U.S. DEPARTMENT OF THE INTERIOR

U.S. GEOLOGICAL SURVEY

Map showing late 1977 debris avalanches southwest of Asheville, western North Carolina

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Figure 1A. Path of debris avalanche #1. Note scoured section in background (A) (white) and incised channel in foreground. This is the channel used by older debris avalanches as attested by pre-1977 toe.

Figure 1B. View down chute from crown head scar.

Figure 2. Head area of debris avalanche #21. Note shallowness of head scarp and lateral margins. See backpack (A) (center) for scale.

Figure 3. Path of debris avalanche #22 showing head (A) and levee (B) along left side of path.

Figure 4A. Head area of debris avalanche #26. A is head scarp; B is part of bedrock exposed in head; C is 9 x 9 m scar not connected to head area below; X is fieldpack.

Figure 4B. Profile of head scar showing 0.9 m high lateral margin (A) and bedrock surface (B). X is fieldpack.

Figure 5A. Head and path of debris avalanche #28. Tree at right side of photograph is at crown of head scar. Note bedrock lip at base of head area. Secondary road in background.

Figure 5B. Path (A) of debris avalanche #28. Person in center of lower part of photograph is near toe.

Figure 5C. Toe of same debris avalanche. Person (A) is standing in front of 3 m high rock dam.

Figure 6. Head (0.9 m high) (A) of debris avalanche #29. Water is seen as bright reflectance above map case in lower right center.

Figure 7A. Head (9 m wide) of debris avalanche #33 which is bedrock-floored.

Figure 7B. Profile of same debris avalanche from rim of head scar.

Figure 8A. Twin head scars of debris avalanche #43. Both are bedrock-floored along a planar slope and have less steep slope profiles (31° or 60%) than most debris avalanches.

Figure 8B. Nearby head scar of debris avalanche #44 floored in residual soil and colluvium.

Figure 8C. Looking down gentle gradient path of debris avalanches #43 and #44. Mud-encrusted bark is up to nearly 1.8 m above base of tree at A.

Figure 8D. Toe of debris avalanche-debris torrent. Mud-encrusted bark is 1.2 m above base of trees. Deposit is about 25 m wide along 9° (16%) slope. Path (A) in background.

Figure 9. Debris avalanche #47. Relative barrenness of head and upper part of chute reflects nearness of bedrock floor.