USDA-FOREST SERVICE

Date of Report: July 12, 1989

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

## PART I - TYPE OF REQUEST

1. Type of Report

[x] A. Funding (Request for estimated FFF funds)
[ ] B. Accomplishment Report

2. Type of Action

[ ] A. Initial (estimated funding is first requested)
[ ] B. Interim

a. [ ] Updating the initial funding request.
b. [ ] Supplying information for accomplishments to date on emergency work underway.

[x] C. Final

a. [x] Best estimate for funds needed to complete eligible
b. rehabilitation measure.
[ ] Following completion of funded work.

## PART II - FIRE LOCATION

a. Fire Name (from Form FS-5100-29): Chiva
b. Forest Supervisor's Fire No. (from Form FS-5100-29): AZ-CNF-165
c. State: ARIZONA
d. County: PIMA
e. Region: 3
f. Forest: CORONADO
g. Ranger District: SANTA CATALINA
h. Date Fire Started: JULY 5, 1989
i. Date Fire Controlled: JULY 10, 1989
j. Estimated Suppression Costs: $ 677,500
k. Fire Suppression Damages Repaired with FFF 102 Funds:

1. 20 miles (firelines waterbarred)
2. 0 acres (firelines seeded)
3. ACCESS ROUTES WATERBARRED, ACCESS ROADS GRADED, PREVIOUSLY CLOSED ROAD USED FOR ACCESS RECLOSED

l. Fire Intensity: 30% (low) 20% (medium) 50% (high)

## PART III - NATIONAL FOREST SYSTEM PROBLEM INVENTORY

a. Watershed No.: 15-05-03-02-160
b. NFS Acres Burned: 2,000
c. Water Repellant Soil: 25 % of NFS acres burned

d. Vegetation Types: MESQUITE GRASSLAND, OAK WOODLAND, PONDEROSA PINE, MIXED CONIFER

e. Geologic Types: GRANITE

f. Soil Erosion Hazard Rating:

__30_ % (low) ___20 % (medium) ___50 % (high)

g. Erosion Potential: _____56 TONS PER ACRE PER YEAR

h. Miles of Stream Channels by Regional Order or Classes: ALL DRY WASHES

i. Miles of Forest Service Trails: 0

j. Miles of Forest Service Roads by Maintenance Levels:

____0_ miles (Level I) ___0_ miles (Level II)
___0_ miles (Levels III, IV, V)

## PART IV - CALCULATED RISK AND CLIMATIC EVALUATION

a. Estimated Vegetative Recovery Period: _5 years.

b. Chance of Success Desired by Management: _70 percent.

c. Equivalent Design Recurrence Period: 25 years.

d. Related Design Storm Duration: _1_ hours.

e. Related Design Storm Magnitude: 2.53 inches.

f. Related Design Flow 10,000 cfsm.

g. Estimated Reduction in Infiltration: _30 percent.

h. Adjusted Related Design Flow: 11,600 cfsm.

## PART V - SUMMARY OF SURVEY AND ANALYSIS

a. Skills Represented on Burned Area Survey Team ("x" appropriate boxes):

| | | | |
|---|---|---|---|
| [X] Hydrology | [ ] Soils | [ ] Geology | [X] Range |
| [ ] Timber | [X] Wildlife | [ ] Fire Mgmt. | [ ] Engineering |
| [ ] Contracting | [X] Local Mgmt. | [ ] Research | [X] ECOLOGIST |

b. Describe Emergency: INTENSE BURN IN WATERSHEDS TRIBUTARY TO POPULAR RECREATION AREA IN SAGUARO NATIONAL MONUMENT AND RECENTLY DREDGED AND SEALED STOCKPONDS ON THE CORONADO NATIONAL FOREST.

c. Emergency Rehabilitation Objective: PROTECT WILDERNESS WATERSHED FROM GRAZING DAMAGE DURING RECOVERY PROCESS, PROTECT INVESTMENT IN STOCKPONDS.

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

Land _70__ % Channel __70_ % Roads _____ % Other _____ %

e. Net Environmental Quality Benefit Index:

[X] Significant [ ] Not Significant

f. Net Social Well Being Benefit Index:

[X] Significant [ ] Not Significant

g. Benefit/Cost Ratio: 7.9:1

h. Net Benefits: $ _279,855_____

i. Cost Effectiveness Index: [X] I. [ ] II. [ ] III. [ ] IV.

## 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.

| | | | NFS Lands | | | Other Lands | | | All Lands |
|---|---|---|---|---|---|---|---|---|---|
| Line Items | Units | Unit Cost | No. of Units | FFF 092 $ | Other $ ident. | No. of Units | Federal$ ident. | Non-Federal $ identify | Total $ |
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | |
| A. 1) Land | | | | | | | | | |
| a. Seeding | Acres | 20 | 300 | 6,000 | | | | | 6,000 |
| b. FENCE REPAIR | MILE | 2192 | 6 | 13,150 | | | | | 13,150 |
| c. | | | | | | | | | |
| d. | | | | | | | | | |
| e. | | | | | | | | | |
| A. 2) Channels | | | | | | | | | |
| a. Opening water courses | Miles | | | | | | | | |
| b. Stabilizing streambanks | Miles | | | | | | | | |
| c. | | | | | | | | | |
| d. | | | | | | | | | |
| e. | | | | | | | | | |
| B. ROADS AND TRAILS | | | | | | | | | |
| a. | | | | | | | | | |
| b. | | | | | | | | | |
| c. | | | | | | | | | |
| C. MAJOR STRUCTURES | | | | | | | | | |
| a. Preplanned - from Forest Plans | | | | | | | | | |
| b. SEDIMENT TRAPS | EACH | 5000 | 4 | 20,000 | | | | | 20,000 |
| D. REHAB TEAM | HR | 18 | 70 | 1,260 | | | | | 1,260 |
| E. TOTAL | | | | 40,410 | $ | | $ | $ | $40,410 |

## PART VII - APPROVALS

1. /S/ James R. Abbott
Forest Supervisor (Signature)
July 12, 1989
Date

2. /S/ Todd Lawson
Regional Forester (Signature)
7-14-89
Date

FS-2500-8

Present Value of Recreation Losses on Saguaro National Monument

| | Without Treatment | | | With Treatment | | |
|---|---|---|---|---|---|---|
| Year | Yearly damage | Present value of 1 | Present value | Yearly damage | Present value of 1 | Present value |
| 1 | 227,325 | 0.92 | 209,139 | 227,325 | 0.92 | 209,139 |
| 2 | 227,325 | 0.85 | 193,226 | 227,325 | 0.85 | 193,226 |
| 3 | 227,325 | 0.78 | 177,314 | 227,325 | 0.78 | 177,314 |
| 4 | 227,325 | 0.71 | 161,401 | 227,325 | 0.71 | 161,401 |
| 5 | 227,325 | 0.66 | 150,034 | 227,325 | 0.66 | 150,034 |
| 6 | 227,325 | 0.61 | 138,668 | 0 | 0.61 | 0 |
| 7 | 227,325 | 0.56 | 127,302 | 0 | 0.56 | 0 |
| 8 | 0 | 0.51 | 0 | 0 | 0.51 | 0 |
| 9 | 0 | 0.47 | 0 | 0 | 0.47 | 0 |
| | | Total | 1,157,084 | | | 891,114 |

Recreation losses reduction benefit = 1,157,084- 891,114 = $265,970

Present Value of Recreation Losses on Coronado National Forest

| | Without Treatment | | | With Treatment | | |
|---|---|---|---|---|---|---|
| Year | Yearly damage | Present value of 1 | Present value | Yearly damage | Present value of 1 | Present value |
| 1 | 16,500 | 0.92 | 15,180 | 16,500 | 0.92 | 15,180 |
| 2 | 16,500 | 0.85 | 14,025 | 0 | 0.85 | 0 |
| 3 | 16,500 | 0.78 | 12,870 | 0 | 0.78 | 0 |
| 4 | 0 | 0.71 | 0 | 0 | 0.71 | 0 |
| 5 | 0 | 0.66 | 0 | 0 | 0.66 | 0 |
| 6 | 0 | 0.61 | 0 | 0 | 0.61 | 0 |
| 7 | 0 | 0.56 | 0 | 0 | 0.56 | 0 |
| 8 | 0 | 0.51 | 0 | 0 | 0.51 | 0 |
| 9 | 0 | 0.47 | 0 | 0 | 0.47 | 0 |
| | | Total | 42,075 | | | 15,180 |

Recreation losses reduction benefit = 42,075 - 15,180 = $26,895

Present Value of Range Losses

| | Without Treatment | | | With Treatment | | |
|---|---|---|---|---|---|---|
| Year | Yearly damage | Present value of 1 | Present value | Yearly damage | Present value of 1 | Present value |
| 1 | 10,629 | 0.92 | 9,779 | 0 | 0.92 | 0 |
| 2 | 9,522 | 0.85 | 8,094 | 0 | 0.85 | 0 |
| 3 | 9,522 | 0.78 | 7,427 | 0 | 0.78 | 0 |
| 4 | 0 | 0.71 | 0 | 0 | 0.71 | 0 |
| 5 | 0 | 0.66 | 0 | 0 | 0.66 | 0 |
| 6 | 0 | 0.61 | 0 | 0 | 0.61 | 0 |
| 7 | 0 | 0.56 | 0 | 0 | 0.56 | 0 |
| 8 | 0 | 0.51 | 0 | 0 | 0.51 | 0 |
| 9 | 0 | 0.47 | 0 | 0 | 0.47 | 0 |
| | | Total | 25,300 | | | 0 |

Range losses reduction benefit = 25,300 - 0 = 25,300

Present Value of Water Storage in Stockponds

| | Without Treatment | | | With Treatment | | |
|---|---|---|---|---|---|---|
| Year | Yearly damage | Present value of 1 | Present value | Yearly damage | Present value of 1 | Present value |
| 1 | 303 | 0.92 | 279 | 303 | 0.92 | 279 |
| 2 | 303 | 0.85 | 258 | 303 | 0.85 | 258 |
| 3 | 303 | 0.78 | 236 | 303 | 0.78 | 236 |
| 4 | 303 | 0.71 | 215 | 0 | 0.71 | 0 |
| 5 | 303 | 0.66 | 200 | 0 | 0.66 | 0 |
| 6 | 303 | 0.61 | 185 | 0 | 0.61 | 0 |
| 7 | 0 | 0.56 | 0 | 0 | 0.56 | 0 |
| 8 | 0 | 0.51 | 0 | 0 | 0.51 | 0 |
| 9 | 0 | 0.47 | 0 | 0 | 0.47 | 0 |
| | | Total | 1373 | | | 773 |

Water Storage losses reduction benefit = 1373 - 773 = 600

Present Value of Sediment Damages

| | Without Treatment | | | With Treatment | | |
|---|---|---|---|---|---|---|
| Year | Yearly damage | Present value of 1 | Present value | Yearly damage | Present value of 1 | Present value |
| 1 | 758 | 0.92 | 697 | 758 | 0.92 | 697 |
| 2 | 758 | 0.85 | 644 | 758 | 0.85 | 644 |
| 3 | 758 | 0.78 | 591 | 758 | 0.78 | 591 |
| 4 | 758 | 0.71 | 538 | 0 | 0.71 | 0 |
| 5 | 758 | 0.66 | 500 | 0 | 0.66 | 0 |
| 6 | 758 | 0.61 | 462 | 0 | 0.61 | 0 |
| 7 | 0 | 0.56 | 0 | 0 | 0.56 | 0 |
| 8 | 0 | 0.51 | 0 | 0 | 0.51 | 0 |
| 9 | 0 | 0.47 | 0 | 0 | 0.47 | 0 |
| | | Total | 3432 | | | 1932 |

Sediment damage reduction benefit = 3432 - 1932 = 1500

From Initial

United States Department of Agriculture | Forest Service | Coronado NF | 300 W. Congress Tucson, AZ 85701

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Reply to: 2520 Emergency Burned Area Rehabilitation

Date: July 11, 1989

Subject: Chiva Fire

To: Regional Forester

Attached is a request for $65,260 for Emergency Burned Area Rehabilitation money for the Chiva Fire.

JAMES R. ABBOTT
Forest Supervisor

WATERSHED & AIR STAFF

Routing

| | |
|---|---|
| | Director |
| | Deputy Director |
| | Technical Applications |
| | Watershed Condition |
| | Water Resources |
| | Riparian |
| | Air Resources |
| | TES |
| | TES Zone (AZ) |
| | TES Zone (NM) |
| | Secretary |
| | Clerks |
| | File # |
| | Toss |

WATERSHED & AIR MANAGEMENT, R-3

JUL 13 1989

RECEIVED

Chiva Fire

Emergency Burned Area Rehabilitation

Prepared by _____
Robert E. Lefevre, Team Leader

_____
Thomas Skinner, Range and Wildlife

_____
Robert Hall, ~~Ecologist~~ Resource Mgmt. Spec.

Approved by _____
James R. Abbott, Forest Supervisor

Approved by _____
William S. Paleck, Park Superintendent

# EMERGENCY BURNED AREA REHABILITATION REPORT

## SITUATION

The Chiva Fire started by lightning on July 5, 1989 on the Coronado National Forest near Chiva Tank on the Santa Catalina Ranger District. It spread rapidly to the Saguaro National Monument and eventually burned a total of 9,300 acres; 2,000 acres on the Coronado National Forest and 7,300 acres on the Saguaro National Monument.

For the purpose of this report, 25-year runoff events are used to determine risks. The 25-year event is used because it is a level than can be grasped; there is a 4% chance of one occurring this year, a 20% chance of one occurring during the next five years, and a 30% chance of one occurring during the next ten years. In addition, runoff events in this area in excess of 25 years are generally controlled by the shape of the watershed, rather than the ground cover, whereas runoff events less than the 25 year event are affected greatly by ground cover.

### Canyon de la Pino Watershed

This watershed, also known as Pine Canyon and Douglas Springs Trail Canyon, is 5420 acres in size, 1722 acres of which are on the Saguaro National Monument. A very popular trail and campground were located near the main channel of this watershed. Most of the ponderosa pine-mixed conifer type consumed in the fire is in this watershed, hence the most productive, highest response areas are here. This is reflected in the proposed alternatives for watershed rehabilitation measures.

### Tanque Verde Guest Ranch Watershed

This watershed is mostly on the Saguaro National Monument and covers 2209 acres, of which 564 acres are on the Coronado National Forest. The mouth of the watershed is on private property owned by the Tanque Verde Guest Ranch. The vegetation type of this watershed is desert scrub and oak woodland. It is of concern because there are tennis courts, corrals, and a basketball court adjacent to the channel on the private land.

Pre-fire conditions produced a peak flow of 1427 cubic feet per second during the 25-year runoff event. Post-fire conditions can be expected to produce a peak flow of 2133 cubic feet per second, a 50% increase. The channel was measured at the point where the basketball court is and found to be capable of carrying about 5,000 cubic feet per second. The concern for the improvements along the wash not that they will be flooded, but that scouring of the bank could eventually undermine them. This is a condition that existed prior to the fire, but the likelihood of a 2133 cubic feet per second event occurring during the five years following this fire increases from 10% to 20%.

Tanque Verde Wash Watershed

This large watershed covers 33,977 acres, 11,060 of which are on the Saguaro National Monument. The remainder is on the Coronado National Forest. Tanque Verde Wash flows through private land for eight miles between the Forest Boundary and the bridge at Tanque Verde Road. Tom Smutzer of the Pima County Department of Transportation and Flood Control indicates that from the Tanque Verde Road bridge on downstream through Tucson the channel is capable of containing post-fire runoff. The eight miles between the Forest Boundary and the Tanque Verde Road bridge, however, is prone to flooding. Several properties including the Tanque Verde Guest Ranch, 49er Country Club, and rancher (and Coronado range permitee) Ken Kecker are located in the floodplain. Approximately 1,200 acres of private land exist in this floodplain. Flooding has occurred as recently as 1983 when a runoff event estimated at 12,500 cubic feet per second was measured. This is estimated as a 50 year return event. Post-fire conditions provide for producing nearly 12,500 cubic feet per second at a 25-year return. These conditions are expected to last about 5 years, which means the likelihood of an event of that size occurring during that time is 20% instead of 10%, the same risks as are found at the Tanque Verde Guest Ranch watershed.

ALTERNATIVES FOR TREATMENT

Introduction

Givens in the rehabilitation of resource damage resulting directly from efforts to fight the Chiva Fire are:

1. Repair access.
   a. Close 4x4 road (cat work, seed and sign).
   b. Grade road to Madrona Ranger Station.
   c. Rehabilitate Cowhead Saddle to Madrona Trail.
2. Flush cut stumps along fire lines.
3. Water bar fire lines.
4. Restore Rocking K Ranch fire camp.
5. Complete trash pickup at base camp, on fire lines, access routes and coyote camps.

Part of this rehabilitation involves reseeding with grasses. The only seeds available that have the potential for use on National Park Service lands are plains lovegrass, sideoats gramagrass and sand dropseed.

Fences

1. No action. In this case there would be no cost to the federal government. As a result of this action there would be cattle in a National Park Service wilderness area, counter to established NPS management policies, the purpose of the wilderness act would be negated on NPS effected wilderness,

and resource damage would continue. Reopening the area to visitors and re-establishing the trail would be delayed at least two years.

2. Construct a new fence. This action would result in minimizing resource damage in wilderness from livestock encroachment and allow rehabilitation processes to proceed at the most rapid pace. Trail work and reopening of the area could be expected in two to five years.

The cost of this alternative is as follows:

| | |
|---|---|
| Supplies and materials | $5,000 |
| Personal Services | $30,000 |
| Transportation of things | $2,500 |
| Transportation of persons | $1,500 |
| Total | $38,000 |

3. Reconstruct allotment pasture fences on the Coronado National Forest. Problems here include burned wooden posts that need replacement, replacement of some wire and retentioning of all wire. Four miles of fencing will need this treatment.

Costs will be less as this fence is accessible by road. The cost of this alternative is as follows:

| | |
|---|---|
| Supplies and materials | $3,400 |
| Personal Services | $20,000 |
| Transportation of things | $500 |
| Transportation of persons | $500 |
| Total | $24,400 |

Trail Work

1. No action. Approximately 7 miles of trail are effected, 4.5 miles west of Douglas Springs Campground and 2.5 miles between the campground and Cowhead Saddle. This trail is closed to all visitor traffic both horse and hiker, as is the campground itself. Under this action resource damage will continue indefinitely. Dollarwise the cost is zero, but politically the cost is incalcuable.

2. Rehabilitate, rebuild and relocate this trail immediately. Under this action the amount of damage to the trail from erosion and weathering will be minimized. This action will allow the opening of the most direct route to Manning Camp within 18 months to two years. It also allows for the opening of the Douglas Springs Campground in a more timely manner, remembering that the duration of closure of the campground itself is dependent on natural recovery time to a certain extent.

The cost estimate, trail crew only, is $250,000. This alternative also requires input from the Denver Service Center for the redesign and location of parts of the trail at an estimated cost of $50,000. Total cost of this option is $300,000.

3. Rehabilitate, rebuild and relocate trail over a 3 to 5 year period. This alternative may more closely mimic natural conditions, but is hard to estimate since under natural conditions there would have been no trail. There would be delays in the opening of the most direct route to Manning Camp, but the delay in opening the Douglas Springs Campground would be essentially the same as that for Alternative 2. With this option the potential for trail erosion and soil loss remains high.

Costs under this alternative are hard to estimate, but would be the same as immediate action or potentially greater.

Direct Watershed Treatment

1. No action. This alternative may mimic natural recovery, but would also allow an increase in downstream flooding, continued loss of soil and land productivity. This action would be more reflective of NPS management policies and management guidelines.

There would be no immediate costs.

2. Impound soil with dead and down trees on contour on 500 acres, and seed 1700 acres in Saguaro National Monument, seed 500 acres in Coronado National Forest. This option would minimize soil loss and preserve land productivity. Downstream flooding would be reduced after first year. This option would also place artificial structures in NPS wilderness and introduce a foreign gene pool to the plant community.

Costs are as follows:

National Park Service- seeding @ $20/acre.....$34,000
terracing @ $50/acre.....$25,000
Total.....$39,000

Coronado National Forest- seeding @ $20/acre.....$10,000

3. Impound soil with dead and down trees on contour, no seeding in Saguaro National Monument, seed 500 acres in Coronado National Forest. This option would minimize soil loss and preserve land productivity, but not to the extent as in Alternative 2. A similar condition holds in the case of downstream flooding. This option would place artificial structures in NPS wilderness.

Costs are as follows:

National Park Service- terracing @ $50/acre.....$25,000

Coronado National Forest- seeding @ $20/acre.....$10,000
Total.....$35,000

4. Seed 1700 acres in Saguaro National Monument and 500 acres in Coronado National Forest. Under this option no artificial structure would be introduced in the NPS managed wilderness. Soil loss and downstream flooding would be minimized, but to a lesser extent than Alternative 2. Foreign genes would be introduced into the gene pool of grasses in the NPS wilderness.

Costs are as follows:

National Park Service- seeding @ $20/acre.....$34,000

Coronado National Forest- seeding @ $20/acre.....$10,000
Total.....$44,000

5. Seed 300 acres only on the Coronado National Forest. This effort would be in conjuction with the hottest burn areas and new sediment traps.

Costs are as follows:

Coronado National Forest - seeding @ $10/acre.....$ 6,000

6. Erosion control structures erected in drainage. This would stabilize the channel and reduce downstream flooding in the first year. This option poses a high risk for failure of the structures in what might be called a domino effect, i.e., if one structure goes all those downstream are weakened and have a high potential for failure. This alternative could not be completed before this year's rains arrive, a condition which also jeopardizes finished structures. This alternative also introduces artificial structures into NPS managed wilderness.

This estimate includes the construction of 370 structures along 7 miles of drainage (six miles in Saguaro National Monument and one mile in Coronado National Forest). At a cost of $1,500/structure the total cost is $55,000.

7. Detention dams above stockponds. These would act as sediment traps and water detaining structures while the watershed heals. These would not catch and hold all the runoff, but would reduce the effects on stockponds.

Cost of four structures at $5,000/structure, on the Coronado National Forest, totals $20,000.

7. Detention dam along the Tanque Verde Guest Ranch. This would be a large dam intended to catch and hold a majority of the water above tennis courts and basketball court. No design as of July 10, 1989.

Estimated cost is $30,000.

Shallow soils, large amounts of bedrock, poor land productivity, and inaccessible country make treatment of the entire burned area prohibitive. No amount of structures and seeding can reduce the runoff to pre-fire conditions in less than three years. Several alternatives have been proposed that would bring about a return to pre-fire runoff conditions in as little as three years. They all include work in the highest, most productive portions of the watershed, of which there are only 2200 acres. The remaining 7100 acres of burned area cannot be effectively treated.

Detention dams or bank stabilizing structures could be proposed in both the Tanque Verde Wash and Tanque Verde Guest Ranch watersheds. These would have to be immense structures, and could not be finished before the 1989 runoff season.

In addition, the properties to be protected by such structures were not protected from similar flows prior to the fire

PROPOSED PROJECT

The proposed project for Emergency Burned Area Rehabilitation consists of a combination of the above alternative treatments. They are: Alternative 2 under Fencing, Alternative 1 under Trail Work, and Alternatives 5 and 7 under Direct Watershed Treatments. This combination is chosen as a result of an evaluation made by a joint Park Service-Forest Service team, which took into account the wilderness nature of the Saguaro National Monument, hence not on-the-ground work in the Monument. No action is proposed for the trail work alternatives because the trail is not maintainable in its present condition and new trail construction is not a legitimate expense of emergency funds. All work done on the Forest is intended to provide emergency treatment to avoid resource loss in the areas of recreation, range, water storage, and sediment removal.

Downstream development along the Tanque Verde Wash in Tucson was in jeopardy of flooding prior to the fire, and minimal increased risk exists as a result of this fire. The Pima County Emergency Services Department has a Flood Warning System in place in the Tanque Verde Wash watershed.

USDA-FOREST SERVICE

Date of Report: July 11, 1989

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

## PART I - TYPE OF REQUEST

1. Type of Report

[x] A. Funding (Request for estimated FFF funds)
[ ] B. Accomplishment Report

2. Type of Action

[x] A. Initial (estimated funding is first requested)
[ ] B. Interim

a. [ ] Updating the initial funding request.
b. [ ] Supplying information for accomplishments to date on emergency work underway.

[ ] C. Final

a. [ ] Best estimate for funds needed to complete eligible
b. rehabilitation measure.
[ ] Following completion of funded work.

## PART II - FIRE LOCATION

a. Fire Name (from Form FS-5100-29): Chiva
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d. County: PIMA
e. Region: 3
f. Forest: CORONADO
g. Ranger District: SANTA CATALINA
h. Date Fire Started: JULY 5, 1989
i. Date Fire Controlled: JULY 10, 1989
j. Estimated Suppression Costs: $ 677,500
k. Fire Suppression Damages Repaired with FFF 102 Funds:

1. 20 miles (firelines waterbarred)
2. 0 acres (firelines seeded)
3. ACCESS ROUTES WATERBARRED, ACCESS ROADS GRADED, PREVIOUSLY CLOSED ROAD USED FOR ACCESS RECLOSED

1. Fire Intensity: 30% (low) 20% (medium) 50% (high)

## PART III - NATIONAL FOREST SYSTEM PROBLEM INVENTORY

a. Watershed No.: 15-05-03-02-160
b. NFS Acres Burned: 2,000
c. Water Repellant Soil: 25 % of NFS acres burned

d. Vegetation Types: MESQUITE GRASSLAND, OAK WOODLAND, PONDEROSA PINE, MIXED CONIFER

e. Geologic Types: GRANITE

f. Soil Erosion Hazard Rating:

__30_ % (low) ___20 % (medium) ___50 % (high)

g. Erosion Potential: _____56 TONS PER ACRE PER YEAR

h. Miles of Stream Channels by Regional Order or Classes: ALL DRY WASHES

i. Miles of Forest Service Trails: 0

j. Miles of Forest Service Roads by Maintenance Levels:

____0_ miles (Level I) ___0_ miles (Level II)
___0_ miles (Levels III, IV, V)

## PART IV - CALCULATED RISK AND CLIMATIC EVALUATION

a. Estimated Vegetative Recovery Period: _5 years.
b. Chance of Success Desired by Management: _70 percent.
c. Equivalent Design Recurrence Period: 25 years.
d. Related Design Storm Duration: _1_ hours.
e. Related Design Storm Magnitude: 2.53 inches.
f. Related Design Flow 10,000 cfsm.
g. Estimated Reduction in Infiltration: _30 percent.
h. Adjusted Related Design Flow: 11,600 cfsm.

## PART V - SUMMARY OF SURVEY AND ANALYSIS

a. Skills Represented on Burned Area Survey Team ("x" appropriate boxes):

| | | | |
|---|---|---|---|
| [X] Hydrology | [ ] Soils | [ ] Geology | [X] Range |
| [ ] Timber | [X] Wildlife | [ ] Fire Mgmt. | [ ] Engineering |
| [ ] Contracting | [X] Local Mgmt. | [ ] Research | [X] ECOLOGIST |

b. Describe Emergency: INTENSE BURN IN WATERSHEDS TRIBUTARY TO POPULAR RECREATION AREA IN SAGUARO NATIONAL MONUMENT AND RECENTLY DREDGED AND SEALED STOCKPONDS ON THE CORONADO NATIONAL FOREST.

c. Emergency Rehabilitation Objective: PROTECT WILDERNESS WATERSHED FROM GRAZING DAMAGE DURING RECOVERY PROCESS, PROTECT INVESTMENT IN STOCKPONDS.

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

Land _70__ % Channel __70_ % Roads _____ % Other _____ %

e. Net Environmental Quality Benefit Index:

[X] Significant [ ] Not Significant

f. Net Social Well Being Benefit Index:

[X] Significant [ ] Not Significant

g. Benefit/Cost Ratio: 6.1

h. Net Benefits: $ _332,213_____

i. Cost Effectiveness Index: [X] I. [ ] II. [ ] III. [ ] IV.

## 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.

| | | | NFS Lands | | | Other Lands | | | All Lands |
|---|---|---|---|---|---|---|---|---|---|
| Line Items | Units | Unit Cost | No. of Units | FFF 092 $ | Other $ ident. | No. of Units | Federal$ ident. | Non-Federal $ identify | Total $ |
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | |
| A. 1) Land | | | | | | | | | |
| a. Seeding | Acres | 20 | 300 | 6,000 | 6,000 | | | | 6,000 |
| b. FENCE | MILES | 6333 | 6 | 38,000 | 13,150 | | | | 38,000 13,150 |
| c. | | | | | | | | | |
| d. | | | | | | | | | |
| e. | | | | | | | | | |
| A. 2) Channels | | | | | | | | | |
| a. Opening water courses | Miles | | | | | | | | |
| b. Stabilizing streambanks | Miles | | | | | | | | |
| c. | | | | | | | | | |
| d. | | | | | | | | | |
| e. | | | | | | | | | |
| B. ROADS AND TRAILS | | | | | | | | | |
| a. | | | | | | | | | |
| b. | | | | | | | | | |
| c. | | | | | | | | | |
| C. MAJOR STRUCTURES | | | | | | | | | |
| a. Preplanned - from Forest Plans | | | | | | | | | |
| b. SEDIMENT TRAPS | EACH | 5000 | 4 | 20,000 | [illegible] | | | | 20,000 |
| D. REHAB TEAM | HR | 18 | 70 | 1,260 | 1,260 | | | | 1,260 |
| E. TOTAL | | | | 65,260 | $[illegible] | | $ | $ | $65,260 |

## PART VII - APPROVALS

1. /S/ _____ _____
   Forest Supervisor (Signature) Date

2. /S/ _____ _____
   Regional Forester (Signature) Date

end

United States Department of Agriculture | Forest Service | Coronado NF | 300 W. Congress Tucson, AZ 85701

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**Reply to:** 2520 Emergency Burned Area Rehabilitation

**Date:** August 11, 1989

**Subject:** Chiva Fire Rehabilitation Monies

**To:** Southwestern Regional Office (R-3)
Russell A. LaFayette, Watershed Improvement Hydrologist-R.O.
Penny Luehring, Soil Management Specialist-R.O.

As per our conversations on August 2 and again on August 3, 1989:

Ten thousand dollars ($10,000.00) of the forty thousand four hundred and ten dollars ($40,410.00) is being returned. This money was part of the rehabilitation effort for the Chiva Fire (AZ-CNF-165), Santa Catalina Ranger District, Coronado National Forest.

Heavy rains have filled two of the stock tanks that were to have sediment traps built. The rains occurred before the cat work could be done. There is not a current need to construct these two sediment traps. Each of these traps would have cost $5000.00.

/s/ Gerald W. Conner
Burn Rehabilitation Team Co-Leader