

(Reference FSH 2509.13)

P. Dominant Soils: Holland-Chawankee family, predominantly, with Holland-Chaix, Chaix-Chawanakee, Neuns and minor other families

Q. Geologic Types: Tonalite of Blue Canyon

R. Miles of Stream Channels by Order or Class: perennial 1.3 mi., intermittent 4.4 mi., ephemeral 47.5 mi.

S. Transportation System

Trails: miles Roads: 1.4 miles (3 miles of Forest Service roads + 2.5 miles of County roads potentially affected outside the perimeter)

PART III - WATERSHED CONDITION

A. Burn Severity (acres): 345 (unburned) 561 (low) 1,453 (moderate) 430 (high)

B. Water-Repellent Soil (acres):

C. Soil Erosion Hazard Rating (acres):
1,452 (low) 552 (moderate) 432 (high)

D. Erosion Potential: 4.6 tons/acre

E. Sediment Potential: 2944 cubic yards / square mile

PART IV - HYDROLOGIC DESIGN FACTORS

A. Estimated Vegetative Recovery Period, (years): 2

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

C. Equivalent Design Recurrence Interval, (years): 2

D. Design Storm Duration, (hours): 24

E. Design Storm Magnitude, (inches): 4.0

F. Design Flow, (cubic feet / second/ square mile): 20.4

G. Estimated Reduction in Infiltration, (percent): 35

H. Adjusted Design Flow, (cfs per square mile): 48.3

PART V - SUMMARY OF ANALYSIS

A. Describe Critical Values/Resources and Threats: Critical values-at-risk were identified as on-site (within the National Forest System land) and off-site (on private land downstream from the burned area). On-site values-at-risk are: soil productivity, sedimentation in channels, road and/or road drainage structures, weed-free ecosystem and heritage resources.

Soil productivity and water quality within the burned area were concluded to not represent an emergency. Similarly, only one road is present in the burned area. It is a spur road and is generally out-sloped with no drainage structures. It is unlikely to be impacted by the burned watershed.

The weed-free ecosystem within the burned area is a value-at-risk. There are 11.5 miles of dozer line with many of those miles within the burn perimeter or on its margins. There is potential for equipment to have operated after being unloaded in nearby private land where noxious weeds (including diffuse knapweed (*Centaurea diffusa*)) were found to be present. Truck and rehab vehicles also passed through these weed-infested areas going into the burned area at several points. Consequently, there is a high probability that seeds for a serious noxious weed type may have been distributed along the native surface roads and dozer lines of this burned area.

The value-at-risk for heritage resources is a large wheel and portion of axle from a railroad logging car. Railroad logging is a significant aspect of the history of this area adjacent to Yosemite National Park. The wheel appears to be associated with activity between 1907 and 1930. It is located below a Forest Service road that was once a railroad logging spur. The fire removed vegetation exposing the wheel which is readily visible from the road. Two equipment operators (private contractors) working on the fire were overheard to be discussing "salvaging" it at a later time.

Off-site values-at-risk include: homes/attached structures or outbuildings in the Ponderosa Basin subdivisions along Cold Spring Creek, a tributary to the Chowchilla River, roads across channels accessing the subdivisions, their domestic water system, two adjacent ponds and the diversion structure and ditch taking water from Cold Water Creek to the ponds. It is determined that adverse impacts coming directly from the burned area into the water system (well/tank/piping) or the two ponds were unlikely.

Most of the observed road/stream crossings in the subdivisions appeared to be built for high flows or were in good condition. Therefore, the only need was to alert the locally responsible parties that initial post-fire storms may mobilize ash and other floatable debris which would necessitate some extra clearing or possible clogging of culverts. Similarly, Chowchilla Mountain road is a County road. It and other County roads affected by traffic to and from the burned area or downstream from the burned area are being rehabbed by county crews. There are several points on the County roads where floatable debris and storm flow might locally impair drainage structures.

Similarly, the diversion structure on Cold Spring Creek could also become clogged by floatable materials and ash during initial post-fire storms. These storms may be later summer thunderstorms but are more likely to be the first winter rains in November-December 2008. It is assumed that the operators would also want to prevent ash and related floatable debris from entering and settling in the diversion ditch. This would likely require the operator to place some barriers within the ditch and provide for later cleaning of trapped material.

While traveling through the Ponderosa Basin subdivisions to assess the burned area, the Forest Service BAER team observed that some homes along Cold Spring Creek had structures (usually decks) with supporting elements nearer the channel than the building. There is likely to be higher water flows during the first two years after the fire in Cold Water Creek. While the analysis does not suggest flooding might occur, water may reach some supports if there are unusually large storms. Local residents near the channel should be advised of this possibility. They should also be advised that ash and floatable debris may be deposited along the channel during the first post-fire storms. This would likely only represent a nuisance and require cleaning.

The Forest Service BAER team is limited to conducting detailed assessment of post-fire impacts to National Forest System lands. It did not involve a detailed BAER assessment of the private land. However, the assessment did consider downstream, off-site values-at-risk in order to determine whether there are on-site treatments that could mitigate these downstream, off-site effects. No on-site treatments were identified that would prevent or significantly reduce the likelihood of floatable debris and ash going downstream or reduce storm flow to pre-burned levels.

B. Emergency Treatment Objectives:

Heritage Resources (Protection): Prevent vandalism/theft of railroad wheel.

Off-Site Resources: Provide information that limits any adverse impacts on private land.

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

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

D. Probability of Treatment Success

	Years after Treatment		
	1	3	5
Land			
Channel			
Roads/Trails			
Protection/Safety	100	100	100

E. Cost of No-Action (Including Loss): \$75,000

F. Cost of Selected Alternative (Including Loss): \$14,320

G. Skills Represented on Burned-Area Survey Team:

<input checked="" type="checkbox"/> Hydrology	<input checked="" type="checkbox"/> Soils	<input checked="" type="checkbox"/> Geology	<input type="checkbox"/> Range	<input type="checkbox"/>
<input type="checkbox"/> Forestry	<input type="checkbox"/> Wildlife	<input type="checkbox"/> Fire Mgmt.	<input checked="" type="checkbox"/> Engineering	<input type="checkbox"/>
<input type="checkbox"/> Contracting	<input type="checkbox"/> Ecology	<input checked="" type="checkbox"/> Botany	<input checked="" type="checkbox"/> Archaeology	<input type="checkbox"/>
<input type="checkbox"/> Fisheries	<input type="checkbox"/> Research	<input type="checkbox"/> Landscape Arch	<input type="checkbox"/> GIS	

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BAER Team Members

Alan Gallegos

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Joanna Clines

Rusty LeBlanc

Tom Jones

(with assistance from Steve Cowdrey and Tom Lowe)

H. Treatment Narrative:

Heritage Resources:

Remove the railroad logging wheel to a secure site for later curation at a suitable facility. While it is common to prevent damage to heritage site by concealing the object on-site, this artifact is both difficult to conceal and already known to parties with an interest in removing it from the National Forest. At the moment, post-fire activity has sufficient people in the area that this is discouraged. But this will no be the case in a few weeks. The Forest Service road crew can move the artifact to the Ranger District Office. The Fresno Flats museum in Oakhurst which includes displays about railroad logging may be a suitable site for its later display.

Off-Site Resources:

A letter sharing the information on potential ash and floatable debris and its likely impact areas should be provided the local affected residents, operator of the diversion to the ponds at Cold Spring Creek and to those responsible for local roads and the County Roads. This would be done in a timely manner to enable residents and/or the County to conduct any independent assessments to guide their mitigation measures.

I. Monitoring Narrative:

(Describe the monitoring needs, what treatments will be monitored, how they will be monitored, and when monitoring will occur. A detailed monitoring plan must be submitted as a separate document to the Regional BAER coordinator.)

Monitoring should be carried out by Forest Botanist and crew to identify infestations and develop actions to eliminate them. A detailed monitoring plan accompanies this report.

Part VI – Emergency Stabilization Treatments and Source of Funds

Interim #

Line Items	Units	Unit Cost	NFS Lands		Other \$	Other Lands				All Total \$
			# of Units	BAER \$		# of units	Fed \$	# of Units	Non Fed \$	
A. Land Treatments										
				\$0	\$0		\$0		\$0	\$0
				\$0	\$0		\$0		\$0	\$0
				\$0	\$0		\$0		\$0	\$0
<i>Insert new items above this line!</i>				\$0	\$0		\$0		\$0	\$0
<i>Subtotal Land Treatments</i>				\$0	\$0		\$0		\$0	\$0
B. Channel Treatments										
				\$0	\$0		\$0		\$0	\$0
				\$0	\$0		\$0		\$0	\$0
				\$0	\$0		\$0		\$0	\$0
<i>Insert new items above this line!</i>				\$0	\$0		\$0		\$0	\$0
<i>Subtotal Channel Treat.</i>				\$0	\$0		\$0		\$0	\$0
C. Road and Trails										
				\$0	\$0		\$0		\$0	\$0
				\$0	\$0		\$0		\$0	\$0
				\$0	\$0		\$0		\$0	\$0
<i>Insert new items above this line!</i>				\$0	\$0		\$0		\$0	\$0
<i>Subtotal Road & Trails</i>				\$0	\$0		\$0		\$0	\$0
D. Protection/Safety										
	Heritage wheel			\$0	\$2,000		\$0		\$0	\$2,000
				\$0	\$0		\$0		\$0	\$0
				\$0	\$0		\$0		\$0	\$0
<i>Insert new items above this line!</i>				\$0	\$0		\$0		\$0	\$0
<i>Subtotal Structures</i>				\$0	\$2,000		\$0		\$0	\$2,000
E. BAER Evaluation										
				---	\$17,250		\$0		\$0	\$17,250
<i>Insert new items above this line!</i>				---	\$0		\$0		\$0	\$0
<i>Subtotal Evaluation</i>				---	\$17,250		\$0		\$0	\$17,250
F. Monitoring										
	Noxious Weed			\$0	12,320		\$0		\$0	\$12,320
<i>Insert new items above this line!</i>				\$0	\$0		\$0		\$0	\$0
<i>Subtotal Monitoring</i>				\$0	\$0		\$0		\$0	\$12,320
G. Totals				\$0	\$19,250		\$0		\$0	\$31,570
Previously approved										
Total for this request				\$0						

PART VII - APPROVALS

 1. /s/ Edward C. Cole
 Forest Supervisor (signature)

07/09/08
 Date

 2. /s/ George Kulick (for)
 Regional Forester (signature)

07/15/08
 Date

APPENDIX A

OLIVER FIRE Noxious and Invasive Non-native Species Report/Monitoring Plan

Fire Name: Oliver Month/Year: July / 2008
Author Name: Joanna Clines
Author Title: Forest Botanist
Author Duty Station: Sierra National Forest, Bass Lake Ranger District

I. Resource Condition Assessment

A. Initial Concerns

Prior to the fire, the area of the 2789 acre Oliver Fire was largely free of non-native invasive plant species, but the construction of over 17 miles of dozer line and the opening up of freshly exposed soil on the steep burned slopes has created hundreds of acres of disturbed ground conducive to the rapid spread of invasive weeds in the event of accidental deposit of viable seeds. Although the District requested that incoming heavy equipment be clean, there is a chance that some equipment was not clean upon deployment to the fire (especially during initial attack). Foot traffic during construction of the 2.3 miles of hand lines also may have introduced seeds or other propagules of non-native plant species to the area. Invasive non-native plant species are adapted to soil disturbance and can be stimulated by heat, charrate (rainwater leached through burned vegetation), and ash; and the removal of competition from established vegetation. The removal of established vegetation, either by a natural event such as a fire or deliberate means such as a dozer creating a fire break, can create the optimum situation for invasive plant establishment and spread.

B. Findings Of The On-The-Ground Survey

1. Summary of findings

On July 5, 2008 the primary dozer lines were surveyed by the Forest Botanist and key vantage points of the burned area were visited to observe effects to vegetation. The vegetation observed in the burned area was compared with maps of burn severity generated by the BAER team geologist and hydrologist for the purpose of predicting rate of recovery of the native vegetation and to identify areas where noxious weed spread is particularly likely.

Findings are as follows:

NOXIOUS WEEDS: An infestation of diffuse knapweed (*Centaurea diffusa*) occurs near the Cold Springs water source on private property just south of the burn area. Water trucks, helicopters, and various vehicles were entering and exiting the property for the duration of the fire, as well as an assortment of fire personnel traversing the infested area on foot. The property owners have been working with Mariposa County and the California Department of Food and Agriculture for the past 20 years to eradicate this "A"-rated weed (top priority for eradication by the State of California). However, at least 20 flowering plants were manually removed on July 5, and at least one of them had remnants of last years fruiting heads, meaning that seeds have been deposited in the soil and are available for transport by vehicles and foot traffic. Because diffuse knapweed plants are prolific seed producers, typically putting out over 1,000 times the amount of seed needed to sustain infestations, the potential for explosive spread from a few seeds transported to the Oliver burn area is very high (CDFA, 2008). In addition, diffuse knapweed is notoriously benefited by any type of disturbance (even from events such as hailstorms), thus dozer lines and newly burned slopes should be considered especially vulnerable. Furthermore, areas averaging between 10 and 14 inches of rainfall annually are especially susceptible to knapweed invasion (CDFA, 2008). Given these factors, the importance of detecting any new seedlings immediately cannot be overstated.

Other invasive non-native weeds poised to spread into the burn area are yellow starthistle (*Centaurea solstitialis*), klamathweed (*Hypericum perforatum*), and lens-podded hoary cress. Yellow starthistle and hoary cress are known to occur in the vicinity of the Mariposa Fairgrounds fire camp. Yellow starthistle occurs in scattered patches along the roads leading to the burn area, for example, along Chowchilla Mountain Road 0.1 miles west of the junction with Forest Road 5S09. Dense patches of yellow starthistle and klamathweed also are known to exist along Harris Ranch Road. All of these roads were used extensively to access the burn area, with vehicles pulling off the road at various times. The potential for tires to pick up contaminated soil and move it into the burn area was high under these circumstances.

NATIVE VEGETATION RECOVERY: Chaparral and coniferous forest found in the burn area is adapted to fire and is expected to recover rapidly if an influx of non-native invasive plants is prevented. Many native woody species will sprout within weeks of the burn, and spring of 2009 will witness a flush of germination of woody and herbaceous species in the low and moderate burn severity areas, and possibly also in the higher intensity areas, primarily of native, fire-adapted species whose seeds have lain dormant in the soil for decades.

The chaparral is composed primarily of the following woody species:

Scientific name	Common Name	Expected first-year response to fire:
<i>Adenostoma fasciculatum</i>	Chamise	Seedlings and sprouts
<i>Aesculus californica</i>	California buckeye	Primarily sprouting.
<i>Arctostaphylos viscida</i> ssp. <i>mariposa</i>	Mariposa manzanita	Seedlings only.
<i>Chamabaetia foliolosa</i>	Bear clover	Rapid sprouting
<i>Ceanothus cuneatus</i>	Buckbrush	Seedlings only.
<i>Cercocarpus betuloides</i>	Birchleaf mountain mahogany	Sprouting only
<i>Eriodictyon californicum</i>	Yerba santa	Primarily sprouting, some seedlings.
<i>Eriophyllum confertiflorum</i>	Golden yarrow	Sprouting.
<i>Fremontodendron californicum</i>	Flannelbush	Mostly sprouting. Some seedlings.
<i>Quercus chrysolepis</i>	Canyon live oak	Sprouting by autumn
<i>Pinus ponderosa</i>	Ponderosa pine	Dead needles will contribute significantly to ground cover as the needles fall and cover the soil.
<i>Pinus sabiniana</i>	Foothill pine	Some needle cast as described above.

The coniferous forest dominating the upper 2/3 of the watershed burned in the Oliver Fire is dominated by ponderosa pine at its lower reaches, but yields to a mixture of sugar pine, incense cedar, white fir, and ponderosa pine toward the top of the burned area. The following species are dominant in this vegetation type:

Scientific name	Common Name	Expected first-year response to fire:
<i>Abies concolor</i>	White fir	N/A
<i>Aesculus californica</i>	California buckeye	Primarily sprouting.
<i>Arctostaphylos patula</i>	Green-leaf manzanita	Primarily sprouting.
<i>Arctostaphylos viscida</i> ssp. <i>mariposa</i>	Mariposa manzanita	Seedlings only.
<i>Calocedrus decurrens</i>	Incense cedar	N/A
<i>Chamabaetia foliolosa</i>	Bear clover	Rapid sprouting, excellent soil protection
<i>Ceanothus cordulatus</i>	Mountain whitethorn	Seedlings

<i>Ceanothus cuneatus</i>	Buckbrush	Seedlings only.
<i>Ceanothus integerrimus</i>	Deerbrush	Sprouts and seedlings
<i>Cercocarpus betuloides</i>	Birchleaf mountain mahogany	Sprouting only
<i>Quercus chrysolepis</i>	Canyon live oak	Sprouting
<i>Quercus kelloggii</i>	Black oak	Younger trees will sprout
<i>Pinus lambertiana</i>	Sugar pine	Needle cast will contribute to soil stability
<i>Pinus ponderosa</i>	Ponderosa pine	Needle cast will contribute to soil stability

In addition to the species listed above, a suite of herbaceous species will emerge from the seed bank in much of the coniferous forest. Many of these will be nitrogen-fixing species such as those in the genera *Lotus*, *Lupinus*, and *Trifolium*. Bulbiferous plants such as *Calochortus*, *Lilium*, *Triteleia*, *Chlorogalum*, and *Brodiaea* typically proliferate directly after burns. Preventing the introduction and spread of invasive weeds is intended to allow the natural recovery of this fire-adapted ecosystem to proceed unimpeded.

II. Emergency Determination

A potential emergency may be caused by the Oliver Fire because of the high potential for introduction and/or spread of noxious and non-native invasive plant species. Most urgent is the need to promptly detect and treat the A-rated noxious weed, diffuse knapweed, which is likely to have been moved from the vicinity of the Cold Springs water source to the burned area and dozer lines.

III. Treatments to Mitigate the Emergency

- A. Treatment Type: Detection surveys for A-rated noxious weeds and other invasive non-native plant species.
- B. Treatment Objective: To locate any new occurrences of noxious and invasive non-native plant species, to eradicate them upon detection, and follow up to ensure effectiveness.
- C Treatment Description: GPS/mapping of any noxious and non-native plant infestations, concentrating efforts along travel routes, dozer lines, and areas where equipment was used as well as areas of high burn severity where soil is bare. Submit report to Regional BAER Coordinator and evaluate the need for further action.

D. Treatment Cost:
Fiscal Year 2009

PERSONNEL	Hourly rate	2 weeks
40 hours - 1 GS 11 botanist to do field work, train temps, make maps, and write reports	40.63	\$ 1,625.20
2 GS 5 temps working four 10 hour days for 4 weeks	12.58	\$ 4,025.60
2 GS 7 temps working four 10 hour days for 4 weeks	15.59	\$ 4,988.80
FLEET/SUPPLIES	FOR/month	2 weeks

4WD SUV - capacity 4 passengers and gear	300	\$ 300.00
Mileage averaging 110/day round trip from North Fork for 16 days	.50/mile	\$ 880.00
Equipment (safety vests, gloves, plastic bags, digging tools, traffic control signs, camera, misc)		\$ 500.00
TOTAL REQUESTED:		\$12,319.60

Fiscal Year 2010

(Costs expected to be equal to or less than those for FY2009)

III. Discussion/Summary/Recommendations

It is the intent of the Forest Service to prevent or minimize the establishment of noxious weeds and non-native invasive plant species within the Oliver Fire burned area and adjacent land. It is necessary to conduct detection surveys along an estimated 17 miles of dozer lines and 2.5 miles of handlines to evaluate the potential spread and/or introduction of noxious weeds and non-native invasive plants for approximately 2 years to in order to promptly detect and treat newly introduced infestations.