

UNITED STATES DEPARTMENT OF THE INTERIOR

BUREAU OF LAND MANAGEMENT
NEW MEXICO STATE OFFICE
Post Office and Federal Building
P.O. Box 1449
Santa Fe, New Mexico 87504-1449

MAY 17 1989

BLM-BIFC			
	Route	Action	Initial
Director	1		6
Assoc. Director	2		2
PAO			
BFO			
Av. Mgt.			
Mgt. Svcs.			
Fire Mgt.	3		SL
Training	4		BE
Info. Sys.			
Stan Palmer			5
Return to Central Files After Noting			

Copy to Phil

Memorandum

To: District Manager, Las Cruces

From: Gym Peak Fire Review Team

Subject: Review of Gym Peak Prescribed Fire

On May 9-10, 1989, a Review Team consisting of the following individuals conducted a review of the Gym Peak Prescribed Fire which was declared a wildfire on May 2, 1989:

Ron Dunton	NMISO State Fire Management Officer - Team Leader
Phil Parks	BIFC - Marana Training Coordinator
Steve Lent	Prineville - District Fire Management Officer
Lynn Saline	Safford District - Area Manager

The fire was declared a wildfire when gusty winds blew the fire across planned control lines, threatened private equipment, and caused one employee to receive second degree burns to both ears. The incident involving the injured employee was potentially much more dangerous, and the fact that he was not more seriously injured was due to the quick action of other Las Cruces District employees nearby.

During the course of the review we focused on three principle areas:

1. The Burn Plan.
2. The Execution and Management of the Burn.
3. The Decision to Declare the Burn a Wildfire.

A significant part of any prescribed fire is the predicted fire behavior. Attachment 1, provides Phil Parks' findings concerning predicted and actual fire behavior, and his opinion why a problem developed during the execution of the burn.

The Burn Plan and execution of the Plan were appropriate. The problems which developed were due to gusty and shifting winds that had not been observed during the days preceeding the burn, nor were they forecasted by the National Weather Service for the day of the burn. See Attachment 2, comments concerning the burn from Fire Management Officer Steve Lent, Prineville District.

The management of the burn was solid and professional. An overall briefing was conducted prior to the start of the burn. Individuals involved in the burn met experience criteria. We do feel the Burn Boss became too involved in a specific slop over and lost sight of the overall operation.

The incident involving the injury to the RLM employee was a result of misunderstood communication involving the Firing Boss and Mark Hakkila. Future briefings should stress to all involved employees that they should not put themselves in any position they feel is dangerous, regardless of orders they have received.

In retrospect, there was inadequate contingency planning regarding the protection of the private equipment as evidenced by the fact that a jeep, several hundred feet of plastic pipe, and a winch did burn.

The decision to declare the burn a wildfire was completely justified and appropriate. There is no question that due to the winds the burn was out of prescription, and with threat to private equipment the only reasonable course of action was to initiate suppression action.

In summary, we did not find any basic flaws in the Burn Plan or execution. We are providing you with recommendations, see Attachment 3, which should decrease the risk of an incident such as this in future burns.

/s/ Ron Dunton

5 Attachments:

- 1 - Cyn Peak Prescribed Fire (2 pp)
- 2 - Cyn Peak Prescribed Burn (2 pp)
- 3 - Suggestions and Remarks (1 p)
- 4 - Map of Planned Burn Area (1 P)
- 5 - Map of Actual Burn (1 p)

cc:

WC (740), Premier Bldg., Rm. 208
YC (100)
YC (700)
OR (910)
AZ (910)

GYM PEAK PRESCRIBED FIRE

The fuel description section of the Prescribed Fire Plan was addressed adequately. NFFL Fuel Model 2 was listed, but after consulting with Dusty Voss and viewing the vegetative patterns, it is not a cut-and-dried Fuel Model 2. There are pockets of FM 1 (grasses) and 3, with brush (NFFL Model 6). Dusty was correct in running Behave Fire Behavior predictions using grass fuel models for rate of spread, and a brush model thrown in for fireline intensity.

Fire Prescription:

The "Acceptable Prescription Range" appears adequate. The ranges were acceptable as far as getting the fire to burn on the "low" end, and a fire not too hot on the "high" end.

Preburn weather data collection appeared adequate. A spot weather forecast was obtained prior to and for the burn.

Weather observations were taken the day of the burn and for several days prior.

Firing Pattern:

The fire was lit at point A (Attachment 4) with one group headed west down the ridge, and another group north along the road, with the fire burning downhill.

This plan, in my opinion, is adequate.

Summation:

Obviously, something went wrong with a person getting burned, private equipment burned, and vegetation outside the original areas 1 and 2 burned.

My opinion is that the prescription criteria was not at fault. The actual weather was at the "high" end of the prescription, which should have posed no real problems.

All the fire behavior aspects were addressed adequately.

Opinion:

1. The Burn Boss was tied up with the details of Slop over #1, between points A and D. This fact diverted attention from the actual operation of getting the prescribed fire done, he should have removed himself from the details and concentrated more on the overall operation.

2. The Firing Boss was spread thin with inexperienced "firers." People with torches lighting the fire should have some experience with lighting fires. This task can get "hot" at times, and a person needs to be used to getting warm, especially with momentary wind switches.

3. The decision to keep lighting around the corner between points B and C, might be questionable. With one major slop over occurring, fire behavior could be considered high, and even though may be still within the preburn acceptable range, the actual activity might be saying "hold off on any more lighting for a while."

4. It's hard to tell where Slop over #2, about point C (where Mark was located) came from. From looking at the burn pattern, it could have come from the area west of A, or north of A.

It appeared that more people saw the fire moving up the hill, or at least whoever saw it, could not get through on the radio to the firing crew at point C.

It was an immediate, sudden change in what had happened all day. The fire made a strong run up the hill, probably a narrow (20'-30' wide) strip of fire.

GYM PEAK PRESCRIBED BURN

Burn Plan and Burn Execution Review

I. Burn Plan

The overall Burn Plan is well developed with clearly stated objectives and prescription limits. The Plan is a good Plan. A suggestion for strengthening the contingency section would be to identify secondary holding lines that would be utilized if the burn crosses planned containment zones or holding lines. It should be clear to all personnel on the burn where secondary holding areas are located and what actions to take.

II. Burn Execution

A. Observations: The burning operation was begun within prescribed conditions identified in the Plan. Weather data was collected at site prior to burn and a spot weather forecast was requested prior to actual burning. The predicted weather did not indicate any unusual weather or erratic winds. The weather data collected at site prior to burn did not indicate strong or unusual winds in the afternoon, but did indicate that relative humidity was dropping below prescribed conditions in the afternoon.

A briefing of the Burn Plan was conducted in town prior to burn. The actual burning operation followed the Burn Plan. The burn operation was initially well conducted with careful progress. Personnel were well deployed. The burning went well until early afternoon when the first spot fire occurred. Several dust devils were noticed, and the rapid spread of the spot fire were indicators that unusual weather conditions might be developing. The burning operation continued in an effort to strengthen the line along the road in the NW section of burn. The wind speed increased and as fire approached the canyon bottom the wind began to shift directions and the fire started making a run up the draw toward burners.

Neither the Burn Boss or Firing Boss was at a location to observe the overall fire activity at this time. Action was being taken to protect the equipment near the mining activity in the area of spot #1. Personnel on the south side of fire reported fire spreading uphill toward burners, but poor radio communications/reception did not result in Firing Boss being informed. Communication among the Burn Boss, Firing Boss, and burning personnel was unclear at this time. There was some confusion on the status of the approaching fire and the attempt to burn out along the road in advance of flames resulting in the potentially serious injury to one of the burners who was in the path of the rapidly approaching fire. The burner became confused and did not know what to do as the flames reached the road and began to cross it. It was only a narrow strip of fire that had reached the road, but that was unknown by the burner. A shout by other personnel helped him know where to go. He received burns to the ears and elbow while running to a safety zone. Once personnel were cleared to safety zones, everyone regrouped and a professional suppression action was conducted as the burn was declared a wildfire.

One engine was left at the site to watch the cabin in the evening and everyone else returned to Deming. During the evening the fire flared up and burned more area, including some pipeline and the jeep that was of concern on the east side.

The overall burn planning and execution of the Gym Peak Prescribed Fire was professional and adequate.

Unfortunately, the burn escaped the immediate area planned to be burned this season, but was within the overall planned unit. The potentially serious accident could have been avoided by clearer communications and adherence to standard safety orders. Personnel on burns should not put themselves into a position they feel is unsafe and should feel comfortable in saying so. Once the fire was declared a wildfire, suppression actions should have continued or the fire carefully monitored with a suppression action analyzed.

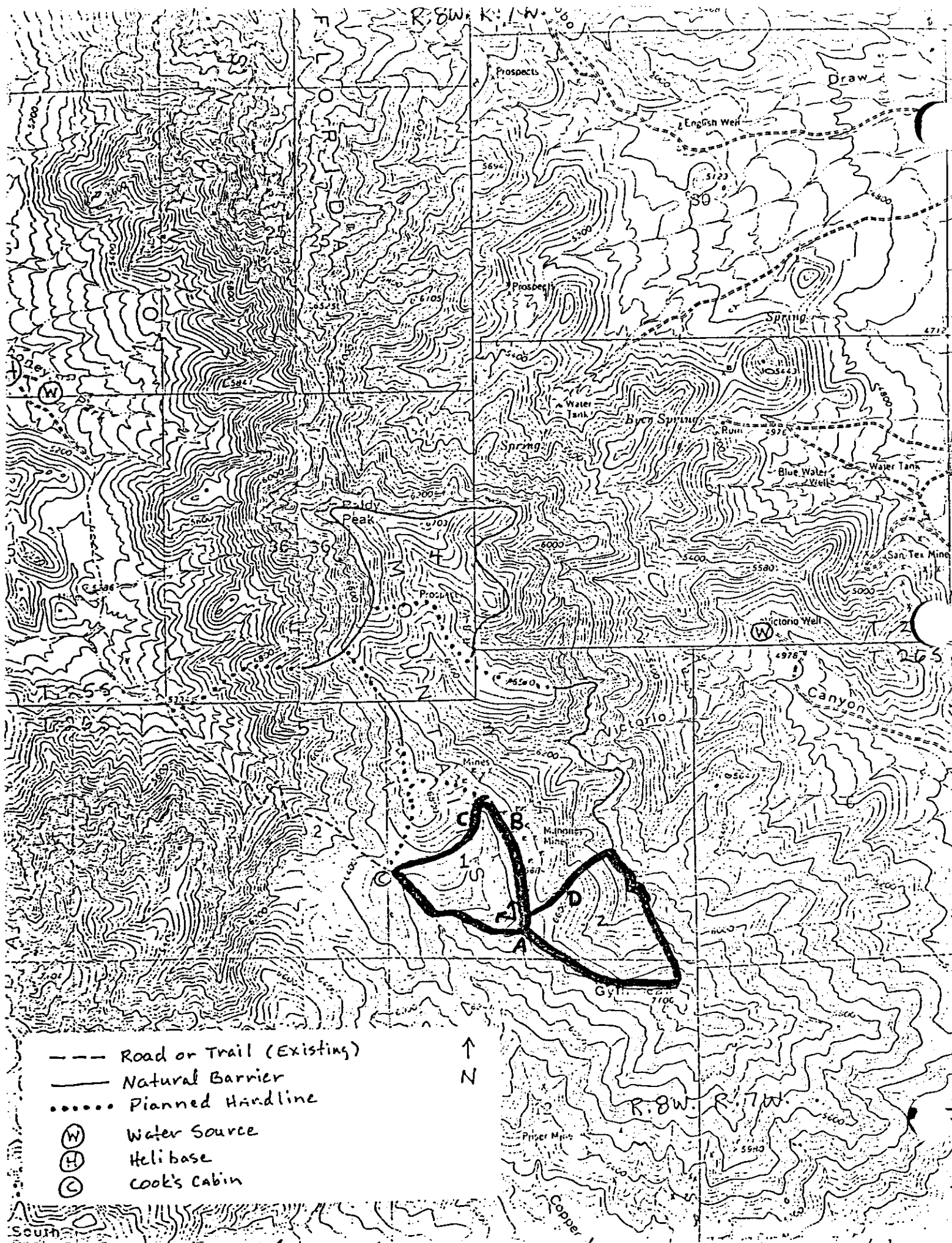
The Plan was sound and well thought out, but unpredicted conditions and some minor management distractions contributed to the escape and resulted in injury and property damage.

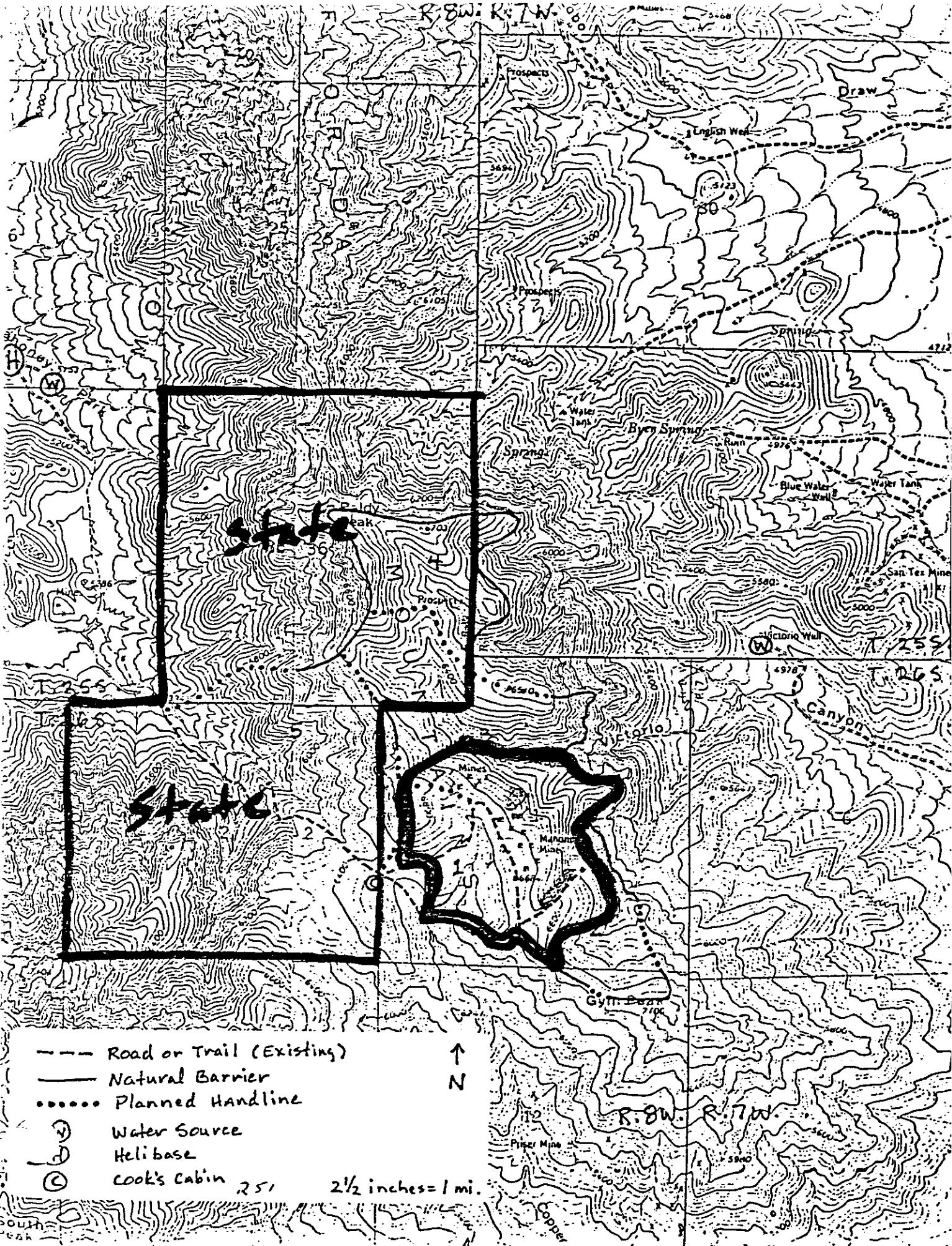
Escaped fires are an unfortunate event, but are a potential risk in all prescribed fire activities and can result from the most careful planning and execution. It is important to not be discouraged by an escaped burn, but to utilize the circumstances to improve burn operations in the future.

SUGGESTIONS AND REMARKS

The following items are suggestions for future burn improvements and remarks to possibly help prevent escapes or damages:

1. Communication: The Burn Boss should be in a location that allows him/her to have clear communication with all areas of fire. This may require experimentation to determine if there are potential "dead" zones in burn area.
2. Personnel used in key burn assignments: The expertize and training of persons used for burning as torch bearers should have prior experience.
3. Management of Burns: The Burn Boss should be in a position in which he/she can observe all fire activity. It is important to delegate operations such as containment/holding and firing to qualified personnel and not get involved in activities that limit overall burn management.
4. Potential Entrapment: Prior to burn, conduct a safety briefing on site, and stress the importance of the need to keep aware of burning conditions and reinforce the need for personnel to avoid placing themselves in dangerous positions.
5. Protection of Improvements: If there are priority sites for protection within or adjacent to burn site, plan for a worse case scenerio and take full preventive measures to avoid damage. It might be helpful to have patrol check sites periodically during and after burn.
6. Personal Protective Equipment: Nomex shrouds which fit under fire hard hats offer excellent protection to the back and sides of a persons head. An IM will be issued making the shrouds mandatory for all future burning operations and for uncontained wildfires.





- Road or Trail (Existing)
- Natural Barrier
- Planned Handline
- ① Water Source
- ② Helibase
- ③ Cook's Cabin

↑
N

2 1/2 inches = 1 mi.

Map 2 - what we actually burned