Date of Report: 12-14-05

BURNED-AREA REPORT
(Reference FSH 2509.13)

PART I - TYPE OF REQUEST

A. Type of Report

[X] 1. Funding request for estimated WFSU-SULT funds
[ ] 2. Accomplishment Report
[ ] 3. No Treatment Recommendation

B. Type of Action

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

[X] 2. Interim Report #**1**
[ ] Updating the initial funding request based on more accurate site data or design analysis
[ ] Status of accomplishments to date

[ ] 3. Final Report (Following completion of work)

PART II - BURNED-AREA DESCRIPTION

A. Fire Name: Runway Fire

B. Fire Number: CA-BDF-9304

C. State: CA

D. County: San Bernardino

E. Region: 05

F. Forest: San Bernardino

G. District: Cajon/Front Country

H. Date Fire Started: 09-07-04

I. Date Fire Contained: 09-11-04

J. Suppression Cost: $600,000

K. Fire Suppression Damages Repaired with Suppression Funds
1. Fireline waterbarred (miles): Currently working on evaluating all dozer and handlines.
2. Fireline seeded (miles): 0
3. Other (identify):

L. Watershed Number: 1809020805 (north) 1807020303 (South)

M. Total Acres Burned: 1193
NFS Acres(1180) Other Federal ( ) State ( ) Private (13)

N. N. Vegetation Types: Dominate: Chamise chaparral, lower montane mixed chaparral, buckwheat and semi-desert chaparral—Others are scrub oak, big-cone douglas fir, alluvial scrub, riparian scrub/woodland and cottonwood/willow (which is a subset of scrub/woodland)

O. Dominant Soils: Typic Xerorthents, warm-Typic Haploxeralfs, Wrightwood-Morical dry families assoc.

P. Geologic Types: Pliocene –well dissected alluvial fan deposits

Q. Miles of Stream Channels by Order or Class: 3.3 miles of order 1

R. Transportation System

Trails: 1.5 miles Roads: 2 miles 1mi OHV

Note: there are many miles of unclassified roads/rehabilitated trails (Unauthorized OHV) in this area that are not reflected in the above information.

PART III - WATERSHED CONDITION

A. Burn Severity (acres): 1071 (low) 123 (moderate) 0 (high)

B. Water-Repellent Soil (acres): 400 (thin layer which is inherent in these soils)

C. Soil Erosion Hazard Rating (acres):
0 (low) 614 (moderate) 579 (high)

D. Erosion Potential: 12 tons/acre

E. Sediment Potential: 7,900 cubic yards / square mile

PART IV - HYDROLOGIC DESIGN FACTORS

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

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

C. Equivalent Design Recurrence Interval, (years): 10

D. Design Storm Duration, (hours): 24

E. Design Storm Magnitude, (inches) 4

F. Design Flow, (cubic feet / second/ square mile): 63

G. Estimated Reduction in Infiltration, (percent): 40%

H. Adjusted Design Flow, (cfs per square mile): 89

PART V - SUMMARY OF ANALYSIS

A. Describe Watershed Emergency:

The Runway fire burned 1193 acres encompassing portions of Baldy Mesa rim which has several significant National Register of Historic Places (NRHP) eligible sites, both historic and prehistoric. There are additional NRHP sites in numerous locations throughout the fire perimeter which highlight the cultural importance of this area.

The Baldy Mesa OHV trail bisects the fire area along FS route # 3N24.The Baldy Mesa OHV area is very popular and used by motorcycles and ATVs. Forest users come from many areas including local riders and the

nearby large metropolitan areas. Use in the area has increased this past year from closures of other OHV areas as a result of the Grand Prix and Old fires in 2003.

Field review and identification of if the fire created a watershed emergency was focused on the potential impact of a fire in this unique setting. An interdisciplinary team of resource specialists reviewed the area for three days to assess the watershed emergency and to develop treatment options.

Findings indicated a watershed emeregency was created by the fire:

1. Cultural and heritage resources- The fire consumed vegetation and exposed several sites in six locations throughout the fire area. The significance of each site varies but all sites are registered on the NHRP list. The District continues to work diligentlly with SHPO, Serrano tribe, and other groups to ensure that the integrity of each site is maintained by selection of the most appropriate treatment or in some cases no treatment. The proximity of the NRHP sites to recreation use makes this area particularly vulnerable with the consumption of protective vegetation can increase access into areas that have not had vehicle access. Review of the fire area along the Baldy Mesa Rim indicate an extreme sensitivity since OHV trails criscross thru existing sites and brings users into areas that are relatively flat and desireable for riding. Unauthorized user created trails have been increasing in the area from the present use. Unauthorized use is occurring from the Northern forest boundary where unclassified roads cross private land before entering Forest Service lands. The fire burned into private land which has increased access onto the forest from dozer lines, secondary routes, and from the consumption of vegetation.Other sites in the southern portion of the burn are not as vulnerable since there is no authorized routes nearby and private property boundaries are either fenced or gated.

2. Threat to life and property on 3N55 at three locations where unnamed intermittent channels cross the road. Reduction in vegetative cover and soil cover in these watersheds will increase surface and channel erosion over natural conditions. The potential for increase in sediment bulking and subsequent adverse effects of flash flooding along this road may occur with thunderstorms or steady precipitation events.

3. Indirect effects of the fire include increased erosion from vehicle intrusion into the fire perimeter. OHV use in the area makes this location vulnerable along unclassified routes, fire lines, secondary fire lines, and areas with reduced vegetative cover. Experience on the Forest has shown that the resource risk from unauthorized vehicles following wildfire is greatly increased with the loss of protective vegetation cover. The natural recovery of vegetation can be significantly reduced if access into the area is not managed. Proliferation of new unauthorized off-highway vehicle trails may result in habitat loss and mortality of Endangered, Threatened, and Forest Service Sensitive species that are known or have a high potential to occur in this area"

A. Emergency Treatment Objectives:
    1. Protect National Register of Historic Places eligible sites within the fire area.
    2. Provide conditions that will allow for natural vegetative recovery of the area while maintaining OHV opportunities.
    3. Reduce threat to life and property.
    4. Protect threatened, endangered and sensitive species and their habitat.

C. Probability of Completing Treatment Prior to First Major Damage-Producing Storm:

Land **90** % Channel **NA** % Roads **90** % Other **90** %

D. Probability of Treatment Success

	Years after Treatment		
	1	3	5
Land	90	95	100
Channel	NA	NA	NA
Roads	95	95	95
Other			
Patrol	95	80	80

E. Cost of No-Action (Including Loss): **477,841.00**

F. Cost of Selected Alternative (Including Loss): **$220,665.00**

G. Skills Represented on Burned-Area Survey Team:

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

Team Leader: Carolyn Napper

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FAX: 909-592-2309

H. **Treatment Narrative:**

(Describe the emergency treatments, where and how they will be applied, and what they are intended to do. This information helps to determine qualifying treatments for the appropriate funding authorities. For seeding treatments, include species, application rates and species selection rationale.)

Note: In considering different treatments the interdisciplinary team evaluated the cost of smoothwire fence, post and cable fence, and pipe rail fencing. Each treatment was scrutinized relative to BAER direction, treatment effectiveness in protecting the resource as well as cost of installation, maintenance, and safety. The team also talked with other forests, engineers, and BAER team leaders to validate treatment effectiveness of the different fences. All of the southern forests have high recreational use all year-long. Fires in 2003 have closed some areas to foster recovery and ensure safety. In this area, since the fire was small, the team felt a closure of the OHV area would not be effective, so treatments were developed that controlled access to sensitive areas.

Land Treatments:

Access Barriers – Fences and barriers will be installed at sites highly vulnerable to intrusions by OHVs. This treatment is needed to protect significant cultural resource sites, federally listed and forest service spensitive species, and to foster the natural vegetative recovery of the burned area. Without physical protection of these areas, vehicular damage is expected to be significant that both NRHP historic and prehistoric sites would be jeopardized. Surrounding areas with vegetation are experiencing new user created trails every few months. The Runway fire has exposed several areas that left untreated will become new staging areas and trails since there is little vegetation to act as a barrier. Adminstrative

closures in other areas on the Forest (Grand Prix, Old Fires) has increased the use in this area. Signing of all vulnerable areas will be included in addition to physical barriers.

Pipe fencing was intially recommended for the area which is most vulnerable to impact due to the presence of the Baldy Mesa OHV trail. This is also the same area that has the most significant resources to protect. Different types of fences were considered but this site requires a failsafe type fence that can not be cut. This type of fence provides for short term recovery of the vegetation, allows for popular recreational activities to continue to occur, and ensures the fence will be in place even with another wildfire. This same style fence was used on the Cedar fire, Cleveland N.F. in 2003. The engineer responsible for implementing the pipe fence treatment found it to be highly effective in protecting resources. After continued coordination with the Region and through discussions with other Forests and staff experienced with this type of issue, it was decided that post and cable fencing could be used. The Forest has had good results with cable fencing and engineering has approved its use with safety reflectors at unauthorized route crossings.

Smoothwire fencing is recommended in other locations instead of the pipe fencing for the following reasons:

1. Moderate burn severity has decreased vegetative cover, reduced soil cover, and increased potential cross country vehicle access.
2. Selected areas are not adjacent to designated OHV routes and receive less vehicle pressure.
3. Selected areas had some fencing previously which has held up well and only needs to be extended to increase its effectiveness.

Status: T-post/three-strand wire fencing was installed along FS road 3N24 instead of the proposed post and cable fencing. Post and cable fencing was not used upon further consultations with the San Manuel Band of Mission Indians due to the possibility of causing greater damage to subsurface deposits in the archaeological sites than using t-post/wire fencing. This resulted in a tremendous cost-savings over the cost of the post and cable fencing. T-post/wire fencing was installed in the other locations as planned. Work was completed by crews on the forest, rather than contract, resulting in further cost savings.

Continuing needs: Due to lack of vegetative recovery, access into the fire area by OHVs and potential for cross country travel will continue to persist. Therefore, materials and supplies for the repair and maintenance of damaged fenceline is needed to effectivly reduce impacts to cultural, soil, botanical, and wildlife resources within and adjacent to the fire area.

OHV Regulation – Monitoring & Enforcement Patrols- One ¼ time position will be staffed for the next year to prevent unauthorized entry into non-barrier sites in the fire area through FS presence, to make contact with users, to monitor the success of installed fences and pipe barriers, and to repair vandalism. Unauthorized intrusions are not totally deterred by physical barriers alone, but the combination of barriers, signs and increased FS presence can be successful in preventing unauthorized entry while the fire area recovers. This position can be cost-shared with OHV Green sticker funds, and fire plan funds to extend the length of time and or the frequency of visits.

Status: Monitoring was conducted by Forest Sevice employees throughout the year to provide increased presence and maintain fence lines.

Continuing needs: Due to lack of vegetative recovery and terrain that is easily accessible to OHVs there is still a need for continued monitoring, patrol, and repair of damage to treatment areas (see examples of damaged fencelines).

Excavation and Recovery of Archeological Feature – One cultural resource area has been located within the floodplain of an active wash. Protection of this feature is estimated at $30,000 and would require modification of the existing stream channel. Rather than modify the channel the feature will be excavated and recovered.

Status: Excavation and recovery of the cultural feature was not done. Further consultations with the tribal representative indicated that the tribe does not wish to have this cultural feature disturbed through archaeological excavation at this time. They would like the Forest to continue monitoring the site to assess potential for future erosion and other impacts. Monitoring to date indicates that the cultural feature is not in immediate danger of eroding away

Continuing need: Continue monitoring the site to address potential erosion issues and other impacts from illegal OHV use of the area.

Signs – Informational signing (large posters) will be placed at three key entry locations to the burned area to inform visitors of the burned area recovery process and their role in ensuring its success by staying on signed travel routes. The signs will be placed at the Tressels, 3N24 intersection with 3N55, and 3N24 intersection with Eaby Road.

Other smaller signs will be used throughout the burned area to inform users of the vegetative recovery proccess and encouraging user compliance to stay behind barriers.

Status: Signs have been placed along fenced areas and various other signs have been ordered for placement throughout burn area.

Continuing needs: Replacement signs will need to be ordered to replace damaged signs.

Disguise Treatment – Unauthorized access can occur at areas that were previously closed, unclassified roads, and along dozer trails. In areas where dense vegetation exists the access route will be mechanically modified with a backhoe or excavator to scarify the road prism, move brush into place, and obscure the potential travelway. Locations identified for this treatment are by Davis Ranch, unclasifed road off 3N55, selected sites north of 3N24, and in any access areas from private land to the north section of the fire. This treatment has been used during routine restoration with considerable success.

Status: The unclassified roads near Davis Ranch, off FS road 3N55, and at the north end of the fire area were scarified and where possible brush was moved into the road prism to obscure the road.

Continuing need: Treatment maintenance is needed to ensure continued effectiveness due to intense storm events during the winter of 2004.

Spread Chips/Mulch – In two areas the fire burned across unclassified roads or OHV trails which has increased the erosion potential. To reduce erosion, sediment delivery, and loss of cultural resources from erosion, the two areas will be mulched with chips to increase soil cover to 50-75%. Access on these routes will be restricted.

Status: Chips/mulch were not spread. Access on those routes are restricted by fencelines.

Channel Treatments: No channel treatments are recommended at this time. Warning signing will be used as identified below.

Roads and Trail Treatments:

Warning signs- To prevent loss of life and property along the 3N55 road, warning signs will be placed in two locations to inform forest users of the increased threat of flash flooding at these locations. In addition, a letter will be sent by the forest to utility department, manager of the road, to inform them of the effect of the fire on the watershed at three crossings along the road. The forest will request assistance from the

utility company in maintaining the road crossings by checking the low water crossing area and the 24 inch culvert (¼ mile south of the low water crossing) for changes in access, debris, or plugging.

Status: The Forest worked with the utilities company and Caltrans in clearing debris from the culvert near the low water crossing area. A warning sign was placed at one location.

Gate - To prevent unauthorized access to the areas behind the powerline towers a gate will be placed. The gate will provide authorized access to utiity crews while restricting unauthorized access to areas recovering from the wildfire. The gate will be connected to fencing to ensure its effectiveness.

Status: The gate, fencing, and closure sign have been installed.

Structures: No structural treatments are recommended.

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.)

Cultural Resource Monitoring Plan

The objective of monitoring is to assess the effectiveness of the prescriptions proposed for heritage resource values potentially at-risk from the deteriorated watershed. If the selected prescriptions do not achieve the desired results, then other measures must be developed and implemented immediately. Monitoring will be completed by site visitation and documentation of any changes in its condition to ensure that vandalism or unauthorized OHV activity or other effects to the site have not occurred. A photo point will be established at each location for consistency in the monitoring effort. Observations will be documented on field monitoring forms and the site records will be updated accordingly.

Sites SBR-10074 and SBR-10078 will be monitored more frequently than the other sites due to its location in a highly used OHV area. The schedule for these two sites will be once/week for the first two months (or until the proposed prescriptions are implemented and all fencing is in place). Thereafter, monitoring can be reduced to once/month for the remainder of the 12 month period.

Because sites SBR-2910H, SBR-9957, SBR-10081, and FS-05-12-53-121 are located in much lower traffic and use areas compared to the other two sites, a lower frequency of monitoring is necessary for protecting heritage values at risk. Sites SBR-2910H and SBR-9957 will be monitored after the first winter storms and subsequent significant rain events. Sites SBR-10081 and FS-05-12-53-121 will be monitored once/month for a period of one year.

Again, if monitoring determines that prescriptions are inadequate to protect the values at risk, additional measures must be implemented.

Status: Monitoring for the effectiveness of treatments for heritage sites has been conducted. Vegetation recovery is minimal in some of the burn area.

Continuing Need: There is a need to continue monitoring these sites once per month due to their locations in a highly used OHV area that remains open after the fire, where unauthorized OHV activity is still rampant. The remaining sites should continue to be monitored on a quarterly basis.

Noxious weeds monitoring: Noxious weed infestations are very likely to increase dramatically following a fire due to an increase in available areas for germination, and the likely introduction of noxious weeds from heavy equipment and personnel, who may arrive from many areas across the western U.S. Areas of highest concern are along dozer lines, along the highway, and in the riparian areas, since these are the most likely areas where noxious weed seeds may be introduced and then distributed. There are also concentrated areas of several threatened, endangered, and sensitive plant and animal species that are at high risk of detrimental effects from noxious weed introduction. These are the areas the team feels should be monitored for noxious weed infestations for three years in order to prevent a large infestation from occurring. A detailed monitoring report is attached. The total cost of monitoring for noxious weeds will be $6000 for the first year after the fire. We request authority to spend $6,000 dollars the first year, and if a noxious weed infestation is found, we will submit and interim report requesting funding to eradicate this population. The monitoring plan is attached.

Status: Noxious weed survey was conducted see attached report Appendix A.

Part VI – Emergency Rehabilitation Treatments and Source of Funds by Land Ownership

			NFS Lands				Other Lands				All
		Unit	# of	WFSU	Other	# of	Fed	# of	Non Fed	Total
Line Items	Units	Cost	Units	SULT $	$	units	$	Units	$	$
A. Land Treatments										
										$0
Fence Material	mile	8,000	0.75	$6,000	$0	0	$0		$0	$6,000
Vandalism Patrol & Monit.	days	200	70	$14,000	$0		$0		$0	$14,000
Signs -large(replacement)	each	250	10	$2,500						$2,500
Signs -small(replacement)	each	75	30	$2,250						$2,250
Disguise Treatment	daily	270	15	$4,050						$4,050
Insert new items above this line!				$0	$0		$0		$0	$0
Subtotal Land Treatments				$28,800	$0		$0		$0	$28,800
B. Channel Treatments										
				$0	$0		$0		$0	$0
				$0	$0		$0		$0	$0
				$0	$0		$0		$0	$0
Insert new items above this line!				$0	$0		$0		$0	$0
Subtotal Channel Treat.				$0	$0		$0		$0	$0
C. Road and Trails										
				$0	$0		$0		$0	$0
				$0	$0		$0		$0	$0
				$0	$0		$0		$0	$0
Insert new items above this line!				$0	$0		$0		$0	$0
Subtotal Road & Trails				$0	$0		$0		$0	$0
D. Structures										
				$0	$0		$0		$0	$0
				$0	$0		$0		$0	$0
				$0	$0		$0		$0	$0
Insert new items above this line!				$0	$0		$0		$0	$0
Subtotal Structures				$0	$0		$0		$0	$0
E. BAER Evaluation										
Interim #1 Report Prep/Tracking	days	300	5	$1,500	$0		$0		$0	$1,500
							$0		$0	
Insert new items above this line!				$0	$0		$0		$0	$0
Subtotal Evaluation				$1,500	$0		$0		$0	$1,500
F. Monitoring										
Heritage Effectiveness	daily	310	12	$3,720	$0		$0		$0	$3,720
Insert new items above this line!				$0	$0		$0		$0	$0
Subtotal Monitoring				$3,720	$0		$0		$0	$3,720
G. Totals				**$34,020**	**$0**		**$0**		**$0**	**$34,020**

PART VII - APPROVALS

1. /s/ Max Copenhagen — 12/15/05
   Forest Supervisor (signature) — Date

2. /s/ Thomas L. Tidwell — 12/20/2005
   Regional Forester (signature) — Date

Appendix A

Weed Detection Survey Results 2005
Runway Fire 2004
San Bernardino National Forest
10/18/2005

I. Introduction

In 2004, BAER funds were used to perform weed detection surveys of the Runway Fire on the San Bernardino National Forest. This document describes the survey results and provides recommendations for continued monitoring and weed removal within the burned areas.

The goals of the invasive species monitoring included detecting the expansion of known weed infestations in burned areas and other sites disturbed by fire suppression activities (i.e. dozer lines, hand lines, safety zones and graded roads) and identifying the introduction of new weed species. Close attention was also given to the affects of invasive species and fire suppression activities on the sensitive plant species found within the area.

II. Background

The Runway Fire occurred on the Front Country District of the San Bernardino National Forest from September 7th to the 11th, 2004. The fire occurred in mixed chaparral, alluvial scrub, and riparian scrub/woodland at an elevation range of 3600-4600 feet.

III. Methods

The NRIS-Terra standard protocol was used to define the methods for data documentation and GIS mapping. Weed species of most importance to monitor, document and map were selected from the invasive non-native species list used in the San Bernardino Forest Plan 2005 (Appendix A). Weed species to be mapped are the most invasive and treatable species; all noxious weeds are listed in this category. These weed species to map were also identified as the greatest threats to the successful restoration of native vegetation following this fire. These 47 target species were to be mapped using GPS equipment in order to provide baseline information, and allow for continued monitoring to detect the expansion of infestations. Weeds to be documented are species that while they may be highly invasive, are not readily treatable. These species are recorded to provide a qualitative representation of all the weed species infestations post-fire.

The surveys were conducted in April 2005, using a combination of general and intuitive controlled survey types when looking for the targeted weed species. In other words, the surveyors attempted to cover as much ground as possible (approximately 90% of total area), but focused on those areas known to be occupied by sensitive plant species and that were most likely to harbor or promote the spread of invasive species (i.e. riparian, dozer/hand lines, roadsides, trails, areas adjacent to private land).

Sensitive plant species were also mapped using GPS's and Element Occurrence forms were filled out to document the population's health and attributes, such as number of individuals, phenology, light and water exposure, and impact of fire, fire suppression activities, and weeds.

IV. Weed Species to be Mapped

Acroptilon repens-Russian knapweed
Ageratina adenophora-eupatory
Ailanthus altissima-tree of heaven
Arundo donax-giant reed grass
Asphodelus fistulosus-onionweed
Atriplex semibaccata-Australian saltbush

Bassia hysopifolia-five-hook bassia
Brassica tournefortii-African mustard
Carduus pycnocephalus-Italian thistle
Centaurea solstitialis-yellow star thistle
Centaurea melitensis-tocalote
Centaurea stoebe ssp. *micranthos*-spotted knapweed
Cirsium vulgare-bull thistle
Conium maculatum-poison hemlock
Cortaderia selloana-pampass grass
Dipsacus sp.-teasel
Dimorphotheca sinuate-African daisy
Elaeagnus angustifolius-Russian olive
Eucalyptus globules-blue gum
Euphorbia lathyris-gopher plant
Ficus carica-fig
Foeniculum vulgare-fennel
Fumaria officinalis-Fumitory
Hedera helix-English ivy
Lathyrus latifolius-perrenial sweetpea
Linaria genistifolia ssp. *dalmatica*-Dalmatian toadflax
Lunaria annua-moonwort
Nicotania glauca-tree tobacco
Olea europaea-olive
Oxalis pes-caprae-Bermuda buttercup
Pennisetum clandestinum-Kikuyu grass
Pennisetum setaceum-fountain grass
Picris echioides-bristly ox-tongue
Piptatherum miliaceum-Smilo grass
Potamogeton crispus-curlyleaf pondweed
Prunus cerasifera-cherry plum
Ricinus communis-castorbean
Robinia pseudoacacia-black locust
Rubus discolor-Himalayan blackberry
Saponaria officinalis-bouncing bet
Salsola tragus-Russian thistle
Salsola paulsenii-barbwire Russian thistle
Schinus molle-Peruvian pepper tree
Senecio mikanioides-German ivy
Spartium junceum-Spanish broom
Tamarix ramosissima-saltcedar
Tribulus terrestris-puncture vine

Weed Species Recorded

Avena barbata-slender wild oat
Brassica nigra-black mustard
Bromus diandrus-ripgut brome
Bromus hordeaceus- soft brome
Bromus madritensis ssp *rubens*-red brome
Bromus tectorum-cheatgrass
Erodium cicutarium- redstem filaree

V. Results

None of the weed species to be mapped were found to occur in the burn area or associated bulldozer/hand lines. However, slender wild oat (*Avena barbata)*, black mustard (*Brassica nigra),* ripgut brome *(Bromus diandrus),* soft brome *(Bromus hordeacues),* red brome *(Bromus madritensis),* cheatgrass *(Bromus tectorum),* and redstem filaree (*Erodium cicutarium)* were all recorded in the burn and on dozer/hand lines.

Forest Service Sensitive species short-joint beavertail cactus (*Opuntia basilaris* var. *brachyclada*) and Forest Service Watch species Plummer's mariposa lily (*Calochortus plummerae*) were found to occur in the burn area and alongside dozer/hand lines.

VI. Conclusions

Approximately six months after the Runway Fire no infestations of the target weed species where discovered. However, it is most likely premature to definitively say that no target weed species exist in the area after such a short time period has elapsed. For example, some perennial species such as fennel, tree tobacco, and tree of heaven may not have sprouted that rapidly postfire.

Infestations of the non-native grasses, black mustard, and redstem filaree typically occurred in scattered patches throughout the burn area, but tended to be more highly concentrated along roadsides and dozer lines. This is intuitively due to their conduciveness to seed dispersal and disturbance. In most instances it was difficult to distinguish whether the weed infestations of non-native grasses, black mustard, and redstem filaree were in place prior to the fires or if they were new occurrences. It is highly probable that the weed species were already present in most of the areas seed banks, but were released from competition following the fire and it's associated disturbances. For example, in the case of most infestations of black mustard, ripgut brome, cheatgrass, and red brome in dozer lines and roadsides it was obvious that their population sizes had expanded beyond the pre-fire levels, when the presence of thick chaparral would have limited the amount of sunlight and nutrient availability.

Short-joint beavertail was found alongside dozer and hand lines, suggesting that individuals had been destroyed when dozer/hand lines were created. Since there were no accurate maps or documentation of short-joint beavertail in these dozer/hand line areas prior to the fire it is impossible to know exactly how many individuals were destroyed. However, 15% of the total population of short-joint beavertail found in the Runway burn area was discovered within ten feet of a dozer/hand line.

Almost all of the short-joint beavertail within the fire perimeter had been burned, but most individuals were regenerating (~80%). This species is known to resprout following low to moderate intensity fire but plants are killed by high intensity fire. The enlargement of cheatgrass and other non-native annual grass populations in and surrounding the burn area increases the amount of flashy fuels and therefore, the likelihood of a fire. Increased fire intervals can induce an increase in the dominance of non-native annual grasses, which in turn further promotes the acceleration of fire cycles. This increase in fire intervals and intensity would not allow short-joint beavertail to grow or reproduce.

Plummer's mariposa lily had not been previously mapped in the burn area, therefore it is hard to distinguish whether the number of individuals has grown or diminished post fire. However, observations from the Old/Grand Prix fire indicate that this species responds well to fire, with the exception of locations of high weed density and canopy cover.

VII. Recommendations

Priority areas (i.e. riparian, dozer/hand lines, roadsides, trails, and safety zones) of the Runway Fire should be resurveyed later in the summer of 2006 to ensure that all species are accurately identifiable and to monitor for the presence of any invasive species that may not have been present in the first six months post fire.

VIII. Project funding spent to date on Runway Fire

Expense Type	Expense for HSBEP6
Salary: Two GS-9's	1144.00

Salary: One GS-7	892.00
Salary: Two GS-5's	3164.00
Gas for 1 vehicle	800.00
TOTAL SPENT	6000.00
TOTAL FUNDS	6000.00
TOTAL REMAINING	0.00

IX. Proposed Budget for Weed Monitoring in 2006

1 GS-9 botanist (226.06/day x 4 days)	=$ 904.24
1 GS-5 biological technician (123.84/day x 3 days)	=$ 371.52
Vehicle mileage (300 miles @ 0.37/mile)	=$ 111.00
TOTAL	=$ 1386.76

IX. Project administrators and contacts

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APPENDIX A:

Scientific Name	Common Name	CalEPPC pest listing	CDFA pest Rating NOXIOUS	SBNF
List A-1&2 **Most Invasive**				
Ailanthus altissima	Tree of heaven	A-2	C#	Y*
Arundo donax	Giant reed, arundo	A-1	C#	Y*
Atriplex semibaccata	Australian saltbush	A-2		Y
Brassica tournefortii	African mustard	A-2		Y
Bromus madritensis ssp. rubens	Red brome	A-2		Y

Scientific Name	Common Name	CalEPPC pest listing	CDFA pest Rating NOXIOUS	SBNF
Bromus tectorum	Cheat grass	A-1		Y*
Centaurea solstitialis !	Yellow star thistle	A-1	C	Y*
Cortaderia selloana	Pampas grass	A-1		Y*
Eichhornia crassipes	Water hyacinth	A-2		Y
Elaeagnus angustifolius	Russian olive	A-2		Y
Eucalyptus globulus	Tasmanian blue gum	A-1		Y
Ficus carica	Edible fig	A-1		Y
Foeniculum vulgare	Wild fennel	A-1		Y
Pennisetum setaceum	Fountain grass	A-1		A
Rubus discolor	Himalayan blackberry	A-1		Y
Saponaria officinalis	Bouncing bet	A-2		Y
Senecio mikanioides =Delairea odorata	Cape ivy, German ivy	A-1	C#	A
Tamarix chinensis, T. gallica, T. parviflora T. ramosissima *Note: T. chinensis and T. gallica* are high potential, others are present	Tamarisk, salt cedar	A-1	C#	Y*
List B **lesser invasives**				
Ageratina adenophora	Eupatory	B		Y
Bassia hyssopifolia	Bassia	B		Y
Brassica nigra	Black mustard	B		Y
Centaurea melitensis	Tocalote	B	C#	Y
Cirsium arvense	Canada thistle	B	B	Y
Cirsium vulgare	Bull thistle	B	C#	Y
Conium maculatum	Poison hemlock	B		Y
Festuca arundinacea	Tall fescue	B		Y
Hedera helix	English ivy	B		A Y?
Holcus lanatus	Velvet grass	B		Y
Olea europaea	Olive	B		A Y?
Phalaris aquatica !	Harding grass	B		Y
Potamogeton crispus	Curlyleaf pondweed	B		Y
Ricinus communis !	Castor bean	B		Y
Robinia pseudoacacia !	Black locust	B		Y
Schinus molle	Peruvian pepper tree	B		Y

Scientific Name	Common Name	CalEPPC pest listing	CDFA pest Rating NOXIOUS	SBNF
Spartium junceum	Spanish broom	B	C#	Y*
Verbascum thapsus	Woolly mullein	B		Y
Vinca major	Periwinkle	B		Y
Red Alert: Potential to spread explosively				
Centaurea stoebe ssp. *micranthos* Formerly C. *maculosa*	Spotted knapweed	Red alert	A	Y
Linaria genistifolia ssp. dalmatica	Dalmatian toad flax		A	Y*
Need more information				
Asphodelus fistulosus	Asphodel	Need info		A
Convolvulus arvensis Moved from Considered but not listed as per advice from M. Lardner	Field bindweed			Y
Descurainia sophia	Tansy mustard	Need info		Y
Dimorphotheca sinuata	African daisy, cape marigold	Need info		Y
Euphorbia lathyris	Gopher plant	Need info		Y
Lathyrus latifolius and others	Perennial sweetpea			Y*
Nicotiana glauca	Tree tobacco	Need info		Y
Oxalis pes-caprae	Bermuda buttercup	Need info		A
Pennisetum clandestinum	Kikuyu grass	Need info	C	Y
Piptatherum miliaceum	Smilo grass	Need info		A
Poa bulbosa				Y
Prunus cerasifera	Cherry plum	Need info		N Y?
Salsola tragus	Russian thistle, tumbleweed	Need info	C	Y
Salsola paulsenii may hybridize with *S. tragus)*	Barbwire Russian thistle, Tumbleweed		C	Y
Tribulus terrestris ?	Puncture vine		C	Y
Annual Grasses that pose significant threats				
Avena barbata	Slender wild oat			A Y?
Avena fatua	Wild oat			Y
Bromus diandrus	Ripgut brome			Y
Lolium multiflorum (also Loilium perenne and	Italian ryegrass			Y

Scientific Name	Common Name	CalEPPC pest listing	CDFA pest Rating NOXIOUS	SBNF
Lolium temulentum on SBNF)				
Schismus barbatus	Mediterranean grass			Y
Considered, but not listed				
Dipsacus sativus *D. fullonum*	Wild teasel. Fuller's teasel			Y
Fumaria officinalis *F. parviflora*	Fumitory			A
Medicago polymorpha	California bur clover			A
Melilotus officinalis *Melilotus alba*	Yellow sweet clover White sweet clover			Y * **Y***
Nerium oleander	Oleander			Y
Picris echioides	Bristly ox-tongue			Y
Silybum marianum	Milk thistle			A Y?
Xanthium spinosum	Spiny cocklebur			A

California Exotic Pest Plan Council (CEPPC) List Categories

List A: Most Invasive Wildland Pest Plants; documented as aggressive invaders that displace natives and disrupt natural habitats. Includes two sub-lists; List A-1: Widespread pests that are invasive in more than 3 Jepson regions, and List A-2: Regional pests invasive in 3 or fewer Jepson regions

List B: Wildland Pest Plants of Lesser Invasiveness; invasive pest plants that spread less rapidly and cause a lesser degree of habitat disruption; may be widespread or regional.

Red Alert**:** Pest plants with potential to spread explosively; infestation currently small or localized. If found, alert Cal EPPC, County Agricultural Commissioner or California Department of Food and Agriculture.

Need More Information: Plants for which current information does not adequately describe nature of threat to wildlands, distribution or invasiveness. Further information is requested from knowledgeable observers.

Annual Grasses**:** A preliminary list of annual grasses, abundant and widespread in California, that pose significant threats to wildlands. Information is requested to support further definition of this category in next list edition.

Considered but Not Listed: Plants that, after review of status, do not appear to pose a significant threat to wildlands

California Dept. of Food and Agriculture Pest Ratings

All weeds on California's 130 plus noxious weed list have a rating. The overall rating system is NOT based on how bad a weed is-all weeds are considered "bad"- but rather on overall distribution throughout the state. Ratings and formal definitions by the CDFA are:

A=rated weeds are normally limited in distribution throughout the state. Eradication, containment, rejection or other holding action at the state-county level. Quarantine interceptions to be rejected or threat at any point in the state.

B=rated weeds are more widespread. Eradication, containment, control or other holding action at the discretion of the commissioner. State endorsed holding action and eradication only when found in a nursery.

C=rated weeds are generally widespread throughout the state. Action to retard spread outside of nurseries at the discretion of the commissioner. Reject only when found in a cropseed for planting or at the discretion of the commissioner.

Q=rated species are treated as temporary "A" weeds. Denoting action outside nurseries at the state-county level pending determination of permanent rating.

D=rated weeds are organisms considered to be of little or no economic importance. No action. Anything not rated as "A", "B", "C", or ""Q' is given a "D" rating.

Forest Codes

Y= Present on forest (and estimated number of acres if provided).
*= Forest is currently treating, in process of treating or has treated in past
A= adjacent or near Forest, reasonable to expect invasion on Forest lands within next 5 years
?= plants are adjacent or near and highly likely to be present but not documented
#= plant added to CDFA noxious weed list 8/2003, pest rating not finalized but "C" rating expected

This table was created using the California Exotic Pest Plant Council List: Exotic Pest Plants of Greatest Ecological Concern in California (CalEPPC 1999) as a template. From that list, only those plants within Jepson subdivisions of the San Bernardino National Forest were included. Plants are listed, in order of most invasive categories as per Cal EPPC list (List A-1 and A-2 were combined) then alphabetically. "Potential pests" from list by Hrusa, Ertter, Sanders, Leppig, and Dean (Madrono 2002) not in Jepson within the SBNF were included along with invasive plants on Forest Botanist's list of concern or that Forest's are currently eradicating. Ratings of plants designated as "noxious weeds" by the California Department of Food and Agriculture were added in a separate column.