



United States
Department of
Agriculture

Forest
Service

San Bernardino National Forest
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File Code: 2520/6520

Date: June 13, 2000

Subject: Mixing Fire Incident / Interim BAER Report # 5

To: Bradley E. Powell, Regional Forester / R5
ATTN: Gary Schmitt, Acting BAER Coordinator, Ecosystem Conservation / R5

Enclosed is the updated interim Burned-Area Report for the Mixing Fire on the San Bernardino National Forest with a detailed monitoring plan. Also addressed is progress to date and a request to redirect some of the funds allocated to higher priority work.

To date all straw bale check dams have been installed and many trapped considerable sediment this past winter. Necessary maintenance of these dams has been performed. Contour-felled log erosion barriers were installed on 35 acres that were burned by high intensity fire. Storm patrols were conducted this winter and work to improve the road drainage has begun. We are still doing additional work to stabilize Road 5S08 and the wet meadow areas. Total expenditures to date are approximately \$64,000. A more accurate accounting in a final accomplishment report will be provided once all projects are completed.

We request redirection of the \$1,755 for culvert cleanout and installation of trash racks and the \$5,000 for realignment of subwatershed Z to complete projects to reduce the impact of the burn on Forest Service Road 5S08 and adjacent wet meadows. This stabilization work includes additional repair of rolling dips, rocking rolling dips, rocking drain outlets (dissipators), rocking drain inlets, and installation of 3 drop structures using rock and/or big mac drains.

Substantial coordination with Caltrans is required before any work can occur on the realignment of subwatershed Z. At this time it is felt that redirecting these funds to improve protection of Forest Service Road 5S08 and adjacent wet meadows is a higher priority. Funding to stabilize subwatershed Z may be made in a future interim report.

A monitoring plan for \$48,000 to cover two years of monitoring to evaluate the effectiveness log erosion barriers (lebs) is attached. This is proposed as a five year monitoring effort which will need an additional \$30,000 (\$10,000/year) to cover the last three years.

Implementation and Effectiveness monitoring of straw bale checkdams, road drainage improvement, and headcut structure treatments is proposed at a cost of \$6,000 for two years of monitoring. Refer to the attached monitoring plan.

We are requesting a total of \$54,000 for monitoring.

/s/ Gene Zimmerman

GENE ZIMMERMAN
Forest Supervisor

Enclosures

cc:

Doug Pumphrey, San Jacinto District Ranger, Idyllwild, California FS - 2500-8 (8/93)



BURNED-AREA REPORT

(Reference FSH 2509.13)

PART I - TYPE of REQUEST

A. Type of Report

- (X) 1. Funding request for estimated EFFS - 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 and BAER monitoring studies)
- (X) 2. Interim Report
 - (X) 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 emergency work

PART II - BURNED-AREA DESCRIPTION / FIRE LOCATION

- | | |
|---|--|
| A. Fire Name: <u>Mixing Incident</u> | B. Fire Number: <u>BDF 6546</u> |
| C. State: <u>California</u> | D. County: <u>Riverside</u> |
| E. Region: <u>Five</u> | F. Forest: <u>San Bernardino</u> |
| G. District: <u>San Jacinto</u> | H. Date fire Started: <u>8-28-1999</u> |
| I. Date Fire Controlled: <u>9-9-1999</u> | J. Time Fire Controlled: <u>1800</u> |
| K. Suppression Cost: <u>\$ 2,375,000 (est.)</u> | |



L. Fire Suppression Damages Repaired with EFFF - PF12 Funds:

1. Fireline waterbarred (miles) 15.0 (hand lines)
2. Fireline seeded (miles) None
3. Other (identify) 3.1 miles of Dozer lines and approximately 2 acres at ICP, Incident Base Camp and Helibase

M. Watershed Number: 03 (Hemet Valley) 1807020201 and 04 (San Jacinto River) 1807020202

N. NFS Acres Burned: 2,959

Total Acres Burned: 3,264

Ownership types . . . listed as follows:

() State N/A () BLM N/A (X) Private 305 () Other N/A

O. Vegetation Types:	Jeffrey pine, Coulter pine and Ponderosa pines intermixed with canyon live oak, chamise, manzanita, interior live oak and ceanothus; in addition, the burned-area had scattered sightings of big cone Douglas fir, mountain big sagebrush, birchleaf mountain mahogany, mountain whitethorn, yucca, buckwheat along with annual grasses.
P. Dominant Soils:	Typic Xeropsamments including some examples that are shallow to a paralithic contact located upon moderately steep upland hillsides; Lithic Xeropsamments located on steep mountain sides and very steep ridgetop areas; Typic Xerorthents and Lithic Xerorthents both located upon steep to very steep mountain sides; Mollic Haploxeralfs and Ultic Haploxerolls both located on strongly sloping to steep mountain sides having north and east aspects; Rock Outcrop exposures were intermixed throughout the entire burned-area. Many units have rounded stones and boulders positioned at the ground surface; stones are rocks in the size range of 10 to 24" while boulders are rock fragments having a size of > 24" in diameter. All soil types had a mesic temperature regime.
Q. Geologic Types:	Slightly consolidated alluvium and colluvium along with weathered residuum derived from acid igneous rocks such as granite and granodiorite. A few areas may have soils derived from mixed metamorphic rocks.

R. Miles of Stream Channels by Order: (Strahler 1952 method)

1st: 6.3

2nd: N/A

3rd: 1.0

4th: N/A

S. Transportation Systems (within the fire perimeter):

Trails 0.6 miles

Roads 3.1 miles (Maintained)

Roads 2.0 miles (4WD Roads)

PART III - WATERSHED CONDITION / NFS PROBLEM INVENTORY

A. Mapping of the Fire Intensity Zones (CIR / acres):

(high) 1,492

(moderate) 865

(low) 561

B. Estimation of Water-repellent type Soils occurring within the different Fire Intensity Zones (acres):

(high) 969 (65 %)

(moderate) 346 (40 %)

(low) 28 (5 %)

C. Rating Soils for Erosion Hazards within California for the different Fire Intensity Zones (acres):

(very high)

(high)

(moderate)

(low)

525 (18 %)

1,365 (46.8 %)

957 (32.8 %)

71 (2.4 %)

D. Potential for Accelerated Erosion Losses without applying emergency rehabilitation treatments:

1st Year

2nd Year

3rd Year

4th Year

26.5 tons/acre/year

9.0 tons/acre/year

5.7 tons/acre/year

3.9 tons/acre/year

***** Overall Totals *****

77,327 tons / 1st year

26,262 tons / 2nd year

16,632 tons / 3rd year

11,380 tons / 4th year

E. Average Sediment Potential: 56,939 cubic yards / square mile

**PART IV - HYDROLOGIC DESIGN FACTORS, CALCULATED RISK
and CLIMATE EVALUATION**

A. Estimated Vegetative Recovery Period: 1 to 5 years for mountain meadows and upland shrub sites
(*up to 30 years for the mixed conifer vegetative communities located on north & east aspects*)

B. Design Chance of Success: 80 percent

C. Equivalent Design Recurrence Interval: 5 year

- D. Design Storm Duration: 24 hours
- E. Design Storm Magnitude: 4.0 inches
- F. Design Flow: 92.3 cubic feet per second per square mile
- G. Estimated Reduction in Infiltration: 15 percent
- H. Adjusted Design Flow: 196 cubic feet per second per square mile

PART V - SUMMARY OF SURVEY & ANALYSIS

A. Describe the Watershed Emergency:

The Mixing Fire burned 3,264 acres with 2,959 of those acres on National Forest land. Over fifty per cent of the Forest land burned with a high intensity. Most of the contrasting soils observed within the moderate to high intensity fire zones exhibited a moderate to strong degree of water-repellency at a depth of about one inch below the ground surface. Infiltration rates will definitely be restricted at the soil surface; very possibly resulting in sheet, rill and gully erosion, and are recognized as potential flood source areas.

Values at Risk:

- ◆ **1) Loss of Soil Productivity** -- Excessive soil loss may occur on sites previously occupied by timber. This results in a decrease in forest productivity and diversity. Also, there is a potential for eroded soils and debris to flow off the burned area and onto the surface of State Highway 74. State Highway 74 is under permit to CalTrans by San Bernardino National Forest.
- ◆ **2) Deterioration of Water Quality** -- Since Lake Hemet and South Fork Jacinto River is adjacent to the burned area, there is a high potential for sediment to enter Lake Hemet and South Fork of the San Jacinto River. The South Fork of the San Jacinto River is recognized as valuable riparian habitat for the Spotted-Owl (FS Sensitive species). It is an important aquatic habitat for trout fisheries, and it is the delivery system for the Hemet Valley water supply.
- ◆ **3) Loss of Water Control** -- There is potential for loss of water control along Highway 74, Forest Service Road 5S08, and Forest Service Road 6S15. **Increased runoff and soil erosion losses could plug the existing culverts and damage the road surface particularly on the 5S08 road system.** The damage caused by the loss of water control would intensify the impacts of the fire especially within Subwatershed " Z " where a main portion of Forest Service Road 5S08 is located.
- ◆ **4) Threats to Human Life and Property** -- A portion of the burned-area exists in close proximity to California State Highway 74. **It is anticipated that a storm event could result in soil and debris from the burned area to be deposited at culvert inlets, potentially blocking them and on the road surface of Highway 74;** and at locations NW of the Keen Camp Summit and approximately three miles WSW of the community of Mountain Center, California. In these specific instances, the eroded material could pose a threat to human life and property especially if the storm occurred at night. State Highway 74 is heavily traveled; it is a main route between Palm Desert, California and Hemet, California; and it is likely that some traffic will use this route prior to a closure due to storm damage. Blocking of culverts may result in sections of Hwy 74 washing out Lake Hemet is a municipal water supply for the town of Hemet, California and its surrounding communities; and it is

used for recreation in the form of camping, boating and picnicking. Increased sediment into the lake will compromise these uses.

♦ **5) Control of water and sedimentation** -- Subwatershed Z was impacted by moderate to high intensity burned areas. A smaller subwatershed within it was impacted by un-natural stream capture, and the drainage re-routed in order to divert water away from the road surface of Highway 74. **During the past 25+ years, however, the flow of water from this diversion has resulted in a significant landslide disturbance occurring just outside the perimeter of the Mixing Fire and along the South Fork of the San Jacinto River.** There is a very high probability that runoff from the burned area will aggravate the unstable slopes and/or cause the landslide to fail. This will result in increased sedimentation into the South Fork San Jacinto River.

♦ **6) Meadow/wetland protection** -- Headcuts on a wet meadow near Baldy Mountain will be aggravated by the moderate to high intensity burned areas. Upstream, poor drainage on an associated Forest Service Road (5S08), may result in additional gullying and dewatering of the meadow.

B. Emergency Treatment Objectives:

Loss of Soil Productivity - Protect soil and soil productivity on sites previously occupied by timber.

Deterioration of Water Quality - Reduce the impact of sedimentation on riparian and aquatic habitats into Lake Hemet and the South Fork of the San Jacinto River.

Loss of Water Control - Control runoff and erosion on State Highway 74, Forest Service Road 5S08, and Forest Service Road 6S15.

Threats to Human Life and Property - Minimize sediment and debris that will flow onto State Highway 74 and/or block its culverts..

Control of water and sedimentation - Reduce the impact of increased runoff on unstable land near the landslide.

Meadow/wetland protection - Minimize any new gullying and dewatering of the wet meadow near Baldy Mountain.

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

Land 85 %

Channel 95 %

Roads 80 %

EM 80 %

D. Probability of Accomplishing Treatment Success:

< ----- Years after Treatment ----- >

	1	3	5
♦ Land	50 / 75 %	80 / 65 %	60 / 55 %

♦ Channel	80 %	75 %	70 %
♦ Roads	80 %	80 %	80 %
♦ EM (Drainage Z)	80 %	90 %	95 %

(NOTE) -- The probability of accomplishing success has been split into 2 different ratings for the proposed land treatments; the percentage on the left reflects the expected results associated with a broadcast seeding effort. The percentage shown on the right suggests the anticipated results from using contour felling for emergency rehabilitation.

E. Cost of Taking No-Action (Including Loss) \$ 598,500

(NOTE) -- The values-at-risk include potential impacts to the Highway 74 road surface, to the Lake Hemet recreational sites and to the Lake Hemet Municipal Water District properties.

F. Cost of Selected Alternative (Including Loss) \$ 291,475 (Angeles NF / Computer Models)

G. Skills Represented on Burned-Area Survey Team ... along with Federal and State agencies or specific groups contacted about the fire incident:

<input checked="" type="checkbox"/> Hydrology	<input checked="" type="checkbox"/> Soils (2)	<input checked="" type="checkbox"/> Geology	<input type="checkbox"/> Range
<input type="checkbox"/> Timber	<input checked="" type="checkbox"/> Wildlife	<input type="checkbox"/> Fire Mgt.	<input checked="" type="checkbox"/> TES Plants
<input type="checkbox"/> Contracting	<input checked="" type="checkbox"/> Ecology	<input checked="" type="checkbox"/> Research	<input checked="" type="checkbox"/> Archeology
<input checked="" type="checkbox"/> GIS Staff	<input checked="" type="checkbox"/> Water District	<input checked="" type="checkbox"/> District Staff (4)	<input type="checkbox"/> Cal Trans

Team Leader: Michael D. Smith / Soil Scientist

Phone: (435) - 896 - 9233 / ext. # 1071

e-mail address: msmith/r4.fishlake

Treatment Narratives:

Land Treatments:

→ **Broadcast Seeding** ... The purpose of this treatment is to establish a ground cover which will protect soil on highly productive sites. This treatment will reduce erosion rates on ground which supported timber prior to the fire. It will also reduce the amount of soil and debris flowing onto sections of State Highway 74. The treatment will be applied to 425 acres. (\$22,950) **NOTE:** Broad cast seeding is not being implemented, and the money allocated is being diverted to contour felling. Randy Davis, BAER implementation leader proposed this to Gary Schmitt, Regional BAER Coordinator (Acting) via telephone, and documented the decision in a memo to Gary Schmitt dated November 22, 1999.

→ **Contour Felling** ... The purpose of this treatment is to trap soil and sediment on the slope and disperse overland flows. The treatment will be done in Drainage Z and other previously timbered areas within

the burned area on upland hillsides and adjacent stream terraces. The burned forest of standing Jeffrey pine and Coulter pine at this site were previously in a closed canopy having very few limbs on the lower portion of the trees. These trees can be cut to a manageable length and easily limbed. They will be laid in trenches on the gently sloping to strongly sloping contours of the land and secured in place using wood stakes to stabilize the log. The logs in the trenches will be sealed at the contact with the soil to prevent runoff from flowing under the logs. The source materials at this location are excellent, with many trees less than 10 " DBH, and the treatment should assist in protecting both Highway 74 and the existing landslide disturbance above the South Fork of the San Jacinto River. (\$11,300) NOTE: The budget for contour felling was increased by the \$22,950 allocated for seeding. This increased the target acreage to 30-35 acres, and made the cost per acre consistent with Randy Davis' cost to implement contour felling on the Willow Fire on the San Bernardino National Forest.

Channel Treatments:

- **Straw Bale Check Dams** ... The purpose of this treatment is to reduce sediment generated by runoff from the burn area and from Forest Service Roads 5S08 and 6S15 from entering perennial water bodies (i.e. Lake Hemet and the South Fork of the San Jacinto River) during the 1st winter following the fire. Forty check dams will be installed along Forest Service roads and 20 check dams will be used to protect the Highway 74 road surface from sedimentation damage. These temporary dam structures will be constructed in areas with low channel gradients. The check dams installed along State Highway 74 will be installed in sites identified for treatment outside the highway's right-of-way **on National Forest Systems Land**. Materials and crews will be transported by vehicle. (\$14,100)
- **Culvert Clean-Out, Removal of Existing Debris & Installing Trash Racks** ...The purpose of this treatment is to protect the watershed from erosion due to overland flows from plugged culverts. As a result of the burned watershed, increased sedimentation and floatable debris at the culverts are expected. The clean-outs would occur along Roads 6S15, 5S08 and Highway 74. The treatments for Highway 74 are located outside the right-of-way **on National Forest System land**. (\$1,755)
- **Realignment of Drainage Z** ... This treatment needs to be coordinated with Cal Trans to ensure that the Highway 74 drainage structure at the Dry Creek crossing is upgraded to handle any increased flows off of Subwatershed Z. Much of the water, perhaps all of it, from Subwatershed Z has been diverted away from the Dry Creek drainage and into the South Fork of the San Jacinto River. There is a very high probability that the impacts of the recent burn with its moderate to high fire intensity zones will increase surface runoff and sedimentation and continue to destabilize the landslide area. These impacts will affect water quality and channel morphology on the South Fork San Jacinto River and potentially extend downstream to the water diversion that supplies the Hemet Valley with its domestic water. (\$5,000)

Roads, Trails and Other Treatments:

- **Stabilization of the Baldy Mountain Wet Meadow Headcuts** ... The purpose of this treatment is to reduce the impact of the burn on highly erodible soils. Because of this, it is likely that these headcuts will downcut from increased runoff caused by the moderate to high intensity burn upstream of them. These gullies will bisect 5S08 and deposit sediment into the South Fork of San Jacinto River where TES plant species are found. The headcuts will be stabilized using 4 to 12 " size angular rocks.

Improved road drainage (new drains and repairing existing drains) will also be done to minimize the road's impact on the gullyng and dewatering of the meadow. (\$5,000)

- **Road Drainage Improvement and Stabilization of the Road Surface on Selected Segments of the 5S08 Road** ... Increased overland flow will concentrate along Forest Service road 5S08 causing potential downcutting where the flows cross the road. This treatment involves placing rock rip rap at drain inlets and outlets. Angular type rock fragments having a size range of 6 to 12 " in diameter will be used. The treatment will reduce the potential for plugging of existing culverts and road washouts, which could result in sedimentation and excessive runoff which could aggravate channel conditions in Subwatershed Z and the Baldy Mountain headcuts. ... This treatment also requires improvement of drainage (additional drains, repair of existing drains, breaking through the berm, etc.) on the existing road surface in order to accomplish effective erosion and water control following the burn. Areas of the 5S08 road surface impacted by moderate to high intensity burn (~ 2¼ miles) will be stabilized by improved drainage along with placement of rip rap at drain inlets and outlets. (\$18,249)
- **Storm Patrol** ... A two to three person Forest Service crew will be responsible for driving the roads administered by the Forest Service and checking the culvert inlets when problems start to arise during significant storm events. By cleaning and maintaining the culvers, the patrol will also prevent the them from becoming plugged and thereby reduce the chance of a major blowout at a culvert crossing. It is suggested that other agencies do the same. (\$1,800)

Monitoring:

- **Contour Felling:** This monitoring item targets concern associated with the use of contour felling to reduce concentrated runoff and erosion. The monitoring objective is focussed on evaluation of the effectiveness of this prescription to reduce concentrated runoff and erosion on a catchment basin scale.
- The effectiveness of contour felling in reducing concentrated runoff and erosion on upper watershed catchment basins will be evaluated. All large fires in the area have experienced high intensity storms that have triggered debris torrents which have caused serious flooding and extensive property damage. On site evaluations will include tons/acre soil loss and other soil loss indicators such as rilling.
- Two small catchment basins, each 2-10 acres in size, will be established. The first will be established where there are no BAER treatments; the second catchment basin will be established where only contour felling is prescribed. Each basin will be instrumented with a constructed flume and a one cubic meter sediment trap that will be maintained weekly or bi-weekly, depending on storm events. Each basin will also have a remote weather station and installed by Forest personnel or by contract. Forest personnel will perform weekly or bi-weekly site maintenance, and complete all data analysis and reporting. It should be noted that the watershed without BAER treatments is completely funded by Forest Service Research funds as part of a fire effects study conducted at several locations throughout the western United States. The watershed with the contour felled log erosion barriers will be instrumented and monitored using BAER funding. Coordinating this BAER treatment effectiveness monitoring with the fire effects research effort affords an opportunity to obtain quality information on the effectiveness of log erosion barriers at reduced cost.

- Monitoring sites will be established in fiscal year 2000, and monitored for a minimum of two years and no more than five years. If monitoring is needed after two years, another Interim Report for request of funds will be submitted. Cost of the first two years is estimated to be \$48,000 and about \$30,000 for years three, four, and five.
- A detailed plan for monitoring the effectiveness of log erosion barriers (lebs) is attached to this interim 2500-8.

Implementation and Effectiveness Monitoring: Monitoring of the implementation and effectiveness of BAER treatments on straw bale check dams, improvement of road drainage, and headcut stabilization is proposed. Location of treatment installations will be recorded using GPS, and digital photographs will be taken of all treatments. Installations will be visited following major storm events, and their condition documented with digital photography and written notes. Information regarding effectiveness (e.g., trapping sediment, diverting runoff, etc.) will be recorded, and repairs will be made as necessary. This monitoring is proposed for the first two postfire years (FY2000 and FY2001) and the cost is estimated at \$6,000. Monitoring reports will be submitted annually to the Regional BAER Coordinator; a final report with findings and recommendations will be submitted to the Regional BAER Coordinator when monitoring is completed at the end of year 2.

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

Line Items	NFS Lands					Other Lands			All
	Units	Unit Cost \$	Number of Units	EFFS-FW22 \$	Other \$	Number of Units	Fed \$	Non - Fed \$	Totals \$

A. LAND TREATMENTS

Broadcast Seeding	acres	54	0	0					
Contour Felling	acres	565	20	34,250					

B. CHANNEL TREATMENTS

Straw Bale Check Dams	dam	235	60	14,100					
Culvert Clean-out, Debris Removal and Install Trash Racks	each	117	0	0					
Subwatershed Z	job	5,000	0	0					

C. ROADS, TRAILS and OTHER TREATMENTS

Stabilization of Baldy Mountain Headcuts	each	1,351	5	6,755					
Spot-Rock Rd. 5SO8	each	600	14	8,400					
Stabilization of Road 5SO8	miles	5,600	2.25	12,849					
Storm Patrol (3 yrs.)	days	300	6	1,800					

D. STRUCTURES

N/A									
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E. INTERIM BAER EVALUATION / EFFECTIVENESS MONITORING / ADMINISTRATIVE SUPPORT

BAER Team Evaluation (interim reports #1 and #2)	days	375	8	3,000					
Implementation Team	month	10,000	1	10,000					
Monitoring -- Contour Felling	2years	48,000	1	48,000					48,000
Monitoring - Implementation and Effectiveness	days	\$300	20 (10 / yr)	6,000					6,000

F. TOTALS									54,000 0
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PART VII - APPROVALS

1.

/s/ Gene Zimmerman

GENE ZIMMERMAN

Forest Supervisor

6/13/00

Date
2.

/s/ Leigh S.Beck (for)

Regional Forester

6/22/00

Date

Contour Felling Effectiveness Monitoring Study

Management Concern:

In the past, severe fires that have experienced high intensity storms have produced accelerated erosion and flooding that have threatened life, property, and infrastructure. Log erosion barriers (contour felling) may be effective in reducing concentrated runoff and erosion on upper watershed catchment basins.

Objectives:

To evaluate the effectiveness of log erosion barriers in reducing concentrated runoff and erosion and subsequent debris flow hazards.

Parameters:

Tons/acre soil loss; and other soil loss indicators (e.g. rills).

Locations:

Two small catchment basins in upper watershed positions (near Highway 74):

Basin A: NW 1/4 of Section 1 T6S R2E Idyllwild 7.5' Quadrangle

Basin B: NW 1/4 of Section 1 T6S R2E Idyllwild 7.5' Quadrangle

Frequency and Duration:

Monitoring sites will be established in FY2000; instrumentation will be maintained for a five year period (FY2000-2004).

Design and Methodology:

Two small catchment basins (approximately 3 acres each); **Basin A** - no BAER treatment; **Basin B** - log erosion barriers (contour felling) treatment only. Each basin will be instrumented with a flume and a sediment trap that will be maintained weekly or bi-weekly, depending on storm events. Each basin will also have a remote weather station. Funding for Basin A has already been secured from a grant from the Joint Fire Sciences Committee. BAER funds are requested to instrument Basin B. Fencing will be required around the perimeter of each basin to limit traffic that would compromise results on treatment effectiveness and watershed erosion response. Facilities will be installed by Forest Service Research with assistance as available from the District. Research personnel will perform site maintenance and will complete all data analysis and reporting.

Data Storage:

Data management will be the responsibility of Forest Service Research, Moscow, Idaho and Riverside, California.

Reporting:

Reporting will be the responsibility of Forest Service Research. Annual Progress Reports will be submitted by November 15 of each year. Final Report will be submitted by November 15, 2005.

Costs:

Costs are broken down in the following table (Forest Service Research salaries are contributed):

Item / Year	2000	2001	2002	2003	2004
Salaries	\$5,000	-	-	-	-
Travel	10,000	5,000	5,000	5,000	5,000
Materials	20,000	2,000	2,000	2,000	2,000
Miscellaneous	3,000	3,000	3,000	3,000	3,000
Total	38,000	10,000	10,000	10,000	10,000

Status Report:

Both basins have been instrumented and the first year winter storm data has been collected and is being analyzed. However, funds are still necessary to cover these obligations. Funding is also needed to cover the fencing needed to restrict traffic that could compromise the study.

Personnel:

Forest Service Research in Moscow, Idaho and Riverside, California; District Resource Officer.

Responsible Official:

Forest Service Research Riverside, California and District Resource Officer.

Follow-Up Action(s):

Treatment design/effectiveness: Integrate findings into Forest BAER Action Plan.

Implementation and Effectiveness Monitoring: Monitoring of the implementation and effectiveness of BAER treatments on straw bale check dams, improvement of road drainage, and headcut stabilization is proposed. Location of treatment installations will be recorded using GPS, and digital photographs will be taken of all treatments. Installations will be visited following major storm events, and their condition documented with digital photography and written notes. Information regarding effectiveness (e.g., trapping sediment, diverting runoff, etc.) will be recorded, and repairs will be made as necessary. This monitoring is proposed for the first two postfire years (FY2000 and FY2001) and the cost is estimated at \$6,000. Monitoring reports will be submitted annually to the Regional BAER Coordinator; a final report with findings and recommendations will be submitted to the Regional BAER Coordinator when monitoring is completed at the end of year 2.