

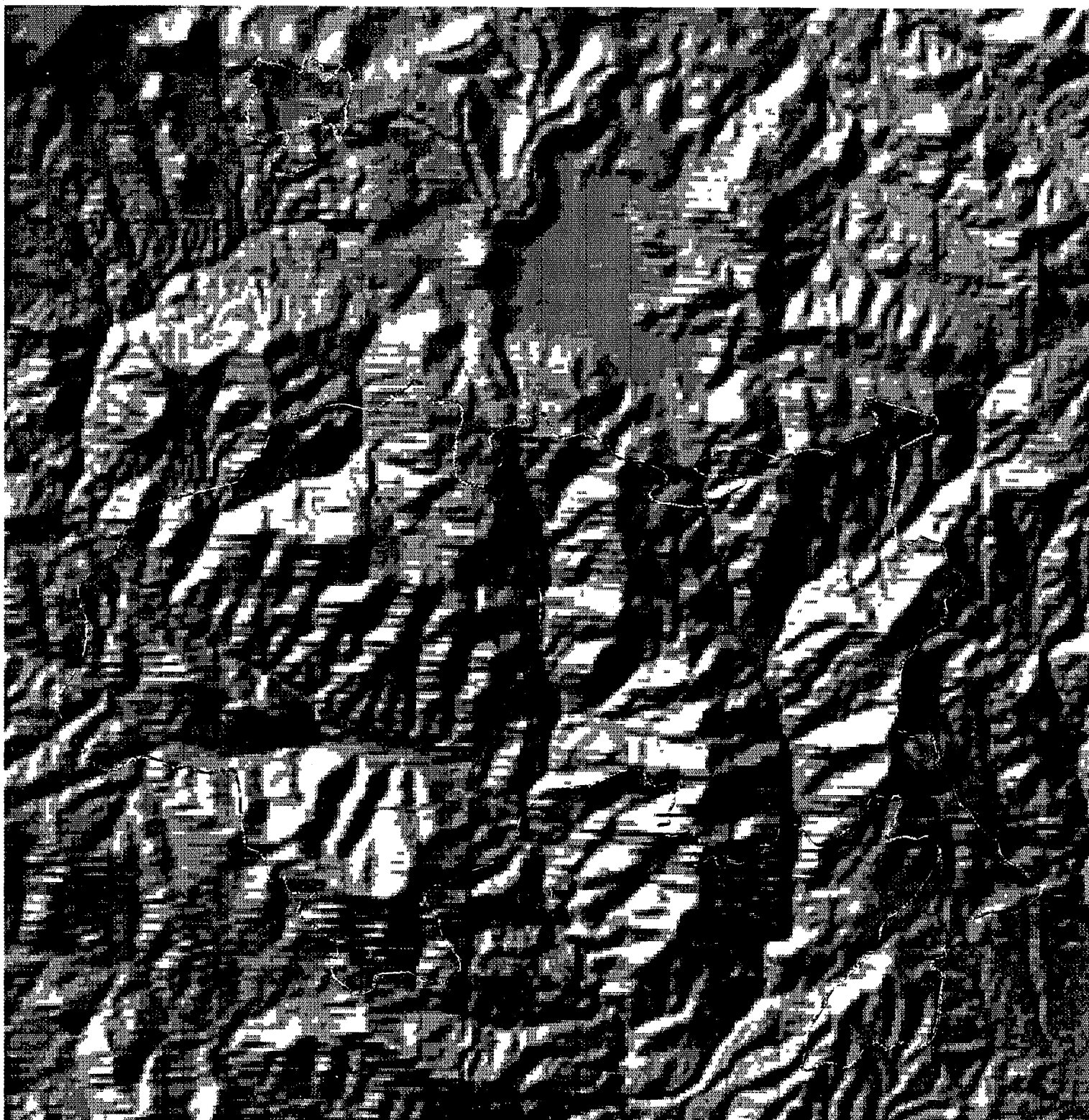
Dixie National Forest

Valley Ranger District



## Magotsu Complex July 1996

### Burned-Area Emergency Rehabilitation Report



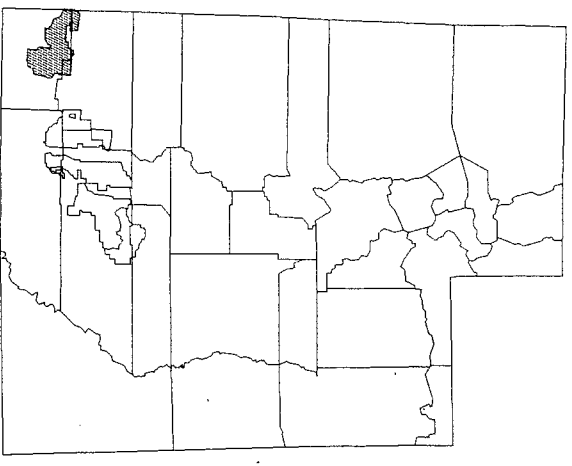
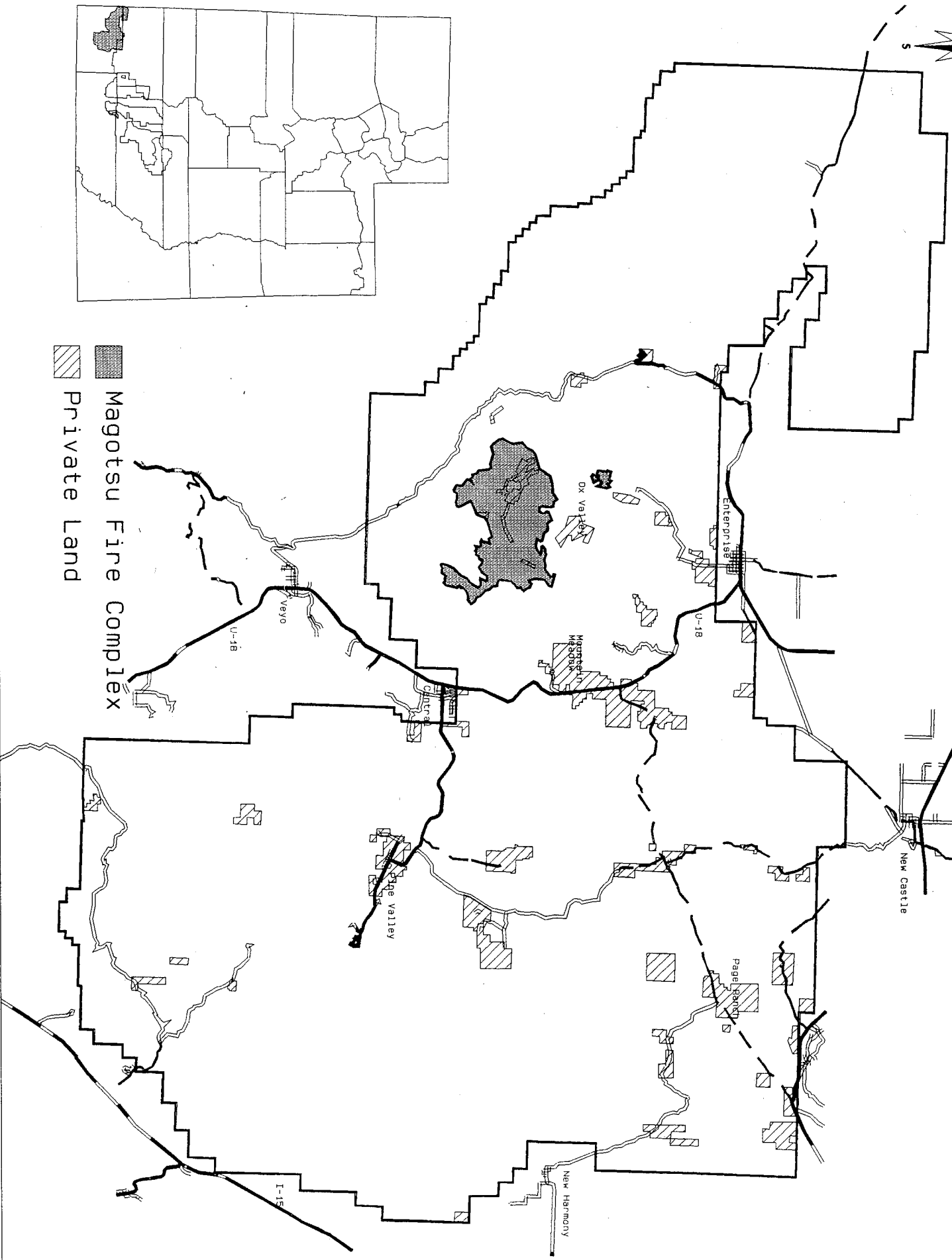
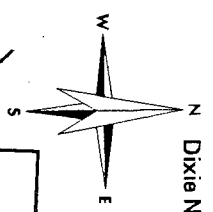
Magotsu Complex Fire Perimeter --8,803 Acres



Pine Valley Ranger District

# Magotsu Fire Complex Locator Map

Dixie National Forest



United States  
Department of  
Agriculture

Forest  
Service

Dixie  
National  
Forest

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File Code: 5100  
Route To:

Date: August 12, 1996

Subject: Magotsu Fire Complex - Rehabilitation Report

To: Hugh Thompson - Dixie Forest Supervisor  
cc: Tom Contreras - Pine Valley District Ranger

On July 29, 1996 a Burned-Area Emergency Rehabilitation (BAER) team made an on-site review of the Magotsu Fire Complex. This incident occurred on the Pine Valley Ranger District, Dixie National Forest. The team was comprised of resource specialists from the Forest and included: Brian Ferguson, Forest Silviculturist, Team Leader; James Bayer, Forest Soil Scientist; Ron Rodriguez, Forest Wildlife Biologist; Craig Kendall, West Zone Hydrologist; and Randy Russell, Pine Valley District Range Conservationist. We first reviewed the burned area via helicopter and then visited several on-site locations via 4X4 vehicle.

Three fires resulted from a thunderstorm system that moved across southern Utah on July 24, 1996. The Magotsu, Racer, and Pilot Peak fires were located and suppression activities began on the evening of July 24 and July 25. The legal descriptions for the origin points are: Magotsu - T38S, R16W, section 29; Racer - T38S, R17W, section 8; and Pilot Peak - T38S, R17W, section 29, Salt Lake Meridian, Washington County, Utah. Total acres burned within the complex was 8803.

There was three parcels of patented land (mining claim) within the burn area. There were no structures present. The legal description is T38S, R17W, portions of sections 20, 24, 25, 26, 27, 28, 29, 33, and 34, Salt Lake Meridian, Washington County, Utah. The fire burned toward another parcel of private land at Ox Valley, to the north but did not burn any of that parcel.

Other improvements in the fire area included the utility corridor to the south and east of the fire which has the IPP powerline and the Kern River natural gas line. There was a wildlife guzzler in section 23. These improvements were successfully protected during suppression activities. There were several miles of range allotment fence within the burn area. Approximately four miles of fence was damaged as a result of the fire. Several heritage resources were located within the burn area but were not damaged. There are approximately 6.5 miles of roads and 11.4 miles of trails within the burn. (See Magotsu Fire Complex Road and Trail Mileage Map.) Some of these were used for access to the fire and as control features. Some roads were worked with tractors to facilitate access by personnel and equipment. Fence materials have been ordered and repairs will be completed this fall.

The area burned occurs on moderately steep to very steep rocky canyons associated with the intermittent streams that drain the area. The major intermittent drainages include Moody Wash, Racer Canyon, Willow Spring Draw, Bellas Canyon, and Hardscrabble Hollow. These drainages drain into Magotsu Creek, a perennial stream, which is just east of the burn.

The soils in the burn area have formed in residuum and colluvium derived primarily from rhyolite bedrock. The extreme northern portion of the burn has soils formed from basalt bedrock (as does the Pilot Peak fire). Soils range from moderately deep and deep in the drainage bottoms, and on the canyon footslopes as well as benchlands and steep concave slopes associated with ephemeral drainages (bowls) of canyon sides. Shallow soils occur on rocky ridges and many of the steep canyon sideslopes associated with rock outcrops. Most of the shallow soils have a significant amount of surface rock fragments in the gravel and cobble size class. Soil erosion hazard for most of the soils within the burn area is rated as moderate. (See James Bayer's soil report attached.)

Vegetation that occurred prior to the fire consisted of a mosaic of stands (see vegetation map and acreage breakdown for the fire area) of Gamble oak and mountain brush (serviceberry, shrub live oak, manzanita, mountain mahogany, bitterbrush, etc.) on deeper soils and black sage on shallow soils. Stands of pinyon-juniper occurred on some of the lower elevation areas. The vegetation was in a mid- to late seral stage due to the exclusion of fire over the past 80-100 years, and as a result of past grazing practices. Many early seral plants, especially grasses and forbs were less evident on the landscape.

The area provides habitat for many species of wildlife including, but not limited to, mule deer, numerous neotropical migratory birds, small mammals and reptiles. A large portion of the burn area has been identified as critical mule deer fawning habitat. The loss of cover in that area will significantly reduce the use of the area by mule deer for fawning. It is anticipated that fawning will occur in adjacent unburned areas, or possibly in some of the unburned islands within the fire perimeter. This is expected to occur over the next 305 years, or until the shrub height exceeds 4-5 feet. Moody Wash is reported to have populations of Virgin River Spinedace, a once proposed threatened species.

The burn area occurred within Fire Group Zero: Miscellaneous Special Habitats (Forested Rock, Wet Meadow, and Deciduous Riparian Communities), Fire Group One: Pinyon-Juniper Woodlands and Fire Group Two: Montane Maple-Oak Woodlands (Bradley, Anne F., Nonan V. Noste, and William C. Fischer. Fire Ecology of Forests and Woodlands in Utah. June 1992. General Technical Report INT-287.) The structure and continuity of vegetation, in addition to the drought (low fuel moisture content) related conditions in the fire area created some explosive burning conditions.

The eastern part of the fire appeared to have burned in more of a mosaic pattern with scattered small to medium sized patches of unburned or lightly burned areas. The western 2/3 burned fairly clean (little or no unburned patches, except for three fairly large unburned blocks, totalling approximately 360 acres). The fire burned at a moderate intensity, with a short duration. There

was no indication of soil damage. There was very little white ash, and charring did not extend into the soil. The leaves and smaller stems of the shrubs, as well as ground litter was consumed. Trunks and larger stems (over 1/2 inch diameter) were only charred. Native grass species had the above ground tops and litter burned, but the crowns still appeared to be intact (i.e. the crowns were not burned below the soil surface).

The following are the findings and recommendations of the team.

Incident objectives #2 and #3 were tied to the resources in the fire area (See Incident Action Plan for Day Operational Period 0600-1800 July 27, 1996). Objective #2 (Protect private property values.) was met by providing structure protection for the Ox Valley area, and protection of the utilities corridor to the south. Objective #3 (Use minimum impact suppression tactics.) was met by utilizing black line, natural barriers, slurry lines and hand line only where needed. There was approximately 1.5 miles of handline constructed. The handline and road disturbance have been water barred to ensure proper drainage. We felt that seeding was not needed in these areas, because natural revegetation would occur.

The consensus of the team was that any precipitation that would occur during the remainder of the growing season would result in sprouting of native shrubs and grasses. This assessment is based on our experience with other fires in similar vegetation types on the District, as well as across the Forest.

From a soil resource and watershed standpoint, there was virtually no damage to the soil (we are within soil quality guidelines for severely burned soils). The principal effect of this burn has been the resulting loss in canopy and ground cover. The loss of this cover poses the possibility of experiencing an increase in on-site soil erosion, should there be a high intensity summer thunderstorm event. Climatic data from Enterprise, Utah (five miles north) shows precipitation averages 1 to 1.4 inches per month for July through November. Summer precipitation for the area is generally spotty and of short duration, which would make an intense event less likely.

The BAER team feels that no emergency condition exists on this fire. There appears to be sufficient live vegetation (sprouting species of shrubs and native grasses) to replace the previous vegetative cover that was burned. Sprouting should initiate with any moisture this growing season and revegetation should be well on its way by the end of next growing season.

Moody Wash and its tributaries drain the burn area. These are intermittent channels and enter Magotsu Creek, a perennial stream, approximately 6 miles downstream from the burn. There are small irrigated farms along Magotsu Creek below the confluence with Moody Wash for about two miles to the confluence with the Santa Clara River. Gunlock Reservoir occurs approximately four miles further downstream. We believe that the normal storm events that occur in the area would not result in any damage to these downstream values. The sediment associated with erosion from the burned area should be filtered out along the Moody Wash drainage before it reaches Magotsu Creek. However, there is the potential for resource damage if a high intensity summer thunderstorm of

sufficient duration occurred over the burn area and resulted in flash flooding.

Generally the emergency measures available to us for treatment of burned areas to prevent damage to on-site as well as downstream resource values include structural and non-structural treatments. Structural treatments include such things as debris basins, check dams, etc. Non-structural treatment generally consists of seeding.

Based on the distance from the burn to a perennial stream and the relatively low potential for a storm event that would cause flash flooding, we do not believe structural treatments are warranted.

We also do not believe emergency seeding (non-structural treatment) is warranted on this burn for the following reasons.

1. Seeding is generally needed where fire intensities are severe enough to kill much of the existing vegetation and where the soil is damaged by burning. This burn was of moderate intensity. The soil did not appear to be damaged (no hydrophobic soils) and it is expected that most of the native shrub and grass species will resprout.

2. Seeding generally is not effective in protecting the watershed during the remainder of the current growing season (i.e. sprouting of seeded species will not be effective in retarding erosion until the plants become well established). Therefore any unusual storm event that might occur this summer will result in similar damage whether or not the area is seeded. It is our opinion that resprouting of existing vegetation will provide similar protection to the watershed that seeding would provide.

Our experience with the Oak Grove fire which burned in similar vegetation types where we seeded part of the burn showed that the native shrub and grass species came back and provided similar watershed protection as the seeded areas. A high intensity storm event occurred within a month after the burn and the seeding was ineffective in preventing erosion. Both the seeded and unseeded areas provided good watershed protection the year following the burn.

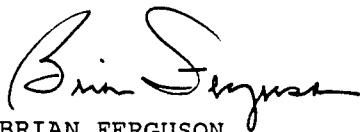
Finally, since we have been so successful at controlling both man caused and natural fires on the District, much of the pinyon-juniper, oak and mountain shrub stands have become decadent. By taking natural fire out of the ecosystem, we now have primarily mid- to late seral stages of growth across much of the District. To have a more healthy ecosystem, we need a mix of early and mid seral growth stages along with the late seral. Consequently, there have been a number of proposed vegetation management projects (Westside Vegetation, etc.) using prescribed fire to accomplish this. The Magotsu and Pilot Peak fires occurred within this area of proposed treatment. These fires accomplished many of the objectives we want for these vegetation types. Although the burn occurred in a larger block than we might propose with a prescribed fire, we believe the desired effects were accomplished. This is one additional reason we do not believe an emergency situation exists.

Although it was the consensus of the rehab team that an emergency situation did not exist, we felt that seeding with a mix of primarily native species on certain critical areas would be beneficial. We felt that some of the native species that might have occupied these sites at one time may have faded out of the species mix as a result of the exclusion of fire and/or over grazing. Because most of the area was classified as critical mule deer fawning habitat, it was felt seeding with the native species would be beneficial. Therefore, seeding was recommended for approximately 1000 acres within the burn area. Approximately 6900 pounds of seed (grass and forbs mix dominated by native species) was applied by aerial seeding on August 1, 1996. Areas that were seeded included lower Racer Canyon, Moody Wash, Willow Spring Draw, Gardner Canyon, and Hardsgrabble Hollow. Other upland basins were also treated. The incident helibase was also seeded during rehab operations, this included approximately 15 acres in the Baker Reservoir area.

Finally, we feel that the Magotsu Fire may have accomplished a number of objectives in the proposed Westside Vegetation Project. (See Magotsu Fire Complex, Acres of Proposed Management Ignited Fires Map and acres burned within planned projects.) We would recommend that the IDT reassess the proposal to see if changes are warranted in any of the planned ignitions prior to finalizing the document. We also recommend that monitoring (including documentation) occur at the end of this growing season and again in the fall of 1997, to determine if the vegetation is successfully re-establishing.

We also feel that this fire has shown the potential for large fire patterns in these vegetation types. This information will be valuable in developing burning prescriptions for management ignited and natural fires to meet management objectives. In developing management strategies it is important to consider resting burned areas from grazing for a suitable time period to allow resprouting and/or establishment of reseeded species. This consideration should be extended to the Magotsu Complex as well.

If you should have any questions concerning this report please feel free to contact any of the BAER team members.



BRIAN FERGUSON

Burn Area Emergency Rehab Team Leader

USDA-FOREST SERVICE

Date of Report: 8-12-96

BURNED-AREA REPORT  
(Reference FSH 2509.13, Report FS-2500-8)

PART I - TYPE OF REQUEST

## A. Type of Report

- ☐ 1. Funding request for estimated FFFS-FW22 funds  
☒ 2. Accomplishment Report

## 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 and design analysis  
☐ Status of accomplishments to-date  
☒ 3. Final report - following completion of work

PART II - BURNED-AREA DESCRIPTION

- A. Fire Name: Maqotsu Complex B. Fire Number: P43651  
C. State: Utah D. County: Washington  
E. Region: 04 F. Forest: DIXIE NF  
G. District: Pine Valley RD  
H. Date Fire Started: 7-24-96 I. Date Fire Controlled: 8-2-96  
J. Suppression Cost: \$1,400,000.00  
K. Fire Suppression Damages Repaired with FFFS-PF12 Funds:  
1. Fireline waterbarred (miles) 1.5  
2. Fireline seeded (miles) —  
3. Other (identify) —  
L. Watershed Number: 018 Meedy Wash  
M. NFS Acres Burned: 8033 Total Acres Burned: 8803  
Ownership type:  
( ) State ( ) BLM ( ) PVT ( 770 ) Patented Mining Claims  
N. Vegetation Types: Pinner-Jumpier, Gambel Oak brush, mountain brush, white sage  
O. Dominant Soils: Sampson-Metagua families complex  
Bernal-Pastorius-Dalcan families association  
P. Geologic Types: Tertiary volcanic and sedimentary rocks  
Quaternary alluvium  
Q. Miles of Stream Channels by Order or Class: 34 1st order intermittent and ephemeral  
R. Transportation System:  
Trails: 11.42 (miles) Roads: 6.54 (miles)



PART III - WATERSHED CONDITION

- A. Fire Intensity (Acres): 1000 (low) 7803 (moderate) \_\_\_\_\_ (high)
- B. Water Repellant Soil (Acres): 0
- C. Soil Erosion Hazard Rating (Acres):  
\_\_\_\_\_ (low) 8703 (moderate) \_\_\_\_\_ (high)
- D. Erosion Potential: 4-6 1st yr, 2 after tons/acre
- E. Sediment Potential: 0.5 cu. yds/sq. mile

PART IV - HYDROLOGIC DESIGN FACTORS

- A. Estimated Vegetative Recovery Period: 2-4 years.
- B. Design Chance of Success: 80 percent.
- C. Equivalent Design Recurrence Interval: 2 years.
- D. Design Storm Duration: 6 hours.
- E. Design Storm Magnitude: 1.2 inches.
- F. Design Flow: 5 cfs.
- G. Estimated Reduction in Infiltration: 25 percent.
- H. Adjusted Design Flow: 6 cfs.

PART V - SUMMARY OF ANALYSIS

- A. Describe Emergency: No emergency exists.

B. Emergency Treatment Objectives:

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 Risk): \$ \_\_\_\_\_

F. Cost of Selected Alternative (Including Risk): \$ \_\_\_\_\_

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

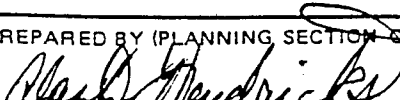
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<input type="checkbox"/> Timber	<input checked="" type="checkbox"/> Wildlife	<input type="checkbox"/> Fire Mgmt.	<input type="checkbox"/> Engineering
<input type="checkbox"/> Contracting	<input checked="" type="checkbox"/> Ecology	<input type="checkbox"/> Research	<input type="checkbox"/> Archaeology
<input type="checkbox"/> _____	<input type="checkbox"/> _____	<input type="checkbox"/> _____	<input type="checkbox"/> _____

Team Leader: Brian Ferguson

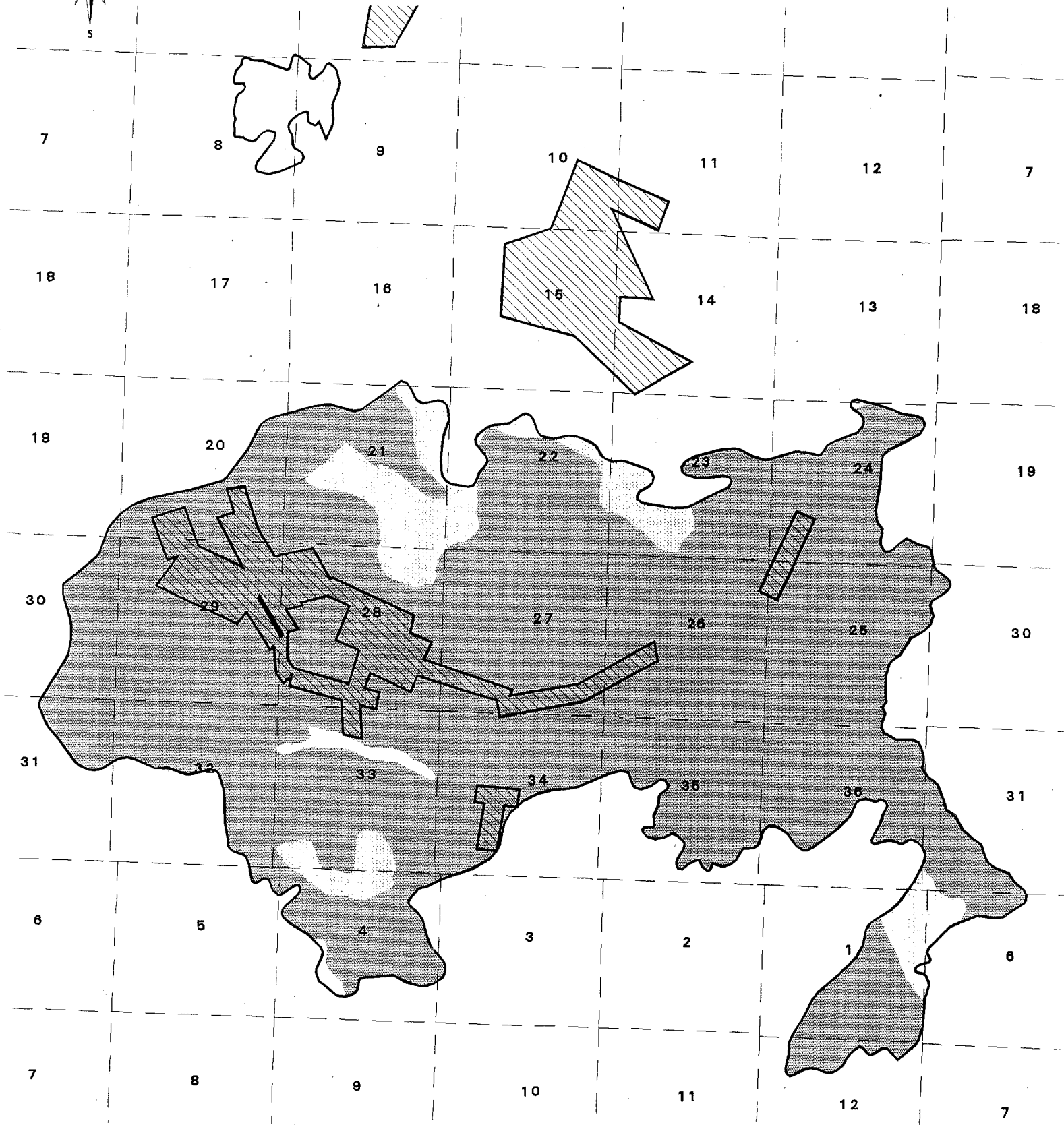
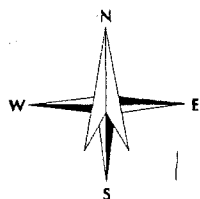
Phone: (801) 865-3700 DG Address: B. Ferguson: R04F07A

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.

INCIDENT OBJECTIVES		INCIDENT NAME	DATE PREPARED	TIME PREPARED
		MAGOTSU FIRE	07-26-96	2300 HR.
4. OPERATIONAL PERIOD (DATE, TIME):				
07-27-96 0600 - 1800 HR.				
5. GENERAL CONTROL OBJECTIVES FOR THE INCIDENT (INCLUDE ALTERNATIVES)				
1. PROVIDE FOR FIREFIGHTER AND PUBLIC SAFETY.				
2. PROTECT PRIVATE PROPERTY VALUES.				
3. USE MINIMUM IMPACT SUPPRESSION TACTICS				
4. BE SENSITIVE TO LOCAL POLITICAL ISSUES				
5. SUPPRESS THE FIRE AT COSTS COMMENSURATE WITH RESOURCE VALUES				
6. PROVIDE FOR INITIAL ATTACK WEST OF HWY. 18				
7. TREAT EVERYONE WITH RESPECT				
6. WEATHER FORECAST FOR OPERATIONAL PERIOD				
50 PCT CHANCE OF SHOWERS IN THUNDER STORMS, WITH GUSTY WINDS				
MAX. TEMP. 80'S-90'S MIN RH 22-30 PCT. UPSLOPE WINDS 5-15 MPH.				
7. GENERAL/SAFETY MESSAGE				
WATCH FOR ERRATIC WINDS IN THUNDERSTORMS, WATCH FOR LOOSE ROCKS				
DRINK PLENTY OF WATER - WATCH FOR SNAKES				
LOOK UP; DOWN + LOOK AROUND				
8. ATTACHMENTS ( / IF ATTACHED)				
<input checked="" type="checkbox"/> ORGANIZATION LIST (ICS 203)		<input type="checkbox"/> MEDICAL PLAN (ICS 206)	<input checked="" type="checkbox"/> SECURITY PLAN	
<input checked="" type="checkbox"/> DIVISION ASSIGNMENT LISTS (ICS 204)		<input checked="" type="checkbox"/> INCIDENT MAP	<input checked="" type="checkbox"/> AIR OPS. PLAN	
<input checked="" type="checkbox"/> COMMUNICATIONS PLAN (ICS 205)		<input checked="" type="checkbox"/> TRAFFIC PLAN	<input type="checkbox"/>	
202 ICS 3/80		9. PREPARED BY (PLANNING SECTION CHIEF)		10. APPROVED BY (INCIDENT COMMANDER)
				

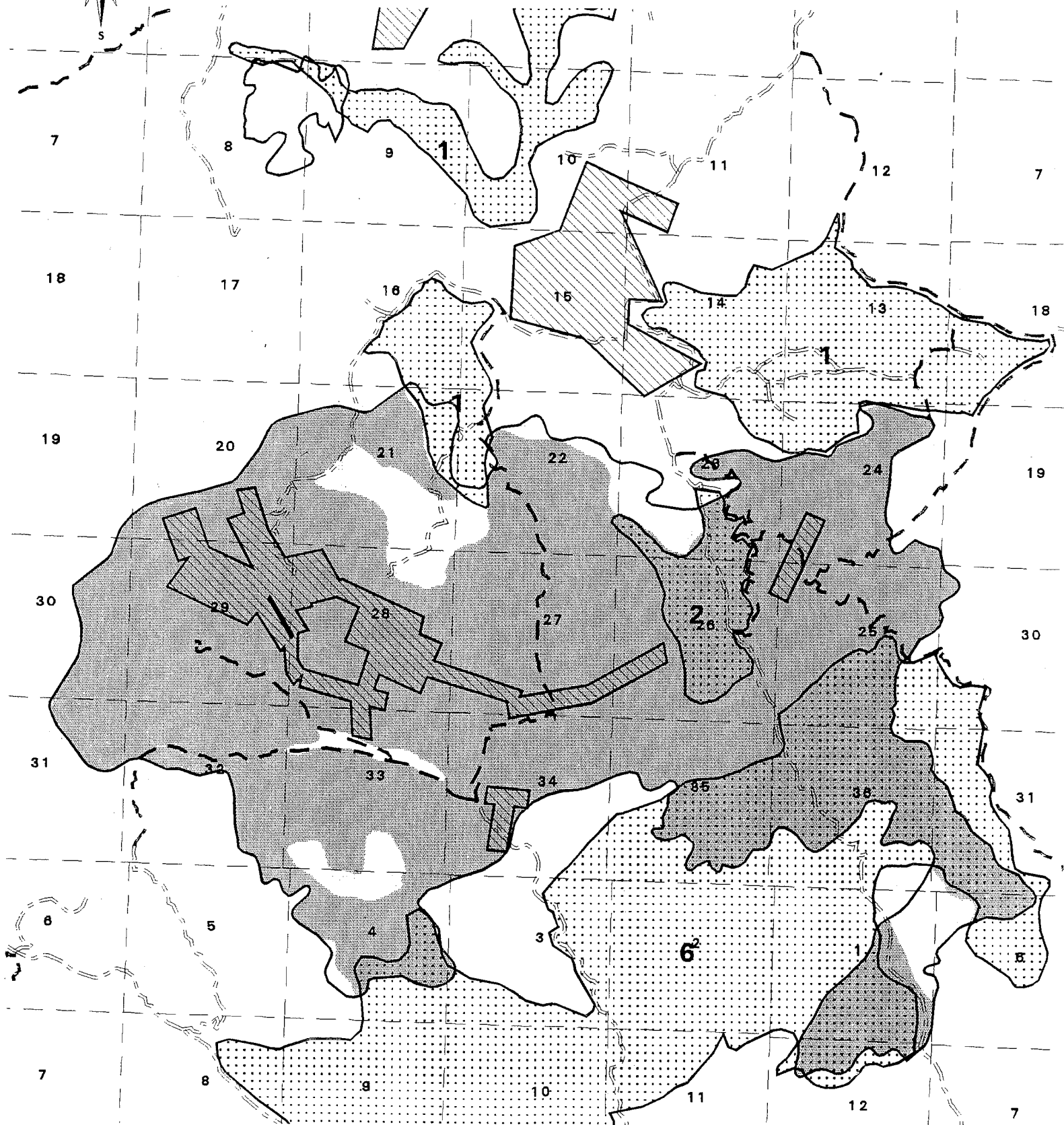
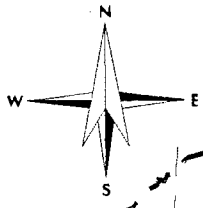
# Magotsu Fire Complex Acres Burned by Vegetation Types



- Big Sage
- Private Land
- Rock/Scattered Pinyon/Juniper
- Mountain Brush
- Oak Brush

Vegetation Classification		Acres
Mountain Brush		7113.48
Mountain Brush/Private Land		733.54
Oak Brush		771.35
Big Sage		50.47
Pinyon Juniper		118.17
Rock/Scattered Pinyon/Juniper		16.35

# Magotsu Fire Complex Road and Trail Mileage



- Big Sage
- Rock/Scattered Pinyon/Juniper
- Mountain Brush
- Private Land
- Westside Vegetation Project Management Ignited Fires

Road Mileage within Fire Perimeter

== Roads 6.54 miles

-- Trails 11.42 miles

Back

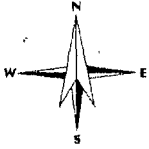
U.S.F.S.		REGION: SOUTHERN			
PROJECT NAME	PINE VALLEY WEST SIDE				
SUPERVISOR	JEFF GRANDISON	ACRES	240	TYPE	
DATE APPROVED		DATE APPROVAL RECD			
DATE MIXED		DATE DELIVERED			
DATE PICKED UP	FALL 1996	BY WHOM:			
ORG.	APPRO. UNIT/ACCT.	EXP. OBJ./TASK ACTIVITY	(REPT. CAT.)	\$ ESTIM.	
6-6-27-E				\$9,500.00	
SEED MIX SPECIES	SOURCE	LBS	U#	\$/LB	TOTAL \$
Slender wheatgrass	Canada	480	U3	\$0.95	\$456.00
Mountain brome	Oregon	720	U18	\$1.74	\$1,252.80
Great Basin wildrye (Magnar)	Utah	480	U17	\$3.63	\$1,742.40
Sherman big bluegrass	Washington	600	U1	\$3.94	\$2,364.00
Arrowleaf balsamroot	Utah	240	U6-7	\$5.00	\$1,200.00
Blue flax	Idaho	200	U9-4	\$2.80	\$560.00
Palmer penstemon	Colorado	200	U5-4	\$9.50	\$1,900.00
TOTALS		2920			\$9,475.20

Bottoms

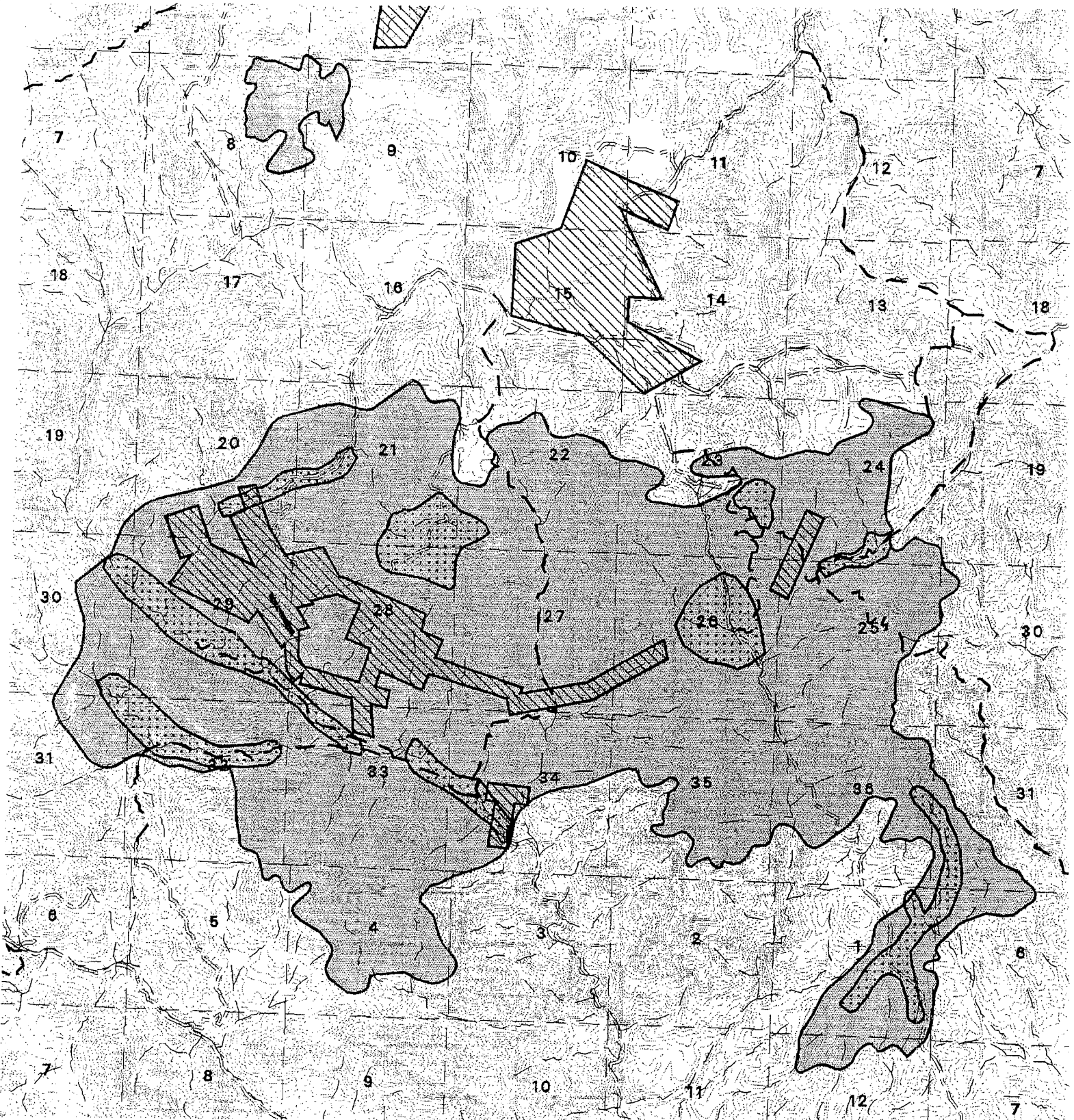
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

PROJECT NAME	INDEAN PEAKS	REGION:	SOUTHERN		
SUPERVISOR	DARRELL MCMAHAN	ACRES	TYPE	PJ THINNING	
DATE APPROVED		DATE APPROVAL RECD	5/13/96		
DATE MIXED	5/23/95	DATE DELIVERED			
DATE PICKED UP		BY WHOM:			
ORG.	APPRO. UNIT/ACCT.	EXP. OBJ/TASK	ACTIVITY	(REPT. CAT.)	\$ ESTIM.
5639	RFF-XZTP	1563	6602E		\$4,500.00
SEED MIX SPECIES	SOURCE	LBS	U#	\$/LB	TOTAL \$
Crested wheatgrass 'Douglas'	Manti	400	U1	\$2.32	\$928.00
Orchardgrass 'Paiute'	Oregon	700	U3-2	\$1.20	\$840.00
Great Basin Wildrye 'Magnar'	Utah	150	U17	\$3.63	\$544.50
Mountain Rye	Manti	150	U7-2	\$4.35	\$652.50
Alfalfa 'Ladak'	Utah	800	U60	\$1.35	\$1,080.00
Small Burnet 'Delar'	Idaho	1000	U28	\$0.425	\$425.00
TOTALS		3200			\$4,470.00




*on uplands*



# Magotsu Fire Complex Seeded Areas



-  Seeded Areas
-  Private Land

-  Roads
-  Trails
-  Perennial Streams