

Date of Report: 1/3/07

BURNED-AREA REPORT
(Reference FSH 2509.13)

(Hotlum Fire looking north into Shasta Valley on lower portion of fire)

PART I - TYPE OF REQUEST

A. Type of Report

- ☐ 1. Funding request for estimated WFSU-SULT 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 or design analysis
 - ☐ Status of accomplishments to date
- ☒ 3. Final Report (Following completion of work)

PART II - BURNED-AREA DESCRIPTIONA. Fire Name: HotlumB. Fire Number: SHF-211C. State: CAD. County: SiskiyouE. Region: 5F. Forest: Shasta-Trinity

G. District:SMMU

H. Date Fire Started:2/26/06

I. Date Fire Contained:2/27/06

J. Suppression Cost:\$270,000+

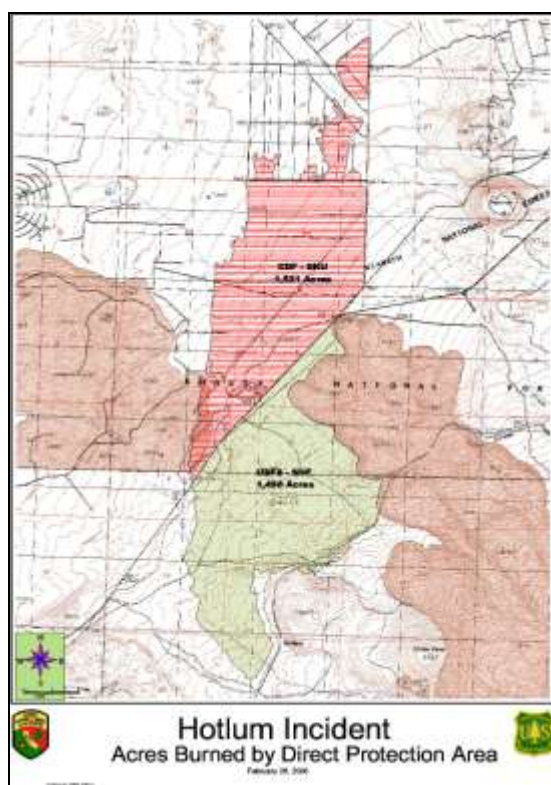
K. Fire Suppression Damages Repaired with Suppression Funds

1. Fireline waterbarred (miles):
2. Fireline seeded (miles):
3. Other (identify):

L. Watershed Number:1801020701

M. Total Acres Burned:3,017

NFS Acres(1,562) Other Federal () State () Private (1,455)



N. Vegetation Types:Ponderosa Pine/Bitterbrush/Annual Grass

O. Dominant Soils:Delaney

P. Geologic Types:Volcanic mudflows

Q. Miles of Stream Channels by Order or Class: 0 perennial, 0 intermittent

R. Transportation System

Trails: miles Roads: 30 miles

PART III - WATERSHED CONDITION

- A. Burn Severity (acres): 1,023 (low) 1,994 (moderate) ____ (high)
- B. Water-Repellent Soil (acres): 0
- C. Soil Erosion Hazard Rating (acres):
1,994 (low) 1,023 (moderate) ____ (high)
- D. Erosion Potential: 2.2 tons/acre
- E. Sediment Potential: 332 cubic yards / square mile

PART IV - HYDROLOGIC DESIGN FACTORS

- A. Estimated Vegetative Recovery Period, (years): 5
- B. Design Chance of Success, (percent): n/a
- C. Equivalent Design Recurrence Interval, (years): 10
- D. Design Storm Duration, (hours): 6
- E. Design Storm Magnitude, (inches): 2
- F. Design Flow, (cubic feet / second/ square mile): 10
- G. Estimated Reduction in Infiltration, (percent): 0
- H. Adjusted Design Flow, (cfs per square mile): 10

PART V - SUMMARY OF ANALYSIS

- A. Describe Watershed Emergency:

The Hotlum fire was a moderate intensity fire driven by strong winds (50+mph) that moved through the area rapidly consuming mixed chaparral with scattered Ponderosa Pine. There was a short residence time caused little soil heating and soil structure destruction. The large response from local, state, and federal units raises the possibility that noxious weeds were introduced in unwashed suppression equipment. Specialists on the BAER team did not find any watershed emergency in regard to erosion, water quality, wildlife, archology. The only concern was the possible introduction of noxious weeds by multiresource units off the forest.

- B. Emergency Treatment Objectives:

Need to order up a noxious weed detection survey to insure no invasive weeds get established in fire perimeter and along dozer lines. If detected in the spring proceed with eradication plan of hand pulling.

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

Land ____ % Channel ____ % Roads ____ % Other ____ %

D. Probability of Treatment Success

	Years after Treatment		
	1	3	5
Land			
Channel			
Roads			
Other			

E. Cost of No-Action (Including Loss):\$30,000

F. Cost of Selected Alternative (Including Loss):\$8,650

G. Skills Represented on Burned-Area Survey Team:

<input checked="" type="checkbox"/> Hydrology	<input checked="" type="checkbox"/> Soils	<input type="checkbox"/> Geology	<input type="checkbox"/> Range	<input type="checkbox"/>
<input type="checkbox"/> Forestry	<input checked="" type="checkbox"/> Wildlife	<input type="checkbox"/> Fire Mgmt.	<input type="checkbox"/> Engineering	<input type="checkbox"/>
<input type="checkbox"/> Contracting	<input type="checkbox"/> Ecology	<input checked="" type="checkbox"/> Botany	<input checked="" type="checkbox"/> Archaeology	<input type="checkbox"/>
<input type="checkbox"/> Fisheries	<input type="checkbox"/> Research	<input type="checkbox"/> Landscape Arch	<input checked="" type="checkbox"/> GIS	

Team Leader:Brad Rust

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Shasta-Trinity National Forest
3644 Avtech Parkway
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H. **Treatment Narrative:**

(Describe the emergency treatments, where and how they will be applied, and what they are intended to do. This information helps to determine qualifying treatments for the appropriate funding authorities. For seeding treatments, include species, application rates and species selection rationale.)

Land Treatments: Allow natural regeneration due to the moderate to low soil burn intensity that did not destroy the natural seedbed. No watershed emergency in regards to erosion, water quality, fish, wildlife, archeology.

Channel Treatments: No streams present.

Roads and Trail Treatments: Suppression rehab. Will cover with waterbarring and seeding.

Structures: none

I. **Monitoring Narrative:**

(Describe the monitoring needs, what treatments will be monitored, how they will be monitored, and when monitoring will occur. A detailed monitoring plan must be submitted as a separate document to the Regional BAER coordinator.)

Noxious weed detection survey needs to be conducted in the Spring to determine if introduction of noxious weeds occurred from multi-agency response into a Ponderosa Pine-Bitterbrush-Perennial grass habitat adjacent to the Mt. Shasta Wilderness boundary.

Three weeks of time for district botanist and assistant to monitor fire area esp. fire perimeter and dozer lines for noxious weeds. If noxious weeds are detected weeds will be hand pulled and put in plastic bags for disposal. If further treatments are needed an Interim request will be submitted.

Accomplishments:

No noxious weeds were detected after 3 weeks of survey in the spring and only one small known patch of yellow-star thistle had expanded. Several populations of noxious weeds species were found to occur in the burn area that we were unaware of prior to the fire. Only one small population of yellow starthistle (*Centaurea solstitialis*) may have come from fire activities. It was in a small opening where the fire did burn. It wasn't associated with a plantation or any other specific activity. It was approximately .1 acre located on the west side of road 42N73 in Section 8. It was hand pulled.

Mellen Colberg	Twyla Miller	Rhonda Posey	Totals
\$148/day	\$148/day	\$243/day	
25 days	25 days	5 days	55 days
\$3700	\$3700	\$1215	\$8615

Concerns were expressed about the possibility of wind erosion after the Hotlum Fire in the Hwy. 97 corridor. Ten wind erosion-monitoring stations were set-up in the perimeter of the fire focusing on areas that burned the hottest throughout from the upper elevation areas to the lower elevation areas. Along Hwy. 97 corridor most soil erosion occurred in the less than 1 ft zone and didn't travel over 20ft. Stations higher than 2 ft, mostly picked up bugs and very little sediments were captured, showing saltation occurs in the less than 1 ft zone. Soil is moving and being deposited in manzanita patches where it is held thus creating erosional pavement areas between brush. These soils are somewhat coarser sandy loams so the wind didn't pick up these sands and move them very far.



Part VI – Emergency Rehabilitation Treatments and Source of Funds by Land Ownership

Line Items	Units	NFS Lands			Other \$	Other Lands				All Total \$
		Unit Cost	# of Units	WFSU SULT \$		# of units	Fed \$	# of Units	Non Fed \$	
A. Land Treatments	none									
				\$0	\$0		\$0		\$0	\$0
				\$0	\$0		\$0		\$0	\$0
				\$0	\$0		\$0		\$0	\$0
<i>Insert new items above this line!</i>				\$0	\$0		\$0		\$0	\$0
<i>Subtotal Land Treatments</i>				\$0	\$0		\$0		\$0	\$0
B. Channel Treatment	none									
				\$0	\$0		\$0		\$0	\$0
				\$0	\$0		\$0		\$0	\$0
				\$0	\$0		\$0		\$0	\$0
<i>Insert new items above this line!</i>				\$0	\$0		\$0		\$0	\$0
<i>Subtotal Channel Treat.</i>				\$0	\$0		\$0		\$0	\$0
C. Road and Trails	none									
				\$0	\$0		\$0		\$0	\$0
				\$0	\$0		\$0		\$0	\$0
				\$0	\$0		\$0		\$0	\$0
<i>Insert new items above this line!</i>				\$0	\$0		\$0		\$0	\$0
<i>Subtotal Road & Trails</i>				\$0	\$0		\$0		\$0	\$0
D. Structures	none									
				\$0	\$0		\$0		\$0	\$0
				\$0	\$0		\$0		\$0	\$0
				\$0	\$0		\$0		\$0	\$0
<i>Insert new items above this line!</i>				\$0	\$0		\$0		\$0	\$0
<i>Subtotal Structures</i>				\$0	\$0		\$0		\$0	\$0
E. BAER Evaluation										
BAER team	ea	1893	1	\$1,893	\$0		\$0		\$0	\$1,893
Nx Weeds	days	412	21	\$8,652	\$0		\$0		\$0	\$8,652
<i>Insert new items above this line!</i>				\$0	\$0		\$0		\$0	\$0
<i>Subtotal Evaluation</i>				\$10,545	\$0		\$0		\$0	\$10,545
F. Monitoring										
					\$0		\$0		\$0	\$0
<i>Insert new items above this line!</i>				\$0	\$0		\$0		\$0	\$0
<i>Subtotal Monitoring</i>				\$0	\$0		\$0		\$0	\$0
G. Totals				\$10,545	\$0		\$0		\$0	\$10,545

Accomplishment Reports

Hotlum Fire – Noxious Weed Monitoring Report May 2006 –September 2006 Rhonda Posey, Eastside Planning Botanist December 4, 2006

Several populations of noxious weeds species were found to occur in the burn area that we were unaware of prior to the fire. Only one small population of yellow starthistle (*Centaurea solstitialis*) may have come from fire activities. It was in a small opening where the fire did burn.

It wasn't associated with a plantation or any other specific activity. It was approximately .1 acre located on the west side of road 42N73 in Section 8. It was hand pulled. All other populations of yellow starthistle appear to be related to ground disturbance from past management activities particularly from converting shrublands to plantations and road building activities near the railroad tracks. In all, approximately eight acres of yellow starthistle were found throughout the burn area. Even though all but one population can be attributed to some other activity, the fire did improve the habitat so these populations are expected to spread.

Six small populations, one to five plants each, of musk thistle (*Carduus nutans*) were found in the burn area. Musk thistle is "A" rated by the State of California which means it requires treatment. These scattered populations were flowering or past flowering so they were there before the burn as they don't flower until the second season. There is a small population of musk thistle on the south end of the railroad trestle that we have been treating since 2004. Seeds from this population may have been spread by birds or by vehicles carrying seeds from other infested areas.

Other weed species present are Klamath weed (*Hypericum perforatum*), bull thistle (*Cirsium vulgare*), common mullein (*Verbascum thapsis*) and perennial sweet pea (*Lathyrus latifolius*). The perennial sweet pea was found in two areas and seemed to be related to illegal dumping activities. The other species are common throughout the burn area and have been for a very long time. Their presence was probably greater this season because of the burn, but I expect them to decline as the native plants recover.

All roads and cat lines were surveyed either by vehicle or on foot. Surveys were carried out by Rhonda Posey, Mellen Colberg and Twyla Miller. See appendix A, Hotlum Weed Survey 2006 spreadsheet and Appendix B, a map of where weeds were found.

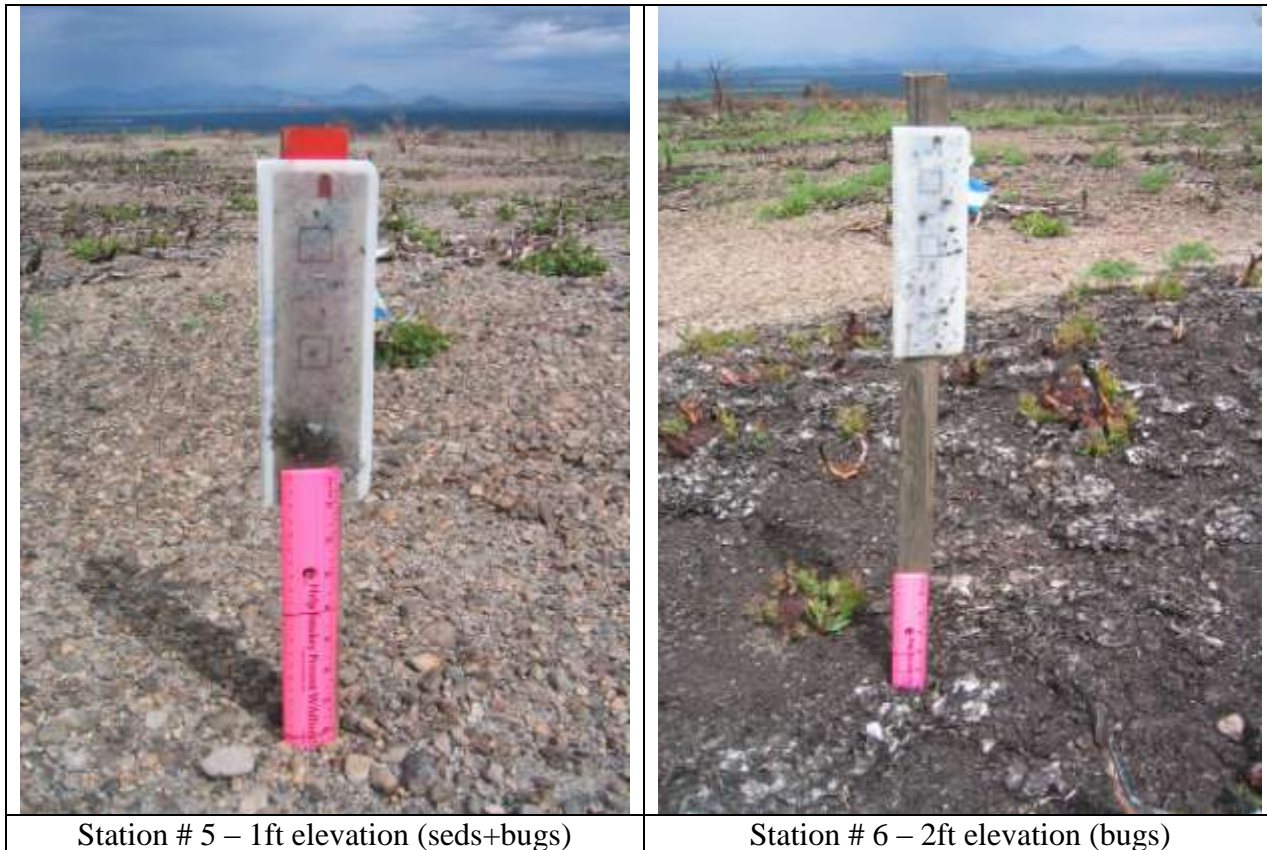
Hotlum Fire Wind Erosion Monitoring Results

Background:

Concerns were expressed about the possibility of wind erosion after the Hotlum Fire in the Hwy. 97 corridor. Soils in this area are sandy loams (Delaney series) with a high wind erosion index.

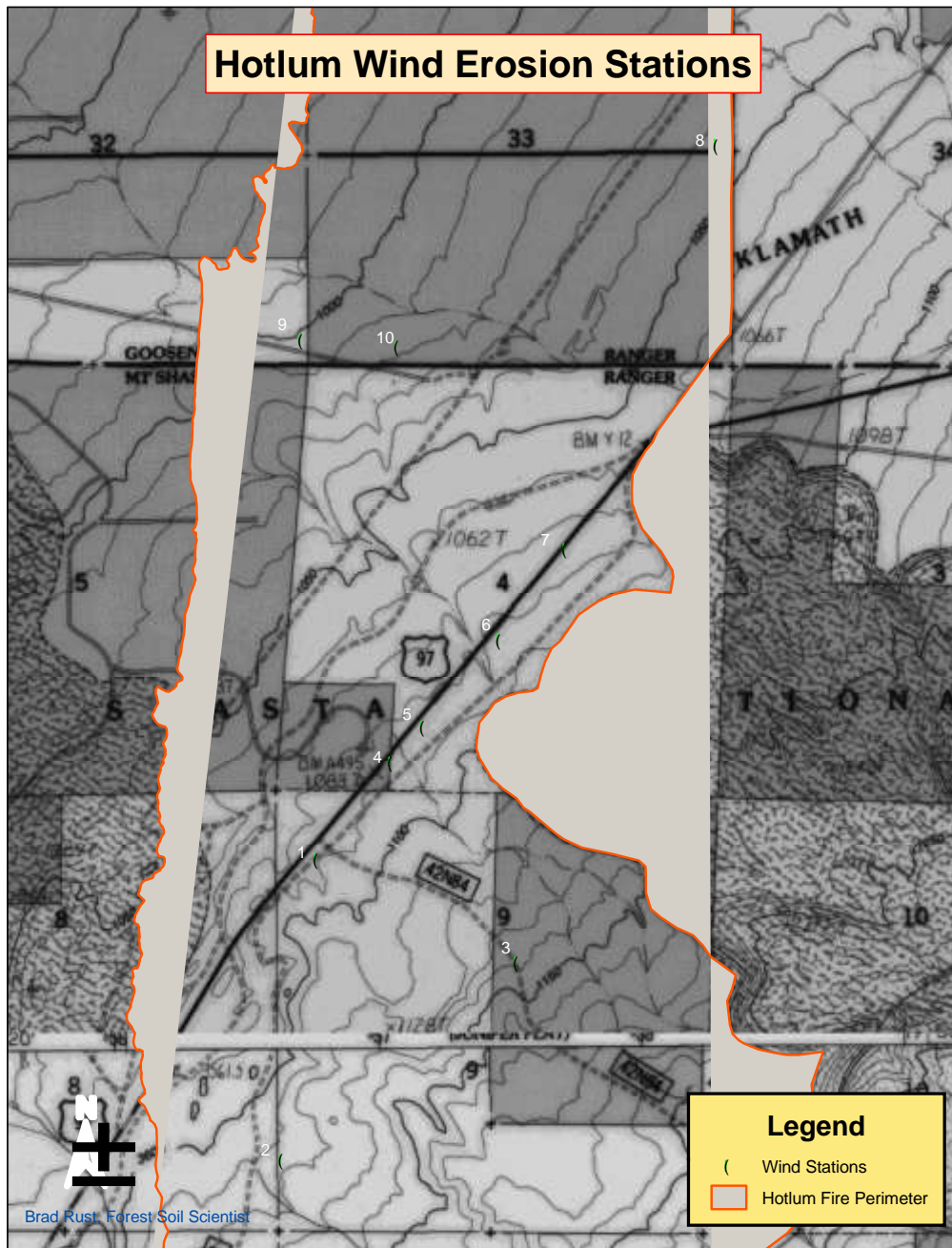
Ten wind erosion-monitoring stations were set-up in the perimeter of the fire focusing on areas that burned the hottest throughout from the upper elevation areas to the lower elevation areas (see map below).

Three elevations (3ft., 2ft., 1ft.) were chosen to evaluate wind erosion extent using catchment and accretion measuring devices (see pic of sticky plates and rulers).



Stations 1, 4, 5, 6, 7 focused on Hwy 97 corridor in various conditions and heights. Station 3 was in an upland position and stations 8, 9, 10 were on lowland positions in Whitney Ck. outwash sediments, where past wind erosion had been observed (see map below).

Wind Erosion Stations:



Results:

Stations were monitored from April 7th to June 1st, 2006 checking on April 7th (set-up date), May 4th, and June 1st. Results are shown in Table 1 below, which shows most erosion occurred in the less than one foot range and was most pronounced in the Whitney Ck. outwash areas (stations 8,9,10).

Table 1: Wind Erosion Monitoring Results

Station	Date	Description	Soil Moisture	Plate count	Erosion	Amount
1	4/7	3ft, windy, burn manz	22%b, 14%o		6.0	
	5/4	s/w windy	21%b, 14%o	low (bugs)	7.0	
	6/1	very windy	22%b, 17%o	low (bugs)	7.0	1.0

2	4/7	1ft, windy, burn manz			6.6	0.6
	5/4	s/w windy	40%b, 32%o	moderate	7.0	
	6/1	very windy	43%b, 22%o	high	7.3	
3	4/7	1ft, windy, open			7.3	0.0
	5/4	s/w windy	32%b, 20%o	high	7.3	
	6/1	very windy	37%b, 24%o	v-high	7.3	
4	4/7	3ft, windy, burn manz	24%b, 16%o		7.0	0.3
	5/4	s/w windy	39%b, 20%o	low (bugs)	7.3	
	6/1	very windy	37%b, 27%o	moderate	7.3	
5	4/7	1ft, windy, open			8.0	0.3
	5/4	s/w windy	25%b, 11%o	high	8.3	
	6/1	very windy	36%b, 25%o	high	8.3	
6	4/7	2ft, s/w windy, burn manz	25%b, 17%o		5.0	1.0
	5/4	s/w windy	40%b, 19%o	mod (bugs)	5.3	
	6/1	very windy	42%b, 23%o	mod (bugs)	6.0	
7	4/7	1ft, s/w windy, burn manz			7.0	0.2
	5/4	low winds	24%b, 14%o	moderate	7.2	
	6/1	mod winds	24%b, 17%o			
8	4/7	3ft, windy, open sandy			4.5	1.5
	5/4	s/w windy	44%b, 27%o	moderate	5.5	
	6/1	very windy	61%b, 27%o	high	6.0	
9	4/7	2ft, windy, burn manz	48%b, 25%o		6.0	0.5
	5/4	windy	51%b, 20%o	moderate	6.4	
	6/1	very windy	32%b, 19%o	high	6.5	
10	4/7	1ft, windy, open			5.5	0.5
	5/4	windy	41%b, 21%o	high	6.0	
	6/1	very windy	28%b, 20%o	high	6.0	

Along Hwy 89 corridor (stations 1,4,5,6,7) most soil erosion occurred in the less than 1 ft zone and didn't travel over 20ft. Stations higher than 2 ft, mostly picked up bugs and very little sediments were captured, showing saltation occurs in the less than 1 ft zone. These soils are somewhat coarser sandy loams so the wind didn't pick up these sands and move them very far.

The Whitney ck. outwash area (stations 8,9,10) has finer sands and silt due to being glacial outwash mixed with fine ash which did blow and move at higher elevations greater than 3ft (see map and table above). These silts and fine sands can create dust clouds (as seen driving NE on Hwy 97 looking on a windy day towards Lassen Nursery fields to the north) but pose no threat to highway safety on hwy 97.

Vegetative cover is coming back nicely so there will not be a wind erosion problem threatening Hwy 97 corridor. Soil is moving and being deposited in manzanita patches where it is held thus creating erosional pavement areas between brush. This causes a slight mounding and soils that have better available water holding capacity reflecting in high soil moisture levels (see Table 1) with high rates of seed sprouting.

PART VII - APPROVALS

1.

Forest Supervisor (signature)

Date
2.

Regional Forester (signature)

Date