$0		$0	$0
Insert new items above this line!				$0	$0		$0		$0	$0
Subtotal Structures				$7,375	$0		$0		$0	$7,375
E. BAER Evaluation										
Assessment Team	Report	$6,200	1	---	$6,200		$0		$0	$6,200
Interim Assessment	Report	$1,163	1		$1,163					
Insert new items above this line!				---	$0		$0		$0	$0
Subtotal Evaluation				---	$7,363		$0		$0	$6,200
F. Monitoring										
Monitoring Report	Report	$1,000	1	$1,000	$0		$0		$0	$1,000
Insert new items above this line!				$0	$0		$0		$0	$0
Subtotal Monitoring				$1,000	$0		$0		$0	$1,000
G. Totals				$31,895	$7,363		$0		$0	$32,375
Previously approved				$20,375	$6,200					
Total for this request				**$11,520**	$1,163					

PART VII - APPROVALS

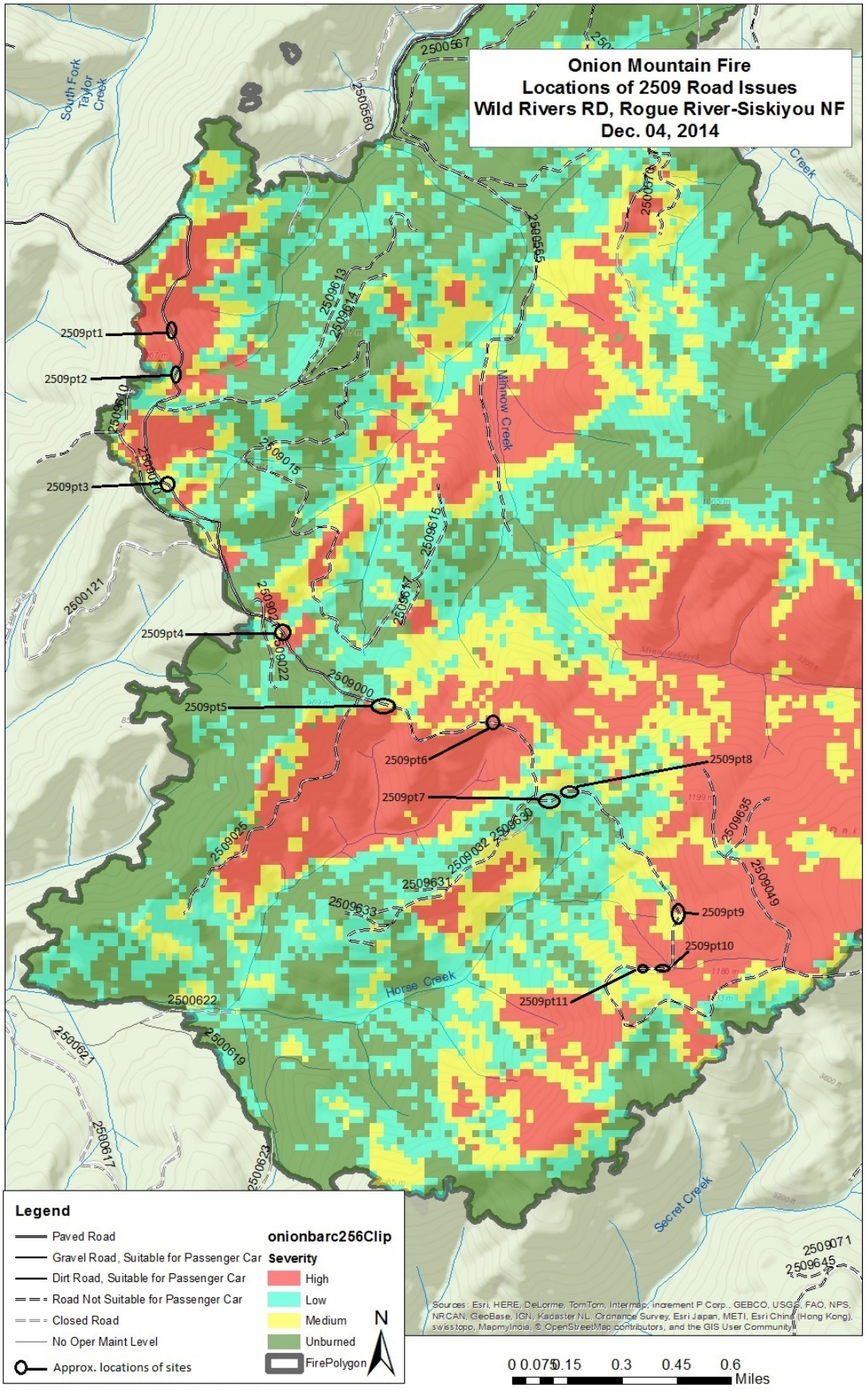
1.  12/15/14

Forest Supervisor (signature) Date

2.  1-16-14

Regional Forester (signature) Date

2509 Road locations of road prism/fill slope destabilization (collapsing, cracking, slumping) from recent rains due to previously undetected tree bole and root burnouts in the fillslope.



NOXIOUS WEED INFESTATIONS AND SENSITIVE PLANT ELEMENT OCCURRENCES