

MESSAGE SCAN FOR MAIL

Hwy 58 Fire

To Los Padres  
CC pdb  
CC fam  
CC wsa:wo  
CC r.griffith

From: ARF-Ecosystem Cons:R05A

Postmark: 96/09/11 14:17

Delivered: 96/09/11 14:11

Status: Previously read Filed

Subject: 2520/6520 - BAER Highway 58 Fire Los Padres NF

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Comments:

Please forward to Forest Supervisor. No hardcopy to follow.

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United States	Forest	Pacific	Regional Office, R5
Department of	Service	Southwest	630 Sansome Street
Agriculture		Region	San Francisco, CA 94111-2214
			415-705-1098 Text (TTY)
			415-705-2876 Voice

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File Code: 2520/6520

Date: September 11, 1996

Route To:

Subject: Authorization for Expending Burned-Area Emergency Rehabilitation Funds (WFSU-FW22) - Highway 58 Fire

To: Forest Supervisor, Los Padres National Forest

Attached is the approved second Interim Burned-Area Emergency Rehabilitation Report for the Highway 58 fire. You are authorized to expend an additional \$18,000 of WFSU-FW22 funds at this time (bringing the total to \$201,000 to date) for the fencing and archaeological site treatments indicated in Part VI of the enclosed FS-2500-8 report.

G.LYNN SPRAGUE  
Regional Forester

Enclosure

cc: PDB  
ARF FAM  
WSA:WO  
R.Griffith  
USDA NRCS State Conservationist, Davis, California  
California Department of Forestry and Fire Protection,  
Headquarters, Sacramento, California.  
State of California, Department of Fish and Game, Sacramento, California

United States  
Department of  
Agriculture

Forest  
Service

Los Padres  
National  
Forest

6144 Calle Real  
Goleta, CA 93117  
805-683-6711  
TDD: 805-967-4487

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Reply to: 2520

Date: September 10, 1996

Subject: HW 58 Fire Burned Area Report

To: Regional Forester

The Interium Burned Area Report (Form FS 2500-8) for the HW 58 Fire is attached. The interium report serves as the Forest request for \$ 8,000 to fund work to protect 2 achaeological sites and a request for \$ 10,000 to fund work for watershed protection at 9 sites. These requests reflects a more detailed estimate of the work needed to protect 11 sites.

/s/DW Dahl  
DAVID W. DAHL  
Forest Supervisor

cc: SLRD DR

BURNED-AREA REPORT  
(Reference FSH 2509.13, Report FS-2500-8)

PART I - TYPE OF REQUEST

A. Type of Report

- ☒ 1. Funding request for estimated EFFF-FW22 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)
- ☒ 2. Interim Report  
☒ Updating the initial funding request based on more accurate site data and design analysis  
☐ Status of accomplishments to-date
- ☐ 3. Final report - following completion of work

PART II - BURNED-AREA DESCRIPTION

- A. Fire Name: HW 58 Fire B. Fire Number: SIU-2999  
C.
- State: California D. County: San Luis Obispo  
E. Region: 05 F. Forest: Los Padres (07)  
G. District: Santa Lucia(53)
- H. Date Fire Started: 08-15-96 I. Date Fire Controlled: 08-28-96  
J. Suppression Cost: \$ 8,000,000 1800 hours
- K. Fire Suppression Damages Repaired with EFFF-PF12 Funds:  
1. Fireline waterbarred (miles) 40 NF 110 Private  
2. Fireline seeded (miles) 5  
3. Other (identify) \_\_\_\_\_
- L. Watershed Number: 1806000401,1806000505,1806000702,18006000504
- M. NFS Acres Burned: 66,263 Los Padres NF Total Acres 104,337  
Ownership type:  
( ) State ( 930 ) BLM (37,145) PVT ( ) \_\_\_\_\_
- N. Vegetation Types: Chaparral - chamise, bigberry manzanita, blacksage,

Coulter Pine, Blueoak woodland, California buckwheat,  
Riparian woodland.

O. Dominant Soils: Trigo, Millshome, Gaviota, San Andreas, Chular,  
Exchequer, Stonyford,  
Modesto, Agua Dulce.

P. Geologic Types: Granite, Sandstone, Shale, Conglomerate

Q. Miles of Stream Channels by Class:

USFS      I - 0                      II - 0                      III - 250                      IV - 0

R. Transportation System:

Trails: 27 (miles)      OHV Trails 25      Roads: 37 (miles)

PART III - WATERSHED CONDITION

A. Fire Intensity (Acres): 30145 (low/unburned) 38653 (moderate) 35537  
(high)

B. Water Repellant Soil (Acres): 62,602 Mostly slight to moderate in  
severity or degree.

C. Soil Erosion Hazard Rating (Acres):  
0 (low)      7303 (moderate)      97035 (high/very high)

D. Erosion Potential: 18 tons/acre

E. Sediment Potential: 8,065 cu. yds/sq. mile

PART IV - HYDROLOGIC DESIGN FACTORS

- A. Estimated Vegetative Recovery Period: 10 years.
- B. Design Chance of Success: 80 percent.
- C. Equivalent Design Recurrence Interval: 10 years.
- D. Design Storm Duration: 24 hours.
- E. Design Storm Magnitude: 6 inches.
- F. Design Flow: 98 cfs.
- G. Estimated Reduction in Infiltration: 60 percent.
- H. Adjusted Design Flow: 165 cfs.

## PART V - SUMMARY OF ANALYSIS

### A. Describe Emergency:

A 104,000 acre wildfire burned several watersheds of the La Panza Range. Thirty four percent of the area burned under high intensity. Soil erosion hazard is high over 95 percent of the area.

Peak flows are expected to increase 1.6 times above normal and sediment is expected to increase 5.7 times above normal for the first year. For the first year, up to 304,466 cubic yards of sediment may move into the Salinas Reservoir, a drinking water supply for the City of San Luis Obispo. This increase in sediment due to the fire is equivalent to 0.8% of the capacity of the reservoir. Several stock ponds and small domestic water supply reservoirs are expected to be partially or completely filled with sediment and debris.

Three houses, two mobile homes, and two out buildings in Wilson and East Huerfano creek watersheds may be at risk to debris flows and/or flooding. The Camatta Ranch House may also be at risk. Three homes along River Road west of Pozo may be in danger. In general, the fire occurred in a very remote and sparsely populated area of the county, and relatively few structures within the watersheds influenced by the fire or subsequent downstream flows will be affected.

Roads, trails, and off-highway (OHV) trails will be impacted. The additional runoff and erosion may result in concentrated water on roads, trails, and OHV trails. Existing rolling dips and lead off ditches may need maintenance and clean out to accommodate the additional runoff from the fire.

The fire area contains a designated OHV area with 27 miles of trails. Prior to the fire, OHV traffic was limited to trails by brush barriers. The fire removed most of the natural brush barriers. There is a concern is that OHV traffic off of the designated trails may cause resource damage by accelerating soil loss.

Access roads to residences, grazing allotments, water developments, and recreation areas may be affected by increased runoff and sedimentation. There is the potential for road washouts at stream crossings. Within the fire perimeter, rocks and debris is expected on road surfaces following storms. Periodically, rocks and debris will be on roads due to gravity movement under fair weather conditions.

More specific information may be obtained by contacting the LPNF Resource Officer-Linda Riddle at the Supervisors Office.

### B. Emergency Treatment Objectives:

1. Road and trail protection.
2. Reduce sedimentation off of roads and trails.
3. Keep roads and trails safe.
4. Maintain safe access to residences, grazing allotments, and recreation opportunities.

5. Insure that roadbeds can handle the additional runoff without damage.
6. Make landowners aware of potential flooding problems and possible on-site protective measures.
7. Protect individual structures in high risk areas downstream from the fire from high flows, sediment deposition, and debris torrents.
8. Prevent OHV trespass damage to watersheds.
9. Maintain the integrity of spillways on small ponds and reservoirs.
10. Control the distribution of livestock within the authorized boundaries to protect watersheds.
11. Make the city and county, and all other responsible agencies, aware of the possible hazards from increased flows and sedimentation.

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

Land - % Channel - % Roads 100 % Other 100 %

D. Probability of Treatment Success

	<----Years after treatment----->		
	1	3	5
Land	80	100	100
Channel	-	-	-
Roads	80	100	100
Other	80	100	100

E. Cost of No-Action (Including Loss): \$216,000  
Team (\$60,000)

F. Cost of Selected Alternative (Including Loss): \$ 57,000 (No Action)

G. Skills Represented on Burned-Area Survey Team:

<input checked="" type="checkbox"/> Hydrology	<input checked="" type="checkbox"/> Soils	<input checked="" type="checkbox"/> Geology	<input checked="" type="checkbox"/> Range
<input type="checkbox"/> Timber	<input checked="" type="checkbox"/> Wildlife	<input checked="" type="checkbox"/> Fire Mgmt.	<input checked="" type="checkbox"/> Engineering
<input type="checkbox"/> Contracting	<input checked="" type="checkbox"/> Ecology	<input type="checkbox"/> Research	<input checked="" type="checkbox"/> Archaeology
<input checked="" type="checkbox"/> GIS	<input checked="" type="checkbox"/> Fisheries	<input checked="" type="checkbox"/> Botanist	<input checked="" type="checkbox"/> Rec/Wilderness

Team Leader: Bob Blecker  
Phone: 805-681-2763 DG Address: B.Blecker:R05F07A

H. Treatment Narrative:

Although quite large, the Highway 58 fire occurred in a very rural area with relatively few downstream values at risk. One of the main concerns immediately after the fire was the potential sediment loading into the Salinas Reservoir

The San Luis Obispo city and county water agencies expressed a concern over the amount of additional sedimentation calculated to enter the reservoir (0.8% of reservoir capacity), but felt that seeding or other land treatment measures were not needed.

Most of the treatments necessary to protect resources involved roads and road maintenance. In order to maintain the roads for public access to residences and other forest uses, the roadbeds will require work to prevent erosion from destroying them. Also, some road cuts have the potential to add large amounts of sediment into the watershed. Some of the treatments necessary include cleaning of drains and culverts, raised culverts, and reworking of drains. Two roads not maintained by the USFS cross the Los Padres N.F. within the burn area. The Pozo road is administered by the county and will require similar work as described above and possibly reinforcement of the side cuts with mulch. The FAA also administers the road up to Black Mt. radar facility, and this road will also require similar work. The Santa Lucia Ranger District has contacted these agencies to insure that they are aware of the hazard to their roads, and to coordinate maintenance. The Los Padres N.F. will stage equipment near the burn area for the winter storm months to maintain the capacity of the USFS roads to handle excess runoff. The Los Padres Forest has also coordinated with agencies responsible for roads off Forest to insure that they know of the potential hazards to their roads from increased peak flows and sedimentation.

There are about 22 miles of hiking trails in the area, and these will be damaged by increased runoff from slopes above that burned with high intensity. The USFS plans to rework the drainage on these trails to insure that they can handle the increased runoff.

About 25 miles of Off Highway Vehicle Roads occur within the burn perimeter. These trails also will require drainage maintenance throughout the first winter to maintain their integrity and reduce soil erosion. Most of the trails were bounded by natural vegetative barriers, which are now gone. In order to prevent trespass, about two miles of fence needs to be constructed, and extra patrols of the area will be needed, as well as cooperation and coordination with local OHV groups.

There are at least three homes and two mobile homes in the Huerfano basin and one home in the Long Canyon basin. The USFS is working with the Natural Resources Conservation Service to complete the identification of homes at risk, and to notify property owners of potential risks, mitigation techniques, and cost share opportunities.

Many ponds occur off National Forest lands. There is a high potential for sedimentation and breaching of spillways if spillways are unarmored or inadequate. The USFS is working with NRCS to notify pond owners of problems, mitigation, and, cost share opportunities. There are only three ponds on national forest land in high risk areas. None of these have structures at risk below them, and all have adequate spillways and are not filled with sediment. The USFS plans to let these collect sedimentation, and if necessary, clean them out after each of the first two rainy seasons.



Approximately 40 miles of Forest Boundary fence exists within the perimeter of the fire. Repair or replacement of this fence will be necessary to protect the watershed from trespass and disturbance by livestock and vehicle from adjacent private lands. The resource protections problem is particularly acute on the north and west sides of the fire. In this area there are numerous small land owners near or adjacent to the Forest, adding potential trespass problems. In addition, there are at least five miles of interior fence that will serve the same function of protecting the watershed from livestock and/or vehicle disturbance in areas previously protected by brush barriers. A more thorough assessment still needs to take place to determine the extent of the damage to the fences and specific watershed areas needing protection. Private landowners are expected to contribute approximately 20% toward this effort.

9-10-96 UPDATE

#### HW 58 Fire Heritage Resources Site Rehab Narrative

There are two historic sites in the Navajo Creek area that need protection from erosion, dry ravel, and trespass where the native brush barriers have been eliminated. Approximately .4 miles of temporary fence will be constructed to replace the native brush barriers and silt fences will be constructed and attached to the fence. Seeding and use of natural jute matt are proposed in order to minimize dry ravel and erosion. The Forest will use Site Steward volunteers to reduce labor costs.

Two Sites at \$4000 each.      Total \$8,000

#### Temporary Watershed Protection Fence

Near the origin of the fire, at the northwest corner of USFS property, seven trails on private property dead end at the Forest boundary. Previous to the fire, a barbed wire fence blocked the trail at the Forest boundary, and brush barriers beside the trail prevented off-highway vehicles from entering the Forest and causing watershed damage. Now that the brush barriers are burned, there is a concern that OHV trespass may increase. The USFS proposes to build approximately 200 feet of temporary fence on either side of the trails that will connect to other barriers (steep slopes in most cases) in order to prevent OHV trespass.

We are asking for 400'/crossing x 7 crossings = 2800' or 1/2 mile

The Turkey Flats OHV staging area burned in the fire. Trails leading out from the staging area were bounded by brush barriers, which prevented trespass on this floodplain. Now there is no barriers defining the trail, and OHV trespass will damage the soils and vegetation here, and preclude the re-establishment of natural brush barriers. About 1 mile of fence will be necessary to prevent trespass.

The McGinnis creek OHV trail paralleled a riparian zone for approximately 1/2 mile. The brush barrier that prevented OHV trespass onto the riparian area

burned. A 1/2 mile temporary fence is needed to prevent OHV damage to the riparian area, and to allow the natural barriers to re-establish.

Total fence needed is 2 miles, at an approximate cost of \$5000 mile. This total cost of \$ 10,000 includes materials and labor. Volunteer help will be used also.

PART VI - EMERGENCY REHABILITATION TREATMENTS AND SOURCE OF FUNDS BY LAND OWNERSHIP

NOTE: Emergency rehabilitation is work done promptly following a wildfire and is not to solve watershed problems that existed prior to the wildfire.

Line Items	Units	Unit Cost M\$	NFS Lands			Other Lands			All
			Number of Units	EFFS-FW22 M\$	Other \$ pvt. ident.	Number of Units	Fed \$ ident.	Non-Fed \$ ident.	Total \$
A. LAND TREATMENTS									
FENCES	mile	5,000	2	10,000					10,0
B. CHANNEL TREATMENTS									
C. ROADS AND TRAILS									
Culvert,Ditch Cleaning	**								
Rip Rap Energy Disap.	ea	64	200	13,000					13,0
Debris Racks	ea	500	14	7,000					7,0
Trail, Road Treatments	mi.	500	69	34,000					34,0
Signs, Gates,Patrol	*			59,000					59,0
* 15 gates and signs, 4 months of patrol and debris removal									
** See Trail and Road Treatments.									
D. STRUCTURES-OTHER									
Arch Site Protection	site	4,000	2	8,000					8,0
E. BAER EVALUATION/ ADMINISTRATIVE SUPPORT									
Salary, travel, admin.	Team	4000	15	\$60,00					60,0
Air Photos	acres		40,000	10,000					10,0
TOTAL									

PART VII - APPROVALS

- /s/DW Dahl  
Forest Supervisor (Signature)
- /s/ James A. Lawrence  
Regional Forester (Signature)

September 10, 1996  
Date

09/11/96  
Date

- The burned area rehabilitation team members were from 3 National Forests, California Department of Forestry and Fire Protection, Natural Resources Conservation Service, California Dept. of Fish and Game, San Luis Obispo City and County agencies.

Grass Seeding Discussion for the Highway 58 Fire

Possible criteria for grass seeding includes:

- No seeding on oak/grass woodlands
  - No seeding on slopes over 60% (preferably less than 50%)
  - No seeding on areas with Threatened, Endangered, or Forest Sensitive plant species
  - No seeding in wilderness areas
  - No seeding on low burn intensity areas
  - Seed only where there are high downstream values
  - No seeding on poor sites (high solar insolation aspects, shallow soils, very rocky sites)
  - Use native species only to augment natural vegetation in areas believed to have depleted seed banks.
  - Seed only with cool season grass species with the capacity to respond and be effective for early season storms
  - Seed at a low rate (e.g., 4 lb/ac of zorro fescue)
- 

Basic Assumptions Involved with Grass Seeding:

1. The effects of grass seeding on peak flows and sediment reduction are uncertain and depend on evenly spaced, low to moderate amounts of rainfall during initial post-fire storms. Seeding will not reduce erosion and runoff from heavy precipitation that occurs early in the rainy season (State Board of Forestry Task Force on Emergency Watershed Protection 1995)
2. Seeding can increase infiltration rates which were lowered during wildfire due to the creation of a hydrophobic layer. Higher infiltration rates can have both positive and negative impacts. Positive impacts include reduced surface erosion created by rilling, sheetwash, and gullyng. Disadvantages include potential increases in mass movement (primarily shallow debris sliding) (Ruby 1987, Spittler 1995, Booker et al. 1993).
3. Seeding can reduce native plant species density, cover, and diversity which in some situations can reduce a system's long-term hillslope stability (Keeler-Wolf 1995, Stone 1993, Rice 1975).
4. Grass seeding can only affect surface erosion processes (i.e., rilling and gullyng). It is likely that between one-fifth and one-third of the erosion in southern California watersheds results from surface erosion. Seeding will have little impact where the major source of sediment is dry ravel or mass wasting. Similarly, downstream sediment yield may not be significantly reduced by seeding if there is very high sediment storage in stream channels that is mobilized by very high peak flows. If infiltration rates are significantly increased by seeding through interruption of the hydrophobic layer, erosion of channel deposits could be affected by grass seeding (Rice 1975, Spittler 1995).
5. On average, about 70% of the long-term sedimentation from the watershed occurs during the first year after the fire (Rice 1975).

6. Due to climatic conditions in many instances, seeding efforts achieve little soil stabilization during the first year except to establish a cover that may be effective in the following seasons (Rice 1975).

7. If there is a sufficient viable seed bank left in the soil, grass seed will not provide additional soil stabilization. If the seed bank is seriously depleted by intense fire, then seeding can add cover which may increase infiltration and reduce surface erosion, possibly providing benefits to downstream values (P. Wohlgemuth, PSW-Riverside, per. communication). Oak/grass woodlands will always have a sufficient seed source and will not require supplemental seeding.

8. Seeding success and effectiveness are closely associated with site productivity. Only better sites should be considered as a priority for seeding; poorer sites should not be considered. The best sites have fine-grained soils, dark color, and usually slopes less than 50%. Poorer sites have harsh exposure, slopes greater than 50% with mobile surfaces, no definite soil development, and high natural erosion rates (Ruby and Griffith, 1994).

9. A rapid, accurate method to assess the quantity of seed in the soil after the fire would assist in deciding whether severely burned areas should be seeded. Some considerations in developing such a technique are: 1) obtaining an adequate sample size, 2) determining the minimum number of seeds/unit volume to recommend seeding, and 3) locating facilities for germinating the samples. 4) Determine germination procedures that reflect natural germination processes so as not to under or over estimate germination.

10. If native seed is prescribed, it should be collected locally.

Given the above assumptions:

1. Downstream values were limited in scope relative to the size of the fire. Two main areas of concern were identified; the Upper Salinas Basin and the Huerohuero Basin. Other individual homes are located below other watersheds, but are either not threatened, or there is only one or two structures. In the case where there is only one or two structures, it is more cost effective and efficient to mitigate the flooding and debris potential with more intensive work at the home site. This localized mitigation is coordinated through the Natural Resource Conservation Service.

#### A. Salinas Reservoir

The BAER team identified the Salinas Reservoir as potentially threatened by the increased sediment load. A representative from the San Luis County water district reviewed the calculated amount of sediment increase into the Reservoir, and determined that it amounted to 0.8% of the total capacity of the Reservoir. It was their opinion not to seed the watershed to reduce sedimentation into the Reservoir since the calculated increase in sediment was not significant to them.

A cost analysis of seeding vs. the cost of water displaced is presented below. The BAER team felt that under the cost/risk criteria, seeding was not

acceptable.

### Potential Impacts to Santa Margarita Reservoir

#### Increased Water Yields:

1st Year	805 ac-ft
2nd Year	322
3rd Year	185
Total	1312

#### Increased Sediment Yields:

1st Year	250,596 cu yds	155 ac-ft
2nd Year	77,922	48
3rd Year	48,706	30
4th Year	29,224	18
5th Year	18,270	11
Total	424,718	262

Background sediment yield = 33 ac-ft (adjusted for past fires)

Average sediment yield unadjusted for past fires = 40 ac-ft

Information from Mr. Gary Henderson, Water Division Manager,  
City of San Luis Obispo - (805) 781-7237

Mr. Henderson utilized the Safe Annual Yield Model developed for Santa Margarita Reservoir under different amounts of sediment that would be delivered to the reservoir. The model determined the relationship that one acre-foot of sediment reduced the safe annual yield by 0.15 acre-feet. For example, 600 acre-feet of sediment would reduce the safe-annual yield of the reservoir by 90 acre-feet.

#### ----- Cost/Benefit Analysis for Santa Margarita Reservoir:

Additional sediment yield first year = 155 ac-ft  
 $155 \text{ ac-ft} \times 0.15 = 23.25 \text{ ac-ft of water lost}$   
Santa Margarita Reservoir water value = \$1,000 ac-ft  
 $\$1000 \text{ ac-ft} \times 23.23 \text{ ac-ft water lost} = \$23,250 \text{ for 1st yr}$

With grass seeding, assume sediment production reduced 10% 1st yr  
 $155 \text{ ac-ft} \times 0.10 = 15.5 \text{ ac-ft sediment}$   
 $15.5 \text{ ac-ft sediment} \times 0.15 = 2.325 \text{ ac-ft of water}$   
 $2.325 \text{ ac-ft of water value} = \underline{\$2,325}$

#### Cost of seeding:

24,156 acres burned in Santa Margarita Reservoir watershed  
(includes wilderness area, high/moderate/low burn intensity)  
 $24,156 \text{ ac} \times \$50/\text{ac} = \underline{\$1,207,800}$   
(seeding costs based on Highway 41 Fire with brome/fescue, not native species)

The most significant amount of sediment produced in the Upper Salinas Basin was calculated to originate from the upper American Canyon and upper Douglas Canyon watersheds. For two reasons, seeding these areas is not recommended by the BAER team. First, the slopes that burned under high intensity are also the slopes over 60%, and seeding is not as successful on steeper slopes. Secondly, these areas are in the Machesna Wilderness and a Research Natural Area, where seeding is an activity that although not forbidden, is not recommended, in order to keep the area in as natural a condition as possible. The American Canyon Research Natural Area was established to protect a rare ecosystem of serotinous Coulter Pine with a chaparral understory. Competition from introduced seed could alter the recovery of this ecosystem.

After reviewing the literature and experiences gained on other local post-fire seeding projects, the BEAR team felt that seeding only decreases soil loss by approximately 10% on average. Given that the Upper Salinas Basin would likely experience a 570% increase in sediment, a 10% reduction may not be significant. Also, seeding is usually not effective until the second year after a fire, and based on the monitoring of the HWY 41 fire, native plant recovery by the second year often reaches 60% or more cover. BEAR guidelines state that if the cover after two years is 30% or greater, then seeding is not recommended.

#### B. Huerohuero Basin

At the time of this report, the Natural Resource Conservation Service identified 2 mobile homes, 3 houses, and about 10 outbuildings at risk from flood in this basin. There are many more home in the area, but most of these are high enough to be out of the flood zone. Most of the problems will be with access roads.

Given that there were a limited number of structures at risk, the BEAR team felt that it would be more effective to mitigate for potential flooding and debris flows locally around the structures, rather than broadcast seeding the slopes above. The BEAR team also felt that most of the flood damage would occur the first winter, and broadcast seeding of upper slopes would not be effective (grasses would not be established until the second year). Also, the team felt that in this local fire-adapted chaparral, the natural recovery rate is excellent. Of the 410% increase in sediment due to the loss of vegetative cover, broadcast seeding is only expected to reduce this figure by 10%. (See the above discussion for the Upper Salinas Reservoir). At the top of the Huerohuero basin, near the summit of Black Mountain, exists a rare plant that could also be threatened by introduced seeding. All these factors combined led to the recommendation of the BEAR team not to broadcast seed in the Huerohuero basin, but rather to seed more intensely and locally around individual structures, as well as construction of other flood and debris mitigating structures. These will be coordinated by the homeowners and Natural Resource Conservation Service.

The upper slopes of the Huerohuero and Upper Salinas Basins will be monitored to follow the native plant recovery.