United States Department of Agriculture | Forest Service | Tonto National Forest | 2324 E. McDowell Road Phoenix, AZ 85006

Reply To: 2520

Date: June 15, 1994

Subject: Burned Area Emergency Rehabilitation; Dagger Fire

To: Files

Forest Service Policy (FSM 2523.03) requires burned area surveys of all fires 300 acres or greater to determine if emergency watershed rehabilitation is needed. The purpose of this letter is to document the findings of the Forest Burned Area Emergency Rehabilitation (BAER) team regarding the Dagger Fire.

Burned Area Information

The Dagger Fire started on June 5, 1994 and was declared controlled on June 7, 1994 at 1800 hours. The fire was located primarily in Sections 35 and 36 of T2N R4E approximately 7 miles NW of Globe. Total burned area was approximately 400 acres.

The fire burned from the southeastern boundary of Ruin Basin, near where Gerald Wash exits the basin to approximately 1.5 miles west near the southwestern boundary of Ruin Basin. Elevations range from 3480 to 3940 feet. Vegetation consisted mostly of chaparral with scattered junipers, and xeric riparian vegetation along the main stem of Gerald Wash. The terrain is generally gently sloping except for some steeper hills on the west side of Siphon Basin that contain the Silver Belt mine shaft. Soils are typically gravelly sandy loam or cobbly loam overlying granitic bedrock and are very shallow except for those formed in alluvium along drainage bottoms. There are no significant improvements within the burned area. Private lands and improvements exist approximately 2 miles downstream of the burned area.

The fire burned primarily with light to moderate intensity. Approximately 50 percent of the area burned at light intensity and 50 percent at moderate intensity. Lightly burned areas include the eastern 1/4 of the burned area and the western 1/4 of the burned area. The middle 1/2 of the fire burned with moderate intensity. This portion of the burned area is composed primarily of gently sloping hills and broad drainage bottoms. Three transects were run to evaluate development of water repellent soils. One transect was run on a lightly burned drainage bottom of light to moderate density chaparral near the western end of the fire, a second was run in a moderately burned drainage bottom of moderate to high density chaparral near the middle of the fire and the final transect was run on a lightly to moderately burned hillslope of light density chaparral near the middle of the burned area. Results were 20, 90 and 40 percent water repellent soils on these respective transects.

Evaluation by the Burned Area Rehabilitation Team

Lightly burned areas typically occurred on steeper slopes than moderately burned areas. In the western 1/4 of the burned area the fire burned with a mosaic pattern leaving islands of unburned vegetation that should help to filter sediment and ash eroded from burned areas and encourage infiltration of accelerated overland flow. Rapid resprouting of chaparral is anticipated in all lightly burned areas. Moderately burned areas occurred in gently sloping basins. Erosion and runoff are expected to increase as a result of the burn but rapid resprouting of chaparral species is expected in these areas as well. The canopy cover of chaparral species is expected to to return to 75 percent of its preburn density within 5 years. Erosion and runoff rates will be greatest immediately after the fire but should return to preburn conditions within 3 years.

Accelerated runoff and erosion does not represent a threat to downstream private lands and structures. Less than 10 percent of the Gerald Wash watershed burned in the fire. The wash enters a canyon with a broad flat bottom immediately downstream of the burned area. It exits the canyon onto a broad braided floodplain that would dissipate flood flows and trigger deposition of sediments well above private lands.

Recommendation

Rapid natural recovery of the burned area and low likelihood of damaging floods lead us to conclude that emergency funds for rehabilitation of the burned area are not necessary.

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for GRANT LOOMIS
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cc:
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