# Date of Report: 8/24/90

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

# PART I - TYPE OF REQUEST

1.	Type of	Report
	[X] A. [] B.	Funding (Request for estimated FFF funds) Accomplishment Report
2.	Type of	Action
		Initial (estimated funding is first requested) Interim
	[] c.	<ul><li>[ ] Updating the initial funding request.</li><li>[ ] Supplying information for accomplishments to date on emergency work underway.</li><li>Final</li></ul>
		<ul><li>[ ] Best estimate for funds needed to complete eligible rehabilitation measure.</li><li>[ ] Following completion of funded work.</li></ul>
		PART II - FIRE LOCATION
8. 9.	Forest S State: ( County: M Region: Forest: Ranger I Date Fin Date Fin Estimate Fire Sup	ne (from Form FS-5100-29): ARCH ROCK Supervisor's Fire No. (from Form FS-5100-29): YNP 079 California Mariposa  5 Stanislaus District: Groveland Se Started: 07 August 1990 Se Controlled: 21 August 1990 Sed Suppression Costs: \$7,600,000.00 Suppression Damages Repaired with FFF 102 Funds:  miles (firelines waterbarred)
		acres (firelines seeded) Other (identify)
12.	Fire Int	tensity: 17 % (low) 5 % (medium) 73 % (high)

## PART III - NATIONAL FOREST SYSTEM PROBLEM INVENTORY

- 1. Watershed No.: 801 Merced River
- 2. NFS Acres Burned: 11,610 total 11,330 FS 280 PVT
- 3. Water Repellant Soil: 80 % of NFS acres burned
- 4. Vegetation Types: Mixed Conifer, Ponderosa Pine, Chaparral, Blue Oak Grassland.
- 5. Geologic Types: Granitic, Metasedimentary.
- 6. Soil Erosion Hazard Rating:
  - 0 % (low) 6 % (medium) 94 % (high)
- 7. Erosion Potential: 23,780 cu. yds/sq. miles
- 8. Miles of Stream Channels by Regional Order or Classes: Class I, 1 mile; Class II, 8 miles; Class III, 1 mile; Class IV, 13 miles.
- 9. Miles of Forest Service Trails: 0
- 10. Miles of Forest Service Roads by Maintenance Levels:

0 miles (Level I) 14.3 miles (Level II)
13.6 miles (Levels III, IV, V)

### PART IV - CALCULATED RISK AND CLIMATIC EVALUATION

- 1. Estimated Vegetative Recovery Period: 5 years
- 2. Chance of Success Desired by Management: 80 percent
- 3. Equivalent Design Recurrence Period: 25 years
- 4. Related Design Storm Duration: 6 hours
- 5. Related Design Storm Magnitude: 3 inches
- 6. Related Design Flow: 125 cfsm
- 7. Estimated Reduction in Infiltration: 75 percent
- 8. Adjusted Related Design Flow: 250 cfsm

### PART V - SUMMARY OF SURVEY AND ANALYSIS

- 1. Skills Represented on Burned Area Survey Team ("x" appropriate boxes):
  - [X] Hydrology [X] Soils [X] Geology [X] Range
  - [X] Timber [X] Wildlife [X] Fire Mgmt. [X] Engineering
  - [X] Contracting [X] Local Mgmt. [] Research [X] Fisheries Biologist
  - [X] Economist [X] Cultural Resources [X] Sensitive Plants
- 2. Describe Emergency: The emergency is flooding, damage to property and other investments (such as roads, dams, bridges, houses and out buildings), loss of site productivity and soil due to erosion, threats to human lives (for example: dangerous travel on damaged roads, strandings during storm events, and the flooding of property).
- 3. Emergency Rehabilitation Objective: The rehabilitation objective is to mitigate the emergency (described in #2) to the extent possible to reduce the risk of loss of life, property and site productivity.

4.	Probability of Completing Treatment Prior to First Major Damage Producing Storm:
	Land 95 % Channel 95 % Roads 80 % Slope stabil. 70 %
5.	Net Environmental Quality Benefit Index: 0.96
	[X] Significant [] Not Significant
6.	Net Social Well Being Benefit Index: 0.73
	[X] Significant [] Not Significant
7. 8. 9.	Benefit/Cost Ratio: 1.8 Net Benefits: \$513,661 Cost Effectiveness Index: [x] I. [] III. [] IV.

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PART VI - ELIGIBLE EMERGENCY REHABILITATION MEASURES OR TREATMENTS

# AND SOURCE OF FUNDS

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   Units   Wo. of   FFF 092   Other \$ No. of   Pederals   Non-Federal Total   Cost   Units   F \$   Units   Wilter   Wilter   Wilter   Wilter   Wilter   Gost   Units   Gost   Units   Gost   Units   Gost   Wilter   Gost   Cost				NFS	Lands			Other L	Lands	All Lands
Cost   Units   \$   Units   \$   State   Cost   Units   \$   Cost   Units   \$   Cost   Units   \$   Cost   Units   \$   Cost   Units   Cost   Cost	Line Items	Units				Other	No.		Non-Federal	Total
(2) (3) (4) (5) (6) (7) (8)   PVT     Acres   60   4127   247.600     1 dent.   1 dent.   247.6     Acres   700   30   21,000     21.0     Miles   5M   0.1   500     25.0     Dips   Bach   800   25   20,000     25.0     Earch   1000   16   13,000     25.0     Miles   500   117   58.500     18.0     18.0     Earch   1000   2.5   12.500     12.6     Miles   500   2.5   12.500                           Miles   500   2.5   12.500                           Miles   500   2.5   12.500                             Miles   500   2.5   12.500			Cost	Units	₩		Units		<b>₩</b>	₩.
(2)   (3)   (4)   (5)   (6)   (7)   (8)   (9)     Acres   60   4127   247.600		·						NPS	PVT	
Acres   (2)   (3)   (4)   (5)   (6)   (7)   (8)   (9)     Acres   60   4127   247,600						ident.		ident.	identify	
Acres   60   4127   247,600		(2)	(3)	(4)	(2)	(9)	(2)	(8)	(6)	
Acres   60   4127   247,600	A. LAND									
Acres   700   30   21,000		Acres	$\bot$	4127	247,600					247,600
Miles   5M   0.1   500		Acres	$\perp$	30	21,000					21,000
Miles   5M   0.1   500	ΰ.									
Miles   SM   0.1   500	d.									
Miles   SM   0.1   500	Θ,									
Miles   SM   0.1   500	B. CHANNELS									
Miles   5M   0.1   500	a. Channel									
On		Miles			500					200
on         Dips         Each         800         25         20,000         20,000           pators         Each         500         117         58,500         13,000         13,000         13,000         13,000         13,000         13,000         12,500										
on         on         con	Armoring									
on         on<										
Dips   Each   800   25   20,000     20,000	Stabilization									
Dips Each 800 25 20,000   20,0	υ.									
Dips         Each         800         25         20,000         20,00           Dators         Each         500         117         58,500         13,000         13,000           Patrol         Days         1500         12         18,000         18,000         18,000           ts         Each         1000         1         1,000         10,00         10,00         10,00           miles         5000         2.5         12,500         12,500         12,50         12,50           miles         5000         2.5         12,500         2.5         12,50         12,50           ch         1         42,000         5         168,000         42,000         252,00           stops         Each         1         42,000         5         168,000         42,000         252,00	AND									
pators Each         500         117         58,500         89,500         13,000         13,000         13,000         13,000         13,000         13,000         13,000         13,000         12,52,52,52         12,500         12,52,52         12,500         12,52,52         12,500         12,52,52         12,500         12,52,52         12,500         12,52,52         12,500         12,52,52         12,500         12,52,52         12,500         12,52,52         12,500         12,52,52         12,500         12,52,52         12,500         12,52,52         12,500         12,52,52         12,500         12,52,52         12,500         12,52,52         12,500         12,52,52         12,500         12,52,52         12,500         12,52,52         12,500         12,52,52         12,52,52         12,52,52         12,52,52         12,52,52         12,52,52         12,52,52         12,52,52         12,52,52         12,52,52         <	a. Intercepting Dips	Each	800	25	20,000					20,000
Days   1500   16   13,000   18,000   19,000   19,000   19,000   10,000			500	117	58,500					58,500
Patrol         Days         1500         12         18,000         1000         1         1,000         10,000 <th< td=""><td>- 1</td><td>-</td><td>800</td><td>16</td><td>13,000</td><td></td><td></td><td></td><td></td><td>13,000</td></th<>	- 1	-	800	16	13,000					13,000
ts Each 1000 1 1,000	- 1	-		12	18,000					18,000
Miles   5000   2.5   12,500	- 1	Each	1000	П	1,000					1,000
	f. Road rocking	Miles	5000	•						12,500
Preplanned -         Forest         6         6         6         6         6         6         7         7         7         7         7         7         8         8         8         8         8         9	D. MAJOR STRUCTURES									
from Forest         Flans		_								
Plans         Reservoir Clear.         1         42,000         42,000         42,000         42,000         42,000         252,000         252,000         Trench Drains         Each         Each         Image: Figure 1         Image: Figure 2         Image: Figure 2         Image: Figure 3         Image: Figure 3 <td>from Forest</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	from Forest									
Reservoir Clear.         1         42,000         5         168,000         42,000         252,           Debris Flow Stops         Each   42M         1   42,000         5   168,000         42,000         252,           Trench Drains         Each	Plans									
Debris Flow Stops         Each         42M         1 42,000         5 168,000         42,000         252,           eed to work out further with private vs F.S. location         Trench Drains         Each	Reservoir									
eed to work out further with private vs F.S. Trench Drains   Each	Debris Flow	$\perp$	42M	T	٠,		5	- 4	٦.	- 4
Trench Drains	out	ther w	ith pr		F.S.	ocation				
	Trench	Each								

	\$ 644,120					0 - 00 B
	ফ					
		APPROVALS		Date		Date
	ক	- APPR		1		
	₩.	PART VII				
	· <del></del>					
to Cc.)	_			(Signature)		(Signature)
(alternative to Cc.)	E. TOTAL		/8/	Forest Supervisor (Signature)	/8/	Regional Forester (Signature)

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(Kererence FSH Z5U9.13)			
Fire Name Arch Rock			Date of Report 8/24/90
Line Items	Type of   Units	Number of Units	Estimated Value \$
(a)	(q)	(c)	(d)
1. Community and urban development (houses and busniesses)	People	200	2,000,000.0
2. Municipal and domestic water supply	People  Served	2000	1,000,000.0
3. Transportation systems (Incl. County Roads)	Miles	27.9	279,000.0
4. Water distribution system (irrigation)	Miles		
5. Agricultural development (crops, facilities)	Acres		
6. Industrial development (small dams	Number	7	250,000.0
7. Power and communication lines	Miles	7	15,000.0
8. Recreation development	PAOT	20	2,000.0
9. Fish habitat	Miles	9	9,000.6
10. Other (specify) State Hwy. 140 Bridge @ Crane Creek	Each	Н	200,000.0
2 11. Total Hazard Potential	XXXXXXXXX	XXXXXXXXXX	3,755,000.0

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Hazards from floods, floating debris, erosion, or sediment because a watershed is impaired by wildfire. (Do not include value of resources damaged or destroyed by the fire reported on FS-5100-29.)

 $^2$  Indicates values threatened by design storm. Does not enter into the  ${\tt B/C.}$ 

B	EXAMINING IMPACTS OF MANAGEMENT ALTERNATIVES FOR AN EMERGENCY PROGRAM	EMERGENCY PROGRAM	T ALTERNATIVES AM	FOR AN			
Fire Name: Arch Rock	101011	2 112 1 20115	751.70		Date of Report:	t: 8/24/90	0
	A. ENVIRONMEN	ENVIRONMENTAL QUALITY BENEFIT	BENEFIT INDEX				
	Weight	Without	Treatment	With	With Treatment	Diff	Difference
Environmental Factor	Factor	Actual		Actual	Weighted	Actual	Weighted
(a)	(Q) ——	ົບ	(g)	(e)	(£)	(g)	(p)
1. Erosion and sediment	10	72	20		10		10
2. Aesthetic land quality	4	0	0	0	0	0	0
3. Water quality	<u>.</u>	2	10		r.		52
4. Site productivity		2	10	0	0	7	10
5. Wildlife habitat	7	7	4	7	4	0	0
6. Fish habitat	- 7	2	4	1	2	1	7
7. Other							
8. TOTAL	28	XXXXXXXXX	48	XXXXXX	21	XXXXXXX	27
	xxxxxxxxxx	xxxxxxxxx		xxxxxx		xxxxxxx	
. Average weighted i	XXXXXXXXX	XXXXXXXX	1.7	XXXXX	0.75	XXXXXXX	96.0
10. Net environmental quality benefit index	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	xxxxxxxxx	XXXXXXXXXXXX	XXXXXX	xxxxxxxxxxx	XXXXXXX	   0.96
	B. SOCIAL WELL-BEING BENEFIT	BEING BENEF	IT INDEX				
	Weight	Without	Treatment	With '	With Treatment	Diff	Difference
Social Criteria (a)	Factor   (b)	Actual (c)	Weighted   (d)	Actual (e)	Weighted   (f)	Actual (q)	Weighted   (h)
1. Life, health, safety	10	2	20	Н	10	1	10
2 Emmont		-	<b>.</b>	· c	·		
	-		-			4	

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3. Recreational opportunity	1	0	0	0	0	0	0
   4. Economic stability	——	0	0	0	0	0	0
-							
5. Income distribution		0	0	0	0	0	0
6. Preserve special sites		0	0	0	0	0	0
7. Other							
		XXXXXXXXX		XXXXXX		XXXXXXX	[
8. TOTAL	15	XXXXXXXX	21	XXXXXX	10	xxxxxxx	11
	XXXXXXXXX	XXXXXXXXX		XXXXXX		xxxxxxxx	
9. Average weighted index	XXXXXXXXX	XXXXXXXXX	1.4	XXXXXX	0.67	xxxxxxxx	0.73
	XXXXXXXXX	XXXXXXXX	xxxxxxxxxxx	XXXXXX	XXXXXXXXXXX	XXXXXXX	
10. Net social well-being benefit index	XXXXXXXXX	XXXXXXXX	XXXXXXXXXXX	XXXXXX	XXXXXXXXXXX	xxxxxxxx	0.73
	C. REMARKS	RKS					
Both Indecies Are Significant							

FS-2500-8a (11/82)

Note: At current Water Resources Council interest rate						
	terest ra	ate 8 - 7/8	3 percent			
				age Expected		
	nits of	Without 7	Treatment	With Treatment	atment	Expected \$
( e	Measure	No. of	Present	No. of	Present	Damage
(e)	· <del></del>	Units	Value (\$)	Units	Value (\$)	Reduction
	(q)	(c)	(d)	(e)	(£)	(a)
I. Watershed Impacts Sediments XXX	XXXXXXXXX	XXXXXXXXXX	XXXXXXXXX	XXXXXXXXXX	XXXXXXXXXXX	XXXXXXXXXXXXXXXXX
1. Downstream water storage						
2. Sediment removal	M ton 1	363	6,692.0	299	5,505.29	1,186.71
3. Fish habitat						
4. Water mality						
lood Water	XXXXXXXX	XXXXXXXXX	XXXXXXXXX	XXXXXXXXX	XXXXXXXXXX	XXXXXXXXXXXXX
	Acre	4127	152.165.49	0	0	  152,165.49
(Bridges Expanded Expansion (Bridges Expansion	A & Mi	1 & 9.43	229.689.74			689
Subtotal Watershed	XXXXXX	XXXXXXXXXX		XXXXXXXXXX		383.041.94
source Related Impacts	17	XXXXXXXXX	XXXXXXXXX	XXXXXXXXX	XXXXXXXXXX	XXXXXXXXXXXXXXX
1. Range						
2. Wildlife and Recreation						
3. Timber						
Subtotal Resource Related	XXXXXXXXX	XXXXXXXXXX		XXXXXXXXXX		
ther Impacts	$\Pi$	XXXXXXXXX	XXXXXXXXX	XXXXXXXXXX	XXXXXXXXXXX	XXXXXXXXXXXXXX
1. Property/Slope Stability Loss	Each	9	1,000,000.	0	0	774,739.44
xxxx   xxxxx   xxxxx   xxxxx   xxxxx   xxxxx   xxxxx   xxxxx   xxxxx	XXXXXXXXX	XXXXXXXXXXXX		XXXXXXXXXXX		774.739.44
ral DOLLARS	1 1	XXXXXXXXX	XXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	1,157,781.38

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REMARKS

R.P.A. value of \$10/M ton sediment reduced used.

Name	USDA-FOREST SERVICE	MAT DO SUEDIN			Fire Name <u>Arch Rock</u>	ne <u>Arch</u>	Rock	
A. Acres   B. Emergency Rehabilitation Needs   S. Emergency Rehabilitation Needs   S. Emergency Rehabilitation   S. Emergency Relation   S. Emergency Rederal   S. Emergency   S. Emerge	SUMMANI OF EMBROSENCI REBEDILLITATION (Reference FSH	2509.13)	DOWNERSHIP		Date of	Report_	8/24/90	
Note								
Burned   (1) Land   (2) Channel   (3) Road & (2) (1) Road   (2) (2) (2) (2) (2) (2) (2) (2) (2) (3) (3) (4) (4) (4) (4) (5) (4) (5) (4) (4) (5) (4) (5) (4) (5) (4) (5) (5) (5) (6) (6) (6) (6) (6) (6) (6) (6) (6) (6	Landownership	A. Acres		gency Rehabi	<u>litation Nee</u>	- 1		
Mon-Federal		Burned					<pre>(4) Other Slope Stability Structures</pre>	ıbility ıres
Mars   Martional Park   6490   Mars   Martional Park   6490   Mars   Martional Park   6490   Mars   Martional Park   6490   Mars   Martional Park   158,000   Mars   Martinal Park   158,000   Mars   Martinal Park   158,000   Mars   Mars   Martinal Park   158,000   Mars   Martinal Park   158,000   Mars   Martinal Park   158,000   Mars   Martinal Park		; ; ;	1 1 7			-	•	
(NRFS)   State & County   280   28		11330	415/	T.O	3.6		4	
NES    Carte & County    280	Other (specify) Yosomite National Park	6490					4	
Seervation								
280	Non-Federal (State & County)					-		
(Non-Federal)   280	To die to the constant of the terms of the t						: :	:
Source of Emergency Rehabilitation Funds for Needed Work (\$)   C. Source of Emergency Rehabilitation Funds for Needed Work (\$)   C. Source of Emergency Rehabilitation Funds for Needed Work (\$)   C. Source of Emergency Rehabilitation Funds for Needed Work (\$)   C. Source of Emergency Rehabilitation Funds for Needed Work (\$)   C. Source of Emergency Rehabilitation Funds   C. Source of Emergency Rehabilitation   C. So	TIMEN RESELVACION							
(Non-Federal)	Private	280					12	
C. Source of Emergency Rehabilitation Funds for Needed Work (\$)    1. FFF	Subtotal (Non-Federal)							
C. Source of Emergency Rehabilitation Funds for Needed Work (\$)    1. FFF	NOTA!							
andownership	C. Source of		tion Funds	for Needed W	1			
andownership [FFFS] (b) 102 Flood Federal Federal FW22]   FW22		Ι.	1		FR & T 4.	)ther	5. Non-	6. Total
andownership   [FFFS]   Prevention   (Enter   FW22]   fund)	<u> </u>	092	102	1 .		ederal	Federal	
(NFS) 434,		[FFFS   FW22]	<u>—</u> — —	revention		(Enter fund)	(Enter fund)	
(NFS) 434,				. — —	-			
oecify) Yosomite National Park	(NFS)	134,120						434,120
	Park	000,891						168,000

   Non-Federal (State & County)							
Indian Reservation							
Private	42,000						42,000
Subtotal (Non-Federal)							
TOTAL							644,120
D. Remarks							
   Source Area on National Forest; National Park Service Administration Annex to the Park land, not Park proper.	ional Park S	ervice Ad	ninistration	Annex to t	he Park land	l, not Park	proper.
2 Source Area on National Forest.							
						FS-2500-8c (11/82)	c (11/82)