



Vol. 25, No. 3
Fall 1995

Arizona Geology

Published Quarterly by the Arizona Geological Survey

**ARIZONA
GEOLOGICAL SURVEY**
INFORMATION TO
ARIZONANS SINCE 1889

OUR MISSION

To provide unbiased earth-science information to the public, businesses, and governmental agencies to facilitate development of relevant policies and courses of action for prudently managing and using Arizona's land, water, mineral, and energy resources.

OUR FUNCTIONS

- Information about Arizona geology
- Geologic publications
- Databases and data files
- Geology library
- Rock cuttings and core repository
- Geologic maps and character of map units
- Geologic hazards investigations
- Mineral and energy resources investigations
- Staff support for Oil and Gas Conservation Commission

A.R.S. § 27-152

Grand Canyon - More Rain and Rockslides

Larry D. Fellows
Arizona Geological Survey

Heavy rain at the South Rim of the Grand Canyon August 20 forced closure of the Bright Angel Trail for an estimated three weeks. In a 40-minute period, 0.64 inches of rain fell. A second storm dropped 1.1 inches of rain August 21.

The trail was impassable in 20-25 places above Indian Garden, which is 4.5 miles and 3,200 feet below the Rim. Flash floods washed away portions of the trail. Rockslides left some boulders as large as small cars on the trail. About 1,000 feet of rock wall will have to be rebuilt.

No hikers were injured. As many as 2,000 people hike the trail daily during the summer. Grand Canyon National Park remained open and all visitor facilities and other activities were available as scheduled. The North Kaibab Trail remains closed because of damage by heavy rain in March. For information about trail conditions, call the National Park Service at (520) 638-7888.

The Bright Angel Trail was closed for nearly three weeks after 2.3 inches of rain fell in a 48-hour period March 4-6. The average total rainfall for March at the South Rim is only 1.4 inches. Water-supply pipelines from the Canyon's north slope to the South and North Rims were severed. The entire Bright Angel and North Kaibab Trails were closed by multiple rock slides. The South Kaibab was closed below Mormon Flats, a two-mile walk from the South Rim.

A debris flow from Prospect Creek March 6 constricted the Colorado River at Lava Falls Rapid by about 50 percent. The debris fan extended 100-150 feet into the river over a distance of 600

feet. Several members of a research group, camped a short distance upstream, heard a roaring sound during the night. When they awoke, they saw the new debris fan, produced by the largest debris flow that has occurred at Lava Falls Rapid since 1955 and the first since 1963.



Damage to the North Kaibab Trail and water pipeline caused by flooding in March 1995. Grand Canyon National Park photograph.