

Date of Report: September 17, 2013

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: American Fire
- B. Fire Number: CA-TNF-1562
- C. State: CA
- D. County: Placer
- E. Region: 5
- F. Forest: Tahoe
- G. District: American River
- H. Fire Incident Job Code: 0517-P5HU11
- I. Date Fire Started: August 10, 2013
- J. Date Fire Contained: August 29, 2013
- K. Suppression Cost: \$ 28,000,000
- L. Fire Suppression Damages Repaired with Suppression Funds
 - 1. Fireline waterbarred (miles): 110 (71 miles of dozer line)
 - 2. Fireline seeded (miles): 0 miles
 - 3. Other (identify):
- M. Watershed Number: 180201280301 Upper North Fork of the Middle Fork American River
- N. Total Acres Burned: 27,440
 - 22,207 NFS FRA Acres
 - Other Federal
 - 5033 State SRA
 - Private

- O. Vegetation Types:** Sierra Mixed Conifer, Montane Hardwood, Montane Chapparral, Douglass Fir, Ponderosa Pine, Jeffrey Pine, Mountain hardwood-Conifer.
- P. Dominant Soils:** Common soils in the area include Hurlbut gravelly loam, Deadwood very gravelly sandy loam, Smokey gravelly sandy loam, Woodseye very gravelly sandy loam, Crozier loam, Cohasset loam and McCarthy gravelly sandy loam.
- Q. Geologic Types:** Ordovician to Devonian aged meta sedimentary bedrock, Miocene to Pliocene aged volcanic rocks of andesitic composition, and Quaternary aged glacial deposits.
- R. Miles of Stream Channels by Order or Class: Perennial: 69 Seasonal: 26 Ephemeral: 224**
- S. Transportation System**
- Trails: 54 miles Roads: 147 miles

PART III - WATERSHED CONDITION

- A. Burn Severity (acres): 1510 (unburned) 10,482 (low) 11,689 (moderate) 3,759 (high)**
- B. Water-Repellent Soil (acres): 3,748**
- C. Soil Erosion Hazard Rating (acres): 2,961 (moderate) 19,380 (very high) 5,096 (high)**
- D. Erosion Potential: 15.12 tons/acre for 24 months**
- E. Sediment Potential: 1,800 cubic yards / square mile**

PART IV - HYDROLOGIC DESIGN FACTORS

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|--|------|
| A. Estimated Vegetative Recovery Period, (years): | 5 |
| B. Design Chance of Success, (percent): | 85 |
| C. Equivalent Design Recurrence Interval, (years): | 5 |
| D. Design Storm Duration, (hours): | 24 |
| E. Design Storm Magnitude, (inches): | 6.19 |
| F. Design Flow, (cubic feet / second/ square mile): | 91 |
| G. Estimated Reduction in Infiltration, (percent): | 25% |
| H. Adjusted Design Flow, (cfs per square mile): | 114 |

PART V - SUMMARY OF ANALYSIS

A. Describe Critical Values/Resources and Threats (narrative): The American Fire started on the afternoon August 10, 2013 in very rugged and heavily forested terrain in the upper North Fork of the Middle Fork American River. The deep canyon country dissected by steep drainages made fire suppression efforts very difficult. The fire was finally contained after burning for 19 days, at 27,440 acres on the evening of August 29, 2013. Other major streams in the burned area include Dark, Black, and Secret Canyon, Antoine, Manila, Screwauger, and Cliff Canyon, Deep Canyon and Bear Trap Creek. Ephemeral channels comprise approximately 224 miles within the fire area along with 26 miles of intermittent channels and 69 miles of perennial streams. The burned area includes the gold rush era town sites of Deadwood and Last Chance as well as many other historic mining sites and portions of the Western States Trail, which is home to internationally known 100-mile endurance events; the Tevis Cup and the Western States Run. Approximately 57% of the fire burned at moderate and high burn severity. The fire made long runs through the forest canopy in Secret and Black Canyons, with 71% of both canyons burning at high and moderate burn severity. Other Critical values potentially at risk from post-fire effects include a high value native resident rainbow trout fishery, 135 miles of National Forest System road used for public access and to manage forest resources, highly productive forest soils, and many cultural sites.

Threats to Human Life/Property – The American Fire burned 22,358 acres (81%) of NFS land and 5,080 acres (19%) privately owned land. There are no known year-round residents within the American Fire burn perimeters. There is, however, human activity in and around the burned areas including: travel routes through the burned areas, recreational users, private industrial timber land and other private landowners, and other private structures. The threat to human life comes from the potential unstable slopes above the waterways, travel routes, recreation trails, caused by the fires and the potential for rock slides and other falling debris. In the Black Canyon area the BAER team found a dangerous shaft that was previously obscured by vegetation. It is now visible from a Forest System Road and is a threat to human life. The BAER Team recommends that a fence be constructed around the shaft to mitigate the hazard. The forest AML program will mitigate this hazard using other program funding. There is an organizational camp on the North Fork American River below the North Fork of the Middle Fork confluence. The BAER Team visited the site and spoke with the operators. The discussion centered on the threat of increased flooding due to post fire runoff from the burned area. According to John Close, a long-time camp caretaker, the camp has never sustained damage due to floods in recent history. This includes large flood events in 1997, 1986, and 1964, which were 100-year events. The probability of damage or loss to human life and property from downstream flooding is unlikely, although the magnitude of consequences could be major, the risk is intermediate.

Threats to Water Quality – There will be a short-term threat to water quality from the tributaries of the main stem of the North Fork of the Middle Fork American River and down to the confluence with the Middle Fork American River. Ash and debris are expected to be mobilized off the steeper slopes during the first significant precipitation event. These areas will have an increased potential for storm water runoff and erosion, especially downslope/downstream from areas of high burn severity. The main short-term threat to water quality will be from ash and fine, suspended sediment. There is a potential for an increase in the pH of the post-fire runoff water due ash deposition. Placer County Water Agency operates the American River pump station, which is located at the proposed Auburn Dam site, which is on the North Fork American River over 40 river miles downstream of the fire. The watershed area above the station is approximately 620,800 acres. The total burn area of the American Fire is 4.4% of the area

above the station. Initial concerns were about increased sediment and debris from the burned area. The probability of debris and sediment affecting the operation of the pump station is low.

Threats of Nonative and Invasive Weeds – It is unknown whether or not all fire suppression and rehabilitation equipment used on the American Fire was weed-free prior to arrival at the incident. Equipment such as trucks, passenger vehicles, heavy equipment, and engines; and foot traffic has the potential to introduce seeds and reproductive propagates of non-native plant species to areas of fire suppression activities. Soon after the base camp was established, a washing station was setup for fire suppression equipment departing and arriving from the fire. Monitoring /observations conducted to track whether fire suppression equipment and vehicles were utilizing the weed washing station revealed that the wash station was bypassed on several occasions by fire equipment leaving the base camp to go to the fire, agency vehicles being demobbed, and heavy equipment that was stationed in other areas/directed to stage from other areas than the base camp. All of these activities increase the likelihood that fire suppression equipment had the potential to spread nonnative invasive plant species (NNIP). Prior to the fire, the area of the American Fire Incident was relatively free of non-native invasive plant species, so the introduction of invasive species, specifically noxious weeds, can be devastating to the local ecosystem. Many invasive plant species are adapted to soil disturbance and therefore stimulated by heat, charrate (burned vegetation), and ash; and the removal of competition from established vegetation. The removal of established vegetation, either by a catastrophic event such as a fire or deliberate means such as a dozer creating a fire line, can create the optimum situation for invasive plant establishment. With early detection, the cost to eradicate noxious and invasive non-native species is greatly reduced. Overall, the probability of damage from noxious and invasive weeds is very likely and the magnitude of consequences would be major, making the risk very high.

Threats to Cultural Resources – Initially, 71 heritage sites were considered at risk for impacts from the fire and/or fire-related suppression or rehabilitation measures. Forty-seven sites are within the burned area (1 unburned site, 28 low burn severity, 13 moderate burn severity, 5 high burn severity), but only 22 sites were assessed by the BAER team archaeologist. Eleven of the sites monitored were located in areas of moderate and high burn intensity; however, seven sites were not visited due to safety concerns, a lack of potential BAER issues, or the necessity to prioritize a large assessment in a relatively short amount of time. Historic resources in the area include habitation structures, cemeteries, hydraulic mining ditches, mining features (e.g., tailings, adits, shafts, trails, etc.), refuse dumps, and trails. The American Fire has increased the accessibility and visibility of archaeological site locations making the probability of loss from vandalism/artifact looting and unauthorized recreational activity possible. The magnitude of consequences is major to moderate. The American Fire has put Heritage resources at a heightened risk of looting and/or unauthorized recreational access.

Threats to Roads – The BAER Team Road Engineer inspected approximately 85 miles of the 135 National Forest Routes within the burned area during the rapid BAER field reconnaissance. Many of the roads were not visited due to closure from down trees, prior earthen barriers and a lack of time. Post-fire precipitation in these areas, combined with the lack of vegetation and ground cover is expected to result in increased, flashy, runoff; down slope movement of fine ash and sediment; rock fall, and possible debris flow until vegetation is reestablished. Roadway ditches, overside drains, culverts and cross drains are at risk of losing their drainage function and diverting water onto the roadway when becoming clogged with debris during post-fire storm runoff events. A few Maintenance Level 3 Roads extend within the fire perimeter and are main collector roads for other road networks within the burn area. The probability of loss on these roads given that they are within the high burn severity area was determined to be likely to very

likely. The magnitude of consequences for significant damage on these roads should be considered major. A majority of road sites at risk are at the stream crossings. Flood frequency analysis has determined that these culverts are at risk due to the predicted increase in post-fire runoff from within the high to moderate burn severity areas. The risk of this threat is high.

Threats to Recreation Sites and Trails – The American Fire burned a major portion of the Western State Trail: a prestigious trail that hosts two annual internationally acclaimed 100 mile endurance events: the Western States Endurance Run and the Western States Endurance Ride or Tevis Cup. Approximately 19 miles of the trail are in the burn area. That portion of the trail that is affected by the American Fire is significant because it is some of the very heart of the endurance event with large elevation changes and 6 miles of the trail that is on the National Register of Historic Places. The probability of increased storm runoff, debris, erosion of the running surface and sedimentation will cause loss of drainage function on the trail. The erosion of the trail infrastructure is likely. The magnitude of property damage is moderate. The risk of this threat is high. Hazards caused by the fire include threats to Forest Service employee safety during BAER implementation from imminently hazardous trees and destabilized trail tread, rolling or falling debris from steep slopes, burned out stumps, and potentially unstable hillsides. There are two bridges on the Western States Trail in the burn area that could be additionally threatened if imminent hazard trees or rock now loosened on immediately adjacent hillslopes by loss of vegetation were to fall onto the bridges.

Threats to Soil Productivity – Black Canyon and Secret Canyon contain the largest concentration of high-intensity burn. Much of this area has moderate to high productivity and moderate slopes conducive to timber production. There is an emergency for soil productivity in this area. Other areas of high burn severity throughout the burn are smaller and more isolated and are on steeper slopes and do not constitute an emergency for soil productivity even though they will experience significant erosion. The Probability of Damage or Loss of current soil productivity is **Likely** and the Magnitude of Consequences is **Moderate**. The Risk is **High**.

Threats to Fisheries and Aquatic Habitat: The majority of the fire has burned at a severity of moderate or less. Riparian vegetation includes alder, willow, dogwood, mixed conifer and Indian rhubarb. Vegetation within the fire primarily burned at low and moderate severity. Areas of moderate to high burn severity have the greatest potential to move sediment into stream systems and impact fisheries or other aquatic resources. Aquatic habitat and biota would be affected by such movement due to turbidity effects on water quality, and from loss of habitat due to sediment accumulation in pools and riffles. Sedimentation may also reduce the productivity of the stream system through effects on macroinvertebrates and reduce availability of spawning habitat. Fire may result in a large array of direct and indirect effects to resident trout populations in Black Canyon and Secret Canyon. Direct effects to these populations will generally occur when high severity burns occur in riparian areas. In the American Fire riparian areas generally burned at low or moderate severity, but some isolated areas within the headwaters of Black Canyon and Secret Canyon where it burned more severely were completely denuded of vegetation. Since some of the drainages burned very hot, fish may have died as a result of water heating, gas exchange or ash loading to streams. The probability of significant loss of trout as a result of the American Fire is unlikely. There is a known population of foothill yellow-legged frogs at the confluence of Peavine Creek and the North Fork Middle Fork American River. Modeling results for the North Fork Middle Fork American River show a 25% increase in post fire discharge. This increase in post fire discharge is not expected to have a significant effect on this population of foothill yellow-legged frogs. A BAER emergency does not exist for resident trout populations or downstream populations foothill yellow-legged frogs as a result of the American Fire.