

BURNED-AREA REPORT
(Reference FSH 2509.13)**PART I - TYPE OF REQUEST****A. Type of Report**

- ☒ 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)
☐ 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: Onion Fire B. Fire Number: CA-KNF-6061
C. State: CA D. County: Siskiyou County
E. Region: 5 F. Forest: Klamath National Forest
G. District: Salmon River Ranger District H. Fire Incident Job Code: (0505) P5EK1W
I. Date Fire Started: August 18, 2011 J. Date Fire Contained: September 10, 2011
K. Suppression Cost: Approximately \$700,000 (Estimated)
L. Fire Suppression Damages Repaired with Suppression Funds
 1. Fireline waterbarred (miles): 4.5 miles of handline
 2. Fireline seeded (miles): None
 3. Other (waterbarring trails, spreading duff material back over nontrail routes): 1.2 miles off-trail routes; 2.0 miles Lady Gulch Trail; 300 feet of man disturbed area to spring used as water source by spike camp.
M. Watershed Number: HUC 6 Watersheds: 180102100104 Garden Gulch/South Fork Salmon River
N. Total Acres Burned: Total 560 NFS Acres (560) Other Federal (0) State (0) Private (0)
O. Vegetation Types: Old growth red fir and white fir timber moving into shrub fuel and heavy dead and down.

P. Dominant Soils:

| Soil Series | Slope (%) | Rock Outcrop (%) | Surface Soil Texture | Rock Fragments (%) | Erosion Hazard Rating | K-Factor | Hydrologic Group | Acres |
|---|-----------|------------------|-------------------------------|--------------------|-----------------------|----------|------------------|-------|
| Entic Xerumbrepts-Gerle family assn. (#124) | 30 to 90 | 15 | gravelly loam | 15-35% | Very High | 0.17 | C | 355 |
| Gilligan-Chawanakee families assn (#128) | 30 to 90 | 25 | sandy loam | <15% | Very High | 0.28 | B | 81 |
| Nanny family, (#166) | 30 to 50 | 10 | very gravelly sandy loam | 35-60% | High | 0.10 | B | 77 |
| Teewinot-Endlich families assn. (#189) | 30 to 90 | 10 | Extremely gravelly sandy loam | 60%+ | Very High | 0.05 | B | 47 |

Q. Geologic Types: The Onion Fire area is primarily underlain with granitic type rocks consisting of diorite and granodiorite.

R. Miles of Stream Channels by Order or Class: Order 3 = 0.7 miles; Order 4 = 0.9 miles

S. Transportation System

Trails: 0.3 miles

Roads: 0 miles

PART III - WATERSHED CONDITION

A. Burn Severity by total and FS (acres):

| Soil Burn Severity (Acres) | Acres | Percent |
|----------------------------|------------|-------------|
| Unburned | 280 | 50% |
| Low | 118 | 21% |
| Moderate | 73 | 13% |
| High | 89 | 16% |
| Total | 560 | 100% |

B. Hydrophobic Soils: 147 acres.

C. Soil Erosion Hazard Rating (acres):

| | |
|----------|-----|
| Low | 365 |
| Moderate | 80 |
| High | 115 |

D. Erosion Potential: 3.4 tons per acre

E. Sediment Potential:

Summary of Sediment Yield to the HUC 6 Watershed

| Watershed | Area (Acres) | Pre Fire Sediment (yd ³) | Post Fire Sediment (yd ³) | Sediment Increase (x Pre Fire) |
|---|--------------|--------------------------------------|---------------------------------------|--------------------------------|
| 1. Garden Gulch/ South Fork Salmon River | 23,800 | 1,191 | 1,542 | 29 |

F. Debris Flow Potential: The impact to debris flow potential will slightly increased on the southern half of the fire area due to the high and moderate soil burn severity that occurred. Debris flow potential modeling estimates that in the drainages with high soil burn severity a have a 13-22% probability of having a debris flow during a 2 year precipitation event for the year following the event. The northern half of the fire area has an estimated debris flow probability of less than 2% for the same precipitation event.

PART IV - HYDROLOGIC DESIGN FACTORS

- A. Estimated Vegetative Recovery Period, (years): 2-3
- B. Design Chance of Success, (percent): NA
- C. Equivalent Design Recurrence Interval, (years): NA
- D. Design Storm Duration, (hours): NA
- E. Design Storm Magnitude, (inches): NA
- F. Design Flow, (cubic feet / second/ square mile): NA
- G. Estimated Reduction in Infiltration, (percent): NA
- H. Adjusted Design Flow, (cfs per square mile): NA

PART V - SUMMARY OF ANALYSIS

A. Describe Critical Values/Resources and Threats:

The Onion Fire started by lightning on August 19, 2011 and is approximately 560 acres in size. The fire is located entirely within the Trinity Alps Wilderness in the Rush Creek 7th Field HUC. Rush Creek drains into the Salmon River, which has high value anadromous fisheries including coho, spring and fall chinook, and steelhead. The upper Rush Creek drainage is characterized by steep granitic slopes which can be highly erosive if soil cover is lost due to moderate and high soil burned severity fires.

Summary of Watershed Response

Hydrologic Response: Intense rainfall events are not uncommon in this part of the Forest. Flashy runoff peaks due to the higher runoff efficiency associated with cover loss and increased hydrophobicity in high and moderate burn severity areas have the potential to increase rill and shallow debris torrent erosion. This material, plus any generated by potential fire induced debris slides, would be delivered fairly efficiently to Rush Creek. After the Rush Fire, that burned more than 4800 acres to the west of the Onion Fire in Rush Creek drainage, an intense thunderstorm hit causing significant rill erosion. Rill sized debris flows, from moderate and high severity burn areas dumped into Rush Creek and into the South Fork of the Salmon River. One draw

had scour marks 3 feet high above the channel bottom due to intense runoff. The South Fork of the Salmon River ran very dirty for 2 days. Because most of the Onion Fire was a low severity burn, the type of rill erosion that occurred in the 2006 event is unlikely to occur.

Erosion Response: Soils within the fire area have formed from granitic rock either in place on mountain sideslopes or from glacial till. Soils formed from glacial till are deep very gravelly sandy loams with a moderate erosion hazard rating on slopes less than 30% and a high erosion hazard rating on slopes greater than 30%. Soils formed in place on steep mountain sideslopes are moderately deep gravelly loams and very gravelly sandy loams with very high erosion hazard ratings. Although some soil map units have high and very high erosion hazard ratings, the erosion response from the Onion Fire is expected to be moderated by the amount of soil cover that remains on the ground due to the mostly low and moderate burn severities. There is no emergency related to soil productivity in this fire adapted landscape.

Geologic Response: A debris flow event would be the most probable geologic response to the Onion Fire. Debris flows would occur in the small intermittent or ephemeral face drainages along the east slope of Rush Creek. The probability of having a debris flow event is estimated to be 13-22% in the southern half of the fire area during a 2 year event. The northern half of the area affected has a debris flow probability of less than 2%. A debris flow would remove vegetation from the intermittent or ephemeral 1st order channels and could scour parts of the main stem of Rush Creek. The scour in Rush Creek would be localized and minimal if the event occurred during a short-duration (<1 hour) low recurrence interval (2 year) event. The potential for wildfire exacerbated debris flows generally decreases after 2 years of the wildfire event.

Values at Risk

Life: The fire burned entirely within the wilderness boundary, so backcountry travelers may be at risk from falling snags. The risk however is very low because the fire burned at mostly low and moderate severity, causing very little tree mortality.

Risk Assessment – Threats to backcountry travelers in the wilderness

Probability of Damage or Loss: Unlikely. Infrequent use and little tree mortality.

Magnitude of Consequence: Moderate. Backcountry travelers could be injured by falling snags

Risk Level: Low.

Property: There are no private property or Forest Service roads that will be impacted by this fire.

Water Quality and Quantity: The most noticeable effects of post fire effects on water quality would be increased sediment and ash from the burned area into drainages downstream of the fire area. During storm events this will increase turbidity and contribute to pool filling. Due to the low burn severity, water quality and quantity is not expected to be significantly affected as a result of the Onion Fire. Debris flow probability is small for the Onion fire (<25%) and any impacts would be mainly in the intermittent or ephemeral face drainages along Rush Creek.

Risk Assessment – Water Quality

Probability of Damage or Loss: Unlikely. This determination is due to the minimal change in watershed response.

Magnitude of Consequence: Minor. This determination is due to the minimal change in watershed response.

Risk Level: Very Low.

Threats to Fisheries: The greatest potential threat to fisheries, including anadromous species downstream in SF Salmon River and Rush Creek resident rainbow trout, would be from habitat impacts resulting from (1) a detrimental increase in ash and sediment and/or (2) an increase in water temperature. However, as described in the "Water Quality and Quantity" discussion, significant changes to in regards to sedimentation are unlikely as a result of the Onion Fire. Additionally, increases in water temperature are not expected because fire within the Riparian Reserve of the creek (e.g., within 350') was primarily none/very low to low severity. Any riparian vegetation affected by the fire, including backburning activities, will recover within a few seasons, and the overall character of the fire is not out of alignment for what may be expected in a Wilderness setting.

Risk Assessment – Fisheries

Probability of Damage or Loss: Unlikely. This determination is due to the minimal change in watershed response and minimal effect to overstory vegetation.

Magnitude of Consequence: Minor. This determination is due to the minimal change in watershed response and minimal effect to overstory vegetation.

Risk Level: Very Low.

Threats to Soil Productivity: There is no emergency to soil productivity due to fire-adapted ecosystem and location with a wilderness area.

Risk Assessment – Soil Productivity

Probability of Damage or Loss: Unlikely. This determination is due to the minimal change in watershed response.

Magnitude of Consequence: Minor. This determination is due to the minimal change in watershed response.

Risk Level: Very Low.

Threats to Cultural Resources: Assessment for cultural resources has not been completed in the Rush Creek area. The fire perimeter primarily encompassed steep slopes where cultural sites are unlikely to be present. However, historic and pre-historic sites remain a possibility adjacent Rush Creek and upon the ridgeline, including the spike camp and associated facilities.

Risk Assessment – Cultural Resources

Probability of Damage or Loss: Unlikely. There is no emergency for cultural resources due to overall topography, remote Wilderness location, and general low fire severity where potential for sites do exist.

Magnitude of Consequence: Minor. There is no emergency for cultural resources due to overall topography, remote Wilderness location, and general low fire severity where potential for sites do exist.

Risk Level: Very Low.

Threats to Wildlife: There is no emergency to wildlife due to the fire-adapted vegetative ecosystem and location with a wilderness area, which minimizes human disturbance to wildlife in these more exposed areas.

Risk Assessment – Wildlife

Probability of Damage or Loss: Unlikely. This determination is due to the small acres of vegetative mortality within the watershed.

Magnitude of Consequence: Minor. This determination is due to the minimal expected change in vegetative patterns within the watershed.

Risk Level: Very Low

Threats of Noxious Weeds Invasion/Spread: This fire was supplied by helicopters and by pack stock from the Shasta-Trinity NF, Weaverville District, via the Lady Gulch Trailhead. Hay was purchased from a Scott Valley rancher, weed status unknown. The helicopter drop points, trailhead, access trail, and camp location will be monitored for weeds that may have been introduced during fire suppression and suppression repair activities. The most likely weed species would be those that might have been in hay: *Isatis tinctoria* (dyer's woad), prevalent in Scott Valley; and those that might have been transported in gear or on cargo nets, possibly starthistle or puncturevine.

Risk Assessment – Noxious Weeds Invasion

Probability of Damage or Loss: Possible

Magnitude of Consequence: Moderate

Risk Level: Intermediate

B. Emergency Treatment Objectives

As noted above, threats to life and most natural resources from increased erosion, establishment of noxious weeds, and critical habitat degradation are low to very low as a result of the Onion Fire. For these reasons the primary treatment objectives are to minimize the establishment of noxious weeds.

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

Land NA % Channel NA % Roads/Trails NA % Protection/Safety NA %

C. Probability of Treatment Success

| | 1 | 3 | 5 |
|-------------------|-----|-----|-----|
| Land | n/a | n/a | n/a |
| Channel | n/a | n/a | n/a |
| Roads/Trails | n/a | n/a | n/a |
| Protection/Safety | n/a | n/a | n/a |

E. Cost of No-Action (Including Loss): None

F. Cost of Selected Alternative (Including Loss): See Appendix A: Summary of cost-risk analysis.

G. Skills Represented on Burned-Area Survey Team:

☐ Hydrology ☒ Soils ☒ Geology ☐ Range ☐ Public Information

| | | | | |
|---|--|--|---|---|
| <input type="checkbox"/> Forestry | <input checked="" type="checkbox"/> Wildlife | <input type="checkbox"/> Fire Mgmt. | <input type="checkbox"/> Engineering | <input type="checkbox"/> Inter-agency coordinator |
| <input type="checkbox"/> Contracting | <input type="checkbox"/> Ecology | <input checked="" type="checkbox"/> Botany | <input type="checkbox"/> Archaeology | <input type="checkbox"/> NRCS |
| <input checked="" type="checkbox"/> Fisheries | <input type="checkbox"/> Research | <input type="checkbox"/> Landscape Arch | <input checked="" type="checkbox"/> GIS | |

Team Leader: Joe Blanchard

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Phone: 530 841 4591 FAX: 530 841 4571

Core Team Members:

- Angie Bell – Geologist/GIS
- Joe Blanchard – Soil Scientist
- Maija Meneks – Fisheries
- Marla Knight – Botany
- Tim Burnett – Wildlife

H. Treatment Narrative

The proposed treatment on National Forest System lands can help to reduce the impacts of the fire on the potential for noxious weed invasion. Since the fire has burned in the Trinity Alps Wilderness, the fire is considered to be a natural event and the response of soil and water quality is assumed to be within the normal range of natural occurrences.

The treatment listed below is considered to be the most effective on National Forest System lands given the local setting including topography and access and the fire being within a wilderness area.

Land Treatments

Noxious Weed Detection Survey:

A weed detection survey will occur once during the growing season, probably late July or early August, depending on the weather, to have the highest probability of finding plant rosettes. Survey work will be conducted by a botanist and/or a technician under direction of a botanist qualified to identify target species and collect data. Weeds of primary concern are Yellow Starthistle and Dyer's Woad. New population locations will be mapped using a gps and/ or 1:24,000 quad map and flagged on the ground. NRIS and Klamath survey and treatment forms will be filled out and entered into the national database. If weed populations are found, they will most likely be small, and plants will be hand dug and bagged (if necessary) for removal at the time of discovery.

Channel Treatments

None recommended.

Road and Trail Treatments

None recommended

Protection/Safety Treatments

None recommended

I. Monitoring Narrative

See attached noxious weed detection survey for details.

Part VI – Emergency Stabilization Treatments and Source of Funds

| | | | NFS Lands | | | | Other Lands | | | All |
|--------------------------|-------|------|-----------|---------|-------|------|-------------|-------|---------|---------|
| | | Unit | # of | WFSU | Other | | Fed | # of | Non Fed | Total |
| Line Items | Units | Cost | Units | SULT \$ | \$ | # of | \$ | Units | \$ | \$ |
| | | | | | | | | | | |
| A. Land Treatments | | | | | | | | | | |
| Nox Weeds Detect | acres | 30 | 51 | \$1,530 | | | \$0 | | \$0 | \$1,530 |
| | | | | \$0 | | | \$0 | | | |
| | | | | \$0 | | | \$0 | | \$0 | |
| | | | | \$0 | | | \$0 | | \$0 | \$0 |
| Subtotal Land Treatments | | | | \$0 | | | \$0 | | \$0 | \$1,530 |
| B. Channel Treatments | | | | | | | | | | |
| | | | | \$0 | | | \$0 | | \$0 | \$0 |
| | | | | \$0 | | | \$0 | | \$0 | \$0 |
| | | | | \$0 | | | \$0 | | \$0 | \$0 |
| | | | | \$0 | | | \$0 | | \$0 | \$0 |
| Subtotal Channel Treat. | | | | \$0 | | | \$0 | | \$0 | \$0 |
| C. Road and Trails | | | | | | | | | | |
| | | | | \$0 | | | \$0 | | \$0 | \$0 |
| | | | | \$0 | | | \$0 | | \$0 | \$0 |
| | | | | \$0 | | | \$0 | | \$0 | \$0 |
| | | | | \$0 | | | \$0 | | \$0 | \$0 |
| Subtotal Road & Trails | | | | \$0 | | | \$0 | | \$0 | \$0 |
| D. Protection/Safety | | | | | | | | | | |
| | | | | \$0 | | | \$0 | | \$0 | \$0 |
| | | | | \$0 | | | \$0 | | \$0 | \$0 |
| | | | | \$0 | | | \$0 | | \$0 | \$0 |
| | | | | \$0 | | | \$0 | | \$0 | \$0 |
| Subtotal Structures | | | | \$0 | | | \$0 | | \$0 | \$0 |
| E. BAER Evaluation | | | | | | | | | | |
| Baer Team | day | 1 | | | 1100 | | \$0 | | \$0 | \$1,100 |
| | | | | \$0 | | | \$0 | | \$0 | \$0 |
| F. Monitoring | | | | | | | | | | |
| | | | | \$0 | | | \$0 | | \$0 | \$0 |
| G. Totals | | | | | | | | | | |
| | | | | \$1,530 | 1100 | | \$0 | | \$0 | \$2,630 |

PART VII - APPROVALS

1. 
Forest Supervisor (signature)

9.19.11
Date

2. 
Regional Forester (signature)

9.21.11
Date