Executive Summary: La Brea Fire BAER Initial Assessment August 31, 2009

The La Brea Fire started on August 8, 2009, and was contained on August 22, 2009. The fire burned approximately 89,489 acres within Santa Barbara County, of which 85,540 acres (96%) is National Forest System (NFS) lands including a portion of the San Rafael Wilderness, and the remainder is on non-forest lands. The initial Burned Area Emergency Response Assessment has been completed and has addressed all National Forest System lands within the burned area. The fire completely burned off all effective cover on the majority of the burned area with the exception of some of the riparian areas in the bottom of the larger drainages. While soil burn severity was largely moderate, watershed response to precipitation events is expected to be high over nearly all of the fire area due to loss of cover on steep slopes. The potential for increased flows leading to flooding and debris flows is high. Runoff and sediment yield is expected to increase substantially in the first three years. Vegetation is expected to re-sprout in the majority of the burned area, with effective cover re-established within 3-5 years.

Within and downstream of the fire perimeter exist multiple high value resources at risk from damage as a result of potential post-fire watershed responses. Some of these values include Forest Service roads, trails, campgrounds and facilities, state Route 166, private lands within and outside of NF boundary and the City of Santa Maria levee system. National Forest visitors using dispersed recreation sites, roads, trails, campgrounds and administration sites, and those driving State Route 166 are also at risk. A loss of protective vegetation at thirty-two archaeological sites puts them at risk of looting and vandalism. Vegetative recovery is at risk from weed introduction and post-fire spread. Given the predicted effects of the fire, all of the high value resources listed above are at risk if the burned area recieves significant rain within the next three years. Impacts would occur from a combination of increases in flood flows, sediment yield, landslides and debris flows.

The BAER assessment team met with local, state, and federal agencies to identify initial concerns and information needs, and discuss the draft BAER report. These meetings helped the BAER team to identify downstream values at risk, and consider treatment options for NFS lands.

Proposed treatments on NFS lands will help to reduce the impacts of the fire following precipitation events, however, those treatments will not completely mitigate the effects of the fire, nor will they be as effective without additional treatments on private lands within and downstream of the fire perimeter. Given the topography of the burned area and lands downstream, the appropriateness and effectiveness of individual treatments varies by location. Treatments not justified on National Forest Lands should still be evaluated by other agencies for appropriateness on private lands.

Throughout the next 3-5 years it is critical that appropriate agencies maintain due diligence and continue to inform the public of the potential hazards resulting from post-fire watershed response. There is a high likelihood that access for emergency traffic along routes that provide for ingress and egress throughout and downstream of the burn area may become compromised.

USDA-FOREST SERVICE

FS-2500-8
Date of Report: ***August 31, 2009***
Interim #1 October 29, 2009

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
[*X*] 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: La Brea Fire

B. Fire Number: CA-LPF-2631

C. State: CA

D. County: Santa Barbara

E. Region: 5

F. Forest: Los Padres

G. District: Santa Barbara

H. Fire Incident Job Code: P5E4TB

I. Date Fire Started: August 8, 2009

J. Date Fire Contained: August 22, 2009

K. Suppression Cost: $33,805,690 as of 8/28/09

L. Fire Suppression Damages Repaired with Suppression Funds
1. Fireline waterbarred (miles): 86 total miles of dozer line (46 on FS land)
2. Fireline seeded (miles): None to date
3. Other (identify): None

M. Watershed Number: M. Watershed Number: **HUC 5**: 1806000706 (Lower Cuyama River), 1806000703 (Cuyama River/ Taylor Canyon), 1806000801 (Sisquoc River), 1806000803 (Santa Maria River), 1806000802 (La Brea Creek)

N. Total Acres Burned: 89,489
NFS Acres (85,540, 96%) Other Federal (0, 0%) State ( ) Private (3,949, 4%)

O. Vegetation Types: Blue oak woodland, chamise-redshank chaparral, coastal scrub, mixed chaparral, and montane hardwood.

P. Dominant Soils:

Map Unit Description	Soil Erosion Hazard	Acres
Los Osos-Modesto-Chualar Families association, 20 to 70 percent slopes	High	33,345
Millerton-Millsholm-Agua Dulce Families association, 30 to 60 percent slopes	Very High	18,309
Yorba-Millsholm-Stonyford Families association, 30 to 60 percent slopes	High	16,970
Millsholm-Exchequer-Stonyford Families complex, 30 to 75 percent slopes	Very High	13,636
Livermore-Agua Dulce-Hambright Families association, 30 to 80 percent slopes	High	3,895
Modesto-Rincon-Millsholm Families association, 20 to 50 percent slopes	High	1,301
Lopez-Santa Lucia Families association, 10 to 70 percent slopes	High	1,080

Q. Geologic Types: Bedrock within the boundaries of the La Brea Fire includes a variety of sedimentary rock types, mapped as named Geologic Formations ranging in age from Oligocene to Holocene, and subdivided by rocktype into different colored map units. Sandstones, shales, and conglomerate formations are present from sediment deposited in both deep marine and terrestrial environments. There are also more recent landform units consisting of alluvial gravel and sand of varying age, deep-seated historic landslide deposits, and surficial landslide scars

R. Miles of Stream Channels by Order or Class: Intermittent Channels = 446.87 miles (Stream Order 2 = 0.4 miles, Stream Order 3 = 37.5 miles, Stream Order 4 = 127.9 miles, Stream Order 5 = 186.7 miles, Stream Order 6 = 81.9 miles, Stream Order 7 = 12.6 miles)

S. Transportation System

Trails: 35 miles USFS Trails Roads: 47 miles USFS Roads

PART III - WATERSHED CONDITION

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

Sum of ACRES_CALC		
OWNERNAME	Burn_Sev	Total
NON FOREST SERVICE	High	263.21
	Low	1262.55
	Moderate	1531.72
	Unburned	891.70
NON FOREST SERVICE Total		3949.18
USDA FOREST SERVICE	High	18365.47
	Low	9201.31
	Moderate	48028.85
	Unburned	9944.71
USDA FOREST SERVICE Total		85540.34
Grand Total		89489.53

B. Hydrophobic Soils: approximately – 25,000 acres

C. Soil Erosion Hazard Rating: High – 56, 591 acres
Very High – 31, 946 acres
No Data – 815

D. Erosion Potential: 15 tons/acres

E. Sediment Potential:

Summary of Soil Burn Severity and Sediment Yield to "Pour Point" Watersheds

Analysis Watersheds	High & Moderate Burn Severity (Acres)	Low & Unburned Burn Severity (Acres)	Fraction of Watershed Moderate & High	Total Erosion (yd3)	Sediment Yield (cy3/mi2)	% Sediment Yield Increase
Cuyama River/Cottonwood Canyon 1	1958	291	0.87	86020	24476	23513
Cuyama River/Cottonwood Canyon 2	725	206	0.78	31962	21976	12303
Cuyama River/Powell Canyon 1	806	178	0.82	35472	23085	15870
Cuyama River/Powell Canyon 2	1855	88	0.95	81246	26773	74114
North Fork La Brea 1	24189	3563	0.87	1062711	24508	23759
North Fork La Brea 2	179	135	0.57	8017	16332	4659
La Brea	38915	21670	0.64	1729619	18271	6285
Twitchell Reservoir	1759	2107	0.45	29193	4833	1787
Cuyama River/Buckhorn Canyon - sub	1108	312	0.78	17647	7954	7609
Sisqouc River	18652	165628	0.10	1023060	3553	394
Sisqouc River/Horse Canyon	9683	4324	0.69	429036	19603	7838
Sisqouc River/Water Canyon	5177	8745	0.37	237445	10915	2072
Sisqouc River at Garey	57577	166198	0.19	3003734	6388	255

[1] Soil burn severity as mapped by satellite BARC imagery and ground survey
[2] Erosion as modeled by RCS
[3] RCS considers background erosion rates at 10 years post-fire

F. Debris Flow Potential: Since all watersheds have at least some areas of steep slopes, and most of the steepest areas burned at moderate to high soil severity, the debris flow potential following the La Brea Fire is high in all watersheds.

PART IV - HYDROLOGIC DESIGN FACTORS

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

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

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

D. Design Storm Duration, (hours): 24

E. Design Storm Magnitude, (inches): 4.5

F. Design Flow, (cubic feet / second/ square mile): 6.8

G. Estimated Reduction in Infiltration, (percent): 36

H. Adjusted Design Flow, (cfs per square mile): 20.6

PART V - SUMMARY OF ANALYSIS

A. Describe Critical Values/Resources and Threats:

The La Brea Fire occurred within the Santa Lucia Mountain Range at the southern-most portion of the Southern Coast Ranges of California, approximately 15 miles east of Santa Maria, Santa Barbara County, California. The burned area is roughly bounded on the northeast by the Cuyama Valley and on the south by the Sisquoc River, a formally designated Wild and Scenic River. The Fire burned a total of 89,489 acres, of which 54,100 acres (60%) were within the San Rafael Wilderness. A total of 85,540 (96%) acres burned on National Forest System (NFS) lands and 3,949 (4%) acres burned on non-forest lands. The team assessed both the National Forest System (NFS) lands as well as the private lands affected by the fire. Approximately 76 percent of the entire burn was mapped as having a moderate and high soil burn severity (55% moderate and 21% high). The burn pattern of the fire was such that generally the lower third of the fire area burned at lower severity (low and moderate), with the upper two thirds burning at moderate and high severity. The riparian drainage areas burned at low to moderate severity. See attached Soil Burn Severity Map, Figure 1 in the Appendix.

Summary of Watershed Response

Hydrologic Response: The fire was divided into sub-watersheds with “pourpoints” established below the burn. The pour points are located one tenth to 24 miles below the edge of the burn depending on where the values at risk are located downstream. In most cases the pourpoints are located within one half mile of the burn perimeter. Watershed response (runoff and sediment yield) is referenced to these points.

The model delivers runoff to the mouth or pourpoint of the watersheds. The 2 year storm event was considered the “design storm” for the purpose of evaluating effects. The La Brea Creek, 5th field watershed is one of the higher output watersheds with a 7.52 X normal (pre-fire) runoff response for a 2 year storm event. This increase in background is considered significant. Additional observations and detailed findings can be found in the Hydrology Specialist Report.

Erosion Response: Erosion rates for lands within the fire perimeter are as follows: the post-fire 1st year erosion rate was modeled at (for all lands within the fire perimeter) approximately 12,300 cubic yards per square mile of watershed area. This represented an average rate across the burn. The number is higher than typical erosion modeling because we used the sum of multiple watershed processes including sheet and rill erosion, gulley erosion, channel scour, and some contribution from debris flows. Typical erosion modeling is only concerned with sheet and rill erosion. Background erosion rate was modeled at approximately 470 cubic yards per square mile and post fire erosion will be approximately 25 times background rates. Additional observations and detailed findings can be found in the Soil Specialist Report.

Geologic Response: Bedrock within the boundaries of the La Brea Fire includes a variety of sedimentary rock types, mapped as named Geologic Formations ranging in age from Oligocene to Holocene, and subdivided by rocktype into different colored map units (Figure 2. Geologic Map). Sandstones, shales, and conglomerate formations are present from sediment deposited in both deep marine and terrestrial environments. There are also more recent landform units consisting of alluvial gravel and sand of varying age, deep-seated historic landslide deposits, and surficial landslide scars (Los Padres N.F., 2003). In general, the major rock formations have a NW-SE structural trend. Two major faults and a number of lesser minor faults are present. The Rinconada Fault crosses the fire from just north of Water Canyon Campground on the SE side to Pine Flat on the NW side. The South Cuyama Fault (also called the Ozena Fault) defines the SW side of the Cuyama Valley at the base of the mountains. Numerous anticlinal and synclinal folds also pass through the area, also generally trending NW-SE. Those folds contribute to fracturing of bedrock which can increase slope instability.

The area is characterized by steep slopes and escarpments, no road access within the Wilderness, some trails, and sparsely scattered campgrounds. Sierra Madre Ridge dominates the skyline on the northeast side of the burned area. 85% of the area drains into the Sisquoc River Watershed, and the remainder (15%) drains into the Cuyama River Watershed. The geomorphic setting of the fire area includes fluvial and slope instability processes such as recent pre-fire deep seated rotational landslides, debris slides, thin surficial soil

slides and dry ravel, areas of extensive rockfall, evidence of debris flows, channel and gully cutting, and multi-level stream terraces that indicate multiple past flooding events. Some areas show a great deal of slope dissection and slope instability, while other areas are amazingly smooth and un-dissected and void of landslide features. Some channels were choked with sediment that will mobilize during flood events and add significant bulk to flowing water. Other channels, especially on steep hillsides, were relatively devoid of sediment pre-fire, but now are subject to filling with dry ravel post-fire. Although areas with instability features were easily recognizable from helicopter and ground reconnaissance, it was difficult to make full correlation with most specific rock units. An exception is the Monterey shale which is very landslide prone.

Our general assessment of slope instability determined that the steeper watersheds will yield large quantities of sediment during moderate to heavy storms, via increased debris slides and debris flows, and channel scouring. Gentler sloped watersheds have a moderate potential for significant slope instability. Since all watersheds have at least some areas of steep slopes, and most of the steepest areas burned at moderate to high soil severity, the debris flow potential following the La Brea Fire is high in all watersheds. Rock fall potential is especially high along roads within the deepest portion of La Brea Canyon, and near the headwaters of Flores Canyon, and along many of the trails which pass below steep rocky slopes. Additional observation and findings can be found in the geology report.

Values at Risk

The following values were identified during the initial phase of the La Brea Fire BAER assessment process as "at risk" from the effects of the fire including increased runoff and debris flows, rock and debris fall, erosion and sedimentation, and landslides:

Life: There is a risk to visitors using the National Forest including dispersed recreation, roads, trails, campgrounds and administration sites; users of State Route 166, public use of roads, trails, campgrounds, and facilities on non-federal land both within and outside the La Brea Fire perimeter.

Property: There are approximately 47 miles of National Forest System Road (NFSR) with in the La Brea fire perimeter. With additional mileage adjacent too or below the burned watershed that could be affected. The dominant road features on the landscape are Colson/La Brea Canyon (NFSR 11N04), Miranda Pines (NFSR 11N03), Pine Canyon (NFSR 11N04), Bates Canyon (NFSR 11N01) and Sierra Madre (NFSR 32S13). Several primitive camp grounds and wilderness trail heads and trails within the burn area and are accessed by the road system. Trails at risk are the Kerry Canyon (OHV), Bear Canyon and Bear Canyon Loop trail system (OHV), and the Roque/Horse Canyon trail system in the San Rafael Wilderness. Threats to Life, Safety and Property, effects on water quality and soil productivity and the Forest Service infrastructure (roads, trails) are considered the values at risk. The infrastructure and facilities are a government asset and are needed for long term administrative, emergency, permittee, recreation, and inholder access during and after the fire recovery period.

In addition to the above values the following non-forest values are at risk: State Route 166, private inholdings within and outside of NF boundary, and a risk to the City of Santa Maria levee system due to increased postfire watershed response (increased flows and Sediment). For more information see the Hydrology Specialist Report, Appendix A, in the project record.

Water Quality and Quantity: Surface waters in the fire area will be bulked by ash, debris and other floatable and transportable material during storm events. It is likely that stream flows from the first post-fire runoff producing rain events will see high concentrations of ash and fine sediment that will cause considerable turbidity and degradation of water quality and the beneficial uses of water. Beneficial uses are: non-water contact recreation, water contact recreation, wildlife habitat, groundwater re-charge, municipal water supply, warm-water/cold water aquatic habitat, freshwater and spawning. The following values at risk were identified by the Team: burned guard station debris and hazardous materials from illegal plantations in the watersheds could contribute contaminants to waterways if not removed or contained. For more information see the Hydrology Specialist Report in the project record.

Threats to Soil Productivity: There is no emergency to soil productivity due to fire-adapted ecosystem and lack of productive timber stands.

Threats to Cultural Resource: A total of thirty-one archaeological sites exist within the La Brea Fire burn perimeter. Seventeen sites are prehistoric Native American sites and fourteen are historic. Two of the historic sites are/were standing structures. The Manzana Schoolhouse survived the fire, however the White Oaks Guard Station burned to the ground. A loss of protective vegetation at all of the archaeological sites puts them at risk to looting and vandalism, particularly those that are located near roads, trails, or developed recreation areas. Sites that are located away from trails or roads are now easier to access and are more visible, thereby putting them at risk. It is therefore recommended that the most effective treatment to mitigate these risks is to restrict public access to the burn area until vegetation has a chance to recover.

A small number of archaeological sites are located off of the National Forest on private and county lands. It is strongly recommended that agencies and landowners responsible for these resources inspect locations for potential site degradation by storm runoff and erosion.

Additional observations for cultural resources are summarized in the Archaeologist Specialist Report, La Brea BAER Project File.

Threats to Wildlife: The area affected by the La Brea Fire supports important habitats and occurrences of federally threatened and endangered wildlife species. Designated Critical Habitat occurs in the fire area for:

- Southern steelhead (federally-threatened)
- California red-legged frog (federally-threatened)
- Arroyo toad (federally-endangered)

The area affected by the fire also has known occupied habitat for:

- California condor (federally-endangered).

No emergency conditions exist for Federally Threatened and Endangered species or their habitat as a result of anticipated post-fire effects.

There are also a number of Forest Service Region 5 Sensitive species that may occur in the area and/or have suitable habitat. These include:

- California spotted-owl (known nest sites)
- Townsend's big-eared bat (suitable roosting habitat)
- Pallid bat (suitable roosting habitat)
- Western red bat (suitable roosting habitat)
- Southern pacific pond turtle (occupied habitat)
- California legless lizard (suitable habitat)
- Two-striped garter snake (occupied habitat)
- Arroyo chub (occupied habitat)
- Speckled dace (occupied habitat)

There are concerns with post-fire effects for aquatic species and their habitats. Increased scouring and debris flows over the next three to five years resulting in changes to channel morphology, lowered water quality and erosion of streambanks and associated riparian vegetation. Burned riparian areas typically recover rapidly post fire due to high soil moistures and ability of most riparian woody plants to crown sprout. Post-fire effects to amphibian species such as the arroyo toad are expected to be beneficial as a result of watershed response which will reestablish sand bars and suitable breeding habitat. California red-legged frogs may have loss habitat a result of post-fire sediment filling up deep pools. Eventually, flood events may also establish new pools and exposed streambanks thus improving habitat for red-legged frogs. Reptilian species such as the aquatic two-striped garter snakes and southern pacific pond turtles will be temporarily displaced, but should eventually recover with the regeneration of riparian vegetation and other aquatic organisms.

Native Vegetation Recovery: An emergency exists with respect to vegetative recovery as a result of the threat of weed introduction and post-fire spread. The unknowing introduction and dispersal of invasive weeds into areas disturbed by fire suppression and rehabilitation has the potential to establish large and persistent weed populations. In addition, it is highly likely that existent weed infestations will increase in the burn area, due to

their accelerated growth and reproduction and a release from competition with natives. These weed populations could affect the structure and habitat function of native plant communities within the burn area. It is expected that most native vegetation would recover if weed invasions are minimized.

Rare Plants: There is not an emergency situation for the continued existence of any of the rare plant species known from within the fire area. Based on conditions found in the field survey, and references on the specific fire ecology of each species, these populations face only minor to moderate threats as a result of the La Brea Fire.

A summary of critical values and resources is in the table below.

Value Category	Hazard	At Risk	Emergency Yes/No
Life & Safety	Increased runoff and debris flows, rock and debris fall, erosion and sedimentation, and landslides.	Users of National Forest roads, trails, campgrounds and administration sites; users of State Route 166, public use of roads, trails, campgrounds, and facilities on non-federal land both within and outside the La Brea Fire perimeter.	Yes
Property	Increased runoff and debris flows, rock and debris fall, erosion and sedimentation, and landslides.	Forest Service roads: ▪ Colson/La Brea Canyon (NFSR 11N04) ▪ Miranda Pines (NFSR 11N03) ▪ Pine Canyon (NFSR 11N04) ▪ Bates Canyon (NFSR 11N01) ▪ Sierra Madre (NFSR 32S13). Forest Service trails: ▪ Kerry Canyon (OHV) ▪ Bear Canyon & Bear Canyon Loop (OHV) ▪ Roque/Horse Canyon trail system in the San Rafael Wilderness Also additional campgrounds and facilities including spring developments (guzzlers) as a critical water source for wildlife. ▪ Non-forest property: Twitchell Reservoir, State Route 166, private in holdings within and outside of NF boundary and the City of Santa Maria levee system.	Yes
Water Quality	Increase in sediment and large woody debris delivered to the facility.	Water supply for the City of Santa Maria is located in the Cuyama watershed at Twitchell Reservoir.	No
	Burned guard station debris and hazardous materials from illegal plantations.	Contaminants to waterways effecting beneficial use of water.	Yes
Soil Productivity	Increased runoff and debris flows, rock and debris fall, erosion and sedimentation, and landslides.	There is no emergency to soil productivity due to fire-adapted ecosystem and lack of productive timber stands.	No
Heritage Resources	A loss of protective vegetation at all of the archaeological sites puts them at risk to looting and vandalism	Loss of integrity of 32 Heritage sites.	Yes
Plant Communities	Loss of habitat.	Rare plant species.	No
Ecosystem Structure and Function	Post-fire weed introduction and spread.	vegetative recovery	Yes
Wildlife & Fisheries Resources	Increased scouring and debris flows over resulting in changes to channel morphology, lowered water quality, and erosion of streambanks and associated	Designated Critical Habitat for: ▪ Southern steelhead (federally-threatened) ▪ California red-legged frog (federally-threatened) ▪ Arroyo toad (federally-	No

	riparian vegetation.	endangered) ▪ California condor (federally-endangered)	

The rapid assessment method and short reporting deadline required by the BAER program did not permit the BAER team to evaluate all the threats at site specific locations, given the complexity of values at risk within and downstream of the burned area. However, the BAER Assessment Team worked with cooperating agencies through interagency meetings to identify general initial concerns and information needs, discuss potential treatment recommendations, and discuss the draft BAER report. These meetings helped the BAER team identify general areas of downstream values at risk, and consider treatment options for NFS lands.

Given the predicted effects of the fire, all of the resources listed above are at serious risk of severe consequences should a storm of any significance rain on the burned area, particularly if antecedent moisture conditions are high.

B. Emergency Treatment Objectives

As noted above, the greatest threats are to life and property from increased erosion and sedimentation, flooding potential, and increased debris flow potential. For these reasons the primary treatment objectives are to minimize loss of life and risk to human safety, and minimize threats to property. Other treatments are identified to reduce the risk of degradation of significant natural resources including the potential spread of noxious weeds, and protection of cultural resource sites.

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

Land **90** % Channel **--** % Roads/Trails **90** % Protection/Safety **90** %

C. Probability of Treatment Success

	Years after Treatment: This refers only to NFS lands, not all lands downstream		
	1	3	5
Land	70	80	100*
Channel	n/a	n/a	n/a
Roads/Trails	80	80	90
Protection/Safety	80	80	90

*It is assumed that there will be a full vegetative recovery by year 5.

E. Cost of No-Action (Including Loss): See Appendix A: Summary of cost-risk analysis.

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

G. Skills Represented on Burned-Area Survey Team:

[X] Hydrology	[X] Soils	[X] Geology	[ ] Range	[X] Public Information
[ ] Forestry	[X] Wildlife	[ ] Fire Mgmt.	[X] Engineering	[X] Inter-agency coordinator
[ ] Contracting	[ ] Ecology	[X] Botany	[X] Archaeology	[X] NRCS
[X] Fisheries	[ ] Research	[ ] Landscape Arch	[X] GIS	

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- Yonni Schwartz – Geologist (T)
- Alex Janicki – Soil Scientist
- Jason Jimenez – Soil Scientist
- Lynette Niebrugge – Soil Scientist (T)
- Mary Moore – Hydrologist
- Kyle Wright – Hydrologist (T)
- Jennifer Bridgewater – Hydrologist (T)
- Krissy Day – Botanist
- Gina Richmond – Botanist (T)
- Angelica Mendoza – Wildlife
- Dan Teater – Fisheries
- Rusty Leblanc – Roads Engineer
- Dave Weaver – Wilderness (Trails)
- Kelli Brasket – Archaeologist
- Bob – Strickland – Archaeologist

Adjunct Team Members:

- Kevin Cooper – Acting Forest BAER Coordinator
- Melody Fountain – Range Specialist
- Tom Murphy – Biologist/Botany
- Bob Jarvis – Engineering
- Steven Galbraith – Archaeologist
- Gary Montgomery – Forest Liaison

H. **Treatment Narrative**

The BAER Assessment team met with officials from the Santa Barbara County Flood Control and Water Conservation District, Santa Barbara City Public Works Department, Santa Barbara County Office of Emergency Services (OES), California Department of Transportation (CalTrans), and Natural Resource Conservation Service (NRCS) to identify initial concerns and information needs. These meetings helped the BAER team to identify downstream values at risk, and consider treatment options. The BAER Assessment team also conducted a debriefing summarizing our findings with Santa Barbara County Flood Control and Water Conservation District, Santa Barbara City Public Works Department and the Santa Barbara County OES. It is critical that through continued coordination, CalTrans and NRCS are provided with the BAER Assessment team findings, as well as final reports.

The proposed treatments on National Forest System lands can help to reduce the impacts of the fire from precipitation events, but treatments will not completely mitigate the effects of the fire

Hillslope treatments were not proposed because they are infeasible and would not reduce the probability of damage to structures. For more information see the Hydrology Specialist Report, Appendix B, in the project record.

The treatments listed below are those that are considered to be the most effective on National Forest System lands given the local setting including topography and access. Other treatments that were considered but not carried forward are identified in Appendix B.

Land Treatments

Hazardous Material Removal or Stabilization: Post assessment of hazards for 2 illegal plantations in the headwaters of the North and South Forks La Brea Creek and 5 wildlife guzzlers along the Sierra Madre Ridge.

Illegal Plantation Hazardous Material Removal or Stabilization Costs

Item	Unit	# of Units	Unit Cost	Total
GS-11 Hydrologist	Days	5	$400	$2,000
GS-11 Los Padres Employee	Days	5	$400	$2,000
Per diem/lodging (1 person)	Days	5	$180	$900
Vehicle mileage	Miles	2,000	$0.37	$740
Total				**$5,640**

Wildlife Guzzlers Hazardous Material Removal or Stabilization Costs

Item	Unit	# of Units	Unit Cost	Total
GS-11 Hydrologist/Soil Scientist	Days	2	$400	$800
GS-11 Los Padres Employee	Days	2	$400	$800
Per diem/lodging (1 person)	Days	2	$180	$360
Vehicle mileage	Miles	1,000	$0.37	$370
Total				**$2,330**

Noxious Weed Detection Surveys: The treatment includes noxious weed detection surveys along dozer lines, safety zones, and selected roads affected by the La Brea fire. Assessing the establishment of weeds and treating small outlying populations before they expand will prevent the weeds from becoming serious threats to the recovery of native plants. If populations are located, an interim report will be completed, requesting funds for treatment/removal of non-native species. See the Noxious Weed Report and Monitoring Plan in Appendix C.

Noxious Weed Detection Survey Costs

Forest Service Detailers for FY 2010

Item	Unit	# of Units	Unit Cost	Total
GS-11 botanist	Days	5	$400	$2,000
1-GS-07 botanists	Days	20	$240	$4,800
1-GS-07 botanists	Days	20	$240	$4,800
Per diem/lodging (2 people)	Days	40	$208	$8,320
Vehicle mileage	Miles	2500	$0.37	$925
Total				**$20,845**

Channel Treatments

None recommended. See Appendix B

Road and Trail Treatments

Treatment Objectives: Minimize risk of road and trail failure in the burn area through the placement and maintenance of effective water control measures. Prevent the channeling of water on roads and trails. Ensure the diversion of runoff in controlled intervals to reduce erosion and further watershed degradation.

Road Treatments: An emergency determination was made on Forest Service roads 1N011 (Bates Canyon), 11N03 (Miranda Pines), and segments of 11N04 (Colson/La Brea Canyon) and 11N04 (Pine Canyon). For more information see the Roads Specialist Report in the project record.

The following treatments were identified as BAER treatments for the La Brea Fire burned area:

- Install culvert inlet treatments (vertical risers, metal end sections).
- Roadway Dips (relief dips at culvert crossings).
- Upsize Culverts (replace undersize culverts).
- Install Drainage Armor (large rip/rap rock).
- Repair and Install Overside Drains (Big Mac spillways).
- Emergency Storm Patrol

Road Treatment Costs

Item	Unit	# of Units	Unit Cost	Total
Relief Dip at Culvert Crossings	Each	7	$1,800.00	$12,600.00
Metal End Section	Each	1	$3,200.00	$3,200.00
Vertical Riser CMP (Snorkel)	Each	3	$3,600.00	$10,800.00
Install Drainage Armor	Cubic Yard	140	$225.00	$31,500.00
Install and Repair Overside Drains	Each	18	$4,200.00	$75,600.00
Install and Remove Culverts	Each	2	$8,500.00	$17,000.00
Storm Patrol	Days	45	$3,750.00	$168,750.00
Total				**$319,450**

Trail Treatments: An emergency determination was made on the following Forest Service trails. For more information see the Trails Specialist Report in the project record.

OHV Trail

Bear Canyon Loop trail System:

- Bear Canyon Trail (31W05), 3.4 miles.
- West Bear Canyon OHV loop (31W13), 3.8 miles.
- East Bear Canyon OHV loop (87W14), 2.3 miles.

Horseshoe Spring Spur OHV Trail (31W12), 1 mile.
Kerry Canyon OHV Trail (30W02), 5.7 miles.

San Rafael Wilderness Trails

Roque/Horse Canyon Trail System (30W03), 18.7 miles.

Trail Implementation Assessment**:** Prior to implementation of treatments, a 2 person crew will perform trail surveys on the trails listed above. The result of the survey will dictate subsequent detailed storm proofing treatment recommendations. Storm proofing is only the minimum necessary trail work activity which will protect the trail investment in its current state and protect it from the expected seasonal weather.

Trail Implementation Assessment Cost

Item	Unit	# of Units	Unit Cost	Total
GS-11 Hydrologist	Days	8	$400	$3200
GS-6 Trail Surveyor	Days	8	$230	$1840
Backcountry per diem	Days	18	$70	$1260
Total				**$6,300**

Interim #1

La Brea BAER Interim #1 is requesting additional funding for emergency treatments to install erosion control structures before winter to prevent damage to Off-Highway Vehicle (OHV) trails (facilities) and to prevent the concentration of runoff water from the trails onto soils below the trails with consequent erosion and additional watershed impact. This work would be completed within the La Brea burn area prior to winter storms of 2009/2010. An area closure is in effect for the La Brea burned area. The closure will be patrolled until the rainy season passes to ensure the effectiveness of this emergency treatment.

The trail assessment recommended in the Initial La Brea BAER 2500-8 was completed between October 20 -23, 2009. Rebecca Biglow, BAER hydrologist, Bob Stone, retired Forest Service trail manager, and Tom Murphey, wildlife biologist hiked the trails to conduct the condition assessment. A report of their findings was compiled by the BAER hydrologist (OHV Trail Winterization Needs report attached) that described out of the total 23.7 miles assessed on the ground; 4.4 miles need emergency treatments in the form of waterbars and a grade dip. Treatments are recommended on the OHV routes only and not on access roads. Even though the entire OHV trail system is deeply rutted due to lack of general maintenance, the increased runoff expected from the winter storms is likely to cause extreme damage in some sections without preventative measures taken prior to the winter storm season. Waterbar and grade dip construction performed with hand tools and overseen by a trail construction and maintenance specialist is recommended in prescribed critical areas in the attached Trail Assessment.

OHV Trail Treatments

Item	*Unit*	*# of Units*	*Unit Cost*	*Total*
Horseshoe Spring Trail	*1.2 mile 52 water bars/mile*	*62*	*$ 175*	*$10,850 **
East & West Bear Canyon Trail	*1 mi. & 2.2 mi. 40 water bars/mile*	*128*	*$ 175*	*$22,400 **
Kerry Canyon Trail	*1 grade dip*	*1*	*$2,500*	*$ 2,500 **
AD Crew Leader GS 7 SQF employee	*1 leader*	*14*	*$ 200*	*$ 2,800*
GS 9 LPF employee	*Days*	*14*	*$ 350*	*$ 4,900*
GS 11 LPF employee	*Days*	*7*	*$ 400*	*$ 2,800*
Vehicle Mileage	*Miles*	*3,000*	*$ 0.37*	*$ 1,110*
TOTAL				*$47,360*

***** includes travel, salary and per diem for 20 person crew - based on estimated cost of Black Eagle 20 person AD trail construction crew at $3,500 per day and an estimate of 14 days to complete the work. The number of waterbars was based on figures of 100 to 200 foot recommended spacing by the hydrologist.***

Protection/Safety Treatments

Human Life and Resource protection (Fire Area Closure): To support the Forest closure order and ensure safety for Forest visitors and protection to Forest resources during the recovery period, gates and closure/warning signs will be placed in the following locatons around the fire perimeter.

- Install 2 new closure gates: 1) FS Rd.11N06 (Buckhorn Ridge) at the Forest boundary, 2) FS Rd. 11N04 (Coulson Canyon Rd.) at the Forest Boundary.

- Install 6 closure/warning signs: 1) FS Rd. 11N04.1 (Pine Canyon Rd.) at Forest Boundary, 2) Tepusquet Rd. at Forest Boundary, 3) FS Rd. 10N06.2 before the intersection with 10N06.1, 4) FS Rd. 32S13 at closure gate intersection with 11N01, 5) FS Rd. 11N01 (Bates Canyon) below White Oaks Guard Station, 6) FS Rd.11N06 (Buckhorn Ridge) at the Forest boundary.

Protection/Safety Treatment Installation Costs

Item	Unit	# of Units	Unit Cost	Total
Install Gates (Stock Yard)	Each	1	$2,500	$2,500
Install Gates (LPF Design)	Each	1	$8,000	$8,000
Install Barbless Fencing	Mile	1	$6,200	$6,200
Install BAER Warning Signs	Each	6	$1,200	$7,200
Information Road Closures Signs	Each	15	$300	$4,500
Total				**$28,400**

Extended Emergency Coordination: This involves communication and coordination with other federal, state, and local agencies with jurisdiction over lands where life and property are at risk from post-fire conditions. Actions include but are not limited to cooperating with other agencies on hazard notification systems, permitting the siting of rain gages and soil moisture instruments to monitor conditions within the burn in support of National Weather Service forecasts, and exchanging information and coordinating the BAER implementation plan as needed when subsequent recovery plans are developed by other agencies. The initial cost request plans for this effort to include a primary coordinator assigned to the district to facilitate coordination and a technical specialist (i.e., geologist, hydrologist) to aid the coordination for the primary resource issues associated with this fire. Additional coordination needs may ensue costs for which will need to be requested on an interim 2500-8. Throughout the next 3-5 years it is critical that appropriate agencies maintain due diligence and continue to inform the public of the potential hazards resulting from post-fire watershed response. There is a high likelihood that access for emergency traffic along routes that provide for ingress and egress throughout and downstream of the burn area may become compromised.

Interagency Coordination Treatment Costs

Item	Unit	# of Units	Unit Cost	Total
GS-13 Forest Liaison/day	Days	15	$470	$7,050
Total				**$7,050**

I. Monitoring Narrative

This monitoring is specifically designed to answer the question; Did BAER treatments provide the needed protection and rehabilitation of the burned area? The effectiveness monitoring efforts identified for the La Brea Fire include the following:

Treatment Effectiveness Monitoring and Patrol: A two person crew will monitor the BAER treatments to check that signs, information boards, temporary fencing, and gate closures are present and functioning properly to maintain closure integrity. Treatments include maintenance, repair, or replacement of closure features as needed during the closure period. Typical monitoring visits will be one day per week per person.

Trail Treatment Effectiveness Monitoring and Patrol Costs

Item	Unit	# of Units	Unit Cost	Total
GS-5 Recreation Tech. (2 persons)	Days	104	$200	$20,800
GS-12 Program Mgr. (1 person)	Days	5	$350	$1,700
Total				**$22,500**

Recommendations

This report is an initial funding request based on a rapid assessment. If additonal treatment needs are identified through more site specific on the ground investigation in cooperation with interested agencies, noxious weed detection surveys, interim requests for additional funding will be filed. These funding requests will identify the purpose for each treatment, and specific treatment specifications, locations, and number of each treatment.

Part VI – Emergency Stabilization Treatments and Source of Funds

Click red icons for notes.	NFS Lands					Other Lands				All
Line Items	Units	Unit Cost	# of Units	BAER $	Other $	# of Units	Fed $	# of Units	Non Fed $	Total $
						Click to Insert new line item below cursor				
A. Land Treatments										
Weed detection survey	ea	$20,845	1	$20,845			$0		$0	$20,845
Haz. Mat. Assessment	ea	$7,970	1	$7,970			#REF!		#REF!	
Subtotal Land Treatments				$28,815	$0		#REF!		#REF!	$20,845
B. Channel Treatments										
				$0			$0		$0	$0
				$0			$0		$0	$0
Subtotal Channel Treatments				$0	$0		$0		#REF!	$0
C. Road and Trails										
Road Stabilization	ea	150700	1	$150,700						
Storm Patrol	day	3750	45	$168,750						
Trail Implem. Assess	day	$900	7	$6,300						
OHV Trail Winterize	***ea***	***47,360***	***1***	***$47,360***						
Subtotal Road & Trails				$373,110	$0		$0		$0	$0
D. Protection/Safety										
Area Closure	ea	$28,400	1	$28,400						#REF!
Interagency Coor.	ea	$470	15	$7,050						
				$0			#REF!		#REF!	
Subtotal Protection				$35,450	$0		#REF!		#REF!	#REF!
E. BAER Evaluation										
Assessment team	ea	$146,044	$1	$146,044	$0	---		---		$0
				---	$0	---		---		$0
Subtotal Evaluation				$146,044	$0	---	$0	---	$0	$0
F. Monitoring										
Treatment effectivene	ea	$22,500	1	$22,500			$0		$0	$22,500
				$0			$0		$0	$0
Subtotal Monitoring				$22,500	$0		$0		$0	$22,500
G. Totals				**$459,875**	**$0**		**#REF!**		**#REF!**	**#REF!**
Previously approved				$412,515		Comments: Costs for the assessment team				
Total for this request Interim 1				***$47,360***		have already been spent, and therefore are not				

PART VII - APPROVALS

1. /s/ Peggy Hernandez — October 29, 2009
   Forest Supervisor (signature) — Date

2. /s/ Thomas A. Contreras (for) — October 30, 2009
   Regional Forester (signature) — Date

The Appendix items are provided separately to reduce file size. They include:

Figure 1: Soil Burn Severity Map

Figure 2: Geologic Map

Appendix A: Summary of cost-risk analysis

Appendix B: Treatment Justification Table

Appendix C: Noxious Weed Report and Monitoring Plan

All other documents are in the Project Record on the La Brea BAER external hard drive.