

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

PART I - TYPE OF REQUEST

## 1. Type of Report

- ☒ A. Funding (Request for estimated FFF funds)  
☐ B. Accomplishment Report

## 2. Type of Action

- ☒ A. Initial (estimated funding is first requested)  
☐ B. Interim  
  
☐ Updating the initial funding request.  
☐ Supplying information for accomplishments to date  
on emergency work underway.  
☐ C. Final  
  
☐ Best estimate for funds needed to complete eligible  
rehabilitation measure.  
☐ Following completion of funded work.

PART II - FIRE LOCATION

1. Fire Name (from Form FS-5100-29): **ARCH ROCK**
2. Forest Supervisor's Fire No. (from Form FS-5100-29): **YNP 079**
3. State: **California**
4. County: **Mariposa**
5. Region: **5**
6. Forest: **Stanislaus**
7. Ranger District: **Groveland**
8. Date Fire Started: **07 August 1990**
9. Date Fire Controlled: **21 August 1990**
10. Estimated Suppression Costs: **\$7,600,000.00**
11. Fire Suppression Damages Repaired with FFF 102 Funds:

28.1 miles (firelines waterbarred)

0 acres (firelines seeded)

Other (identify)

12. Fire Intensity:            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 cfs
7. Estimated Reduction in Infiltration: 75 percent
8. Adjusted Related Design Flow: 250 cfs

### 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

☒ Significant ☐ Not Significant

6. Net Social Well Being Benefit Index: 0.73

☒ Significant ☐ Not Significant

7. Benefit/Cost Ratio: 1.8

8. Net Benefits: \$513,661

9. Cost Effectiveness Index: ☒ I. ☐ II. ☐ III. ☐ IV.

*Date 6 Sept 8/24/90*  
*Final*

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	NFS Lands			Other Lands			All Lands	
		Cost	No. of Units	FF 092 \$	Other \$	No. of Units	Federal \$	Non-Federal \$	Total \$
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	
A. LAND									
a. Seeding	Acres	60	4127	247,600					247,600
b. Mulching	Acres	700	30	21,000					21,000
c.									
d.									
e.									
B. CHANNELS									
a. Channel									
Clearing	Miles	5M	0.1	500					500
b. Channel									
Armoring									
c. Channel									
Stabilization									
e.									
C. ROADS AND TRAILS									
a. Intercepting Dips	Each	800	25	20,000					20,000
b. Energy Dissipators	Each	500	117	58,500					58,500
c. Overflow Structure	Each	800	16	13,000					13,000
d. Emerg. Flood Patrol	Days	1500	12	18,000					18,000
e. Snorkel inlets	Each	1000	1	1,000					1,000
f. Road rocking	Miles	5000	2.5	12,500					12,500
D. MAJOR STRUCTURES									
a. Preplanned -									
from Forest									
Plans									
b. Reservoir Clear.									
c. Debris Flow Stops	Each	42M	1	42,000		5	168,000	42,000	252,000
(need to work out further with private vs F.S. location)									
d. Trench Drains	Each								



USDA-Forest Service

ON-SITE AND OFF-SITE DEVELOPMENTS SUBJECT TO HAZARDS<sup>1</sup>

(Reference FSH 2509.13)

Fire Name	Date of Report		
Arch Rock	8/24/90		
Line Items (a)	Type of Units (b)	Number of Units (c)	Estimated Value \$ (d)
1. Community and urban development (houses and businesses)	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	2	250,000.0
7. Power and communication lines	Miles	2	15,000.0
8. Recreation development	PAOT	20	2,000.0
9. Fish habitat	Miles	6	9,000.0
10. Other (specify) State Hwy. 140 Bridge @ Crane Creek	Each	1	200,000.0
11. Total Hazard Potential	XXXXXXXXXX XXXXXXXXXX	XXXXXXXXXX XXXXXXXXXX	3,755,000.0

12. Narrative (Optional- if additional space is needed, attach another sheet).

1 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 B/C.

FS-2500-8b (11/82)

USDA-Forest Service									
EXAMINING IMPACTS OF MANAGEMENT ALTERNATIVES FOR AN EMERGENCY PROGRAM (Reference FSH 2509.13)									
Fire Name: Arch Rock					Date of Report: 8/24/90				
A. ENVIRONMENTAL QUALITY BENEFIT INDEX									
Environmental Factor (a)	Weight Factor (b)	Without Treatment		With Treatment		Difference		Actual (g)	Weighted (h)
		Actual (c)	Weighted (d)	Actual (e)	Weighted (f)	Actual (g)	Weighted (h)		
1. Erosion and sediment	10	2	20	1	10	1	10		
2. Aesthetic land quality	4	0	0	0	0	0	0		
3. Water quality	5	2	10	1	5	1	5		
4. Site productivity	5	2	10	0	0	2	10		
5. Wildlife habitat	2	2	4	2	4	0	0		
6. Fish habitat	2	2	4	1	2	1	2		
7. Other									
8. TOTAL	28	XXXXXXXXXX	48	XXXXXX	21	XXXXXXX	27		
9. Average weighted index	XXXXXXXXXXXX	XXXXXXXXXX	1.7	XXXXXX	0.75	XXXXXXXXXX	0.96		
10. Net environmental quality benefit index	XXXXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXXXX	XXXXXX	XXXXXXXXXXXX	XXXXXXXXXX	0.96		
B. SOCIAL WELL-BEING BENEFIT INDEX									
Social Criteria (a)	Weight Factor (b)	Without Treatment		With Treatment		Difference		Actual (g)	Weighted (h)
		Actual (c)	Weighted (d)	Actual (e)	Weighted (f)	Actual (g)	Weighted (h)		
1. Life, health, safety	10	2	20	1	10	1	10		
2. Employment	1	1	1	0	0	1	0		



3. Recreational opportunity	1	0	0	0	0	0	0	0	0	0
4. Economic stability	1	0	0	0	0	0	0	0	0	0
5. Income distribution	1	0	0	0	0	0	0	0	0	0
6. Preserve special sites	1	0	0	0	0	0	0	0	0	0
7. Other										
8. TOTAL	15	XXXXXXXXXX	XXXXXXXXXX	21	XXXXXXXXXX	10	XXXXXXXXXX	11		
9. Average weighted index	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	1.4	XXXXXXXXXX	0.67	XXXXXXXXXX	0.73		
10. Net social well-being benefit index	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	0.73		
C. REMARKS										

Both Indices Are Significant

#### D. EXPECTED DAMAGE REDUCTION BENEFIT SUMMARY

Note: At current Water Resources Council interest rate 8 - 7/8 percent

Economic Benefit Indices			Damage Expected				
			Without Treatment		With Treatment		Expected \$ Damage Reduction (g)
(a)	Units of Measure  (b)	No. of Units (c)	Present Value (\$) (d)	No. of Units (e)	Present Value (\$) (f)		
I. Watershed Impacts Sediments		XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	
1. Downstream water storage							
2. Sediment removal	M ton <sup>1</sup>	363	6,692.0	299	5,505.29	1,186.71	
3. Fish habitat							
4. Water quality							
II. Flood Water		XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	
1. Land (Soil Prod. Degrade) (Bridges & Roads)	Acre	4127	152,165.49	0	0	152,165.49	
2. Water Improvements	Ea & Mi	1 & 9.43	229,689.74			229,689.74	
3. Subtotal, Watershed		XXXXXXXXXX		XXXXXXXXXX		383,041.94	
III. Resource Related Impacts		XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	
1. Range							
2. Wildlife and Recreation							
3. Timber							
4. Subtotal, Resource Related		XXXXXXXXXX		XXXXXXXXXX			
IV. Other Impacts		XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	
1. Property/Slope Stability Loss	Each	6	1,000,000.	0	0	774,739.44	
2. Subtotal, Other		XXXXXXXXXX		XXXXXXXXXX		774,739.44	
V. TOTAL DOLLARS		XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	1,157,781.38	

REMARKS

<sup>1</sup> R.P.A. value of \$10/M ton sediment reduced used.

FS-2500-8a (11/82)

USDA - FOREST SERVICE		Fire Name <u>Arch Rock</u>				
SUMMARY OF EMERGENCY REHABILITATION NEEDS BY LANDOWNERSHIP						
(Reference FSH 2509.13)						
Date of Report <u>8/24/90</u>						
B. Emergency Rehabilitation Needs						
Landownership	A. Acres Burned	(1) Land (acres)	(2) Channel (miles)	(3) Road & Trail (miles)	(4) Other Slope Stability Structures	
Federal (NFS)	11330	4157	0.1	3.6	1	
Other (specify) <u>Yosemite National Park</u>	6490				1 4	
Subtotal (NFS)						
Non-Federal (State & County)						
Indian Reservation						
Private	280				1 2	
Subtotal (Non-Federal)						
TOTAL						
C. Source of Emergency Rehabilitation Funds for Needed Work (\$)						
Landownership	1. FFF	2. Emergency Flood Prevention	3. FR & T	4. Other Federal (Enter fund)	5. Non-Federal (Enter fund)	6. Total
	(a) 092 [FFFS FW22]	(b) 102				
Federal (NFS)	434,120					434,120
Other (specify) <u>Yosemite National Park</u>	168,000					168,000
Subtotal (NFS)						

